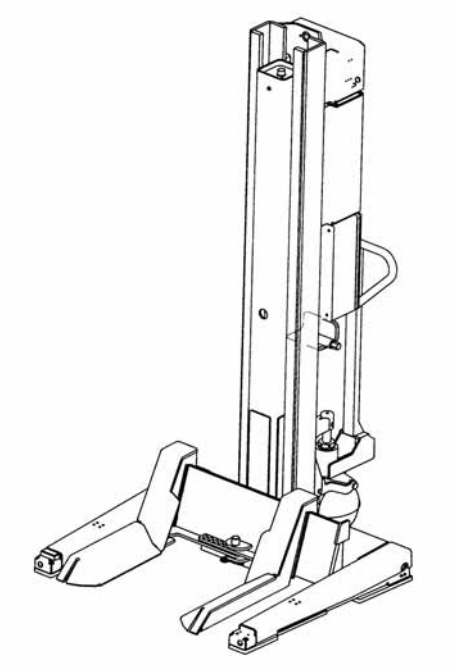
MCS 7500 Flex RC Bluetooth

Date 01/2007
Manual date: 17.01.2007



Operating Instruction and Documentation

Serial number:.....

Retailer address / phone

MCS 7500 Bluet E 01-07.doc

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Foreword

Nußbaum-Lifts are a result of long-standing experiences.
The high quality and the superior concept guarantee them reliability, a long lift time and the economic business.
To avoid unnecessary damages and dangers, read the operating instruction attentive and observe the contents.
Another or the described purpose going out use is not valid when not as agreed.
This is valid particularly for climb and go.

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

For the use belonged:

- to observe all the notice in the operating instruction and
- the following of the inspection and maintenance work and the prescribed tests.
- The instruction for use have to be observed by all persons working with the lift.
- Especially the chapter “Safety/accident Prevention“ has to be observed.
- In addition to the safety remarks of the instructions for use the regulations and instructions being valid at the place of operation have to be considered.

Obligations of the operator:

The operator is obliged to allow only those persons complying to the following requirement to work at the unit

- being well acquainted with the basic regulations concerning labour safety and accident prevention and being trained to operate the unit.
- having read and understood the chapter concerning safety and warning instructions and confirmed that by their signature.

Dangers when operating with the lift:

The Nußbaum-Lifts are designed and built according to technical standard and the approved regulations for technical security. Yet, danger for body and life of the operator may turn up when using the lift inexpertly.

The lift must only be operated :

- for its appropriate use
- in unobjectionable condition concerning technical security.

Organising requirements

- The instructions for use are constantly to be kept at the place of operation being at hand at any time.
- In addition to the instructions for use rules pertaining to other regulations i.e. accident prevention and environmental rules are to be observed and directed.
- Safety- and danger alert operation of personal is occasionally and by observing the instructions for use to be controlled.

- As far as required and ordered by regulations personal protective equipment is to be used
- All safety- and danger-hints at the lift are to be observed!
- Spare parts must comply with technical requirements laid down by the manufacturer. This is only warranted with original parts.
  Consider time intervals given or fixed in instructions for use for repeated tests/inspections.

Maintenanceworks, remedy of faults and disposal

- Fixed Adjusting-, maintenance- and inspectionworks and time intervals including
  Details for exchange of parts/part components as mentioned in the instructions for use are to be adhered.
  These works must only be carried out by expert personal.
- After maintenance- and repair works loose screw connections must always be firmly tightend!

Guarantee and liability

- Our „General conditions of selling and delivering“ are in force.
  There will be no guarantee or liability for injuries of persons or things if these injuries are caused by one or by some 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 or do not work correctly or are not installed correctly.
- Not to follow the regulations of the operating instruction concerning transport, storing, installation, initiation, operation and maintenance of the lift.
- Changes of the construction of the lift without asking the producer.
- Changes of important adjustments of the lift (e.g. driving elements, power rating, motor speed, etc)
- Wrong or incorrect maintenance.
- Catastrophes, acts of God or external reasons.

Record of handing over

The mobile column lift MCS 7500 with the

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

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

the safety was checked and the lift was started.

The persons below were introduced after the installation of the automotive lift. The introduction was carried out from an erector of the lift-manufacturer or from a franchised dealer (competent person).

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

Your customer service:.....

1.Introduction

The document **"Operating Instructions and Documentation"** contains important information about installation, operation and maintenance of the MCS 7500.

To furnish proof of **installation of the automotive lift** the form "Record of Installation" must be signed and returned to the manufacturer.

To furnish proof of the singular, felt this documentation contains forms. The forms should be used to document the checks. They should not be removed from this documentation.

Every **Changes to the construction** and **displacement** of the automotive lift must be registered in the **"Master document"** of the lift.

1.1 Installation and check of the automotive lift

Only specialist staff is allowed to do work concerning safety and to do the safety checks of the lift. They are called experts and competent person in this document.

Experts are persons (for example self-employed engineers, experts) which have received instruction and have experience to check and to test automotive lifts. They know the relevant labour and accidents prevention regulations.

Competent person are persons who have acquired adequate knowledge and experience with automotive lifts. They took part in training from the lift-manufacturer (servicing technicians of the manufacturer or dealer, are competent)

1.2 Information of Warning

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

Danger! This sign indicates danger to life. Inexpert handling of the described operation may be dangerous to life.

Caution! This sign cautions against possible damage to the automotive lift or other material defects in case of inexpert handling .

Attention! This sign indicates for an important function or other important notes.

2.Master document

2.1 Lift–manufacturer

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

2.2 Application

The mobile column lift is a lifting device for raising heavy vehicles (Truck, Bus...)
The maximum capacity of one mobile column lift amount 7500 kg.
It's not allowed to install the standard-automotive lift in a hazardous location or washing bays.

2.3 Changes at the construction

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

.....

.....

.....

.....

name, address of the expert

....
place, date signature of the expert

2.4 Declaration of conformity

Nussbaum

Konformitätserklärung

Declaration of Conformity

Déclaration de conformité

Declaración de conformidad

Dichiarazione di conformità

gemäß Maschinenrichtlinie 98/37/EG Anhang II.

CE

OTTO NUßBAUM GmbH&Co. KG
Korker Str.24
D - 77694 Kehl-Bodersweier

Hiermit erklären wir, daß die Hebebühne, Modell …
Hereby we declare that the lift model …
Déclare par la presente que le pont elevateur modèle …
Por la presente declara, que el elevador modelo …
Con la presente dichiariamo che il ponte sollevatore modello …

MCS 7500

COMPACT - FLEX - FLEX RC BLUETOOTH

(RGK175.840604D) (RGB175.840604D) (RGBL175.840604D)

Seriennummer: _____

in Übereinstimmung mit den folgenden EG – Richtlinien und harmonisierten Normen gefertigt wurde
was manufactured in conformity with EC directives and the harmonized norms
fabriqué en conformité avec les directives européennes suivantes et selon les normes harmonisées en vigueurs.
producido de acuerdo a las siguientes reglas de la Comunidad Europea y normas harmonisadas.
é stato costruito in conformitá con le direttive CE e le relative norme armonizzate

98/37EG	Maschinenrichtlinie / *Machinery Directive*
2006/95/EG	EG Niederspannungs- Richtlinie / *Electromagnetic Compatibility (EMC)*
2004/108/EG	EMV Richtlinie / *Low voltage directive (LVD)*
EN 1493: 1998	Fahrzeug- Hebebühnen / *Automotive Lifts*
EN 60204 -1	Sicherheit von Maschinen – Elektrische Antriebe / *Safety of machinery*
EN 61000-6-2,-4	Elektromagnetische Verträglichkeit / *Electromagnetic compatibility (EMC)*

Diese Erklärung verliert ihre Gültigkeit, wenn die bezeichnete Maschine wesentlich verändert wird!

Kehl- Bodersweier, 1.09.2008

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

3.Technical Information

3.1 Technical ratings

Capacity of one mobile column lift	7500 kg
Lifting time	approx. 70 sec. with load
Lowering time	approx. 55 sec. with load
Lifting height	1650 mm
Line voltage	3 x 400 Volt , 50Hz
Control rating	24 V
Power rating	2.1 KW
Motor speed	1400 rotation/min
Pump capacity	2 cm^3/rotation
Hydraulic pressure	approx. 220 bar with load
Pressure relief valve	approx. 250 bar with load
Pressure relief vavle (safety device)	max. 40 bar
Oil tank	approx. 17 Liter per oil tank
Sound level	≤ 75 dB(A)
Connection by customer	see the Electrical diagram Fuse T 32 A (Pay attention to the tension of your country)

3.2 Safety device

1. Pressure relief valve
   Overprint-safety of the hydraulic system
2. Holding valve
   safety device against unintentional lowering
3. Lockable main switch
   safety device against unauthorised operation
4. CE-STOP
   Safety device against squeeze
5. Hydraulically unlocking safety-system at the cylinder
   Safety device against unintentional lowering
6. Safety Star System (SST)

- The SST observed the complete Process of the Lift during „Lifting“ and „Lowering“.
- The lift will be lowering during the normal work with 0,05 Meter 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 switch off the hydraulic supply for the cylinder.
  The Safety-star system locks and the lift stopped.

- Switch off the main switch.
- Check the complete hydraulic system. If the system is defective, call the service of your retailer.

- The lift can be repaired by an expert, the satisfactory knowledge and experiences with hydraulic lifts has.

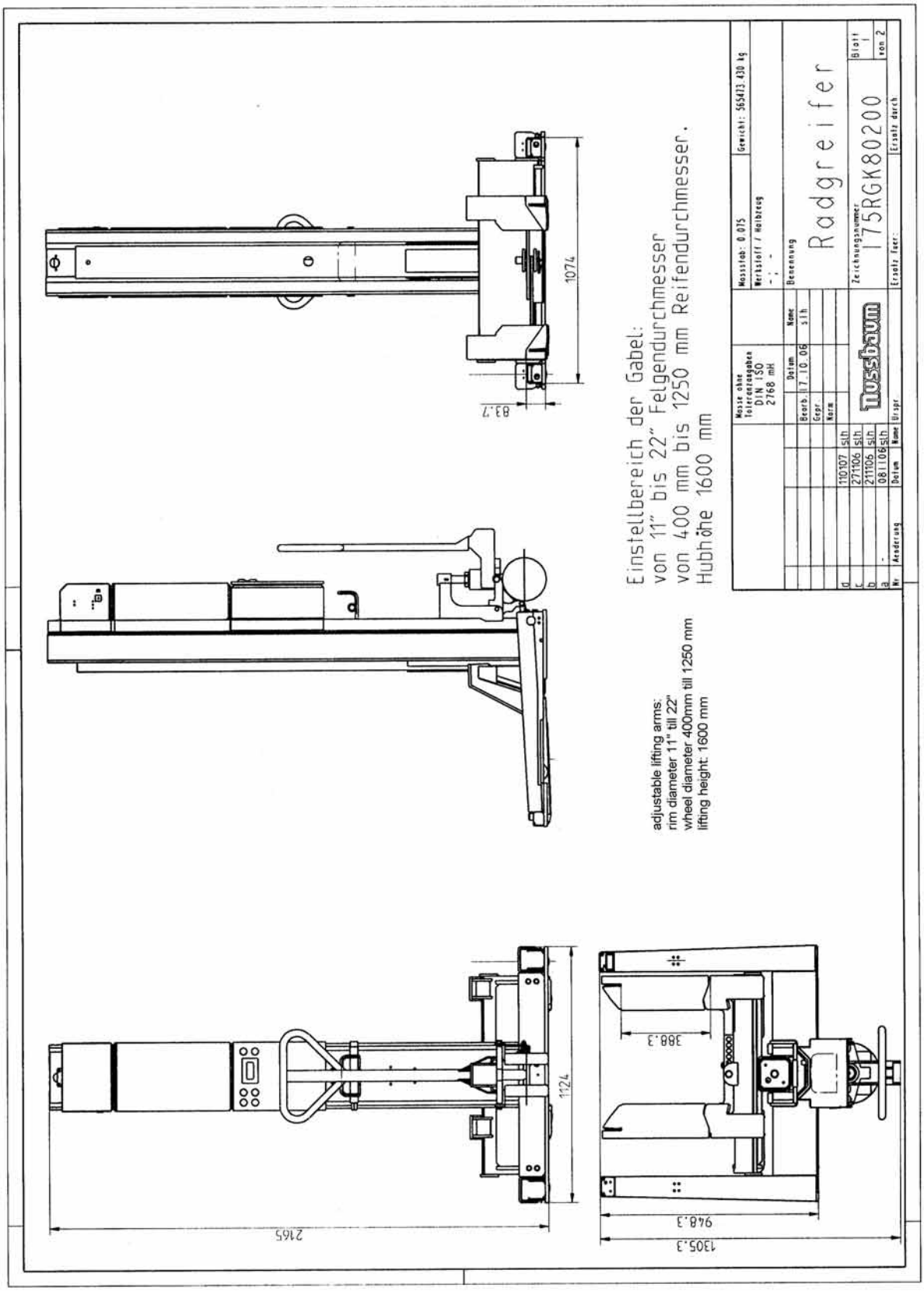
CE-STOP

- The automotive lift stops automatically approx. 250 mm before the lowest position.
- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- An acoustic signal is heard until the lift is in the lowest position

Top-Limit

- The Computer-control-system recognizes the top-height position of the lift and switch off.

