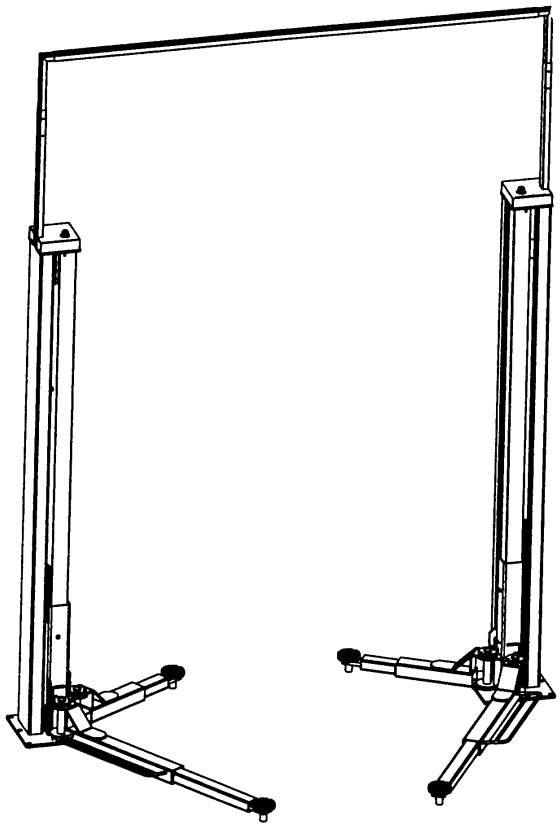
Nußbaum
HEBETECHNIK

# 2.25 SL

date: June 24th 1996



# Operating instruction and documentation

**serial-number.....**

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## Appendix

Document ”First security check before Installation”
Document ”Regular security check”
Document ”Extraordinary security check”

☞ **Send this record, filled in and undersigned, to the automotive manufacturer after the installation**

**Otto Nußbaum GmbH & Co.KG**

**Korker Straße 24**

**777694 Kehl-Bodersweier**

**Germany**

# Record of installation

The automotive lift 2.25 SL with the

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

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

the safety was checked and the lift was startet.

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 | signature of the competent |

# Record of handing over

The automotive lift 2.25 SL with the

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

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

the safety was checked and the lift was startet.

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).

| | | |
|---|---|---|
| ..... | ..... | ..... |
| date | name | signature |
| ..... | ..... | ..... |
| date | name | signature |
| ..... | ..... | ..... |
| date | name | signature |
| ..... | ..... | ..... |
| date | name | signature |
| ..... | ..... | ..... |
| date | name | signature |
| ..... | ..... | ..... |
| date | name of the competent | signature of the competent |

# 1. Introduction

The document **”Operating Instructions and Documentation”** contains important infomation about installation, running and preserving of the 2.25 SL.
To furnish proof of **installation of the automotive lift** the form ”Record of Installation” must be sent undersigned to the manufacturer.
To furnish proof of the single, regular and special security checks this documentation contains forms. The forms should be used to document the checks. They should also be left in this documentation.
Every **Changes in the construction** and **changing place** 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 the works concerning safety and to hold the safety checks of the lift. They are called experts and competents in this document.

**Experts** are persons (for example self-employed engineers, TÜV-experts) which have got an instruction and experience to check and to test automotive lifts in an expert’s report. They know the signified regulations for protection of labour and prevention of accidents.

**Competents** are persons which have got enough knowledge and experience with automotive lifts. They took part in a training from the lift-manufacturer (servicing erectors of the manufacturer and the franchised dealer are Competents)

## Information of danger

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

***Danger!***
***This sign marks a danger to life. Inexpert handling of the marked series of event ist dangerous to life***

***Caution!***
***This sign marks a caution against possible damage of the automotive lift or other material defects in case of inexpert handling .***

***Indication!***
***This sign marks an indication for an important function or for another important note.***

# 2. Master document of the automotive lift

**Lift designation** 2.25 SL
**Lift-manufacturer** Otto Nußbaum GmbH & Co.KG
Korker Straße 24
77694 Kehl-Bodersweier
Germany

## Application

The automotive lift 2.25 SL is a lifting stage for lifting and repairing vehicles with a laden weight of 2500 kg. The load of one carrying arm must not be more than 750 kg. It's not allowed to put the load only on one of the carrying arms, just as it is not allowed to install the lift in rooms with danger of explosion.
After changing construction and after repairings the lift has to be checked from an expert again. The operating instruction and the instruction for maintenance have to be observed.

☞ **Changes of construction, repairings and changes of place must be registered in this master document**

**Changes of 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

**Change of automotive-lift-place, expert checking, resumption of work** (date, address and signature of the competent)

.....
name, address of the competent

..... .....
place, date signature of the competent

# CE-certificate/attestation of conformity

The automotive lift 2.25 SL with the serial number .....
is in accordance with the tested lift (number 04 205-2561/96)

..... .....

place, date company stamp, signature

# ZERTIFIKAT

## *CERTIFICATE*

RWTÜV
ANLAGENTECHNIK GMBH

Registrier-Nr./*Registered No.:*
**04 205-2561/96**

**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* | Aktenzeichen *File reference* | Prüfbericht Nr. *Test report No.* | Ausstellungsdatum *Date of issue* | Gültigkeit bis *Expiry date:* |
|---|---|---|---|---|---|
| Hr. Müller | 27.03.1996 | 7.2-718/96 | 2558/96 + 2559/96 | 22.08.1996 | 22.08.2001 |

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 den Änderungen 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** Otto Nußbaum GmbH & Co. KG
***Applicant:*** Korker Str. 24, D-77694 Kehl

**Fertigungsstätte:** s. o.
***Manufacturing plant:***

**Produktbeschreibung:** Kfz-Hebebühne Typ: 2.25 SL
***Product description:***

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

RWTÜV Anlagentechnik GmbH
Institut für Gerätesicherheit und Medizintechnik
Langemarckstr. 20
D-45141 Essen
Tel.: (49) 201-825-3216
Fax : (49) 201-825-3209

# 3. Technical information

## Technical ratings:

| | |
|---|---|
| Lifting capacity 2.25 SL: | 2500kg |
| Lifting capacity of one carrying arm 2.25 SL: | max. 750 kg; It's not allowed to put the load only on one of the carrying arms |
| Lifting time: | appr. 40 sec |
| max. height of lifting: | 1870mm |
| Line voltage: | 400 V three phase current |
| Driving voltage: | 230 V |
| Power rating: | 2 * 2,0 kW |
| Motor speed: | 1350 revolution/minute |
| Sound level: | ≤ 75 dBA |

## Safety devices

1. Safety switching in case the carrying nut breaks

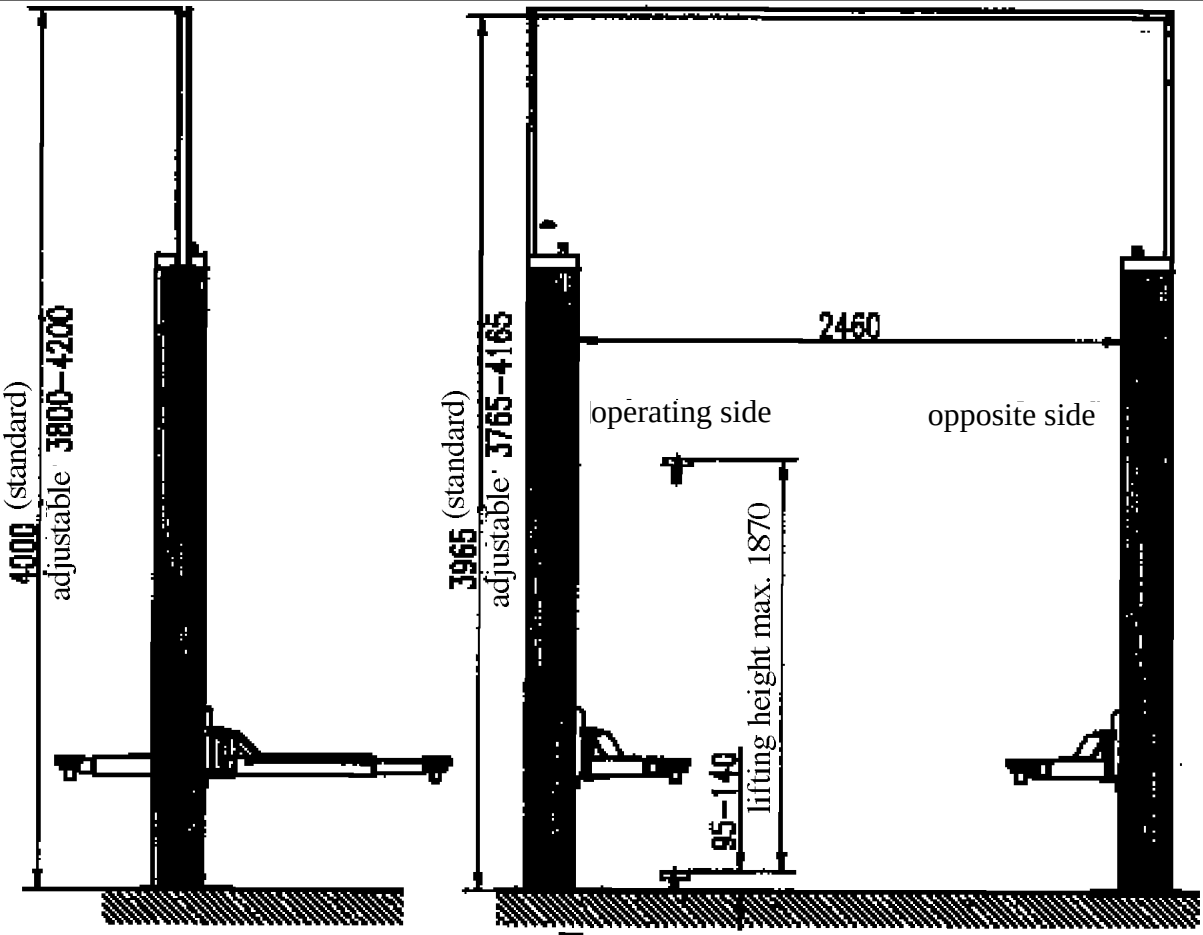
   check of the carrying nut with built-in pin

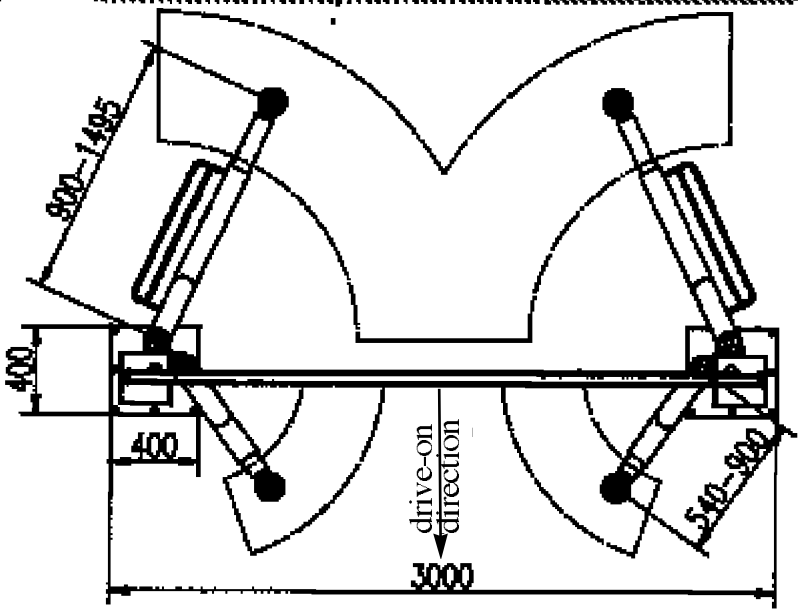
2. Limit switches for top and lowest position

   Safety device of the lift against too much lifting or lowering of the carriage

3. foot protector
   Safety device of the lift against squashing in case of unauthorized lowering of the lift.

