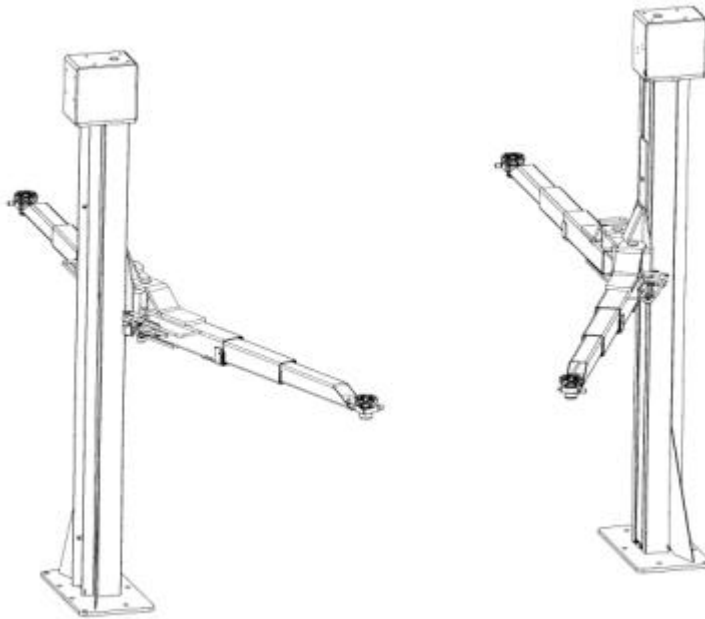


2.50 SE

Automotive Lift date: 12-1998

Manual date: 06.12.1998

Version: electronic



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) 78 53 / 87 87//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.

Company Nussbaum is not liable for damages arising from this. The user carries the risk alonely.

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.

Maintenanceworks, remedy of faults and disposal

- Fixed Adjusting-, maintenance- and inspectionworks 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 tightend!



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

Otto Nussbaum Hebetchnik GmbH & Co.KG
Korker Strasse 24
77694 Kehl-Bodersweier
Germany

Record of installation

The automotive lift 2.50 SE 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:.....

.....

Record of handing over

The automotive lift 2.50 SE 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:.....

.....

1. Introduction

The document "**Operating Instructions and Documentation**" contains important information about installation, operation and maintenance of the 2.50 SE/T/MB.

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.

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)

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
Germany

2.2 Application

The automotive lift 2.50 SE is a lifting stage for lifting and repairing vehicles with a laden weight of 5000 kg . The max. load distribution is 3:2 in or against the drive-on direction. It is not allowed to put the load on one or two carrying arms. It is not allowed to install the standard lift in the a explosive location or wash halls. After changing the construction and after repair, the lift has to be checked by an expert again. The operating instruction and the instruction for maintenance have to be observed.



Changes at the construction, repairs and transposition of lift must be registered in this master document.

2.3 Changes at the construction

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

.....

name, address of the expert

.....
 place, date

.....
 signature of the expert

2.4 Displacement of the automotive-lift

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

.....

name, address of the competent

.....
 place, date

.....
 signature of the competent

2.5 CE-Certificate/attestation of conformity

The automotive lift 2.50 SE with the serial number.....
Is in accordance with the tested lift (CE-certificate-number 04-205-1381/95)

.....
place, date

.....
company stamp, signature

ZERTIFIKAT

CERTIFICATE

RWTÜV

ANLAGENTECHNIK GMBH

Registrier-Nr./Registered No.:
04 205-1381/95

EG-Baumusterprüfbescheinigung gemäß Anhang VI der EG-Richtlinie 89/392/EWG
EC-type approval according to appendix VI of the EC-directive 89/392/EEC

Zeichen des Auftraggebers Reference of applicant	Auftragsdatum Date of application	Attestzeichen File reference	Prüfbericht Nr. Test report No.	Ausstellungsdatum Date of issue	Gültigkeits- Expiry date
Müller	30.03.95	7.2-1448/95	2933/95	08.09.1995	08.09.2000

Hiermit wird bestätigt, daß das nachfolgend genannte Produkt den grundlegenden Anforderungen der Richtlinie des Rates vom 14.06.89 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Maschinen, sowie der Änderung 91/368/EWG und 93/44/EWG, entspricht.
We hereby certify that the product mentioned below meets the basic requirements of the council directive dated 14.06.89 on the approximation of the laws of the member states relating to machinery, as well as the amendments 91/368/EEC and 93/44 EEC.

CE 0044

Antragsteller <i>Applicant:</i>	Otto Nußbaum GmbH, Korker Str. 24 77694 Kehl
Fertigungsstätte: <i>Manufacturing plant:</i>	s.o.
Produktbeschreibung: <i>Product description:</i>	Fahrzeughebebühne Typ : 2.50 SE

TÜV CERT - Zertifizierungsstelle
der RWTÜV Anlagentechnik
im Institut für Produktprüfung und
Werkstofftechnik, notifiziert bei der EG-
Kommission unter Nr. 0044

RWTÜV Anlagentechnik GmbH
Institut für Produktprüfung
und Werkstofftechnik
Langemarokstr. 20
45141 Essen
Tel.: +201-825-3216
Fax.: +201-825-3209

3. Technical Information

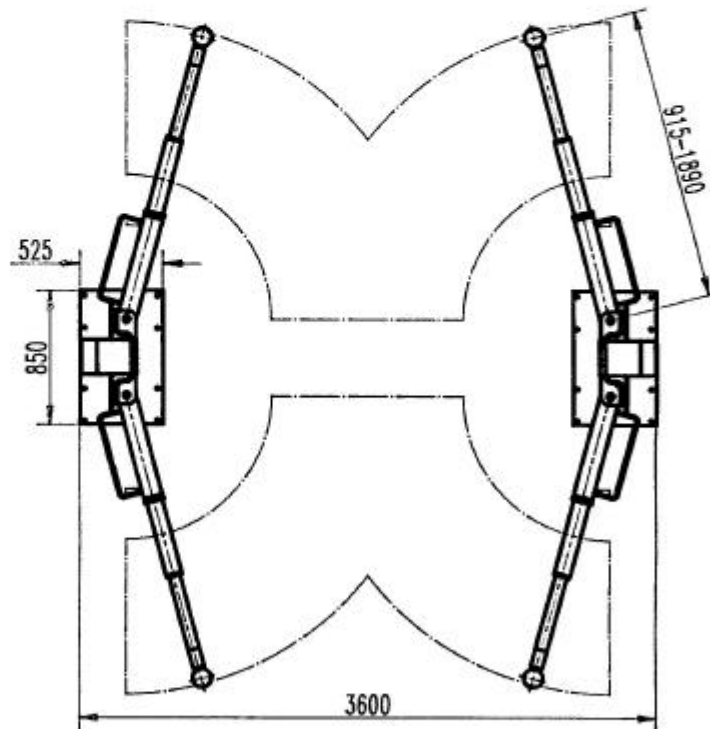
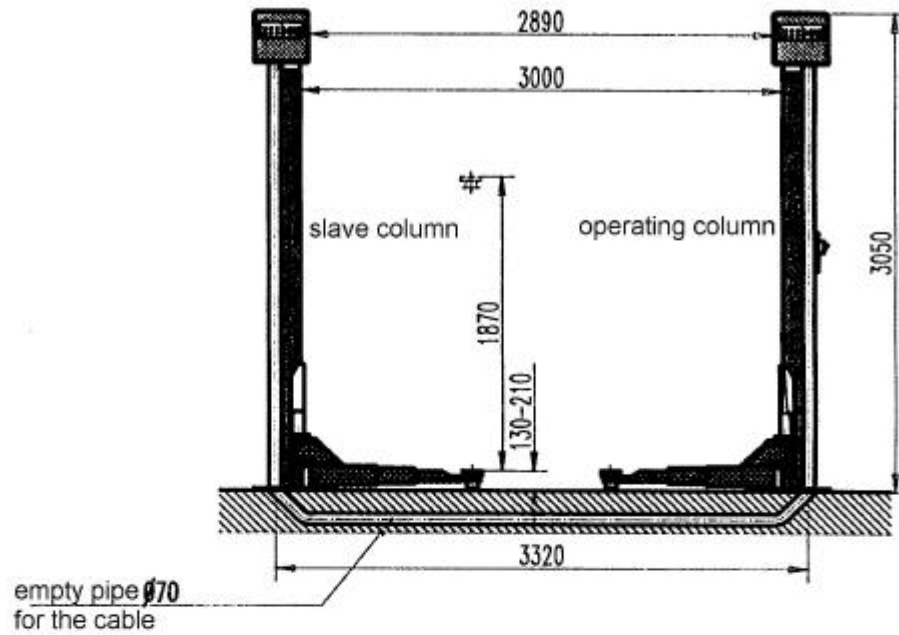
3.1 Technical ratings