3.3 Datasheet



4.Safety regulations

When using automotive lifts the German safety regulation BGG945: Examine of automotive-lifts; BGR260 Using automotive-lifts; (VBG14) must be observe adhered to.

Especially the following regulations are very important:

- The max. capacity of one mobile column lift is 7500 kg.
- The mobile column lifts must be completely below, before lifting the vehicle.
- During working with the lift the operating instructions must be followed.
- Only trained personnel over the age of 18 years old are to operate this lift.
- It's not allowed to transport passengers on the lift or in the vehicle.
- It's not allowed to climb onto the mobile lift or onto a lifted vehicle.
- The mobile column lift must be checked from an expert after changes in construction.
- It's not allowed to start with operations at the lift before the main switch is switched off.
- During lifting or lowering the vehicle it must be observed from the operator.
- It's not allowed to install the standard-mobile column lift in hazardous location or washing halls.
- Check the center of gravity of the vehicle if heavy parts are removed.

5.Operating instructions

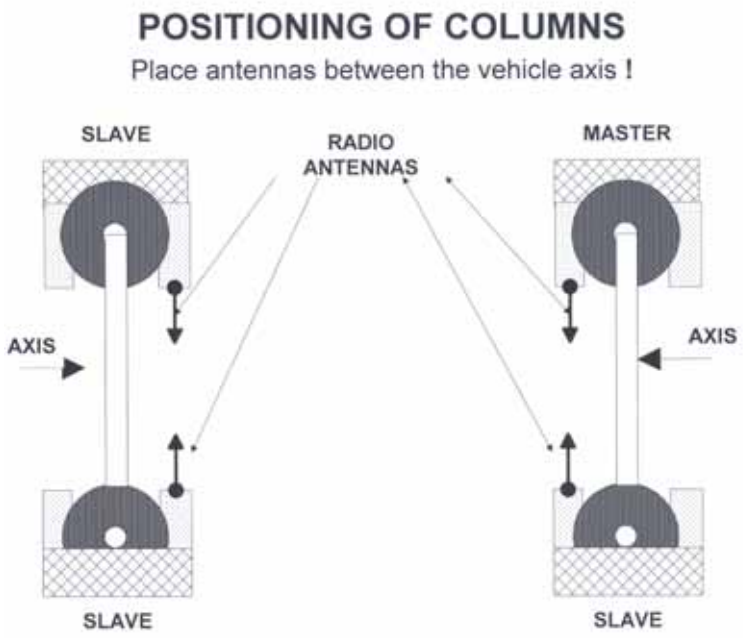
The Safety Regulations must be observed during working with the automotive lift. Read the safety regulations in chapter 4 carefully before working with the lift!

5.1 Positioning of the columns

- Every solid surface is suitable as installation-place.
- Push the lever from the „neutral" position to the „lifting" position.

pic 1: Hand lever
A - Move the hand lever several times in arrow-direction = The mobile column lift raise.

- Place the columns shown in picture below. Take care, that the antennas are inside of vehicle area (antennas between vehicles axles; therefore 2 right columns and 2 left columns.); necessary to improve the radio connection quality.



pic.2

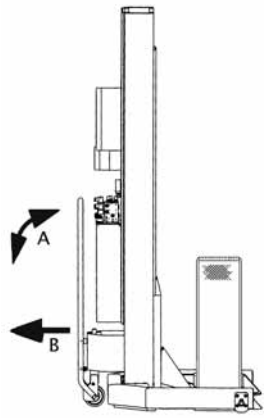
5.2 Putting into operation

- Check the emergency stop buttons. All must be unlocked.
- Watch the bars of the battery charge control; the must be minimum at 60%. If not, recharge battery first. (charger integrated in column, connect 230V, switch)
- If possible, FIRST put the system in operation and then enter the vehicle in vehicles area.
- To put the system in operation, first switch ON the mainswitch of all the 3 SLAVE-columns. (SEE SLAVE-sticker on column). After switching ON the SLAVE, the display will show “SLAVE”.
- After it, switch ON the main switch of the MASTER column (SEE MASTER-sticker on column). The master is searching valid slave columns (about 50s).
- All 3 SLAVE-columns must be found by the MASTER .

In case of radio connection interruption(during operation) => switch SLAVES ON again, afterwords switch MASTER ON again (see above : putting system in operation). If connection is established again, operating the lift is possible again.

- Now drive vehicle in vehicles area .
- If all columns are in the lowest position, each display shows „0 mm“. If this is not the case, press the button 2 “Lowering” (see pic. 4) until the carriage stops automatically. It is possible, that nevertheless all columns are not yet in the lowest position.
  Press the button 4 of the column, where you standing, and lower it in the lowest position.
  It is important, that you press the lowering button, until all displays shows “0 mm”.

(Normally not by user : If not, open the electro-box of the concerned column. At the top on the right side of the controller there are Dip-Switches. All beside the No. 5 are in the same position. Check the positions of the carriage again, they must be in the lowest position. Move the Dip-switch 7 two seconds to the left side and then back again. After it, the display shows “0mm”. If necessary repeat this process at the other controllers.)



A - Move the hand lever several times in arrow-direction = The mobile column lift raise.
B - Now, slide the columns under the wheels of the vehicle

pic 2a: Positioning the columns

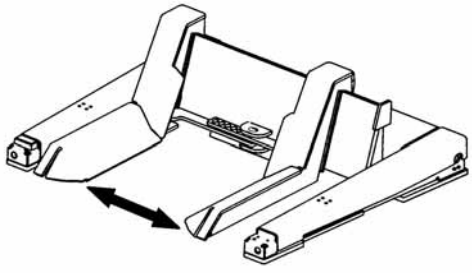
Lower all columns with the hand lever into the lowest position. Pull the lever slowly. (see pic. 1)

pic 3: operating unit

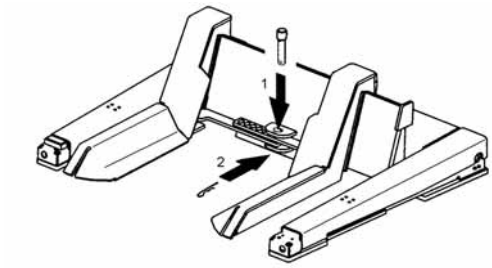
1 : LIFTING (all columns)
2 : LOWERING (all columns)
3 : LIFTING (the column, at you are standing)
4 : LOWERING (the column, at you are standing)
A : LIGHT: GREEN (columns in operation)
B : LIGHT: YELLOW (Lifting / Lowering of two columns)
C : LIGHT: RED (Failure)
D : LC-DISPLAY
E: ON/OFF Button only for operation in pairs
F: OPTIONALI “RESET” BUTTON (without function)
G: BATTERY CHARGE CONTROL
H: KEY SWITCH (operation only by authorized persons in case of disturbance)
K : EMERGENCY STOP BUTTON
L : MAIN SWITCH

5.3 Lifting the vehicle (mode synchronous)

- Block the vehicle against rolling, put into gear.
- Position the MCS 7500 to the wheels and let it down with the hand lever. If necessary use the additional supports.

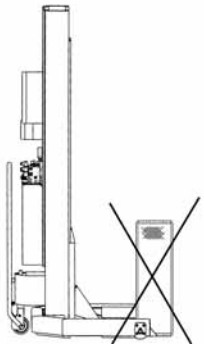


pic 4:
Rim diameter 11“ –22“
Wheel diameter 400mm – 1250mm

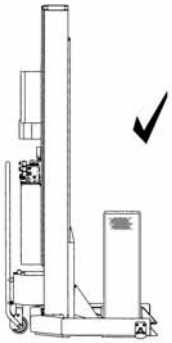


pic 4a:
secure the adjustable lifting arms with bolt and clamp before working with the MCS

- Observe the wheel position in the MCS *(see pic. 5 and 6).*



Wrong

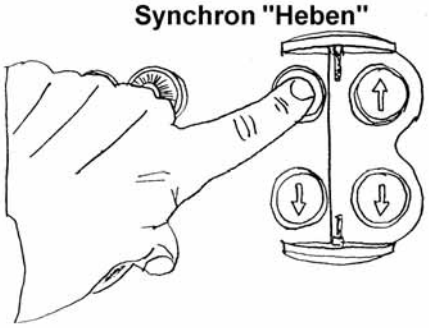


Correct

- Place the columns shown in pic. below. Take care, that the antennas are inside of vehicle area (antennas between vehicles axles; therefore 2 right columns and 2 left columns.); necessary to improve the radio connection quality.

Before lifting the load, lower the mobile-column-lift (pull the lever slowly) in the lowest position, otherwise a malfunction can lead it to damages.

- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Switch on the control system; Switch-on all the main switch on position ”1”.
- Raise the vehicle with the mode „Synchronous“. Press the button „lifting“ (Synchronous) at the operating unit.



pic 7: Synchronous „lifting“

- Lift the vehicle on the working height. Press the button „lifting“ .
- In the display each MCS you can read the momentary height of the supports.
- Observe the complete process.

It is only allowed to lift or to lower the MCS with load. Otherwise a MCS without load can cause an unequal. After it, this MCS switch-off the complete system and the red light (disturbance) is lighting.

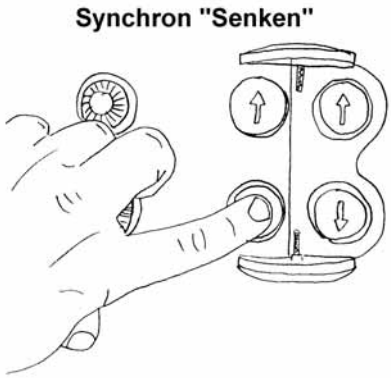
Accordingly, the number of the lifting wheels must agree with the number of the MCS.

In the case of disturbance, raise or lower the lift only in the „single“ mode.

5.4 Lowering the vehicle (mode synchronous)

- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Lower the lift at the height for working or in the lowest position.
  Press the button „lowering“ (Synchronous) at the operating unit. The MCS raises a little bit (unlocking the safety device), before the lowering starts.
- When lowering a vehicle, hold the button 2 pushed, until the lift has reached the height of 250mm; the lift stops automatically. Then push the button 2 again.
- The lift will continue lowering again. When a column stops during lowering between the height of 0 and 250mm, use button 4 to lower all columns in single operation mode to the ground (important for zeroing (referencing) the columns again). You hear an acoustic signal until the lift reaches the lowest position.

  In case of an SYNCHRON ERROR (shown on display; means unequal position error of the columns) bring all columns back in the same position height, by using the buttons 3 or 4 and watching the positions on the display. When all columns are at the same height (position) again, you can operate the system again.



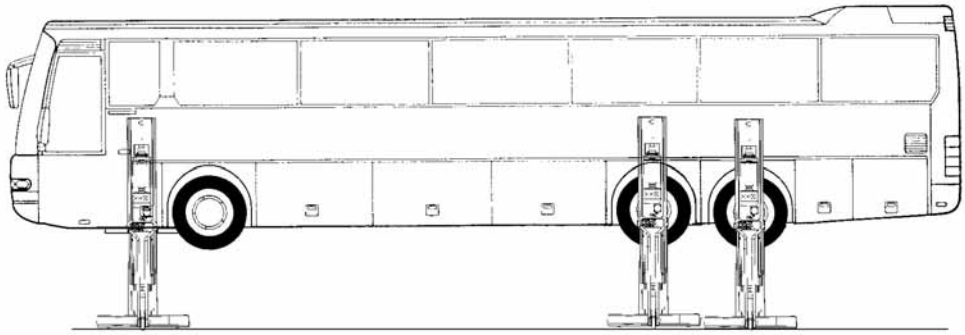
pic 8: Synchronous „lowering“

- Observe the complete process.
- When the lifts are in the lowest position the mobile lifts can be removed. Raise the MCS with the hand lever (read chapter 5.1).

5.5 Single-Mode „Lifting“

Before dismounting heavy parts (motor, axle, set of gears) check the center of gravity. Otherwise a malfunction can lead it to damages or leadto danger for body and lives.

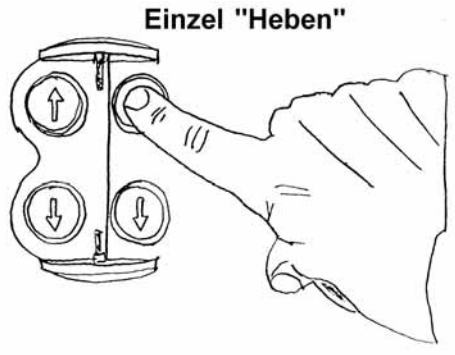
It is possible to move the MCS in the single-mode. This is necessary to reach the different levels of the pick-up points.



pic *9:*

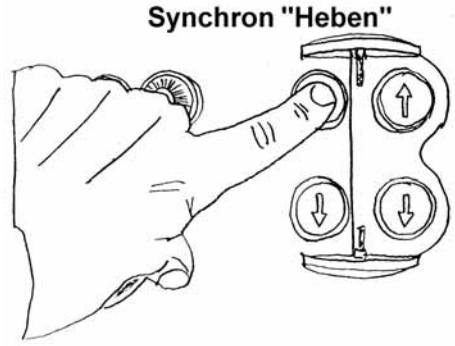
Through this measure, it is possible to raise the vehicle horizontally.