# Data sheet 2.25 SL




| | | |
|---|---|---|
| lifting capacity | : | 2500 kg |
| lifting time | : | ca. 40 sec |
| lowering time | : | ca. 40 sec |
| power rating | : | 2 x 2,0 kW |
| lifting height | : | 1870 mm |

Maß- und Konstruktions-
änderungen vorbehalten!

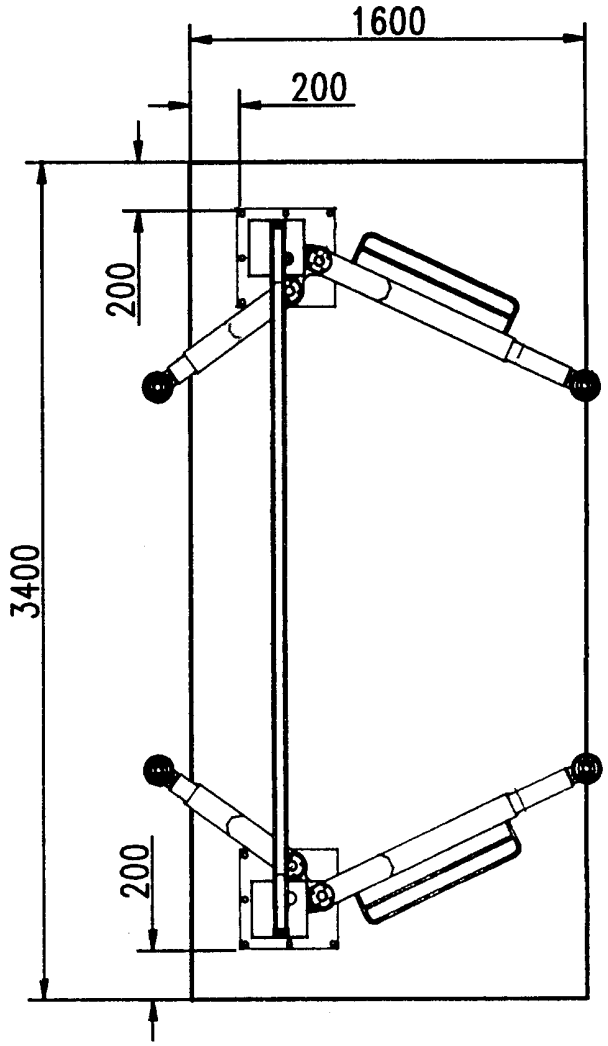
DIESE ZEICHNUNG WURDE AUF CAD ERSTELLT / THIS DRAWING WAS CREATED ON A CAD SYSTEM

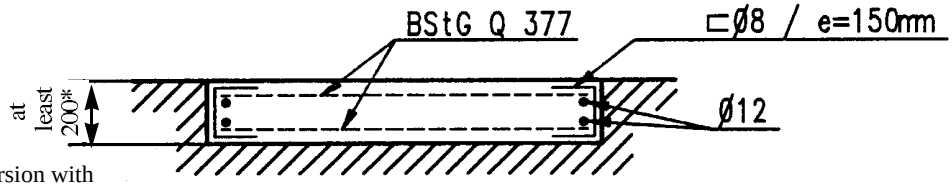
2-columns lift 2.25 SL
scale 1:30

23.04.1996 / VEID | EINBAU1370-1

HEBETECHNIK
77694 KEHL–BODERSWEIER

# Foundation plan

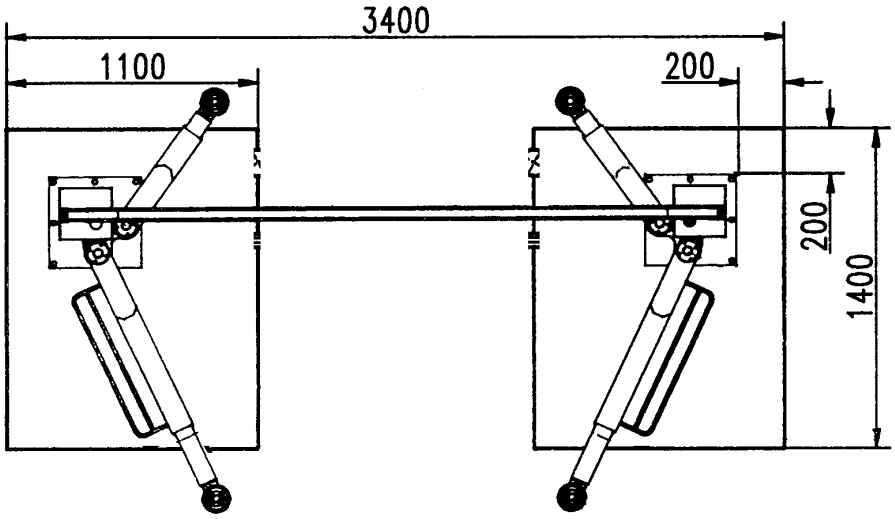


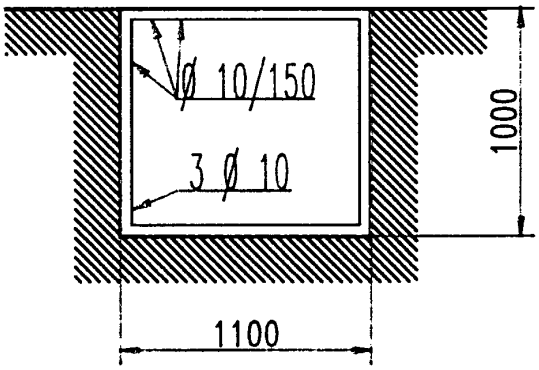

*) at least 150 mm for version with base frame bow

reinforcement in both directions at the upper and lower side of the plate min 3,5 $cm^2/m$
(for example structural steel Q 377)
revolving Ø8 / e = 150 mm
at the edges Ø 12
concrete quality min. B 25 (DIN 1045)
concrete covering for stiffenig steel 2 cm
foundation base: frost-protected floor!

## Block-foundationplan




reinforcement:
constructional topside or
bottom crosswise




□#Ø 10/150
circulating at both sides

VE 3 Ø 10
concrete covering for steel-insert

2 cm !

building material: concrete at least BN 250
steel: structural steel 42150
structural steel 50155

foundation base: frost-protected floor with foundation pressure p from at least 15 N/qcm

# Electrical diagram part 1

| | |
|---|---|
| date: | July 30th 1996 |
| Electricien: | Braun |
| drawing-n°.: | 225SL E01-1 |

contact a -b is available only one time. It is a late-close switch, whitch works at position I (up) and at position II (down).