Lifting capacity	5000 kg
Load of one carrying arm	max. 1500 kg (It is not allowed to put the load on one or two carrying arms.)
Lifting time	appr. 40 sec.
Lifting height	max. 1870 mm
Line voltage	3 x 400 three phase current
Control tension	230 V
Power rating	2 x 2,2 kW
Sound level	. 75 dBA
Connection by customer	Fuse T16 A / 5 x 1,5 qmm in accordance with recommendation

3.2 Safety devices

1. safety switching in case the carrying nut breaks
2. limit stop switch (actuated by electronic control)
3. foot protector
4. synchronism controlled by electronic control system

3.3 Data sheet



capacity: 5000 kg
lifting height: 1870 mm
motor rating: 2 x 2,2 kW
power rating 400V, 50hz

Mass- und Konstruktionsaenderungen vorbehalten!

Data sheet 250 SE

with carrying arms for MB-Sprinter and VW LT 97
Version: electronic equalisation

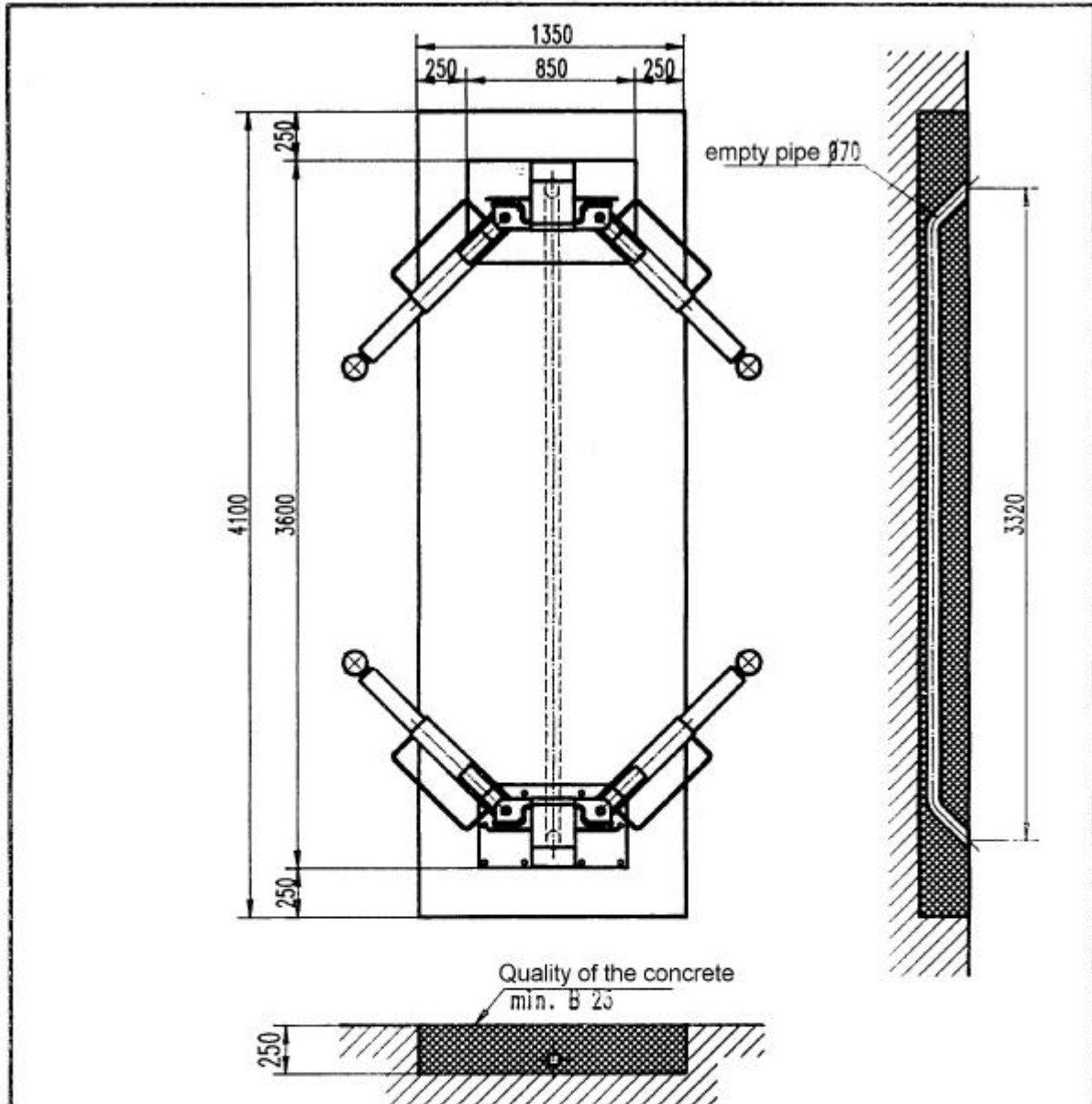
28.09.1999 / VEID

EINBAU2040

TUPfbaum
HEBETECHNIK

TEL 07853/800-0 FAX 07853/8787
FERTIGUNGSTECHNIK UND MASCHINENBAU
77694 KEHL-BODERSWEIER

3.4 Foundation diagram



Quality of the concrete min B25 (DIN 1045)
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.