- Block the vehicle against rolling, put into gear.
- Position the MCS. Whenn necessary use the additional supports.
- Lower the MCS in the lowest position (with the handlever).
- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Switch on the control system; all the main switch on position ”1” .
- Raise every MCS with the single-mode until the pick-up points of the vehicle are reached. Turn the plastic cover at the respective operating unit and press the button „lifting“ (single).



pic 10: single-mode “lifting”

- Now, all MCS are ready for the synchronous working.
- Raise the vehicle with the synchronous mode. Press the button „lifting“ (synchronous) at one operating unit.



pic 11: synchronous mode “lifting”

- Lift the vehicle on the working height
- Observe the complete process.

5.6 Single-Mode „Lowering“

- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Lower the vehicle on the working height or the lowest position.
  Press the button „lowering“ (synchronous see pic. 8) at the operating unit. The MCS raises a little bit (unlocking the safety device), before the lowering starts.
- The mobile lift stops approx. 240 mm over the floor. Control the dangerous places of the mobile lift and be sure that there are no objects or people in the immediate area of the lift or on the lift. Press the button “ lowering” until the lift again. You hear an acoustic signal until the lift reaches the lowest position.
- The MCS which are standing on a higher level, lower with the “single-mode”. Turn the plastic cover at the respective operating unit and press the button „lowering“ (single).

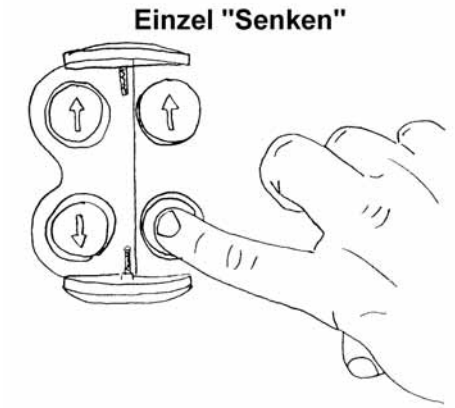


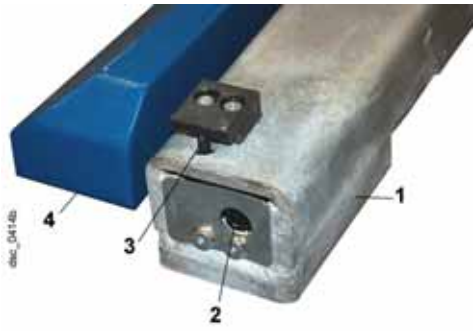
Bild 12: single-mode “lowering”

- Observe the complete process.
- When the lifts are in the lowest position the mobile lifts can be removed. Raise the MCS with the hand lever (read chapter 5.1).

5.7 Axle-mode

Before dismounting heavy parts (motor, axle, set of gears) check the center of gravity. Otherwise a malfunction can lead it to damages or lead to danger for body and lives.

It is possible one MCS and the MCS at the opposite side to raise and to lower, together. (axle-mode). This is necessary to dismounting heavy parts (motor, axle, set of gears. Every MCS is equipped with photoelectric. Transmitter and receiver see pic.13).

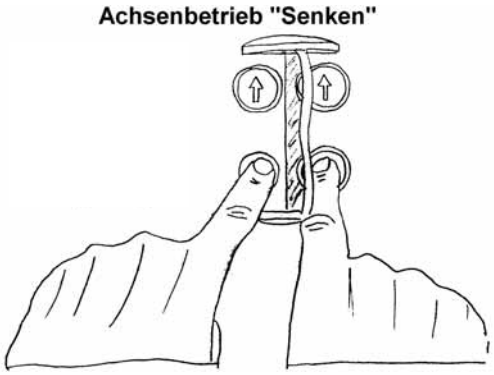


pic 13: positions of the photoelectric

1 base frame
2 photoelectric
3 anntennas
4 lifting arm

- For using the axle-mode. The opposite MCS´s must become positioned , that the photo-electric's recognize itself.
- Select button paired operation (Button "E" at the operating unit) on both sides.
- For lowering of the single axle, at you are standing: press button 2 and 4 together. The columns towards each other will only move, when they get a signal from the opposite column (photocell in the leg).
  In case of radion connection interruption => switch SLAVES ON again, afterwords switch MASTER ON again (see above : putting system in operation). If connection is established again, operating the lift is possible again.
- The allowable maxi. deviation of both MCS to each other is allowed to ± 100 mm doesn't overstep, otherwise the axis-mode is not possible.
  The opposite MCS is recognized, the yellow signal lamp shines, when both buttons "Lifting " or both buttons "Lowering " are pressed.

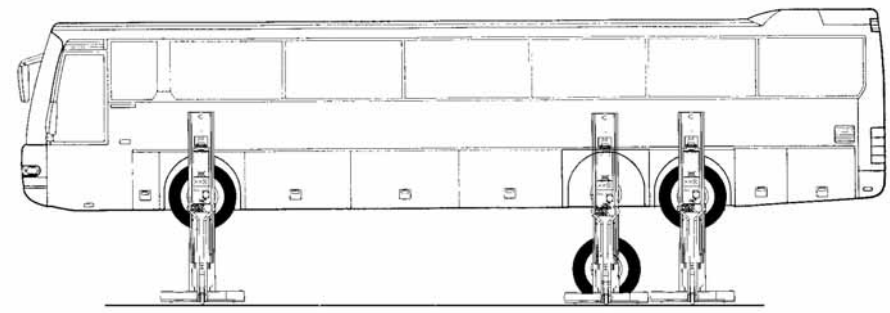
pic 14:axle-mode "lifting"



pic 15: axle-mode "lowering"

The axle-mode is not possible (example: interrupt through an obstacle, deviation more than ± 100 mm) when the photoelectric are not recognized.

pic 16:



- Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.
- Lower the axle on the working height or the lowest position.
  Press both buttons “lowering” at one operating unit of MCS, at you are standing. The MCS raises a little bit (unlocking the safety device), before the lowering starts.
- Raise the vehicle on the working height.
- Observe the complete process.
- Raise the axle on the working height.
  Press both buttons “lifting” at one operating unit of MCS, at you are standing.

5.8 The key-operated switch function

It is only allowed to use the service key through the customer service or the assigned personnel otherwise danger consists for damages and damages for body and lives.

- The key-operated switch at the operating-column (master-column), is to be used only with disturbance. Put the key in the key-operated switch if the red light shines (disturbance) and turn the key on position „1“ . The current error message is ignored by this measure. Press now the button „lowering“ (synchronous) at one operating unit. The MCS starts to lower.
  Observe the complet lowering process. Check the dangerous places of the lift and be sure that there are no objects or people in the immediate area of the lift or on the lift.

It is only allowed to use the service key with a disturbance. If the disturbance is remedied, the key must be removed again. The key is to be removed against misuse.

5.9 Equalisation of the MCS

- The MCS are adjusting automatically during lifting and lowering.
  First, lower the MCS always into the lowest position, this is the prerequisite for a trouble-free work. In this position the complete system will be reset.

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.

Problem: The Motors does not start!

Potential causes:	**Solution:**
- *no power supply*	*check the main fuse*
- *the main switch is not switched on.*	*check the main switch*
- *the fuse is defective*	*check the fuse /exchange it*
- *the feed line is cut*	*check the line*
- *the thermo-fuse is active*	*let it cool down approx.10 min.*
- *the battery of the controllers is empty*	*call the customer service*

Problem: the motor starts, the lift does not lifting!

Potential causes:	**Solution:**
- *the vehicle is too heavy*	*unload the vehicle*
- *the level of the oil is too low*	*refill oil*
- *the hydraulic valve is defective*	*call the customer service*

Problem: The MCS does not lowered!

Potential causes:	**Solution:**
- *the MCS is standing on a obstacle*	*single-mode operate*
- *the hydraulic valve is defective*	*call the customer service*
- *the fuse is defective*	*exchange the fuse*
- *the button „lowering“ is not pressed*	*check the switch*
- *the holding valve is defective*	*call the customer service*
- *the safety star system is always locked*	*call the customer service*

6.1 Lowering on a obstacle

The lift switched off if the lift is running onto an obstacle and out of the rule-window ± 50 mm.

6.1.1 Remove the obstacle

- Press the button “lifting ” in the single-mode. (see the chapter 5.4/5.5)

Keep an eye on it, at the singles-mode, that one MCS is lifted never too high, otherwise the crash of the vehicle can occur.

6.2 Emergency lowering

A emergency lowering is an intervention into the control of the lift and can be done only by experienced expert.
The emergency lowering must be carried in this order. Otherwise a malfunction can lead it to damages or lead to danger for body and lives.

Every kind of external leakage has to be removed. This is necessary in particular before an emergency lowering.
The emergency lowering may only be done by persons which are trained in using the lift.

Reasons, that can make an emergency lowering necessary, are a defect of the electric system or disturbances of the valves, etc.

In case of power-failure or defective Valves there is the possibility through suitable tools to lower the lift in the lowest position, so that the vehicle can be driven off.

6.2.1 Procedure of the emergency lowering

- Switch off the main switch an d safe it. (lock it)
- Remove the covers of hydraulic unit.
- Secure the dangerous place around the lift.

Pic 6:

Loosen and remove the 2 lock nuts with a suitable tool in arrow direction. Carry out this process at both columns. (Key 41)

Pic 7:

The piston rod can be stuck through the dirty deposit at the top of the hole. Use the solvent and lubricating stuff (for an example WD40) to loosen the connection. The WD40 is sprayed generously between the screw thread and the bore hole (see arrow). The time of the effect follows the contamination-degree.

Pic 8:

Loosen the cap of the Minimess connection and the cap of the tank. Fasten the Minimess hydraulic tube at the screw fitting and put the other end into the tank.

Pic 9:

Use the long screw thread-bushing and turns with a suitable tool (key-wideness 24, available with your dealer,), clockwise. Lower the lifting carriage only approx. 5cm – 10 cm. Repeat the process at the next column. Lower always 5 cm-10 cm until all lift are in the lowest position.
Repair the defective lift. After it create a Reset which is described in the operating instruction.

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

Observe the complete emergency lowering process.

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

You can only work again with the automotive-lift, if it is in a safety-related perfect condition.

- After it, carry out an reset as described in the operating instruction.

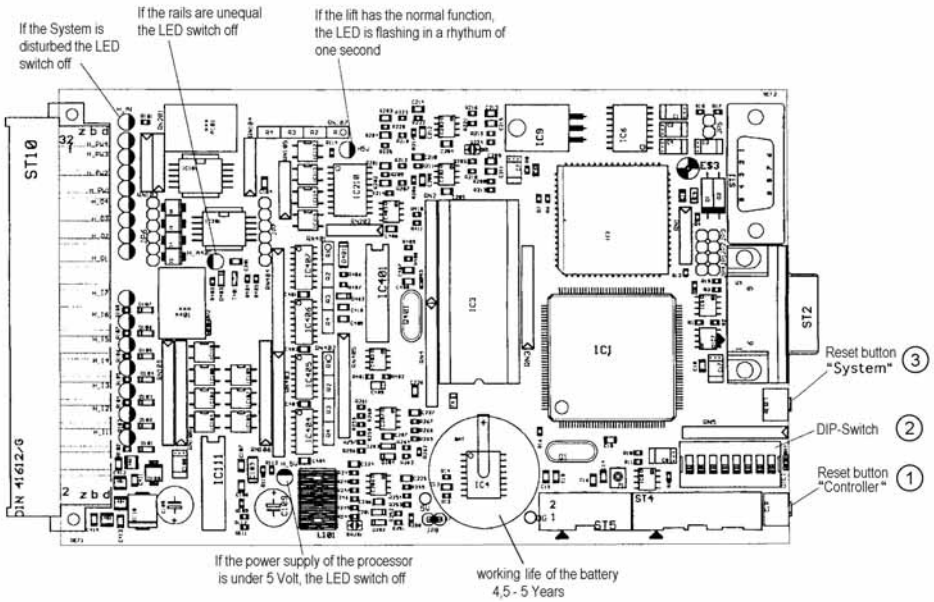
6.3 Reset the MCS after an emergency lowering

A reset of the system can be enforced, if the MCS are in the lowest position.

