

2.28 SL / 2.30 SL

2.32 SL / 2.35 SL

2.40 SL / 2.50 SL II

Date automotive-lift: 01/2011

Date manual: 01.05.2011



Original Documentation

Operating Instruction and Documentation

Serial No.:.....

Retailer/Phone

Made in Germany



Nussbaum

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Foreword

Nußbaum lifting systems are the result of over 25 years experience in the automotive lifting industry.

The high quality and the superior concept ensure reliability, a long lift lifetime and above all and economic business solution.

To avoid unnecessary damage, injury or even death, read the operating instructions with care and observe the contents.

Nußbaum lifts is not responsible for incidents involving the use of Nußbaum lifting systems for applications other than those for which they were designed.

Otto Nußbaum GmbH & Co. KG is not liable for any resulting damages. The user carries the risk alone.

Obligations of the user:

- To observe and adhere to the operating instructions.
- To follow the recommended inspection and maintenance procedures and carry out the prescribed tests.
- The operating instructions must be observed by all persons working with or around the lift.
- Above all chapter 4 "Safety Regulations" is very important and must be closely adhered to.
- In addition to the safety regulations stated in the operating instructions manual, the appropriate safety regulations and the operating procedures of the place of operation must also be considered.

Obligations of the operator:

The operator is obliged to allow only those persons complying to the following requirements to work with or around the unit.

- Persons being familiar with the basic regulations concerning labour safety and accident prevention and being trained to operate the particular unit.
- Persons having read and understood the chapter concerning safety and warning symbols.
- Persons using the lift are required to confirm that they have read and understood the chapter on safety and warning symbols by signing the appropriate form.

Dangers when operating the lift:

Nußbaum-Lifts are designed and built according to technical standards and the approved regulations for technical safety. The use of Nußbaum lifts for purposes other than those for which they were designed, may result in injury or even death.

The lift must only be operated :

- For its appropriate use
- In faultless condition concerning technical security.

Organisational Requirements

- The instructions for use are to be kept at the place of operation being easily accessible at any time.
- In addition to the instructions for use, rules pertaining to other regulations i.e. accident prevention and environmental rules are to be observed and adhered to.
- The owner of the Nußbaum lifting system must ensure that operators and persons working with or around the lift occasionally conduct "refresher" courses to ensure that the appropriate operating procedures and safety precautions are known.
- Personal Protective Equipment (PPE) must be used according to the appropriate regulations.
- All safety- and danger signs on and around the lift are to be observed and followed!
- Spare parts must comply with the technical requirements specified by the manufacturer. This is only warranted with original parts.
- Observe and adhere to the specified time intervals between tests and inspections.

Maintenance works, repairing faults

- Adjustments, maintenance, and inspections, are to be followed according to the time intervals specified. Details regarding the exchange of parts and components as mentioned in the operating instructions are to be adhered to.
These works must only be carried out by expert personal.
- After maintenance- and repair works loose screws, nuts and bolts must always be firmly tightened!

Guarantee and liability

- Our "General conditions of selling and delivering" are in force.
There will be no guarantee or liability for incidents involving injuries or death or damage to equipment if these incidents are the result of one or more of the following reasons.
- Inappropriate use of the lift
- Inappropriate installation, initiation, operation and maintenance of the lift.
- Use of the lift while one or several security devices do not work, do not work correctly or are not installed correctly.
- Failure to follow the regulations of the operating instructions regarding transport, storage, installation, initiation, operation and maintenance of the lift.
- Unauthorized changes to the structure of the lift without first asking the producer.
- Unauthorized changes of adjustments of important components of the lift (e.g. driving elements, power rating, motor speed, etc)
- Wrong or incorrect maintenance practice.
- Catastrophes, acts of God or external reasons.



After completely filling out this sheet including signatures, copy and return the original to the manufacturer. The copy must remain in the manual.

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

Record of installation

The automotive lift with the.....

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

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

The initial safety check was carried out and the lift was started.

The installation was carried out by the operating authority/competent (please delete as applicable).

The initial safety check was carried out by a competent person before the initial operation.

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

Used Dowels(*):.....(Type/Name)

Minimum anchorage depth (*) kept:mm ok

Starting torque (*) kept:NM ok

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

.....
date name of the competent person signature of the competent person

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

(*) see supplement of the dowel manufacturers

Automotive Lift date: 05/2011 / Manual date: 01.05.2011

Record of handing over

The automotive lift 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 by either the erector from the lift-manufacturer or from a franchised dealer (competent person).

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name signature

.....
date name of competent signature of the competent

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

1. General Information

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

- Conformation of **installation of the automotive lift** is recorded on the “Record of Installation” form and must be signed and returned to the manufacturer.
- Conformation of once of, regular and out of the ordinary service checks is recorded in the respective check forms. The forms are used to document the checks. They should not be removed from the manual.

All **Changes to the structure** and any change of **location** of the automotive lift must be registered in the “**Master document**” of the lift

1.1 Installation and service checks of the automotive lift

Only specialised staff are allowed to repair and maintain the lift and only these specialised staff are allowed to conduct safety checks on the lift. For the purposes of this document these specialised staff will be called Experts and Competent persons.

Experts are persons (for example self-employed engineers, experts) which have received instructions and have the appropriate experience to check and to test the automotive lifts. They are aware of the work involved and know the accident prevention regulations.

Competent persons are persons who have acquired adequate knowledge and experience with automotive lifts. They have completed the appropriate training provided by the lift-manufacturer (the servicing technicians of the manufacturer or dealer, are regarded as competent)

1.2 Warning Symbols

The three symbols below are used to indicate danger and other important information. Pay attention to areas on and around the lift that are marked with these symbols.



Danger! This sign indicates danger. Ignoring this warning may result in injury or even death.



Caution! This sign cautions against possible damage to the automotive lift or other material objects in the case of improper use.



Attention! This sign indicates an important function or other important information regarding the operation of the lift.

2. Master document of the automotive lift

2.1 Lift–manufacturer

Otto Nußbaum GmbH & Co.KG
Korker Strasse 24
D-77694 Kehl-Bodersweier

2.2 Application

The automotive lift is a lifting device for lifting and repairing vehicles with a lifting weight of ... (see the list) with a maximum load distribution of (2:3**) (1:2***) in or against the drive in direction. Working and raising with only one or only two carrying arms is forbidden.

The installation of standard lifts is in fire-hazardous workshops and wet environments (outdoors, washing halls, etc.) is prohibited.

The operation of the lift is carried out directly on the control column (see data sheet).

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.

(*) maximum Capacity of the different SL = Smart-Lift

2.28 SL ND**	= 2800kg
2.30 SL **	= 3000kg
2.32 SL ***	= 3200kg
2.35 SL ***	= 3500kg
2.40 SL ***	= 4000kg
2.50 SL II ***	= 5000kg

Lifting Arms Variants	Standard Lifting arms	Mini-Max Lifting arms (MM)	MB/BMW Lifting arms	T-(Transporter) Lifting arms	Double joint Lifting arms (DG)
2.28 SL (ND)	590-900mm 940-1495mm	–	–	–	–
2.30 SL	590-900mm 940-1495mm	560-1030mm 1000-1545mm	–	–	–
2.32 SL	580-900mm 940-1495mm	600-980mm 1000-1480mm	480-870mm 940-1495mm	580-1170mm 940-1495mm	–
2.35 SL	570-1160mm 1130-1840mm	635-1065mm 1130-1840mm	–	–	–
2.40 SL	570-1160mm 1130-1840mm	635-1065mm 1130-1840mm	–	–	–
2.50 SLII	890-1916mm	–	–	–	untill max. 1789mm

2.3 Changes at the construction

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

.....
.....
.....

name, address of the expert

.....
place, date

.....
signature of the expert

2.4 Displacement of the automotive-lift

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

.....
.....
.....

name, address of the competent

.....
place, date

.....
signature of the competent

2.5 Declaration of conformity

EG- Konformitätserklärung

Nussbaum

gemäß Maschinenrichtlinie Anhang II 1A

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

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

SMART LIFT

2.28 SL	2.30 SL MM
	2.32 SL MM
2.32 SL T	2.32 SL MB
2.35 SL	2.35 SL MM
2.40 SL	2.40 SL MM
2.50 SL	2.50 SL DG

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

Maschinenrichtlinie / Machinery Directive
Niederspannungsrichtlinie / Low Voltage Directive
EMV Richtlinie / EMC Directive

2006/42/EG
2006/95/EG
2004/108/EG

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

Fahrzeug- Hebebühnen / Vehicle lifts
Elektrische Ausrüstung von Maschinen / Electrical equipment of machines
Elektromagnetische Verträglichkeit / Electromagnetic compatibility (EMC)

EN 1493
EN 60204 -1
EN 61000-6-2 , -6-4

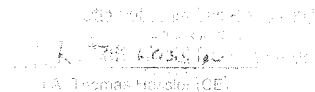
Beauftragter für die Technische Dokumentation
Authorised to compile the technical file

M. Goltzki (Nussbaum)

Seriennummer
Serial number

Seriennummer

Kehl- Bodersweiler, 10.11.2010


M. Goltzki
F.A. Tomasini (CE)

DoC_SL_2010-11.doc

Nussbaum

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EG- Konformitätserklärung

Nussbaum

gemäß Maschinenrichtlinie Anhang II 1A

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

SMART LIFT

2.30 SL

2.32 SL

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

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Fahrzeug- Hebebühnen / Vehicle lifts
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EN 1493
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Beauftragter für die Technische Dokumentation
Authorised to compile the technical file

M. Golutzki (Nussbaum)

Seriennummer
Serial number

Seriennummer


EG Baumusterprüfung nach Anhang IX durch:
EC Type examination according Annex IX approved by notified body

TÜV NORD CERT GmbH
Langemarckstr. 20, D-45141 Essen (0044)

Nummer der EG Baumusterprüfbescheinigung:
Number of the EC type-examination certificate

44 205 10 387538
44 205 10 387538-002

Kehl- Bodersweier, 10.11.2010


/s/ Thomas Nessler (GR)

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Nussbaum

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EG-Baumusterprüfbescheinigung

EC type-examination certificate

Registrier-Nr.

Registration No.

44 205 10 387538

Zeichen des Auftraggebers
Customer's reference
Herr Th. Hassler

Auftragsdatum
Date of order
28.09.2010

Aktenzeichen
File reference
2.4-718/96 Moz/Büc

Prüfbericht Nr.
Test report no.
10 205 387538-001

Name und Anschrift
des Auftraggebers

Otto Nussbaum GmbH & Co. KG
Korker Straße 24
77694 Kehl

Customer's name
and address

Erfüllt mit dem u. g. Produkt die Anforderungen des Anhangs I der Maschinenrichtlinie 2006/42/EG
als eine Grundlage für die EG-Konformitätserklärung.
*The product described below meets the requirements of annex I of the Directive 2006/42/EC
as a basis for the EC declaration of conformity.*

Geprüft nach

Maschinenrichtlinie 2006/42/EG
EN 1493+A1:2008
Machinery Directive 2006/42/EC
EN 1493+A1:2008

Tested in accordance with

Beschreibung des
Produktes
(Details siehe Anhang 1)

Kfz-Hebebühne
Vehicle Lift

Description of product
(Details see Annex 1)

Typenbezeichnung

2.30 SL

Type Description

Bemerkung

Bitte beachten Sie auch die umseitigen Hinweise
Please also pay attention to the information stated overleaf

Remark

TÜV NORD CERT GmbH
Zertifizierungsstelle / Certification body
Maschinen / Machinery
Benannte Stelle 0044 / Notified Body 0044

Gültig bis / Valid to: 06.10.2015

Essen, 07.10.2010



EG-Baumusterprüfbescheinigung

EC type-examination certificate

Registrier-Nr.

Registration No.

44 205 10 387538-002

Zeichen des Auftraggebers <i>Customer's reference</i>	Auftragsdatum <i>Date of order</i>	Aktenzeichen <i>File reference</i>	Prüfbericht Nr. <i>Test report no.</i>
Herr Th. Hassler	28.09.2010	2.4-991/98 Moz/Büc	10 205 387538-002

Name und Anschrift des Auftraggebers	Otto Nussbaum GmbH & Co. KG Korker Straße 24 77694 Kehl	<i>Customer's name and address</i>
---	--	--

Erfüllt mit dem u. g. Produkt die Anforderungen des Anhangs I der Maschinenrichtlinie 2006/42/EG
als eine Grundlage für die EG-Konformitätserklärung.
*The product described below meets the requirements of annex I of the Directive 2006/42/EC
as a basis for the EC declaration of conformity.*

Geprüft nach	Maschinenrichtlinie 2006/42/EG EN 1493+A1:2008 Machinery Directive 2006/42/EC EN 1493+A1:2008	<i>Tested in accordance with</i>
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Beschreibung des Produktes (Details siehe Anhang 1)	Kfz-Hebebühne Vehicle Lift	<i>Description of product (Details see Annex 1)</i>
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Typenbezeichnung	2.32 SL	<i>Type Description</i>
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Bemerkung	Bitte beachten Sie auch die umseitigen Hinweise <i>Please also pay attention to the information stated overleaf</i>	<i>Remark</i>
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TÜV NORD CERT GmbH
Zertifizierungsstelle / *Certification body*
Maschinen / *Machinery*
Benannte Stelle 0044 / *Notified Body 0044*

Gültig bis / *Valid to:* **06.10.2015**

Essen, 07.10.2010

3. Technical Information

3.1 Technical ratings

Lifting capacity:	2.28 SL ND = 2800kg 2.30 SL = 3000kg // 2.32 SL = 3200kg 2.35 SL = 3500kg // 2.40 SL = 4000kg 2.50 SL II = 5000kg
Load of one carrying arm:	It is forbidden to raise the load only with one carrying arm.
Load distribution:	2.28 SL // 2.30 SL max. 2:3 in or against the drive on direction
Load distribution:	2.32 SL // 2.35 SL // 2.40 SL // 2.50 SL II max. 2:1 in or against the drive on direction
Lifting time:	approx. 40 sec.
Lowering time:	approx. 40 sec.
Standard Line Voltage:	3 ~/N+PE, 400 Volt ,50 Hz
Power rating:	2 x 1,5 kW
Motor speed:	1420 rotation/Min
Sound level L_{pA} :	≤ 70 dB
Connection by customer:	3~/N+PE, 400V, 50 Hz fuse 16 Ampere (time-lag fuse) observe your state regulations
Optional: Energy set:	Air pressure: 6-10 bar plug: 220V/50hz



Important note!

the lifting platform will hand over without electrical connection to the available current supply, after examination on function and security.

A plug and socket connection is to be made by customer.

This attached plug must be in direct proximity of the lifting platform. Position the plug on a height which only can be reached without devices (e.g. leader).

Otherwise, a lockable main switch in direct proximity of the lifting platform must be attached more separately, which without device can be reached.