fuse
3 x T 16 A
by customers

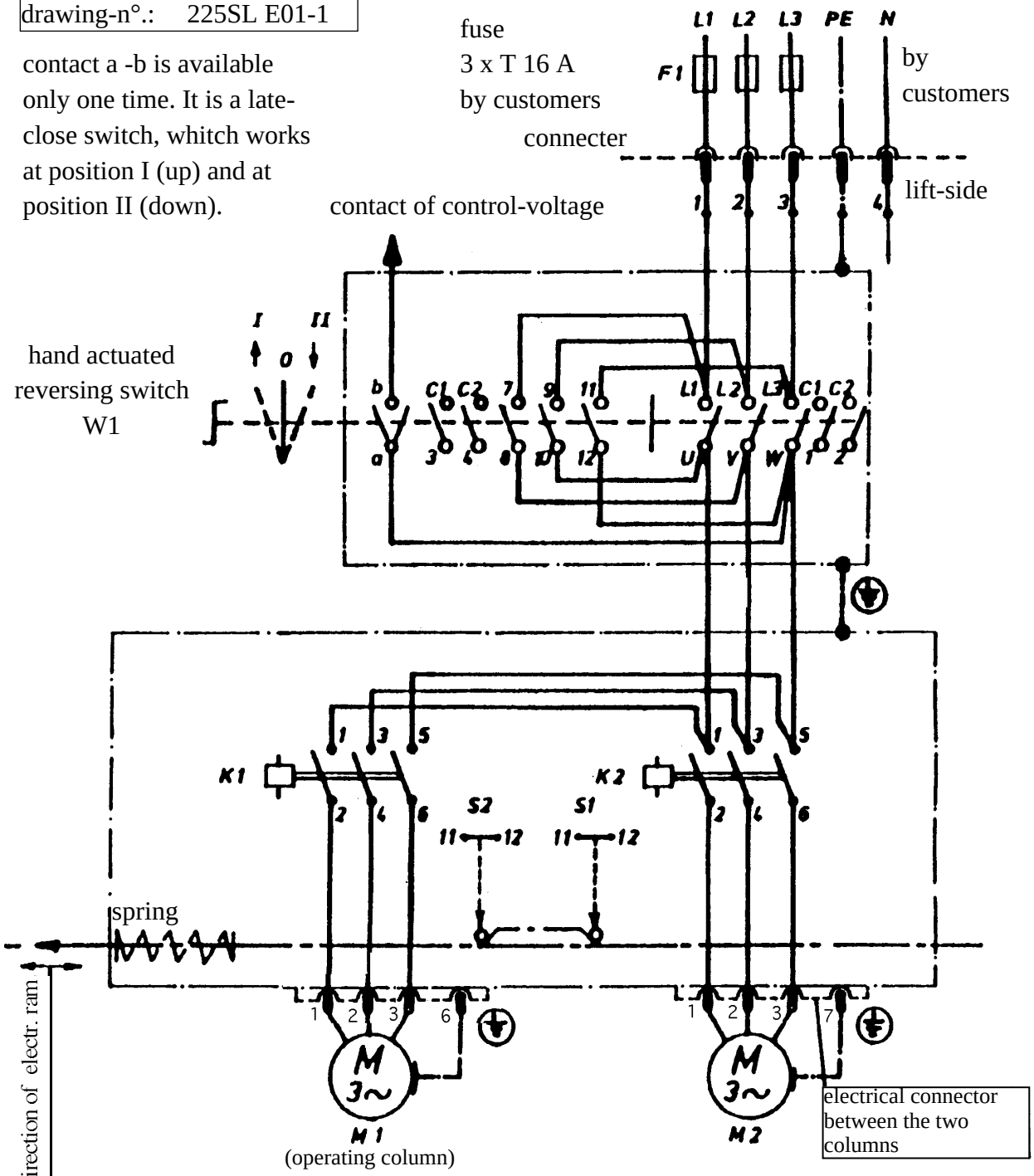
connecter

by customers

lift-side

contact of control-voltage

hand actuated reversing switch W1

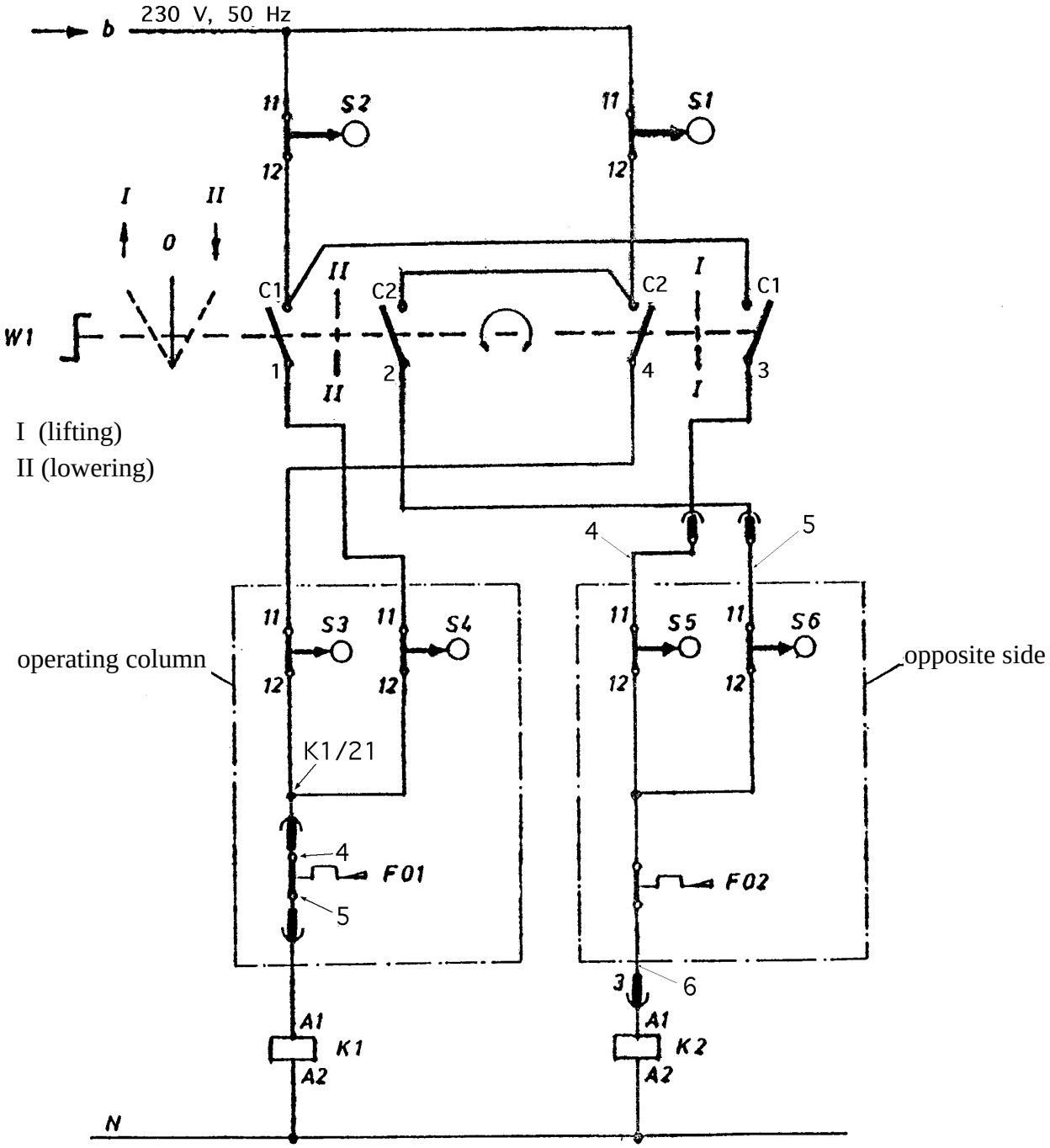



**power supply:** 3 phases/N + PE; 50 Hz 400/230V

**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

# Elektro-Schaltplan Teil2




| | |
|---|---|
| date: | July 30th 1996 |
| Electricien: | Braun |
| drawing-n°.: | 225SL E03-1 |

# Electrical parts list

F01: thermofuse in motor

F02: thermofuse in motor

K1: motor contactor

K2: motor contactor

M1: motor 400 V, 1350 U/min, 2,0 kW; operating column

M2: motor 400 V, 1350 U/min, 2,0 kW; opposite column

S1: switch group at tappet (upper side)

S2: switch group at tappet (lower side)

S3: top limit switch; operating column

S4: bottom limit switch; operating column

S5: top limit switch; opposite column

S6: bottom limit switch; opposite column

W1: reversing switch

# 4. Safety regulations

Using automotive lifts for working the Regulations of Accident Prevention (VBG1: General Regulations, VBG14: Automotive lifts) must be observed.

### Especially the following regulations are very important

- The laden weight of the lifted vehicle mustn't be more than 2500 kg for automotive lift 2.25 SL, the lifting capacity of one carrying arm mustn't be more than 750 kg for 2.25 SL. It is not allowed to load only one of the carrying arms.
- During working with the lift the operating instructions must be followed
- 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
- 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
- Switching on or switching off the lift pay attention that the lifting and lowering movement are steady
- 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 capter 4 carefully before working with the lift!***

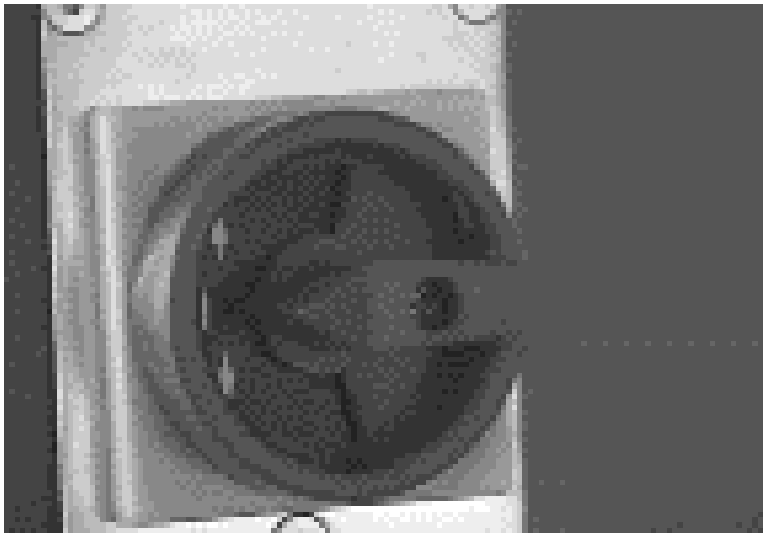
***Indication: lift can be adjusted repeatedly during operating***

The operating elements are shown in **picture 2**.

### Lifting the vehicle with the automotive lift

- Drive vehicle in the lift, longitudinal directon and transverse direction in centre
- Determine adjustable pads at the points which are provieded from the vehicle manufacturer (**pic. 1**)
- 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 and check the sit of the pads

**pic. 1:** Determine adjustable pads at the points which are provieded from the vehicle manufacturer



**pic. 2:** reversing switch

- lift the vehicle until the wheels are free; turn reversing switch to „lifting“-position (upside)
- When the wheels are free: interrupt lifting and check the sit of the pads again

***The sit of the pads under the vehicle is very important. If the position of the pads isn't all right the vehicle might fall down!***

- Lift the vehicle on the height for working;turn reversing switch to „lifting“-position (upside)

### Lowering the vehicle with the automotive lift

- 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
- Lower the vehicle at the height for working or until the carrying arms reach the lowest point; switch to „lowering“-position (downside)
- Drive vehicle out of the lift, when the lift is in lowest position

# 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 of trouble:**

- Main switch is not engaged
- Feed line is cut
- fuse is defect
- Motor is overheated: let it cool down for app. 10 min.
- Lift is driven onto an obstacle

### Problem: Motor starts, lift is not lifting!

**Potential causes of trouble:**

- broken nut: refer to function of switching off
- height limit switch is engaged
- torn control rope

### Problem: Lift cannot be lowered!

**Potential causes of trouble:**

- bottom limit switch is engaged
- broken nut: refer to function of switching off
- torn control rope

## Emergency lowering in case of power failure

In case of power failure the lift can't be lowered with the motor. In this case there is the possibility to lower the lift manually. For this the lift must be turned down to lowest position at the nut on the top end of the spindle. When the lift is at lowest position the vehicle can be removed from the lift

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

## Emergency lowering

- Switch off and lock main switch
- Lower the lift-carriage at the big V-belt pulley. For this take care, that the height difference between right and left carriage is not more than 10 mm.

## Function of limit switches

If the lifting carriage or the extension arm has driven because of inattentiveness onto an obstacle, the lift stops automatically.
To avoid blocking of the lifting carriage (operating side) in drive-on direction a fuse is built in motor, which interrupt the driving current of the motor in case of overstressing. A further operating of the lift is possible only after a few minutes(cool down of motor).

### Actuation of safety switching

The lift is equipped with a safety switching, which controls the wear of the main nut and the wear of the chain. If the lifting nut breaks a safety nut which is conducted loose in the spindle carries the load. The lift can only be lowered in lowest position and can't be lifted any more. Simultaneously (in case of broken lifting nut) the tappet is pulled from the control rope until the position switches are pressed and both motors shut down.
The lift cannot be operated from the operating elements any more.

***If the safety switching is actuated the service must be called in any case, because the lift is defect!***

A control of the lift's current supply is necessary, means looking if the fuses are all right and the switches are engaged.

***In case of any obstruction and in case of repairs at the lift the main switch must be switched off and be safeguarded against reengaging***

***Only experts or competents are allowed to open the switch box.***

### Control of synchronization (mechanically)

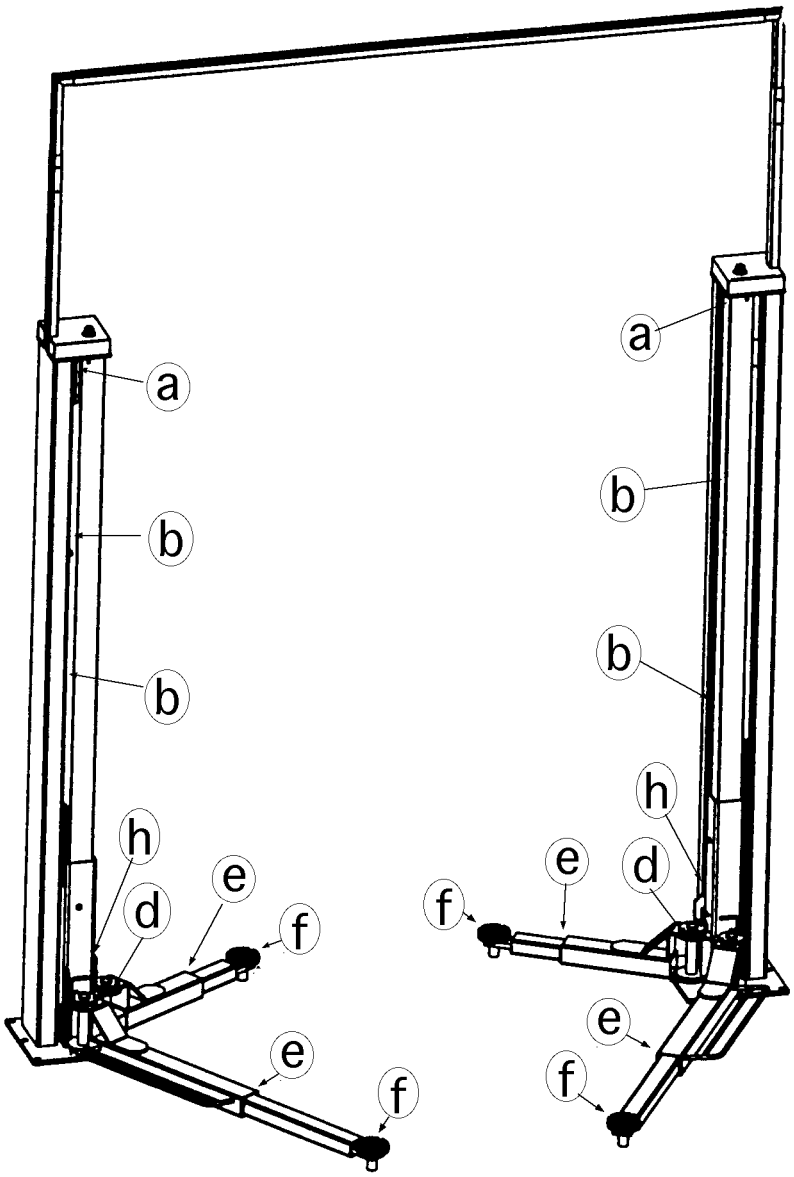
To guarantee synchronization of the two lifting carriages, the lifting carriages are connected via control rope with a tappet. In case one lifting carriage is max. 20 mm earlier at a definite height, the tappet is pulled. The tappet presses one of the two position switches located at the tappet and this carriage which has been earlier at the definite height stops until both carriages are at the same height again.

In case of torn control rope a pressure spring presses the tappet down until both switches are pressed and both motors are switched off.

# 7. Maintenance

A regular service has to be performed every three months by the lift' s 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 or leakage the technical service has to be informed.

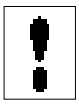
**pic. 3:** Maintenance schedule for 2-columns-lifts



## Maintenance schedule for the lift (see picture 3)

**d, e, f** Grease the pull-outs of the carrying arms, bolts of pads and slide ways of carriage slide rollers

**b** Lubricate spindle one time a month a little bit. The Saw-chain-bonding oil T 320 (OEST) is recommended.



***Take care, that biological decomposable saw-chain-bonding oil is not used. In this case the lift might be damaged!***

f Check rubber flooring of the pads and change them if they are worn

h Grease sequence nut one time a month with multipurpose fat. Use boring at lifting carriage

**a** Grease spindle bearing annually with multipurpose fat

**g** Grease control ropes and pulleys monthly with multipurpose fat a little bit and lubricate them with oil-spray (non-resin) a little bit.

