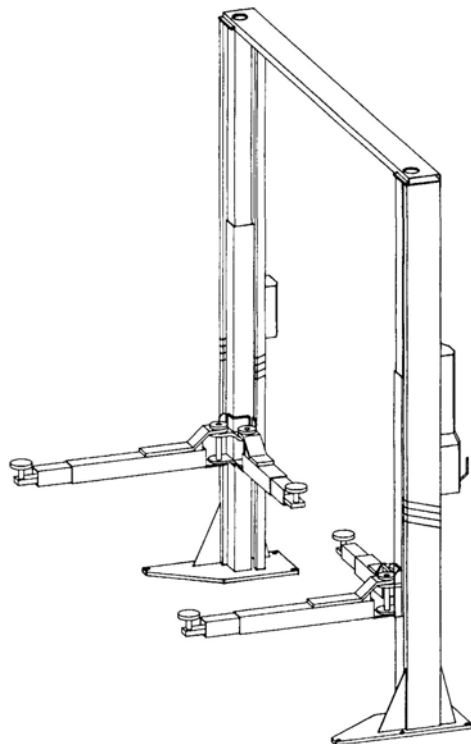


# SPL 4000 (SPL 9000)

Automotive Lift date: 05/2001

Manual date: 29.05.2001



## Operating instruction and documentation

Serial-number:.....

Retailer address / phone



**Nußbaum**  
HEBETECHNIK

Nußbaum Hebetchnik GmbH & Co.KG//Korker Straße 24//D-77694 Kehl-Bodersweier//Tel: +49(0)7853/8990  
Fax: +49(0)7853/8787//E-mail:info@nussbaum-lifts.de//http://www.nussbaum-lifts.de

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## **Foreword**

Nussbaum-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.

***Nussbaum Hebetchnik 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 to 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!



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

**Otto Nussbaum Hebetechnik GmbH & Co. KG**  
**Korker Straße 24**  
**D-77694 Kehl-Bodersweier**

**Record of installation**

The automotive lift SPL 4000 (SPL 9000) with the  
serial number:..... was installed on:.....  
at the firm:..... at:.....  
the safety was checked and the lift was started.

The installation was effected from the operating authority/competent (please delete as applicable).

The safety of the automotive lift was checked from the competent before the initial operation.

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

.....	.....	.....
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)

**Record of handing over**

The automotive lift SPL 4000 (SPL 9000) 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) which 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 Hebetechnik GmbH & Co. KG  
Korker Straße 24  
D-77694 Kehl-Bodersweier

### 2.2 Application

The automotive lift SPL 4000 (SPL 9000) is a lifting mechanism for lifting motor vehicles with a laden weight of up to 4000 kg (9000 pounds). 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

**Declaration of conformity**

in accordance with directive for machinery 98/37/EG appendix II.

Producer/deliverer: **OTTO NUSSBAUM GmbH & Co KG**

Address: **Korker Str.24 D-77694 Bodersweier**

product: **2-Post-Lift**

Name of the product: **SPL 4000**

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

We declare on our own responsibility that the mentioned product is conform with the regulations of the European community's directive for machinery (EC-directive 98/37/EEC), with the modifications of this directive and with the transformation of this directive into national laws.

following further directives of the EC:

- 73/23/EEC Directive for low voltages in the valid version
- 89/336/EEC EMV- directive in the valid version

following harmonised standards:

- EN 1493
- EN 60204.1/.2

Because the mentioned machine is listed in the appendix IX of the European community's directive for machinery, the RWTÜV executed a control of the lift with the number of registration:

**04 205-2366/00**

Bodersweier, den 18.04.2001  
place, date

**Otto Nußbaum GmbH & Co. KG**  
Korker Straße 24  
77694 Kehl-Bodersweier  
☎ 0 78 53 / 899 - 0  
company - stamp

\_\_\_\_\_  
Dipl.Ing. K. Müller (construction)

# ZERTIFIKAT CERTIFICATE

## RWTÜV

Registrier-Nr./Registered No.:  
**04 205-2740/98**

EG-Baumusterprüfbescheinigung gemäß Anhang VI der EG-Richtlinie 98/37/EG  
EC-type approval according to annex VI of the EC-Directive 98/37/EC

Zeichen des Auftraggebers Reference of applicant	Auftragsdatum Date of application	Aktenzeichen File reference	Prüfbericht Nr. Test report No.	Ausstellungsdatum Date of issue	Gültigkeit bis Expiry date
Hr. Müller	06.10.1998	3.1.1-1082/98	2738/98 u. 2739/98	02.05.2000	02.05.2005

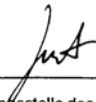
Hiermit wird bestätigt, daß das nachfolgend genannte Produkt den grundlegenden Anforderungen der Richtlinie des Rates vom 22.06.98 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Maschinen entspricht.  
We hereby certify that the product mentioned below meets the basic requirements of the council directive dated 22.06.98 on the approximation of the laws, regulations and administrative provisions of the member states relating to machinery.

**CE 0044**

Antragsteller  
Applicant: Otto Nußbaum GmbH  
Korker Straße 24, D-77694 Kehl

Fertigungsstätte:  
Manufacturing plant: s.o.

Produktbeschreibung:  
Product description: Kfz.- Hebebühne (Vehicle lift): Typ 2.40 SPL  
Nennlast (Nominal load): 4000 kg

  
Zertifizierungsstelle des RWTÜV e.V.  
für Gerätesicherheit, Aufzüge  
und Medizintechnik, notifiziert bei der  
EG-Kommission unter Nr. 0044

Rheinisch-Westfälischer  
Technischer Überwachungs-  
Verein e.V., Sitz: Essen  
Langemarckstraße 20  
D-45141 Essen  
Postfach 10 32 61  
D-45032 Essen  
Telephone +49/201 8 25-0  
Telefax +49/201 8 25-33 56