3.2 Safety devices

1. Safety switching in case the carrying nut breaks
Examination of the carrying nut with a wear-pin into the lifting carriage.
2. Electronic disconnection
If the final position is reached, the lifting platform switched-off
3. Electronic synchronisation
Safety device against unequal run of the lifting carriage
4. Lockable lifting arms
Protection against unintentional adjusting of the arms
5. Safety catch hook
Safety device against repeated raising if the lifting nut is broken
6. Lockable reversing switch
Safety device against unauthorized use

Optional:

7. foot protector at the carrying arms
Safety device to avoid crushing
8. CE-STOP
Safety device to avoid crushing

3.3.2 Data sheets 2.30 SL

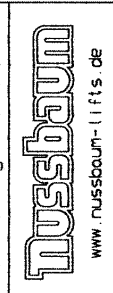
<p>Alle Maße sind am Bau zu prüfen Leerrohre mit max. 45° Bogen ausführen Leerrohre mit ausreichend Zugdrähten ausstatten</p> <p>examine the dimensions at the workshop equip the empty pipe with max. 45° bows equip the empty pipe with wire pull</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Bei Verlegung der Versorgungsleitungen durch das Leerrohr kann die obere Quertroverse zwischen den Hubsäulen entfallen. during optional transfer cable in the empty pipe a cross beam is not necessary</p> </div> <div style="width: 45%;"> <p>Wir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin, jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund etc.) obliegt nicht unserer Verantwortung. Die Ausbildung der Einbausituation muss von planenden Architekten bzw. Statiker im spezialisierten Fall individuell spezifiziert werden.</p> </div> </div> <div style="text-align: center; margin-top: 20px;"> </div> <div style="margin-top: 20px;"> <p>Betonqualität quality of concrete min. C20/25 normal bewehrt normal armouring</p> <p>Wir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin, jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund etc.) obliegt nicht unserer Verantwortung. Die Ausbildung der Einbausituation muss von planenden Architekten bzw. Statiker im spezialisierten Fall individuell spezifiziert werden.</p> </div> <div style="margin-top: 20px;"> <p>(*) Betonstärke min. 200mm ohne Belag (Fliesen/Estrich) Concrete thickness min. 200mm without floor pavement/tiles min. 150mm bei Verwendung mit Grundrissen oder Hilfsbögen at least min. 150mm for version with base frame or additional bows</p> </div> <div style="margin-top: 20px;"> <p>statische Kräfte und Momente je Hubsäule: Mx= 11 000 500 Nm My= 12 825 000 Nm Fz= ca. 18000 N</p> </div>
<p>Das Netzkabel wird von oben in die Bediensäule eingeführt. The power supply cable inserted from the above into the operating column</p> <p>3885 (Standardmass) standard adjustable einstellbar 3685-4085</p> <p>operating column Bediensäule 2560</p> <p>opposite column Gegensäule 2886</p> <p>DKFFB ohne Fliesen und Estrich Fundament angeschragt für Anschlussarmierung Foundation chamfer for connection reinforcing</p> <p>Leerrohr DN70 empty pipe 2900</p> <p>Leerrohr für Versorgungsleitungen (Strom, optional Luft) empty pipe for power supply (electric, optional air pressure)</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>3885 (Standardmass) standard adjustable einstellbar 3685-4085</p> <p>operating column Bediensäule 2560</p> <p>opposite column Gegensäule 2886</p> <p>DKFFB ohne Fliesen und Estrich Fundament angeschragt für Anschlussarmierung Foundation chamfer for connection reinforcing</p> <p>Leerrohr DN70 empty pipe 2900</p> <p>Leerrohr für Versorgungsleitungen (Strom, optional Luft) empty pipe for power supply (electric, optional air pressure)</p> </div> <div style="width: 45%;"> <p>Fundament 1600 3100 Fundament 3500</p> <p>940-1495 400 200 400</p> <p>Einrichtung Drive in direction</p> <p>400-054</p> </div> </div>

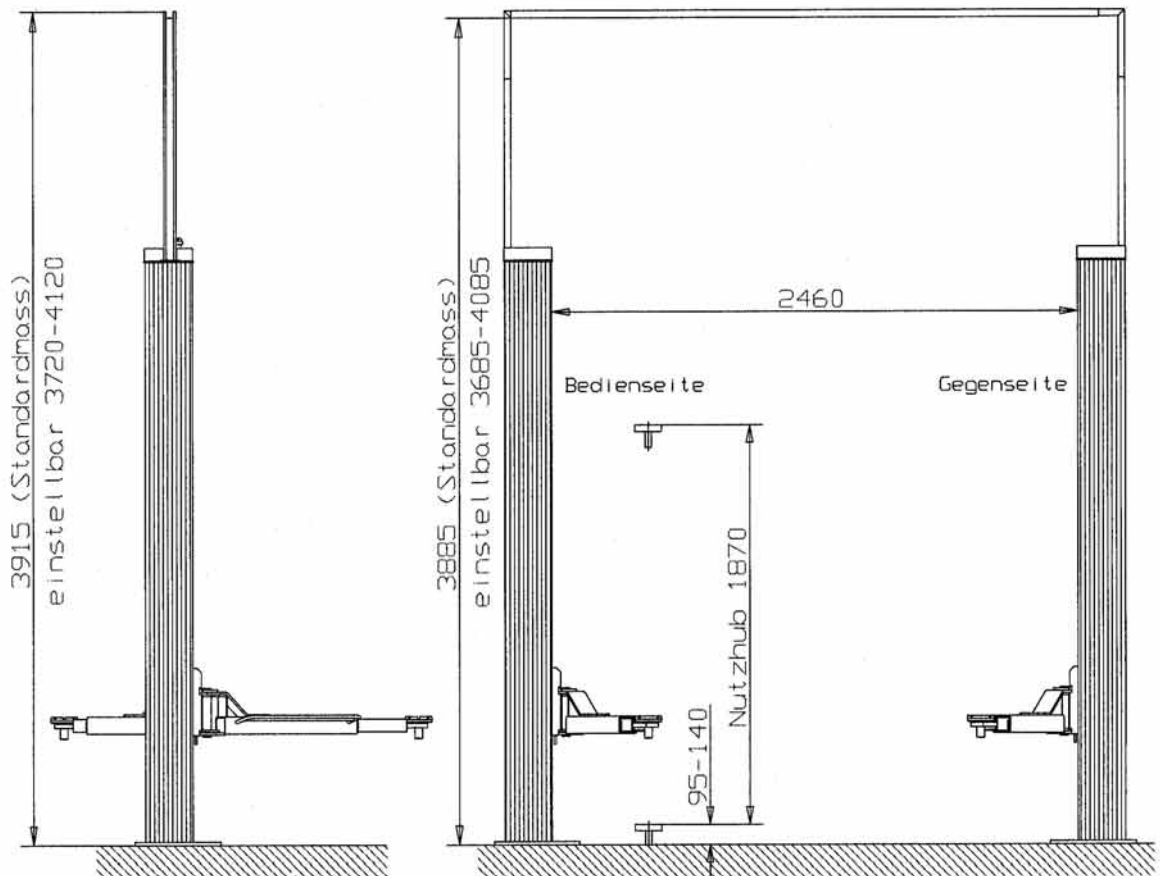
subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten!

2.30 SL

mit kurzen 2-fach Teleskoparme
with short, double telescopic arm

19.10.09//M.G. EINBAU1569-1

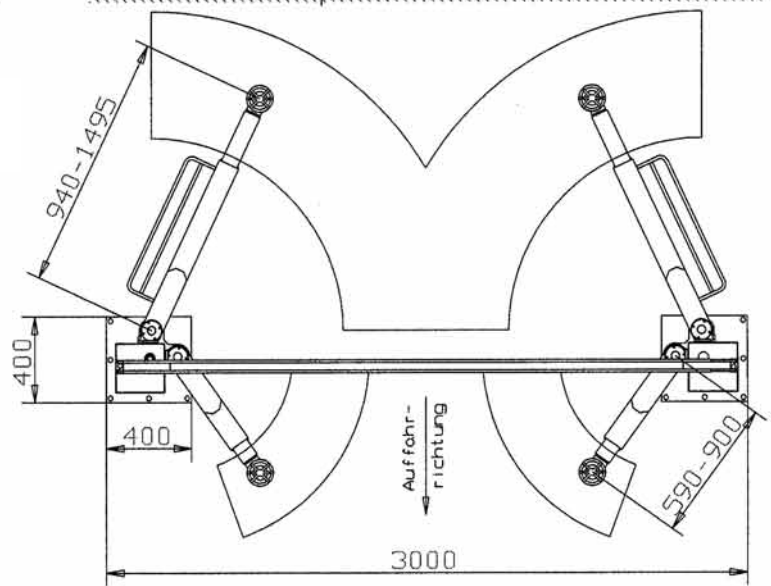




Concrete quality: C20/25
Concrete thickness: min 200mm

Technische Daten:

- Tragfähigkeit : 3 000 kg
- Hubzeit : ca. 40 sec
- Senkzeit : ca. 40 sec
- Nutzhub : 1 870 mm
- Motorleistung : 2 x 1.5 kW



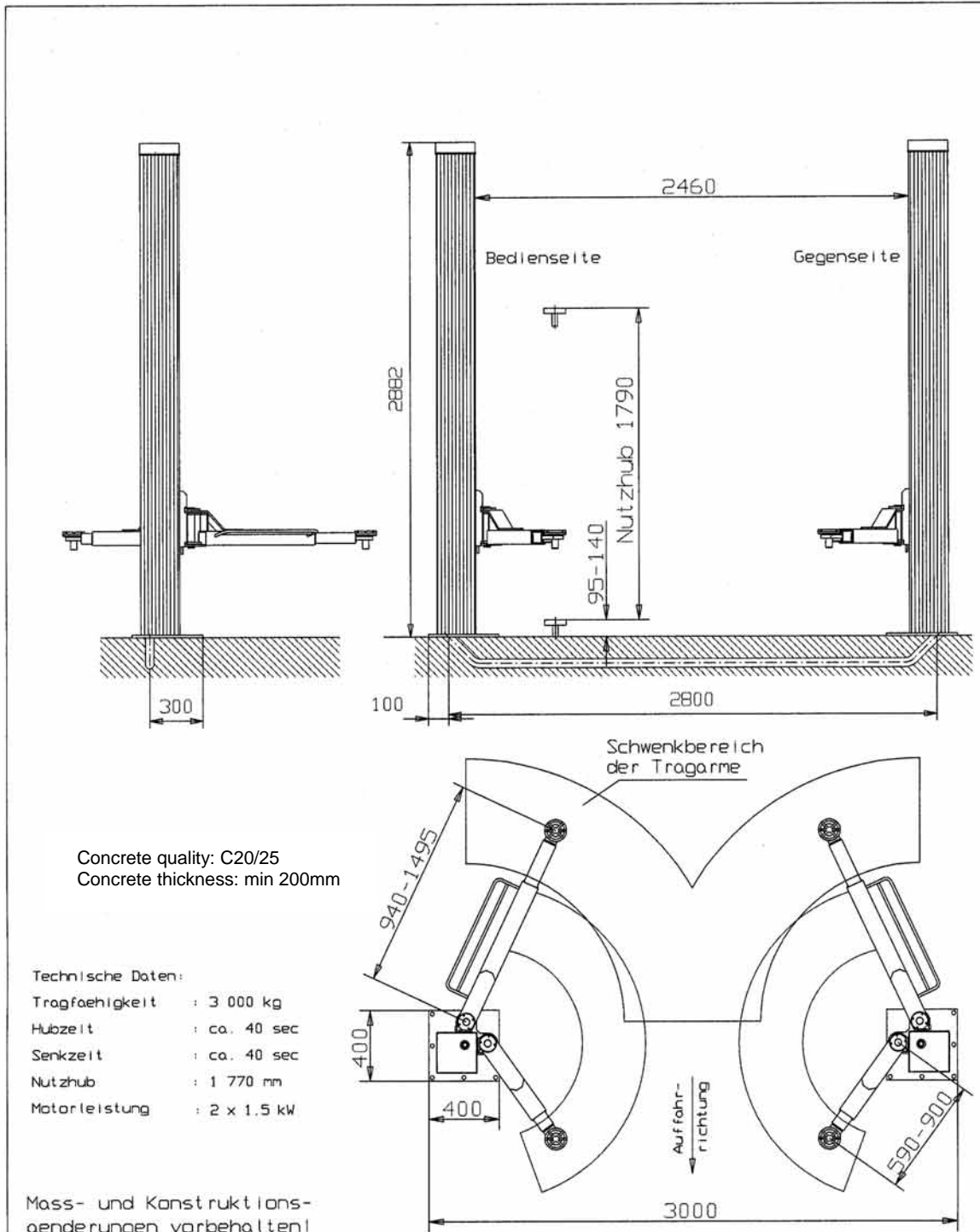
Mass- und Konstruktions-
änderungen vorbehalten!

Smart-Lift 2.30 SL

mit kurzer Säule ab März 2002 Masstab 1:30

08.09.1999 / VEID

EINBAU1378-2



Smart-Lift 2.30 SL

ohne Kabelbrücke Masstab 1:30

22.10.04 // M.G.

EINBAU1509-1

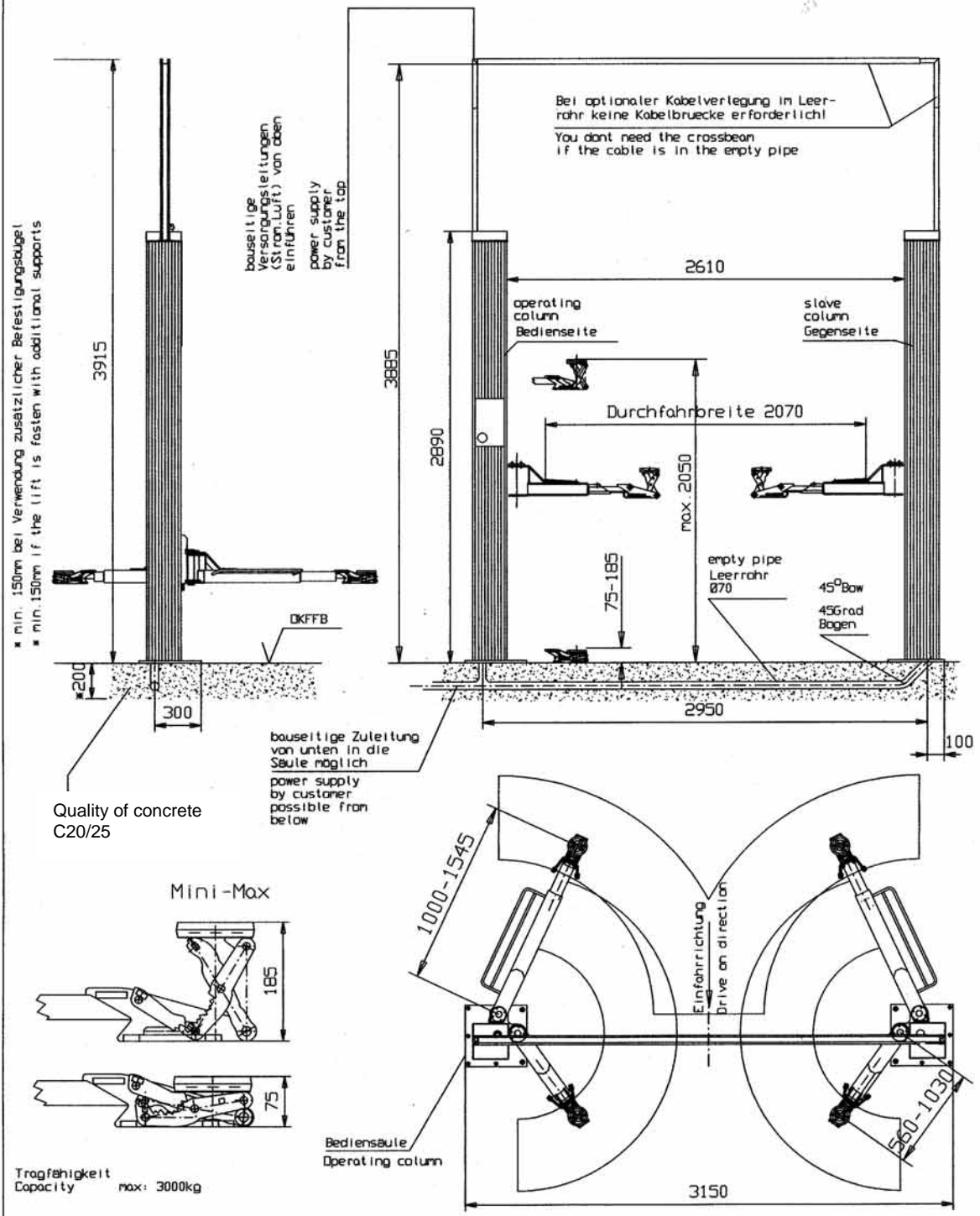
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77694 KEHL-BODERSWEIER



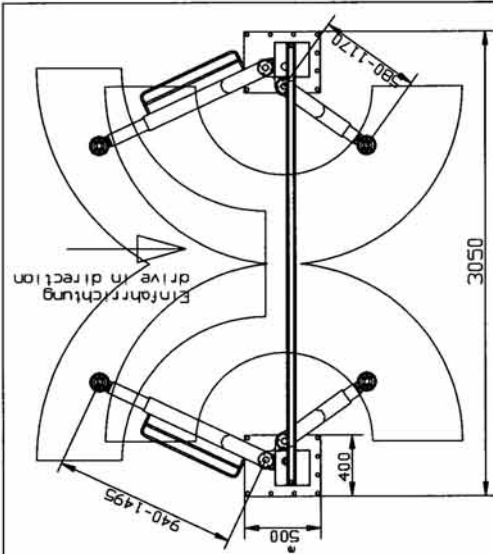
subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten!

2.30 SL Mini-Max

08.11.04 // M.G.