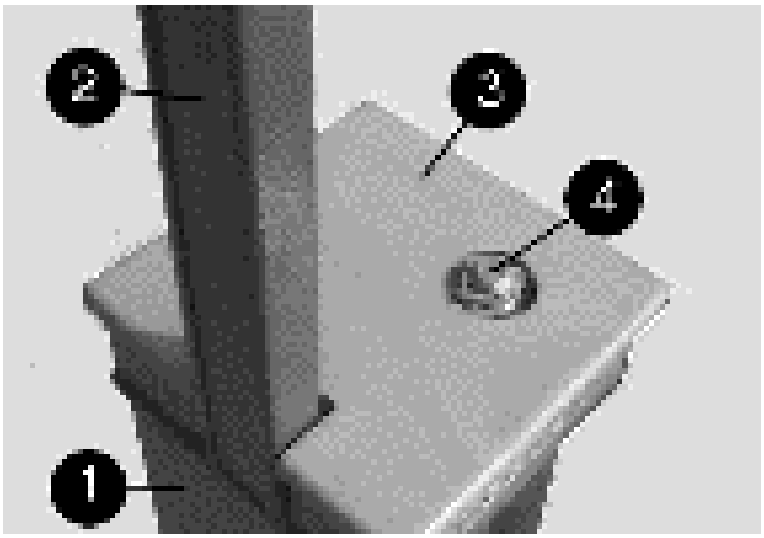
When the lift is installed the lubricating felt between nut-support and lifting nut is to oil very well. Use a saw-chain oil which can also be used when the spindle is rotating and which doesn't be thrown away. The oil recevoir constituted from the carrying plate, must be filled with oil completely. The lift must be driven in lowest and in top position. Afterwards the lift must be checked with load to look after smooth running of the lift. The lubrication of the nut is carried out with oil can though column and covering sheet. This lubrication must be repeated every 2-4 weaks depending on time the lift is uesed. It is refered to the emergency lubrication characteristic of the NYLATRON-lifting nut. However a regular lubrication described in the previous section guarantees a careless operating of the lift.

## Adjusting of the polyflex-belt

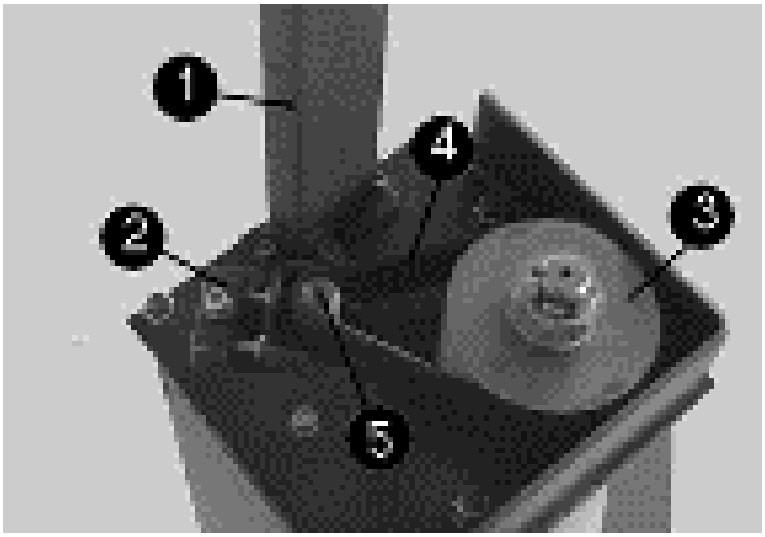
If the driving-belt is replaced the belt-tension must be probably adjusted again. For this the coverings of the columns must be removed **(pic. 4**). Afterwards the belt-tension is adjusted again at the „tension-element" (**pic. 5**): Loosen the 3 fixing screws of the motor (**pic. 6 n° 1**) for one turn. Now the belt can be tensioned or be loosen up (**pic. 6 n° 2**). With the help of an accessory-tool (**pic. 7**), which can be sent from *Nußbaum Hebetechnik GmbH & Co.KG,* and a spring balance (**pic. 8**) the polyflex-belt is adjusted to its right belt-deflection (max. 1,5 mm).

**The necessary force for deflection of the belt (belt-deflection: 1,5 mm) is 65 N!**

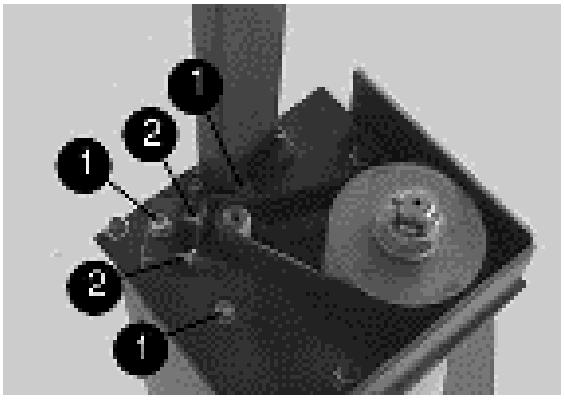
For this the accessory-tool must be touched the belt as shown in **pic. 9**. Afterwards the fixing screws of the motor must be fastened again.



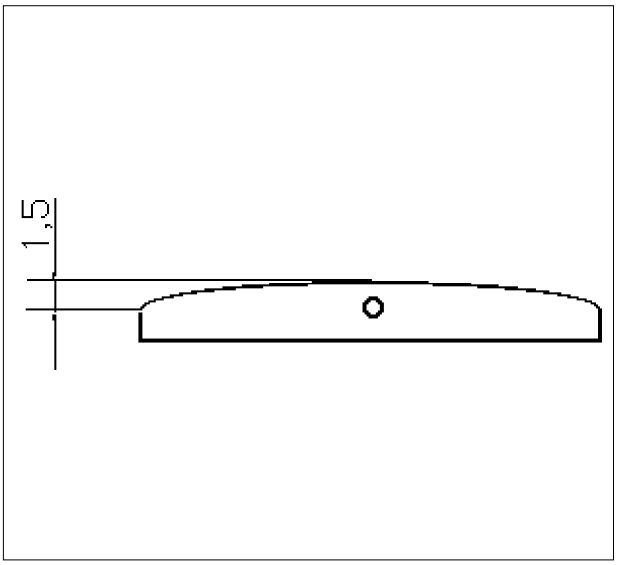

**pic. 4:** covering of the column
1: column; 2: ascending pipe; 3: covering of the column; 4: spindle



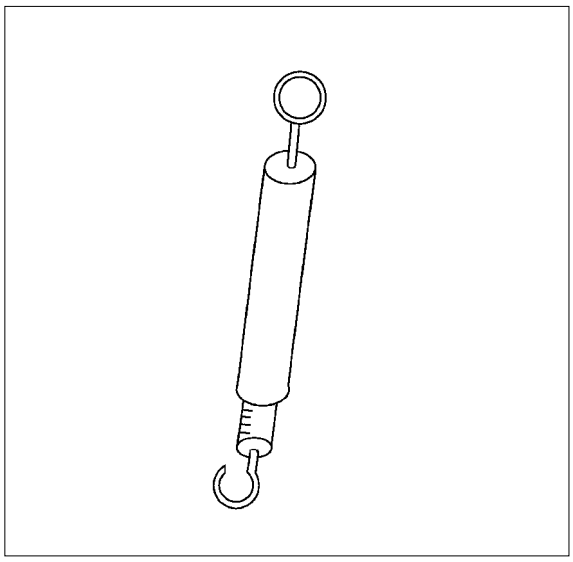

**pic. 5:** Position of the driving-belt
1: ascending pipe; 2: tension-element for adjusting the belt-tension; 3: pulley;
4: polyflex-belt (driving-belt); 5: motor shaft



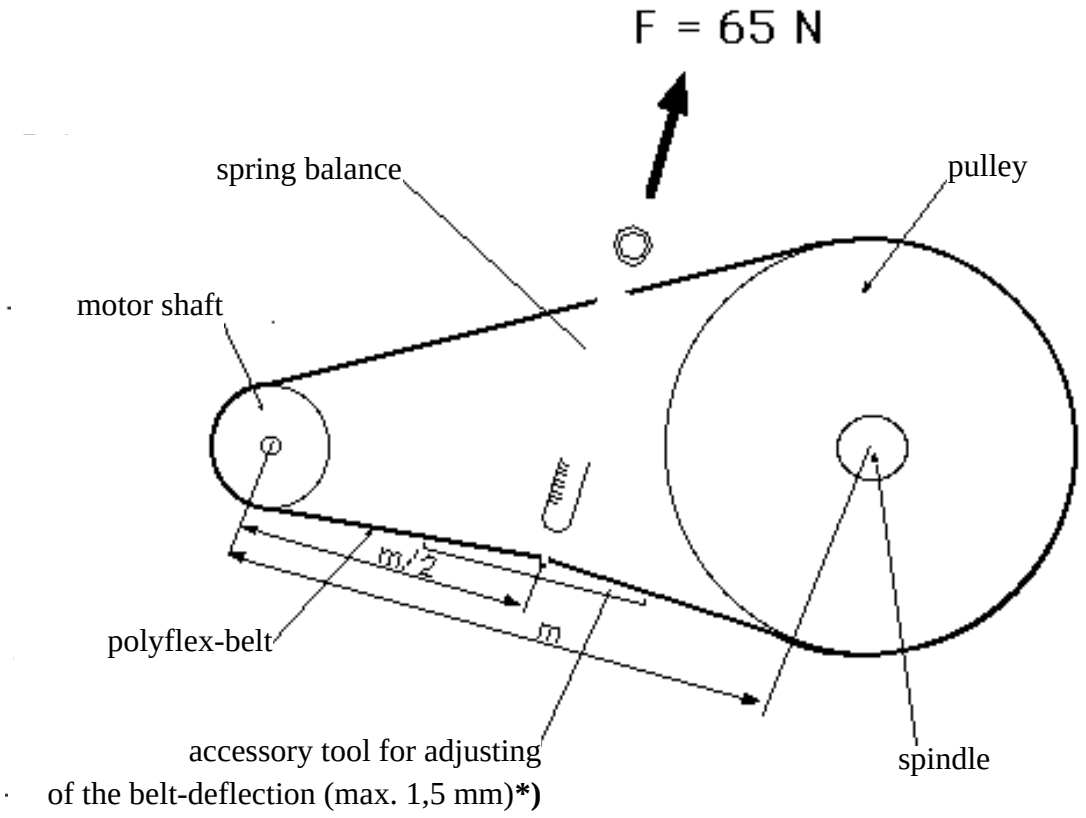

**pic. 6:** adjusting of the belt-tension
1: fixing screws of motor
2: adjusting screws for belt-tension




**pic. 7:** accessory-tool for adjusting of the maximum belt-deflection of 1,5 mm



**pic. 8:** spring balance for adjusting of the belt-tension (65 N)




***)** belt must touch the accessory-tool

# 8. Security check

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

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

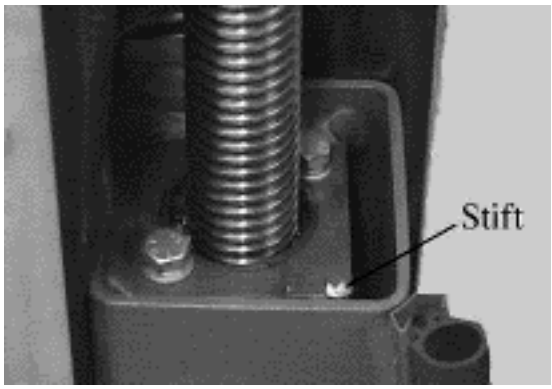
☞ ***The first and regular security checks must be performed by a competent. It is recommended to service the lift at this occasion.***

