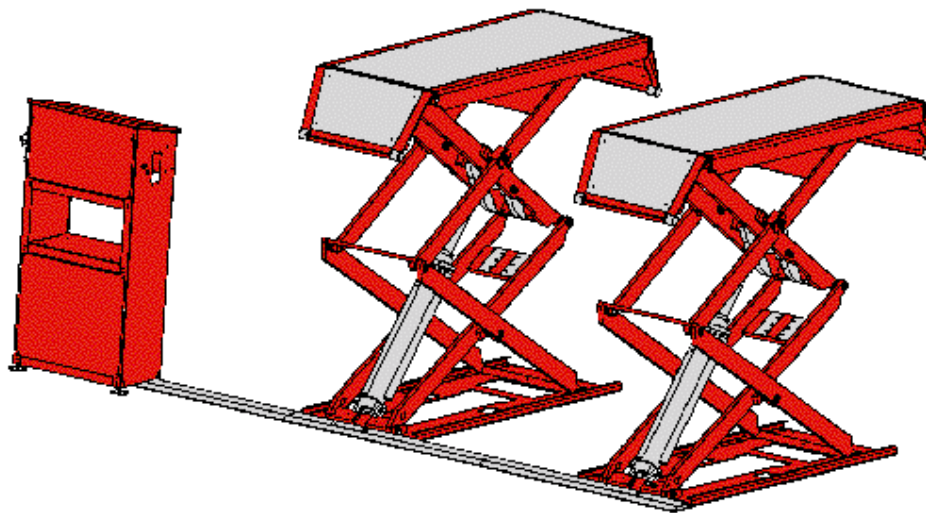


JUMBO-LIFT III

date: September 1998

Version: single phase



Instructions and documentation

serial-number.....



Nussbaum
HEBETECHNIK

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Appendix

- Document "First security check before Installation"
- Document "Regular security check"
- Document "Extraordinary security check"

Record of handing over

The automotive lift Jumbo-Lift III with the

serial number.: was installed on

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

the safety mechanism and operation were checked.

The persons below were instructed after the installation of the automotive lift. The instruction was carried out by a technician of the lift-manufacturer or by a competent person. The persons below are fully familiar with the contents of this manual.

.....
date	name	signature

.....
date	name	signature

.....
date	name	signature

.....
date	name	signature

.....
date	name	signature

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

1. Introduction

The document "**Operating Instructions and Documentation**" contains important information about installation, operation and maintenance of the Jumbo-Lift III.

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

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

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

Installation and check of the automotive lift

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

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

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

Information of Warning

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



Danger!

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



Caution!

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



Attention!

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

2. Master document of the automotive lift

Lift designation	Jumbo-Lift III
Lift-manufacturer	Otto Nußbaum GmbH & Co.KG Korker Straße 24 77694 Kehl-Bodersweier Germany

Application

The automotive lift Jumbo-Lift III is a lifting mechanism for lifting motor vehicles with a laden weight of up to 3200 kg. The max. load distribution is 2:1 in or against drive-on direction. The automotive lift is only designed for servicing vehicles. It is not allowed to carry persons with the lift.

If the vehicle has a short wheelbase, the drive-on ramps must be taken off, because the wheels have hang free.

It's not allowed to install the standard-automotive lift in a hazardous location or washing bays.



Changes to construction, repairs and transposition of lift must be registered in this master document

Changes to the construction, expert checking, resumption of operation (date, kind of change, signature of the expert)

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

.....
name, address of the expert

.....
place, date

.....
signature of the expert

Displacement of automotive-lift-place, expert checking, resumption of operation (date, address and signature of the competent)

.....
name, address of the competent

.....
place, date

.....
signature of the competent

CE-certificate/attestation of conformity

The automotive lift Jumbo-Lift III with the serial number
is in accordance with the tested lift (number 04 205-1246/98)

.....
place, date

.....
company stamp, signature

ZERTIFIKAT
CERTIFICATE

RWTÜV

Registrier-Nr./Registered No.:
04 205-1246/98

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

Zeichen des Auftraggebers Reference of applicant	Antragdatum Date of application	Aktenzeichen File reference	Prüfbericht Nr. Test report No.	Ausstellungsdatum Date of issue	Gültigkeit bis Expiry date
Hr Müller	02.03.98	3.1.1-1154/97	1244/98 u. 1245/98	09.07.1998	09.07.2003

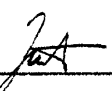
Hiermit wird bestätigt, daß das nachfolgend genannte Produkt den grundlegenden Anforderungen der Richtlinie des Rates vom 14.06.89 zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Maschinen sowie den Änderungen 91/368/EWG und 93/44/EWG entspricht.
We hereby certify that the product mentioned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

CE 0044

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

Fertigungsstätte: s.o.
Manufacturing plant:

Produktbeschreibung: Kfz-Hebebühne Typ: Jumbo III
Product description:


Zertifizierungsstelle des RWTÜV e.V.
für Gerätesicherheit, Aufzüge
und Medizintechnik, notifiziert bei der
EG-Kommission unter Nr. 0044

Rheinisch-Westfälischer
Technischer Überwachungs-
Verein e.V., Sitz: Essen
Langemarckstraße 20
D-45141 Essen
Postfach 10 32 61
D-45032 Essen
Telephone +49/201 8 25-0
Telefax +49/201 8 25-33 56

3. Technical information

Technical ratings

Lifting capacity:	3200 kg
Load distribution:	max. 2:1 in or against drive-on direction
Lifting time:	ca. 37 sec
Lowering time:	ca. 27 sec
Max. height lifting:	min.1800 mm
Line voltage:	1~N + PE, 220V, 60 Hz
driving voltage:	24 V
Power rating:	3,0 KW
Output oil pump:	3 ccm/revolution
Hydraulic pressure:	app. 300 bar
Response pressure of the Pressure relief valve:	320 bar
Oil-tank capacity	appr. 17 litre
sound level (measured at operating panel)	75 dBA

Safety devices

1. Lockable main switch
Safety device against unauthorized operation
2. CE-Stop
3. Safety Star System
4. Automatic stop at maximum height
5. Hose burst check valve in the bottom of the cylinder in case of line breakage
6. Pressure relief valve

(more information: see next pages: for additional explanation)

Additional explanations

1. Safety device to avoid too fast lowering (computer controled system)

- When functioning normally the lift descends at a normal speed
- If the lift descends noticeable faster there may be a problem with the hydraulic system (tube broken or leakage)
- the computer control system recognizes the problem and switches off the air supply (Safety Star System locks)

Check the complete hydraulic system for defects

Lock the main switch and replace the defective parts.

Unlock the main switch for the lift to resume normal functioning again.

2.CE-Stop

- The automotive lift stops automatically 250 mm before the lowest position. (computer controled system).

Make sure that there are no objects or persons beneath or in the immediate vicinity of the lift. Release “lowering“ button

Push again “lowering“button on the operating unit . An acoustic signal is heard until the lift is in its lowest position.

3. Safe Star System

- Is a continuous safety device active at any position during lifting and lowering.

4. Automatic stop at maximum height

- When the lift has reached its maximum height, it stops automatically, (computer control system)

Push “lowering“ button

The lift will raise for a short distance. The pneumatic cylinders on the hydraulic cylinder unlock the Safety Star System (continuously safety device).

The lift starts to lower.

Keep the “lowering“ button pressed until the lift has lowered at least 50 mm.

Do not push the “lowering“ button a second time before the lift has lowered at least 50 mm. Otherwise the lift will raise again until the limit stop. The lift will not lower anymore with the “lowering“ button.