### 3. Technical Information

#### 3.1 Technical ratings

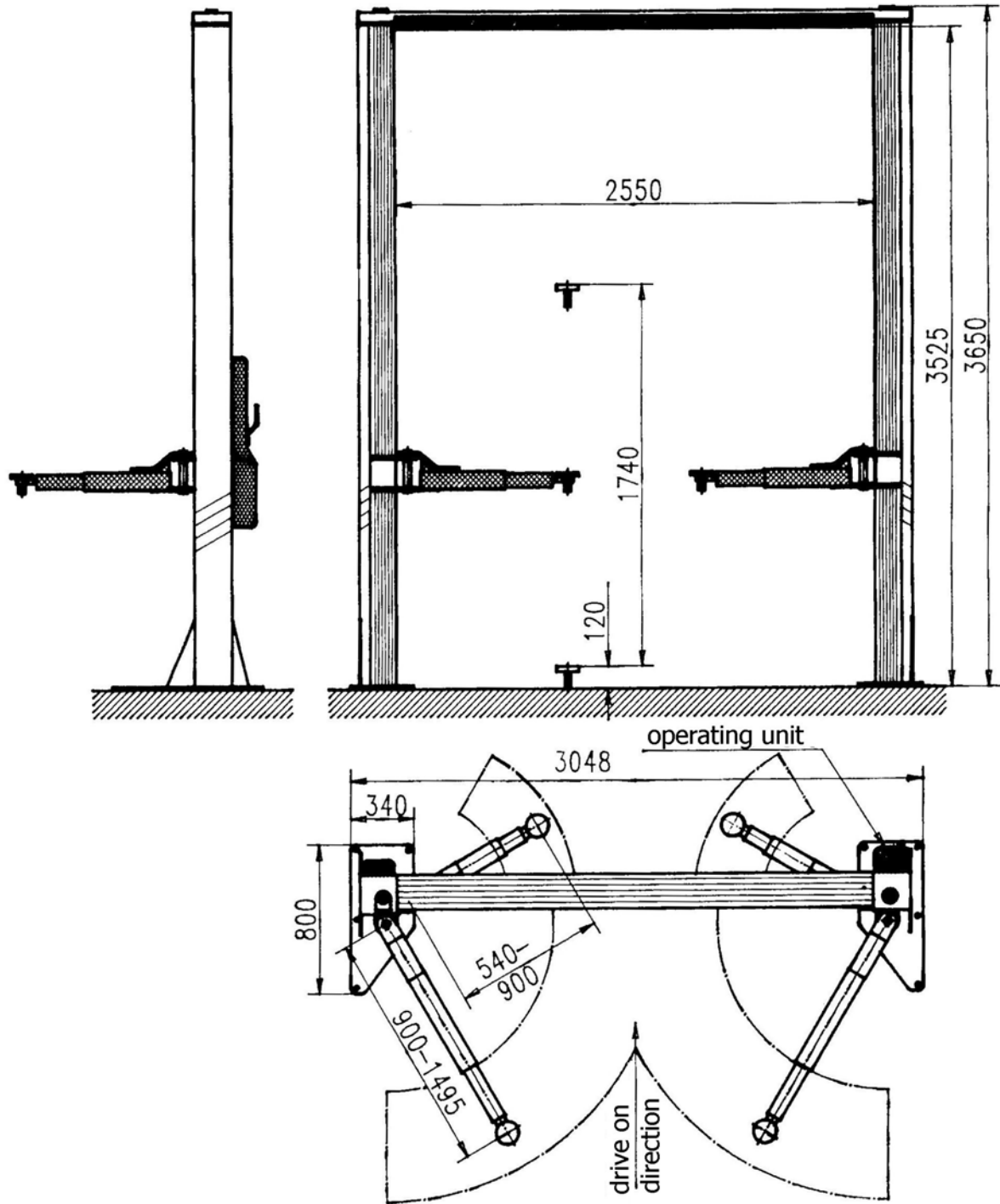
capacity	4000 kg (9000 pounds)
load distribution	max. 2:1 in or against drive-on direction
Lifting time (main lift)	* approx. 32 sec. with load
Lowering time (main lift)	* approx. 41 sec. with load
Lifting height:	1740 mm
Line voltage	* 3~/N+PE, 400V, 50 Hz (Standard version) 208–240V, 60 Hz single phase (USA) 3 x 575 V, 60 Hz (Canada) 3 x 230 V, 60 Hz (Canada)
Control voltage	24 V
Power rating	* 3 kW , (2,2 kW USA)
Motor speed	2800 rotation/minute
Pump capacity	* 3 ccm , (2 ccm USA, Canada)
Hydraulic pressure	approx. 185 bar with load
Hydraulic pressure (main lift)	approx. 215 bar
Oil tank	approx. 8 Litre
Sound level	≤ 75 dBA
Connection by customer	3~/N+PE, 400V, 50 Hz (standard version) with fuse T16A (Pay attention to the tension of your state)

