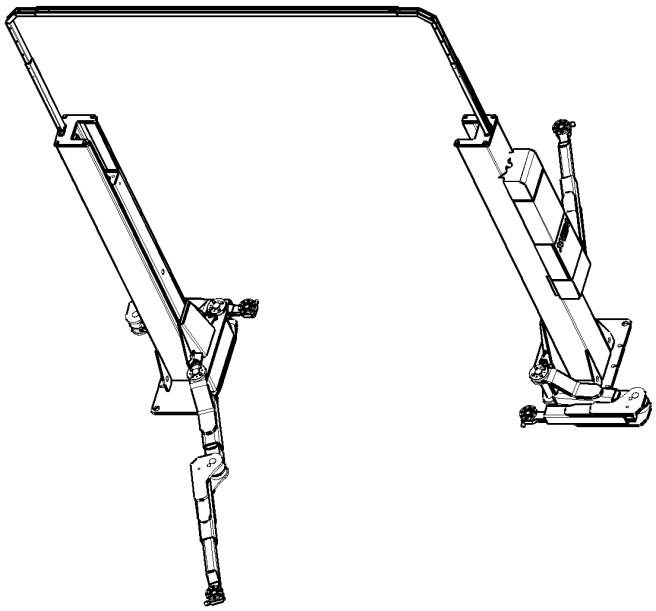
2.60 HL SST

Automotive-Lift date: 01/2010
Manual date: 15.03.2012



Original Documentation

Operating instructions and documentation

Serial-number:.....

Retailer address / phone

Made in Germany

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

Contents

Foreword

Nußbaum lifting systems are the result of a long time 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 access able 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: 01/2010 / Manual date: 15.03.2012

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 HL is a lifting mechanism for lifting motor vehicles
with a laden weight of up to 6000 kg . The max. load distribution is 3:1 either in or against the drive-on direction.
The capacity is reduced to max. 4200 kg when using the forklift adapters.
The automotive lift has been designed for servicing vehicles only. It has not been designed to carry people. Carrying people either directly on the lift or in vehicles that are on the lift is therefore not allowed.
The installation of the standard lift in hazardous or dangerous locations such as wash bays is dangerous and is therefore not allowed.

2.3 Changes to the Lift Construction

Changes to the construction, expert checking, resumption of work (date, type 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 confomity

EG- Konformitätserklärung

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:	**HL 2.60 SST DG** *2.60 HL SST 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	2006/42/EG
EMV Richtlinie / EMC Directive	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 vigueurs.
producido de acuerdo a las siguientes normas armonizadas.
è stato fabbricato in conformità con le norme armonizzate

Fahrzeug- Hebebühnen / Vehicle lifts	EN 1493: 2010
Elektromagnetische Verträglichkeit / Electromagnetic compatibility (EMC)	EN 61000-6-2 ,-6-4

Beauftragter für die Technische Dokumentation Authorised to compile the technical file	M. Golutzki (Nussbaum)
Seriennummer Serial number	_____ Seriennummer
Konformitätserklärung gültig bis / Declaration of Conformity valid until:	31.12.2011

Kehl- Bodersweier, 31.10.2011

Otto Nußbaum GmbH & Co. KG
Korker Straße 24
i. A. 77694 Kehl-Bodersweier
i.A. Thomas Hassler (CE)

Otto Nußbaum GmbH & Co. KG · Korker Str. 24 · D-77694 Kehl-Bodersweier
Tel.: +49(0)7853/899-0 · Fax: +49(0)7853/8787 · www.nussbaum-lifts.de

CE

3. Technical Information

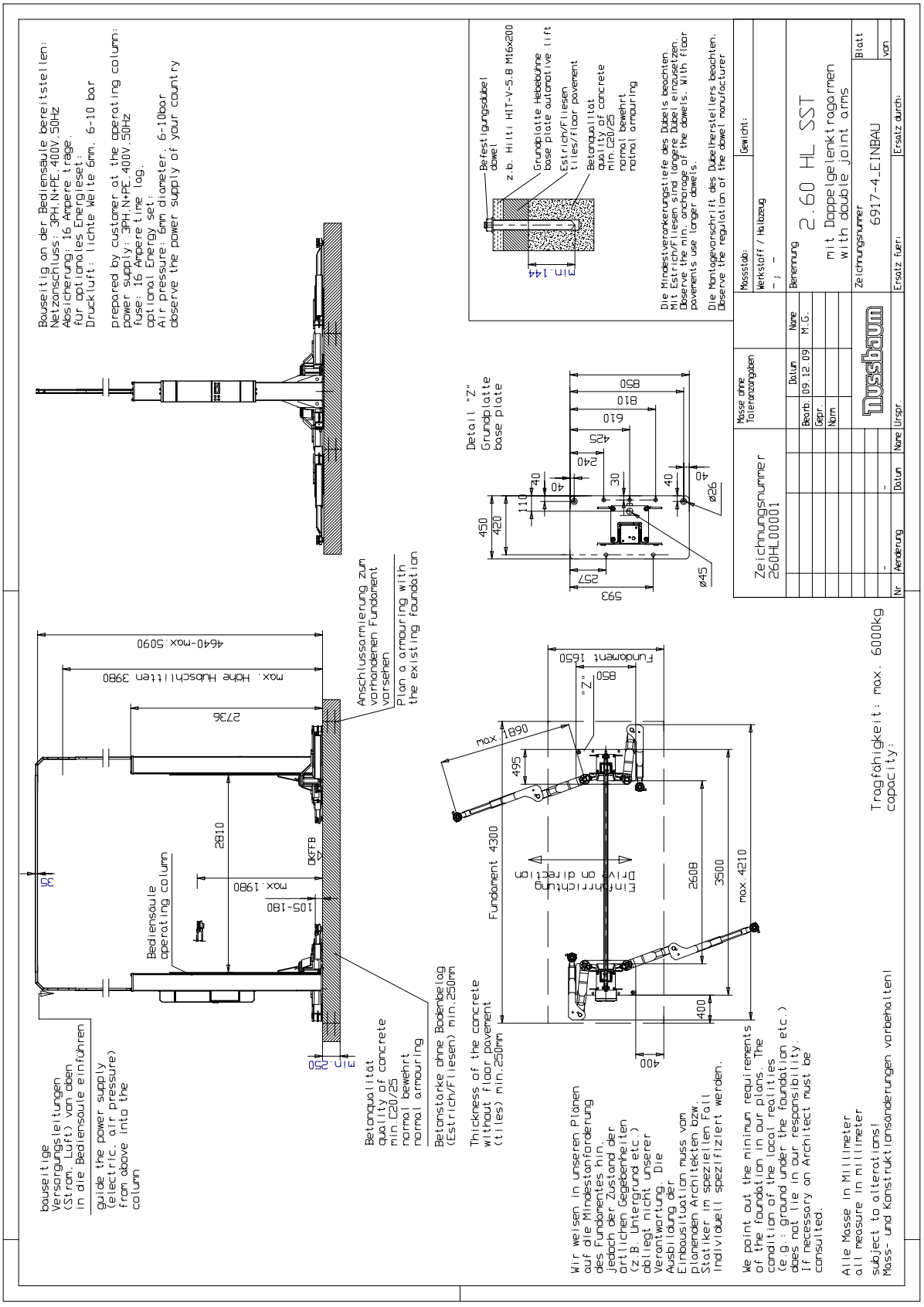
3.1 Technical ratings

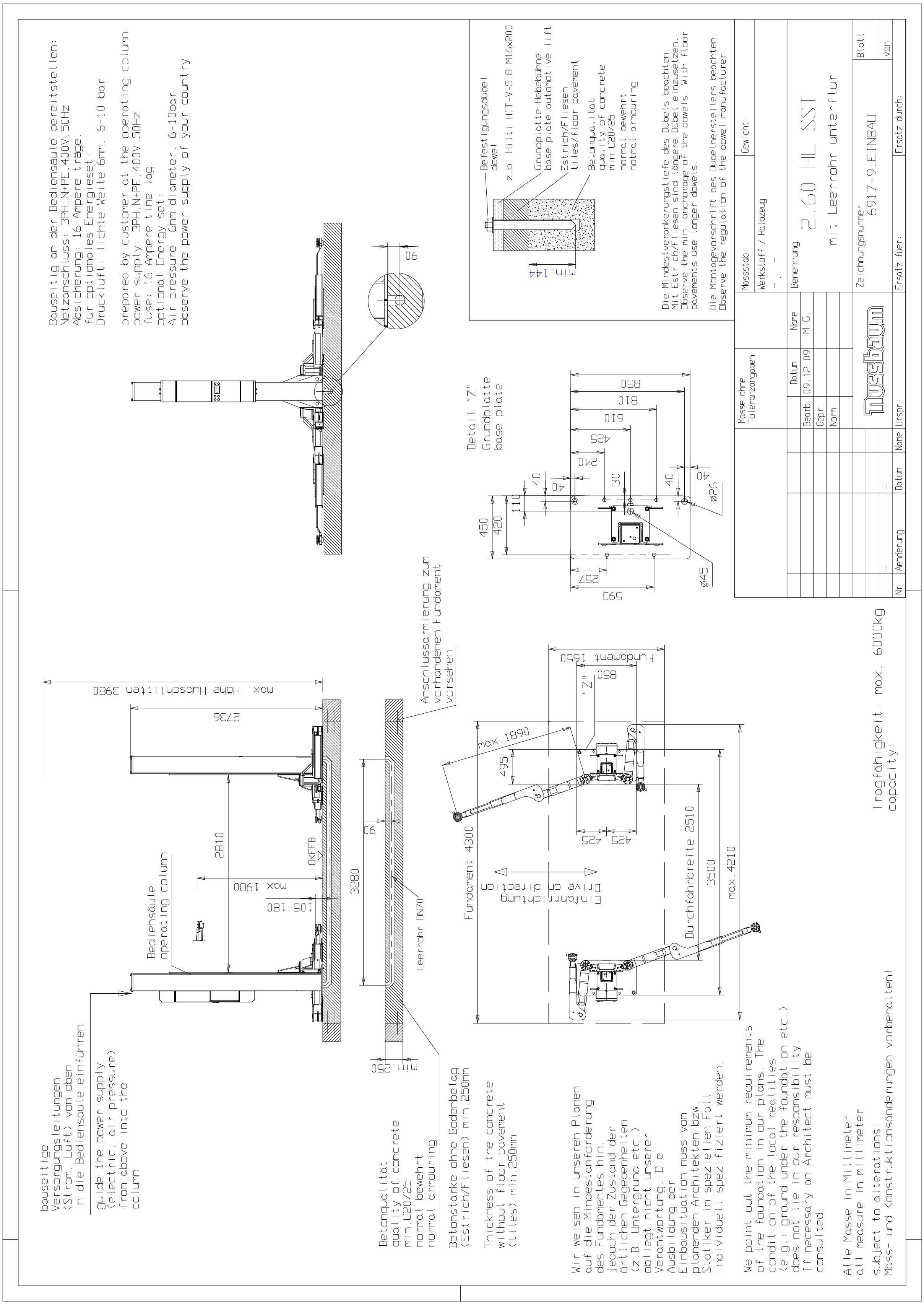
Capacity	6000 kg
Load distribution	max. 3:1 in or against the drive on direction
Lifting time	approx. 78 sec. with 5900 kg Load
Lowering time	approx. 65 sec. with CE-Stop and 5900 kg Load
Line voltage	3 x 400 Volt , 50Hz
Power rating	1.5 kW (992463)
Motor speed	1400 rotation/min
Pump capacity	5,7 cm^3 (Marz.) 1BK7S9,2Q
Hydraulic pressure	approx. 205 bar
Pressure control valve	approx. 215 bar
Hydraulic pressure (SST System)	approx. 35 bar
Oil tank	per Hydraulic unit approx. 17 Litre
Sound level L_{pA}	$\leq$ 70 dB
Connection by customer	3~/N+PE, 400V, 50 Hz fuse 16 Ampere (time-lag fuse) observe your state regulations