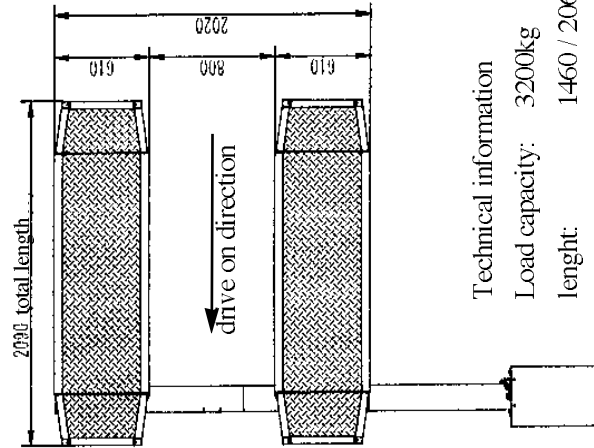
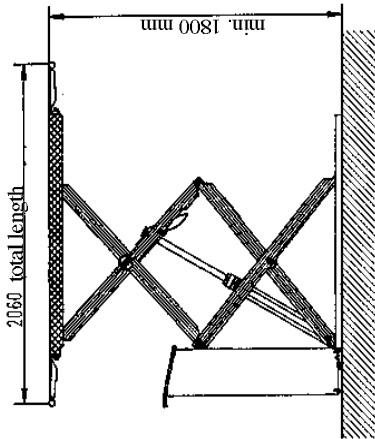
In this case push “lowering“ button and the override switch simultaneously, until the lift is back in its normal lifting range. Do this very carefully in order to avoid running the cylinder block what could lead to further problems.

5. Hose burst check valve

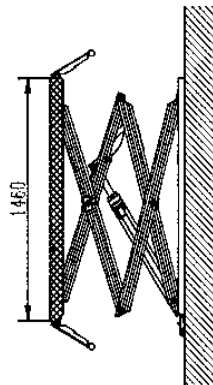
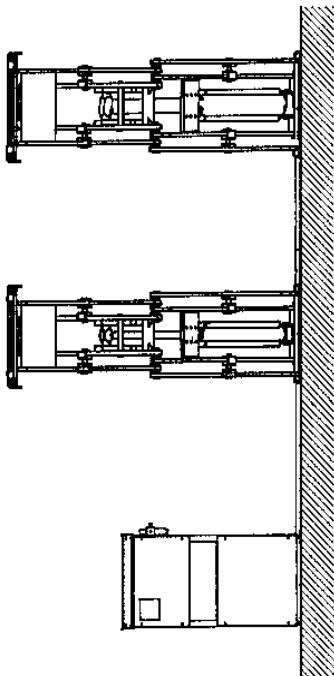
- The hose burst check valve is at the bottom of the cylinder . If a tube breaks and the rate of flow is more then 7 litres per minute the break pipe valve closes and the Safe Star System locks.

6. pressure relief valve


- Safety device against overpressure in the hydraulic system.

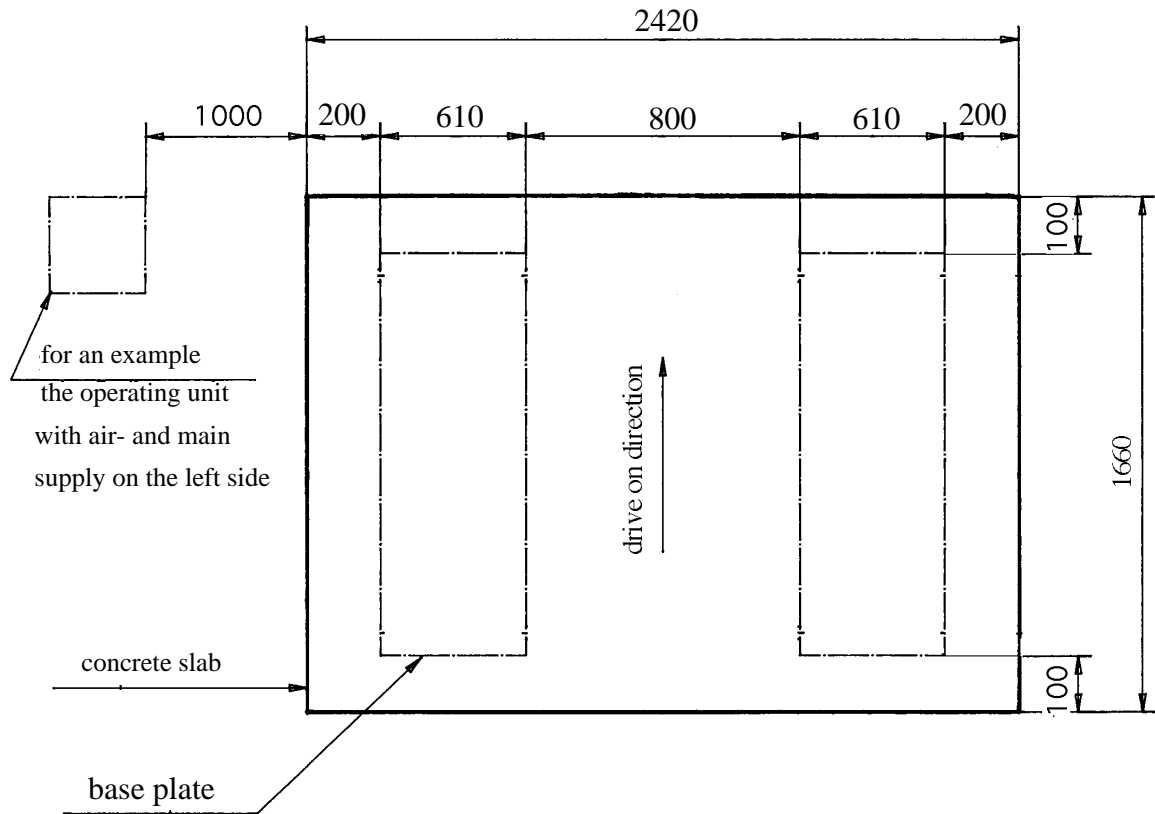


Technical information
 Load capacity: 3200kg
 length: 1460 / 2060mm
 width: 2020 mm
 min. height: 99 mm
 max. height: min. 1800 mm