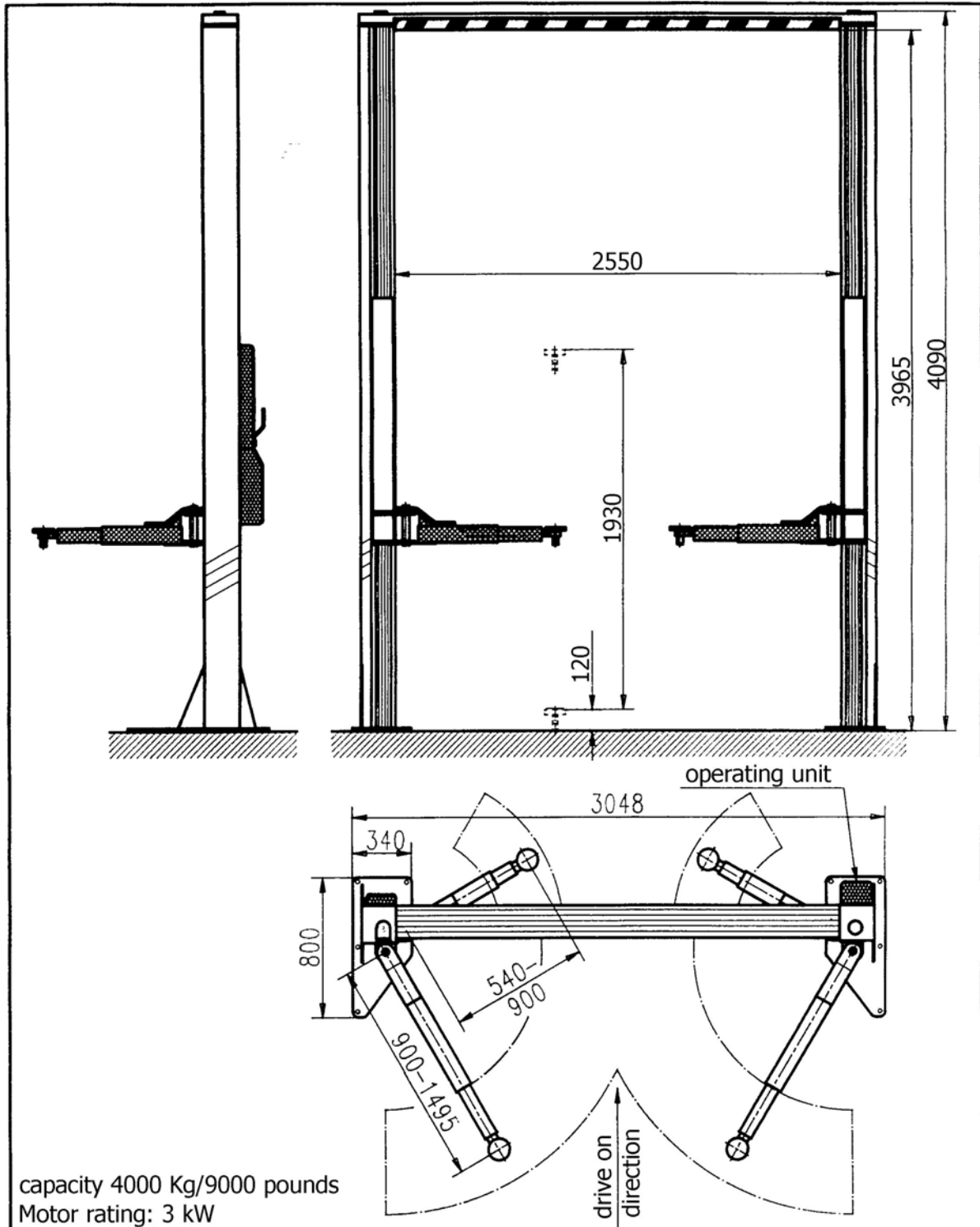
#### 3.2 Safety device

1. Safety ratchets  
Safety device against unintentional lowering
2. Screens at the hydraulic cylinder  
safety device for slow lowering in the case of pipe breaking
3. Lockable main switch  
safety device against unauthorised operation

(\* Implementation German)

3.3 Data sheet (USA/Canada)

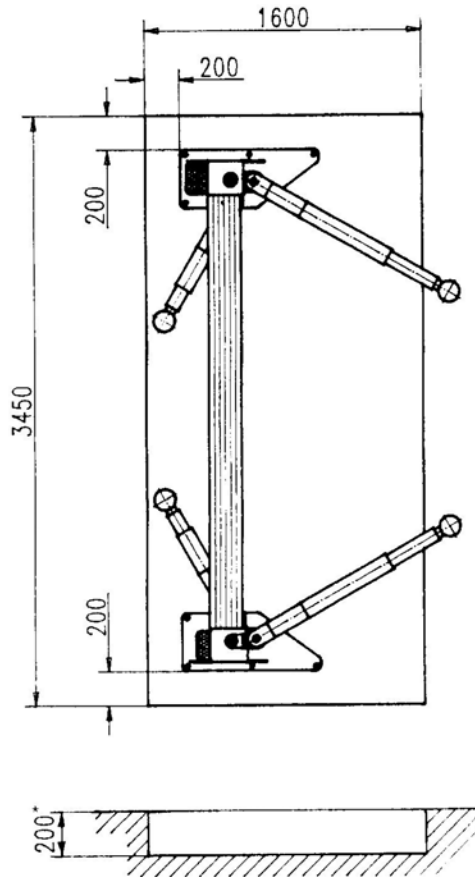




DIESE ZEICHNUNG WURDE AUF CAD ERSTELLT / THIS DRAWING WAS CREATED ON A CAD SYSTEM

SPL 3500		 TEL 07853/899-0 FAX 07853/8787 FERTIGUNGSTECHNIK UND MASCHINENBAU 77694 KEHL-BODERSWEIER
Implementation Germany    Masstab 1:30		
18.03.1997 / Veid	EINBAU0982-4	

### 3.4 Foundation diagram

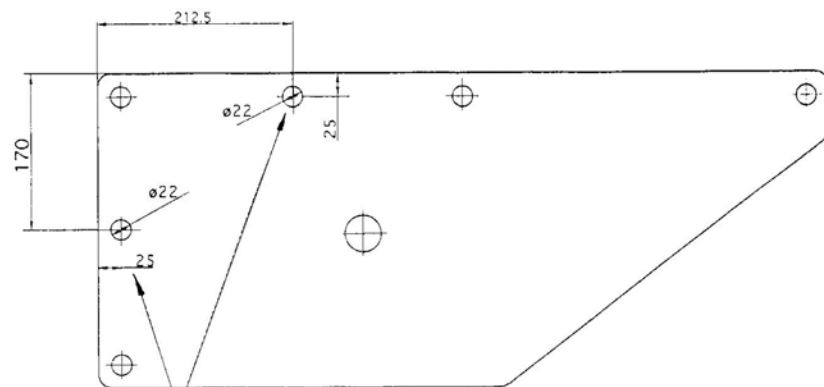


thickness of the concrete: min. 200 mm

(\* a concrete -thickness of 150 mm is sufficient if additionally two dowels are drilled into the base-plate)  
Shorter dowels can use becomes (UMV 80 UPAT Company)