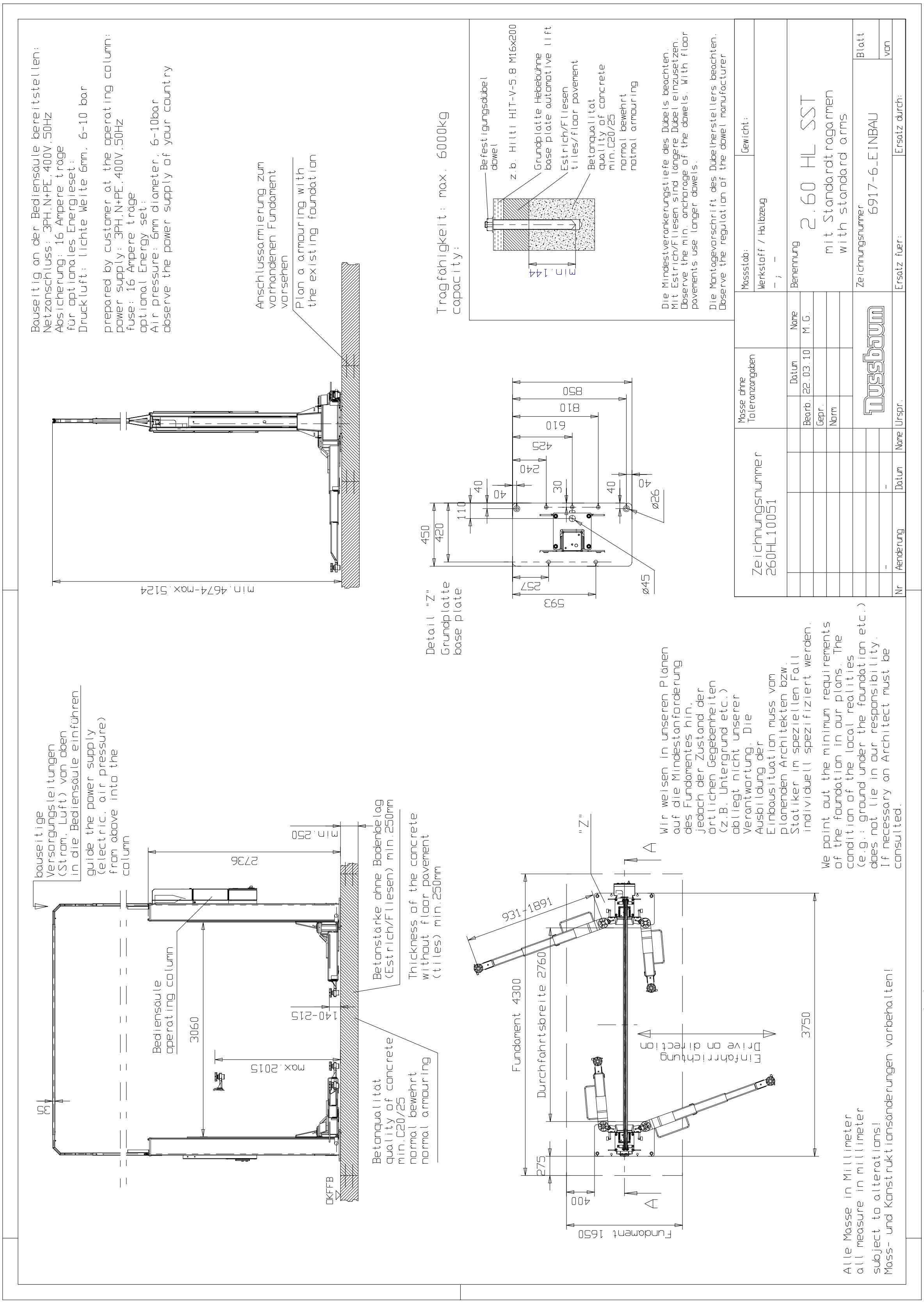
3.2 Safety device

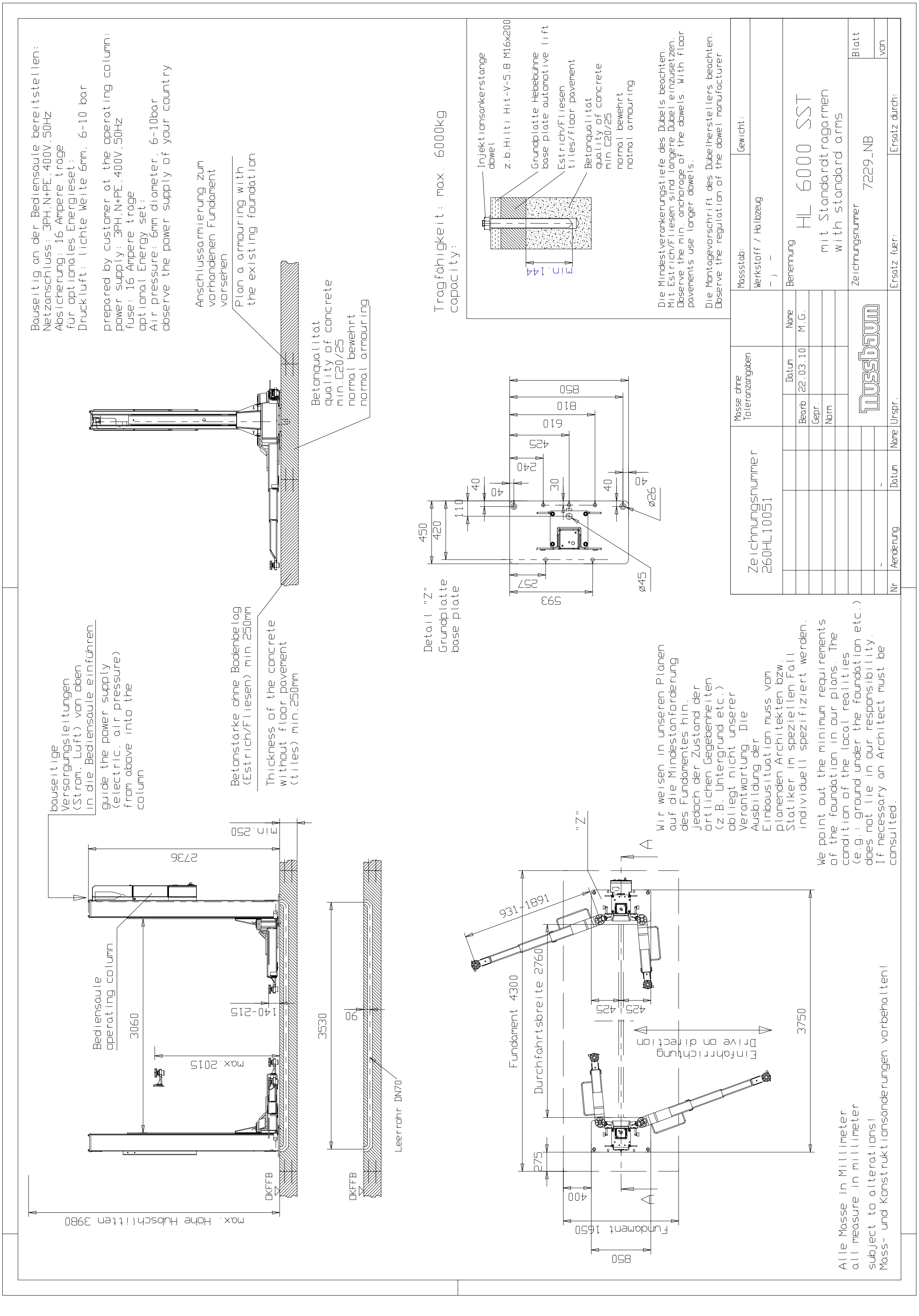
1. Pressure relief valve
   Protects the hydraulic system from exceedingly high pressures.
2. Holding valve (check valve)
   Safety device against unintentional lowering
3. Lockable main switch
   Safety device against unauthorised operation
4. CE-Stop + acoustic signal (Optional)
   Safety device to avoid crushing (egg. foot in lift recess)
5. Hydraulic unlocking safety system at the cylinder.
   Safety device against unintentional lowering
6. Pneumatic lockable arm
   Protection against unintentional adjusting of the arms
7. Foot-protection at the standard arms
   Safety device to avoid crushing

3.3 Data sheet




bauseitige Versorgungsleitungen (Strom, Luft) von oben in die Bediensäule einführen
guide the power supply (electric, air pressure) from above into the column
Bediensäule
operating column
2810
105-180
max. 1980
DKFFB
2736
max. Höhe Hubschlitten 3980
Bauseitig an der Bediensäule bereitstellen:
Netzanschluss: 3PH,N+PE,400V,50Hz
Absicherung: 16 Ampere träge.
für optionales Energieset:
Druckluft: lichte Weite 6mm, 6-10 bar
prepared by customer at the operating column:
power supply: 3PH,N+PE,400V,50Hz
fuse: 16 Ampere time lag.
optional Energy set:
Air pressure: 6mm diameter, 6-10bar
observe the power supply of your country
3280
90
min. 250
Betonqualität
quality of concrete
min.C20/25
normal bewehrt
normal armouring
Leerrohr DN70
Anschlussarmierung zum vorhandenen Fundament vorsehen
Betonstärke ohne Bodenbelag (Estrich/Fliesen) min.250mm
Thickness of the concrete without floor pavement (tiles) min.250mm
Fundament 4300
Einfahrrichtung
Drive on direction
495
max. 1890
"Z"
Fundament 1650
850
425
425
Durchfahrbreite 2510
3500
max. 4210
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 requirements of the foundation in our plans. The condition of the local realities (e.g.: ground under the foundation etc.) does not lie in our responsibility. If necessary an Architect must be consulted.
Alle Masse in Millimeter
all measure in millimeter
subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten!
Tragfähigkeit: max. 6000kg
capacity:
Detail "Z"
Grundplatte
base plate
450
420
110
40
40
240
425
610
810
850
30
40
40
593
257
ø45
ø26
Befestigungsdübel
dowel
z.b. Hilti HIT-V-5.8 M16x200
Grundplatte Hebebühne
base plate automotive lift
Estrich/Fliesen
tiles/floor pavement
Betonqualität
quality of concrete
min.C20/25
normal bewehrt
natmal armouring
min. 144
Die Mindestverankerungstiefe des Dübels beachten.
Mit Estrich/Fliesen sind längere Dübel einzusetzen.
Observe the min. ancharage of the dowels. With floor pavements use longer dowels.
Die Montagevorschrift des Dübelherstellers beachten.
Observe the regulation of the dowel manufacturer
Masse ohne Toleranzangaben
Massstab:
Gewicht:
Werkstoff / Halbzeug
-; -
Datum
Name
Bearb.
09.12.09
M.G.
Gepr.
Norm
Benennung
2.60 HL SST
mit Leerrohr unterflur
Zeichnungsnummer
6917-9_EINBAU
Blatt
von
Nr
Aenderung
Datum
Name
Urspr.
Ersatz fuer:
Ersatz durch:


Bauseitig an der Bediensäule bereitstellen:
Netzanschluss: 3PH,N+PE,400V,50Hz
Absicherung: 16 Ampere träge
für optionales Energieset:
Druckluft: lichte Weite 6mm, 6-10 bar
prepared by customer at the operating column:
power supply: 3PH,N+PE,400V,50Hz
fuse: 16 Ampere träge
optional Energy set:
Air pressure: 6mm diameter, 6-10bar
observe the power supply of your country
Anschlussarmierung zum vorhandenen Fundament vorsehen
Plan a armouring with the existing foundation
Tragfähigkeit: max. 6000kg
capacity:
min.4674-max.5124
Befestigungsdübel
dowel
z.b. Hilti HIT-V-5.8 M16x200
Grundplatte Hebebühne
base plate automotive lift
Estrich/Fliesen
tiles/floor pavement
Betonqualität
quality of concrete
min.C20/25
normal bewehrt
normal armouring
min.144
Die Mindestverankerungstiefe des Dübels beachten.
Mit Estrich/Fliesen sind längere Dübel einzusetzen.
Observe the min. anchorage of the dowels. With floor pavements use longer dowels.
Die Montagevorschrift des Dübelherstellers beachten.
Observe the regulation of the dowel manufacturer.
Detail "Z"
Grundplatte
base plate
850
810
610
425
240
40
30
40
40
110
450
420
ø26
ø45
257
593
Zeichnungsnummer
260HL10051
Massstab:
Werkstoff / Halbzeug
Gewicht:
Benennung
2.60 HL SST
mit Standardtragarmen
with standard arms
Zeichnungsnummer
6917-6-EINBAU
Blatt
von
Masse ohne Toleranzangaben
Datum
Name
Bearb.
22.03.10
M.G.
Gepr.
Norm
Nr
Aenderung
Datum
Name
Urspr.
Ersatz fuer:
Ersatz durch:
bauseitige Versorgungsleitungen (Strom, Luft) von oben in die Bediensäule einführen
guide the power supply (electric, air pressure) from above into the column
Bediensäule
operating column
2736
min.250
3060
max.2015
140-215
OKFFB
Betonstärke ohne Bodenbelag (Estrich/Fliesen) min.250mm
Thickness of the concrete without floor pavement (tiles) min.250mm
Betonqualität
quality of concrete
min.C20/25
normal bewehrt
normal armouring
"Z"
931-1891
Fundament 4300
Durchfahrtsbreite 2760
Einfahrrichtung
Drive on direction
3750
275
400
Fundament 1650
A
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 requirements of the foundation in our plans. The condition of the local realities (e.g.: ground under the foundation etc.) does not lie in our responsibility. If necessary an Architect must be consulted.
Alle Masse in Millimeter
all measure in millimeter
subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten!


Bauseitig an der Bediensäule bereitstellen:
Netzanschluss: 3PH,N+PE,400V,50Hz
Absicherung: 16 Ampere träge
für optionales Energieset:
Druckluft: lichte Weite 6mm, 6-10 bar
prepared by customer at the operating column:
power supply: 3PH,N+PE,400V,50Hz
fuse: 16 Ampere träge
optional Energy set:
Air pressure: 6mm diameter, 6-10bar
observe the power supply of your country
Anschlussarmierung zum vorhandenen Fundament vorsehen
Plan a armouring with the existing foundation
Betonqualität quality of concrete min.C20/25 normal bewehrt normal armouring
Tragfähigkeit: max. 6000kg
capacity:
Injektionsankerstange dowel
z.b.Hilti Hit-V-5.8 M16x200
Grundplatte Hebebühne base plate automotive lift
Estrich/Fliesen tiles/floor pavement
Betonqualität quality of concrete min.C20/25
normal bewehrt normal armouring
min.144
Die Mindestverankerungstiefe des Dübels beachten.
Mit Estrich/Fliesen sind längere Dübel einzusetzen.
Observe the min. anchorage of the dowels. With floor pavements use longer dowels.
Die Montagevorschrift des Dübelherstellers beachten.
Observe the regulation of the dowel manufacturer
Massstab:
Werkstoff / Halbzeug
Gewicht:
Benennung
HL 6000 SST
mit Standardtragarmen
with standard arms
Zeichnungsnummer
7229_NB
Blatt
von
Ersatz fuer:
Ersatz durch:
Masse ohne Toleranzangaben
Datum
Name
Bearb.
22.03.10
M.G.
Gepr.
Norm
Zeichnungsnummer
260HL10051
Nr
Aenderung
Datum
Name
Urspr.
Detail "Z"
Grundplatte
base plate
850
810
610
425
240
40
30
40
40
ø26
110
420
450
257
593
ø45
bauseitige Versorgungsleitungen (Strom, Luft) von oben in die Bediensäule einführen
guide the power supply (electric, air pressure) from above into the column
Betonstärke ohne Bodenbelag (Estrich/Fliesen) min 250mm
Thickness of the concrete without floor pavement (tiles) min.250mm
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 requirements of the foundation in our plans. The condition of the local realities (e.g.: ground under the foundation etc.) does not lie in our responsibility. If necessary an Architect must be consulted.
Bediensäule
operating column
2736
min.250
3060
140-215
max.2015
3530
90
Leerrohr DN70
OKFFB
max. Höhe Hubschlitten 3980
"Z"
A
931-1891
Fundament 4300
Durchfahrtsbreite 2760
425
425
Einfahrrichtung
Drive on direction
3750
275
400
Fundament 1650
850
Alle Masse in Millimeter
all measure in millimeter
subject to alterations!
Mass- und Konstruktionsänderungen vorbehalten!

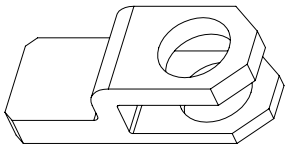
4.Safety regulations

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

Especially the following regulations are very important:

- The laden weight of the lifted vehicle must not exceed 6000 kg for the automotive lift.
- The automotive lift must be in its lowest position (fully collapsed), before the vehicle can be driving on to the lift. Only then can the vehicle be lifted.
- While working with the lift the operating instructions must be followed.
- Vehicles with low clearance or vehicles that are specially equipped should be pre tested to ensure that they clear the lift ramp to avoid damage.
- Only trained personnel over the age of 18 years old are to operate this lift.
- No one is to stand within the working area (danger area) during lifting and lowering
- No one is to be raised or lowed either directly or in a vehicle by the automotive lift.
- No one is to climb onto the automotive lift or onto an already raised vehicle.
- The automotive column lift must be checked by an expert after changes in the construction have been made.
- The main switch must be switched off and locked before work on the vehicle can commence. This is a safety precaution to ensure that the lift does not move during work.
- The main switch must be switched off and locked before any maintenance or repair work on the automotive lift itself can be carried out.
- During lifting or lowering the operator must observe the vehicle to ensure that the vehicle and the lift are functioning correctly.
- Installation of the standard-mobile column lift in hazardous or dangerous locations such as washing bays is dangerous and is not allowed.
- Check the centre of gravity of the vehicle if heavy parts (egg the motor) are removed.
- If heavy parts must be removed (motor) the centre of gravity will change. Secure the vehicle before removing parts to avoid the possibility of the vehicle becoming insecure.