☞ ***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

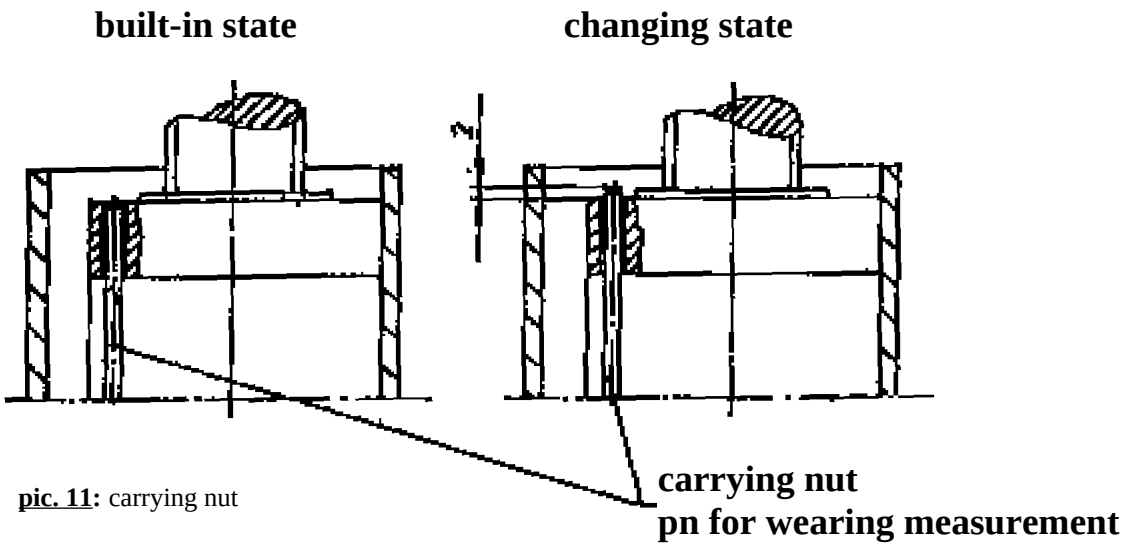
have been filled out. In the following there is a short description about special safety devices.

- carrying nut (optical wearing measure). To check the carrying nut take off covering from the spindle. There is a pin built in the carrying plate (see **pic. 10**). This pin must be even with the top edge of the carrying plate (lifting carriage




**pic. 10 :** lifting carriage with pin (= Stift)

upper side; built-in state see **pic. 11**). If the pin looks 2 mm out of the top edge at the annually check (see **pic. 10** changing state) the carrying nut and the sequence nut must be changed.



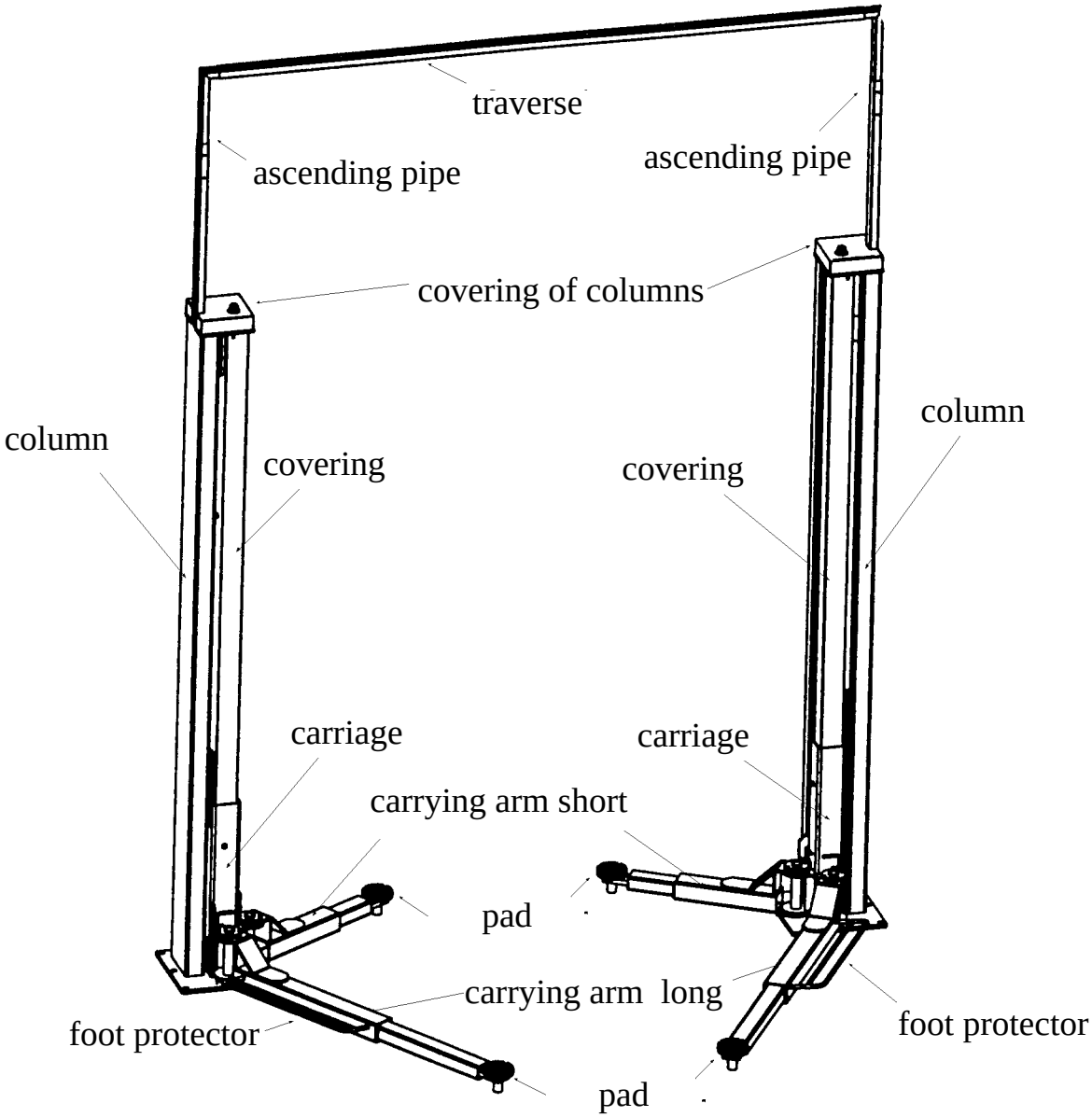

**pic. 11:** carrying nut

- Check height limit switch and bottom limit switch. They have to be all right otherwise the must be changed.
  Check of limit switches: One man must be lift or lower the lift. A second man actuates the height limit or the bottom limit switch. If the switches are all right the lift stops after every actuation.
- stability: The nuts of the dowels must be tightened with a dynometric key ( M = 80 Nm)

- Installation in wash-halls: pay attention to safety of the electrical equipment against water

# 9. Installation and Initiation

## Installation of the lift




**pic. 12:** Installation assembly

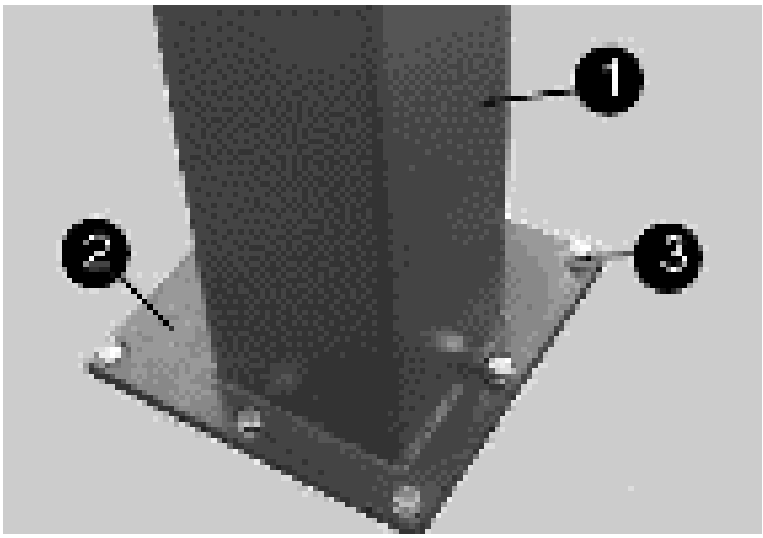
### Regulations for the installation

- 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 electric supply 3~/N + PE, 400 V/230 V, 50 Hz has to be provided.The supply line must be protected witch T 16 A (VDE 0100). The min. diameter amounts to 1,5 $mm^2$.
- The cable entry in the column is located in operating column (motor box) topside (standard version). Another possibility is the location of cable entry in a boring at the base plate. However the cable has to be secured with a cable bushing.
- Installation in wash-halls: pay attention to safety of the electrical equipment against water

## Erection and doweling of the lift

It is necessary to dowel the lift against slipping. For this you need a concrete floor with a thickness of at least 260 mm and a quality of at least B 25. In case of doubt a test boring has to be performed and a dowel is to set in. Afterwards the dowel must be tightened with a torque of about 80 Nm. If there are defectives (cracks or hairline cracks) in the zone of influence (Ø 200 mm), the foundation cannot be used to install the lift on it. A foundation must be constructed in accordance with the form ”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.

- Put and line up columns in accordance with data sheet to the installation place. Screw cable suspension bridge on columns
- Check position of the lift
- Bore holes to fix the dowels through the borings of the base plates (**pic. 13**). Clean holes with pressure air. Put in safety dowels with washers in borings. The manufacterer demands LIEBIG safety dowels type B 20. 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 **picture20**. If the ground is covered with floor tiles, the dowels have to be chosen according to **picture 21**.
- Check the line-up of the columns and look if they are vertical. If they aren’t vertical correct with suitible bases.
- Tighten the dowels with a dynamometric key (M = 80 Nm)



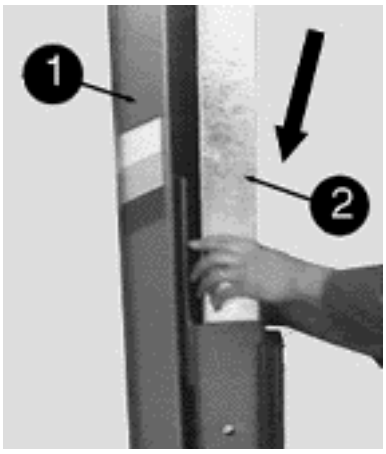

**pic. 13:** doweling
1: column; 2. base plate; 3: safety-dowel

***Each dowel must be tightened with a torque of 80 Nm. The normal function of the lift cannnot be guaranteed***

- If the possible torque is 80 Nm and if the arched U-washer lies flat on the checking plate after tightening of the dowelnut, you have got a safety dowel connection
- Unscrew coverings at the frontside and backside of the operating column.
- Connect power supply. The cable entry is at the top of the motor-box (operating column) for standard version. The coverings at frontside are only fixed at the top and can be pulled out after unscrewing. But for this the lifting carriages must be lowered to lowest position (see **pic. 14, pic. 15** and **pic. 16**)

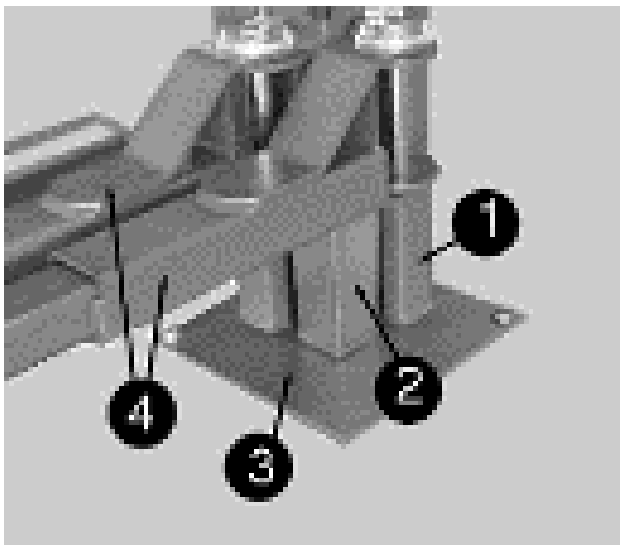
## Electromounting and Supplypoint

- There are two cables in the operating column: with 7 wires and with 5 wires
- The 5-wires-cable is for connection with power supply (wire 4 is neutral-wire!). The 7-wires-cable is pulled through the traverse to opposite side (the ascending pipe has got an opening with screwing. Through this opening the electrical cable can be pulled.
- Afterwards there must be wired at the top of the opposite column