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

Foundation diagram 250 SE

Version: electronic equalisation

Masstab 1:30

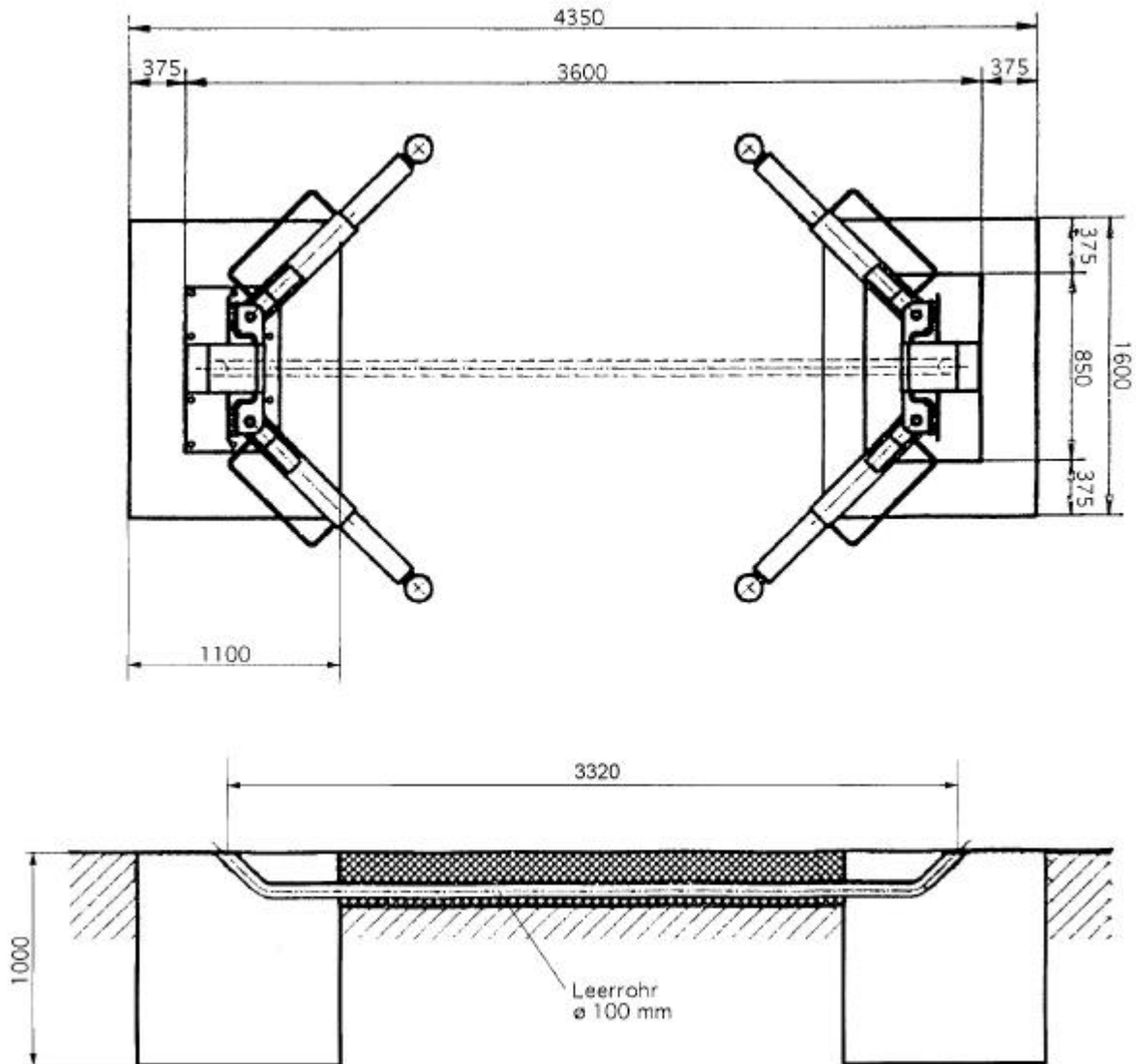
28.09.1999 / Veid

EINBAU2041

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77694 KEHL-BODERSWEIER

Block foundation



Quality of the concrete min. B25

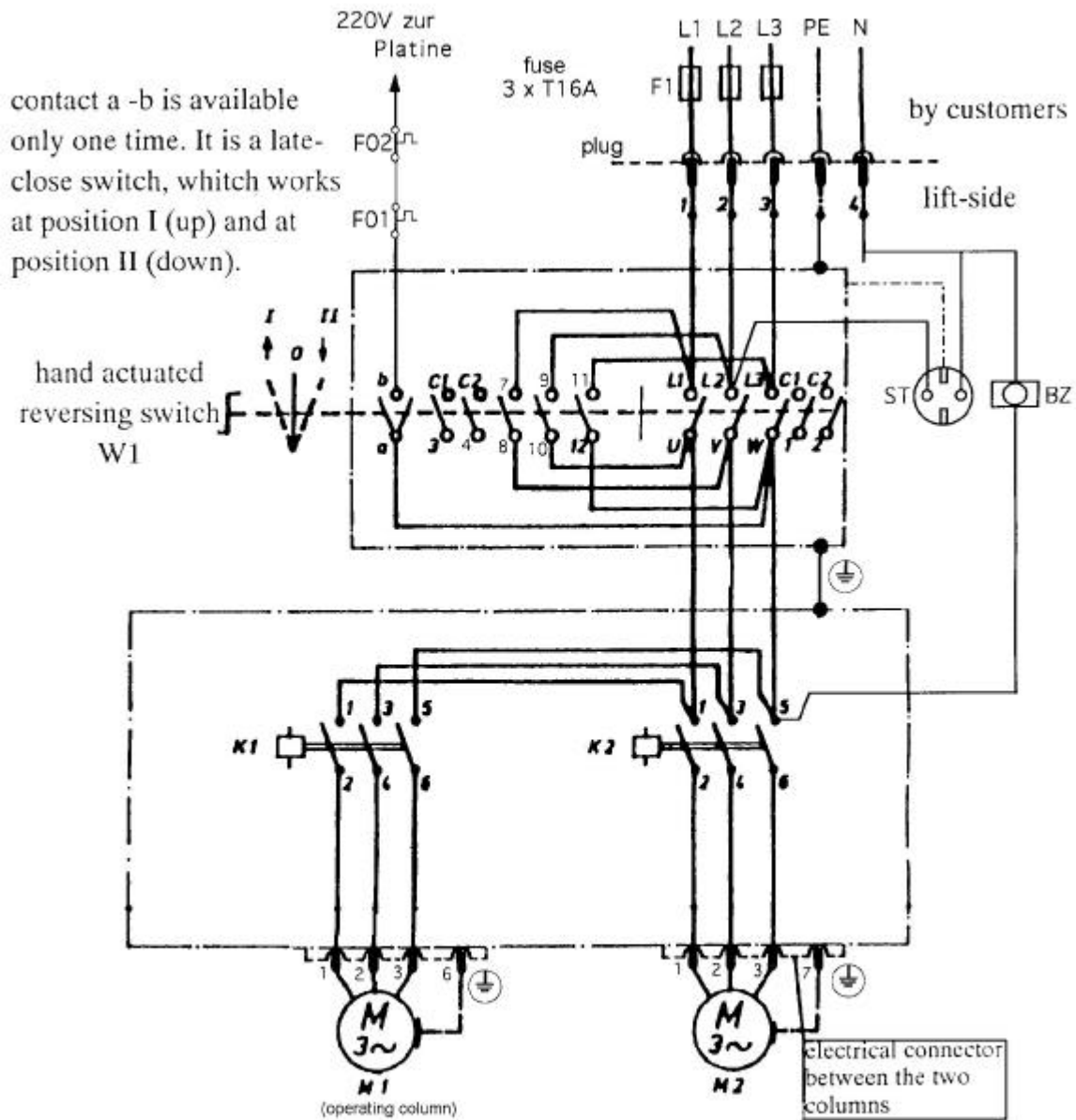
An even installation place has to be provided.

The foundation must be based in a frost resistance depth

Both outside and indoors, where you must reckon with frost.