- The capacity is reduced to max. 4200 kg when using the forklift adapters.

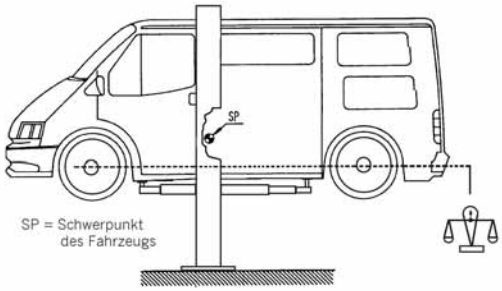


5.Operating Instructions

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

5.1 Lifting the vehicle

- Drive the vehicle onto the middle of the lift.
- Secure the vehicle from rolling, put into gear, apply the hand brake.
- Before positioning the arms under the vehicle, press the button; “unlocking the arms” and the pneumatic safety device will open.
  Slew the carrying arms under the vehicle and position the pads at the points specified by the vehicle-manufacturer. The arms will lock, if the button “lifting” is pressed.
- Determine the centre of gravity. This point must be located in the middle of the lift. If necessary, adjust the lifting-pads until the vehicle is in the raising condition, that is horizontally level.



Pic 1:

- Check all the danger points of the lift and ensure that there are no objects or people in the working area around the lift or on the lift.
- Switch on the main switch.
- Raise the vehicle. Press the button “lifting” until the wheels are free. If the wheels are free, stop the lifting procedure and check the safety position of the vehicle on the pads again. Check also the locking system of the arms. They must be locked, if the wheels are free. Otherwise lower the lift and position the vehicle one more time.

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

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

Pic 2: Main operating unit
A Button “Lifting“
B Button “Lowering“
C Optional: Button “Equalization of the lifting arms“
D Display

5.2 Lowering the vehicle

- Check all danger points of the lift and be sure that there are no objects or people in the working area (danger area) around the lift or on the lift.
- Lower the lift to the required working height or to its lowest (or fully collapsed) position. Press the button “lowering“. The lift will rise approx. 1 mm (safety function) before it starts to lower.
- Before the lift reaches its lowest position, the lift stops automatically (CE-Stop). After the lift has stopped, check the danger areas around the lift. Press the button “lowering” again. A warning signal will sound as the lift is further lowered. This is to warn against the risk of crushing as the lift is lowered to its lowest (fully collapsed) position.
- Observe the complete lowering process.
- Once the arms are in the lowest position, press the button “unlocking the arms” and remove the arms from under the vehicle.
- Drive the vehicle off the lift.

5.3 Position measurement

An hall sensor on the hydraulic cylinder monitors the threaded spindle by counting the magnetised increments on the outer ring.
The number of increments counted is transmitted to the Controller. The controller processes this information and regulates both lifting carriages so that they remain level. The current position is shown on the Display.

- The SST (Safety-Star Technology) observes the complete Process of the Lift during “Lifting” and “Lowering”.
- The automotive lift lowers with a average load at a rate of 0.05 Meters per sec.
  If the lift descends noticeable faster there may be a problem with the hydraulic system. The computer-control-system recognizes the problem and switches off the hydraulic supply for the cylinder. The Safety-star system locks and the lift stops.

5.4 Manual equalization of the automotive lift

Only trained and authorized staff are allowed to work with the DIP-switches! The main-switch must be switched off!

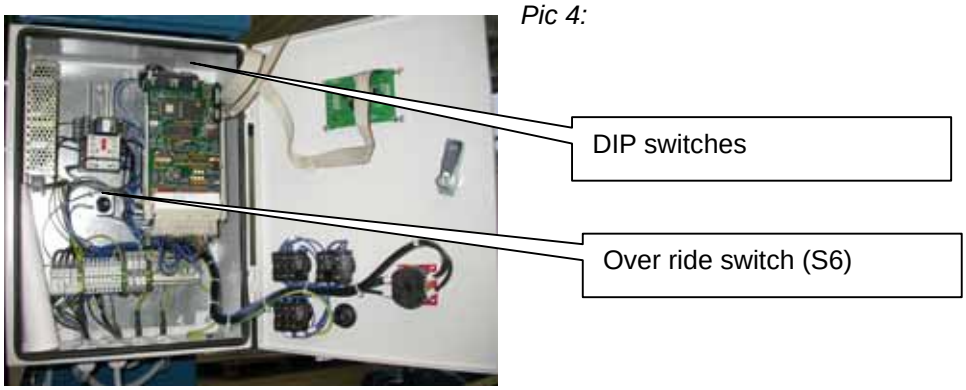
- If the Computer Control System recognize a difference of approx. 40 mm between both lifting carriages, it will stop the lift automatically.
- Equalize the lifting carriages.
- Open the electrical box.
- Adjust the following Dip-switch as described: (see Pic. Pos. K)
  Dip switch 5 (regulation ON/OFF).
  Dip-switch 1 (only lifting carriage 1 moveable).
  Dip-switch 2 (only lifting carriage 2 moveable).
  Dip-switch 7 (reset – zero the lift in the lowest position).

Enforce the equalisation:

- Equalize lifting carriage 1.
- Move the Dip Switch 5 to the “off” position (regulation off).
- Move the Dip switch 1 to the “on” Position (Dip switch 1 for platform 1).
- Press the button “lifting” or “lowering” and the override switch simultaneously until the platform is level.
- Move the Dip switch 1 to the “off” Position.

- Move the Dip switch Dip 5 to the “on” Position (regulation on).
- Press the button “lowering” until the lift reaches the lowest position so that a reset can then be carried out (see chapter “Reset after an emergency lowering”)
- Remount the covers.

Pic 4:



6. Troubleshooting

If the lift does not work properly, the reason might be quite simple. Please check the lift for the potential reasons mentioned on the following pages. If the cause of trouble still cannot be found, please call technical service.

Problem: Motor does not start!	
Potential causes:	solution:
No power supply	*Check the power supply*
Main switch is not engaged	*Check the main switch*
The main switch is defective	*Check the main switch*
Fuse defective	*Check Fuse*
The feed line is cut	*Check the complete cable*
Thermal switch in the motor is active	*Let motor cool down*
The lifting carriages are not within the control limits (window)	*Read chapter 5.3*
Motor is defective	*Call technical service*

Problem: Motor starts, lift does not lift!	
Potential causes:	solution:
The vehicle is too heavy	*unload the vehicle*
Level of the oil is too low	*check the oil level, fill with hydraulic oil as required*
The emergency lowering screws are not closed	*Check the emergency lowering screw*
Hydraulic valve is defective	*Call technical service*
Gear pump is defective	*Call technical service*

Problem: the lift does not lower!	
Potential causes:	solution:
An obstacle is restricting the lift from being lowered	*(see chapter 6.1)*
Hydraulic valve is defective	*Call technical service*
Fuse is defective	*Check the fuse*
The SST is locked	*Call technical service*
Button "lowering" is defective	*Call technical service*

Problem: the arms do not move	
Potential causes:	solution:
The unlocking button is defective	*check the button*
Not enough air pressure	*check the air pressure*
Air hose defective	*check the air hose*

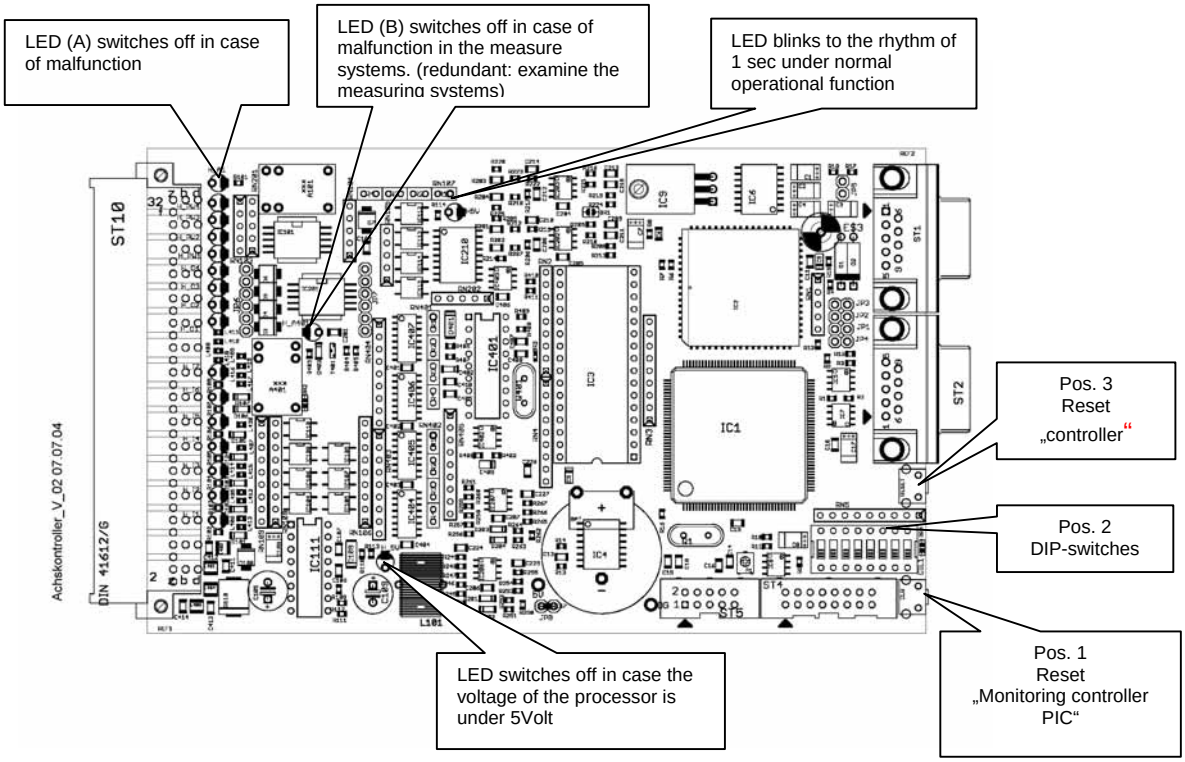
6.1 Lowering onto an obstacle

If the Safety-Star-System recognizes a difference of 40 mm between both lifting carriages it automatically switches off the lift.

6.1.1 Remove an obstacle

Only trained and authorized staff are allowed to work with the DIP-switches! The main-switch must be switched off!

- Remove the cover of the control box.
- Press the button "Reset" (1) and hold it. (see Pic. 5, "Reset Achskontroller 1")



pic 5: Platine - Controller

- Switch off the main switch and wait 5 sec. Hold the reset button.
- Switch on the main switch and wait 5 sec. Hold the reset button.
- Let go off the reset button.
- Move all the Dip-switches to the “off” position.
- Move the Dip-switch 1 and 2 to the “on” position.
- ***Caution***: This procedure can only be done when the lift is ***not*** at its maximum height.
- Closely observe the vehicle on the lift and its reaction.
- Press the “lifting” button until the obstacle can be removed.
- The side of the lift that is higher must be lowered with the help of the corresponding Dip-switch. (see chapter “Equalisation of the two lifting platforms”).
- After equalizing the runways, a reset must be carried out (see the following points).
- Move all the Dip-switches to the “off” position.
- Move the Dip-switch 5 to the “on” position.
- Press the button “reset” (1) and hold it. (Pic. 2)
- Switch-off the main switch and wait 5 sec. Hold the reset button.
- Switch-on the main switch and wait 5 sec. Hold the reset button.
- Let go off the reset button.
- Press the button “lowering” until the lift (both platforms) is in its lowest position (fully collapsed) and the warning signal stops beeping.
- Move the Dip-switch 7 to the “on” position .
- Keep Dip-switch 5 in the “on” position.
- Press the button “reset” (1) and hold it.
- Switch-off the main switch and wait 5 sec. Hold the reset button.
- Switch-on the main switch and wait 5 sec. Hold the reset button.
- Let go off the reset button.
- Keep Dip-switch 5 in “on” position.
- Move Dip-switch 7 to the “off” position.
- Three diodes should now be see on the computer display board. One additional diode should be blinking at the frequency of approx. 1 sec.
- Raise and lower the automotive lift a few times without a load. Observe the process.
- Remount the covers.

6.2 Emergency lowering

A emergency lowering is an intervention into the controls of the lift and can be done only by experienced expert.
The emergency lowering must be carried in this order. Otherwise a malfunction may lead to damage to equipment, injury or even death.

Every kind of external leakage must be removed. This is particularly necessary before an emergency lowering.
The emergency lowering may only be done by persons who are trained in using the lift.

Reasons, that may warrant an emergency lowering are; a defect in the electric system or disturbances of the valves, etc.

In case of power-failure or defective valves it is the possible through the use of suitable tools to lower the lift to its lowest position so that the vehicle can be driven off.

6.2.1 Emergency lowering procedure

- Switch off the main switch and secure it. (lock it)
- Remove the covers of hydraulic unit.
- Secure the danger area around the lift.

Pic 6:

Loosen and remove the 2 lock nuts with a suitable tool (spanner, wrench) in an anti-clockwise direction. Carry out this process on both columns. (Key 41)

Pic 7:

The piston rod at the top of the column may be restricted by dirt and grit deposits. Use a solvent and a lubricant (for an example WD40) to loosen and lubricate the connection. Spray the WD40 generously between the piston rod thread and the bore hole (see arrow). The time taken to remove the dirty deposit will depend on the degree of contamination.

Pic 8:

Loosen the both red locknuts at the hydraulic block. Then loosen the both emergency lowering screws with a suitable tool (size5) maximum 1 turn anticlockwise

Pic 9:
Use the extended threaded socket connection and turn clockwise with an appropriate tool (socket wrench size 24, available at your dealer,). Lower the lifting carriage only 5cm – 10 cm. Repeat this process on the next column and continue until the entire lift is in its lowest position. Only lower each side 5 cm-10 cm at a time.
Repair the defective lift. After this is complete, a "Reset" must be carried out (described in the operating instructions).

Attention!! ***Lower the automotive-lift only approx. 5cm – 10 cm at a time.***

Observe the complete emergency lowering process.

Do not work with the lift until the defective parts are changed.