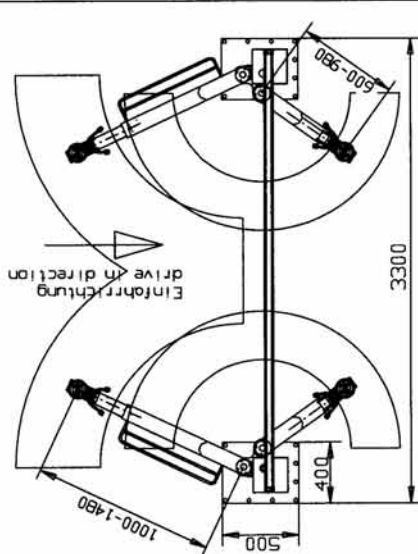
6190-1 EINBAU

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 77694 KEHL-BODERSWEIER



Technische Daten:
 Tragfähigkeit : 3 200 kg
 Hubzeit : ca. 40 sec
 Senkzeit : ca. 40 sec
 Nutzhub : 1 870 mm

2.32 SL T



Technische Daten:
 Tragfähigkeit : 3 200 kg
 Hubzeit : ca. 40 sec
 Senkzeit : ca. 40 sec
 Nutzhub : 1 870 mm

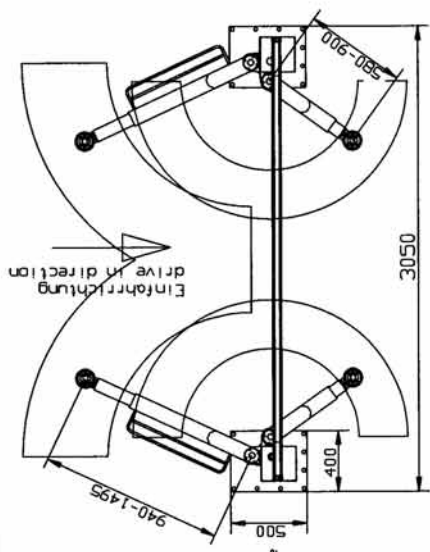
2.32 SL Mini-Max

Traggerne gültig ab:
05.10.2005

(nicht nebstst.lich)

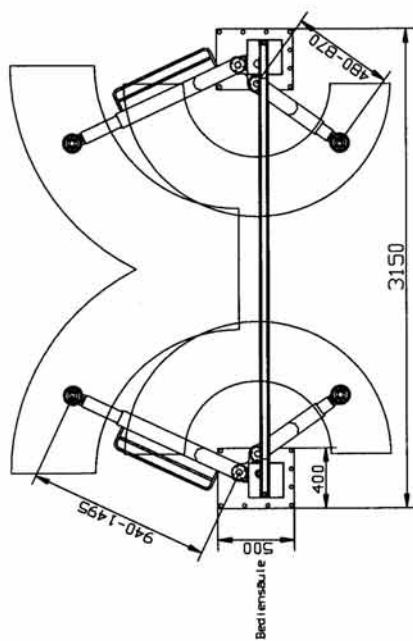


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 WWW.NUSSBAUM-11.F15.DE
 77694 KEHL-BODERSWEILER



Technische Daten:
 Tragfähigkeit : 3 200 kg
 Hubzeit : ca. 40 sec
 Senkzeit : ca. 40 sec
 Nutzhub : 1 870 mm

2.32 SL

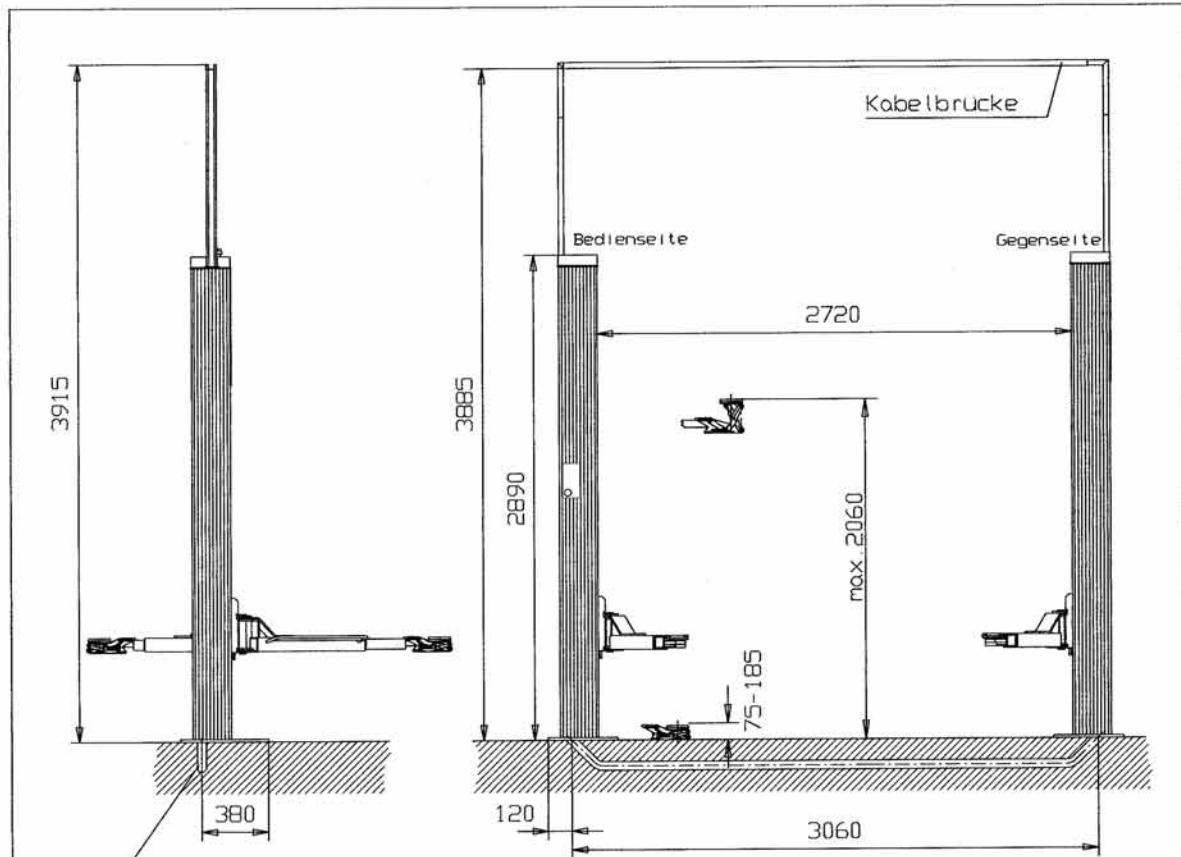


2.32 SL MB

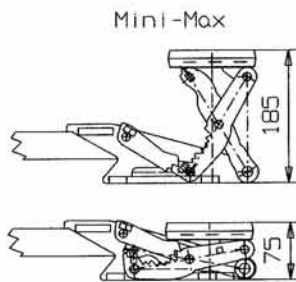
Alle Maße in mm.
 Mass- und Konstruktionsänderungen vorbehalten.
 Der genaue Lieferumfang ist der Preisliste zu entnehmen.

2.32 SL
 verschiedene Traggerne

16.08.2000 / Veld Einbau 1895-1

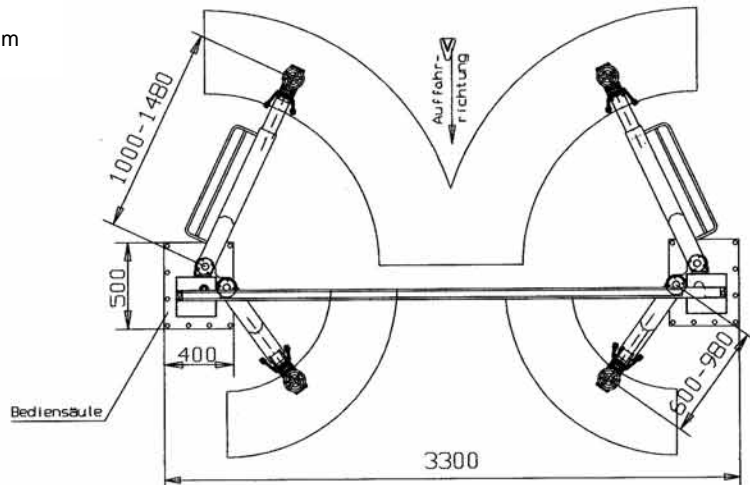


Concrete quality: C20/25
Concrete thickness: min 200mm



Technische Daten:

Tragfähigkeit : 3 200 kg
Hubzeit : ca. 40 sec
Senkzeit : ca. 40 sec



Mass- und Konstruktionsänderungen vorbehalten!

2.32 SL
mit Mini-Max Tragarme

05.10.05//M.G.

6045-B.EINBAU

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77694 KEHL-BODERSWEIER

3.3.4 Data sheet 2.35 SL

Bei optionaler Kabelverlegung im Leerröhrl ist keine Kabelbrücke erforderlich

Bei optionaler Kabelverlegung in Leerröhrl ist keine Kabelbrücke erforderlich

Bei optionaler Kabelverlegung in Leerröhrl ist keine Kabelbrücke erforderlich

45° Bogen
Leerröhrl mit Zugdrähten ausstatten.

3915
480
3885
2890
2770
max. 2060
115-190
3110
120
3350
1130-1940
600
400
570-1160
Bedienelement

Tragarme Satz
240SPL08000

Quality of concrete: C20/25
Concrete thickness: min. 200mm

Technische Daten:

- Tragfähigkeit : 3 500 kg
- Hubzeit : ca. 40 sec
- Senkzeit : ca. 40 sec
- Hubhöhe : 2 060 mm

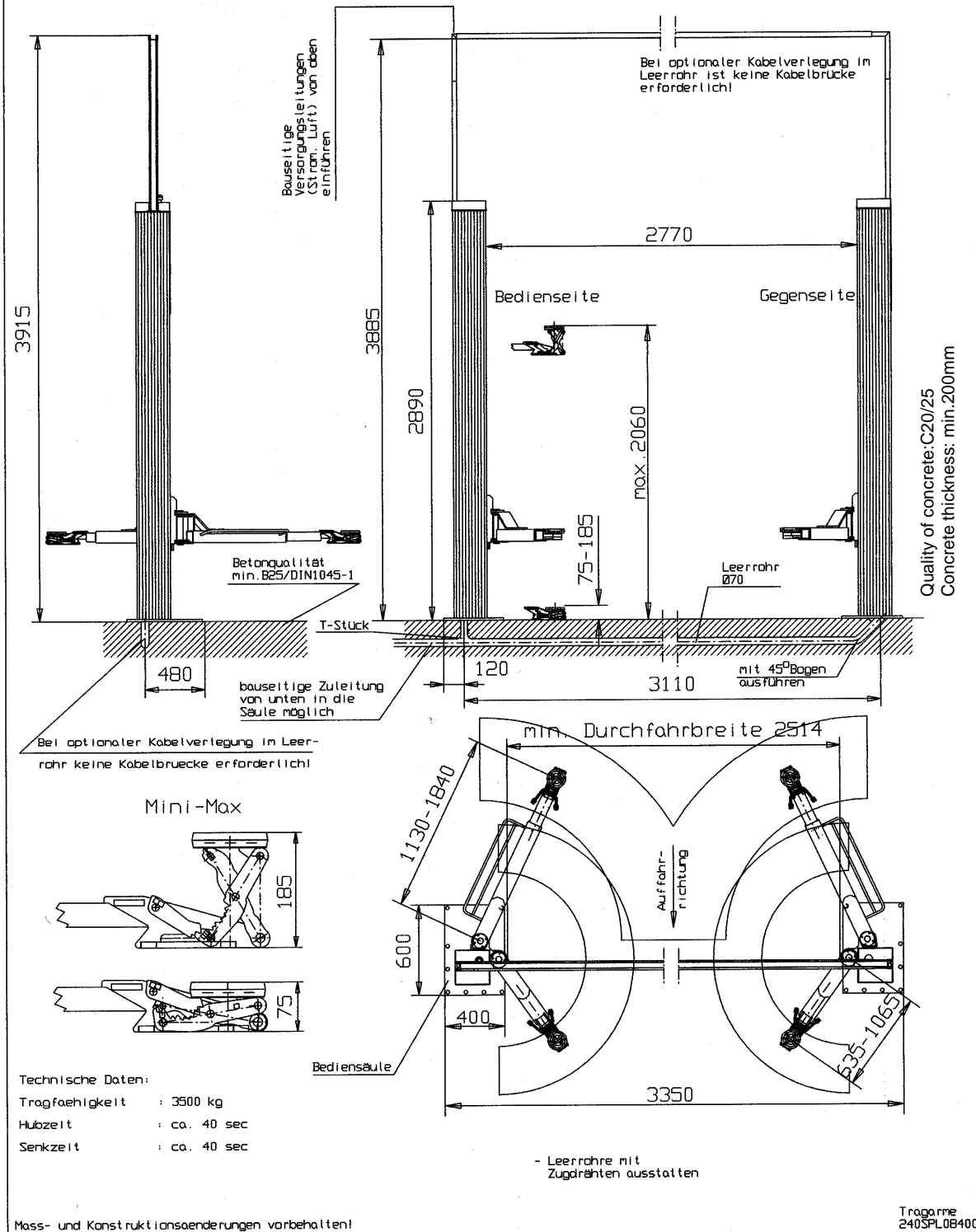
Alle Masse in mm.
Mass- und Konstruktionsänderungen vorbehalten.
Der genaue Lieferumfang ist der Preisliste zu entnehmen.

Datenblatt SMART LIFT 2.35 SL U

Masstab 1:50

30.03.04 // M.G. 2079-3 EINBAU

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2.35SLU Mini-MAX

17.11.03 // M.G.

6046-4 EINBAU

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3.3.5 Data sheet 2.40 SL

4005 (Standardmass)
Stützrohr
Stützrohr
480
min. 200

Bauseitige
Energieversorgung
(Strom, Luft) von oben
oder durch ein Leerröhre
führen. (Strom, Luft) von oben
führen.
den 70mm zur Bedienseule
führen.

Bedienseule
2770
Durchfahrbreite 2514
max. 2060
115-190
DKTEB
Bei post. lateraler Kabelverlegung in Leerröhre keine Kabelnische erforderlich

3970
2890
120
3110

Kabelbrücke

3750
1600
200
200
570-1180
3350
400
Bedien-
element

Zuleitung
unterflur
möglich
Leerröhre
Ø 70mm
1330-1840

Fundamentplatte
Betonqualität
min. B25 / DIN 1045-1

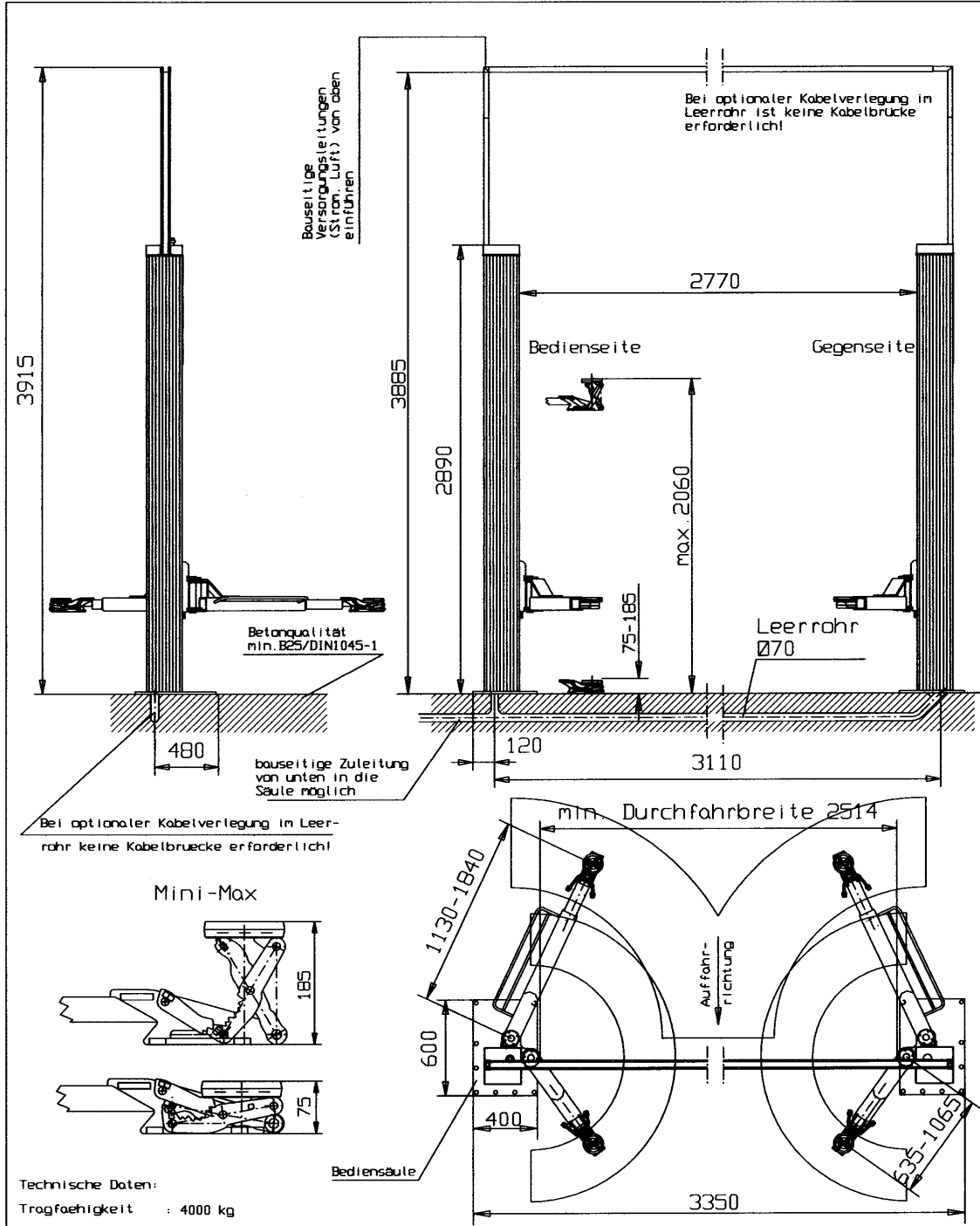
Wir weisen in unseren Plänen
auf die Mindestanforderung des
Fundamentes hin. Jedoch der
Zustand der örtlichen Gegebenheiten
(z.B. Untergrund, Deckenstatik etc.)
abliegt nicht in unserer Verantwortung.
Im Bedarfsfall ist ein Architekt, Statiker
zu kontaktieren.