The reinforcement must be checked by the engineer engaged in static calculations

3.5 Electric diagram

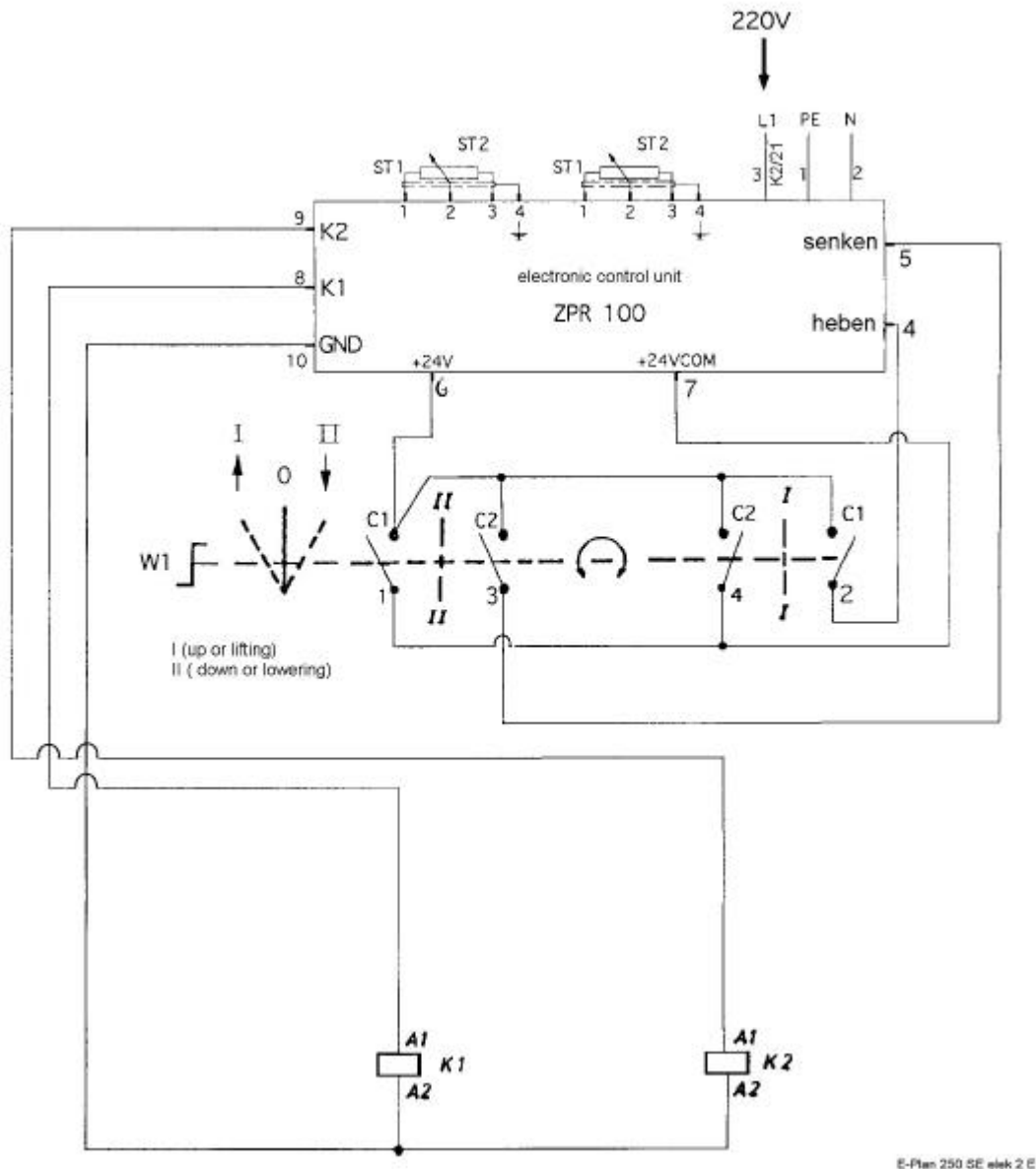


power supply 3~/N+PE 50 Hz 400/230V

choice of the protection measures: look of the local security regulations (BRD: VDE 0100)

by customers: electrical power line is to be secured with time-lag fuse 16 A; min wire-Ø: 1,5 mm²

E-Plan 250 SE skk 1 E



E-Plan 250 SE elek 2 E

Electrical parts list

F01:	Thermoswitch in the motor
F02:	Thermoswitch in the motor
K1:	up contactor
K2:	up contactor
M1:	Motor 400V, 2,2 kW master side
M2:	Motor 400V, 2,2 kW opposite side
W1:	reversing switch
St:	socket (MB-Version, optional)
BZ:	elapsed time (MB-Version, optional)

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

- During working with the lift the operating instructions must be followed.
- The laden weight of the lifted vehicle mustn't be more than 5000 kg for automotive lift 2.50 SE, the lifting capacity of one carrying arm mustn't be more than 1500 kg. It is not allowed to load only one of the carrying arms.
- Only trained personnel over the age of 18 years old are to operate this lift.
- During lifting or lowering the vehicle it must be observed from the operator.
- Position the pads as described of the vehicle manufacturer under the vehicle.
- Observe the complete lifting and lowering.
- Switch on and switch off the main switch, so that the lifting and lowering movement is steady and not abrupt.
- It's not allowed to stay under the lifted or lowered vehicle (except for the operator).
- It's not allowed to transport passengers on the lift or in the vehicle.
- It's not allowed to climb onto the lift during lifting or lowering 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 operations at the lift before the main switch is switched off.
- It's not allowed to install the standard-automotive lift in hazardous location.

5. Operating instructions



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

5.1 Lifting the vehicle

- Drive the vehicle in the lift.
- Safeguard the vehicle against rolling away, switch into gear, activate the parking brake.

- Position the adjustable pads under the vehicle which are described by the vehicle manufacturer.
- Control the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Lift the vehicle free. Check the position of the pads under the vehicle again.
- Press the button “ ” until the wheels are free.



pic. 2) the changing switch



Check the pads under the vehicle again, otherwise the vehicle can fall down.



The Lift can during the lifting depending on load repeatedly adjusting.

5.2 Synchronism of the automotive lift

- The lift is equipped with an electronic synchronism.
- At the two columns are potentiometer which recognizes the actual-position of the spindle. They recognizes the height of the lift.
- A lifting carriage is faster like the other lifting carriage. The electronic control system sees the process and stopped the fast carriage so long until both carriage have the same height again. The permitted regulation range is 18 mm.

5.4 Lowering the vehicle

- Control the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Turn the changing switch in Position „,“ (see pic. 2)
- Lower the lift at the height for working or until the carrying arms reach the lowest position.



The Lift can during the lowering depending on load repeatedly adjusting.

- If the lift is in the lowest position turn the carrying arms to the outside.

5.5 LED - (display visibly) at the operating unit

A position measure system observe the lifting and lowering process. Additional the functions are made by a visibly display. Find the explanations following:

Operating unit at the column



If following LED s are lighten, means this:

Senken – LED green – the lift is lowering

Heben – LED green – the lift is raising

UA2 – LED red – below limit switch is active (slave side)

K2 - LED green – Motor contactor is active (slave side)

OA2 – LED red – top limit switch is active (slave side)

UA1- LED red – below limit switch is active (master side)

K1 - LED green - Motor contactor is active (master side)

OA1- LED red - top limit switch is active (master side)

(MB Version optional with elapsed time and socket)

Indications at standard function

- raising up:
the following LED lighten: lifting, K1,K2 - lowering glow
- lowering:
the following LED lighten: lowering, K1,K2 – lifting glow
- top position is reached (top limit switch is active):
the following LED lighten: OA1, OA2, lifting – lowering glow
- lower position is reached (below limit switch is active):
the following LED lighten: UA1, UA2, lowering – lifting glow