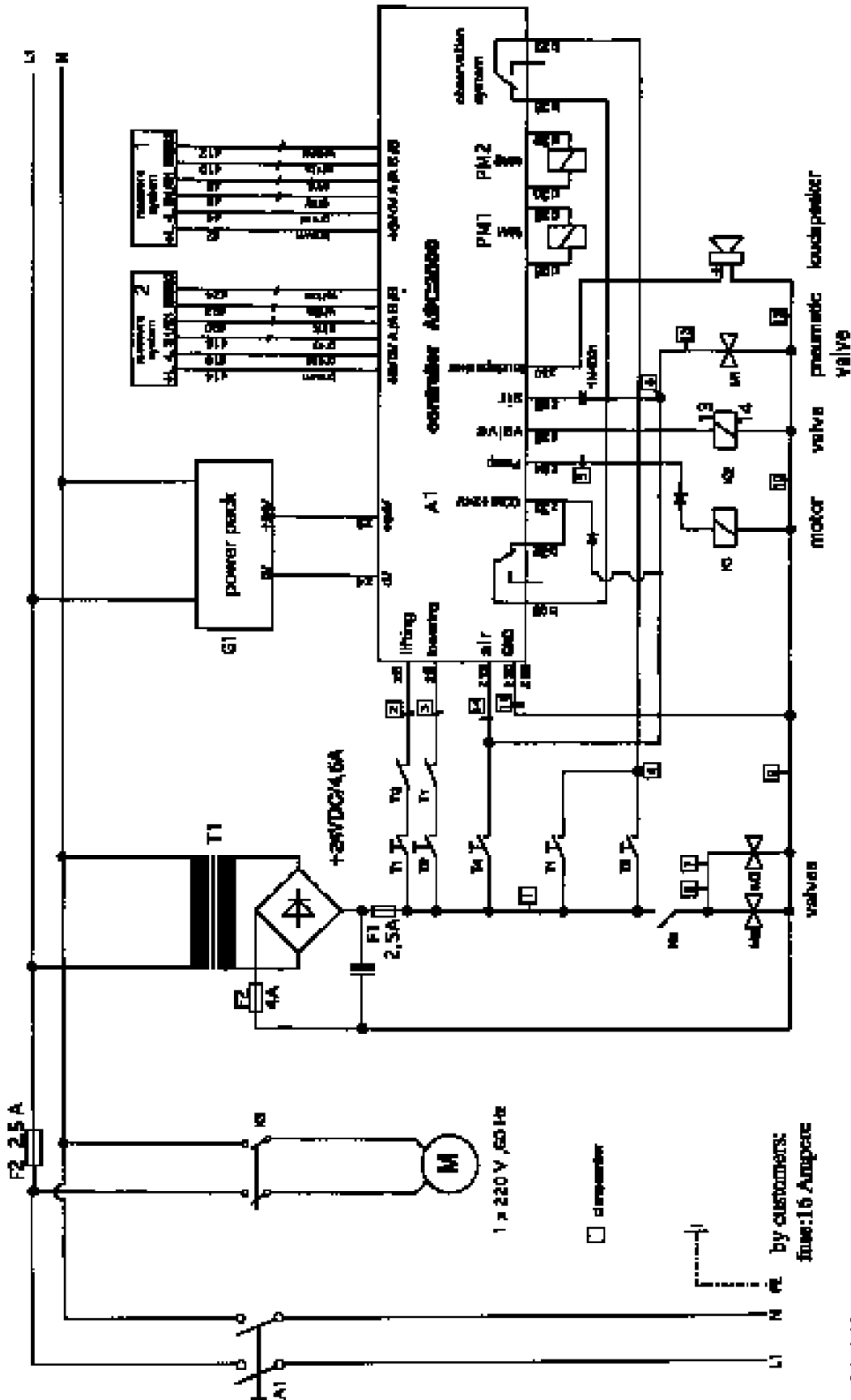
subject alteration

 <p>TEL 07853/899-0 FAX 07853/8787 FERTIGUNGSTECHNIK UND MASCHINENBAU 77694 KEHL-BODERSWEILER</p>	
<p>Jumbo - Lift III scale Maßstab 1:30</p>	
<p>30.10.1997 / VE10</p>	<p>EINBAU1677-1</p>



description of concrete slab:
 quality of concrete: at least B 25
 width of concrete plate: at least 2420 mm
 length of concrete plate: at least 1660 mm
 thickness of concrete plate: at least 160 mm

Electrical diagram drawing



all the wires without the use of error sections are in mm²

26.10.98
D. Braun
E-Plan J. 9 sin

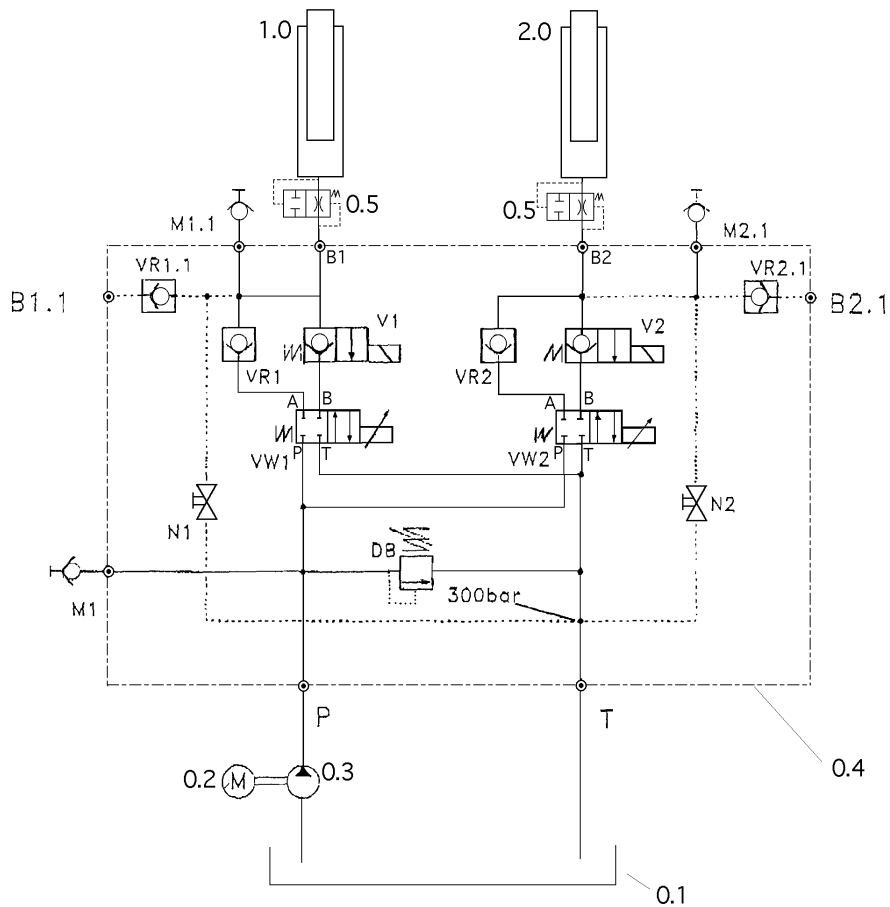
Parts list of electrical diagram

A:	main switch
M:	motor, 3,0 kW
K1:	contactor motor up
K2:	contactor valve up
F1:	fuse 4 A
F2:	fuse 2.5 A
T1:	“Lifting“ button
T2:	“Lowering“ button
T4:	override switch
H:	accoustic signal (loudspeaker)
M1:	pneumatic valve
M2:	valve
M3:	valve
T1:	transformer 220 V- 24V
G1:	power pack 220 V-24 V (Blackbox)
A1:	controller

measure system 1 on the cylinder 1

measure system 2 on the cylinder 2

Hydraulic diagram

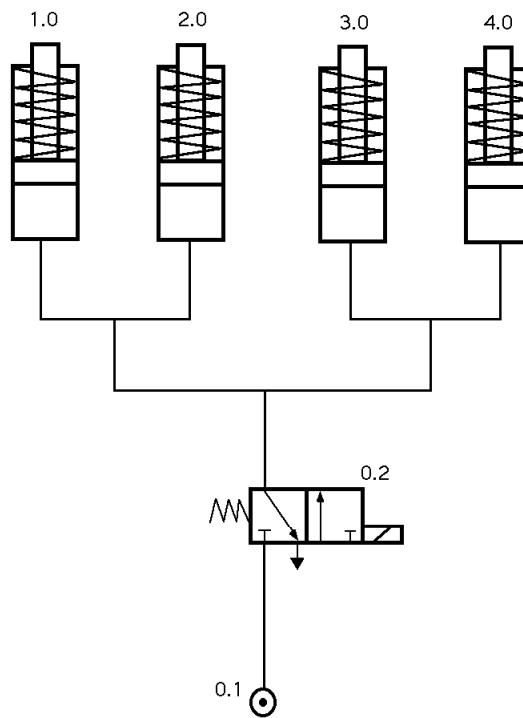


Parts list of hydraulic diagram

- 0.1 : oil-tank
- 0.2 : motor
- 0.3 : gear pump
- 0.4 : hydraulic block complete
- 0.5 : hose burst check valve
- VR1 : holding valve
- VR2 : holding valve
- VR1.1 : holding valve
- VR2.1 : holding valve
- N1 : emergency lowering screw
- N2 : emergency lowering screw
- DB: pressure relief valve approx. 300 bar
- VW1: 4/2 valve
- VW2: 4/2 valve
- V1: holding valve (elctrical unlocking)
- V2: holding valve (elctrical unlocking)
- M1: connection manometer
- M1.1: connection to measure the hydraulic pressure
- M2.1: connection to measure the hydraulic pressure