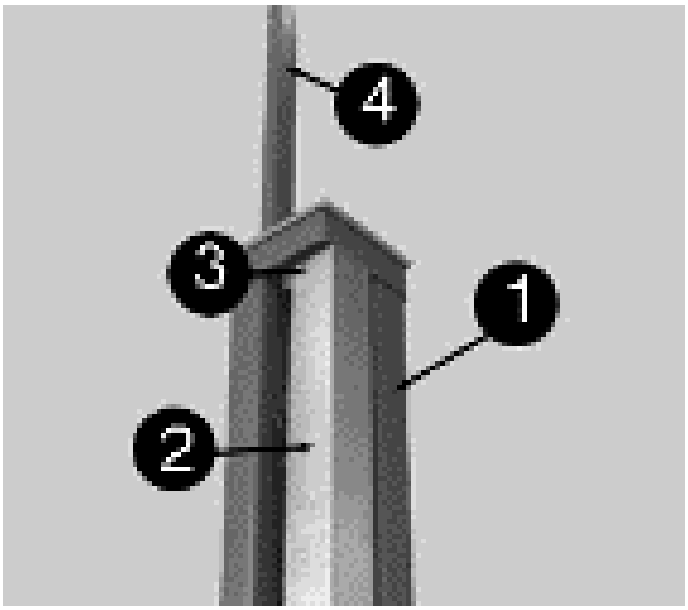

**pic. 14:** Put in coverings

1. column
2. covering of column




**pic. 15:** covering lower side

1. column
2. covering of column
3. base plate
4. carrying arms

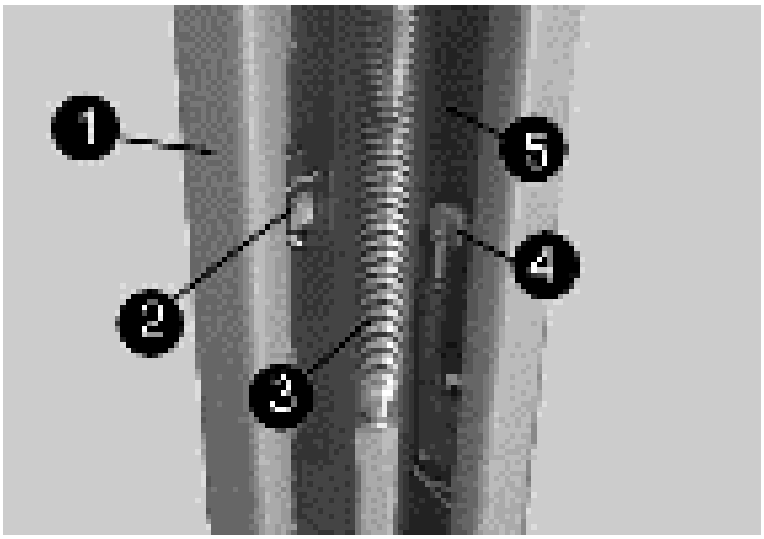



**pic. 16:** covering top side

1. column
2. covering
3. screws for covering
4. ascending pipe for electrical wires and control rope

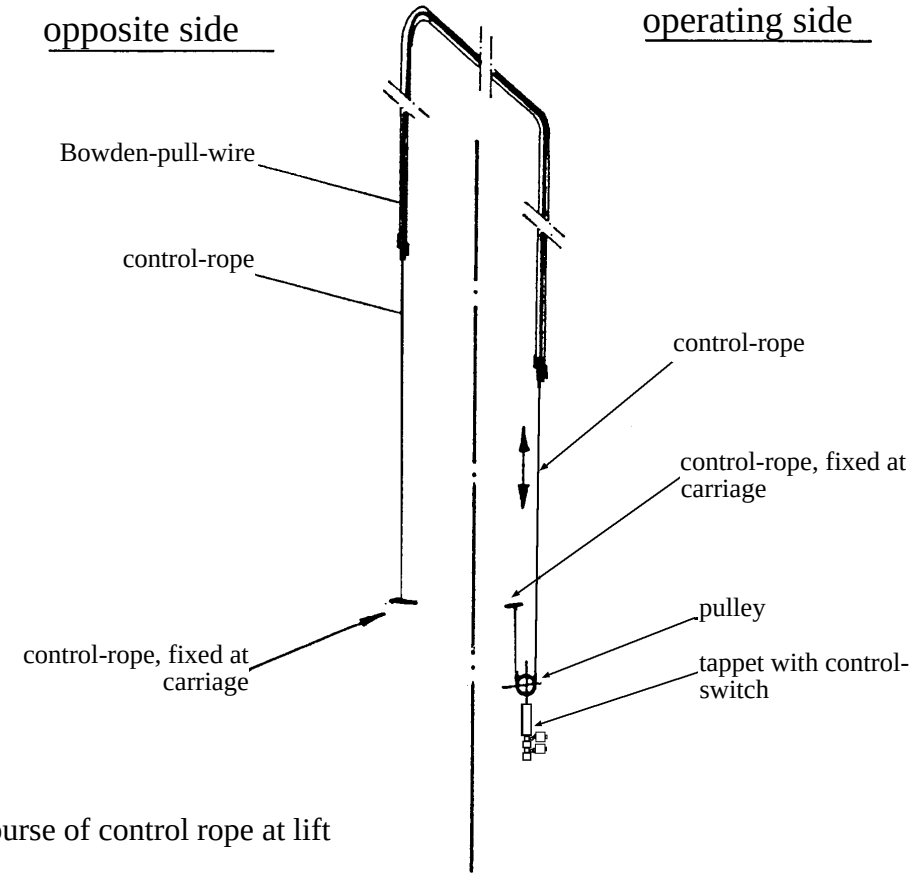
## Installation of control rope

- Pull Bowden-pull-wire through ascending pipes and through traverse (**pic. 18**).
- Pull hang-up nipple, which is connected with the end of the control-rope, from column headplate to lower side of **operating column.** Put control-rope round the pulley, which is connected with the tappet (**pic. 17 and 19**). Hang-in control rope at carriage.

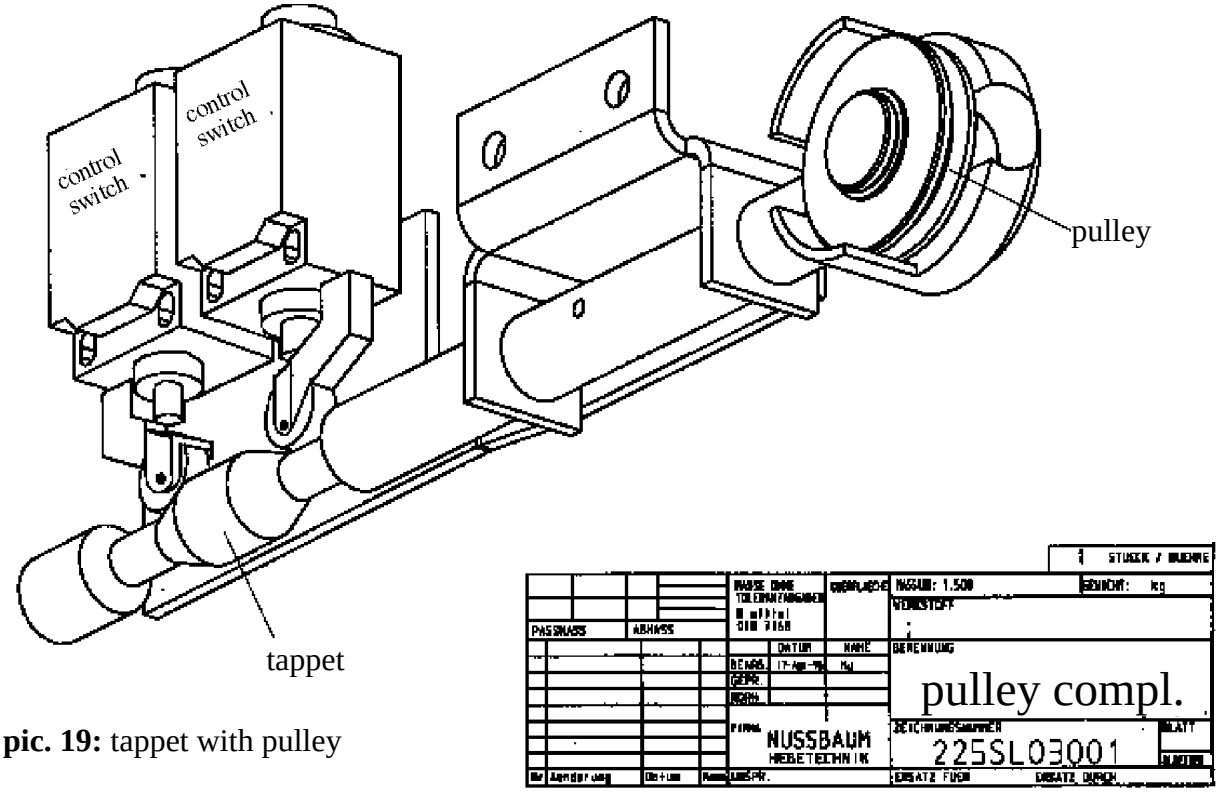



**pic. 17:** pulley with control rope

1: operating column
2: bottom limit switch
3: spindle
4: pulley
5: control rope




**pic. 18:** course of control rope at lift




**pic. 19:** tappet with pulley

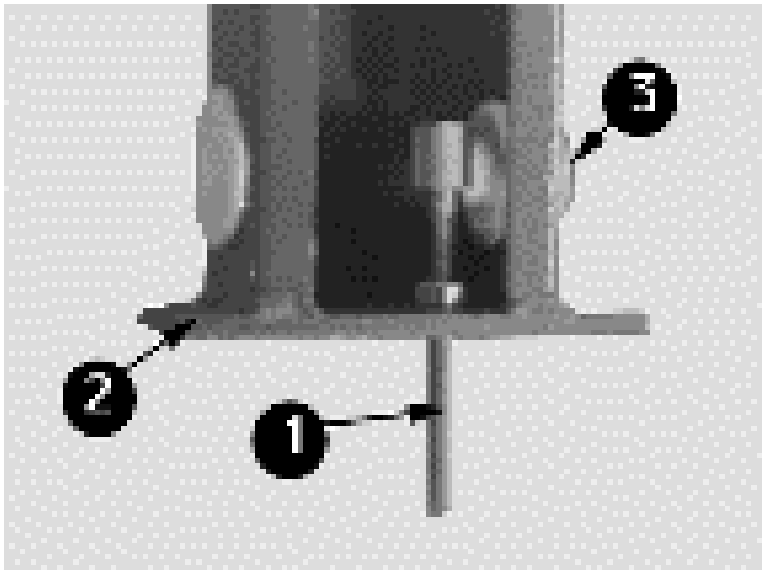
- Course of the control rope at opposite side: Fix control rope at carriage upper side (see **pic. 18**). After you have tightened the rope, the end of the rope should hang down approximatly 100 mm from the upper edge of the lifting carriage. Form a loop with the end of the rope, insert thimble and squeezing device and screw them slightly together. Now hang up thimble in the bow and check the rope if it is tighten enough, fasten screw tight.
- Adjusting of the lifting carriages: the lifting carriages must have the same level with each other. To line up the carriage the tension pulley must be turned to lower or upper side until the switchgroup at the tappet have got the right position. The position of the switches must be parallel. the axis of the pulleys must be agree with the control edge and the pulley must be fitted straightly at the tappet.
- Control of adjustment: while lifting tap the switches briefly (one after the other) with finger: The following regulation must be recognized:

**lifting:** tapping the upper switch the motor of the operating side must stop.
Tapping the lower switch the motor of the opposite side must stop.