LED-display at faulty function

	Lowerly and position of the lifting carriage		arbitrary position between the end positions			upper end position of the lifting carriage		
possible fault	Master-side not plugged in (P1 NOK)	slave-side not plugged in (P2 NOK)	master and slave - side not plugged in (P1 u. P2 NOK)	master-side not plugged in (P1 NOK)	slave-side not plugged in (P2 NOK)	master-side not plugged in (P1 NOK)	slave-side not plugged in (P2 NOK)	master and slave-side not plugged in (P1 u. P2 NOK)
turn the reversing switch on "lifting"	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!P! K1 lighten K2 lighten UA1 lighten UA2 lighten "lifting" lighten "lowering" glow	!hold! "lifting" glow. "lowering" glow. UA1 lighten.	!hold! "lifting" glow. "lowering" glow. UA2 lighten.	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! OA1 lighten permanent UA2 lighten permanent "lifting" glow "lowering" glow	!P! K1 lighten K2 lighten UA1 lighten UA2 lighten "lifting" lighten "lowering" glow
turn the reversing switch on "lowering"	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! "lifting" glow. "lowering" glow. UA1 lighten.	!hold! lifting glow. "lowering" glow. UA2 lighten.	!hold! UA1 lighten UA2 lighten "lifting" glow "lowering" glow	!hold! OA1 lighten permanent UA2 lighten permanent "lifting" glow "lowering" glow	UA1 lighten UA2 lighten "lifting" glow "lowering" glow

comment: if the both LED "lifting" and "lowering" glows, and the lift does not move, then is the lift out of the checking area

Legende:

z.B. "UA1 lighten"

z.B. "lifting glow"

P1 NOK

P2 NOK

P1 o. P2 NOK

P1 u. P2 NOK

!P!

!hold!

diode (LED) "below limit switch" lighten.

diode (LED) "lifting" glow.

Potentiometer 1 at the master-side is not plugged in or the line is interrupt

Potentiometer 2 at the slave-side is not plugged in or the line is interrupt

Potentiometer 1 at the master-side or the Potentiometer 2 at the slave-side is not plugged in or the line is interrupt

Potentiometer 1 at the master-side and Potentiometer 2 at the slave-side is not plugged in or the line is interrupt

attention: the lift only raises, lowering is not possible: the danger exists, the lift can raise about the top limit.

the lift does not move in the desired direction.

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 of the dealer.

A simple fault delimitation can be carried out at the LED-display of the operating unit. (see the step 5.5 LED-Display visibly at the operating unit).



Repairs at the security devices of the lift as well as repairs and examinations of the electrical fittings are forbidden.

Problem: The lift does not lifting and not lowering!

possible causes:

the main switch is not switched on
the main switch is faulty
the fuse is faulty
the feed line is cut
the motor is overheated
the plug is not plugged in
the lift is not in the regulation range

remedying:

switch it on
replace it
replace it
replace it
let it cool down
plug in
equalize manually

Problem: The lift does not lifting!

possible causes:

the lift is running at 2 phases
V-belt is torn/slack
the lifting nut is broken
top limit is active

remedying:

make sure 3 phases by customer
check it / replace it
call the service partner
lower the lift

Problem: The lift does not lowering!

possible causes:

the bottom limit switch is active
lift is driven on a obstacle

remedying:

raise the lift
equalise manually

6.1 Emergency lowering in case of power failure

In case of power failure the lift can not lowered with the motors. In this case there is the possibility to lower the lift manually. Draw the main plug or switch off and lock the main switch and remove the cover of the v-belt pulleys. For this the lift must be turned down to lowest position at the nut on the top end of the spindle. If the lift is in the lowest position removes the vehicle.



The emergency lowering must only carried out by persons which are instructed to using the lift. Please refer to the regulation "Lowering the vehicle".

Procedure – emergency lowering

- loose the main plug; switch off the main switch and lock it.
- remove the cover of the v-belt pulleys.
- lower the lift: turn the nuts (every side) alternately 5 cm until the lift has reached lowest position.
- after the emergency lowering: Do not work with the lift until the faulty parts are exchanged.

6.2 Driving onto an obstacle


If the lifting arm or the lifting carriage is driven on a obstacle, the motor from this side locked. The lift switched off if the lifting carriage are not more in the regulation range (approx. 25 – 30 mm) (since 9/99 64 mm).


An additional protection is a temperature control in the motor. Which interrupt the electrical circuit when it is overloaded. You can not work with the lift. Cool down approx. 5 – 10 min. dependently on the outside temperature.


After the locking of the motor, check the V-belt, if necessary replace it. Call the service-partner.

6.3 Function of safety device

The lift is equipped with a safety switching, which controls the wear of the main nut. If the lifting nut is broken, a safety nut which is conducted loose in the spindle, carries the load. After a break of the nut, the lift can only once being lowered in the lowest position. If the lift has reached the lowest position it is not possible to raise the lift. The lifting carriage of the broken side gets mechanically locked. During the lifting the other side is driving out of the regulation range and switched off the lift. You can not work with the lift anymore. Call the service-partner.

 ***If the safety device is active call the service partner!***

 ***Switch off the main switch at all repairs and disturbances!***

 ***The electrical system may only be opened by trained persons!***

6.4 Manually equalisation of the carriage

The lift is equipped with a position measuring system which guarantee the synchronisation of the lift. The electrical control recognises if one lifting carriage is approx. 18 mm earlier at the definite height. The electrical control stopped the motor of this carriage until both carriage have the same height again. After it both motors are working together again.

If the carriages of the lift are driving out of the regulation range/switching off window of approx. 36 mm (since 9/99 64 mm), the electrical control recognises this and switched off the lift.

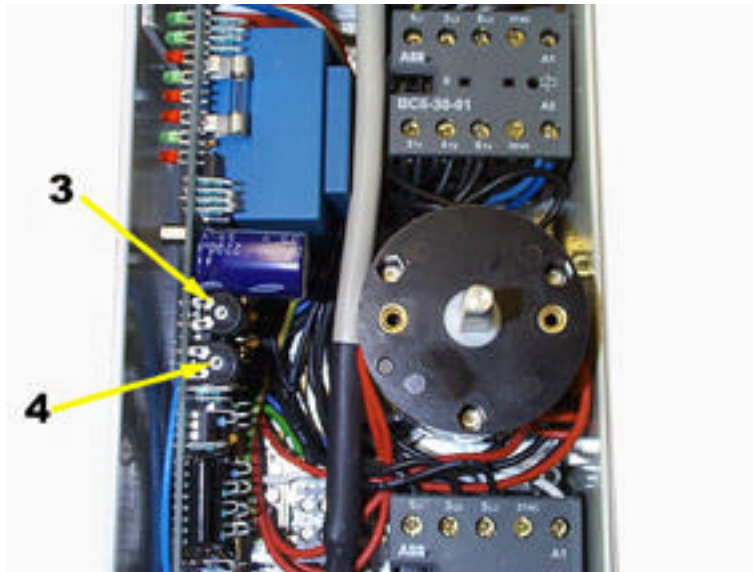
To reach the normal function of the lift you must equal manually the carriages. Remove the cover of the V-Belt pulley at the top of the lift. Equal the lift: turn one nut until the carriage have the same height.

6.5 Adjusting of the top limit switch and the bottom limit switch

The operating unit of the lift is equipped with potentiometer. One is for the top limit switch and one is for the bottom limit switch. The Potentiometer may from safety reasons being only adjusted by trained person.

Out of safety reasons: The Potentiometer only may be adjusted by competent trained persons.

- Pull the main plug before the maintenance or repair.



pic. G

3 Potentiometer for the upper end-point

4 Potentiometer for the lower end-point

⚠ *It is possible if the adjustments are wrong that the lift has malfunctions. It is danger for your life for the lift and the vehicle.*

- Loose the screws of the operating unit. Pull it careful out of the column. (pic. G)
- If the Potentiometer 3 (top-limit) is turned anticlockwise, the upper end-point has been moved up. The lift stops later.
- If the Potentiometer 3 (top-limit) is turned clockwise, the upper end-point has been moved down. The lift stops earlier.
- If the Potentiometer 4 (bottom-limit) is turned anticlockwise, the lower end-point has been moved up. The lift stops earlier.
- If the Potentiometer 4 (bottom-limit) is turned clockwise, the lower end-point has been moved down. The lift stops later.