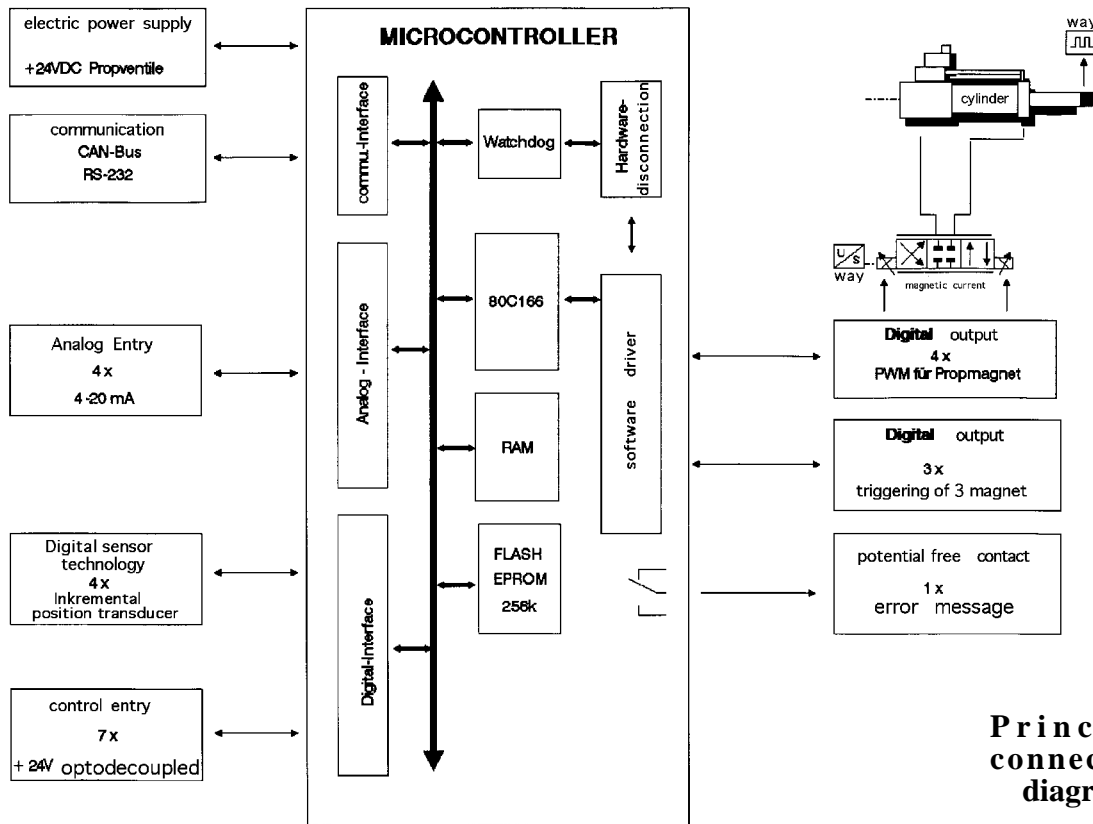
- 1.0 : hydraulic cylinder
- 2.0 : hydraulic cylinder

Pneumatic diagram (of the Safe Star System release cylinders)

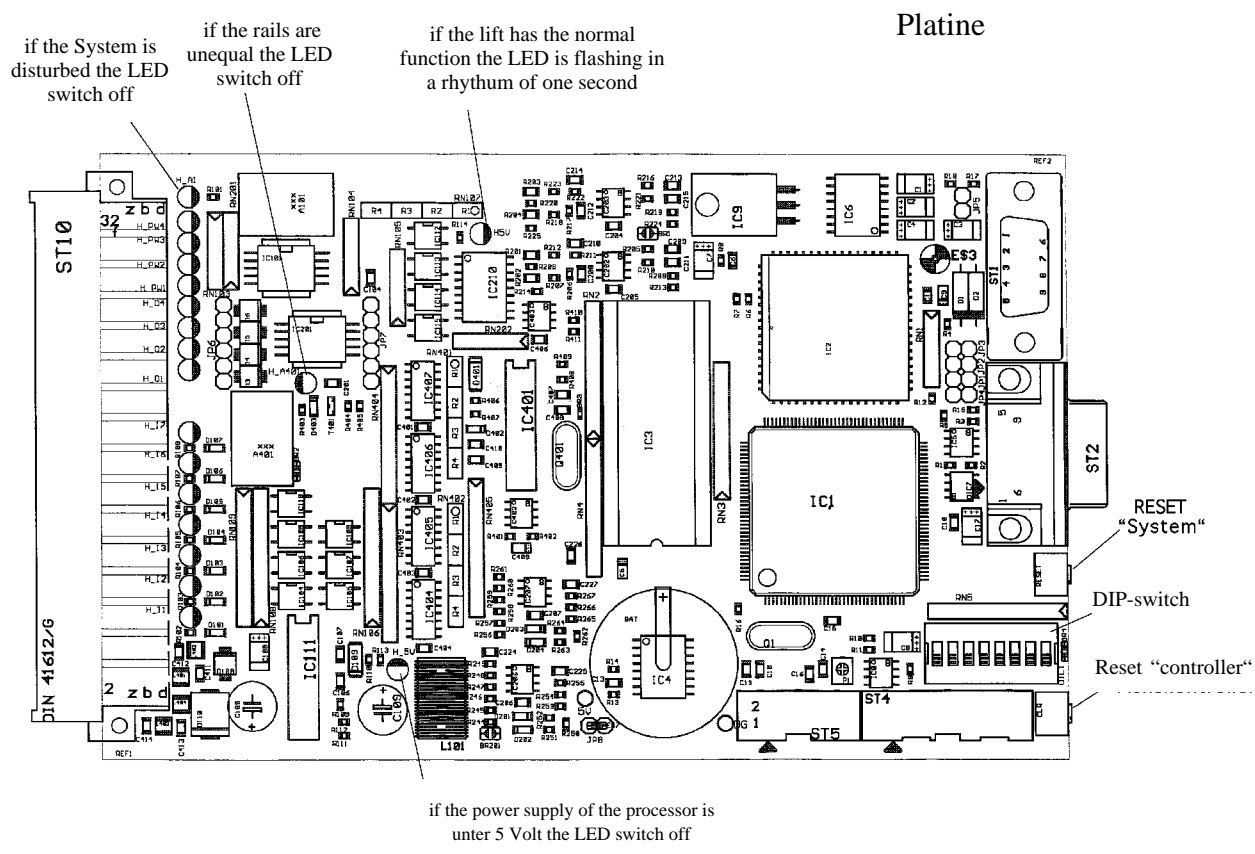


Parts list of pneumatic diagram

- 0.1: pneumatic unit
- 0.2: 3/2-valve
- 1.0: Pneumatic cylinder
- 2.0: Pneumatic cylinder
- 3.0: Pneumatic cylinder
- 4.0: Pneumatic cylinder



Principle connection diagram



4. Safety regulations

To use automotive lifts local Regulations of Accident Prevention must be observed.
(For germany this is VBG14)

In particular the following regulations are very important

- The laden weight of the lifted vehicle mustn't be more than 3200 kg, the maximum load distribution is 2:1 in any drive-on direction.
- To operate the automotive lift the **operating instructions** must be followed.
- Only trained personnel over the age of 18 years are to operate the lift.
- The operator should at all times observe the vehicle during lifting and lowering.
- Nobody should stay under the lift during lifting and lowering.
- Do not raise or lower the lift with people on the lift or in the vehicle.
- Do not climb onto the lift during lifting or lowering or onto a lifted vehicle.
- The Automotive Lift must be checked by an expert after changes to the construction .
- Do not install the standard-automotive lift in hazardous location and washing bay.
- Do not make repairs on the lift until the main switch is switched off.

5. Operating instructions

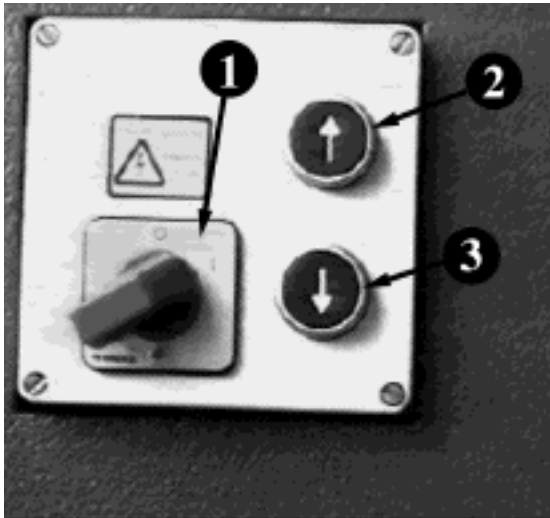


*The Safety Regulations must be observed during working the automotive lift.
Read the safety regulations in chapter 4 carefully before operating with the lift!*

The operating elements are shown in picture 1.