Quality of concrete: C20/25
Concrete thickness: min. 200mm

2.40 SL
Tragfähigkeit: max. 4000 kg
19.09.03 // M.G. 6152 EINBAU

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www.nussbaum-lifts.de

Alle Masse in mm.
Mass- und Konstruktionsänderungen vorbehalten.
Der genaue Lieferumfang ist der Preisliste zu entnehmen.



Technische Daten:
 Tragfähigkeit : 4000 kg
 Hubzeit : ca. 40 sec
 Senkzeit : ca. 40 sec

Quality of concrete: C20/25
 Concrete thickness: min. 200mm

Mass- und Konstruktionsänderungen vorbehalten!

2.40 SL Mini-Max		 TEL 07853/899-0 FAX 07853/8787 FERTIGUNGSTECHNIK UND MASCHINENBAU 77694 KEHL-BODERSWEIER www.nussbaum-lifts.de
02.05.05 // M.G.	6188 EINBAU	

3.3.6 Data sheets 2.50 SL II

Standard Version:
Bauseits an der Bediensäule bereitstellen:
Prepared by customer at the operating column:
Netzanschluss/power supply: 3PH, N+PE/400V, 50HZ
Absicherung/Fuse: 16 Ampere Tröge/line log

consider the regulation of your country

subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten! all measure in millimeter

250SL00041	Masse ohne Teilerzeugnisse	Masstab: Werkstoff / Holzmaß	Gewicht: kg
		β	e n n u n g
	Datum	15.04.11	H.G.
	Bearb.		
	Gepr.		
	Norm		
	Nussbaum		Blatt
Nr. Änderung	Datum	Urspr.	Ersatz durch:
			von

bei optionaler Kabelverlegung im Leerrohr ist keine Kabelbrücke erforderlich.
during optional transfer cable in the empty pipe a cross beam is not necessary.

Kabelbrücke crossbeam

Steigrohr höhenverstellbar adjustable guide pipe

* je nach Ausführung depending on the version

bauseitige Versorgungsleitungen (Strom, Luft) von oben in die Bediensäule einführen from the top into the operating column

Bediensäule operating column

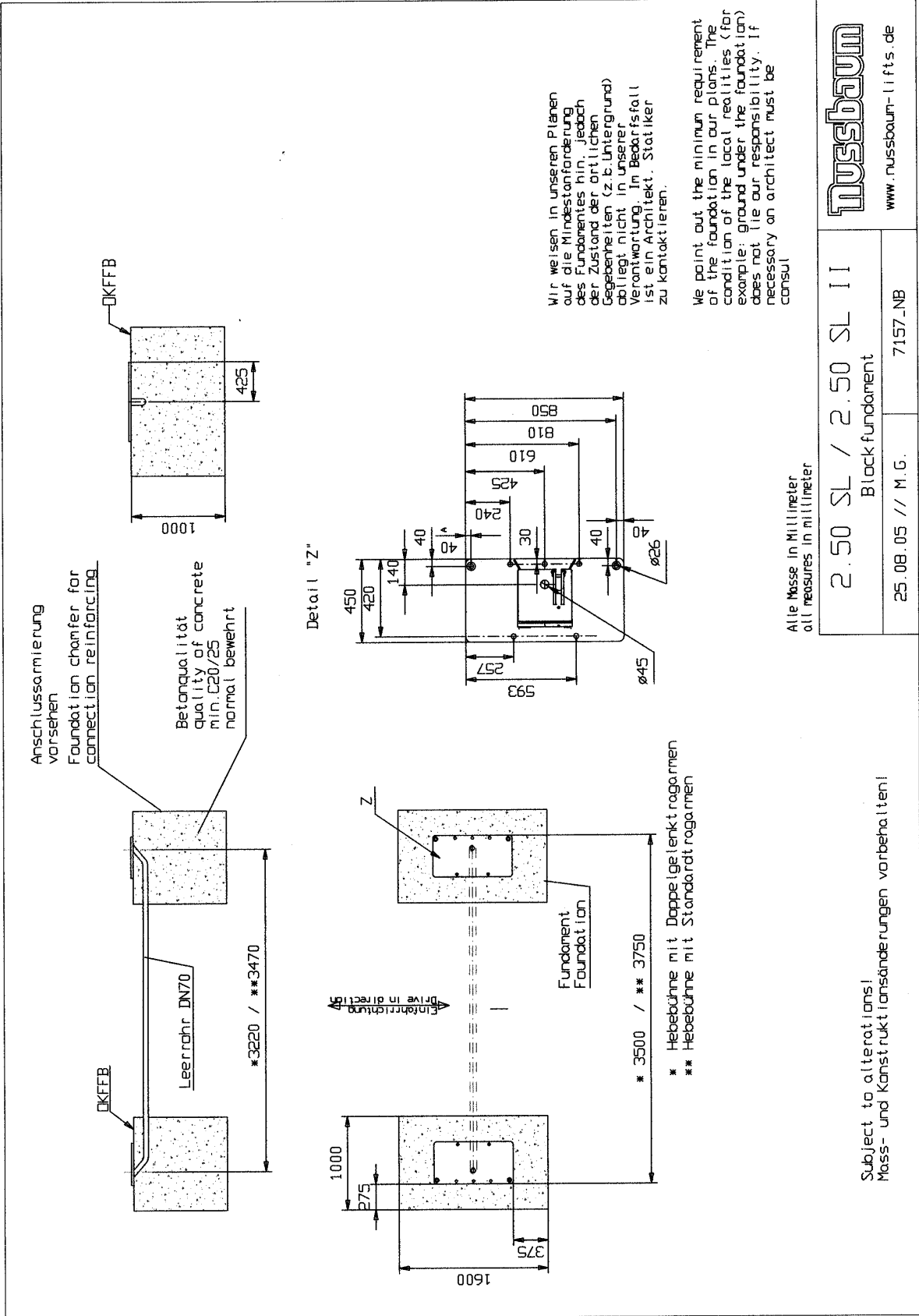
Betonqualität quality of concrete min. C20/25 normal bewehrt normal armoured

Fundament anschrängen für Anschlussarmierung foundation anchor for connection reinforcing

max. statische Kräfte je Säule
Fz = 32000N 000 Nmm
Mx = 31 000 000 Nmm
My = 26 175 000 Nmm
Dynamischer Faktor c = 1.15

Wir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin, jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund) obliegt nicht in unserer Verantwortung. Im Bedarfsfall ist ein Architekt, Statiker zu kontaktieren.

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



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2.50 SL / 2.50 SL II

Blockfundament

25.08.05 // M.G.

7157_NB

Subject to alterations!
 Mass- und Konstruktionsänderungen vorbehalten!

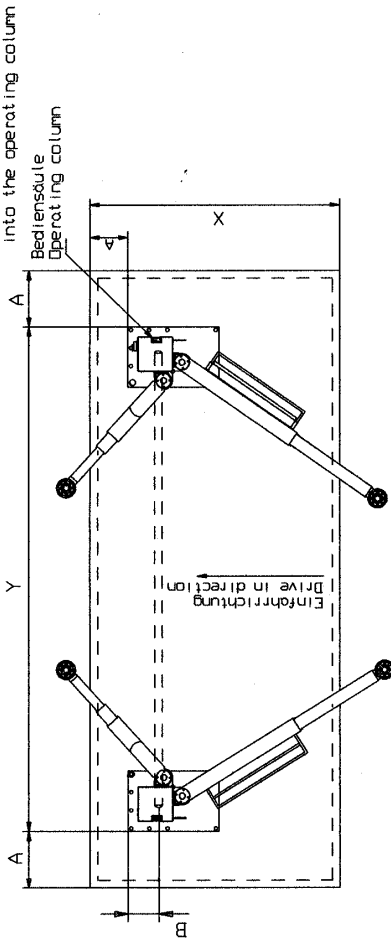
3.4 Foundation diagram drawing (SL-series)

Fundamentplan (Version ohne Traverse und Steigrohr)
Foundation plan (Version without traverse and ascending pipe)

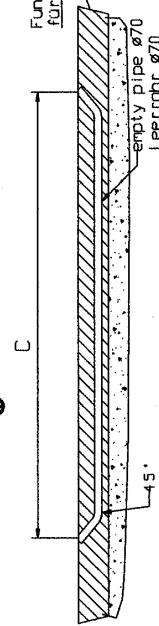
	X	Y	A	B	C	E
2.26 SL	1600	3150	200	100	2950	200
2.30 SL	1600	3000	200	100	2800	200 #
2.30 SL MB/BMW	1600	3100	200	100	2900	200 #
2.30 SL n.n.	1600	3150	200	100	2950	200 #
2.32 SL / SL-T	1600	3050	200	120	2810	200 #
2.32 SL MB	1600	3150	200	120	2910	200 #
2.32 SL n.n.#	1600	3250	200	120	3010	200 #
2.35SL/SL n.n.	1600	3350	200	120	3110	200
2.40SL/SL n.n.	1600	3350	200	120	3110	200
2.50 SL/SL II	1350	3750	250	425	3470	250
2.50 SL BE II	1350	3500	250	425	3220	250

(n.n.) = Mini-Max

Das Netzkabel wird von oben in die Bediensäule eingeführt. The power supply cable inserted from the above into the operating column

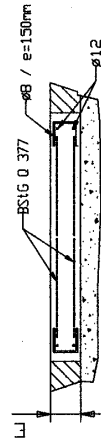


Fundament anschneiden für Anschlussartierung



Mir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin, jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund etc.) obliegt nicht unserer Verantwortung. Die Ausbildung der Einbausituation muss von planenden Architekten bzw. Statiker im speziellen Fall individuell spezifiziert werden.

min. 150mm bei Verwendung mit Grundrohrmenügel
at least 150mm for version with base frame bow



Bewehrung in beiden Richtungen an Ober- und Unterseite der Palette
min. 3.5cm 2/n (z.B. Bauschalengebe Ø 377)
umlaufend Ø8/e=150mm

In den Ecken laeags jeweils Ø12

Betonqualität min. C20/25

Die Gruendung des Fundaments hat auf frostfreien Boden zu erfolgen

reinforcement in both directions at the upper and lower side of the plate
min. 3.5cm/2/n (for example structural steel Ø377)

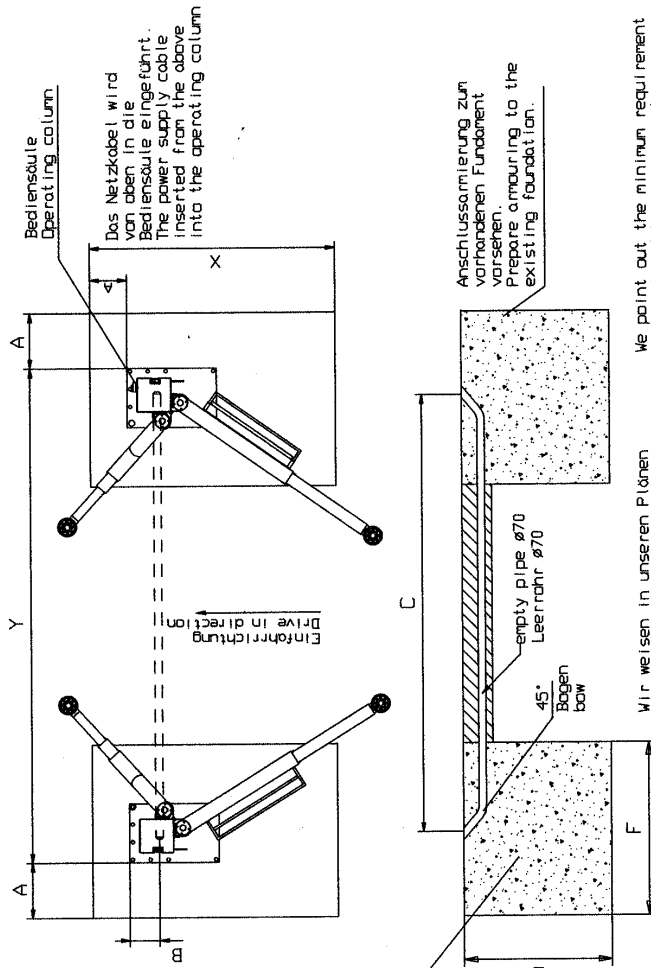
at the edges 12 diameter

concrete quality min. C20/25

foundation base: frost-protected floor!

Masse ohne Toleranzen		Massestab:		Gewicht:	
Name		Werkstoff / Halbezug		kg	
Berbl. dt. ab 05	10.11.08	SL-Baureihe	Fundamentplan	6348	EINBAU
Gepr.		Zeichnungsnummer Blatt			
Norm		6348			
Nussbaum		Ersatz fuer:			
Nr.	Herstellung	Datum	Name Urspr.	Ersatz durch:	

Fundamentplan (Version ohne Traverse und Steigrohr)
Foundation plan (Version without traverse and ascending pipe)



Gültig ab: 28.10.09
valid since:

Bauseits an der Bediensäule bereitstellen:
Stromanschluss: 3PH, N+PE, 400V, 50Hz
Absicherung: 16 Ampere träge
Druckluft für optionales Energieset:
lichte Weite 6mm, 6-10 bar

Prepare by customer at the operating column:
power supply: 3PH, N+PE, 400V, 50Hz
fuse: 16 Ampere time lag
air pressure for the optional energy set:
inner diameter 6mm, 6-10 bar

Betonqualität
quality of concrete
min. C20/25
normal bewehrt
normal armoured

Die Gründung des Fundamentes hat
auf frostfreiem Boden zu erfolgen
foundation base: frost-protected floor!