Observe the regulations of the dowels manufacturer

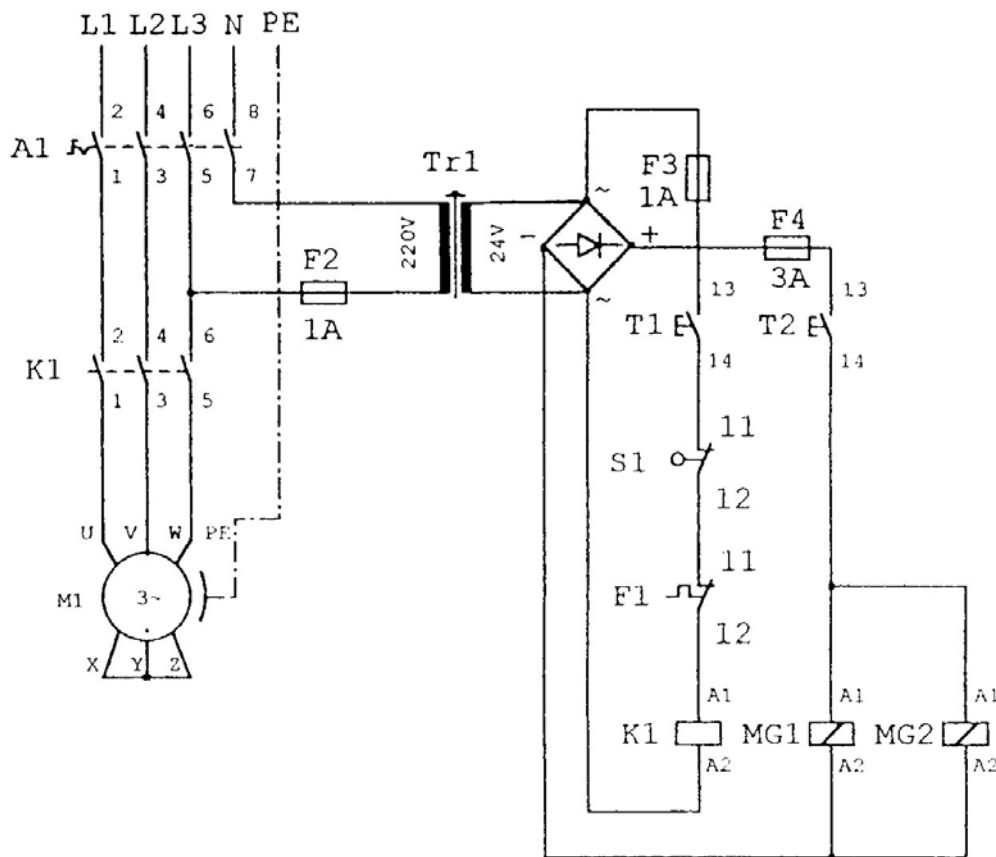
concrete quality min. B25 (DIN 1045)  
fondation base: frost-protected floor!



zusätzliche Bohrungen für die Betonstärke von 150 mm  
Betonqualität B25 / Dübel UMV 80 von der Firma UPAT

additional holes for the concrete-thickness of 150 mm  
Concrete quality B25 / Dowels UMV 80 from UPAT Company

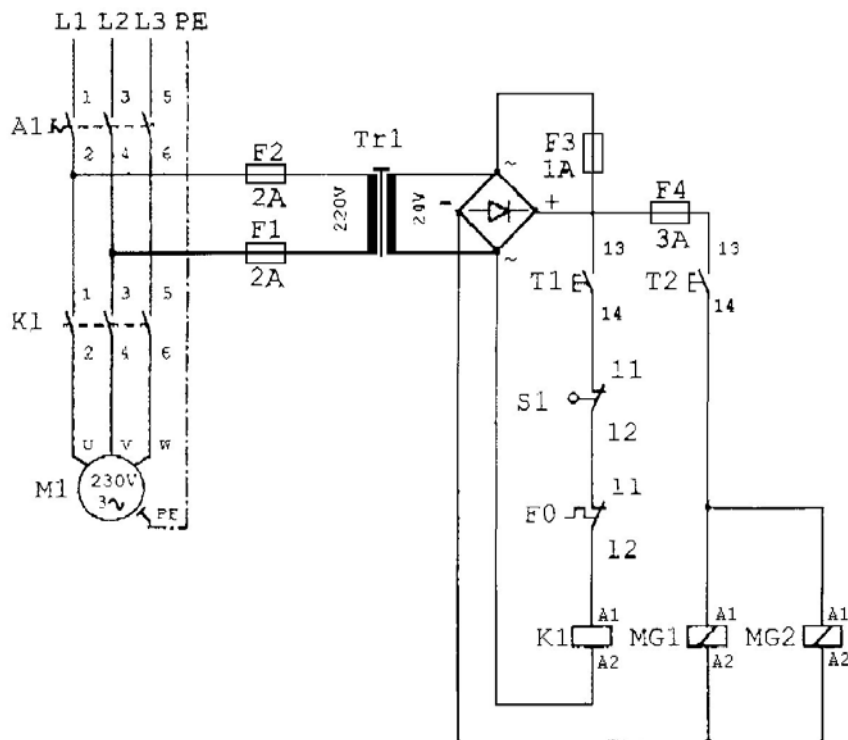
### 3.5 Electrical diagram drawing (Standard)



#### Electrical parts list

- A1 main switch 4-polig
- M1 motor, 400 V, 3,0 kW
- F1 fuse 1A
- F2 fuse 1A
- F3 fuse 3A
- T1 button "lifting"
- T2 button "lowering"
- K1 up contactor
- TR1 transformer
- F0 thermofuse in the motor
- S1 top limit switch
- MG1 magnet coil 1
- MG2 magnet coil 2

### 3.6 Electrical diagram drawing (3 x 230V Canada)

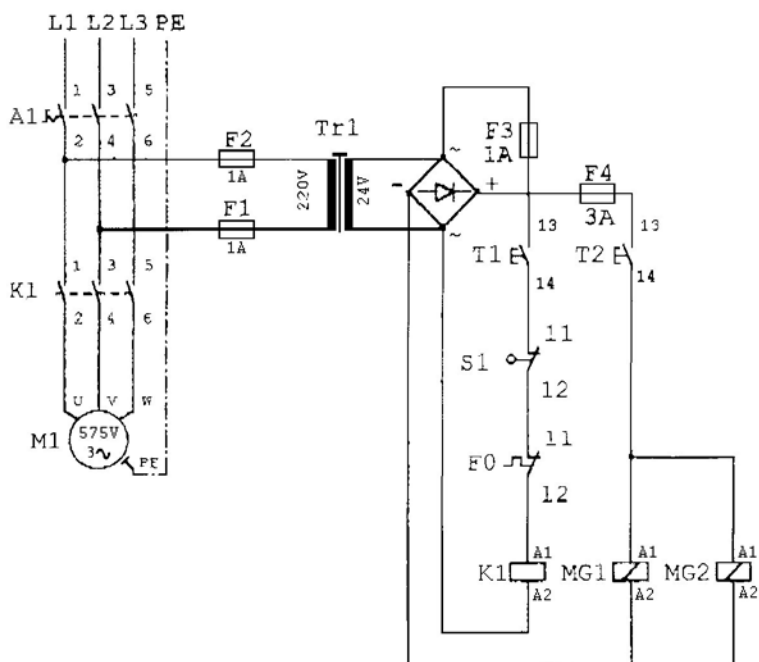


#### Electrical parts list

- A1 main switch
- M1 motor, 3 x 230 V, 2,2 kW
- F1 fuse 2A
- F2 fuse 2A
- F3 fuse AC 1A
- F4 fuse DC 3A
- T1 button "lifting"
- T2 button "lowering"
- K1 up contactor
- TR1 transformer
- F0 thermofuse in the motor
- S1 top limit switch
- MG1 magnet coil 1
- MG2 magnet coil 2