Recommencement of work can only begin once the lift is deemed to be in perfect condition regarding safety.

- If the lift has been deemed safe to operate, carry out a reset as described in the operating instructions.

6.3 Reset after an emergency lowering

A reset can only be carried out, if the automotive-lift is in its lowest position (fully collapsed).

Access to the DIP-Switch is only possible once the main switch is in the "off" position. Only instructed, authorized technical personnel can carry out the reset.

a) Drive the vehicle off the lift.
b) Open the cover of the operating unit.
c) Open the electrical box door.
d) Press the button "Reset" 1 (see pic.5) and hold it.
e) Switch-off the main switch and wait 5 sec while holding the reset button.
f) Switch-on the main switch and wait 5 sec while holding the reset button.
g) Let go of the reset button
h) Press the button "lowering" until both lifting carriages are in their lowest position.
i) If necessary repeat steps d) to h) several times to be sure that the lift is in its lowest position.
j) Next, move the Dip-switch 7 to the "on" position.
k) Keep Dip-switch 5 in the "on" position.
l) Repeat the steps d) to h)
m) Next, move Dip-switch 7 to the "off" position. Keep Dip-switch 5 in the "on" position.
n) Three diodes should now light up on the computer-board. One additional diode should be blinking in the frequency of approx. 1 sec.

o) Raise and lower the automotive lift a few times without load. Observe the process.

p) Mount the covers.

7.Inspection and Maintenance

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

To guarantee the utmost availability and to ensure that the lift remains functional, maintenance work contracts are organised between our clients and their local retailers.
A service must be performed at regular intervals of 3 months through the operator in accordance with following service manual. If the lift is in continuous operation or in a dirty environment, the maintenance rate must be increased.
During daily operation the lift must be closely observed to ensure that it is functioning correctly. In the case of malfunction or leakage the technical service must be informed.

7.1 Maintenance plan of the lift

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

Maintenance plan	**Period**
Check the condition of the type plate, the short operating instruction and the sticker “capacity.	min. 1x yearly
In case of heavy dirt deposit clean the piston rods of the hydraulic cylinders from deposit. Remove the cover of the lift. If necessary raise the lift to the highest position. Grease the piston rods with a high capacity lipid (approx. 5 g of S2 DIN51503 KE2G of the Renolit Company.	min. 1x yearly
Clean and check the moving parts. Lubricate the moving parts of the lift (hinge bolts, rolls, sliding surfaces). Grease with a multipurpose lipid (example: Auto Top 2000 LTD. Agip).	min. 1x yearly
Check the sliding block of the lifting carriage. In case of wear or damages exchange it. Grease it with a multipurpose fat.	min. 1x yearly
Grease the lubricating nipples of the double joint arms with a multipurpose fat.	min. 1x yearly
Check the hydraulic tubes/hoses for leakage. Check the screw fittings.	min. 1x yearly
Check the oil level. Fill in a clean, high quality oil (32 cst) in the tank.	min. 1x yearly
The hydraulic oil has to be changed at least once a year. To change the oil, lower the lift into the lowest position. Empty the tank and replaced clean oil, approx. 21 litres are needed. A high quality hydraulic oil is recommended, its should be 32 cst. (e.g. HLP 32 LTD. OEST Company)	min. 1x yearly

Use a ATF-Suffix hydraulic-oil (OEST Company) if the ambient temperature is under 5 degree centigrade. After the fill up, the hydraulic oil must be between the upper and low marking of the oil level gauge.	
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.	min. 1x yearly
Damage to external surfaces, must be immediately repaired. If theses repairs are not made immediately, permanent damage to the powder-coated surface may result. Repair and clean damaged areas with an abrasive paper (grain 120). After this is complete, use a suitable paint (observe the RAL Number).	min. 1x yearly
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).	min. 1x yearly
Check the condition and function of the safety device CE-Stop and the acoustic signal, foot protection, locking system of the lifting arms, rubber pads	daily
Check the Battery of the controller (ASC). The Battery has a working life at normal business between 4 ½ - 5 Years (manufacturers statement). To avoid a permanent data-loss through an empty battery, you must examine the battery of the controller during the regularly maintenance. The measuring can only take place at the controller which was switched-off. The measuring is possible with a commercial tensiometer. Standard voltage approx. 3.2 V (no exchange necessary), but a value under 2.9 V, the controller must be exchanged. Send the controller to the Nußbaum Headquarter. Previously, contact your service partner.	min. 1x yearly
Check the electrical cable, plugs for damages	min. 1x yearly
Check the condition and function of the electrical box, press button, signal lamps and labelling.	min. 1x yearly
Check the condition of the cable channels.	min. 1x yearly
Check the condition of the concrete floor at the dowels.	min. 1x yearly
Check the turning moment of the screws (see the list)	min. 1x yearly

Turning moment for screws

property class 8.8

	0,10*	0,15**	0,20***
M8	20	25	30
M10	40	50	60
M12	69	87	105
M16	170	220	260
M20	340	430	520
M24	590	740	890

property class 10.9

	0,10*	0,15**	0,20***
M8	30	37	44
M10	59	73	87
M12	100	125	151
M16	250	315	380
M20	490	615	740
M24	840	1050	1250

* sliding friction 0,10 for very good surfaces, lubricated
** sliding friction 0,15 for good surfaces, lubricated oder dry
*** sliding friction 0,20 surface black or phosphatized, dry

Drehmomenttabelle 8.8-10.9 E

Pic 10:

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.

8. Security check

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

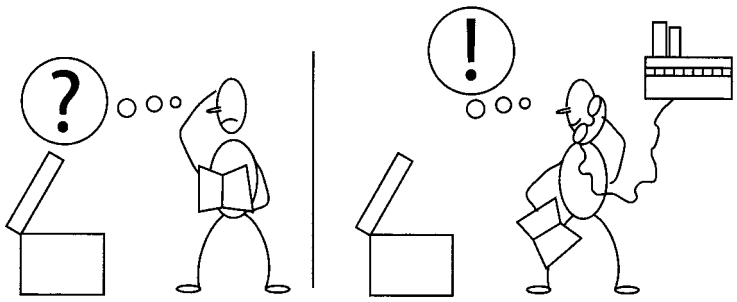
1. Before the initial operation, after the first installation.
   Use the form "First security check before initiation"
2. In regular intervals after the initial operation, at least annually.
   Use the form "Regular security check at least annually"
3. Every time the construction of that particular 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 us 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.

9. Handing over and Initiation



9.1 Regulations

- The installation of the lift is performed by trained technicians of the manufacturer or one of its distribution partners. If the operator can provide trained mechanics, he or she can install the lift by him or herself. The installation has to be done according to this regulation.
- Installing the standard-automotive lift in a hazardous location or a washing bay is not allowed..
- Before installation a sufficient foundation must be constructed. If the foundation is already constructed then proof that the foundation conforms to the standard is required.
  A level foundation for the installation is required. The foundations must be based in a frost resistance depth, both outdoors and indoors in a position where the installer believes there is no chance of frost.
- An electrical supply 3~/N+PE, 400 V, 50 Hz must be provided.
  The supply line must be protected with a time-lag fuse T16A (VDE0100 German regulation).
  The minimum diameter amounts to 2.5 mm².
- All cable ducts must be equipped with protective coverings to prevent accidents.

9.2 Erection and bolting down the lift

Before the installation of 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 avoid accidents.

- Carefully remove the lift from its wooden crate. Check the lift for damage.
- Position the columns as described in the foundation diagram drawing.
- Connect the power supply to the column (by customer).
- Connect the cables between the columns.
- Check the positions of the columns again.
- Fill tanks, approximately 17 litres of hydraulic oil per tank.
- Bore holes in the foundations so that base plates and be bolted down. Clean the holes with compressed air. Put masonry bolts in and secure. The lift-manufacturer demands Liebig safety masonry bolts or equally good bolts from another manufacturer (with licence). Be sure to observe their regulations (bore hole, torque...). Before bolting, check that the concrete-floor is of quality C20/25. If the entire floor is concrete (there is no surface covering), bolts must be selected according to a floor without a surface covering. If the ground is covered with floor tiles or some other form of surface covering, the bolts must be selected according to the floor with floor-covering.
- Press the button “lifting” observe the rotation of the motor.
- If the automotive-lift does not rise, check the rotation-direction of the motor. Otherwise, change two phase of the power supply. (only with 3 phases)
- Fine adjustment of the lift: If necessary use metal sheets to level out an uneven floor. A continuous contact between the floor and the base plate must be ensured to avoid hollow spaces.
- Tighten the masonry bolts to there specified moments using a torque wrench.

Each masonry bolt must be tightened to the specified torque. Otherwise the normal function of the lift can not be guaranteed.
Observe the regulations of other masonry-bolt manufacturers.

- If necessary, carry out a reset before the first operation. (see chapter 6.3)
- Raise the lift to a height of about 800 mm.
- Mount the lifting arms.
- Raise and lower the lift several times without a load (vehicle) to the upper and lower limits.
- Check that the safety devices are functioning correctly.
- Raise and lower the lift several times with a vehicle to the upper and lower limits. (see chapter 5.2)
- Check the hydraulic system for leakages.
- Check that the masonry-bolts are correctly torque again.

In the case of any faults, call the customer service immediately!

9.3 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.

9.4 Change of lift location

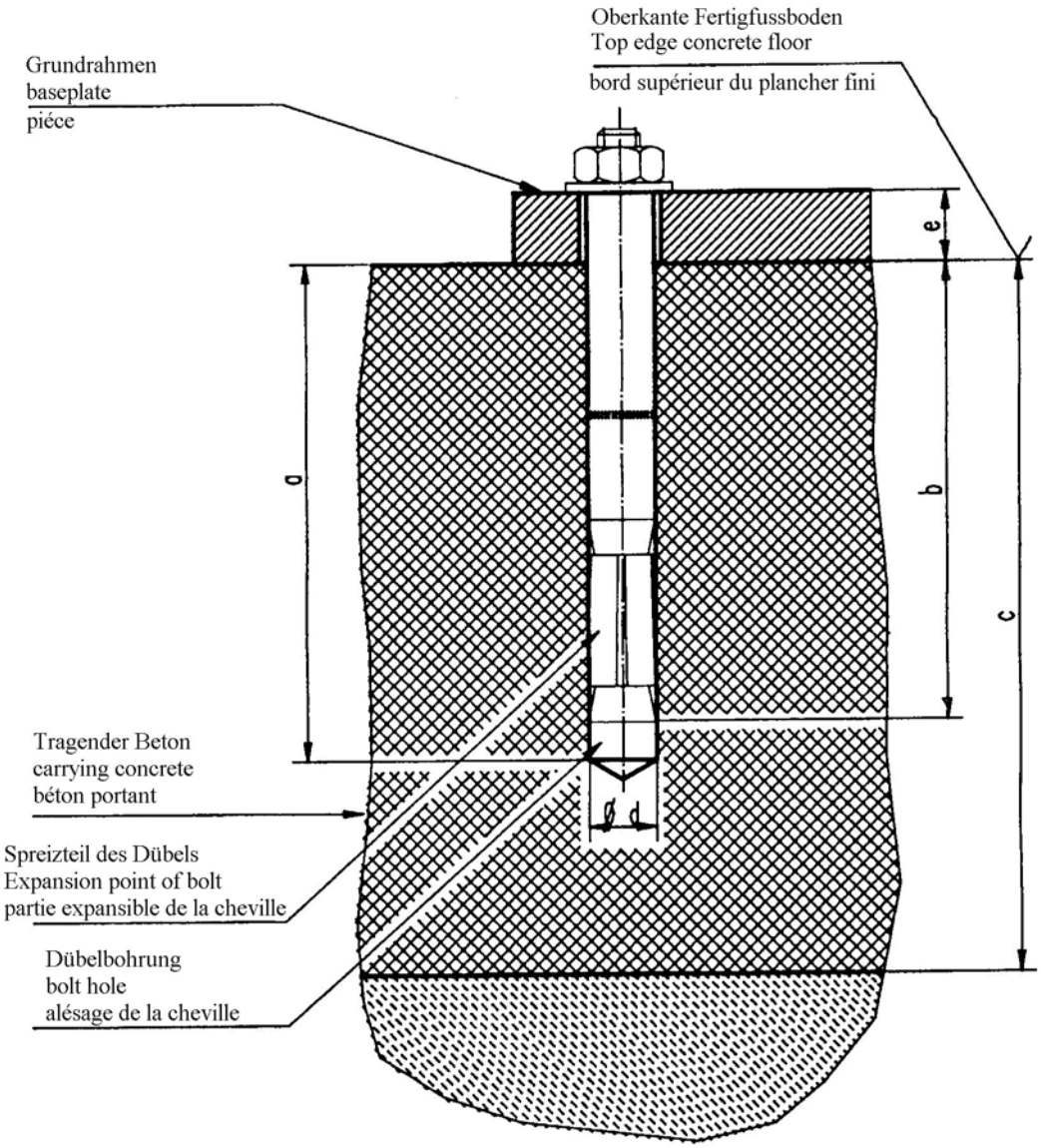
If the place of installation is to be changed, the new place has to be prepared in according to the regulations of the first installation. The change should be performed in accordance with the following points:

- Raise the lift to a height of about 1000 mm.
- Remove the cover of the tank.
- Remove the lifting arms.
- Lower the lift to its lowest position.
- Remove the oil from tank.
- Remove all electrical cables between the columns.
- Disconnect the power supply.
- Transport the automotive-lift to the its new location
- Install the lift in accordance with chapter 9 “ Installation and Initiation”.

Use new masonry-bolts, the used bolts can not be used again.