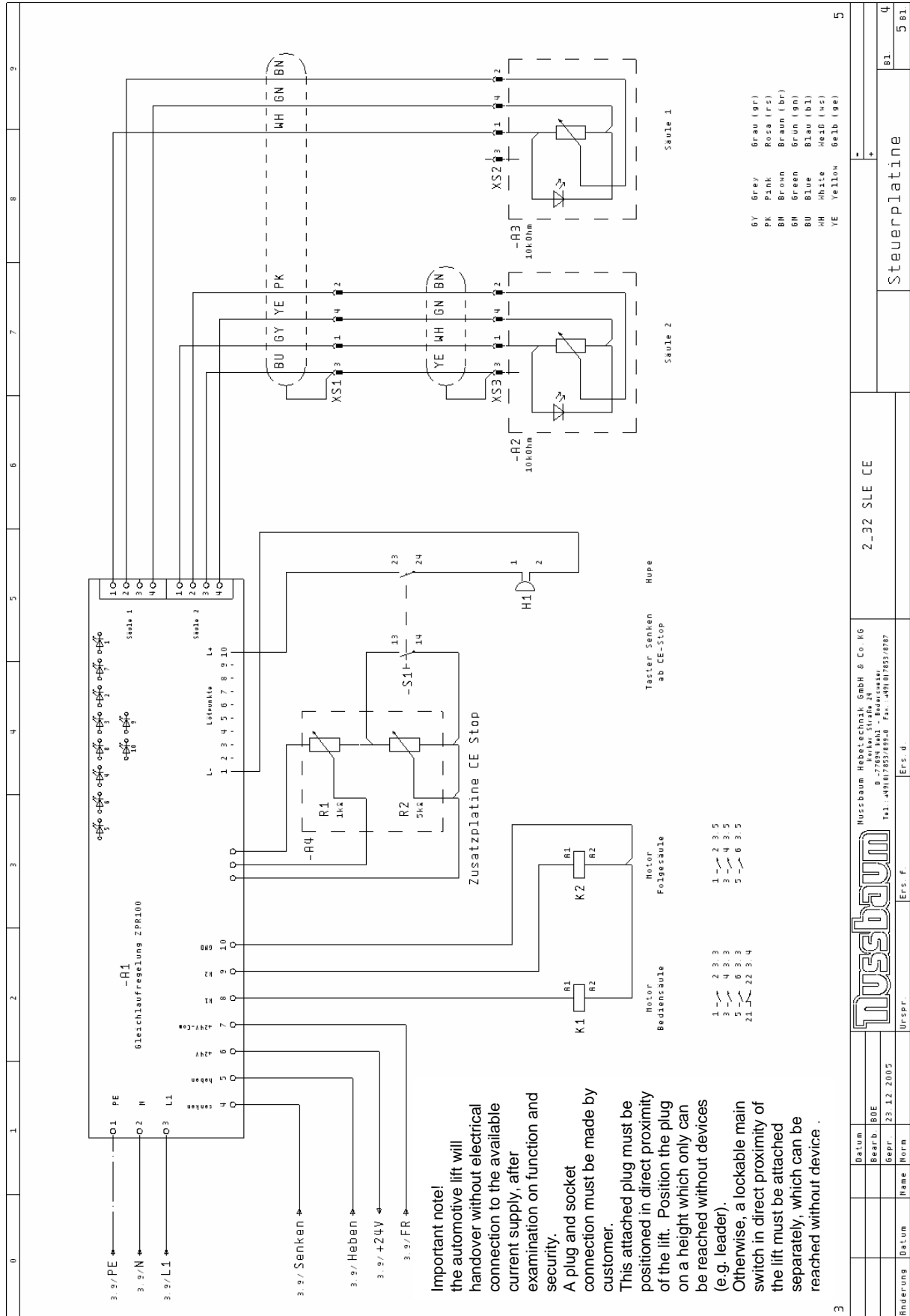
* (n. m. = Mini-Max)

Typ	X	Y	A	B	C	E	F
2.26SL	1350	3150	200	100	2950	800	1000
2.30SL	1350	3000	200	100	2800	800	1000
2.30SL MB/BMW	1350	3100	200	100	2900	800	1000
2.30SL/SL m. m.	1350	3150	200	100	2950	800	1000
2.32 SL / SL-I	1400	3050	200	120	2810	800	1000
2.32 SL MB	1400	3150	200	120	2910	800	1000
2.32 SL m. m.*	1400	3300	200	120	3060	800	1000
2.36SL/SL m. m.	1400	3350	300	120	3110	1000	1000
2.40SL/SL m. m.	1400	3350	300	120	3110	1000	1000
2.50SL / SL.II	1600	3750	250	425	3470	1000	1000
2.50SL.D6/ D6.II	1600	3500	250	425	3220	1000	1000

Wir weisen in unseren Plänen auf die Mindestanforderung des Fundamentes hin. Jedoch der Zustand der örtlichen Gegebenheiten (z.B. Untergrund etc.) obliegt nicht unserer Verantwortung. Die Ausbildung der Einbausituation muss vom planenden Architekten bzw. Statiker im speziellen Fall individuell spezifiziert werden.

We point out the minimum requirement of the foundation in our plans. The condition of the local realities (for example: ground under the foundation) does not lie our responsibility. The execution of the installation situation must be individually specific by the planning architect or by the engineer engaged in static calculations in the special case.

Massstab: Verstoff / Halbzug		Gewicht: kg	
None	None		
Datum	None		
Bearb. dt. 08.05	P.F.G.		
Gepr.	None		
Norm	None		
Nussbaum			
Blockfundamentplan			
SL-Baureihe			
Zeichnungsnummer Blatt			
6698.EINBAU			
v. von			
Ersatz Nr.:			



Nussbaum Hebe-technik GmbH & Co. KG
D-77894 Badst. Straße 21
Toll. +49(0)7922/9222 Fax. +49(0)7922/9797

Daum	80E	23.12.2005	5 B1
Gepr.	Norm	Steuerplatine	5 B1
Ursprf.	Ers. f.		

4. Safety regulations

If you use the automotive lift, the German following regulations are to be considered:
BGG945: Examine of automotive-lifts; BGR500 Using automotive-lifts; (VBG14).

Especially the following regulations are very important:

- The maximum laden weight of the lifted vehicle must not exceed. See the detail of type plate at the operating column. It is forbidden to raise the load only with one carrying arm.
- Observe always the detailed operating instruction and the valid legal guidelines.
- The automotive lift must be in its lowest position (fully collapsed), before the vehicle can be driving into the lift.
- Vehicles with low clearance or vehicles that are specially equipped should be pre tested to ensure that they clear the lift ramp to avoid damage.
- Only trained personnel over the age of 18 years old are to operate this lift.
- Position the rubber pads at the pick-up points under the vehicle as described of the vehicle manufacturer.
- After every lowering of the vehicle in the lowest position, examine the safe position of the lifting arms under the vehicle. If necessary adjust it again.
- If heavy parts must be removed (motor) the centre of gravity of the vehicle will be changed. Secure the vehicle against falling with suitable equipment, before removing parts.
- It's not allowed to stay under the lift during the lifting and lowering procedure.
- 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.
- Switch on and switch off the main switch, so that the lifting and lowering movement is steady and not abrupt.
- It is only allowed, to pick up the vehicle at the approved pick-up points.
- Observe the complete lifting and lowering procedure
- It's not allowed to install the standard-automotive lift in hazardous location and washing halls.
- The automotive-lift must be checked from an expert after changes in construction or after repairing carrying pads.

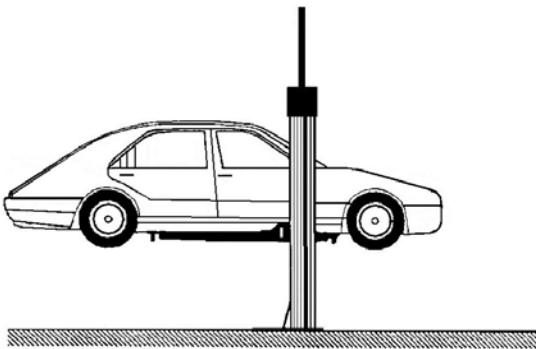
5. Operating instructions



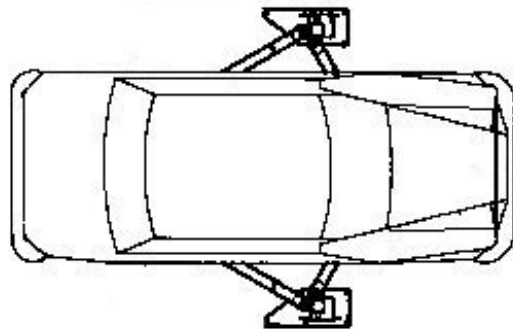
The Safety Regulations must be observed during working with the automotive lift. Read the safety regulations in chapter 4 carefully before working with the lift!

5.1 Positioning the vehicle

- Position the vehicle as described at the picture (Pic. A and Pic. B). (necessary only with asymmetrical lifting arms)



Pic. A) Position the column between the steering wheel and the car-door.



Pic. B) Drive the vehicle into the centre of lifting platform.

- Position the adjustable rubber pads under the vehicle which are described by the vehicle manufacturer. (see pic.1)



Version with Mini-Max lifting arms

*pic 1: Version with Mini-Max lifting arms
Position the pads under the described points of the vehicle.*



Pic 2: Press the lever to position the pads under the pick-up points.

! ! **Examine the position of the teeth. They must engages reliably in the intended position. Otherwise the "mini-max" can fall down into the lowest position.**



Pic 3: Press the rear lever to unlock the pads.

- Examine the locking device of the arms. They must be locked before raising the vehicle with the lift.
- After every lowering of the vehicle in the lowest position, examine the safe position of the lifting arms under the vehicle. If necessary adjust it again.
- 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.

5.2 Lifting the vehicle

- Lift the vehicle free. Check the position of the pads under the vehicle. Activate the operating element => „Lifting“ (see pic. 4)
- If the wheels are free, stop the lifting procedure and check the sit of the pads again.
- Lift the vehicle on the working height.
- Observe the lifting procedure.



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



The automotive-lift can regulate several times depending upon distribution of the load.



Check the fixing device of the arms. The device must lock.

pic 4: operating element
(2.30 SL until 2.40 SL)



operating element 2.50 SL II



Optional
CE-Stop button

By Customer:

Install an separate lockable main switch in a approachable height, if the electrical connection between the automotive-lift and the electrical power-supply of the lift is on a height of minimum 1,90 meter and it is only approachable with devices.



If the top limit switch or the bottom limit switch was activated, two red LED are shining. It is forbidden, to raise and to lower the lift several times alternating, if the red LED are shining. Otherwise a damage can occur.

5.3 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.

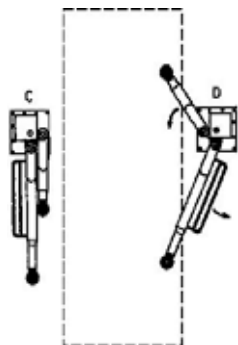
5.4 Lowering the vehicle

- 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.
- Lower the lift at the height for working or until the carrying arms reach the lowest position.; Activate the operating element => „Lowering“



The automotive-lift can regulate several times depending upon distribution of the load.

- If the lift is in the lowest position turn the carrying arms to the outside (D), stop position (C). (pic 5, valid for 2.30 SL until 2.40 SL)



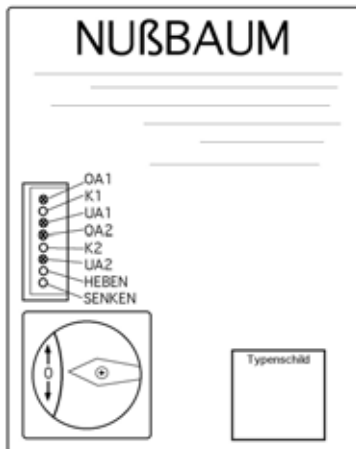
C
Starting point of the lifting arms

D
If the lift is in the lowest position turn the carrying arms to the stop position (starting point)

- Drive the vehicle out of the lift.

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:



pic 6: **Operating unit at the column**

If following LED s are lighten, means this:

OA1	- LED red	- top limit switch is active (master side)
K1	- LED green	- Motor contactor is active (master side)
UA1	- LED red	- below limit switch is active (master side)
OA2	- LED red	- top limit switch is active (slave side)
K2	- LED green	- Motor contactor is active (slave side)
UA2	- LED red	- below limit switch is active (slave side)
Heben	- LED green	- the lift is raising
Senken	- LED green	- the lift is lowering

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

	Lowerly end position of the lifting carriage		arbitrary position between the end positions		upper end position of the lifting carriage	
	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-side not plugged in (P1 NOK)	slave-side not plugged in (P2 NOK)
possible fault						
turn the reversing switch on "lifting"	!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 OA2 lighten "lifting" glow "lowering" glow	!hold! OA1 lighten permanent UA2 lighten permanent "lifting" glow "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! "lifting" glow "lowering" glow UA1 lighten.	!hold! "lifting" glow "lowering" glow UA2 lighten.	!hold! UA1 lighten OA2 lighten "lifting" glow "lowering" glow	!hold! OA1 lighten permanent UA2 lighten permanent "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

!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 line is interrupt

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.
Repairs at electrical system may be accomplished only by expert persons.**

Problem: The lift does not lifting and not lowering!	
possible causes:	remedying:
<i>No electrical power supply</i>	<i>Examine the power supply</i>
<i>The main switch is not switched on</i>	<i>Examine the main switch</i>
<i>The reversing switch is defective</i>	<i>Examine the reversing switch</i>
<i>The fuse is faulty</i>	<i>Examine the fuse, replace it if necessary</i>
<i>The feed line is cut</i>	<i>Examine the feed line</i>
<i>The motor is overheated</i>	<i>Let it cool down</i>
<i>The plug connection between the motors are loose</i>	<i>Examine the plugs</i>
<i>The lift is not in the regulation range</i>	<i>Equalize manually (see chapter 6.4)</i>
<i>V-Belt is torn or defective</i>	<i>Shut down the lift. Replace the V-belt and adjust it again (see chapter 7.3)</i>
<i>Motor defective</i>	<i>Make an emergency lowering (see chapter 6.1)</i>
<i>The automotive-lift is in the lowest position. The safety device (catch hook) is active and the lift is no longer in the regular range</i>	<i>Lifting nut is defective. Call your service partner.</i>

Problem: The lift does not lifting!	
possible causes:	remedying:
<i>Only 2 phases active</i>	<i>Examine by an electrician</i>
<i>V-Belt is torn or slack</i>	<i>Shut down the lift. Replace the V-belt and adjust it again (see chapter 7.3)</i>
<i>The automotive-lift is in the lowest position. The safety device (catch hook) is active and the lift is no longer in the regular range</i>	<i>Lifting nut is defective. Call your service partner.</i>
<i>Top limit switch is active</i>	<i>Only lowering procedure is possible</i>

Problem: The lift does not lowering!	
<u>possible causes:</u>	<u>remedying:</u>
<i>The bottom limit switch is active</i>	<i>Only lifting procedure is possible</i>
<i>The lifting arms is driven on a obstacle and the lift is not anymore in the regular range. The lift is turned off.</i>	<i>Equalise the lift manually</i>

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. 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 anymore. Let it 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. Then call your 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 again. The lifting carriage of the broken side gets mechanically locked with a catch hook. During the lifting procedure the other side is driving out of the regulation range and turned off the lift. You can not anymore work with the lift. Call the service-partner.



If the safety device is active, Shut down the lift and phone your 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. 64 mm, the electrical control recognises this and turned 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. Equalize the lift: turn one nut (at the top of the spindle) until both lifting carriage are on 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.



An examination of the set-up must be carry out when assembling the lift

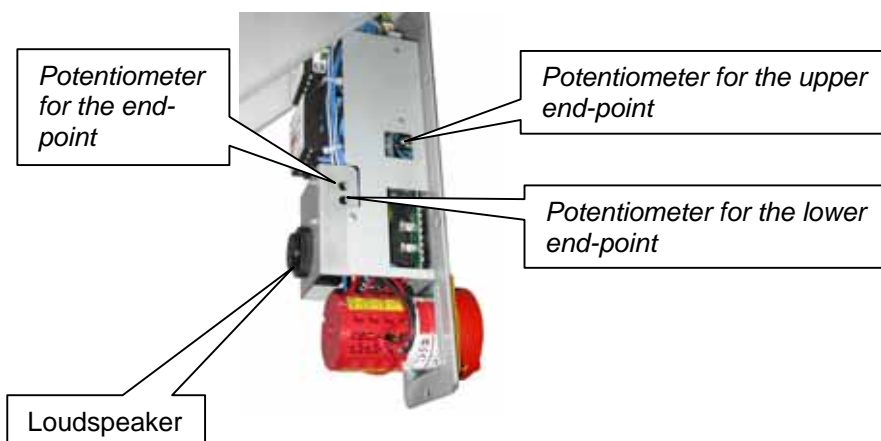
- Pull the main plug before the maintenance or repair.



*Pic. 7: Version without Ce-Stop
The Illustration can vary, depending the lift type*

*Pos. 3 Potentiometer for the upper end-point
Pos. 4 Potentiometer for the lower end-point*

pic 8: Version with CE-Stop





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.
- 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 raise or lower to the end position. The lift can lock or jamming! Adjust 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.

7. Inspection and Maintenance



Before conducting maintenance work, preparations must be made to ensure that during maintenance and repair work there is no risk to the safety of people working on or around the lift and also that there is no risk of damage to equipment being used on or around the lift.