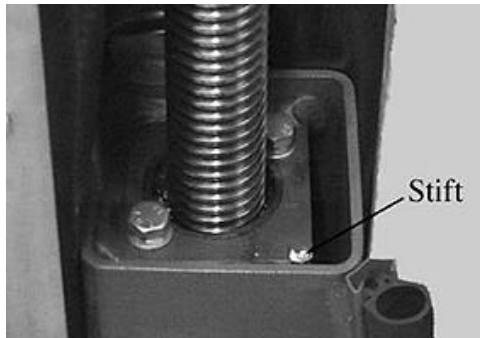
After the adjusting do not lifting or lowering to the end position. The lift can lock or jamming!

Alter the potentiometer easily. After it operate the lift. Repeat the process until the normal end position is reached.

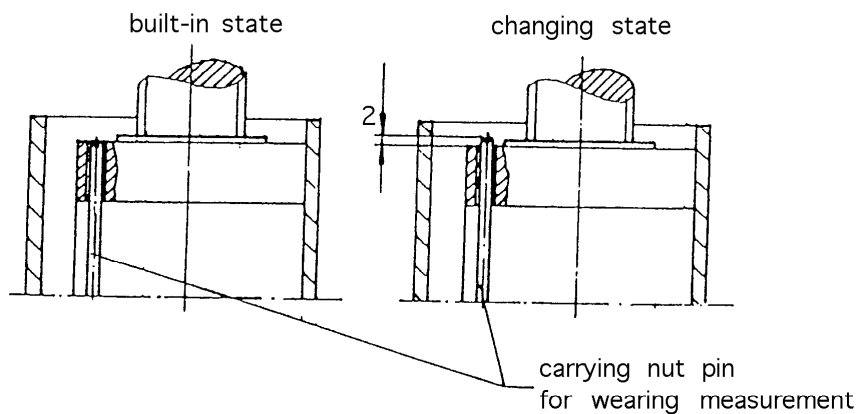
- Pay attention at the cover and the rubber behind the operating unit. Do not damaging this parts. If the parts are faulty replace it. Otherwise the protection (IP54) against liquids is no more ensured.

6.6 Check the carrying nut system

- carrying nut (optical wearing device). To check the carrying nut, take off the covering of the spindle (pic.3,pos.b). There is a pin built in the carrying plate (pic.10). This pin must be even with the top edge of the carrying plate (upper side of the lifting carriage; built-in state pic.11). If the pin looks 2 mm out of the top edge at the annually check (pic.11 changing state). The carrying nut and the sequence nut must be replaced.



Pic.10: the carrying-nut pin (stift)



Pic.11: carrying nut

7. Maintenance

A regular service has to be performed every three months by the lifts operator according to the following schedule. If the lift is in continuous operation or dirty environment, the maintenance rate has to be increased.

During daily operation the lift has to be watched carefully for its correct function. In case of any malfunction the technical service of the retailer has to be informed.

7.1 Maintenance schedule of the automotive lift

- Clean and grease the pull-outs of the carrying arms, bolts of the pads and slide ways of the carriage sliding blocks.
- Oiling the spindle and the lubricating felt between the carrying nut and the centring of the spindle one time a month with a thin oil as SAE15W40. Attaching twice lifting and lowering the lift in the end position. After lifting and lowering the lift with load. The lubricating interval has to be carried out at every maintenance. If the lift is in continuous operation, the maintenance rate has to be increased.

The nut between the column and the covering will be greased with an oil can. The regular complete lubrication in the mentioned distances secures the absolutely easy operation for the lift.



Do not use an biodegradable adhesive oil for greasing the spindle.



A normal adhesive oil impaired the qualities of the lift. We recommend a thin Oil: for an example SAE15W40.

A over-lubrication or greasing with grease of the spindle through a intensive lubrication supplies reduce the degree of effectiveness of the lift.

- check the rubber pads, otherwise exchange it.
- grease sequence nut one time a month with multipurpose fat. Use boring at lifting carriage.
- grease the spindle bearing annually with multipurpose.
- check the welding of the lift.
- check the torque of the screws. (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

* 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.

- 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.

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

- Including this:

- de-icing salt
- sand, pebble stone, naturail 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. Installation and Initiation

8.1 Installation of the automotive lift

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 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 1,5 mm².
- The cable entry in the column is located in operating column topside. Another possibility is the location of the cable entry in a boring at the base plate. However the cable has to be secured with a cable bushing. Do not fold the cables!

8.1.1 Erection and doweling of the lift

It is necessary to dowel the lift. For this you need a concrete floor with a thickness of at least 250 mm and a quality of at least B25. In case of doubt a test boring has to be performed and a dowel is to set in. Afterwards the dowel is tighten with a torque which is described of the dowel manufacturer (example: Liebig Company 180 Nm). If there are defectives (cracks or hairline cracks) in the zone of influence Ø200 mm, the foundation cannot be used to install the lift on it.

A foundation must be constructed in accordance with the data sheet “foundation plan”. It must be paid attention of an even installation place of the lift because of a straight contact between lift and concrete floor.

- As protection against liquids, should before doweling put a thin foil between the base plate and the concrete.
- Close after this the split between the base plate and the concrete with silicone.
- Bore holes to fix the dowels through the borings of the base plates (pic.13). Clean the holes with pressure air. Put in the dowels. The lift manufacturer demands Liebig safety dowels type B20 or equally good dowels of other manufacturer (with licence) but observe the regulation. (bore hole, torque...). Before doweling check the concrete floor with quality B25 if the concrete floor goes to the top egde of the floor. In this case the dowels have to be chosen according to pic.22. If the ground is covered with floor tiles, the dowels have to be chosen according to pic.21.
- Lining up the column with spirit level.
- If necessary put thin metal sheets between the base plate and the floor until the lift is in the correct vertical position and the contact between the base plate and the floor is available.
- Tighten the dowels with the dynamometric key (example: Liebig-dowel 180 Nm).

! *Each dowel must be tightened with the demanded torque. Otherwise the normal function of the lift can not guaranteed.*

- If you need the cable not under the floor mount the traverse and the ascending pipe. Secure the traverse against falling out. Do not hang any additional loads on the traverse and the ascending pipe. (for an example: a ladder)