**lowering:** tapping the upper switch the motor of the opposite side must stop.
tapping the lower switch the motor of the operating side must stop.

# Additional installation of control rope (since June 24th 1996)

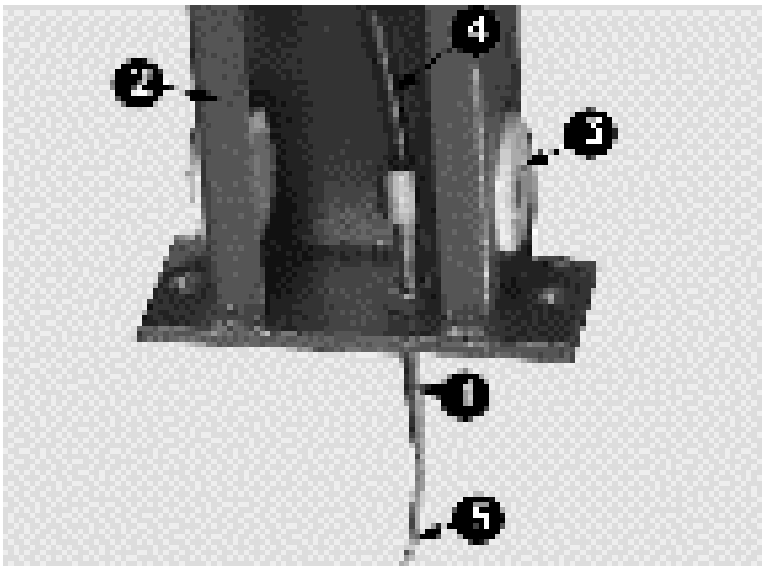
For regulation of control rope an accessory adjusting screw is mounted at ascending pipe of opposite side. (**pic. 19a**)




**pic. 19a:** Position of adjusting screw at ascending pipe of opposite side

1: adjusting screw
2: ascend. pipe oppos. s.
3: cable bushing for electrical power supply and for control cable

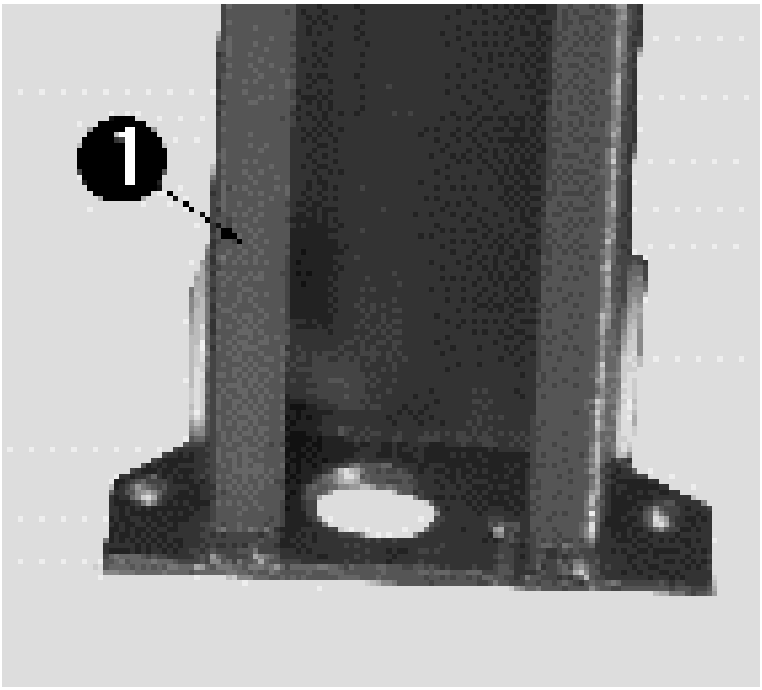
Put bowden shell of control rope in adjusting screw. Pull control rope through shell and through adjusting screw (**pic. 19b**).




**pic. 19b:** adjusting screw with bowden cable

1: adjusting screw
2: ascend. pipe oppos. side
3: cable bushing for electrical power supply and for control cable
4: bowden shell
5: control rope

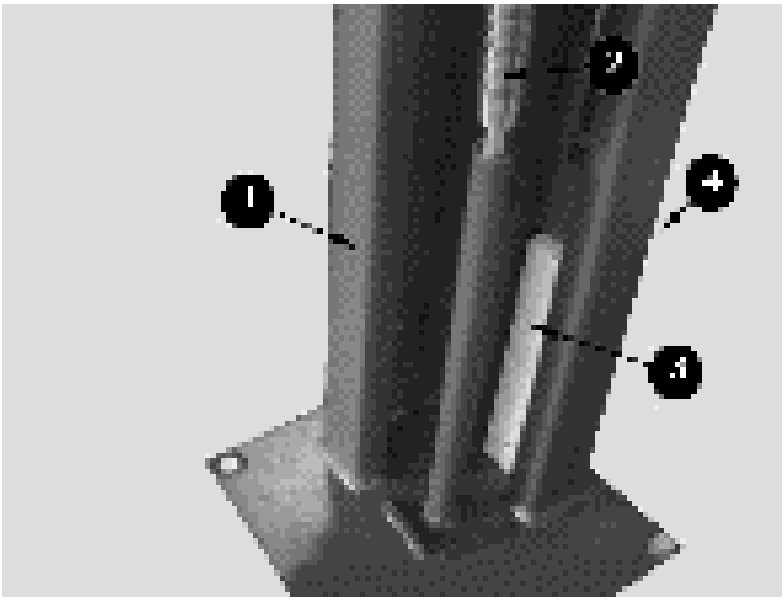
There is a difference between ascending pipe of opposite and operating side you can see at **pic. 19c**:




**pic. 19c:** ascending pipe of operating side

1: ascending pipe of operating side

The wooden bar for installation is positioned under the tappet (**pic. 19d**) to avoid activating of the control switches during installation. After mounting of control rope, the wooden bar must be removed.

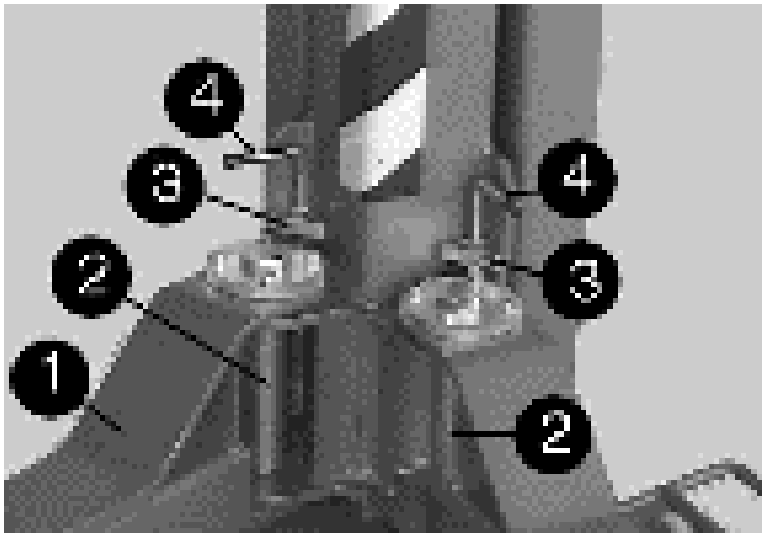



**pic. 19d:** wooden bar at tappet

1: operating column
2: spindle
3: wooden bar
4: control switch

## Installation of carrying arms

- Install carrying arms and bolts top and bottom with enclosed circlips (**pic. 20**).




**pic. 20:** Installation of the carrying arms

1: carrying arm
2: bolt of carr. arm
3: fixing device
4: pull-rod

***The carrying bolts must be secured at both sides , otherwise a correct connection between lift carriage and carrying arm cannot be guaranteed.***

- Lift and lower the lift with vehicle several times, tighten dowels a second time (M = 80 Nm)

## Initiation

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

If the lift is installed by a competent, he will perform this security check. If the operator installs the lift by himself, he has to instruct a competent to perform the security check.

The competent confirms the faultless function of the lift in the installation record and the form for the security check and allows the lift to be used.

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

## Changing of the installation place

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

- lift carriage to medium height
- Take away current supply from lift
- Dismount carrying arms (take off crclips from carrying arm bolts, take off carrying

arm bolts and dismount carrying arms)

- Take off load chain at the chain connection
- Loosen screws from base frame and take off columns
- Install lift in accordance with chapter ”Installation and Initiation” of the lift.

***Use new dowels, The used dowels cannot be used any more.***

☞ ***A security check must be performed before reinitiation by a competent. Use form ”Regular security check”.***