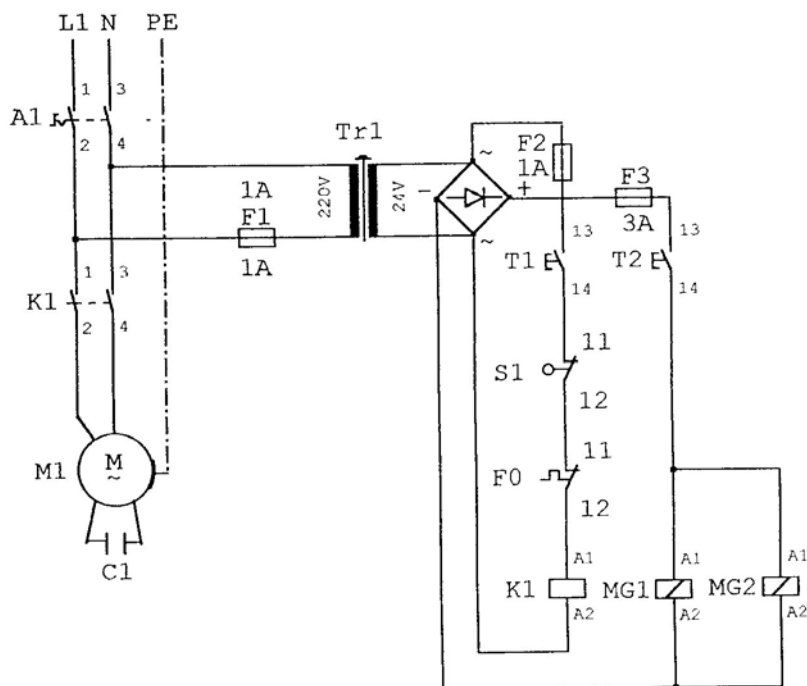
### 3.7 Electrical diagram drawing (3 x 575V Canada)



#### Electrical parts list

- A1 main switch
- M1 motor, 3 x 575 V, 2,2 kW
- F1 fuse 1A
- F2 fuse 1A
- F3 fuse AC 1A
- F4 fuse DC 3A
- T1 button "lifting"
- T2 button "lowering"
- K1 up contactor
- TR1 transformer
- F0 thermofuse in the motor
- S1 top limit switch
- MG1 magnet coil 1
- MG2 magnet coil 2

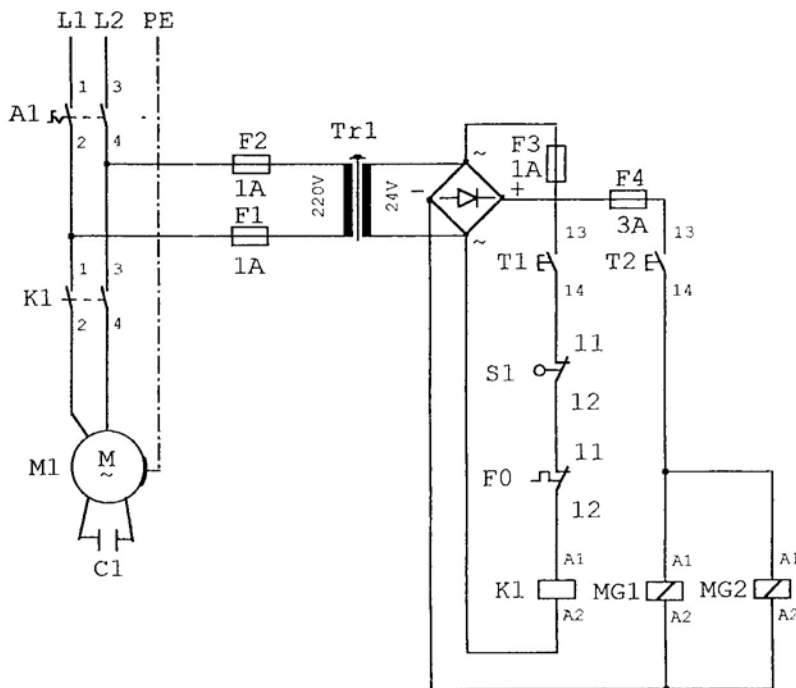
### 3.8 Electrical diagram drawing (single phase)



#### Electrical parts list

A1	main switch
M1	motor
F1	fuse 1A
F2	fuse 1A
F3	fuse DC 3A
T1	button "lifting"
T2	button "lowering"
K1	up contactor
TR1	transformer
F0	thermofuse in the motor
S1	top limit switch
MG1	magnet coil 1
MG2	magnet coil 2
C1	capacitor