Lifting the vehicle with the automotive lift

- Drive vehicle over the lift, longitudinal axes on line of the lift.
- If the wheelbase is too short and the wheels are standing on the ramps, remove the ramps.
- When necessary fold out the extension ramps.
- Block the vehicle against rolling, put into gear
- Position elastomer-supports under the pick-up points of the vehicle as prescribed by the vehicle-manufacturer.



pic 1: the operating unit

- 1 main switch
- 2 “lifting“ button
- 3 “lowering“ button



The elastomer supports must not be used on the high end to avoid overturning. They have to be placed such that the supports have the lowest height.

- 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; main switch on position ”1”
- Lift vehicle until the wheels of the vehicle are free. Push button ”lifting”. Check that the vehicle is safety positioned



The vehicle must be positioned on the elastomer supports in a safe way, otherwise there's a danger that the vehicle might fall down.

- Lift vehicle to working height ; by pushing the “lifting“ button.

Lowering the vehicle with the automotive lift

- 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 to working height or until the platforms reaches its lowest point; by pushing the “lowering“ button.

Attention !



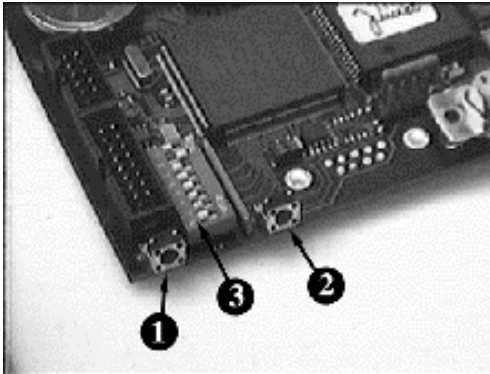
If the runways are 250 mm over the floor the automotive lift stops to avoid injuring of feet. Check the dangerous zone. Push “lowering“ button again. An acoustic signal is heard during lowering until the lift is in its lowest position.

Equalisation of the two lifting platforms

In case unequalisation of the two platforms greater than approx. 40 mm the CCS will automatically stop the lift:

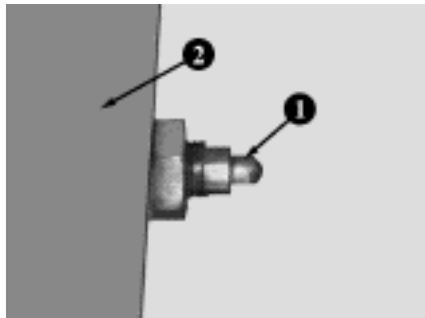
You should then perform the following to reset the lift's function.

- In the Control box in the operating unit you can find the “DIP“- switches (see pic. 2)
 - Dip 5 (normal operating on / off)
 - Dip 1 (The side 1 is manuel moveable)
 - Dip 2 (The side 2 is manuel moveable)
 - Dip 7 (The Reset switch)



pic. 2

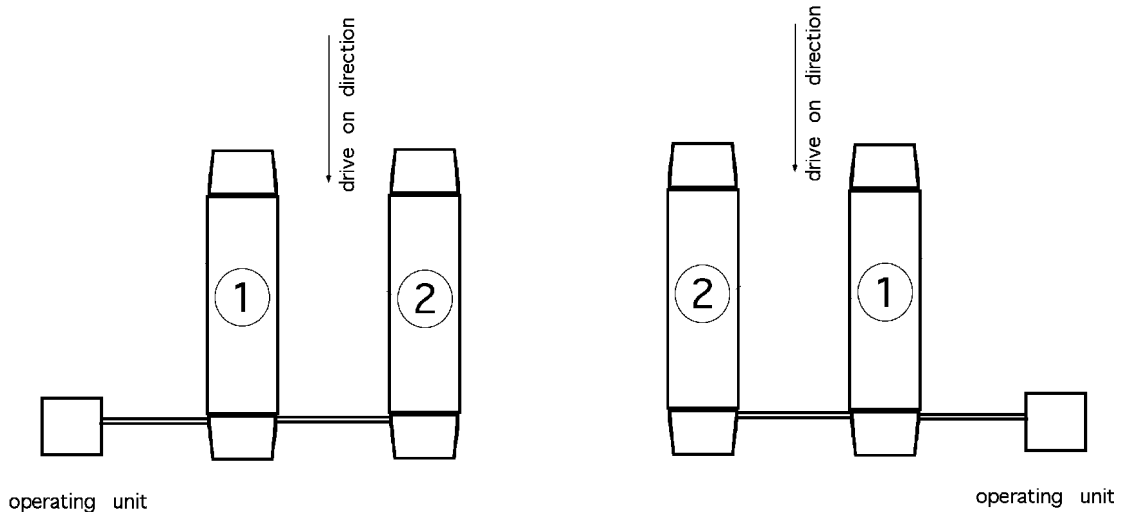
- 1 button reset “controller“
- 2 button reset “complet system“
- 3 Dip-switch in the electric box



pic 3:

- 1 override switch
- 2 controlbox

The override switch is behind the cover of the operating unit.



pic 3a :

The Position of the operating unit and the platforms

- No. 1 the platform
- No. 2 the platform

The platform No.1 is always closest to the operating unit

- Remove the cover of the operating unit and remove the cover of the electric box.

Equalisation the runway No. 1

Move the Dip switch 5 in “off“ position

Move the Dip switch 1 in “on“ position (is for the platform No.1)

Push “lifting“or “lowering“ button and the override switch (see pic. 3) simultaneous until the platform have the same height.

Move the Dip switch 1 in the “off“ position

Move the Dip switch 5 in the “on“ position

Lower the lift to perform the reset as described in “Reset the automotive lift after an emergency lowering“

Mount the covers

Equalisation the runway No. 2

Move the Dip switch 5 in “off“ position

Move the Dip switch 2 in “on“ position (is for the runway No.2)

Push “lifting“or “lowering“ button and the override switch (see pic. 3) simultaneous until the platform have the same height.

Move the Dip switch 2 in the “off“ position

Move the Dip switch 5 in the “on“ position

Lower the lift to perform the reset as described in “Reset the automotive lift after an emergency lowering“

Mount the covers



Caution: *If the Dip switch 1 and / or 2 are actuated, the CE-Stop and the acoustic signal are out of function. Attention: Danger of squeeze*

6. Troubleshooting

If the lift does not function 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 for technical support.



Repairs at the lift's security devices as well as repairs and examinations of electrical components may only be performed by specialists.

Problem: Motor does not start

Potential causes

- Main switch is not “on“
- Fuse is defective: replace fuse
- Feed line is cut
- power failure

Problem: Lift is not raising!**Potential causes**

- Level of hydraulic oil is too low
- vehicle is too heavy
- hydraulic line is blocked or dirty
- pistons jam
- emergency lowering screw is not closed

Problem: Lift is not lowering but lifting !**Potential causes**

- defective magnetic valve in hydraulic block
- no air supply (the Safety Star System is engaged)
- defective pneumatic valve (the Safety Star System is engaged)

Emergency lowering when power failure

In case of power failure or defective electromagnetic valve or defective pneumatic valve, the hydraulic valve and/or the pneumatic valve of the lift do not open any more. Therefore the lift can not be lowered. In this case there is the possibility to open the hydraulic valve manually and to lower the lift to its lowest position. So the vehicle can be driven off from the lift.

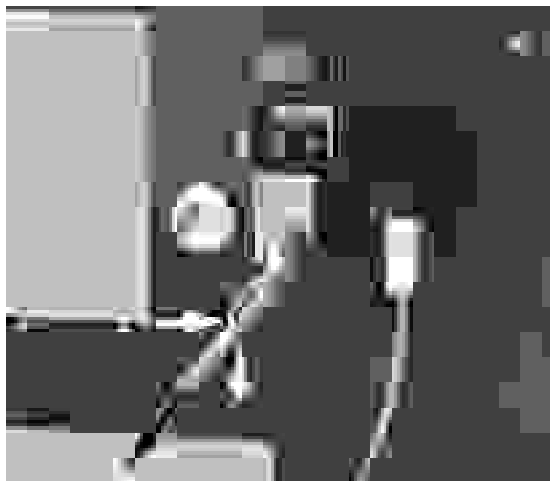


The emergency lowering can only be performed when the interactive Safety Star System is not locked .