8.1.2 Electro mounting and current connection

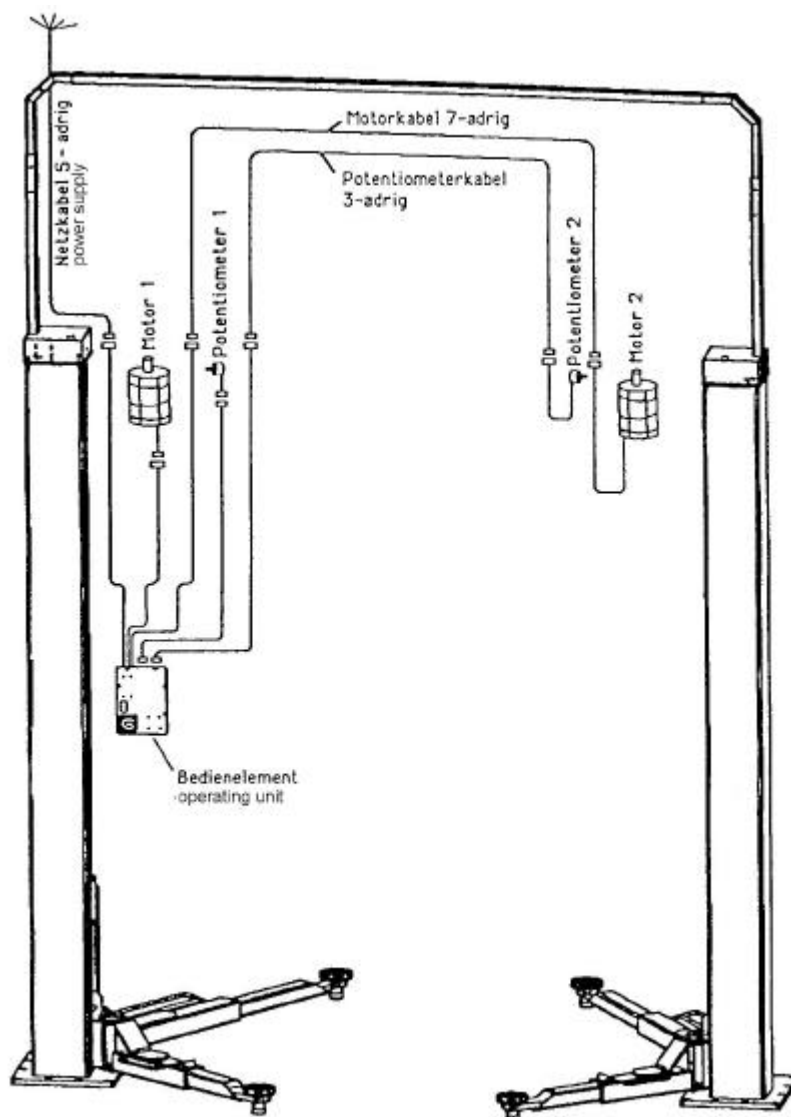
A) with using traverse and ascending pipe

- Remove the cover at the top of the column.
- Lay the cable after the drawing (pic.17) in the ascending pipe and the traverse. Put the correct plugs together.
Observe the secure contact between the plugs.
Plug in the 7-wire motor cable (with 2 plugs) in the head plate of the operating column. Lay this cable over the ascending pipe and the traverse to the head plate of the opposite side. Plug in the plug in the head plate of the opposite side.

Plug in the 3-wire potentiometer cable (with 2 plugs) in the head plate of the opposite side. Lay this cable over the ascending pipe and the traverse to the head plate of the opposite side. Plug in the plug in the head plate of the opposite side.

The 5-wire cable (with one plug) is for the main supply. Plug in the plug at the head plate of the operating column.

- Push the cover sheets careful in the ascending pipe.

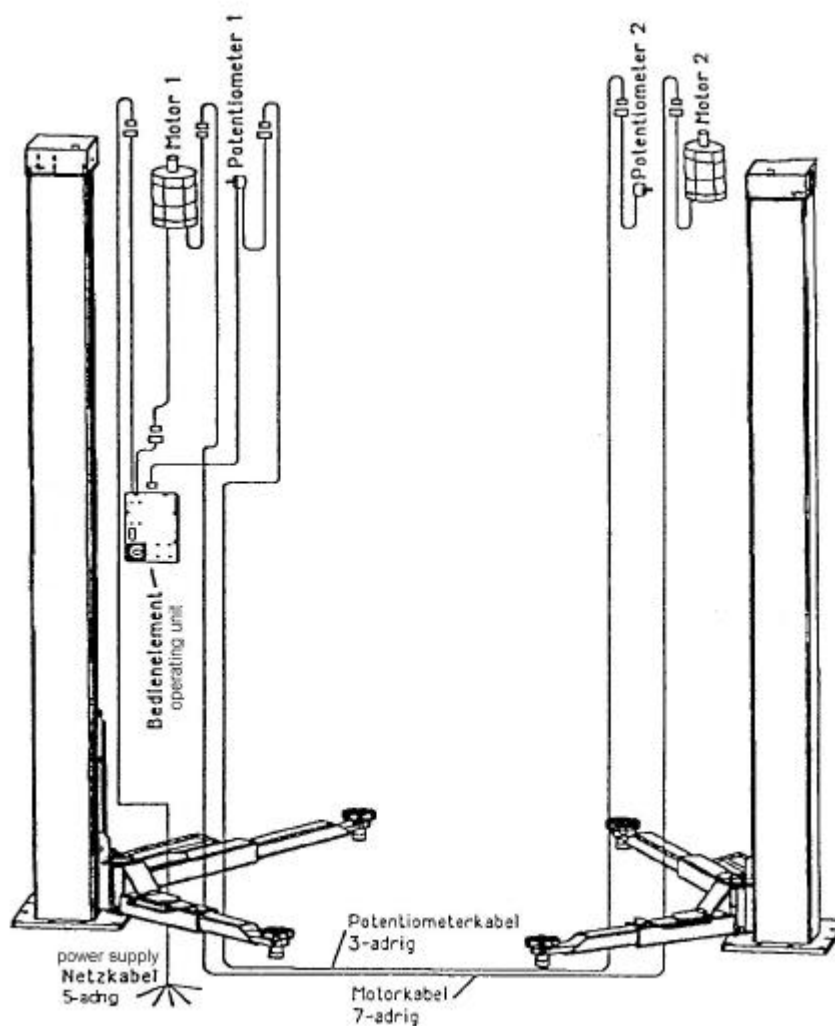


pic.17 cable run with traverse and ascending pipe

B) without using traverse and ascending pipe (under floor)

- It is possible to lay the cable under the floor.
- Do not need the traverse and the ascending pipe.

- Make a foundation in accordance with the drawing. The opening for the cable is in the base plate of the lift.
- Pay attention to the cable if you mount the column.
- Lay the cable before positioning of the column through the empty pipe.
Move the column to the installation place. Lay the cable through the hole in the base plate to the head plate of the column. Mount the column. Pay attention. the cables.
- Connect the cables (Plugs) in accordance with the drawing.(pic.19)
- Pay attention the cables does not touches the rotating parts.
- Observe the secure contact between the plugs.



pic.19 cable run without traverse and ascending pipe

8.1.3 Installation the carrying arms

- Install carrying arms and bolts top and bottom with enclosed circlips.



The carrying arms must be secured at both sides, otherwise a correct connection between the lift carriage and the carrying arm can not be guaranteed.

- Lift and lower the lift with vehicle several times, tighten dowels a second time with the correct torque. (Liebig 180 Nm)

8.2 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.

8.3 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:

- Lift or lower the carriage to medium height.
- Take away current supply from the lift.
- Remove the cover of the lift.
- Dismount the carrying arms.
- Disconnect the plugs.
- If necessary remove the ascending pipe and the traverse.
- 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”.

9. 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.