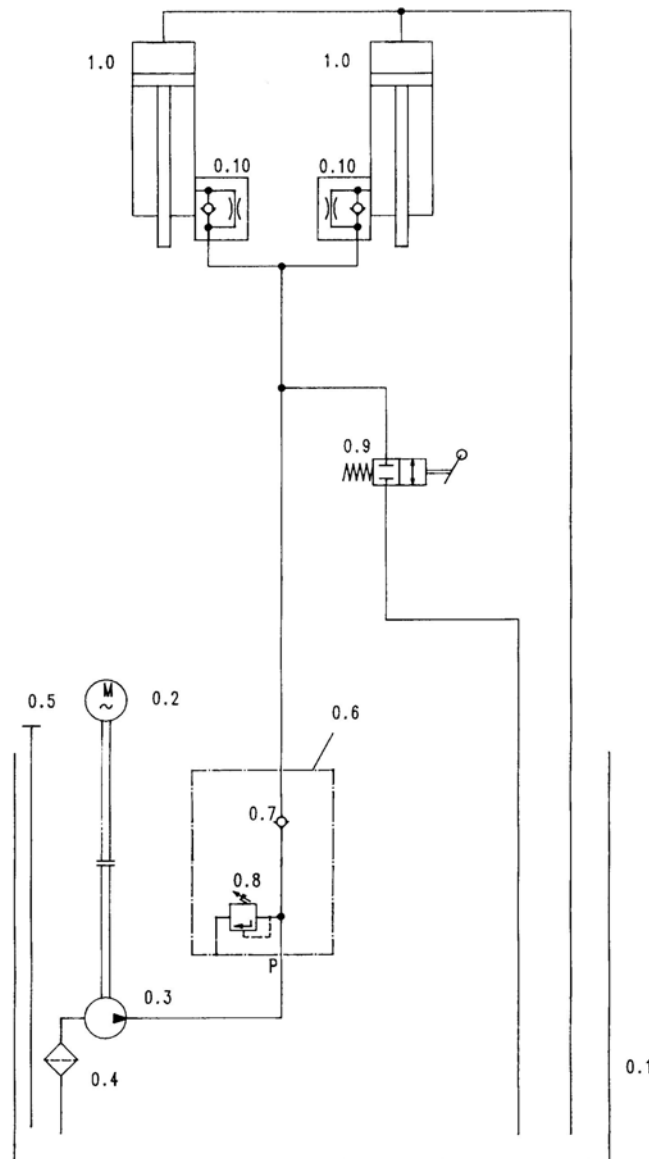
### 3.9 Electrical diagram drawing (2 phase)



#### Electrical parts list

A1	main switch
M1	motor, 230V 2,2 kW
F1	fuse 1A
F2	fuse 1A
F3	fuse AC 1A
F4	fuse DC 3A
T1	button "lifting"
T2	button "lowering"
K1	up contactor
TR1	transformer
F0	thermofuse in the motor
S1	top limit switch
MG1	magnet coil 1
MG2	magnet coil 2
C1	capacitor

### 3.10 Hydraulic diagram drawing



#### Hydraulic parts list

- 0.1 oil tank
- 0.2 motor
- 0.3 gear pump
- 0.4 oil filter
- 0.5 oil level gauge
- 0.6 hydraulic block
- 0.7 holding valve
- 0.8 pressure relief valve
- 0.9 ball valve
- 0.10 flow control valve
- 1.0 hydraulic cylinder

## 4. Safety regulations

Using automotive lifts for working the regulations of accident EN1493/Aug.98 (CEN/TC 98 „Automotive lifts”) must be observed.

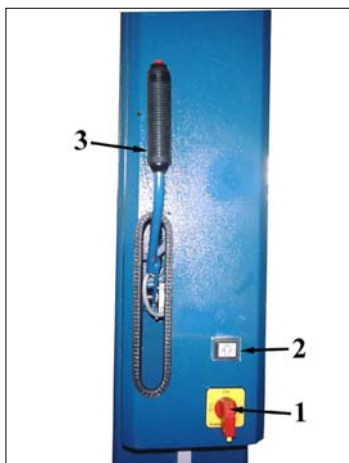
**Especially the following regulations are very important:**

- The laden weight of the lifted vehicle mustn't be more than 4000 kg (9000 pounds). The max. load sharing is 2:1 in or against the drive-on direction.
- The automotive lift must be sunk completely, before the vehicle is driving, in the provided direction, on the lift.
- During working with the lift the operating instructions must be followed.
- At vehicles with low sub-ground clearance or with optional equipment's is to be tested previously whether damages can appear.
- Only trained personnel over the age of 18 years old are to operate this lift.
- Position the pads as described of the vehicle manufacturer under the vehicle.
- It's not allowed to stay under the lifted or lowered vehicle (except for the operator).
- Check the center of gravity of the vehicle if heavy parts are removed.
- It's not allowed to transport passengers on the lift or in the vehicle.
- It's not allowed to climb onto the lift or onto a lifted vehicle.
- The automotive lift must be checked from an expert after changes in construction or after repairing carrying pads.
- It's not allowed to start with repair operations at the lift before the main switch is switched off.
- During lifting or lowering the vehicle it must be observed from the operator.
- It's not allowed to install the standard-automotive lift in hazardous location and wash halls.

## 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!***



*pic 1: Operating unit*

- 1 main switch
- 2 button "lifting"
- 3 lever "lowering" + button "unlocking the ratchets"

### 5.1 Lifting the vehicle

- Drive the vehicle between the two columns, transverse direction in centre.
- Block the vehicle against rolling, put into gear.
- Slew the carrying arms under the vehicle and position the pads at the points which are described from the vehicle-manufacturer.
- 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 main switch.
- Raise the lift until the wheels are free. Press the button „▲“ .
- If the wheels are free, stop the raising. Check the safety seat of the pads again.
- Raise the lift on the working height. Press the button „▲“ .
- Observe the complete process.

### 5.2 Lowering the vehicle

- 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 the lift on the working height or in the lowest position. Press the button „unlocking the ratchets“ and pull the lever slowly down simultaneously.
- Observe the complete process.
- If the lift is in lowest position, slew the carrying arms outside and drive the vehicle out of 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.
- Raise the lift out of the ratchets, press only the button „▲“ .

## 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:

*No power supply*

repair failures:

*Check the power supply*

*The main switch is not switch on*  
*Defective fuse*  
*The feed line is cut*  
*Thermofuse is active*

*Switch on the main switch*  
*change the fuse*  
*check it*  
*let it cool down*

**Problem: Motor starts, lift does not lifting!**

Potential causes:

*The vehicle is too heavy*  
*The oil level is too low*  
*Defective hydraulic valve*

repair failures:  
*unload the vehicle*  
*refills*  
*call the technical service*

**Problem: The lift does not lowered!**

Potential causes:

*The lift is driven onto an obstacle.*  
*Defective hydraulic valve*  
*Defective fuse*  
*Do not pressed the button „unlocking the ratchet“*

repair failures:  
*Press the button „▲“*  
*call the technical service*  
*change the fuse*  
*press the button „unlocking the ratchet“ and pull the button down.*

**Problem: The lift does not lowering in the ratchet!**

Potential causes:

*The button „unlocking the ratchet“ is pressed*

repair failures:  
*pull only the lever*

## 6.1 Lowering onto an obstacle

If the carrying arms are lowered on a object, the lift stops the lowering process.  
Press the button „▲“ 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 „▲“ 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 parts has been changed.

## 7. Inspection and Maintenance



*Before a maintenance, all preparations are to enforce that with maintenance-working and repair-working at the lift no danger for body and lives and for damages of objects exists.*

A regular service has to be performed in regular distances of 3 months through the operator in accordance with following service manual.