An access on the DIP-Switch can take place only with a switched off main switch and only through instructed, authorized technical personnel.

a) Drive the vehicle out the lift.
b) Open the cover of the operating unit.
c) Move the DIP switch 7 on position “on” (see pic. 18, Pos 2)
d) After it, move the DIP switch 7 on Position “off” agein.
e) The system has now the normal function again.
f) Close the cover of the operating unit.

pic 18: controller



7.Inspection and Maintenance

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

A regular service has to be performed in regular distances of 3 months through the operator in accordance with following service manual. If the lift is in continuous operation or dirty environment, the maintenance rate has to be increased.
During daily operation the lift has to be watched carefully for ist correct function. In case of any malfunction or leackage the technical service has to be informed.

7.1 Maintenance plan of the MCS

- In case of heavy dirt deposit clean the piston rods of the hydraulic cylinders from deposit. Remove the cover of the MCS. If necessary raise the MCS with the single-mode in the highest position.
  Grease the piston rods with a high capacity lipid (approx. 5 g of S2 DIN51503 KE2G of the Renolit Company.
- 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).
- 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).
- 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).
- Check the hydraulic tubes for leackage.
- Clean the surface of the photoelectric. (transmitter and receiver)
- Check the oil level. Fill in a clean, high quality oil (32 cst)in the tank.
- The hydraulic oil has to be changed at least once a year. To change the oil, lower the lift into the lowest position. Empty the tank and replaced clean oil, approx. 20 litres are needed. A high quality hydraulic oil is recommended, its should be 32 cst. (e.g.g. HLP 32 LTD. OEST Company)
  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.
  If any cracks are found on the lift cease use immediately. Switch-off and secure the main switch (lock) and call the service partner.
- Check the safety device of the lift.
- Check the Battery of the controller (ASC). The Battery has a working life at notmal business between 4 ½ - 5 Years (manufacturers statement). To avoid a permanent data-loss through an empty battery, the ASC must be sent for after 4 years into the nussbaum headquarter. Please contact your service partner.
- Check the turning moment of the screws (see the list pic. 19)

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

Drehmomenttabelle 8.8-10.9 E

* 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

pic 19:

7.2 Cleaning of the MCS

A regular and appropriate maintenance served the preservation of the lift.
It can be a prerequisite for claims at possible corrosion.
The best protection for the lift is the regular cleaning of dirt of all manner.
- Including this:
  - de-icing salt
  - sand, pebble stone, natural soil
  - industrial dust of all manner
  - water ; also in connection with other environmental influences
  - aggressive deposit of all manner
  - constant humidity by insufficient ventilation

How often must the lift be cleaned ?
This is dependent on the use, of the working with the lift, of the cleanness of the workshop and location of the lift. The degree of the dirt is dependent on the season, of the weather conditions and the ventilation of the workshop.
Under bad circumstances it is necessary to clean the lift every week, but a cleaning every month can suffice.

Clean the lift and the floor with a non-aggressive and non-abrasive detergent. Use gentle detergent to clean the parts. Use an standard washing-up liquid and lukewarm water.
- Do not use for cleaning a steam jet cleaning
- Remove all dirt careful with a sponge if necessary with a brush.
- Pay attention that are no remains of the washing-up liquids on the lift after cleaning.
- Do not use aggressive means for cleaning the workshop floor and the automotive lift.
- A permanent contact with every kind of liquid is forbidden. Do not use any high pressure device for cleaning the lift.

8.Security check

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

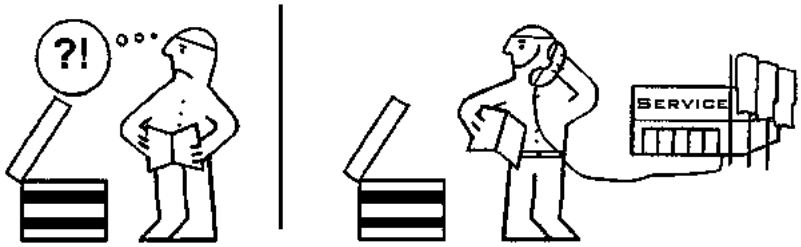
1. Before the initial operation, after the first installation
   Use the form "First security check before initiation"
2. In regular intervals after the initial operation, at least annually.
   Use the form "Regular security check at least annually"
3. Every time the construction of that particular lift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

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

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

This manual contains form with a schedule for the security checks. Please us the adequate form for the security checks. The form should remain in this manual after they have been filled out. In the following there is a short description about special safety devices.

9.Handing over and Initiation



9.1 Regulations

- It's not allowed to install the standard-automotive lift in a hazardous location or washing bays.
- Every solid surface is suitable as installation-place.
- An electrical supply 3~/N+PE, 400 V, 50 Hz has to be provided.

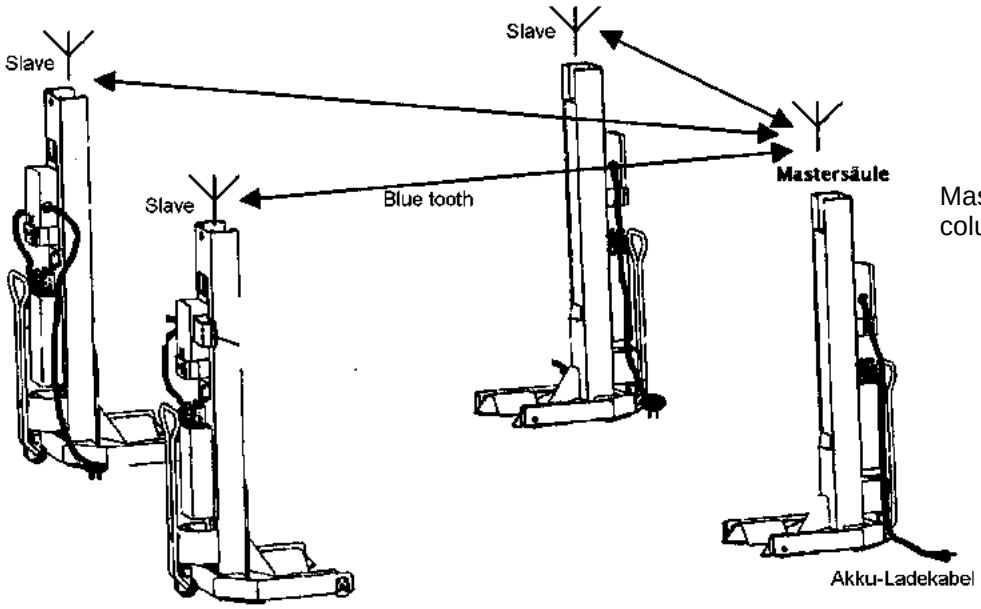
9.2 Initiation

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

If the lift is installed by a competent person, he will perform this security check. If the operator installs the lift by himself, he has to instruct a competent person to perform the security check.
The competent confirms the faultless function of the lift in the installation record and form for the security check and allows the lift to be used.

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

9.3 Position of the columns



Master column

Cable for charging the Battery

First security check before installation

☞ Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Function „Sychronous-mode“	☐	☐	☐	.....
Function „single-mode“	☐	☐	☐	.....
Function „axle-mode“	☐	☐	☐	.....
Function button „lifting,lowering“	☐	☐	☐	.....
Function, condition lights at the operating unit	☐	☐	☐	.....
Function hand lever	☐	☐	☐	.....
Function safety star system	☐	☐	☐	.....
Condition MCS	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Condition pulleys	☐	☐	☐	.....
Condition bearings	☐	☐	☐	.....
Condition weldings	☐	☐	☐	.....
Construction (deformation,cracking)	☐	☐	☐	.....
Condition/Function photoelectric	☐	☐	☐	.....
Condition cable + protecting tube + plug	☐	☐	☐	.....
Condition hydraulic unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

(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

Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
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Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
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Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

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

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☐ Initiation possible, repair failures

until.....

☐ No failings, Initiation possible

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signature of the expert signature of the operator

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Failures repaired at: ....

signature of the operator

(Use another form for verification!)

Regular security check and Maintenance

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Condition hydraulic unit	☐	☐	☐	.....
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(mark here applicable, in case of verification mark in addition to the first mark!)

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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

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Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

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

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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

☞ Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
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Function safety device CE-Stop	☐	☐	☐	.....

(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

Filling out and leave in this manual

Serial-number:_____

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Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

(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

 Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Function „Sychronous-mode“	☐	☐	☐	.....
Function „single-mode“	☐	☐	☐	.....
Function „axle-mode“	☐	☐	☐	.....
Function button „lifting,lowering“	☐	☐	☐	.....
Function, condition lights at the operating unit	☐	☐	☐	.....
Function hand lever	☐	☐	☐	.....
Function safety star system	☐	☐	☐	.....
Condition MCS	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Condition pulleys	☐	☐	☐	.....
Condition bearings	☐	☐	☐	.....
Condition weldings	☐	☐	☐	.....
Construction (deformation,cracking)	☐	☐	☐	.....
Condition/Function photoelectric	☐	☐	☐	.....
Condition cable + protecting tube + plug	☐	☐	☐	.....
Condition hydraulic unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

(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

Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Function „Sychronous-mode“	☐	☐	☐	.....
Function „single-mode“	☐	☐	☐	.....
Function „axle-mode“	☐	☐	☐	.....
Function button „lifting,lowering“	☐	☐	☐	.....
Function, condition lights at the operating unit	☐	☐	☐	.....
Function hand lever	☐	☐	☐	.....
Function safety star system	☐	☐	☐	.....
Condition MCS	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Condition pulleys	☐	☐	☐	.....
Condition bearings	☐	☐	☐	.....
Condition weldings	☐	☐	☐	.....
Construction (deformation,cracking)	☐	☐	☐	.....
Condition/Function photoelectric	☐	☐	☐	.....
Condition cable + protecting tube + plug	☐	☐	☐	.....
Condition hydraulic unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

(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

Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Function „Sychronous-mode“	☐	☐	☐	.....
Function „single-mode“	☐	☐	☐	.....
Function „axle-mode“	☐	☐	☐	.....
Function button „lifting,lowering“	☐	☐	☐	.....
Function, condition lights at the operating unit	☐	☐	☐	.....
Function hand lever	☐	☐	☐	.....
Function safety star system	☐	☐	☐	.....
Condition MCS	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Condition pulleys	☐	☐	☐	.....
Condition bearings	☐	☐	☐	.....
Condition weldings	☐	☐	☐	.....
Construction (deformation,cracking)	☐	☐	☐	.....
Condition/Function photoelectric	☐	☐	☐	.....
Condition cable + protecting tube + plug	☐	☐	☐	.....
Condition hydraulic unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

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

Security check carried out:.....

Carried out the company:.....

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

Result of the Check:

☐ Initiation not permitted, verification necessary

☐ Initiation possible, repair failures

until.....

☐ No failings, Initiation possible

....
signature of the expert signature of the operator

If failures must be repaired:

Failures repaired at: ....

signature of the operator

(Use another form for verification!)

Extraordinary security check

Filling out and leave in this manual

Serial-number:_____

kind of check	all right	defect missing	veri-fication	remark
Type plate	☐	☐	☐	.....
Short operating instruction	☐	☐	☐	.....
Warning designation	☐	☐	☐	.....
Function „Sychronous-mode“	☐	☐	☐	.....
Function „single-mode“	☐	☐	☐	.....
Function „axle-mode“	☐	☐	☐	.....
Function button „lifting,lowering“	☐	☐	☐	.....
Function, condition lights at the operating unit	☐	☐	☐	.....
Function hand lever	☐	☐	☐	.....
Function safety star system	☐	☐	☐	.....
Condition MCS	☐	☐	☐	.....
Condition colour	☐	☐	☐	.....
Condition pulleys	☐	☐	☐	.....
Condition bearings	☐	☐	☐	.....
Condition weldings	☐	☐	☐	.....
Construction (deformation,cracking)	☐	☐	☐	.....
Condition/Function photoelectric	☐	☐	☐	.....
Condition cable + protecting tube + plug	☐	☐	☐	.....
Condition hydraulic unit	☐	☐	☐	.....
Condition surface piston rod	☐	☐	☐	.....
Condition of the cover	☐	☐	☐	.....
Tightness of the hydraulic system	☐	☐	☐	.....
Level of hydraulic oil	☐	☐	☐	.....
Condition hydraulic tubes	☐	☐	☐	.....
Condition electrical wires	☐	☐	☐	.....
Test MCS with vehicle	☐	☐	☐	.....
Mobility of the MCS	☐	☐	☐	.....
Function safety device CE-Stop	☐	☐	☐	.....