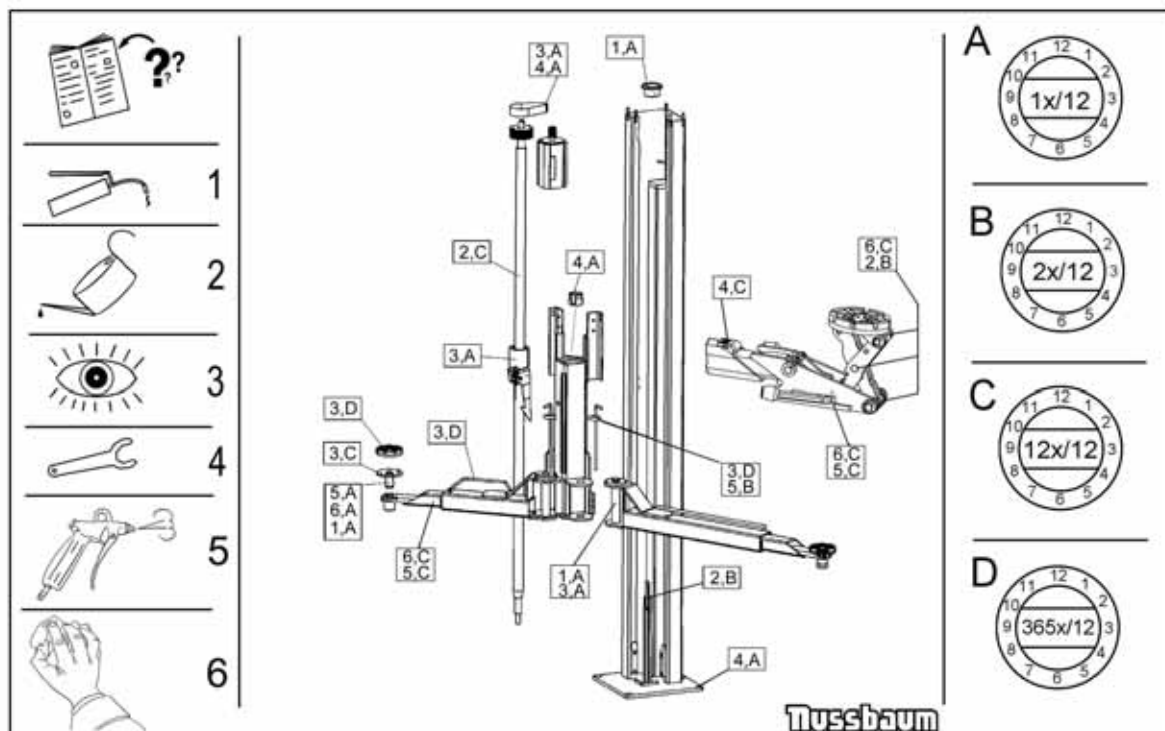
To guarantee the utmost availability and to ensure that the lift remains functional, maintenance work contracts are organised between our clients and their local retailers.

A service must be performed at regular intervals of 3 months through the operator in accordance with following service manual. If the lift is in continuous operation or in a dirty environment, the maintenance rate must be increased.

During daily operation the lift must be closely observed to ensure that it is functioning correctly. In the case of malfunction or leakage the technical service must be informed.



German legal guidelines : BSV (Prescription of working tools) + BGR500 (Work with working tools)



Lubrication and maintenance plan:

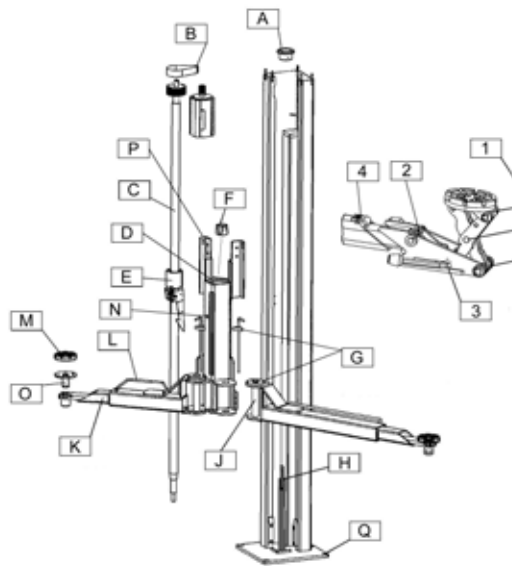
For an example: 1B = grease every six month with a multipurpose grease
5C = clean every month with air pressure

7.1 Maintenance schedule of the automotive lift




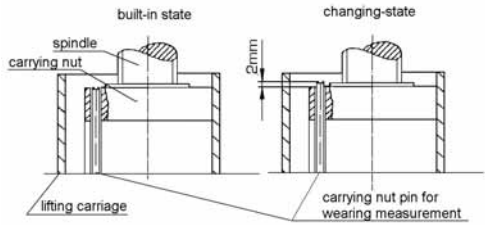




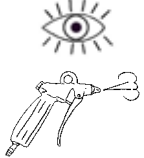




Before beginning any maintenance work isolate the power supply. Secure the main switch (lock it). Secure the danger area around the automotive lift and secure the lift against unintentional lowering




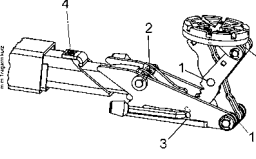




Visual inspection	spray	oil	lubricate	Clean with air pressure	clean	examine







Pos.	Maintenance type	Maintenance plan	Period
		Check the condition of the type plate, sticker, short operating instruction. Clean it and if necessary replace it.	Daily
A		Grease the lubricate nipples with a multipurpose lipid. (example: Auto Top 2000 LTD. Agip). Before remove the spindle cover (g). Eine Überfettung ist zu vermeiden.	min. once in a year
B	 	Check condition the Poly-V belt. and if necessary replace it. Observe the chapter of the V-Belt installation.	min. once in a year

<p>C</p>		<p>Check the spindle for wear.</p>	<p>min. once in a year</p>
<p>D</p>		<p>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 (c) and the covering (g) will greased with an oil can. The regular complete lubrication in the mentioned distances secures the absolutely easy operation for the lift.</p> <p><i>Do not use adhesive Oil. A formation of resin is possible and a damage can occur. Normal adhesive Oil impaired the running of the lift negative. We recommended e.g. SAE 15W40.</i></p>	<p>after the installation and min. once in a year</p>
<p>E</p>		 <p>arrying nut (optical wearing device). To check the carrying nut, take off the covering of the spindle. There is a pin built in the carrying plate. This pin must be even with the top edge of the carrying plate (upper side of the lifting carriage; built-in state). If the pin looks 2 mm out of the top edge at the annually check (changing state). The carrying nut and the sequence nut must be replaced.</p>	<p>min. 1 x per year</p>

<p style="text-align: center;">F</p> 		<p>Examine the condition and the function of the spindle centering (after running delay) annually, or if necessary. Adjust it, if necessary. Is it not possible to adjust the spindle centering anymore, exchange it.</p> <p>Examine the spindle centering without a torque moment key: (4 Nm)</p> <p>Switch of the main switch. Take one hand on the spindle and rotate it easily back and forth. During this procedure, fasten the hose clamp with a suitable tool until the back and forth movements are only possible with more power. In this case put the second hand on the spindle, too. The spindle centering is correctly fastened, when the spindle can be rotated with the two hand but with more expenditure of force.</p> <p>Before starting another maintenance, carry out the same procedure at the second column.</p> <p>In case the spindle can be easily moving despite fastening the spindle centering, then it is necessary to work at the cut edge of the spindle centering. Or exchange the spindle centering if necessary.</p> <p>Note: After the repair, both lifting carriage must be on the same level. If necessary, adjust the spindle with the hand. (see chapter 6.4 in the detailed documentation).</p>	<p>min. once in a year</p>
<p style="text-align: center;">G</p>		<p>Check condition and function of the locking device and the crown gear of the lifting arms. In case of damage exchange it.</p>	<p>min. once in a year</p>
<p style="text-align: center;">H</p>		<p>Check the DU-bearing of wear. Oil it with e.g. an SAE 15W40.</p>	<p>min. once in a year</p>
<p style="text-align: center;">J,K,O</p>		<p>Check the condition and the function of the lifting arms and the threaded bolts. Grease the bolts and the threaded easily</p>	<p>min. once in a year</p>
<p style="text-align: center;">L</p>		<p>Check condition and function of the foot protection of the lifting arms. Exchange in case of damage.</p>	<p>Daily</p>
<p style="text-align: center;">M</p>		<p>Check the condition and the function rubber pads. In case of damage replace it.</p>	<p>Daily</p>

<p>N</p>		<p>Lubricate the second lifting nut through the bore hole of the lifting carriage at the lubricating nipples with a multipurpose fat. Before remove the spindle cover (g) at the column.</p> <p>A over-lubrication with grease or Molikote at the spindle, through the intensive lubrication reduce the degree of effectiveness of the lift. This must be avoided. Degrease the spindle and oil easily.</p>	<p>monthly</p>																																																																						
<p>P</p>	 	<p>Check the condition and the function of the sliding blocks of the lifting carriage and also the sliding surfaces of the columns. After cleaning lubricate it.</p>	<p>min. once in a year</p>																																																																						
	 	<p>MINI-MAX lifting arm</p> <p>Clean the Mini-Max in regularly interval with air pressure. That is a reason-prerequisite for a trouble-free function. In case of a strong contamination, a cleaning is to be enforced.</p> <p>After the cleaning, lubricate the surfaces (for example: the bolt) with a oil.</p> <ol style="list-style-type: none"> 1 Blow out the bolts with air pressure. Test the roll on wear. 2 Check the safety screws. (The screw is only easily fastened and additional fastened with adhesive => Loctite The screw cannot be put on solidly, otherwise the smooth running of the Mini-Max mechanisms is no longer guaranteed 3 Clean the surface and spray it. 4 Check the safety sheet. 	<p>monthly</p>																																																																						
<p>Q</p>		<p>Check that all screws and bolts are fasten correctly with torque (turning moments, see the list)</p> <table border="1" data-bbox="699 1406 1216 1572"> <thead> <tr> <th colspan="4">Anzugsdrehmoment (Nm) für Schraubschrauben</th> <th colspan="4">Freigabeblech 12.9</th> </tr> <tr> <th rowspan="2"></th> <th colspan="3">Festigkeitsklasse 4.6</th> <th rowspan="2"></th> <th colspan="3">Festigkeitsklasse 12.9</th> </tr> <tr> <th>0,10*</th> <th>0,15**</th> <th>0,20***</th> <th>0,10*</th> <th>0,15**</th> <th>0,20***</th> </tr> </thead> <tbody> <tr> <td>M8</td> <td>30</td> <td>25</td> <td>30</td> <td>M8</td> <td>30</td> <td>27</td> <td>44</td> </tr> <tr> <td>M10</td> <td>40</td> <td>50</td> <td>60</td> <td>M10</td> <td>58</td> <td>73</td> <td>87</td> </tr> <tr> <td>M12</td> <td>68</td> <td>87</td> <td>105</td> <td>M12</td> <td>100</td> <td>128</td> <td>151</td> </tr> <tr> <td>M16</td> <td>170</td> <td>220</td> <td>260</td> <td>M16</td> <td>250</td> <td>315</td> <td>380</td> </tr> <tr> <td>M20</td> <td>340</td> <td>430</td> <td>520</td> <td>M20</td> <td>490</td> <td>615</td> <td>740</td> </tr> <tr> <td>M24</td> <td>590</td> <td>740</td> <td>890</td> <td>M24</td> <td>840</td> <td>1050</td> <td>1250</td> </tr> </tbody> </table> <p>* Drehmoment 0,10 für sehr gute Oberflächengüte, geschmitten. ** Drehmoment 0,15 für gute Oberflächengüte, geschmitten oder maschinell. *** Drehmoment 0,20 für schlechte Oberflächengüte, geschmitten oder maschinell.</p>	Anzugsdrehmoment (Nm) für Schraubschrauben				Freigabeblech 12.9					Festigkeitsklasse 4.6				Festigkeitsklasse 12.9			0,10*	0,15**	0,20***	0,10*	0,15**	0,20***	M8	30	25	30	M8	30	27	44	M10	40	50	60	M10	58	73	87	M12	68	87	105	M12	100	128	151	M16	170	220	260	M16	250	315	380	M20	340	430	520	M20	490	615	740	M24	590	740	890	M24	840	1050	1250	<p>min. once in a year</p>
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		<p>Check all welded joints for cracks on the automotive-lift. If any cracks are found on the lift cease use immediately. Switch-off and secure the main switch (lock) and call the service partner.</p>	<p>min. once in a year</p>																																																																						

		<p>Check the varnish: Damage to external surfaces, must be immediately repaired. If these repairs are not made immediately, permanent damage to the powder-coated surface may result. Repair and clean damaged areas with an abrasive paper (grain 120). After this is complete, use a suitable paint (observe the RAL Number).</p> <p>Check the zinc surface and repair it with a suitable tool. Use abrasive paper (grain 280). White rust can result from moisture laying in certain areas for long periods of time. Poor aerating can also result in rust formation. Rust may result from mechanical damage, wear, aggressive sediments (de-icing salt, liquids) or insufficient cleaning. Repair and clean these areas with abrasive paper (grain 280). After this is complete, use a suitable paint (observe the RAL Number).</p>	min. once in a year
		<p>Check the electrical components for damage.</p> <ul style="list-style-type: none"> - plug / male plug - Reversing switch and LED lights - During the installation and the maintenance, check the condition of the electrical cables. The cables and wires must be secured, that they are not crushed or kinked, and that they no touched rotating components (e.g. V-belt pulley contact, etc.). 	<p>min. 1 x per year</p> <p>Daily</p>
		<p>Check the electrical cable of wear.</p> <p>Optional Energy set:</p> <ul style="list-style-type: none"> - electrical plug - pneumatic connection <p>Check for damage. Check the function.</p>	min. 1 x per year
		<p>At every maintenance or repair the condition of the electrical cables must be checked. Every cable and hoses must be secured against breaking, squeezing and touching the rotating parts.</p>	min. 1 x per year

7.2 How often must the lift be cleaned?

A regular and appropriate maintenance practice will aid the preservation of the lift. No guarantees can be given when damage (egg rust or fading colour) is the direct result of poor maintenance and cleaning practice. Regular cleaning of all kinds of dirt is the best protection against wear and the formation of rust and will prolong the life of the lift

- Dirty deposits that can cause rust include:
 - de-icing salt
 - sand, pebble stone, natural soil
 - all types of industrial dust
 - water; also in connection with other environmental influences
 - all types of aggressive deposits
 - constant humidity caused by insufficient ventilation

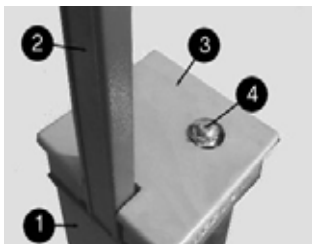
Obviously this is dependent on the type of work being done with the lift, the degree of cleanliness of the workshop and location of the lift. The degree and amount of dirt is dependent on the season, on the weather conditions and the ventilation of the workshop. During poor conditions it may be necessary to clean the lift once week, but cleaning once a month will suffice.

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

- Do not use steam jet cleaners.
- Remove all dirt carefully with a sponge or if necessary with a brush.
- Ensure that no washing-up liquid is left on the lift after cleaning.
- Do not use aggressive means for cleaning the workshop floor and the automotive lift.
- A permanent contact with any kind of liquid is not allowed. Do not use high pressure devices for cleaning the lift.

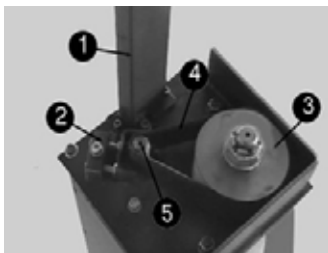
7.3 Adjust the Polylex-belt

If the V-belt was exchanged, the V-belt must be adjusted, again. Remove the cover of the V-belt.

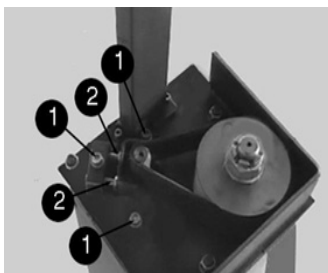


Pic. 12: cover of the belt (version with raising pipe)
 1: column
 2: raising pipe
 3: cover of the belt
 4: spindle

The new V-belt tension must be adjusted at the stretch device. (pic.13). Loose the three screws at the motor easily. (pic. 13, No.1). The belt can be loosened or tightened at the screws. (pic.14, No.2).