### 7.1 Maintenance plan of the lift

- Clean and grease all moving parts. (bolts of the pads, slide ways, sliding blocks, carrying arms..)
- Check the welding.
- Check the colour if necessary make a repair.
- Check the hydraulic hoses for leakage.
- Check the safety device of the lift.
- Check the rubber of the carrying arms and replace them if its necessary.
- Check the oil level. Fill in a clean, high quality oil (32 cst)in the tank.
- The hydraulic oil has to be changed at least once a year. To change the oil, lower the lift into the lowest position. Empty the tank and replaced clean oil, approx. 40 litres are needed. A high quality hydraulic oil is recommended, its should be 32 cst. (e.g.g. HLP 32 LTD. OEST Company)
- Check the rolls and the equalisation ropes of the lift.
- Check the electrical parts.
- Check the torque of the screws. (see pic.2)



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

\* 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.

## 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

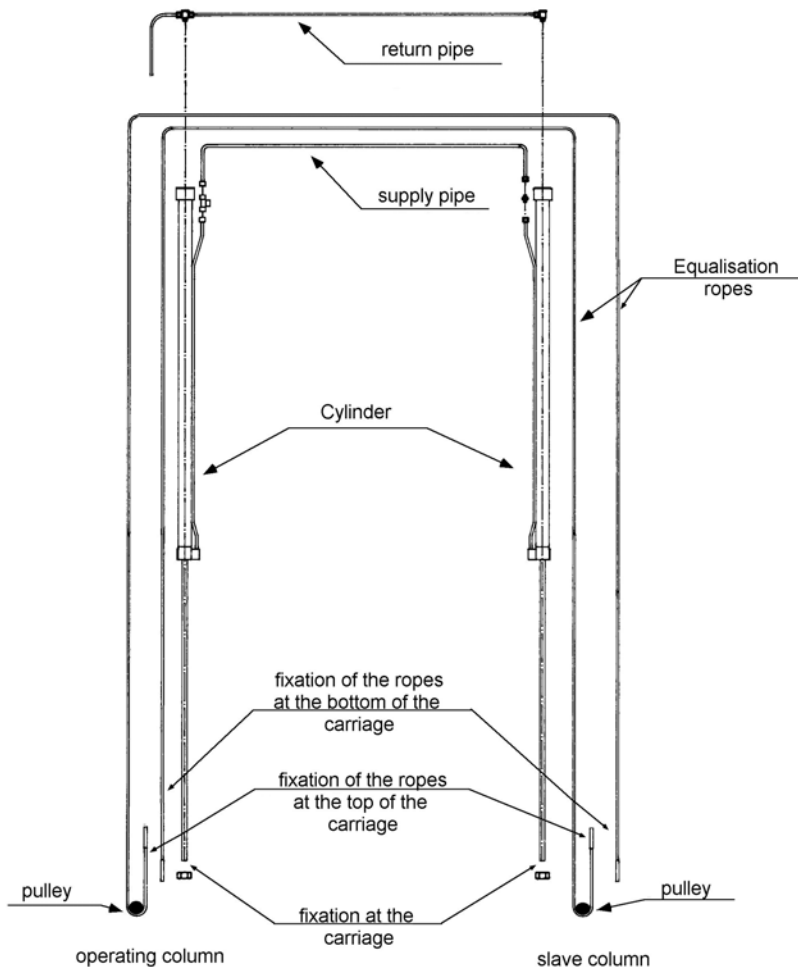
### 9.1 Regulations for the installation

- 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.

## 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 demands LIEBIG safety dowels type B 20 or equal dowels of another manufacturer but pay-attention their regulation. , with 150mm concrete-thickness to be enough UMV 80 dowels of the UPAT Company, concrete-quality min.B25, Before doweling check concrete floor with quality B 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 (Liebig M = 80 Nm). Pay attention the regulation of the dowel manufacturer.



**Each Liebig-dowels must be tightened with a torque of 80 Nm. The normal function of the lift cannot be guaranteed (Liebig = german dowel manufacturer).**

- 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 „▲“. 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 „▲“. 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 loose 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 „▲“. 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 tightened 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 exact 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 exact synchronisation of the lift.***

- Install carrying arms (refer to data sheet), lubricate bolts and secure them with enclosed 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 Deaerating 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 accordance 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 cylinder.
- 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 reinitiation by a competent person. Use form "Regular security check".***