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

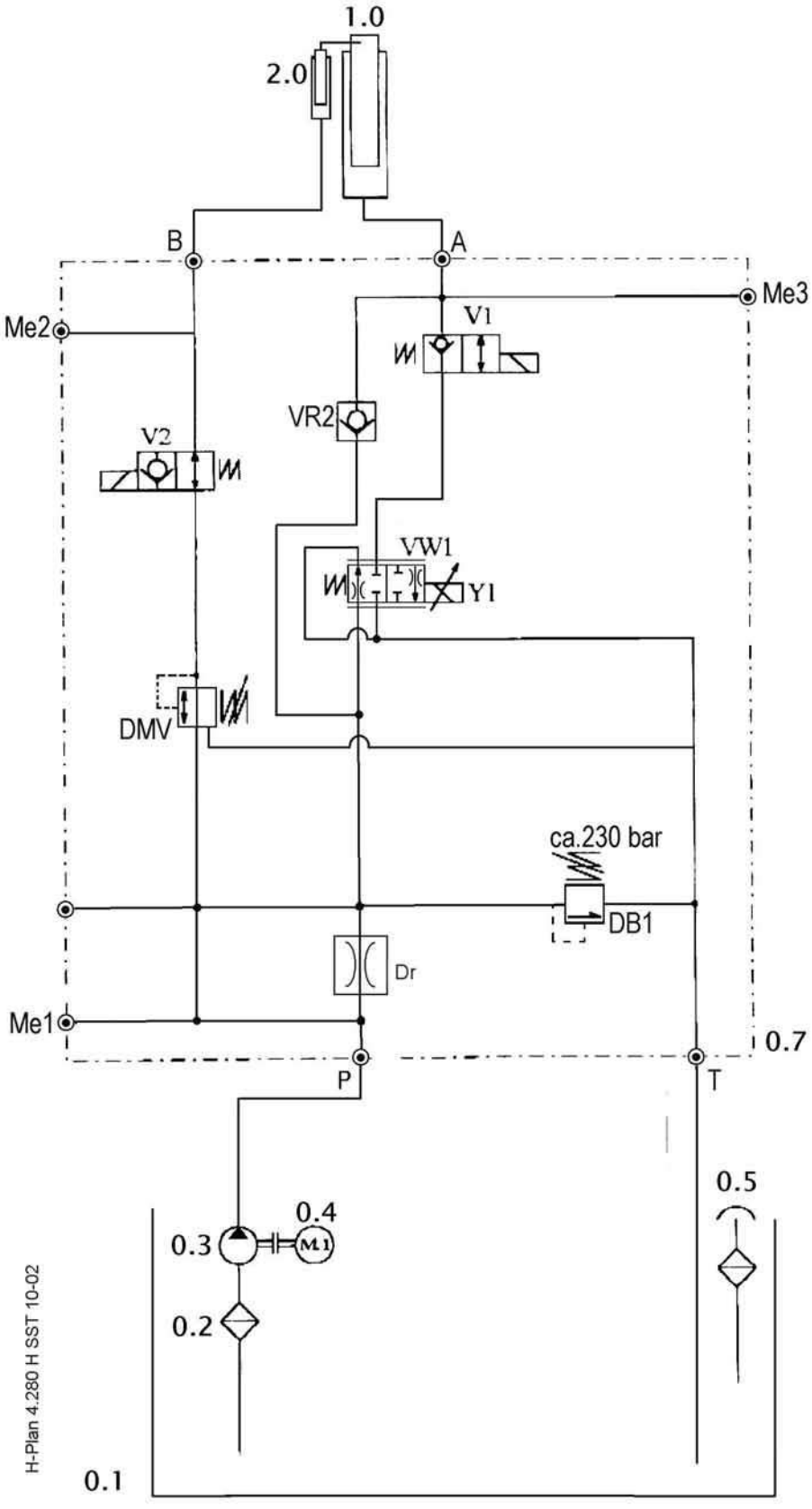
If failures must be repaired:

Failures repaired at: ....

signature of the operator

(Use another form for verification!)

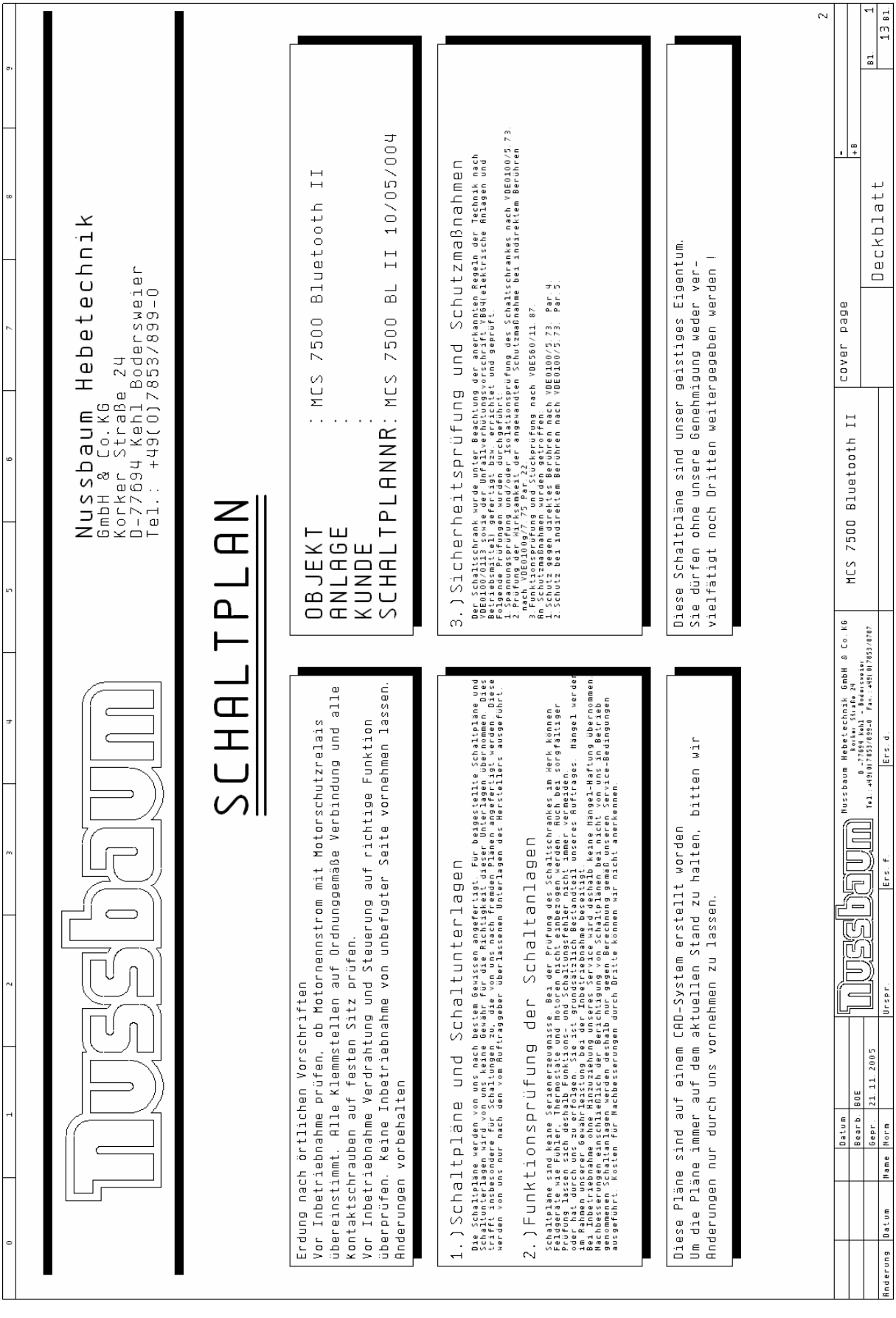
Hydraulic diagram drawing



Hydraulic parts list

Pos.	Description	order number
0.1	oil tank	
0.2	filter	980012
0.3	gear pump	980486
0.4	sub oil motor 2kW	992100
0.5	oil level gauge	980098
0.7	hydraulic block complete	99 540 07 005
DB1	pressure relief valve	155211
DMV	pressure relief valve DR08-01-C-V-120V	161350
M1-M3	measure connection	118495
VW1	proportional valve WEP06DA013B0240S	161060
V1	2/2 way valve	158502
V2	2/2 way valve	158503
VR1	holding valve	130053
VR2	holding valve	130053
1.0	cylinder	175RGK82200
2.0	unlocking cylinder	

Electrical diagram drawing



Inhaltsverzeichnis

Spalte X:
eine automatisch erzeugte Seite
wurde manuell nachbearbeitet

Seite	Seitenbenennung	Seitenzusatzfeld	Anlage	Ort	Datum	Bearb.	X
1	Deckblatt			B	24.06.2003	BOE	
2	Inhaltsverzeichnis			B	24.06.2003	BOE	
3	Änderungsinfo.			B	24.06.2003	BOE	
4	Einspeisung			B	24.06.2003	BOE	
5	Steuerspannung			B	20.06.2003	BOE	
6	Bedientasten			B	24.06.2003	BOE	
7	Sensoren			B	24.06.2003	BOE	
8	Achscontroller			B	24.06.2003	BOE	
9	Bluetooth Modul			B	24.06.2003	BOE	
10	+B-X1			B	24.06.2003	BOE	*
11	+B-XH			B	24.06.2003	BOE	*
12	Stückliste			B	24.06.2003	BOE	*
13	Stückliste			B	24.06.2003	BOE	*

Änderung	Datum	Name	Norm		Ursprung	Ers. f.	Ers. d.
			Datum				
			Bearb.	BOE			
			Gepr.	21.11.2005			

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

MCS 7500 Bluetooth II

contents

Inhaltsverzeichnis

Bl. 2
13 Bl.

Operating Instruction and Documentation
MCS 7500 Flex (Bluetooth)

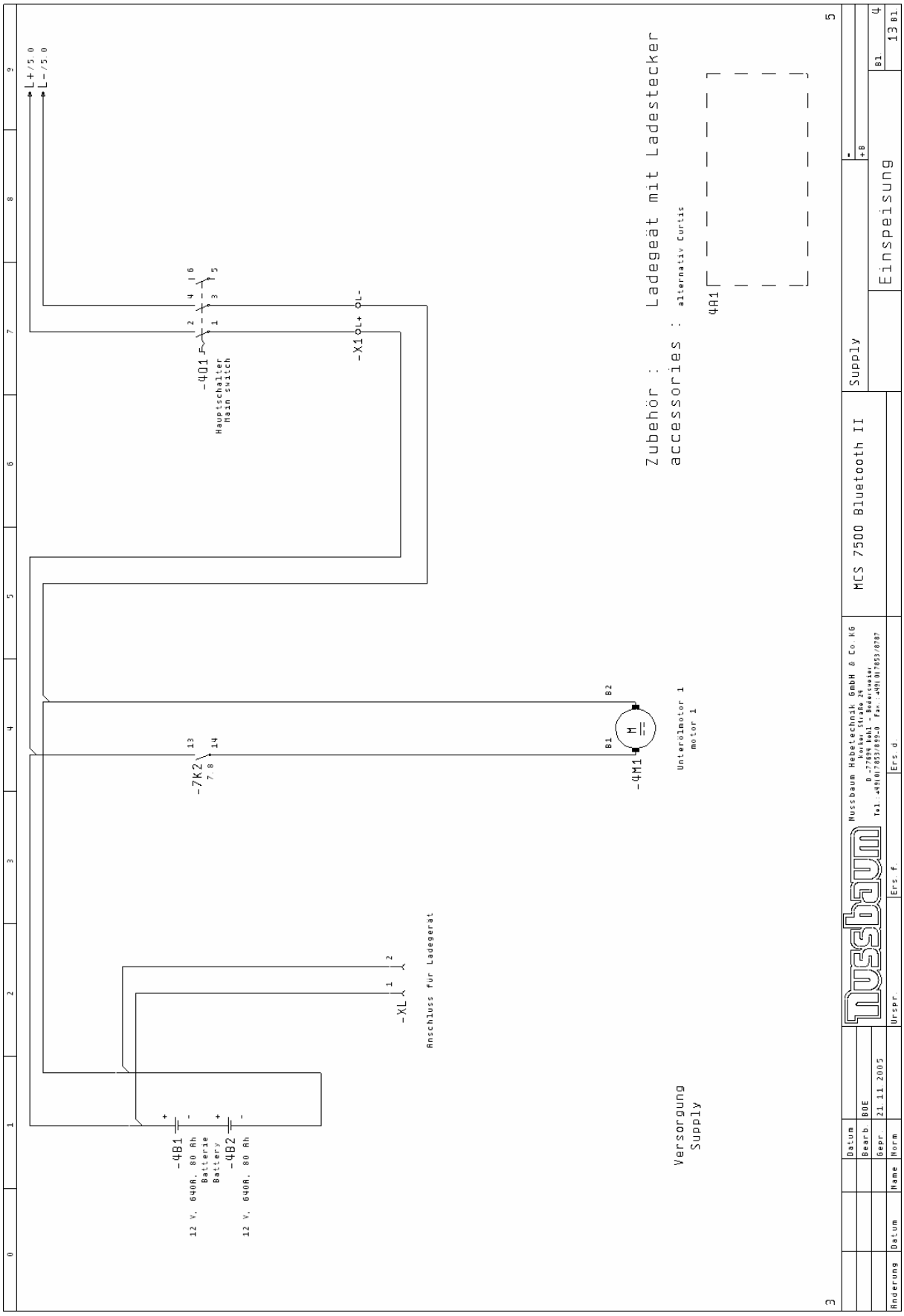
0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