**picture 20:** choice of the dowel lengths 2.25 SL  without floor pavement or tile surface

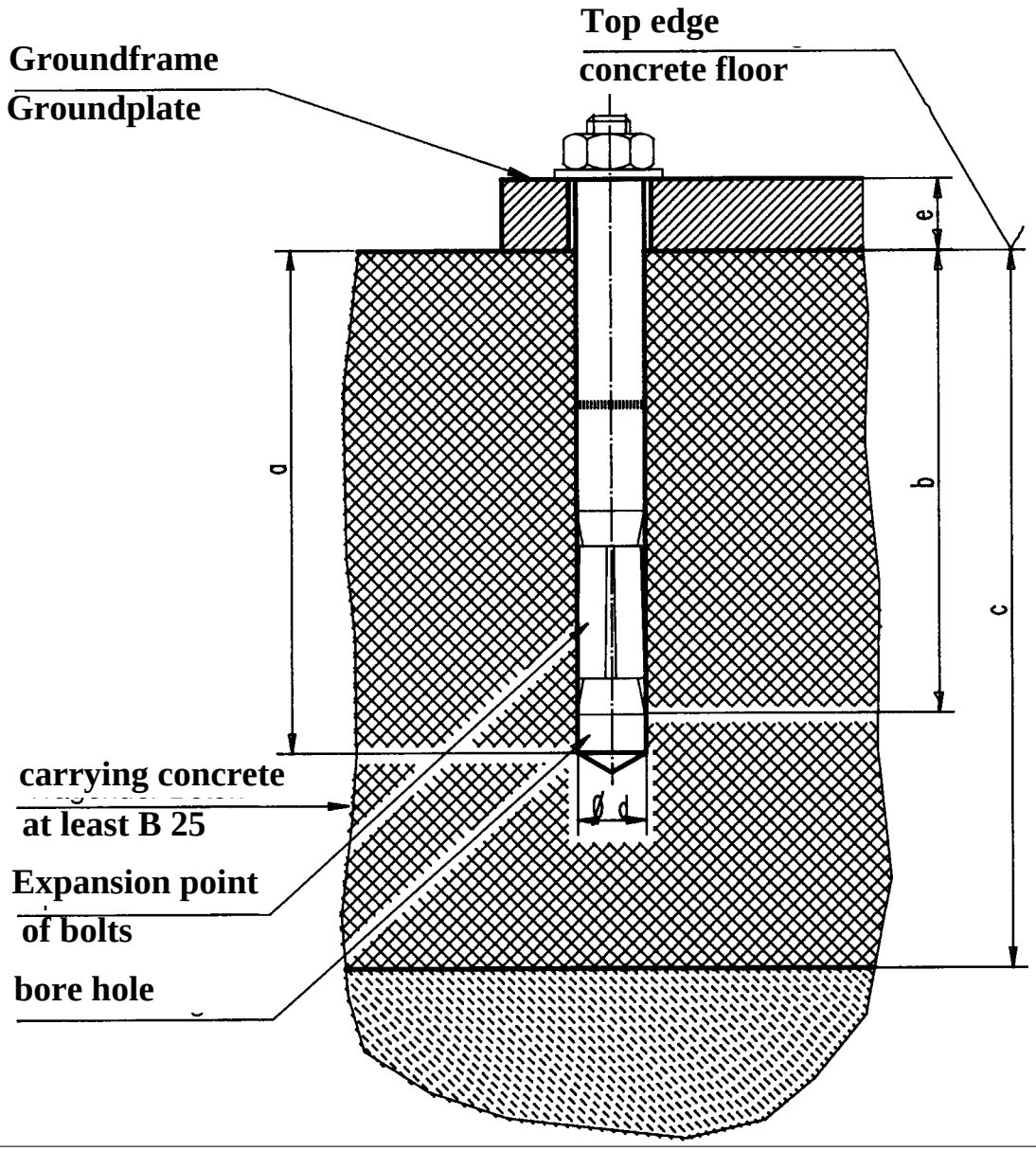
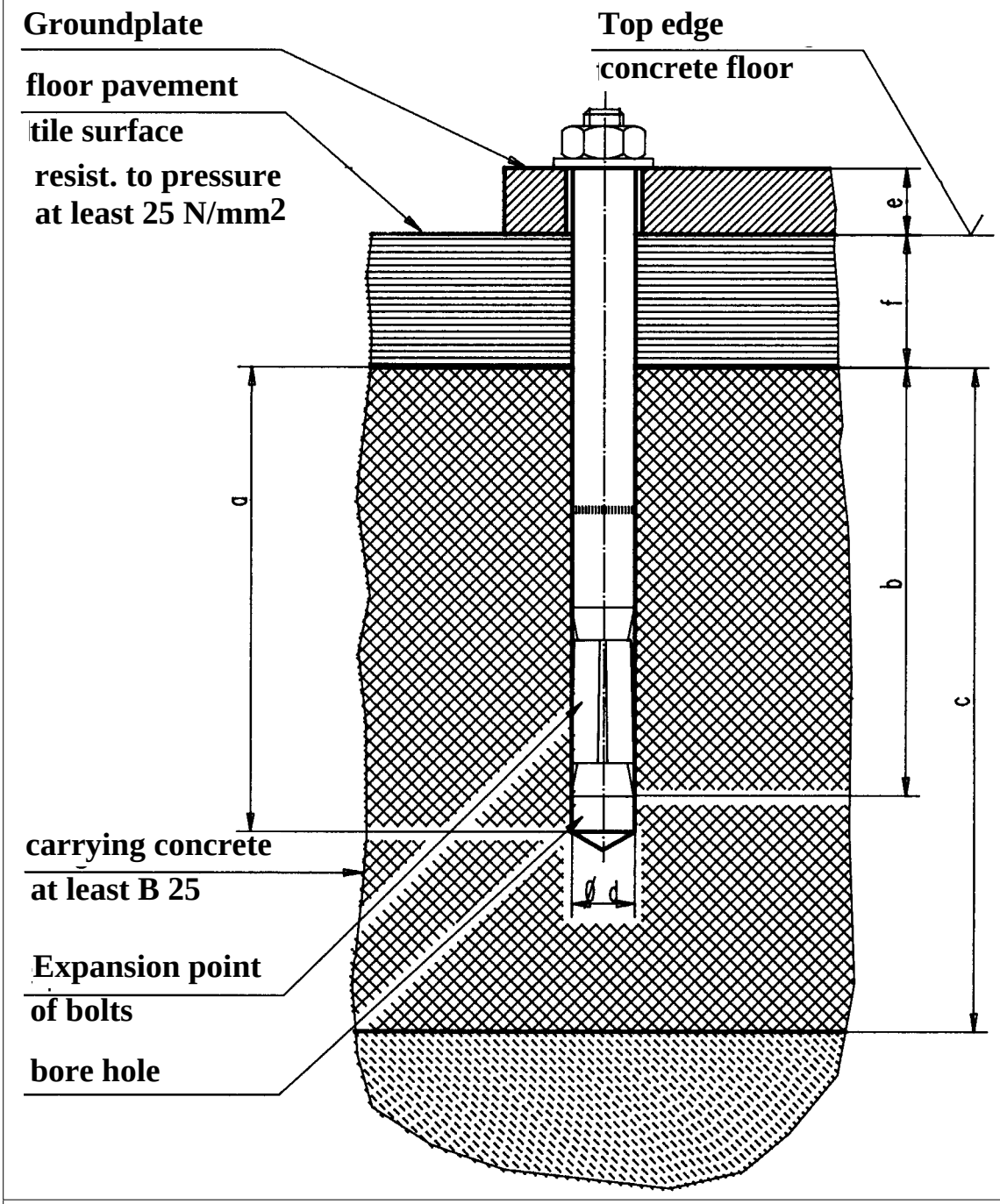



table to picture 20:

| | | |
|---|---|---|
| dowel type | | Liebig  B20; UPAT UMV 100 (or UMV 80 for verion with base frame bow)  or equal dowels of other manufacturers (with authorization) |
| Drilling depth | a | according to dowel manufacturer |
| min. anchorage depth | b | 100 mm (or 80 mm for version with base frame bow) |
| thickness of concrete | c | at least 200 mm (or at least 150 mm for vers. w. base fr. bow) |
| diameter of bor | d | according to dowel manufacturer |
| thickness of the Lift-piece | e | 15 mm |

**picture 21:** choice of the dowel lengths 2.25 SL with floor pavement or tile surface




able to picture 21:

| | | |
|---|---|---|
| dowel type | | Liebig B20; UPAT UMV 100 (or UMV 80 for verion with base frame bow) or equal dowels of other manufacturers (with authorization) |
| Drilling depth | a | according to dowel manufacturer |
| min. anchorage depth | b | 100 mm (or 80 mm for version with base frame bow) |
| thickness of concrete | c | at least 200 mm (or at least 150 mm for vers. w. base fr. bow) |
| diameter of bor | d | according to dowel manufacturer |
| thickness of the Lift-piece with bottom | e+f | depending of floor pavement (f = 15 mm) |

## First security check before installation

☞ **to fill in and to leave in this document**

| kind of check | all right | defect lacking | veri-fication | Remark |
|---|---|---|---|---|
| Type plate | ☐ | ☐ | ☐ | ..... |
| Short operating instructions | ☐ | ☐ | ☐ | ..... |
| Warning designation | ☐ | ☐ | ☐ | ..... |
| Detailed operating instructions | ☐ | ☐ | ☐ | ..... |
| Designation Lifting/Lowering | ☐ | ☐ | ☐ | ..... |
| Main switch lockable | ☐ | ☐ | ☐ | ..... |
| Function switching off | ☐ | ☐ | ☐ | ..... |
| Rotating direction of motor | ☐ | ☐ | ☐ | ..... |
| Securing of carrying arm bolts | ☐ | ☐ | ☐ | ..... |
| Securing of pads | ☐ | ☐ | ☐ | ..... |
| Construction (deformation, cracking) | ☐ | ☐ | ☐ | ..... |
| Fixed seat of the carrying screws | ☐ | ☐ | ☐ | ..... |
| Condition spindle and carrying nut | ☐ | ☐ | ☐ | ..... |
| Smooth running of the lift | ☐ | ☐ | ☐ | ..... |
| Stability of the lift | ☐ | ☐ | ☐ | ..... |
| Function equalisation control | ☐ | ☐ | ☐ | ..... |
| Condition coverings | ☐ | ☐ | ☐ | ..... |
| Condition electrical wiring | ☐ | ☐ | ☐ | ..... |
| Protective conductor ... | ☐ | ☐ | ☐ | ..... |
| Function test automotive lift with vehicle .. | ☐ | ☐ | ☐ | ..... |
| Condition concrete floor (cracks) ... | ☐ | ☐ | ☐ | ..... |
| Fixing device | ☐ | ☐ | ☐ | ..... |
| Condition bolt | ☐ | ☐ | ☐ | ..... |

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

---

security check carried out: .....

Name, address of the competent.....

***Result of the Check:***

- ☐ Initation not permitted, verification necessary
- ☐ Initation possible, repair failures until .....
- ☐ No failings, Initation possible

Signature of the expert:..... Signature of the operator:.....

***If failures must be repaired***

Failures repaired at: ..... Signature of the operator:.....

**( Use anather form for verification! )**

## Regular security check

☞ **to fill in and to leave in this document**

| kind of check | all right | defect lacking | veri-fication | Remark |
|---|---|---|---|---|
| Type plate | ☐ | ☐ | ☐ | ..... |
| Short operating instructions | ☐ | ☐ | ☐ | ..... |
| Warning designation | ☐ | ☐ | ☐ | ..... |
| Detailed operating instructions | ☐ | ☐ | ☐ | ..... |
| Designation Lifting/Lowering | ☐ | ☐ | ☐ | ..... |
| Main switch lockable | ☐ | ☐ | ☐ | ..... |
| Function switching off | ☐ | ☐ | ☐ | ..... |
| Rotating direction of motor | ☐ | ☐ | ☐ | ..... |
| Securing of carrying arm bolts | ☐ | ☐ | ☐ | ..... |
| Securing of pads | ☐ | ☐ | ☐ | ..... |
| Construction (deformation, cracking) | ☐ | ☐ | ☐ | ..... |
| Fixed seat of the carrying screws | ☐ | ☐ | ☐ | ..... |
| Condition spindle and carrying nut | ☐ | ☐ | ☐ | ..... |
| Smooth running of the lift | ☐ | ☐ | ☐ | ..... |
| Stability of the lift | ☐ | ☐ | ☐ | ..... |
| Function equalisation control | ☐ | ☐ | ☐ | ..... |
| Condition coverings | ☐ | ☐ | ☐ | ..... |
| Condition electrical wiring | ☐ | ☐ | ☐ | ..... |
| Protective conductor ... | ☐ | ☐ | ☐ | ..... |
| Function test automotive lift with vehicle | ☐ | ☐ | ☐ | ..... |
| Condition concrete floor (cracks) ... | ☐ | ☐ | ☐ | ..... |
| Fixing device | ☐ | ☐ | ☐ | ..... |
| Conditon bolt | ☐ | ☐ | ☐ | ..... |

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

security check carried out: .....

Name, address of the competent.....

***Result of the Check:***

Initation not permitted, verification necessary

Initation possible, repair failures until .....

No failings, Initation possible

Signature of the expert:..... Signature of the operator:.....

***If failures must be repaired***

Failures repaired at: ..... Signature of the operator:.....

**( Use anather form for verification! )**

## Extraordinary security check

☞ **to fill in and to leave in this document**

| kind of check | all right | defect lacking | veri-fication | Remark |
|---|---|---|---|---|
| Type plate | ☐ | ☐ | ☐ | ..... |
| Short operating instructions | ☐ | ☐ | ☐ | ..... |
| Warning designation | ☐ | ☐ | ☐ | ..... |
| Detailed operating instructions | ☐ | ☐ | ☐ | ..... |
| Designation Lifting/Lowering | ☐ | ☐ | ☐ | ..... |
| Main switch lockable | ☐ | ☐ | ☐ | ..... |
| Function switching off | ☐ | ☐ | ☐ | ..... |
| Rotating direction of motor | ☐ | ☐ | ☐ | ..... |
| Securing of carrying arm bolts | ☐ | ☐ | ☐ | ..... |
| Securing of pads | ☐ | ☐ | ☐ | ..... |
| Construction (deformation, cracking) | ☐ | ☐ | ☐ | ..... |
| Fixed seat of the carrying screws | ☐ | ☐ | ☐ | ..... |
| Condition spindle and carrying nut | ☐ | ☐ | ☐ | ..... |
| Smooth running of the lift | ☐ | ☐ | ☐ | ..... |
| Stability of the lift | ☐ | ☐ | ☐ | ..... |
| Function equalisation control | ☐ | ☐ | ☐ | ..... |
| Condition coverings | ☐ | ☐ | ☐ | ..... |
| Condition electrical wiring | ☐ | ☐ | ☐ | ..... |
| Protective conductor ... | ☐ | ☐ | ☐ | ..... |
| Function test automotive lift with vehicle .. | ☐ | ☐ | ☐ | ..... |
| Condition concrete floor (cracks) ... | ☐ | ☐ | ☐ | ..... |
| Fixing device | ☐ | ☐ | ☐ | ..... |
| Condition bolt | ☐ | ☐ | ☐ | ..... |

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

security check carried out: .....

Name, address of the competent.....

***Result of the Check:***

Initation not permitted, verification necessary

Initation possible, repair failures until .....

No failings, Initation possible

Signature of the expert:..... Signature of the operator:.....

***If failures must be repaired***

Failures repaired at: ..... Signature of the operator:.....

**( Use anather form for verification! )**