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

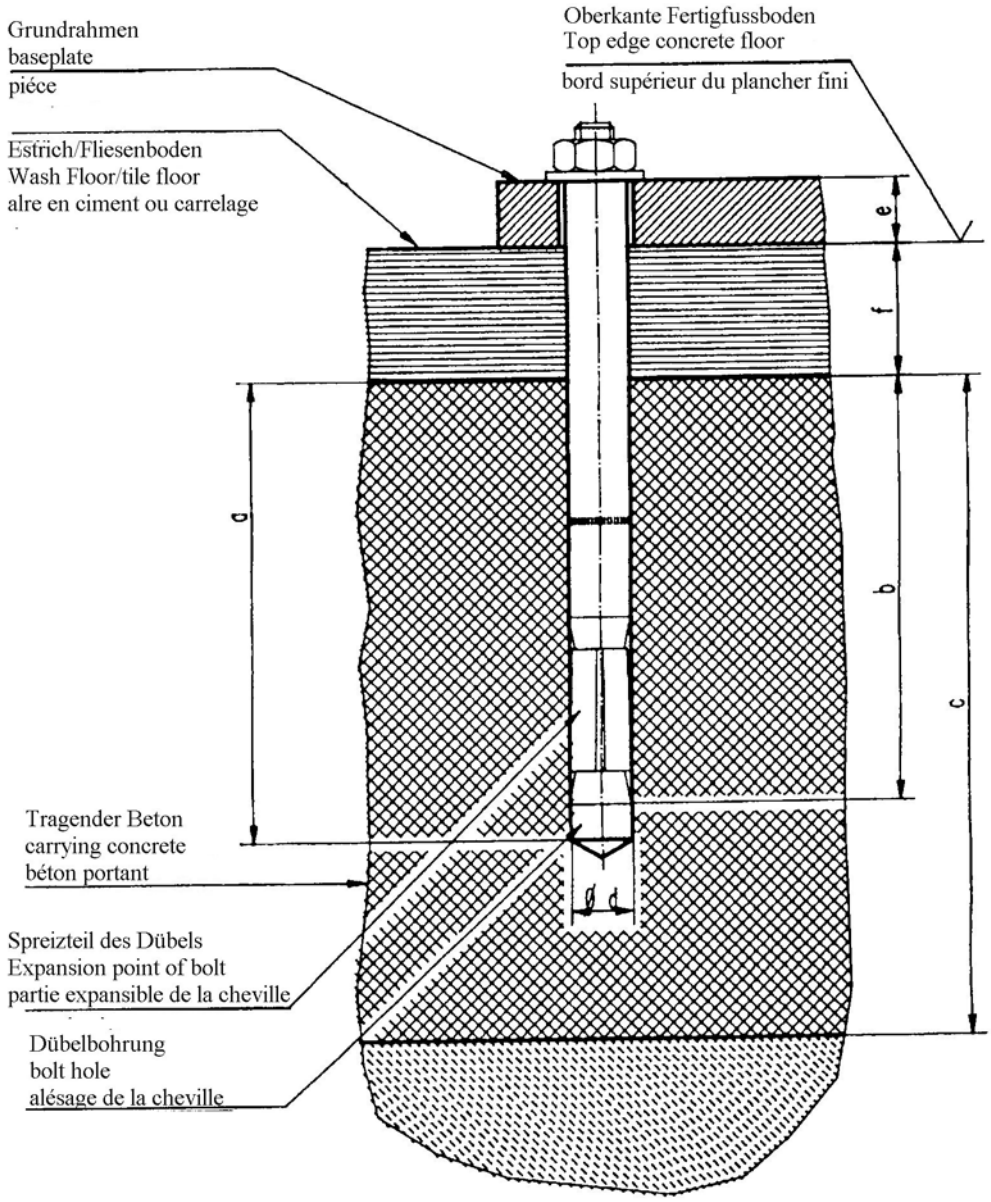
Masonry-Bolt length without floor pavement or tile surface



Liebig-masonry bolts		
Bolt-type		BM16-25/100/40
Drilling depth	a	200
Min. anchorage depth	b	165
Thickness of concrete	c	260
Diameter of bore	d	25
Thickness of the lift-pieces	e	0-35
Number of bolts		14
Starting torque		115 Nm

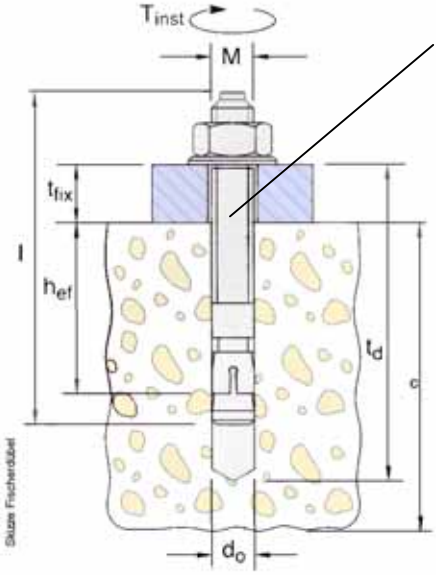
You can use equivalent dowels from another dowel manufacturer (with license) but observe their regulation.

Masonry-Bolt length with floor pavement or tile surface



Liebig-bolts			
bolt-type		BM16-25/100/65	BM16-25/100/100
Drilling depth	a	125	125
Min. anchorage depth	b	100	100
Thickness of concrete	c	min.250*	min.250*
Diameter of bore	d	25	25
Thickness of the lift-pieces	e+f	40-65	65-100
Number of bolts		20	20
Starting torque		115Nm	115Nm

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

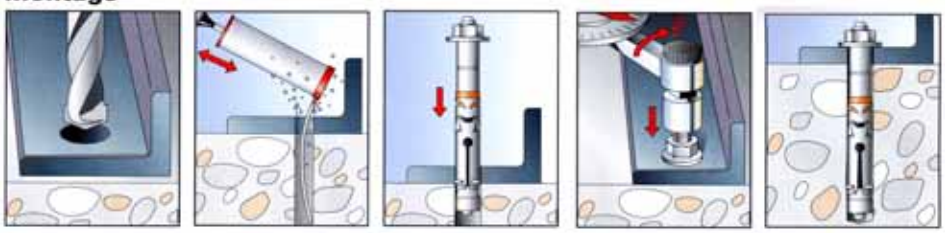


Änderungen vorbehalten!
subject to alterations!
sous réserve des modifications!

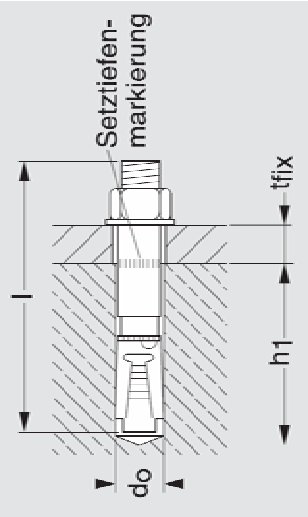
fischer-Dübel				2.60 HL SST [e]
Dübel typ of dowel type de cheville		FH 15/50 B	FH 18 x 100/100 B	FH 24/100 B
Bohrteife drilling depth Profondeur de l'alésage	t_d	145	230	255
Mindestverankerungstiefe min.anchorage depth Profondeur minimale dáncrage	h_{ef}	70	100	125
Betonstärke thickness of concrete Epaisseur 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 Epaisseur de la pièce	t_{fix}	0-50	0-100	0-100
Anzugsdrehmoment Nm turníng moment moment d´une force	M_D	40	80	120

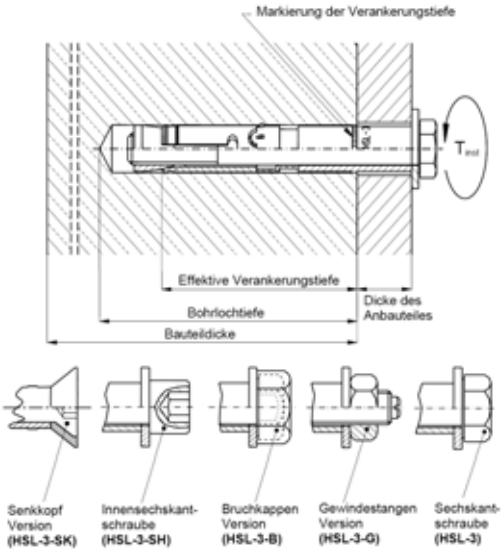
Stückzahl piece number nombre des pièces	a	4
	b	8
	c	10
	d	12
	e	14
	f	16
	g	20

Montage



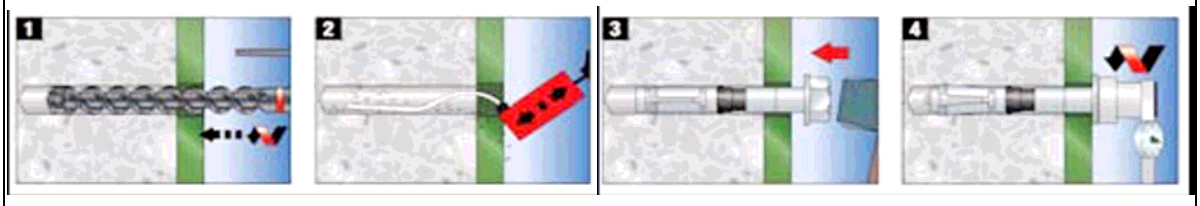
Es können auch gleichwertige Sicherheitsdübel anderer Hersteller (mit Zulassung) unter Beachtung deren Bestimmungen verwendet werden.
It is possible to use equivalent safety-dowels (with license) of other manufacturer but observe their regulations.
Des chevilles des autres marques (autorisées) peuvent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



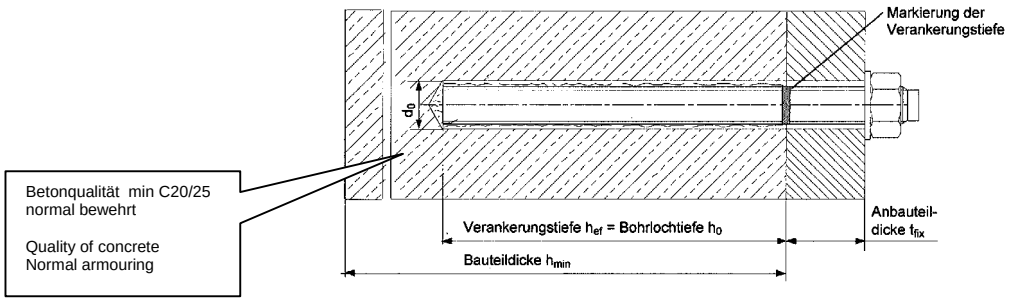


Änderungen vorbehalten!
subject to alterations!
sous réserve des modifications!

Hilti-Dübel					**2.60 HL SST**[e]	**2.60 HL SST**[e]
Bodenbelag (Estrich, Fliesen)		**ohne Bodenbelag**	**ohne Bodenbelag**	**mit Bodenbelag**	**ohne Bodenbelag**	**mit Bodenbelag**
Dübel typ of dowel type de cheville		HSL-3-G M10/40 Art.Nr.371797	HSL-3-G M12/50 Art.Nr.371800	HSL-3-G M12/100 Art.Nr.371831	HSL-3-G M16/50 Art.Nr.371803	HSL-3-G M16/100 Art.Nr.371832
Bohrteife drilling depth Profondeur de l'alésage	h_1	90	105	105	125	125
Mindestverankerungstiefe min.anchorage depth Profondeur minimale dáncrage	h_{ef}	70	80	80	100	100
Betonstärke thickness of concrete Epaisseur 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	18	24	24
Bauteildicke thickness of the lift-piece Epaisseur de la pièce	t_{fix}	0-40	0-50	0-100	0-50	0-100
Anzugsdrehmoment Nm turníng moment moment d´une force	T_{inst}	35	60	60	80	80
Gesamtlänge Total length Longueur totale	l	135	164	214	188	238
Gewinde Thread fil	M	10	12	12	16	16
Stückzahl piece number nombre des pièces	a	4				
	b	8				
	c	10				
	d	12				
	e	14				
	f	16				
	g	20				



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 respetant les directives du fabricant.



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

Hilti-Injections dowel				**HL 2.60 SST**[e]
Betonboden / concrete floor		ohne Bodenbelag / without floor pavement (tiles)		
Dübel type of dowel type de cheville		HIT-V-5.8 M10x130	HIT-V-5.8 M12x150 Art.Nr.387061	HIT-V-5.8 M16x200 Art.Nr.956437
Bohrteife (mm) drilling depth Profondeur de l'alésage	h_o	90	108	144
Mindestverankerungstiefe (mm) min.anchorage depth Profondeur minimale dáncrage	h_{ef}	90	108	144
Betonstärke (mm) thickness of concrete Epaisseur du béton	H_{min}	min.120	min.138	min.180
Bohrerdurchmesser (mm) diameter of bore Diamètre de l'alésage	d_o	12	14	18
Bauteildicke (mm) thickness of the lift-piece Epaisseur de la pièce	t_{fix}	max.17	max.19	23
Anzugsdrehmoment (Nm) turníng moment moment d´une force	T_{inst}	20	40	80
Gesamtlänge (mm) Total length Longueur totale	**l**	130	150	200
Gewinde Thread fil	**M**	10	12	16
Stückzahl piece number nombre des pièces	a	4		
	b	8		
	c	10		
	d	12		
	e	14		
	f	16		
	g	28		

Die Montageanweisung des Dübelherstellers ist Folge zu leisten.
Bei Bodenbelag (Estrich/Fliesen) sind längere Dübel zu verwenden.

Observe necessarily the installation description of the dowel manufacturer.
Use longer dowels with version with floor pavement and tiles

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

First security check before installation

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

☞ Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

☞ Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

Complete and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Sticker “max. capacity”	☐	☐	☐	.....
Function button lifting/lowering	☐	☐	☐	.....
Detailed operating instruction	☐	☐	☐	.....
Condition concrete	☐	☐	☐	.....
Safety device of hinge bolt	☐	☐	☐	.....
Function button “equalization of the lift”	☐	☐	☐	.....
Condition automotive lift	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Construction (deformation, cracking)	☐	☐	☐	.....
Torque of the dowels (bolts)	☐	☐	☐	.....
torque moments of the screws and dowels	☐	☐	☐	.....
Condition operating unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition coverings	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Closeness of the hydraulic system	☐	☐	☐	.....
Condition hydraulic hoses	☐	☐	☐	.....
Function test with vehicle	☐	☐	☐	.....
Function safety devices	☐	☐	☐	.....
Condition welding	☐	☐	☐	.....
Function/condition lifting carriage	☐	☐	☐	.....
Condition lifting arms	☐	☐	☐	.....
Function locking system of the lifting arms	☐	☐	☐	.....
Condition rubber pad	☐	☐	☐	.....
Condition columns	☐	☐	☐	.....
Function CE-Stop	☐	☐	☐	.....
Function acoustic warning signal	☐	☐	☐	.....