Pic. 21: choice of the dowel length with floor pavement or tile surface

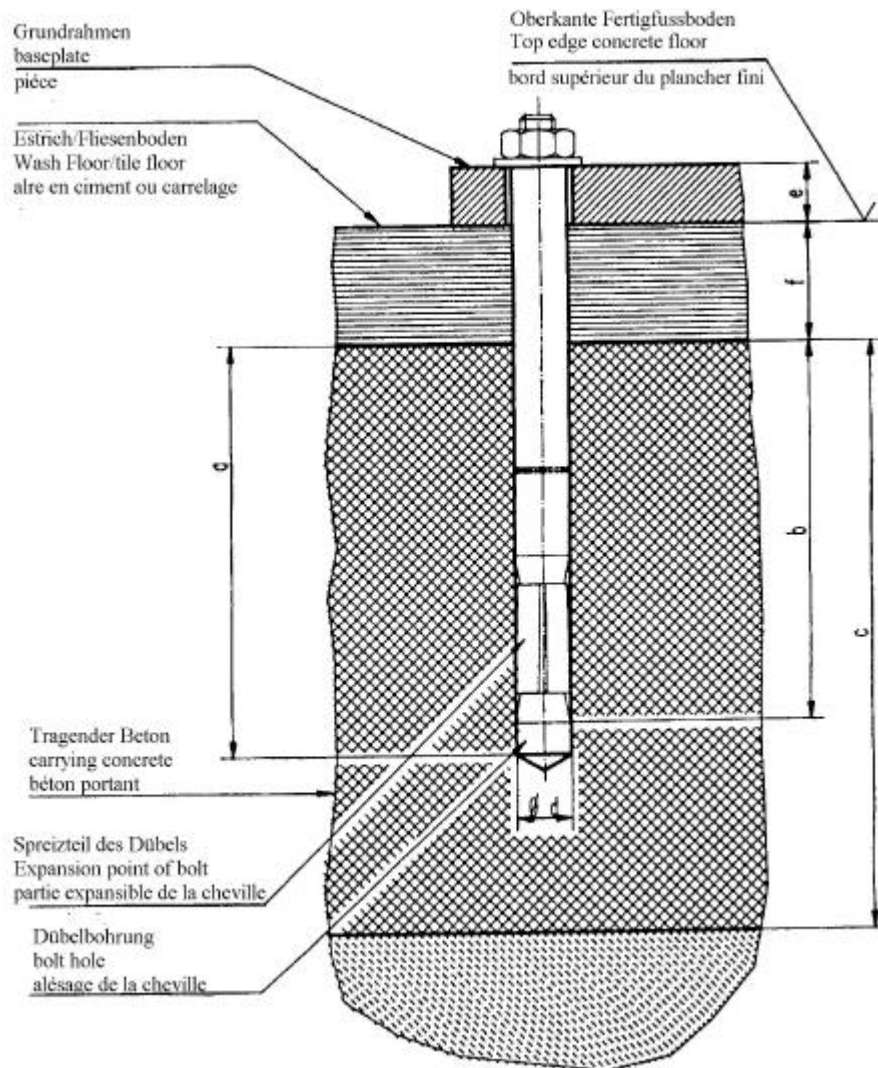


Table to picture 21.

Liebig-dowels

Dowel-type		B25/130	B25/165	B25/190	B25/240
Drilling depth	a	200	235	260	310
Min. anchorage depth	b	165	165	165	165
Thickness of concrete	c	260	260	260	260
Diameter of bore	d	25	25	25	25
Thickness of the lift-pieces	e+f	0-35	35-70	70-95	95-145
Number of dowels		20	20	20	20
Starting torque		according to dowel manufacturer			



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

Pic. 22: choice of the dowel length without floor pavement or tile surface

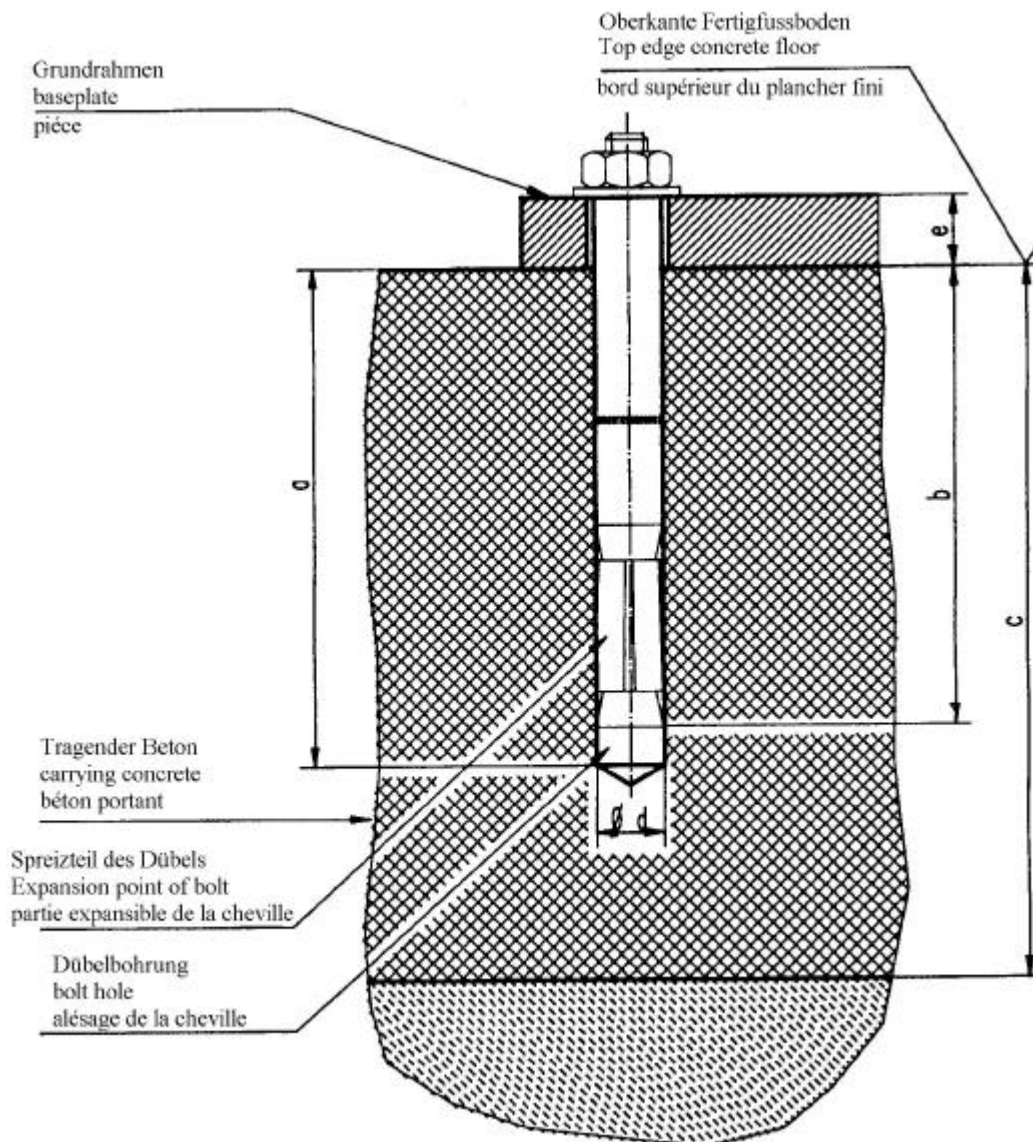


Table to picture 22.

Liebig-dowels		B25/130	B25/165
Dowel-type		B25/130	B25/165
Drilling depth	a	200	235
Min. anchorage depth	b	165	165
Thickness of concrete	c	260	260
Diameter of bore	d	25	25
Thickness of the lift-pieces	e	0-35	35-70
Number of dowels		20	20
Starting torque		according to dowel manufacturer	



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

First security check before installation

 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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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*

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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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*

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"/>
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Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Result of the Check:

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- 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*

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"/>
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Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Name, address of the competent:.....

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- 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*

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Function automotive lift with load.....	<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:.....

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- 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*

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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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*

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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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*

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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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*

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"/>
Condition pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the safety devices.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check the torque of the screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of carrying arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Securing of pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque of the dowels.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition welding.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wiring.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixing device of carrying arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition foot protection.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete floor.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smooth running of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function automotive lift with load.....	<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!)