The emergency lowering may only be performed by persons instructed to use the lift. Please refer to the regulation "Lowering the vehicle with the automotive lift".

- Remove the cover of the operating unit



Remove the Pneumatic tube:

press the ring
(white arrow)
and pull the blue pneumatic tube
(black arrow)

Connect this tube on a suitable air supply
(app. 8-10 bar)

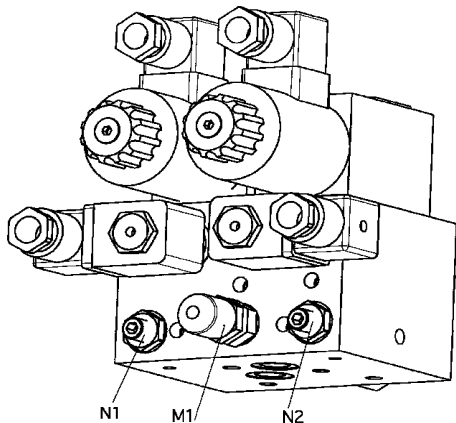
- Remove the blue pneumatic tube behind the pneumatic unit and connect this tube directly on a suitable air supply (app. 8- 10 bar)
- If the safety star system is locked, you must unlock the Safety Star System with an suitable tool. (wing spanner \varnothing 65 mm) (see pic. 3b)



pic 3b:

Place the tool on the Safe Star System safety nut and turn counter clockwise until the safety nut is unlocked.

- If now the Safety Star System is unlocked, you must loosen the locknut of the emergency lowering screw with a wrench (17 size).(see pic. 4)
- Mark the position of the Allen screws to the reference point on the block. The Allen screws need to be brought back to this position at the end of the emergency lowering procedure.
- Slowly and carefully loosen the emergency lowering screw (Allen screw)(N1) with a hexagon spanner (5) until platform 1 has lowered 5 cm.




pic 4: position of the emergency lowering screw's

- N1-** emergency lowering screw with locknut
- N2-** emergency lowering screw with locknut
- M1 -** hydraulic manometer connection

- Tighten screw N1.
- Slowly and carefully loosen the emergency lowering screw (Allen screw)(N2) with a hexagon spanner 5 until platform 2 has lower 5 cm.
- Tighten screw N2.
- Repeat the above steps until the vehicle is in the fully lowered position
- **Do not attempt to lower both sides simultaneously.**
- Fasten emergency lowering screw and secure it with the locknut when the lift is in its lowest position.





 *After finishing the emergency lowering, the emergency lowering screw and the locknut must be brought back to their original position . Otherwise a malfunction of the lift may occur.*

- Drive vehicle from the lift

Emergency lowering by defective electrovalve

In case of defective electromagnetic valve, the hydraulic valve of the lift will not open any more. Therefore the lift can't be lowered. In this case there is the possibility to open the hydraulic valve manually and to lower the lift to its lowest position, so the vehicle can be driven off.

 *The emergency lowering can only be performed when the interactive Safety Star System is not locked .*

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

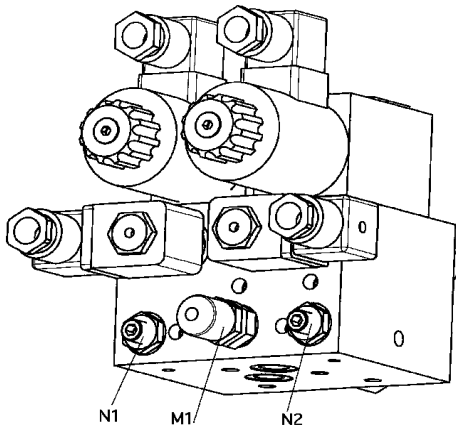
- It is better to work with **two** persons by this emergency lowering
- Remove the cover of the operating unit
- If the Safe Star System is locked, you must unlock the Saftye Star System with an suitable tool. (wing spanner \varnothing 65 mm) (see pic. 3b)
- If now the Safety Star System is unlocked, you must loosen the locknut with a wrench (17 size).(see pic. 4)



pic 3b:

Place the tool on the Safety Star System Saftye nut and turn counter clockwise until the safety nut is unlocked.

- One person should: push the "lowering" button
- The other person should slowly and carefully loosen the emergency lowering screw (Allen screw)(N1) with a hexagon spanner (5) until platform 1 has lower 5 cm.
- Tighten screw N1.
- Slowly and carefully loosen the emergency lowering screw (Allen screw)(N2) with a hexagon spanner 5 until platform 2 has lower 5 cm.
- Tighten screw N2.




pic 4: position of the emergency lowering screw's

N1- emergency lowering screw with locknut

N2- emergency lowering screw with locknut

M1 - manometer connection

- Repeat the above steps until the vehicle is in the fully lowered position
- **Do not attempt to lower both sides simultaneously.**
- Fasten emergency lowering screw and secure it with the locknut when the lift is in its lowest position.

 **After finishing the emergency lowering, the emergency lowering screw and the locknut must be brought back to their original position. Otherwise a malfunction of the lift may occur.**

- Drive vehicle from the lift

Reset the automotive lift after an emergency lowering

- Drive off vehicle from the lift
- Remove the cover (at the top) of the operating unit
- Remove the cover of the large electric box.
- Press the reset button 1 (see pic) and hold it.
- Switch off the main switch on the operating unit and wait 5 seconds.
- Switch on the main switch on the operating unit and wait 5 seconds again.
- Let go of the reset button.
- Push button "lowering" until the lift (both platforms) is in the lowest position and the acoustic signal stopped beeping.
- If necessary repeat the steps d) till i) a few times until the lift is in the lowest position.
- Only in this lowest position of the lift move now the Dip switch 7 in "on" position (its on the computerboard/ see pos.3)
- The Dip switch 5 stays in "on" position
- Repeat the steps d) till h)
- Move the Dip switch 7 in "off" position. The Dip switch 5 stays in "on" position
- On the computerboard must now three Diodes permanently be on. One additional Diode must

- lighten with the frequency of approx. 1 sec.
- o) Lower and lift the automotive lift a few times without load. Observe the process.
- p) Mount all the covers of the operating unit.

Lowering onto an obstacle

If the lift is running onto an obstacle with one platform during lowering, and the platform are 40 mm unequal the lift stops automatically. In this case the automotive lift must be raised until the obstacle can be removed.

- Remove the cover of the operating unit and remove the cover of the electric box.
- Press the reset button 1 on the computerboard and hold it (see pic on page 25)
- Switch off the main switch on the operating unit and wait 5 seconds.
- Switch on the main switch on the operating unit and wait 5 seconds again.
- Let go of the reset button.
- Move all Dip switches in “off“ position
- Move Dip switch 1 and 2 to “on“
- Caution: This procedure can only be done when lift is not at maximum height
- Carefully watch the car on the lift and its reaction. (equality)
- Press lifting button until the object can be removed.
- The side of the lift that is higher must be lowered with the help of the corresponding Dip switch. (see “Equalisation of the two lifting platforms“)
- After the equalisation of the runways you must reset the lift :
- Turn off all Dip switches
- Turn on Dip switch 5
- Press the reset button 1 (see pic on page 25) and hold it.
- Switch off the main switch on the operating unit and wait 5 seconds.
- Switch on the main switch on the operating unit and wait 5 seconds again.
- Let go of the reset button.
- Push button “lowering“ until the lift (both platforms) is in the lowest position and the acoustic signal stopped beeping.
- You might have to repeat a.m. steps to reach the lowest possible position.
- Move the Dip switch 7 in “on“ position (its on the computer board/ see pos.3)
- Dip switch 5 stays in “on“ position
- Press the reset button 1 (see pic on page 25) and hold it.
- Switch off the main switch on the operating unit and wait 5 seconds.
- Switch on the main switch on the operating unit and wait 5 seconds again.
- Let go of the reset button.
- The Dip switch 5 stays in “on“ position
- Move the Dip switch 7 in “off“ position .
- On the computerboard must now three Diodes permanently be on. One additional must be blinking in the frequency of approx. 1 sec.
- Lower and lift the automotive lift a few times without load. Observe the process.
- The lift is in the normal functioning mode
- Mount the covers

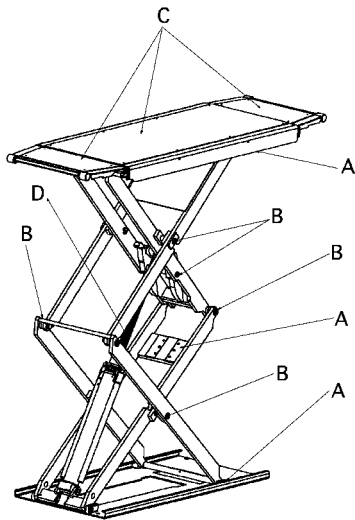
7. Maintenance

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

During daily operation the lift has to be watched carefully for its correct function.