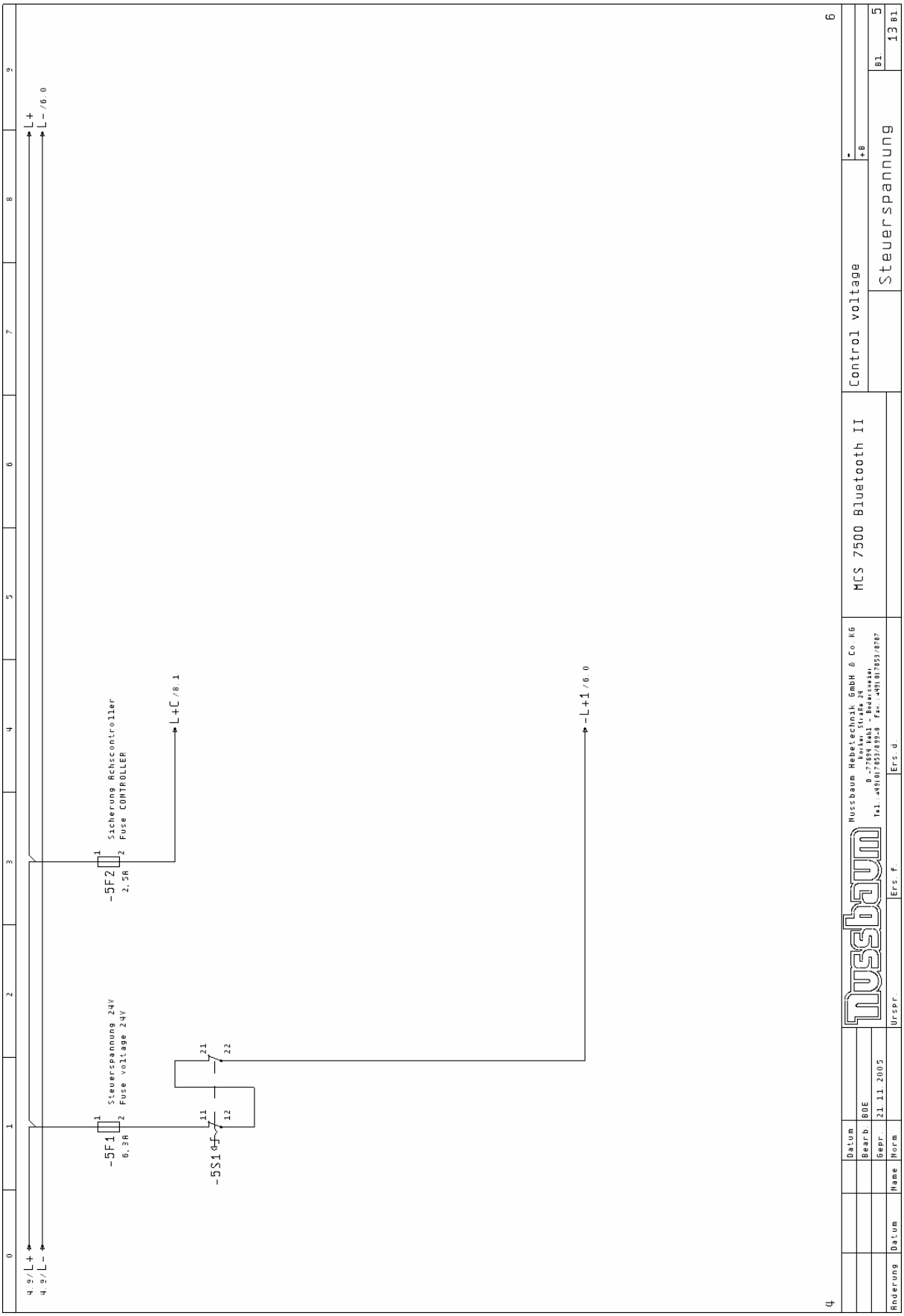
ÄNDERUNGS-INFORMATIONEN

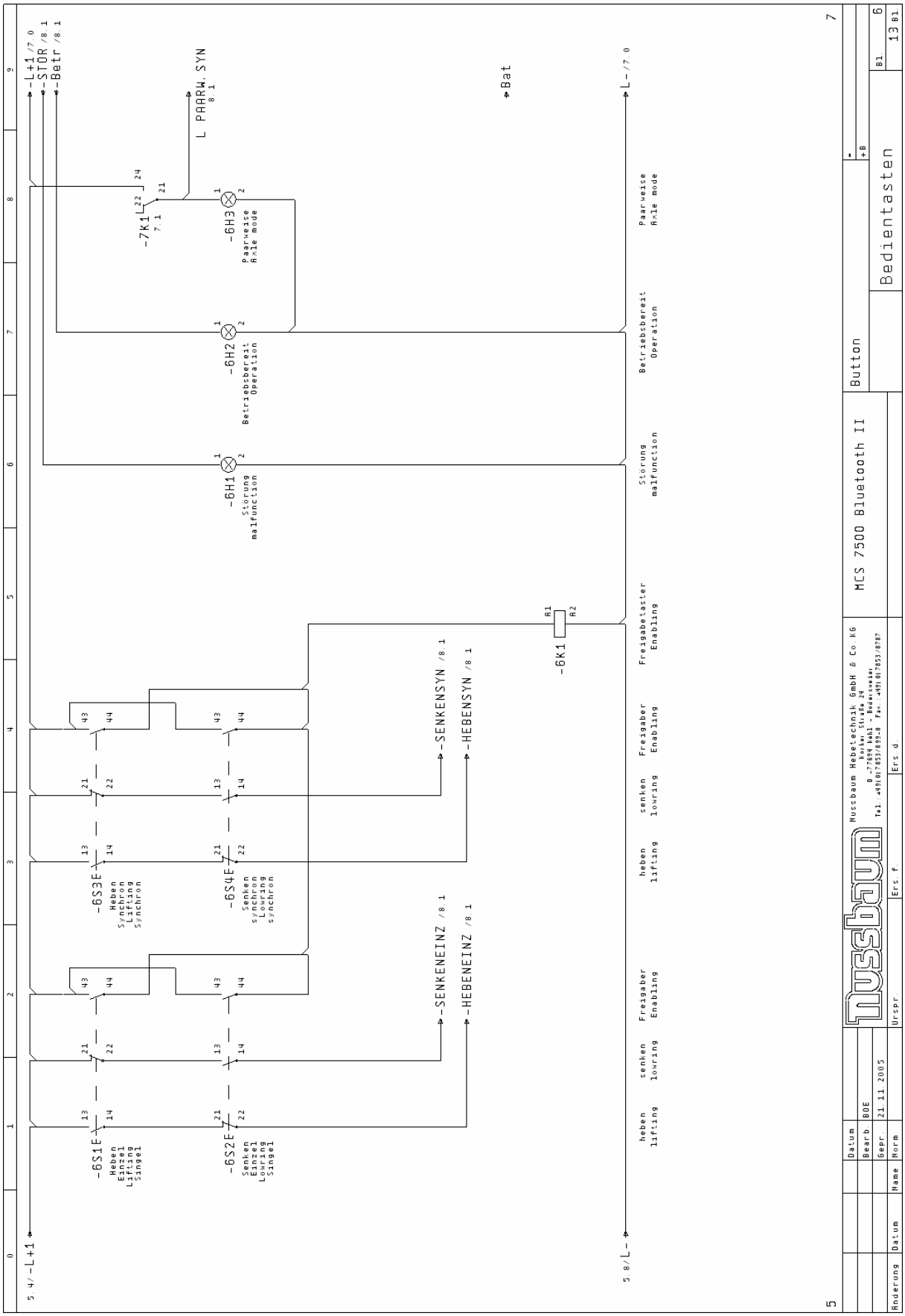
Nr.	Datum	Firma	Bearbeiter	Änderungen	ORT/SEITE