(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

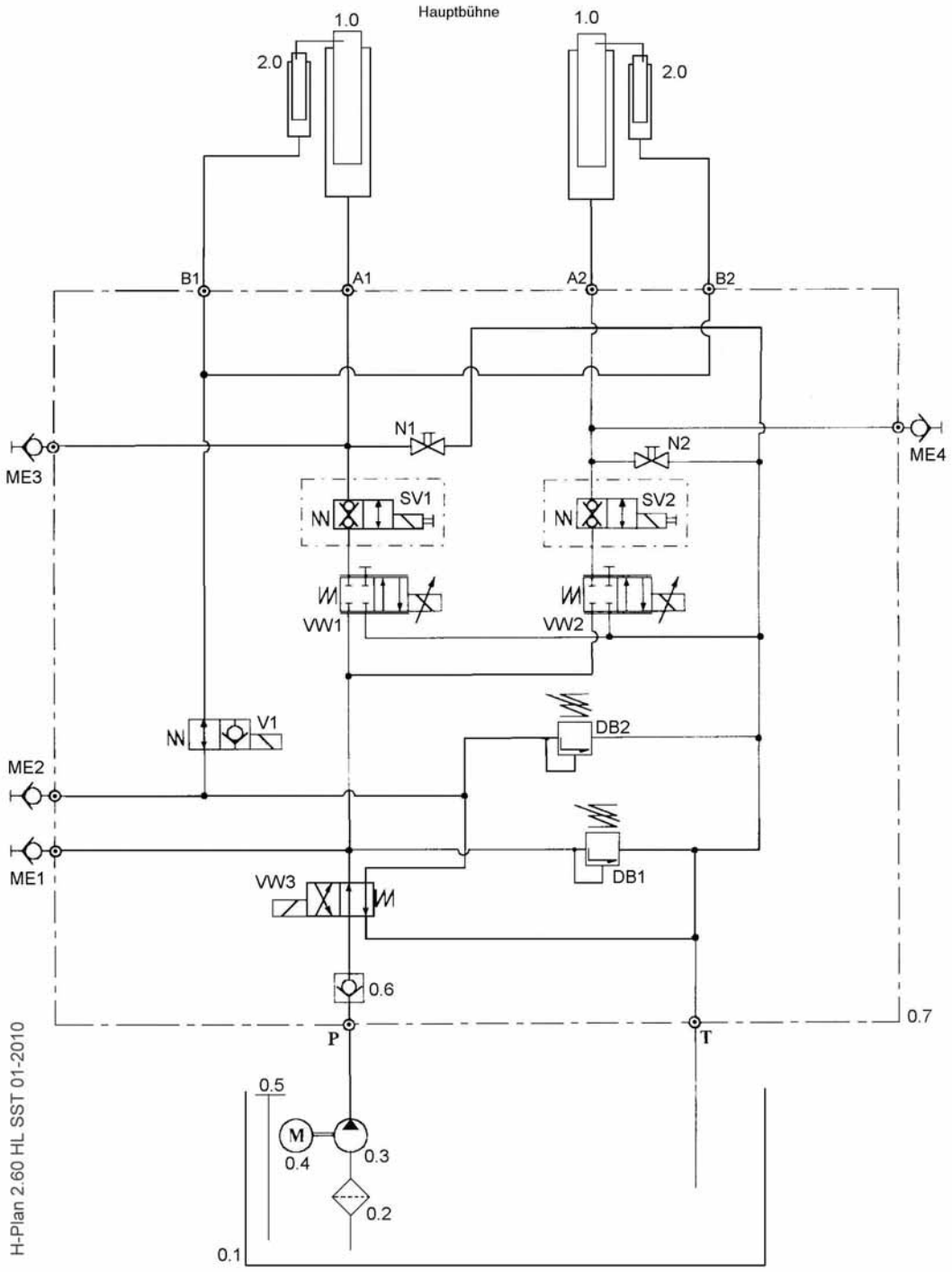
If failures must be repaired:

Failures repaired at: ....

signature of the operator

(Use another form for verification!)

Hydraulic diagram drawing



Hydraulic parts list

No.	Description		Order No.
0.1	Oil tank		260HL01520
0.2	Oil filter		980012
0.3	Gear pump 5,8cm³	1BK7S9,2Q	982031
0.4	Sub oil motor		992463
0.5	Oil level gauge		980098
0.6	Hydraulic valve		980166
0.7	Hydraulic block		99-572-00-01-5
DB1	Pressure relief valve		155211
DB2	Pressure relief valve		155211
M1-M4	Measuring connection		118495
VW1	Proportional valve	WEP06DA01B0240S	154370
VW2	Proportional valve	WEP06DA01B0240S	154370
VW3	4/2 way valve	WE06DA77A0240F	600394
V1	Holding valve		158503
N1	Emergency lowering screw		120026
N2	Emergency lowering screw		120026
SV1	Double seat valve		158641
SV2	Double seat valve		158641
1.0/2.0	Cylinder + unlocking cylinder		260HL22001

Electrical diagram drawing

Inhaltsverzeichnis

Spalte X: eine automatisch erzeugte Seite wurde manuell nachbearbeitet WUPJ0050 24.02.1994

Seite	Seitenbenennung	Seitenzusatzfeld	Datum	Bearbeiter	X
1	Deckblatt		02.12.2009	BOE	
2	Inhaltsverzeichnis		04.12.2009	BOE	
3	Anderung		02.12.2009	BOE	
4	Einspeisung		04.12.2009	BOE	
5	Steuerspannung		04.12.2009	BOE	
6	Achscontroller		04.12.2009	BOE	
7	Ventile		04.12.2009	BOE	
8	Bedientasten		04.12.2009	BOE	
9	frei		02.12.2009	BOE	
10	X1		04.12.2009	BOE	
11	X1.1		04.12.2009	BOE	
12	Stückliste		04.12.2009	BOE	x
13	Stückliste		04.12.2009	BOE	x

			Datum		Nussbaum Hebetechnik GmbH & Co.KG Kerker Straße 24 D-77694 Kehl - Bodersweier Tel.:+49(0)7853/899-0 Fax.:+49(0)7853/8787	2.60 HL SST	-	
			Bearb.	BOE			+	
			Gepr.	02.08.2010			Inhaltsverzeichnis	Bl. 2
Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	13 Bl.

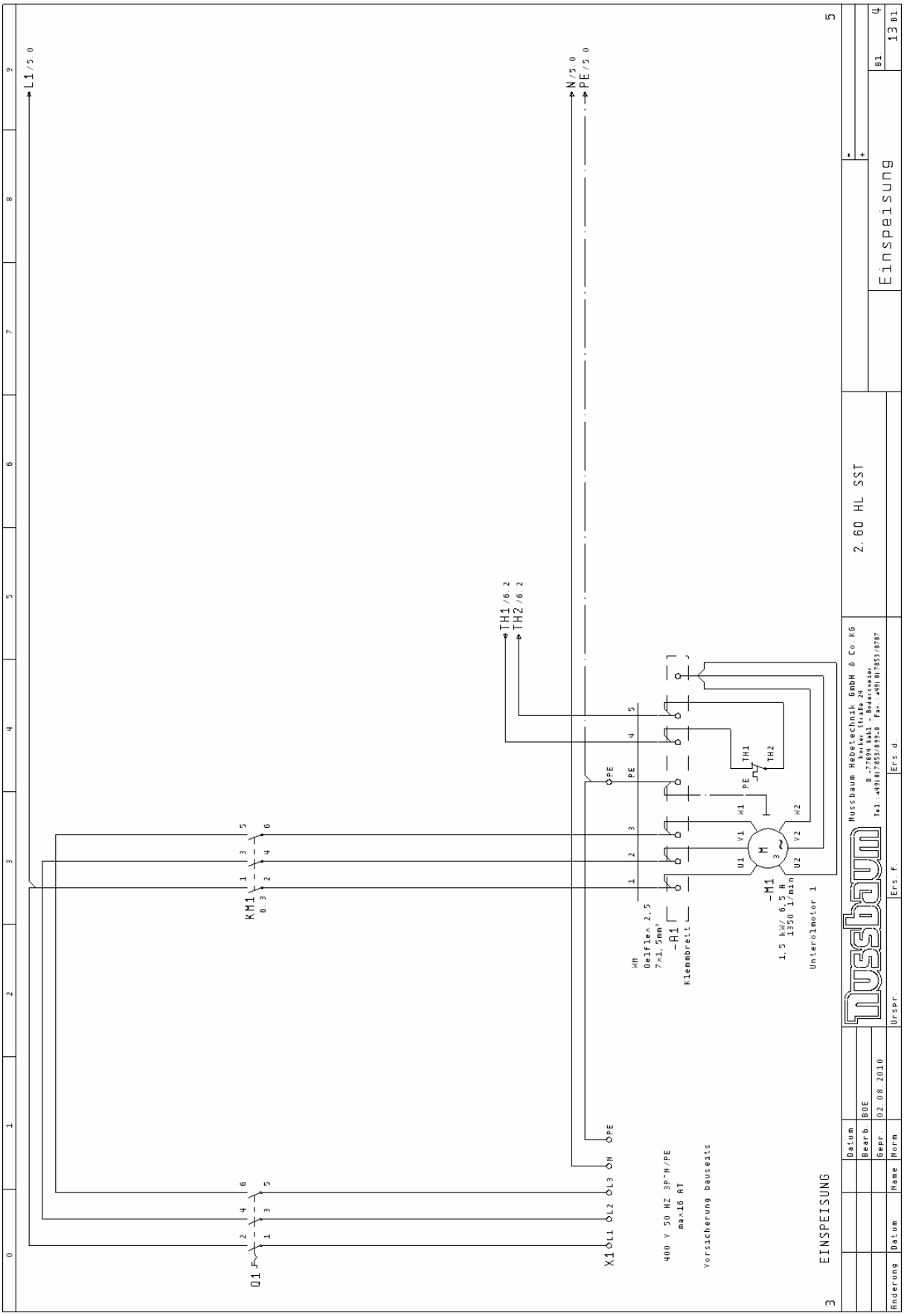
Nussbaum

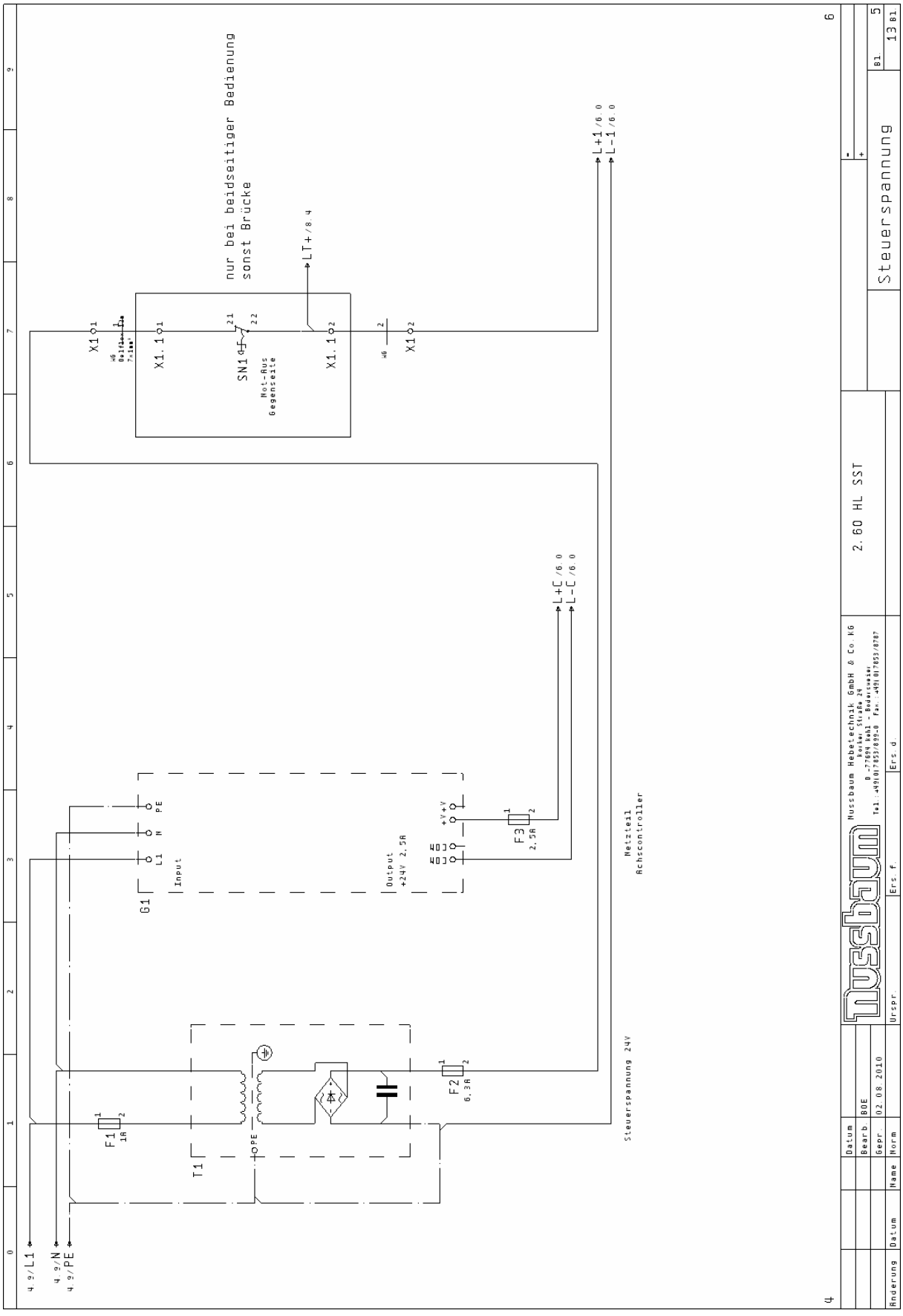
Operating Instruction and Documentation
2.60 HL SST