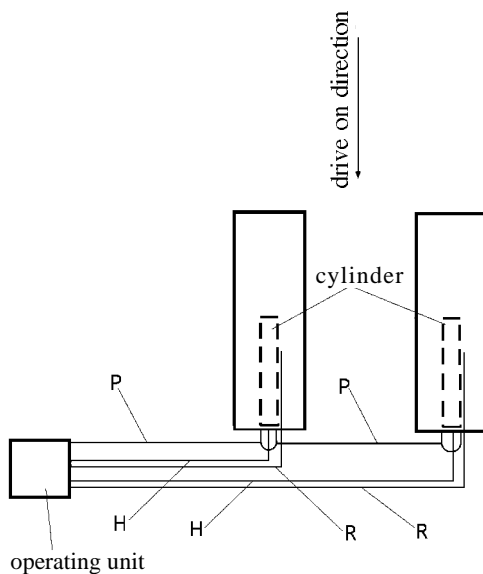
Maintenance schedule for the lift

- Generally don't remove the plastic cover of the piston rod.
Only in case of heavy dirt deposit clean the piston rods of the hydraulic cylinders from deposit.



pic. 5:

- A** - clean and grease the sliding surface
- B** - grease the bolts (lubricating nipples)
- C** - clean under the plank and grease
- D** - If necessary clean and grease the piston rods



pic 6 : for an example

the course of the tubes and
the operating unit is on the right side

- H - the hydraulic tubes
- P - the pneumatic tubes
- R- the rotamess cables

- Grease the piston rods with a high capacity lipid (app. 5 Gramm of S2 DIN51503 KE2G-60 LTD. Renolit) over app. 4 cm only
- Clean and lubricate moving parts of the lift (hinge bolts, sliding pieces, sliding surfaces) grease with a multipurpose lipid (app. Auto Top 2000 LTD. Agip)
- grease all the lubricating nipples (grease with a multipurpose lipid (app. Auto Top 2000 LTD Agip)
- Check level of hydraulic oil.

The hydraulic oil has to be changed at least once a year. To change the oil lower the lift into its lowest position. Empty the tank and replace clean oil, approximately 17 litres are needed. A high quality hydraulic oil is recommended, its viscosity should be 32 cst (e.g. HLP 32 LTD. OEST).

The hydraulic oil level is 2 cm under the oil tank cover.

It's prescribed (VBG 14, § 52-3, German regulation) to exchange the hydraulic tubes if its necessary, but latest after 6 years.

Check the white Polymer blocks and replace them if its necessary.

Maintenance of paint work

when cleaning the shopfloor or the lift, do not use aggressive detergents that may damage the paint or cause rust. Regularly retouch damaged paint work so that no rust will develop. Regularly clean lift from dust and dirty.

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



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



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

This manual contains forms with a schedule for the security checks. Please use the adequate form for the security checks. The form should remain in this manual after they have been filled out.

9. Installation and Initiation

Installation of the lift

Regulations for the installation

- The installation of the lift is only performed by trained technicians of the manufacturer or its dealer. The installation has to be done according to the regulations.
- For the installation a concrete floor with a thickness of at least 160 mm and a quality of at least B25 has to be provided. If these requirements cannot be fulfilled a foundation according to the foundation plan has to be made. The area must be flat and completely even. Foundations located outside or in rooms with the danger of frost have to be made considering this fact.
- The standard lift must not be installed in hazardous locations or washing areas.
- An **electrical supply** 1~N + PE, 220V, 60 Hz has to be provided. The supply must be protected by fuses. The electrical connections are located in the command unit.
- A compressed air supply with an inside width of 4 mm has to be provided at the command unit. The pressure must be 8-10 bar. Pressure variations through other air consumer are not allowable.
- It is normally not allowable to remove the hydraulic and pneumatic hoses and the electrical cable for the installation under the ground.
- All cable ducts have to be equipped with protective coverings to prevent accidents.

Installation and doweling of the lift

1. Put the lift cautiously out of the case. Do not stretch the scissors.
2. Install the lift according to the data sheet and the foundation plan and line it up.
3. Remove the cover of the operating unit.
4. Install command unit at its designed place and connect it with air and power supply.
5. Connect hydraulic and pneumatic hoses and the rotamess cable between command unit.

The hoses must not be crossed!

6. Fill in clean hydraulic oil, approx. 17 litres. A high quality hydraulic oil is recommended, its viscosity should be 32 cst.
7. Push "lifting"- button short. Check the direction of the motor.
8. Push the lifting button until one platform raised a little bit. Let go of the button immediately.
9. If none platform is lifting, check the direction of the motor and if necessary change two cable of the electrical supply (only by three phase current).
10. Push "lifting"-button until both platform are on the height of approx. 10 cm/3,9 inch
11. Push lowering button until the platform are in the lowest position and the acoustic signal switched off.
12. Repeats twice the steps 8 till 11

13. Push “lifting“-button. Raise the lift on approx. 30cm/11.8 inch (a little bit over the CE-Stop)
14. Push “lowering“-button. Lower the lift on the CE-Stop level. Let off the button.
15. Push “lowering“-button again and hold it until the platform are in the lowest position and the acoustic signal is out of function.
16. Repeats twice the steps 13 till 15.
17. Push “lifting“- button until the lift is on the highest position.
18. Push “lowering“-button until the lift is in the lowest position (both rails)
19. Push “lifting“-button until the lift is in the highest position.
20. Adjust lift: first one baseplate, than adjust the second baseplate. If there is an uneven floor even it out with washers. A continuous contact between floor and base plate must be guaranteed to avoid hollow spaces
21. Dowel the lift on the floor.

Before the lift is doweled to the ground, the quality of the floor has to be checked. For an existing concrete floor the dowels have to be chosen according to pic. 7, if the ground is covered with floor tiles, the dowels have to be chosen according to pic. 8. Its important for the troublefree working that the base plates are clean and the guides of the sliding block are clean and greased.

Tighten the eight dowels with a dynamometric key (M = 50Nm)



Each Liebig-dowel (German Dowel manufacturer) must be tightened with a torque of 50 Nm. Otherwise the normal function of the lift cannot be guaranteed.

You can use equivalent characteristics dowels another dowel manufacturer (with licensing) but observe their regulation !

22. If necessary dowel the operating unit too.
23. Lower and lift the automotive lift a few times without load and observe the process.
24. Mount the coverings. CAUTION: Do not damage the hydraulic and pneumatic tubes and the electric cable.
25. The automotive lift has the normal function mode.



If you have now a problem with the lift call a competent person from your service.

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 to perform the security check.

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



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

Transpose the automotive lift

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

- Remove the cover of the operating unit and the tubes
- Loosen the dowels of the lift and the operating unit
- Lowering the lift in the lowest position
- Disconnect electrical current supply from lift
- Disconnect the hydraulic supply and the rotamess cable from lift
- Transport lift to new place of installation
- Install lift in accordance with chapter "Installation and Initiation" of the lift.



Use new dowels, the used dowels cannot be used any more.



A security check must be performed before reinitiation by a competent. Use form "Regular security check".