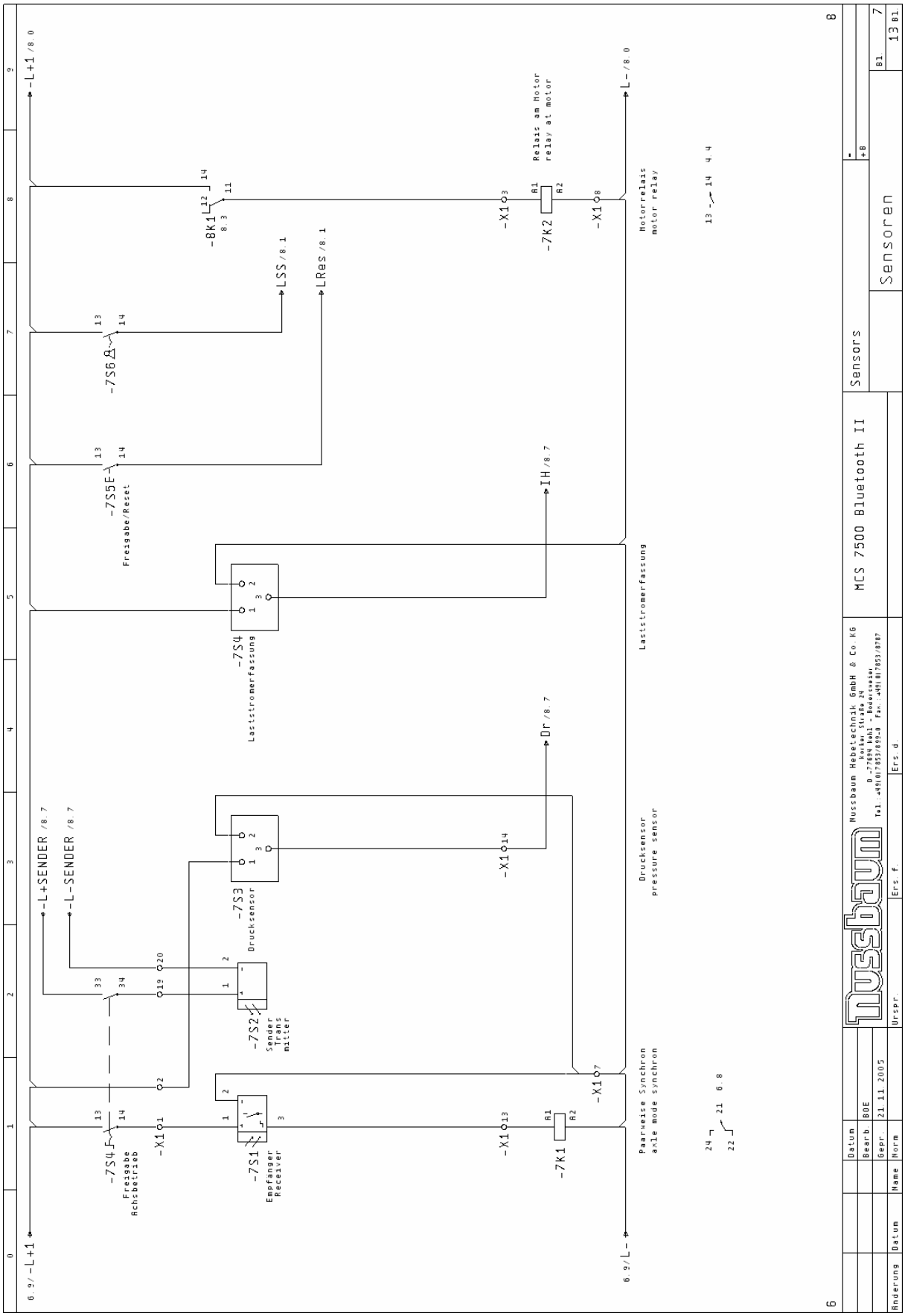
2 4

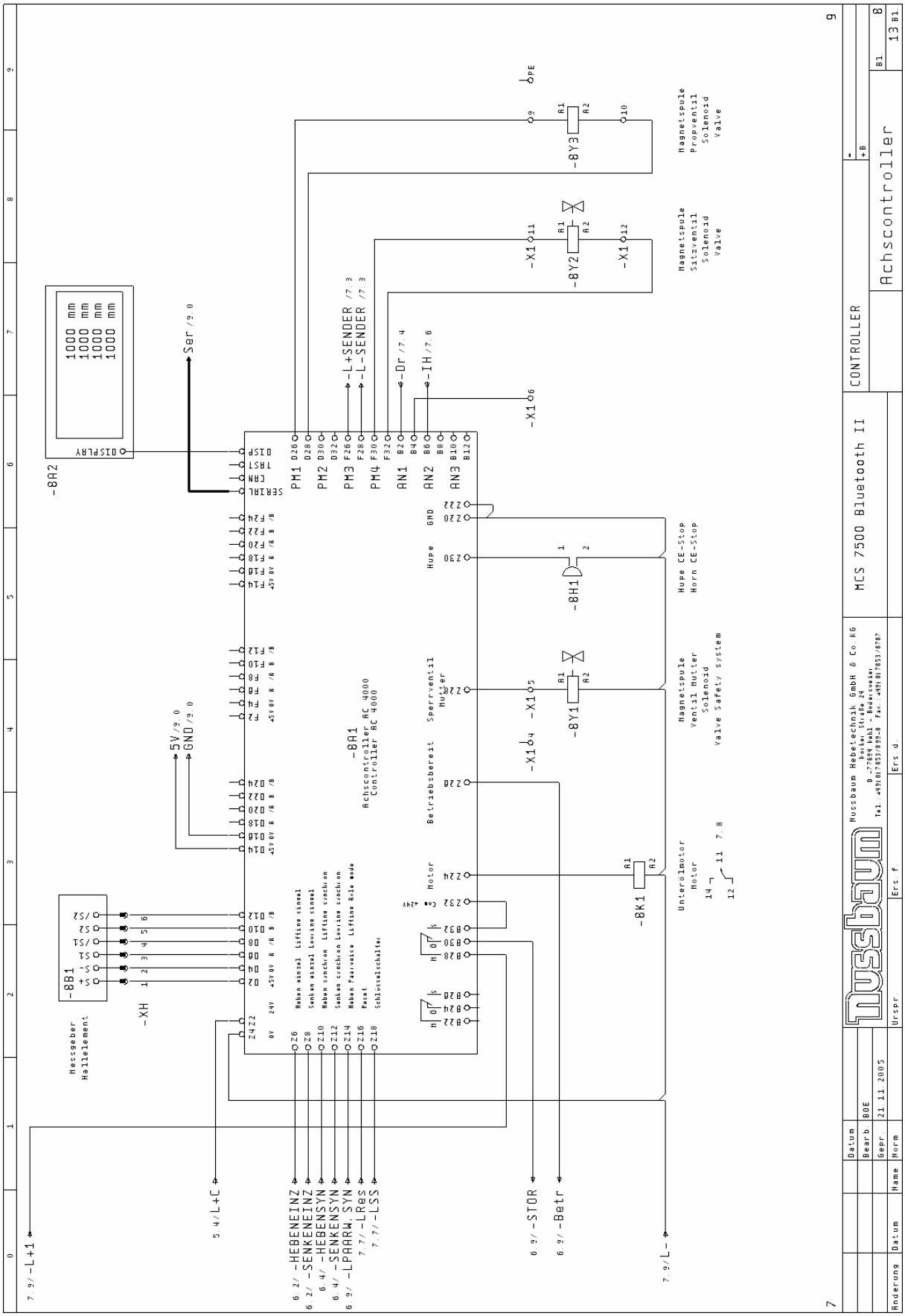
			Datum		Nussbaum Hebetechnik GmbH & Co. KG Werner-Straße 24 D -77694 Kehl - Bodersweier Tel.: +49(0)7853/899-0 Fax.: +49(0)7853/8787	MCS 7500 Bluetooth II	change information	-
			Bearb.	BOE				+ B
			Gepr.	21.11.2005			Änderungsinfo.	Bl. 3
Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	13 Bl.

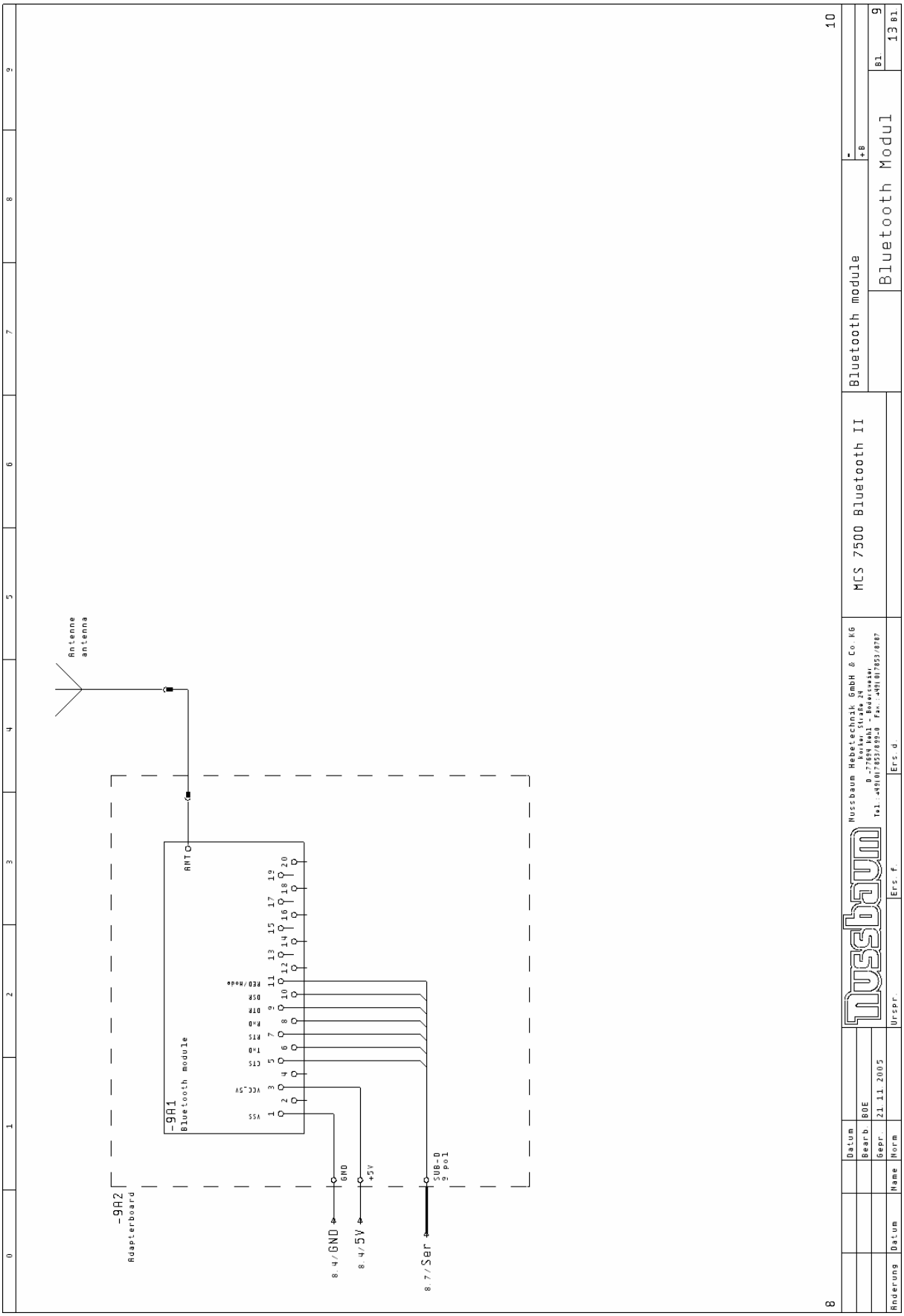

L+ /5.0
L- /5.0
-Q1
Hauptschalter
Main switch
-X1
-7K2
-4M1
Unterölmotor 1
motor 1
-4B1
12 V, 640A, 80 Ah
Batterie
Battery
-4B2
12 V, 640A, 80 Ah
-XL
Anschluss für Ladegerät
Versorgung
Supply
Zubehör : Ladegeät mit Ladestecker
accessories : alternativ Curtis
4A1
MCS 7500 Bluetooth II
Supply
Einspeisung
Hubbaum Hebetechnik GmbH & Co. KG


L+
L- /6.0
-5F2
2.5A
Sicherung Achscontroller
Fuse CONTROLLER
L+ /8.1
-5F1
6.3A
Steuerspannung 24V
Fuse voltage 24V
-5S1
-L+1 /6.0
Control voltage
Steuerspannung
MCS 7500 Bluetooth II
Nussbaum Hebetechnik GmbH & Co. KG


-L+1 /7.0
-STOR /8.1
-Betr /8.1
L PARRW. SYN 8.1
Bat
L- /7.0
-7K1 7.1
-6H3 Paarweise Axle mode
-6H2 Betriebsbereit Operation
-6H1 Störung malfunction
-6K1
-SENKENSYN /8.1
-HEBENSYN /8.1
-SENKENEINZ /8.1
-HEBENEINZ /8.1
-6S3E Heben Synchron Lifting Synchron
-6S4E Senken synchron Lowring synchron
-6S1E Heben Einzel Lifting Singel
-6S2E Senken Einzel Lowring Singel
heben lifting
senken lowring
Freigaber Enabling
Freigabetaster Enabling
Störung malfunction
Betriebsbereit Operation
Paarweise Axle mode
5.4/-L+1
5.8/L-
MCS 7500 Bluetooth II
Button
Bedientasten
Nussbaum Hebetechnik GmbH & Co. KG


-L+1 /8.0
-8K1
8.3
LSS /8.1
LRes /8.1
-7S6
-7S5
Freigabe/Reset
-7S4
Laststromerfassung
-7S3
Drucksensor
-7S2
Sender Trans mitter
-7S4
Freigabe Achsbetrieb
-7S1
Empfänger Receiver
-7K2
Relais am Motor
relay at motor
-7K1
Motorrelais
motor relay
IH /8.7
Or /8.7
-L+SENDER /8.7
-L-SENDER /8.7
-X1
L- /8.0
6.9/-L+1
6.9/L-
Laststromerfassung
Drucksensor
pressure sensor
Paarweise Synchron
axle mode synchron
Hussbaum Hebetechnik GmbH & Co. KG
MCS 7500 Bluetooth II
Sensors
Sensoren
Datum
Bearb
Gepr.
Norm
Urspr
Ers. f
Ers. d
Änderung
Name
21.11.2005
BOE


MCS 7500 Bluetooth II
CONTROLLER
Achscontroller
Hussbaum Hebetechnik GmbH & Co. KG
-8A2
DISPLAY
1000 mm
-8A1
Achscontroller AC 4000
-8H1
-8K1
-8Y1
-8Y2
-8Y3
-8B1
Messgeber Hallelement
-HX
-L+SENDER
-L-SENDER
-HEBENEINZ
-SENKENEINZ
-HEBENSYN
-SENKENSYN
-LPARRW. SYN
-LRes
-LSS
-STÖR
-Batr
Hupe CE-Stop
Horn CE-Stop
Magnetspule Ventil Hutter Solenoid
Valve Safety system
Magnetspule Sitzventil Solenoid Valve
Magnetspule Propventil Solenoid Valve
Unterölmotor Motor


Antenne
antenna
ANT
-9A1
Bluetooth module
-9A2
Adapterboard
GND
+5V
SUB-D
9 pol
8.4/GND
8.4/5V
8.7/Ser
MCS 7500 Bluetooth II
Bluetooth module
Bluetooth Modul
Hussbaum Hebetechnik GmbH & Co. KG

Klemmenplan

Leistenbezeichnung: +B-X1

Seite/Pfad	Kabeltyp	Anschluß	Ziel-bezeichnung	Klemmen-Symbol	Brücken	Klemmen-nummer	Anschluß	Ziel-bezeichnung	Kabeltyp	Funktionstext
/4.7		1	-4Q1			L+	13	-7K2		Unterölmotor 1
/4.7		3	-4Q1			L-	B2	-4M1		"
/7.1		24	-7K1		●	1	1	-7S1		
/7.1		14	-8K1		●	2	1	-7S3		Paarweise Synchron
/7.6		A1	-7K2			3	11	-8K1		Motorrelais
/8.4		Z20	-8A1			4				Unterölmotor
/8.4		Z28	-8A1			5	A1	-8Y1		Magnetspule Ventil Mutter
/8.7		B4	-8A1			6				Hupe CE-Stop
/7.1		A2	-7K1		●	7	2	-7S1		Paarweise Synchron
/7.6			-Z4		●	8	A2	-7K2		Motorrelais
/8.9		D20	-8A1			9	A1	-8Y3		Magnetspule Propventil
/8.9		D28	-8A1			10	A2	-8Y3		"
/8.8		F30	-8A1			11	A1	-8Y2		Magnetspule Sitzventil
/8.8		F32	-8A1			12	A2	-8Y2		"
/7.1		A1	-7K1			13	3	-7S1		
/7.4		B2	-8A1			14	3	-7S3		Drucksensor
/7.2		F20	-8A1			19	1	-7S2		Paarweise Synchron
/7.2		F28	-8A1			20	2	-7S2		"
/8.9						PE				Magnetspule Propventil