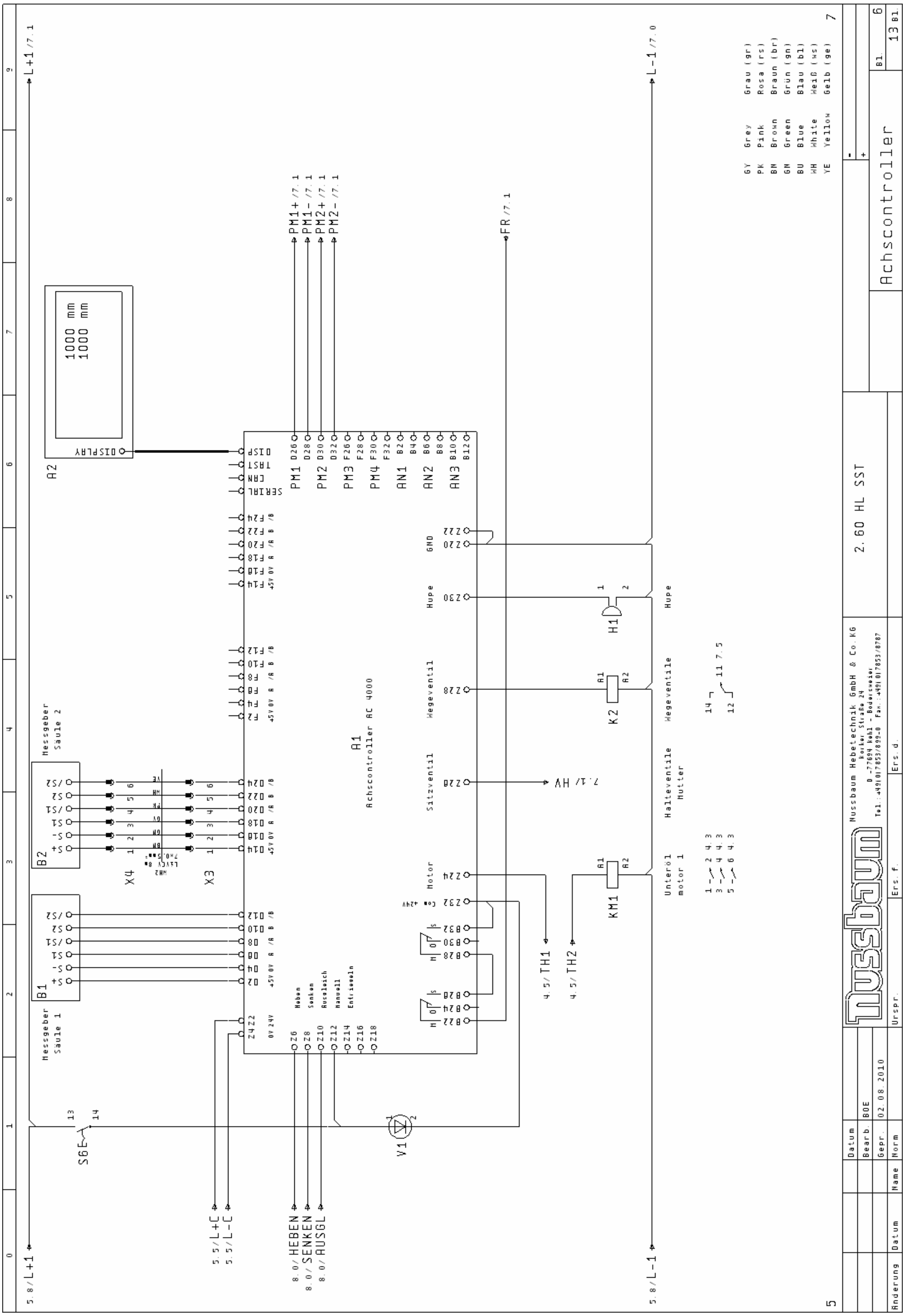
ÄNDERUNGS-INFORMATIONEN

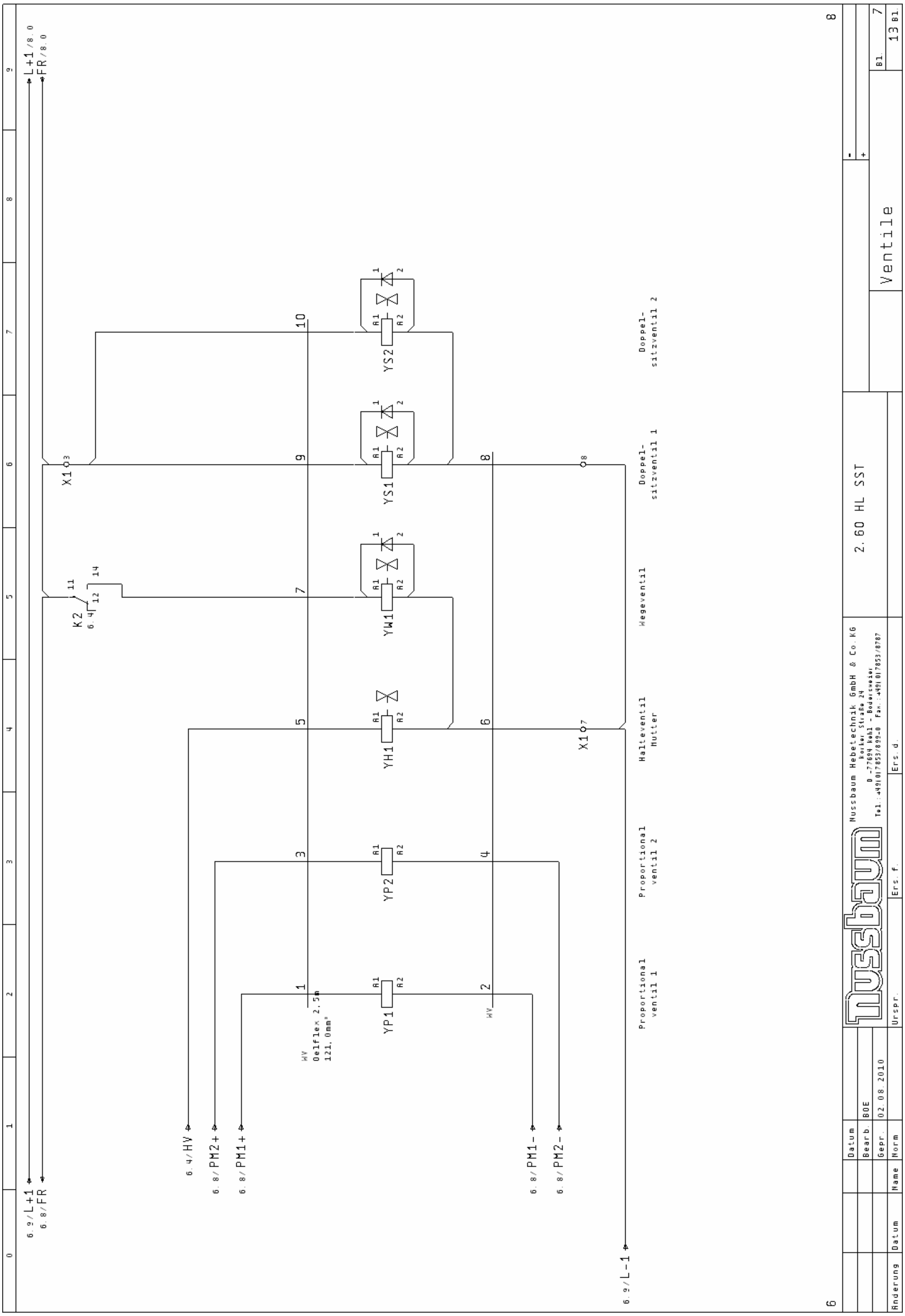
Nr.	Datum	Firma	Bearbeiter	Änderungen	ORT/SEITE
1	02.08.2010	NB	Boe	Motorleistung von 3kW auf 1,5kW angepasst	4

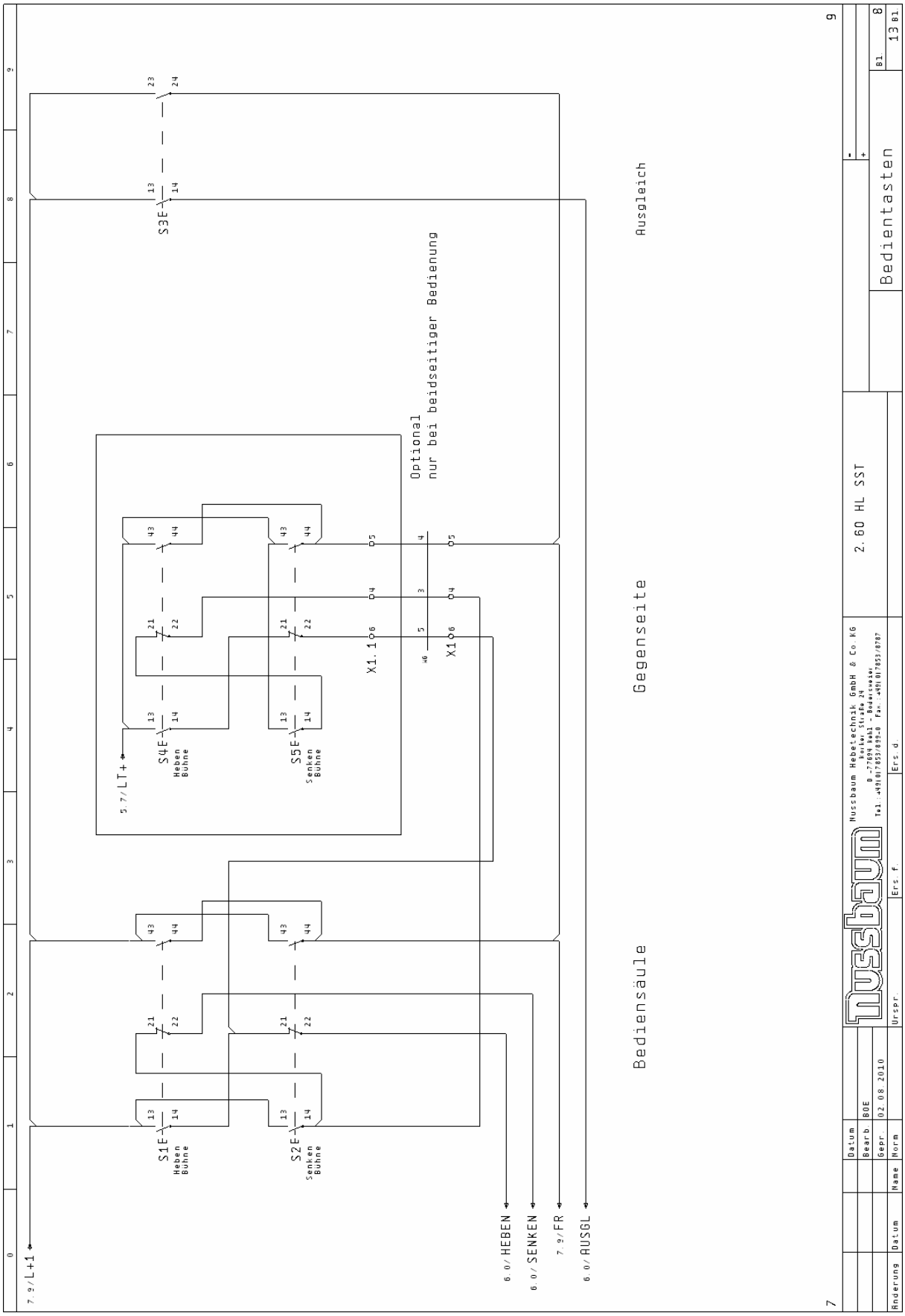
			Datum		Nussbaum Hebetechnik GmbH & Co.KG Kerker Straße 24 D-77694 Kehl - Bodersweier Tel.: +49(0)7853/899-0 Fax.: +49(0)7853/8787	2.60 HL SST		-
			Bearb.	BOE				+
			Gepr.	02.08.2010			Änderung	Bl. 3
Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	13 Bl.

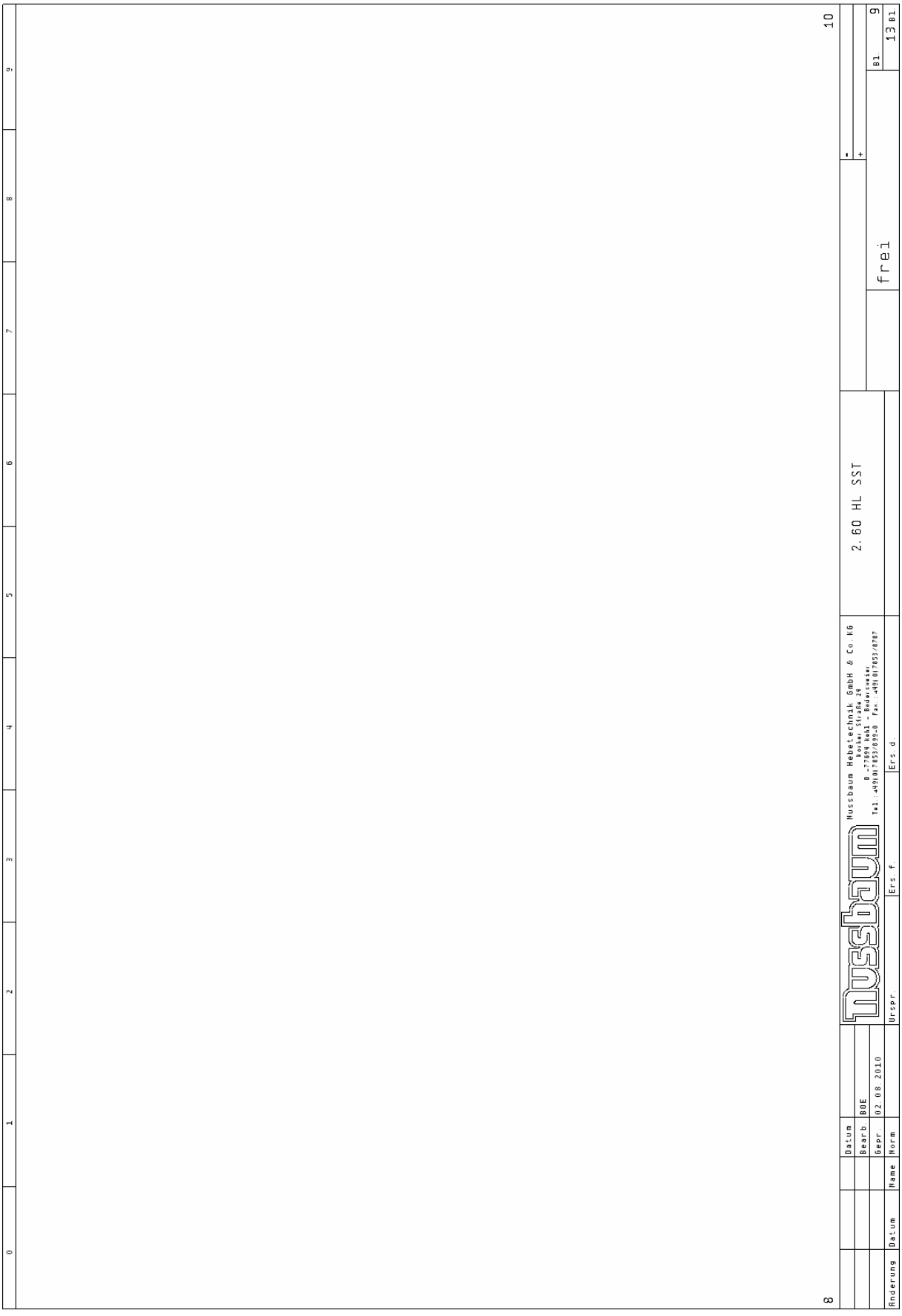

L1/5.0
N/5.0
PE/5.0
TH1/6.2
TH2/6.2
KM1
Q1
X1
-M1
1.5 kW/ 6.5 A
1350 1/min
Unterwolmotor 1
-A1
Klemmbrett
ÖlFlex 2.5
7x1.5mm²
400 V 50 HZ 3P~N/PE
max16 AT
Vorsicherung bauseits
EINSPEISUNG
2.60 HL SST
Einspeisung
Nussbaum Hebetechnik GmbH & Co. KG
Datum
Bearb
Gepr.
Änderung
Name
Norm


nur bei beidseitiger Bedienung
sonst Brücke
Steuerspannung
2.60 HL SST
Nussbaum Hebetechnik GmbH & Co. KG
Netzteil
Achscontroller
Steuerspannung 24V
Input
Output
+24V 2.5A
F1
1A
F2
6.3A
F3
2.5A
T1
G1
SN1
X1
X1.1
L+1/6.0
L-1/6.0
L+F/6.0
L-F/6.0
LT+/8.4
Datum
Bearb
Gepr.
Norm
Urspr.
Ers. f.
Ers. d.
Änderung


Achscontroller
2.60 HL SST
A1
Achscontroller AC 4000
A2
DISPLAY
1000 mm
1000 mm
B1
Messgeber Säule 1
B2
Messgeber Säule 2
X3
X4
H1
Hupe
K2
Wegeventile
KM1
Unteröl motor 1
Halteventile Mutter
V1
S6E
L+1
L-1
FR
PM1+
PM1-
PM2+
PM2-
HEBEN
SENKEN
AUSGL
L+C
L-C
TH1
TH2
HV
GY Grey Grau (gr)
PK Pink Rosa (rs)
BN Brown Braun (br)
GN Green Grün (gn)
BU Blue Blau (bl)
WH White Weiß (ws)
YE Yellow Gelb (ge)
Nussbaum Hebetechnik GmbH & Co. KG
Datum
Bearb. BOE
Gepr. 02.08.2010
Norm
Änderung
Datum
Name
Urspr.
Ers. f.
Ers. d.