**Pic. 4: choice of the dowel length without floor pavement or tile surface**

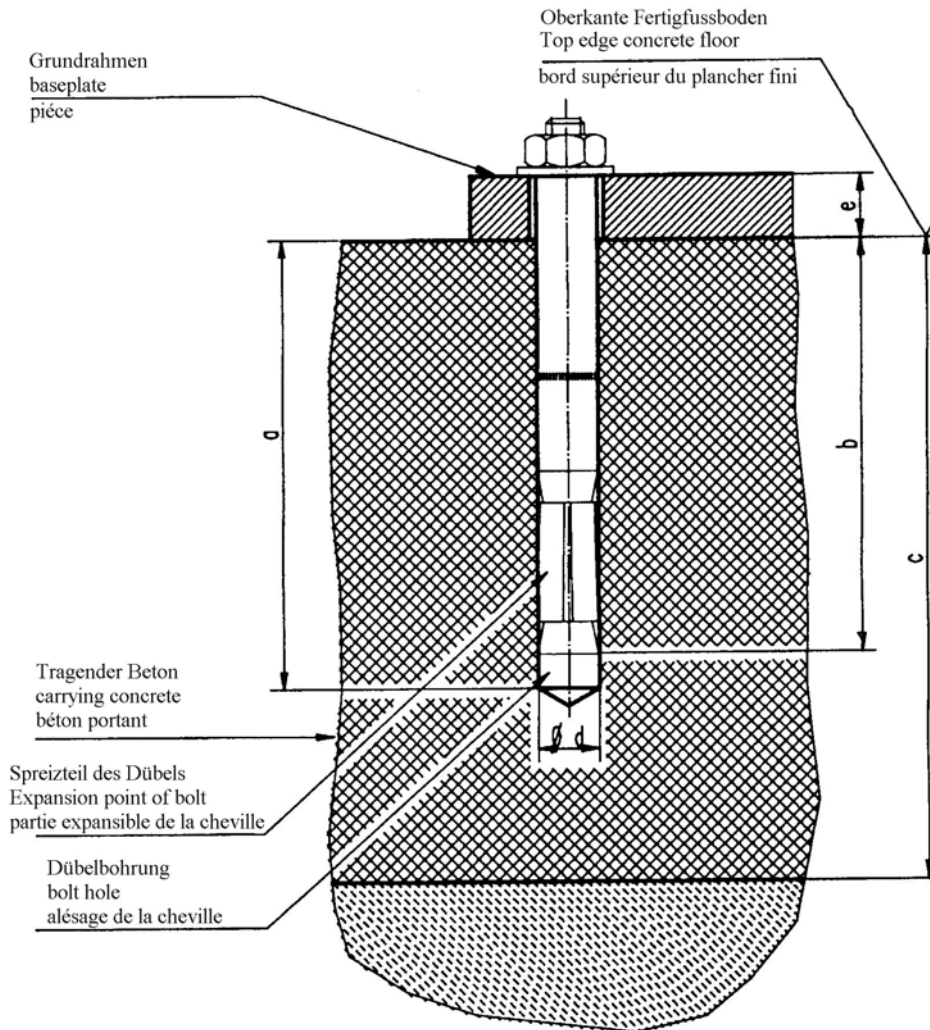


Table to pic 4

Liebig-dowels

Dowel type		B20/75	B20/100
Drilling depth	a	115	140
Min. anchorage depth	b	85	85
Thickness of concrete	c	180	180
Diameter of bore	d	20	20
Thickness of the lift-pieces	e	0-40	40-65
Number of dowels		8 (12*)	8 (12*)
Starting torque		according to dowel manufacturer	

\* 12 piece. with a concrete-strength of 150 mm

**Nussbaum Company demands LIEBIG safety dowels (german dowel manufacturer) or equivalent dowels of other manufacturer but observe the regulations.**

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

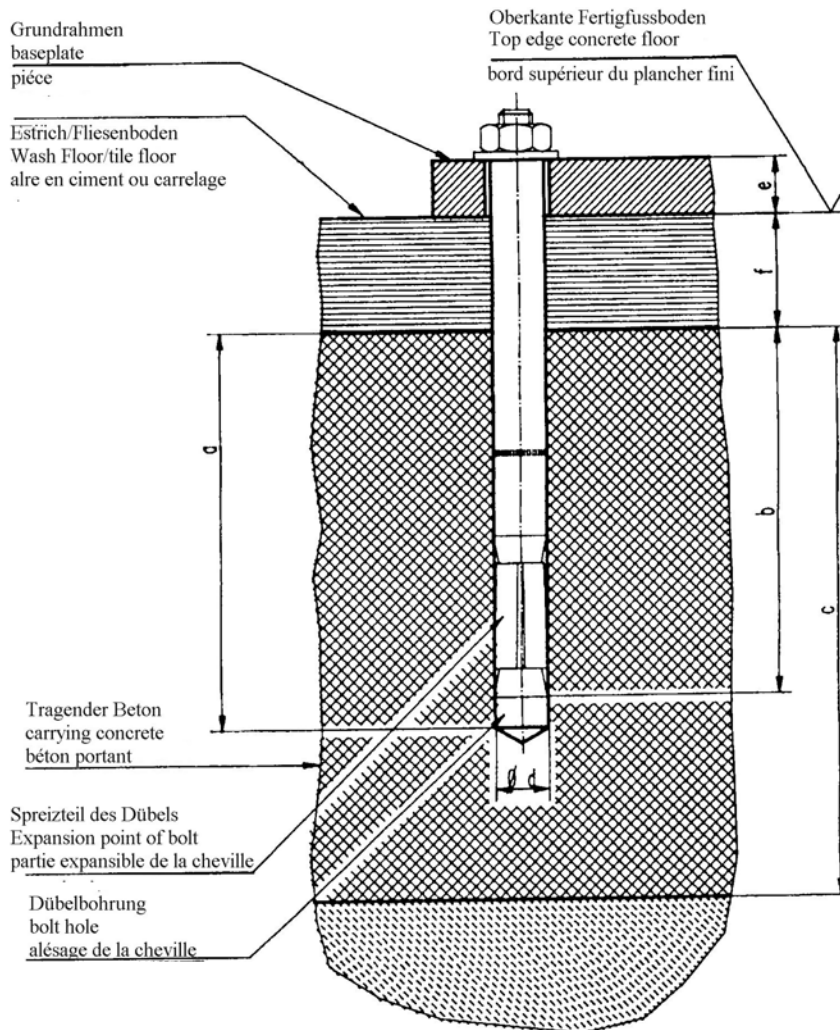


Table to pic 5

Liebig-dowels

Doweltyp		B20/100	B20/125	B20/135	B20/175
Drilling depth	a	140	165	175	215
Min. anchorage depth	b	85	85	85	85
Thickness of concrete	c	180	180	180	180
Diameter of bore	d	20	20	20	20
Thickness of the lift-pieces	e+f	40-65	65-90	90-100	100-140
thickness of floor pavement					
Number of dowels		8 (12*)	8 (12*)	8 (12*)	8 (12*)
Starting torque		according to dowel manufacturer			


\* 12 piece. with a concrete-strength of 150 mm

**Nussbaum Company demands LIEBIG safety dowels (german dowel manufacturer) or equivalent dowels of other manufacturer but observe the regulations.**



**First security check before installation**

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

 Filling out and leave in this manual

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Short operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
Warning designation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	.....
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**

 Filling out and leave in this manual

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

kind of check	all right	defect missing	ver-ification	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"/>	.....
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**

 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"/>	.....
Warning designation.....	<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**

 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"/>	.....
Warning designation.....	<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"/>	.....
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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"/>	.....
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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"/>	.....
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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**

 Filling out and leave in this manual

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

kind of check	all right	defect missing	ver-ification	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"/>	.....
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"/>	.....
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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**

 Filling out and leave in this manual

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

kind of check	all right	defect missing	ver-ification	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"/>	.....
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**

 Filling out and leave in this manual

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

kind of check	all right	defect missing	ver-ification	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"/>	.....
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**

 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"/>	.....
Warning designation.....	<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**

 Filling out and leave in this manual

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

kind of check	all right	defect missing	ver-ification	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"/>	.....
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	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"/>	.....
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!)