Pic. 13: position of the belt
 1: raising pipe (optional)
 2: stretch device
 3: V-belt pulley
 4: Polyflex-belt
 5: shaft of the motor



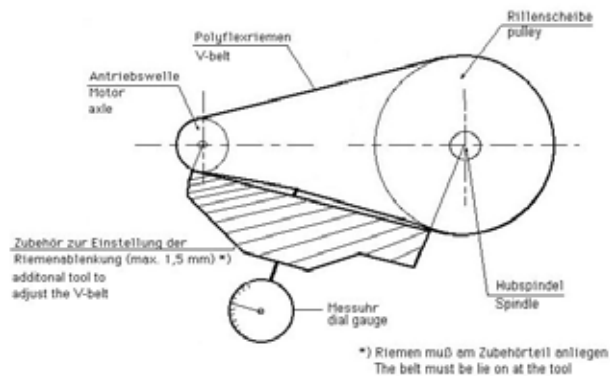
pic. 14: adjust the belt tension
 1: the three screws of the motor
 2: adjusting screws

The belt tension gets adjusted with the help of an accessory. (pic. 14; This accessory can be ordered from Nussbaum).



Pic 15: accessory

- Put the device on a solid flat surface. Push it down until the pin is on the flat surface too. Put the clock on zero – turn the ring of the clock so long until the indicators are on zero. Put the device on the V- belt. The indicator of the clock may only turn mini. 1 (1mm) until 1,5 (1,5mm) turn.



pic16: measuring instrument



pic 17: Put the measuring device on the V-belt

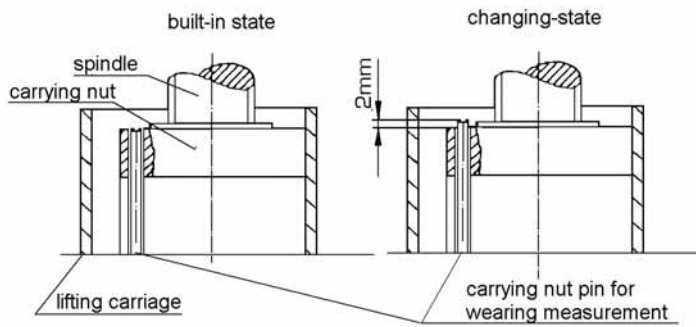
- Bring the screws back in initial position.

7.4 Examine 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.16). This pin must be even with the top edge of the carrying plate (upper side of the lifting carriage; built-in state pic.17). If the pin looks 2 mm out of the top edge at the annually check (pic.17 changing state). The carrying nut and the sequence nut must be replaced.



pic 18: the carrying-nut wear pin marked with red safety colour

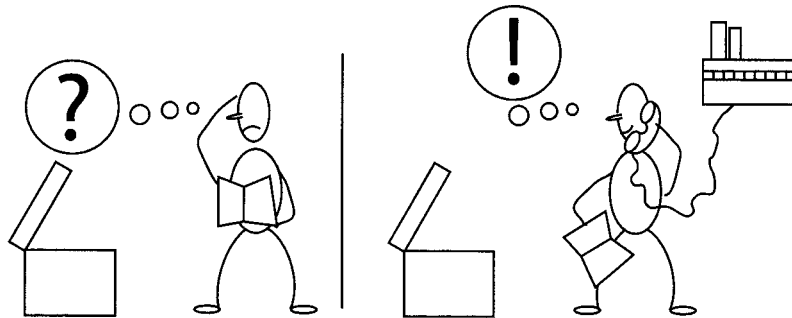


pic 19: the carrying-nut wear pin

7.5 Examine of the stability of the automotive lift

- Examine the dowels with a torque key as described by the dowel manufacturer. Observe the declaration of the dowel manufacturer.

8. Installation and Initiation



pic20:

8.1 Regulations for the installation

- The installation of the lift is performed by trained technicians of the manufacturer or its distribution partner. If the operator can provide trained mechanics, he can install the lift by himself. The installation has to be done according to this regulation.
- The standard lift must not be installed in hazardous locations or washing areas.
- Before installation a sufficient foundation must be proved or constructed.
- An even installation place has to be provided. The foundations must be based in a frost resistance depth, both outside and indoors, where you must reckon with frost.
- An electrical supply 3~/N+PE, 400 V, 50 Hz has to be provided. The supply line must be protected with 16 Ampere time lag (VDE0100 German regulation). The minimum diameter amounts to 2,5 qm².
- 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!
- After assembly of the lift, the protective grounding of the lift must be examined after International Electronical Commission (IEC) guidelines (60364-6-61) before first start-up by operators. Also an insulation resistance examination is recommended.

8.1.1 Erection and doweling of the lift

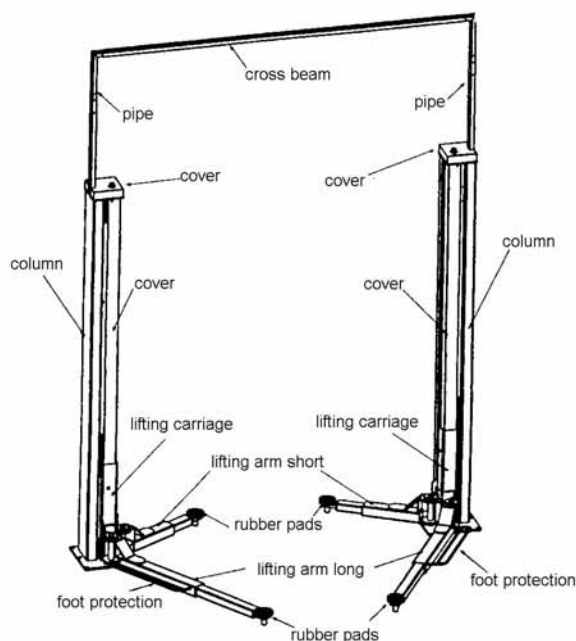


Before installation the lift, secure the installation area to prevent access to unauthorised persons. Use devices such as cranes, fork lift trucks and supports to transport the lift and to avoid accidents.

Before installation of the lift create a sufficiently concrete by customer. The operator is responsible for the installation place. A concrete with a quality of minimum C20/25 and a thickness without tiles and floor pavement is necessary (thickness => see the foundation drawing 6348_EINBAU).

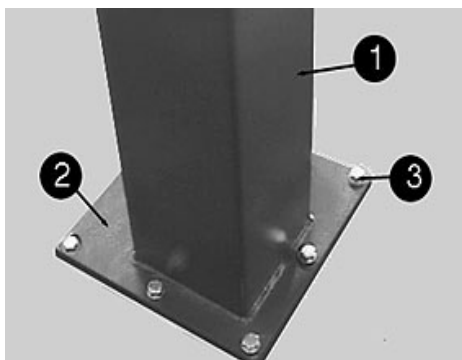
We point out the minimum requirement of the foundation in our plans. The condition of the local realities (for example: the ground under the foundation) does not lie in our responsibility. The execution of the installation situation must be individually specified by the planning architect or by the engineer engaged in statically calculations in the special case.

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. If there are defectives (cracks or hairline cracks) in the zone of influence $\varnothing 200$ mm, the foundation cannot be used to install the lift on it.



pic 21: complete view: automotive lift with ascending pipe and traverse.

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.



pic.22: doweling

- 1: column
- 2: base plate
- 3: dowel

- As protection against liquids, should before doweling put a thin foil between the base plate and the concrete.
The gap between base plate and workshop soil should be squirted out with silicone, after doweling.

- Bore the holes to position the dowels through the bore holes of the base plates (pic.22). Clean the holes with pressure air. Insert the dowels. The lift manufacturer demands Liebig safety dowels or equal dowels of other manufacturer (with licence) but observe the regulation. (bore hole, torque...).. Before doweling check the concrete floor with quality C20/25(B25) if the concrete floor goes to the top edge of the floor. In this case the dowels have to be chosen according to the page 60 (Dowels without tiles, floor pavement). If the ground is covered with floor tiles, the dowels have to be chosen according to page 61. (Dowels with tiles, floor pavement). Observe the table of FISCHER Dowel manufacturer, too.
- Examine the lining up of the columns 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. Observe the regulations of the dowel manufacturer.



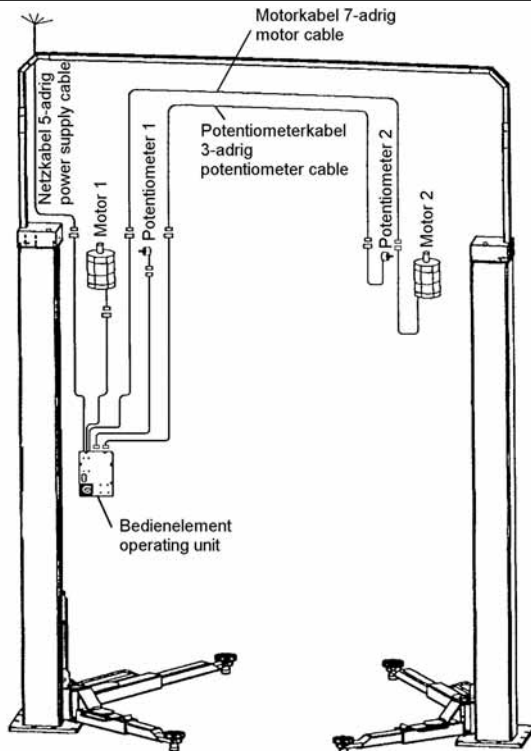
Each dowel must be tightened with the demanded torque. Otherwise the normal function of the lift can not guaranteed.

- If the dowel is tightened with the demanded torque, the curved washer lies flat on the base plate. A safe dowel connection is guaranteed.

8.1.2 Electro mounting and current connection

A) with using cross-beam and ascending pipe

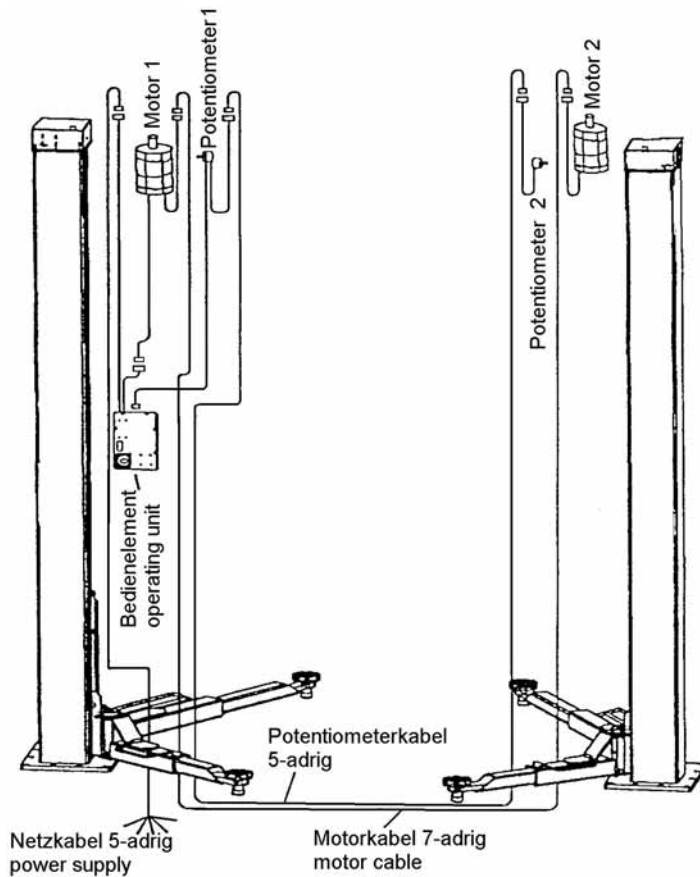
- Remove the cover at the top of the column.
- Lay the cable after the drawing (pic.23) in the ascending pipe and the traverse. Put the correct plugs together.
Observe the secure contact between the plugs.
Plug in the 7-wire motor cable (with 2 plugs) in the head plate of the operating column. Lay this 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.
- Pay attention the cables does not touches the rotating parts.



pic 23: cable run with traverse and ascending pipe

B) without using cross-beam 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. Build the column. Pay attention the cables.
- Connect the cables (Plugs) in accordance with the drawing.(pic.24)
- Pay attention the cables does not touches the rotating parts.



pic 24: cable run without traverse and ascending pipe

8.2 Installation the carrying arms

- Install the carrying arms, secure the bolts with enclosed seeger circlip ring.



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.

- Raise and lower the lift with vehicle several times, tighten dowels a second time with the correct torque.

8.3 Initiation



Before the initiation a security check must be carried out. Therefore use the form: First security check.

If the lift is installed by a competent person, he or she is to perform the security check. If the operator installs the lift by him or herself, he or she must instruct a competent person to perform the security check.

The competent confirms the faultless function of the lift in the installation record and the form for the security check and authorises the use of the lift.



Please send the completed installation record to the manufacturer after installation.

8.4 Change of lift location

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 re initiation by a competent person. Use the sheet "Regular security check".

9. 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 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 also recommended to carry out a service on the lift at this time.



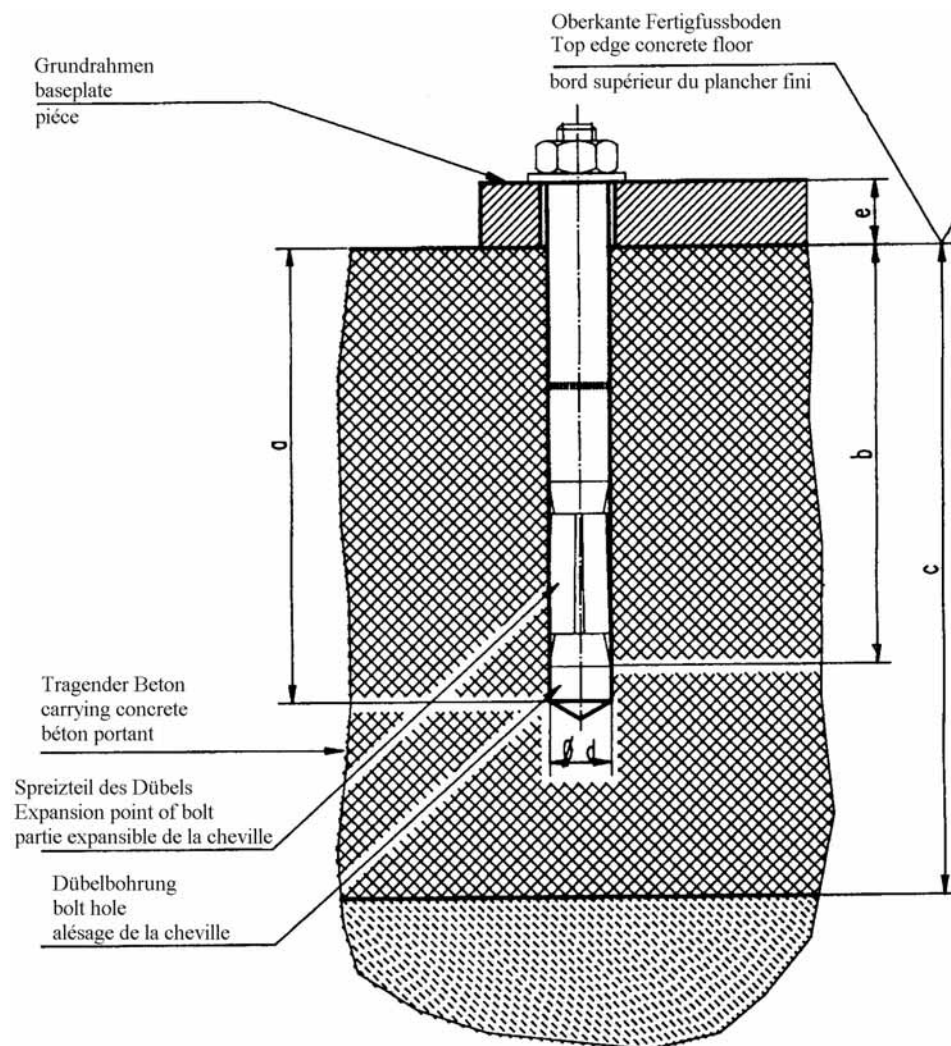
After the construction of the lift has been changed (changing the lifting height or capacity for example) and after serious maintenance works (welding load bearing parts) an extraordinary security check must be performed by an expert.