L+1
FR
X1
K2
YS2
YS1
YW1
YH1
YP2
YP1
Doppel-sitzventil 2
Doppel-sitzventil 1
Wegeventil
Halteventil Mutter
Proportional ventil 2
Proportional ventil 1
6.4/HV
6.8/PM2+
6.8/PM1+
6.8/PM1-
6.8/PM2-
6.9/L-1
Oelflex 2,5m
2.60 HL SST
Ventile
Nussbaum Hebetechnik GmbH & Co. KG
Datum
Bearb. BOE
Gepr. 02.08.2010
Norm
Urspr.
Ers. f.
Ers. d.
Änderung
Datum
Name


Bedientasten
2.60 HL SST
Nussbaum Hebetechnik GmbH & Co. KG
Bedienseite
Gegenseite
Ausgleich
Optional
nur bei beidseitiger Bedienung
S1E Heben Bühne
S2E Senken Bühne
S3E
S4E Heben Bühne
S5E Senken Bühne
X1.1
X1
5.7/L+
7.9/L+1
6.0/HEBEN
6.0/SENKEN
7.9/FR
6.0/AUSGL


Nussbaum Hebetechnik GmbH & Co. KG
Kehler Straße 34
D -77694 Kehl - Bodenseeweg
Tel. +49(0)7853/899-0 Fax. +49(0)7853/8787
2.60 HL SST
frei
Änderung
Datum
Name
Gepr.
02.08.2010
Norm.
Urspr.
Ers. f.
Ers. d.
Bl. 9
13 Bl.

Klemmenplan

WUPKM020 / 22.04.1998

Leistenbezeichnung: X1

Funktionstext	Oelflex (WG)	Oelflex (WV)	Oelflex (WH)	Kabeltyp	Ziel-bezeichnung	Anschluß	Klemmen-nummer	Brücken	Klemmen-Symbol	Ziel-bezeichnung	Anschluß	Kabeltyp	Seite/Pfad
EINSPEISUNG							L1			D1	1		4.0
=							L2			D1	3		4.0
=							L3			D1	5		4.0
=							N			T1	_3		4.1
=							PE	●					4.1
Netzteil Achscontroller	1				X1.1	1	1	│		F2	2		5.7
=	2				X1.1	2	2	│		S0	13		5.7
Doppelsitzventil 1		9			YS1	A1	3	│		K2 S2	11 44		7.6
Gegenseite	3				X1.1	4	4	│		S2	14		8.5
=	4				X1.1	5	5	│		S2 S3	44 24		8.5
=	5				X1.1	6	6	│		S2	21		8.5
Halteventil Mutter		8			YH1	A2	7	●		A1	Z20		7.4
Doppelsitzventil 1		8			YS1	A2	8	●					7.6
Unterölmotor 1			PE		-A1		PE	●		T1	PE		4.4

Änderung	Datum	Name	Norm

Datum	22.12.2009
Bearb.	BOE
Gepr.	02.08.2010

Urspr. | Ers. f. | Ers. d.

Nussbaum Hebetechnik GmbH & Co. KG
Korker Straße 24
D-77694 Kehl - Bodersweier
Tel.: +49(0)7853/899-0 Fax: +49(0)7853/8787

2.60 HL SST

X1

+ / -

9 | 11 | Bl. 10 | 13 Bl.

Klemmenplan

WUPKM02D / 22.04.1998

Leistenbezeichnung: X1.1

Seite/Pfad	5.7	5.7	8.5	8.5	8.5
Oelflex (WG)	1	2	3	4	5
Kabelname / Kabeltyp					
Anschluß	1	2	4	5	8
Ziel-bezeichnung	X1	X1	X1	X1	X1
Klemmen-Symbol					
Brücken					
Klemmen-nummer	1	2	4	5	6
Anschluß	21	22	22	44	22
Ziel-bezeichnung	SN1	SN1	S4	S5	S5
Kabelname / Kabeltyp					
Funktionstext	Netzteil Achscontroller	"	Gegenseite	"	"

10   12

			Datum	22.12.2009	Nussbaum Hebetechnik GmbH & Co. KG, Korker Straße 24, D-77694 Kehl - Bodersweier, Tel.: +49(0)7853/899-0 Fax.: +49(0)7853/8787	2.60 HL SST	- / +
			Bearb.	BOE			X1.1
			Gepr.	02.08.2010			B1 11 / 13 B1
Änderung	Datum	Name	Norm		Urspr. / Ers. f. / Ers. d.		

Stückliste

NUSTÜCK1 17.01.2003

Bauteilbenennung	Menge	Bezeichnung	Typen nummer	Lieferant	Artikelnummer
-A1	1	Motorbrettabdeckung	991312	Nussbaum	991312
-A1	1	Klemmbrettdichtung	991313	Nussbaum	991313
-A1	1	Klemmbrett	991314	Nussbaum	991314
A1	1	Achscontroller ASC 4000 Vollversion	940260	Nussbaum	940260
A1	1	Federleiste 64pol für Achscontroller	FEDERLEISTE 64POL	Nussbaum	991416
A1	1	Leiterkartenhalter/ Kartentasche	120X10029	Zubehör	992045
A1	1	Befestigungssatz für Leiterkartenhalter	120X10059	Zubehör	992046
A1	1	Blechhalter ASC			035UNI03012
A1	33	Flachsteckhülse 2,8	45365.123.204	AMP	991352
A1	33	Isoliertülle 2,8	F 2,8	AMP	991353
A2	1	Displayrahmen klein , komplett	240TSRH21133	Nussbaum	240TSRH21133
A2	1	Display für ASC 4000	DEM16481 SY-LY/L	Nussbaum	940257
A2	1	Displaykabel Achscontroller	990874	Nussbaum	990874
B1	1	HALLELEMENTSCHALTER HDD-16MS60BL,5-55ND1/5	HDD-16MS60BL,5-55ND1/5	Nussbaum	990658
B2	1	HALLELEMENTSCHALTER HDD-16MS60BL,5-55ND1/5	HDD-16MS60BL,5-55ND1/5	Nussbaum	990658
F1	1	Sicherungsklemme Trenner 5*20 mm	M4/8.SF	Entrelec	990661
F1	1	Feinsicherung	FEINSICHERUNG	GIF	990475
F2	1	Sicherungsklemme Trenner 5*20 mm	M4/8.SF	Entrelec	990661
F2	1	Feinsicherung	FEINSICHERUNG	GIF	990286
F3	1	Sicherungsklemme Trenner 5*20 mm	M4/8.SF	Entrelec	990661
F3	1	Feinsicherung	FEINSICHERUNG	GIF	990124
G1	1	Schalt-Netzgerät Achscontroller DC 24 V /2,5A	S60-F24	Lust GmbH	940101
H1	1	Digisond akustischer Signalgeber	B/P 228	Deltron Components	990331
-J	1	E-Box mit Montageplatte gelocht 2.xx HDL SST	B1045-0050LB08	Krauth technology	B1045-0050LB08
-J	1	Montageplatte universal 300*400	B1045-0017	Krauth technology	B1045-0017
-J	2	Perfect Kabelverschraubung M25x1,5	KABELVERSCHRAUBUNG M25X1,5	Jacob GmbH	992350
-J	2	Sechskanntmutter M25x1,5	SECHSKANNTMUTTER M25X1,5	Jacob GmbH	992297
-J	3	Perfect Kabelverschraubung M20x1,5	KABELVERSCHRAUBUNG M20X1,5	Jacob GmbH	9951937
-J	3	Sechskanntmutter M20x1,5	SECHSKANNTMUTTER M20X1,5	Jacob GmbH	992296
-J	2	Perfect Kabelverschraubung M16x1,5	KABELVERSCHRAUBUNG M16X1,5	Jacob GmbH	99519371
-J	2	Sechskanntmutter M16x1,5	SECHSKANNTMUTTER M16X1,5	Jacob GmbH	992295
K2	1	INDUSTRIERELAIS 24V 4 Wechsler	274I	BTR	990267
K2	1	Industrierelaissockel für 4 Wechsler	110178	BTR	990381
KH1	1	Leistungsschütz 5,7 kW 24 V DC	11BG12.01 D 24V DC	Lovato electric	990842
-M1	1	Unterölmotor 1,5 kW	U07H4S1-366 T	Hanning GmbH	992463
Q1	1	Hauptsch. Not-Aus 3p 16A 5,5kW	A 105/3.0200-EV/SO	Merz GmbH	990403
S1	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
S1	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
S1	1	Kontaktblock 1S 1Ö (M22)	M22-AK11	Moeller	990132
S1	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
S2	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
S2	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
S2	1	Kontaktblock 1S 1Ö (M22)	M22-AK11	Moeller	990132
S2	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
S3	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
S3	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
S3	1	Kontaktblock 1S (M22)	M22-AK10	Moeller	990142
S3	1	Start (I)(M22)	M22-XD-G-X1	Moeller	991045
S4	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
S4	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131

11 13

			Datum	02.08.2010	Nussbaum Hebetechnik GmbH & Co.KG Korker Straße 24 D-77694 Kehl - Bodersweier Tel.:+49(0)7853/899-0 Fax.:+49(0)7853/8787	2.60 HL SST		-	
			Bearb.	BOE				+	
			Gepr.	02.08.2010				Stückliste	Bl. 12
Änderung	Datum	Name	Norm		Urspr.	Ers.f.	Ers.d.		13 Bl.

Stückliste

NUSTÜCK1 17.01.2003

Bauteilbenennung	Menge	Bezeichnung	Typen nummer	Lieferant	Artikelnummer
S4	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
S4	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
S5	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
S5	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
S5	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
S5	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
S6	1	Drucktaster Einbau klein 1S	DS 131	OSER GmbH	990366
SN1	1	Kontaktelement 10 (M22)	M22-K01	Moeller	990181
SN1	1	NOT-AUS-Taster rot (M22)	M22-PV	Moeller	990415
SN1	1	Befestigungsadapter (M22)	M22-A	Moeller	990965
SN1	1	Unterlegschild NOT - AUS gelb quadr.	M22-XYK	Moeller	992387
T1	1	Trafo + Gleichrichter + Kondensator	TRAFO 1-PH	Schmelzer	990835
V1	1	Sperrdiode BYV 28 -100 1000V; 3A	BYV 28 -100	Conrad Elektronik	940042
W6	1	Steuerleitung mit num. Adern (761,0mm²)	PVC-STEUERLEITUNG FLEX	Kabel Wächter GmbH & Co.KG	990289
WH2	1	Steuerleitung 7x0,5 mm²	PVC STEUERLEITUNG LIYY	Kabel Wächter GmbH & Co.KG	991104
WM	1	Steuerleitung mit num. Adern (761,5)	PVC-STEUERLEITUNG FLEX	Kabel Wächter GmbH & Co.KG	990059
WV	1	Steuerleitung mit num. Adern (12x1,0)	PVC-STEUERLEITUNG FLEX	Kabel Wächter GmbH & Co.KG	990466
X1	4	Schutzleiterkl D 4/6.P.ADO schraub-schn	D 4/6.P.ADO	Entrelec	990767
X1	9	Reihenklemme DR 4/6 ADO grau schraub-schn	D 4/6 ADO	Entrelec	990761
X1	1	Schutzleiterkl D 2,5/6.P.ADO schn-schn	D 2,5/8.P.ADO	Entrelec	990185
X1	1	Abschlussplatte 3 mm grau. für D1,5/6... ADO	ABSCHLUSSPLATTE FEAD2	Entrelec	990589
X1	1	Bezeichnungskarte L1-L2-L3-N-PE horizontal	RC65 6X5 L1-L2-L3-N-PE	Entrelec	990739
X1	1	Bezeichnungskarte 1-10 horizontal	RC65 6X5 1-10	Entrelec	990743
X1.1	5	Reihenklemme DR 4/6 ADO grau schraub-schn	D 4/6 ADO	Entrelec	990761
X3	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990918
X3	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990919
X3	6	Stifteinsatz für Gerätestecker	STIFTEINSATZ	Spörle GmbH	991330
X3	6	Buchseneinsatz für Gerätestecker	BUCHSENEINSATZ	Spörle GmbH	991331
X4	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990918
X4	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990919
X4	6	Stifteinsatz für Gerätestecker	STIFTEINSATZ	Spörle GmbH	991330
X4	6	Buchseneinsatz für Gerätestecker	BUCHSENEINSATZ	Spörle GmbH	991331
YH1	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YP1	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YP2	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YS1	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YS1	1	Sperrdiode 1N40007 1000V; 1A	1 N 40007	Conrad Elektronik	990652
YS2	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YS2	1	Sperrdiode 1N40007 1000V; 1A	1 N 40007	Conrad Elektronik	990652
YW1	1	Ventilstecker	GERÄTESTECKER	Seehausen	980654
YW1	1	Sperrdiode 1N40007 1000V; 1A	1 N 40007	Conrad Elektronik	990652

12

			Datum	02.08.2010	Nussbaum Hebetechnik GmbH & Co.KG Korker Straße 24 D-77694 Kehl - Bodersweier Tel.: +49(0)7853/899-0 Fax.: +49(0)7853/8787	2.60 HL SST	-	
			Bearb.	BOE			+	
			Gepr.	02.08.2010			Stückliste	Bl. 13
Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	13 Bl.