Pic. 7: Choice of dowel lengths Jumbo-Lift III (without floor pavement or tile surface)

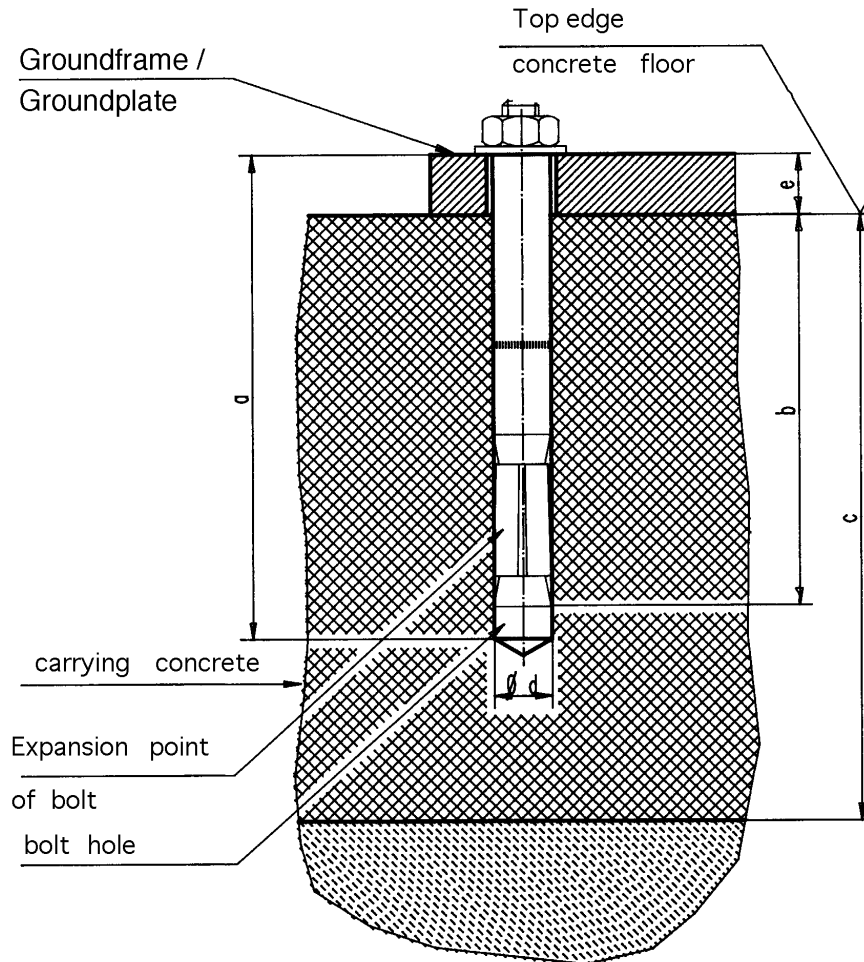


table to picture 10:

Liebig-Dowel (German Dowel manufacturer)

type of dowel		B15/70	B15/95
drilling depth	a	112	137
min. anchorage depth	b	72	72
thickness of concrete	c	160	160
diameter of bor	d	15	15
thickness of the lift-piece	e	0-40	40-65
quantity of dowels		8	8



You can use equivalent characteristics dowels another dowel manufacturer (with licensing) but observe their regulation !

pic. 8: Choice of dowel lengths Jumbo-Lift III (with floor pavement or tile)

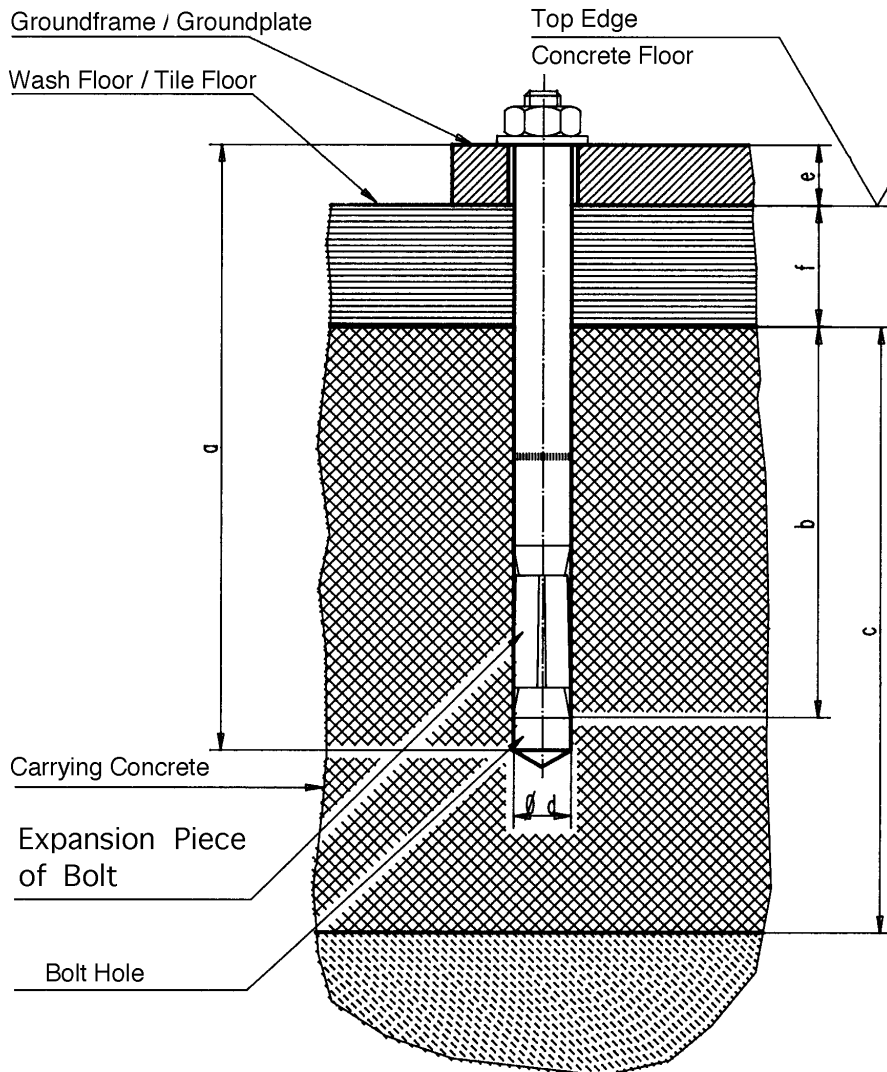


table to picture 11:

Liebig-Dowel (German Dowel manufacturer)

type of dowel		B15/70	B15/95	B15/120	B15/145
drilling depth	a	112	137	162	187
min. anchorage depth	b	72	72	72	72
thickness of concrete	c	160	160	160	160
diameter of bor	d	15	15	15	15
thickness of the lift-piece + thickness of floor pavement	e+f	0-40	40-65	65-90	90-115
quantity of dowels		8	8	8	8



You can use equivalent characteristics dowels another dowel manufacturer (with licensing) but observe their regulation !

First security check before installation



to fill in and to leave in this document

kind of check	all right	defect lacking	verification	Remark
Registration plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation Lifting/Lowering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety device of hinge bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition pneumatic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test automotive lift with vehicle ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of concrete floor (cracks).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function acoustic warning sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition planking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Safe Star System.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

security check carried out:

Name, address of the competent.....

Result of the Check:

- 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

 to fill in and to leave in this document

kind of check	all right	defect lacking	verification	Remark
Registration plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation Lifting/Lowering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety device of hinge bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition pneumatic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test automotive lift with vehicle ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of concrete floor (cracks).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function acoustic warning sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition planking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Safe Star System.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

security check carried out:

Name, address of the competent.....

Result of the Check:

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



to fill in and to leave in this document

kind of check	all right	defect lacking	verification	Remark
Registration plate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Short operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warning designation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detailed operating instructions.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Designation Lifting/Lowering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Main switch lockable.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety device of hinge bolt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Construction (deformation, cracking)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fixed seat of the carrying screws	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition surface piston rod.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition piston rod coverings.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition electrical wires.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition hydraulic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition pneumatic hoses.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Level of hydraulic oil.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of the hydraulic system.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function test automotive lift with vehicle ..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition of concrete floor (cracks).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function acoustic warning sign	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function CE-Stop.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function equalisation of the lift.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function ramps.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Condition planking.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Function Safe Star System.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

security check carried out:

Name, address of the competent.....

Result of the Check:

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!)