This manual contains forms with a schedule for the security checks. Please use the appropriate forms for the security checks. The forms should remain in this manual after they have been filled out. A short description about special safety devices follows.

pic: Selection of Liebig-Dowels without tiles, floor pavement

valid for (2.30 SL, 2.32 SL, 2.35 SL, 2.40 SL)

bore hole 22 mm diameter in the base plate



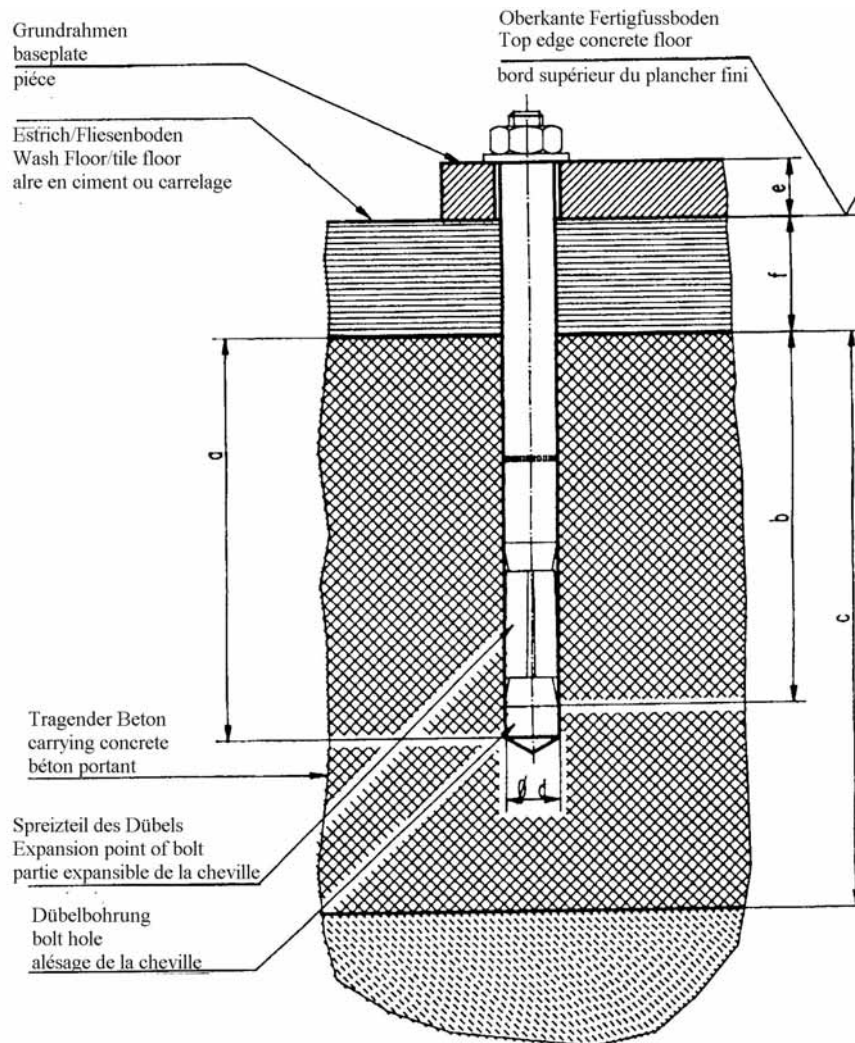
Liebig dowels

Dowel type		BM12-20/80/40
Drilling depth	a	100
Min. anchorage depth	b	80
Thickness of concrete	c	min.160 (*)
Diameter of bore	d	20
Thickness of the lift-pieces	e	0-40
Quality of concrete		min.C20/25 with normal armouring
Number of bolts		according to the lift type
Starting torque		70 Nm

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

It is possible to use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

pic: Selection of Liebig-Dowels with tiles, floor pavement
valid for (2.30 SL, 2.32 SL, 2.35 SL, 2.40 SL)
bore hole 22 mm diameter in the base plate



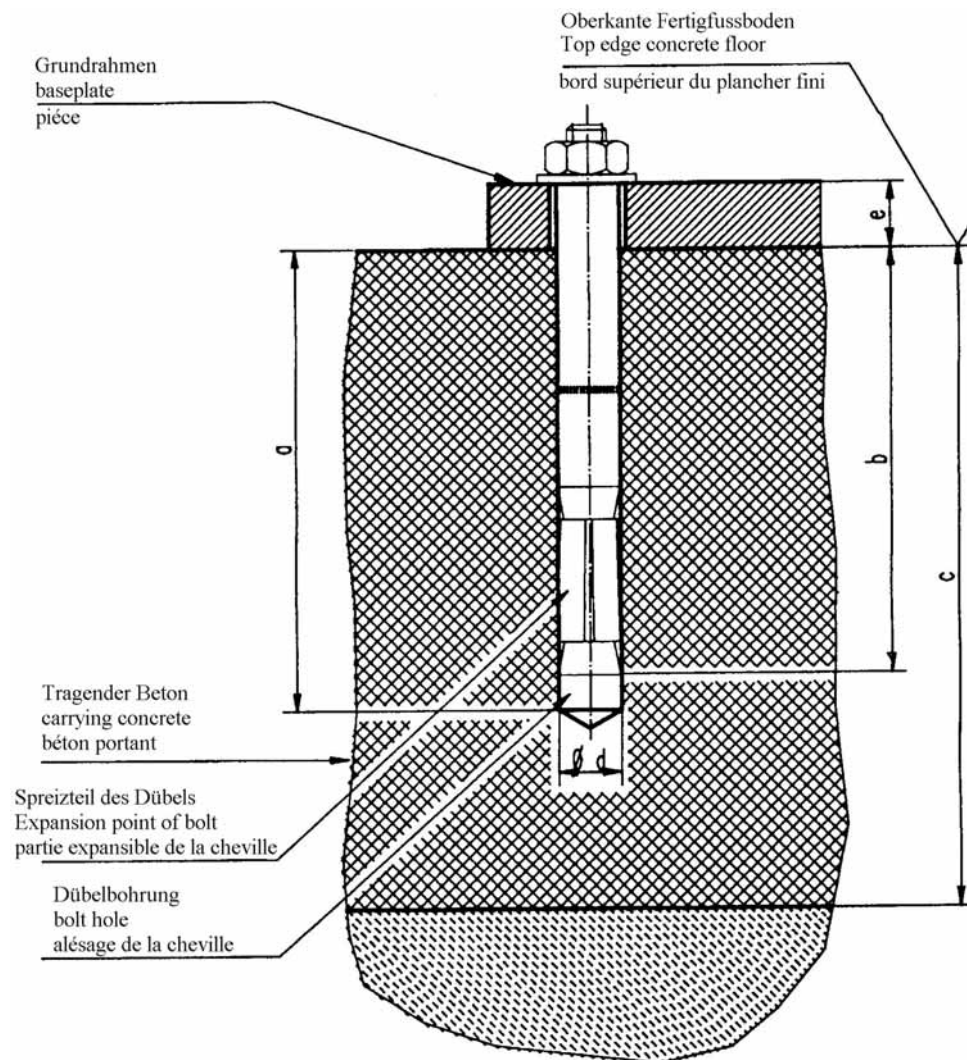
Liebig dowels

Dowel type		BM12-20/80/65	BM12-20/80/100	BM12-20/80/140
Drilling depth (mm)	a	100	100	100
Min. anchorage depth (mm)	b	80	80	80
Thickness of concrete (mm)	c	min.160(*)	min.160(*)	min.160(*)
Diameter of bore (mm)	d	20	20	20
Thickness of the lift-pieces (mm)	e+f	40-65	65-100	100-140
Quality of concrete		min.C20/25 with normal armouring		
Number of bolts		according to the lift type		
Starting torque		70 Nm	70Nm	70Nm

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

It is possible to use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

pic: Selection of Liebig-Dowels without tiles, floor pavement
valid (2.50 SL II, 2.50 SL DG II)
bore hole 26 mm diameter in the base plate



Liebig dowels

Dowel type		BM16-25/100/40
Drilling depth (mm)	a	125
Min. anchorage depth (mm)	b	100
Thickness of concrete (mm)	c	min.200 (*)
Diameter of bore r (mm)	d	25
Thickness of the lift-pieces (mm)	e	0-40
Quality of concrete		min.C20/25 with normal armoring
Number of bolts		according to the lift type
Starting torque		115 Nm

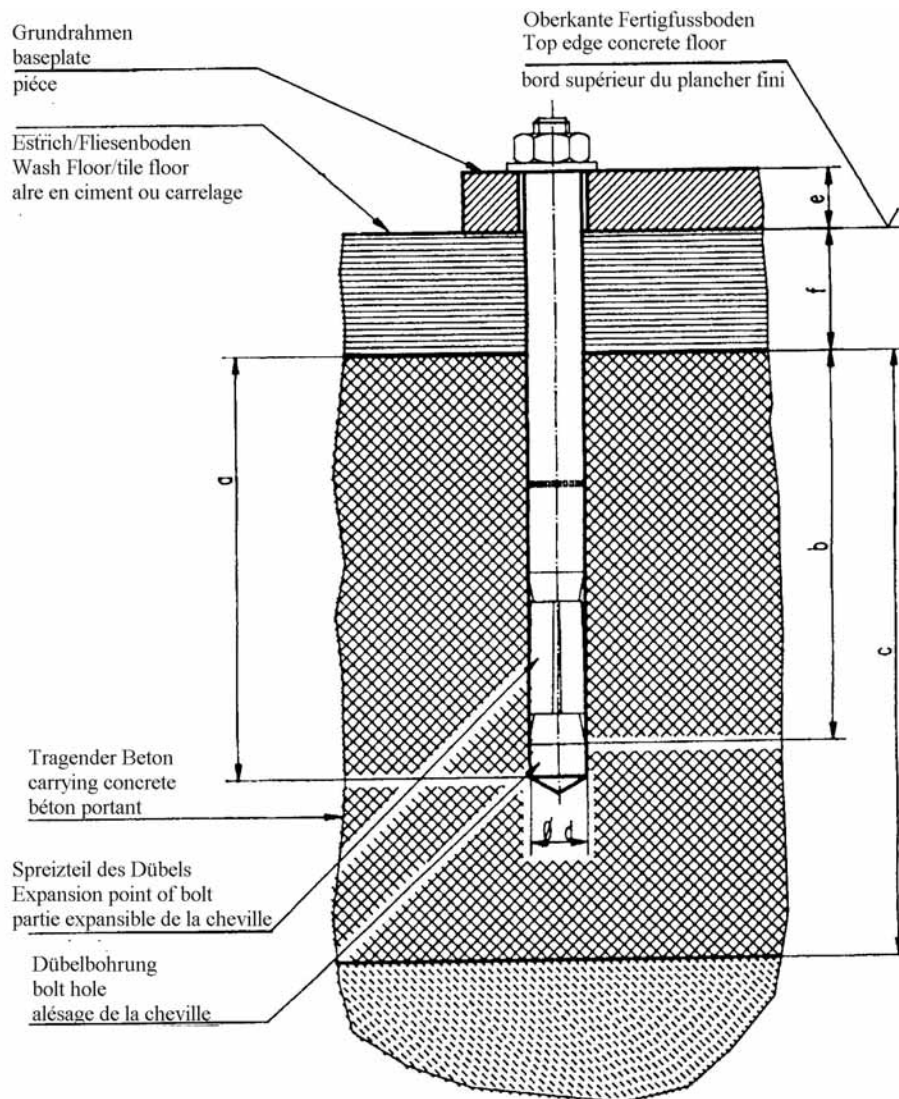
(*) minimum thickness of concrete by using the mentioned dowels. Otherwise, observe the regulation of the foundation plan.

It is possible to use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

pic: Selection of Liebig-Dowels with tiles, floor pavement

valid for (2.50 SL II, 2.50 SL DG II)

bore hole 26 mm diameter in the base plate



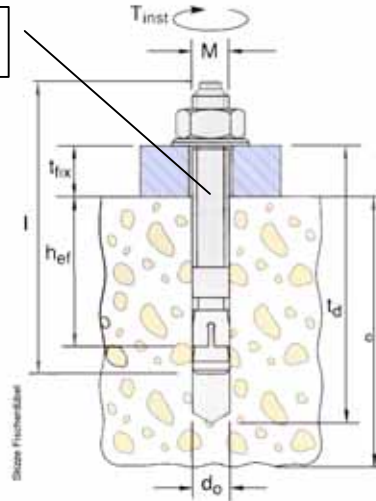
Liebig dowels

Dowel type		BM16-25/100/65	BM16-25/100/100
Drilling depth (mm)	a	125	125
Min. anchorage depth (mm)	b	100	100
Thickness of concrete (mm)	c	min.200 (*)	min.200 (*)
Diameter of bore (mm)	d	25	25
Thickness of the lift-pieces (mm)	e+f	40-65	65-100
Quality of concrete		min.C20/25 with normal armouing	
Number of bolts		according to the lift type	
Starting torque		115 Nm	115Nm

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

It is possible to use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

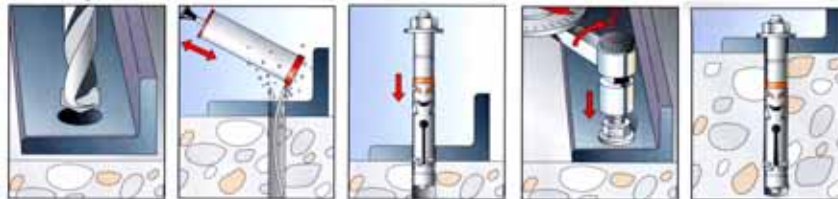
Marker min.
min. anchorage depth



Änderungen vorbehalten!
subject to alterations!
sous réserve des modifications!

fischer-Dübel			2.30 SL ^d , 2.32 SL ^e , 2.35 SL ^e , 2.40 SL ^e ,	2.50 SL II ^g 2.50 SL DGII ^g
Dübel typ of dowel type de cheville		FH 15/50 B Bestellnr. 970265	FH 18 x 100/100 B Bestellnr: 972230	FH 24/100 B Bestellnr. 970267
Bohrtiefe drilling depth Profondeur de l'alésage	t _d	145	230	255
Mindestverankerungstiefe min.anchorage depth Profondeur minimale d'ancrage	h _{ef}	70	100	125
Betonstärke thickness of concrete Épaisseur du béton	c	siehe den aktuellen Fundamentplan see current foundation-diagram drawing vois le plan de fondation actuel		
Bohrerdurchmesser diameter of bore Diamètre de l'alésage	d _o	15	18	24
Bauteildicke thickness of the lift-piece Épaisseur de la pièce	t _{fix}	0-50	0-100	0-100
Anzugsdrehmoment Nm turning moment moment d'une force	M _D	40	80	120
Gesamtlänge Total length Longueur totale	l	155	230	272
Gewinde Thread fil	M	M10	M12	M16
Stückzahl piece number nombre des pièces	a	4		
	b	8		
	c	10		
	d	12		
	e	16		
	f	20		
	g	14		

Montage



Es können auch gleichwertige Sicherheitsdübel anderer Hersteller (mit Zulassung) unter Beachtung deren Bestimmungen verwendet werden.
It is possible to use equivalent safety-dowels (with license) of other manufacturer but observe their regulations.
Des chevilles des autres marques (autorisées) peuvent aussi être choisies en respectant les directives du fabricant.

First security check before installation



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stability of the lift	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

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

.....
signature of the expert

.....
signature of the operator

If failures must be repaired:

Failures repaired at:

.....
signature of the operator

(Use another form for verification!)

Regular security check and maintenance



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	veri- fication	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<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



Fill out and leave in this manual

Serial-number: _____

kind of check	all right	defect missing	ver-ification	remark
Type plate.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
short operating instruction at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker capacity at the column.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sticker lubrication/maintenance plan.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instruction.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation „lifting/lowering“.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Automotive-lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function reversing switch.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, plastic window LED Display.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition lockable main switch by customer.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition rubber pads and threaded.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety seeger ring at the lifting arm bolts.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function foot protection (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop + acoustic signal (optional)....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition bolts and DU-bearings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition colour.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Construction (deformation, cracking)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Torque moment of screws and dowels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Poly V-Belt.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function spindle centering.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function locking system of the arms..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function moveable lifting arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety sheet at the Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition, Function Mini-Max arms.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Crossbeam & cable channel.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the covers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition Spindle and carrying nut.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition carrying nut wear pin.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition safety pin of the pads.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standsicherheit der Hebebühne	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition concrete (cracking).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical cables and plugs.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test with vehicle.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test „driving to the end position “.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<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!)