Kabelname | Kabeltyp

WUPKM02D / 22.04.1998

9 | 11

Änderung	Datum	Name	Norm	
			Datum	05.10.2005
			Bearb.	BOE
			Gepr.	21.11.2005

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

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

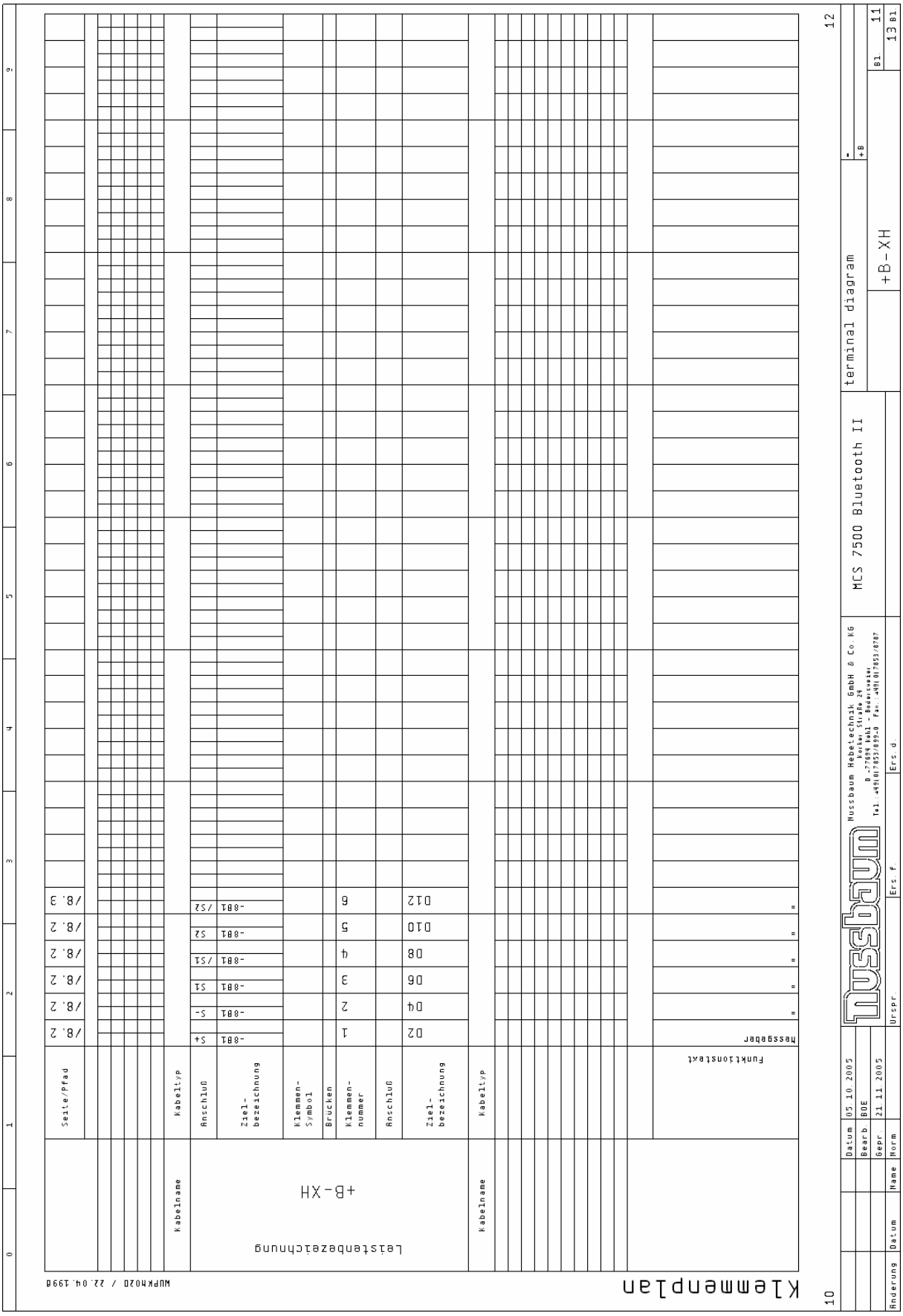
MCS 7500 Bluetooth II

terminal diagram

- +B

+B-X1

Bl. 10
13 Bl.


Klemmenplan
Leistenbezeichnung
+B-XH
terminal diagram
MCS 7500 Bluetooth II
+B-XH
Nussbaum Hebetechnik GmbH & Co. KG
Messgeber
Funktionstext
Kabelname
Kabeltyp
Anschluß
Ziel-bezeichnung
Klemmen-Symbol
Brücken
Klemmen-nummer
Seite/Pfad
Datum
Bearb
Gepr.
Name
Norm
Änderung

Stückliste

WUP0003D 24.02.1994

Bauteilbenennung	Menge	Bezeichnung	Typen Nummer	Lieferant	Artikelnummer
+B-4B1	1	BATTERIE HOPPECK	85805	Hoppeck	990872
+B-4B1	1	Negativ Polklemme 12-70 mm²	88904020	Deutsche Exide GmbH	990886
+B-4B1	1	Positiv Polklemme 12-70 mm²	88904030	Deutsche Exide GmbH	990887
+B-4B1	2	Batterieleitung	BATTERIELEITUNG	LAPP	990896
+B-4B2	1	BATTERIE HOPPECK	85805	Hoppeck	990872
+B-4B2	1	Negativ Polklemme 12-70 mm²	88904020	Deutsche Exide GmbH	990886
+B-4B2	1	Positiv Polklemme 12-70 mm²	88904030	Deutsche Exide GmbH	990887
+B-4B2	3	Batterieleitung	BATTERIELEITUNG	LAPP	990896
+B-XL	1	LADESTECKER STIFT 25 mm²	88742311	Deutsche Exide GmbH	990888
+B-XL	1	BUCHSEN KONTAKTSATZ	88731408	Deutsche Exide GmbH	990891
+B-XL	1	GEHÄUSE BUCHSE für Ladestecker	88731418	Deutsche Exide GmbH	990889
+B-XL	1	Handgriff für Ladestecker	88731406	Deutsche Exide GmbH	990890
+B-XL	1	CODIERSTIFT für Ladestecker	88731403	Deutsche Exide GmbH	990892
+B-XL	1	GEHÄUSE STIFT für Ladestecker	88731511	Deutsche Exide GmbH	GEHÄUSE STIFT
+B-4Q1	1	Hauptsch. Not-Aus 3p 16A 5,5kW	A 105/6.1000 SONDER	Merz GmbH	990129
+B-X1	17	Reihenklemme D 1,5/6.ADO grau schn-schn	D 1,5/6.ADO	Entrelec	990183
+B-X1	1	Reihenklemme D 1,5/6.N.ADO bl schn-schn	D 1,5/6.N.ADO	Entrelec	990577
+B-X1	1	Schutzleiterkl D 1,5/6.P.ADO schn-schn	D 1,5/6.P.ADO	Entrelec	990578
+B-4A1	1	220 V, UMSCHALTBAR 6 / 12 / 24V	BATTERIELADEGERÄT	Kessel J. GmbH	990893
+B-5F1	1	Sicherungsklemme Trenner 5x20 mm	M4/8.SF	Entrelec	990661
+B-5F1	1	Feinsicherung	FEINSICHERUNG	GIF	990286
+B-5S1	1	NOT-AUS-Taster rot (M22)	M22-PV	Moeller	990415
+B-5S1	1	Befestigungsadapter (M22)	M22-A	Moeller	990965
+B-5S1	2	Kontaktelement 10 (M22)	M22-K01	Moeller	990181
+B-5F2	1	Sicherungsklemme Trenner 5x20 mm	M4/8.SF	Entrelec	990661
+B-5F2	1	Feinsicherung	FEINSICHERUNG	GIF	990124
+B-6S1	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
+B-6S1	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
+B-6S1	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
+B-6S1	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
+B-6S1	1	Schalterklappe mit Halterung RG-BUS	990839	Nussbaum	990839
+B-6S2	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
+B-6S2	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
+B-6S2	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
+B-6S2	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
+B-6S3	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
+B-6S3	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
+B-6S3	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
+B-6S3	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
+B-6S4	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
+B-6S4	1	Tastenplatte Pfeil (M22)	M22-XD-S-X7	Moeller	990131
+B-6S4	1	Kontaktblock 1S 10 (M22)	M22-AK11	Moeller	990132
+B-6S4	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
+B-6K1	1	INDUSTRIERELAIS 24V 4 Wechsler	274I	BTR	990267
+B-6K1	1	Industrierelaissockel für 4 Wechsler	110178	BTR	990381
+B-6H1	1	Lampenfassung LED weiß (M22)	M22-LED-W	Moeller	991193
+B-6H1	1	Leuchtmeldervorsatz rot,kon.(M22)	M22-LH-R	Moeller	990944
+B-6H1	1	Befestigungsadapter (M22)	M22-A	Moeller	990965
+B-6H2	1	Lampenfassung LED weiß (M22)	M22-LED-W	Moeller	991193
+B-6H2	1	Leuchtmeldervorsatz grün,kon.(M22)	M22-LH-G	Moeller	990943

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			Datum	05.10.2005	Nussbaum Hebetechnik GmbH & Co.KG Korker Straße 24 D-77694 Kehl - Bodersweier Tel.: +49(0)7853/899-0 Fax.: +49(0)7853/8787	MCS 7500 Bluetooth II	-	
			Bearb.	BOE			+B	
			Gepr.	21.11.2005			Stückliste	Bl. 12
Änderung	Datum	Name	Norm		Urspr.	Ers. f.	Ers. d.	13 Bl.

Stückliste

WUP0003D 24.02.1994

Bauteilbenennung	Menge	Bezeichnung	Typen Nummer	Lieferant	Artikelnummer
+B-6H2	1	Befestigungsadapter (M22)	M22-A	Moeller	990965
+B-6H3	1	Lampenfassung LED weiß (M22)	M22-LED-W	Moeller	991193
+B-6H3	1	Leuchtmeldervorsatz gelb,kon.(M22)	M22-LH-Y	Moeller	990945
+B-6H3	1	Befestigungsadapter (M22)	M22-A	Moeller	990965
+B-7S4	1	Wahltaste 2St. Drehkn. I,0 rast.(M22)	M22-WR	Moeller	990946
+B-7S4	1	Kontaktblock 1S (M22)	M22-AK10	Moeller	990142
+B-7S4	1	Kontaktelement 1S (M22)	M22-K10	Moeller	990133
+B-7S1	1	OBE5000-186M70-SE5	EINWEGLICHTTASTER	Pepperl + Fuchs	990681
+B-7K1	1	INDUSTRIERELAIS 24V 4 Wechsler	274I	BTR	990267
+B-7K1	1	Industrierelaissockel für 4 Wechsler	110178	BTR	990381
+B-7S3	1	Drucksensor 4-20 mA	PDRB.E002.S14.C425	Baumer electric	991567
+B-7S4	1	Drucksensor 4-20 mA	PDRB.E002.S14.C425	Baumer electric	991567
+B-7S5	1	Drucktaste flach o.Tast.Platte (M22)	M22-D-X	Moeller	990130
+B-7S5	1	Kontaktblock 1S (M22)	M22-AK10	Moeller	990142
+B-7S5	1	Start (I)(M22)	M22-XD-G-X1	Moeller	991045
+B-7S6	1	Schlüsseltaste 2St.abzug in 0 rast.(M22)	M22-WRS-A1	Moeller	990948
+B-7S6	1	Kontaktblock 1S (M22)	M22-AK10	Moeller	990142
+B-8A1	1	Achscontroller ASC 4000 Vollversion	940260	Nussbaum	940260
+B-8A1	1	Federleiste 64pol für Achscontroller	FEDERLEISTE 64POL	Nussbaum	991416
+B-8A1	32	Flachsteckhülse 2,8	45365.123.204	AMP	991352
+B-8A1	32	Isoliertülle 2,8	F 2,8	AMP	991353
+B-8B1	1	HALLELEMENTSCHALTER HDD-16MS60BL,5-55MD1/5	HDD-16MS60BL,5-55MD1/5	Nussbaum	990658
+B-XH	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990918
+B-XH	1	Steckverb.Gerätestecker ku 6 pol.	STECKVERBINDER	RS Component	990919
+B-XH	6	Stifteinsatz für Gerätestecker	STIFTEINSATZ	Spörle GmbH	991330
+B-XH	6	Buchseneinsatz für Gerätestecker	BUCHSENEINSATZ	Spörle GmbH	991331
+B-8K1	1	INDUSTRIERELAIS 24V 4 Wechsler	274I	BTR	990267
+B-8K1	1	Industrierelaissockel für 4 Wechsler	110178	BTR	990381
+B-8H1	1	Digisond akustischer Signalgeber	B/P 228	Deltron Components	990331
+B-8A2	1	Display für ASC 4000	DEM16481 SY-LY/L	Nussbaum	940257
+B-8A2	1	Displayrahmen klein , ohne Tastatur	990751	Nussbaum	990751
+B-8A2	1	Displaykabel Achscontroller	990874	Nussbaum	990874
+B-9A1	1	OEM-SERIAL PORT Adapter Bluetooth	CB-OEMSPA13X-02	NOHAU GmbH	940131
+B-9A1	1	Antennen-Anschlusskabel Bluetooth	CB-ACC-18	NOHAU GmbH	940132
+B-9A1	1	STABANTENNE Bluetooth	CB-ACC-16	NOHAU GmbH	940134
+B-9A1	1	VERLANGERUNGSKABEL Bluetooth	SMA-FX-CABLE-200	NOHAU GmbH	940136

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			Datum	05.10.2005	Nussbaum Hebetechnik GmbH & Co.KG Werker Straße 24 D-77694 Kehl - Bodersweier Tel.:+49(0)7853/899-0 Fax.:+49(0)7853/8787	MCS 7500 Bluetooth II	-	
			Bearb.	BOE			+B	
			Gepr.	21.11.2005			Stückliste	Bl. 13
Änderung	Datum	Name	Norm		Urspr.	Ers.f.	Ers.d.	13 Bl.