TECHNIK Herkules FÜR MENSCHEN

Operating manual and test record for service Lift

Maschinen-Typ	Artikel-Nr.	Serien-Nr.
	HLQ-01	

Herkules Hebetechnik GmbH
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CE

HLQ-01_2013.01_760-058_2.0_ENG

Translation from German original

Contents

1 Operation and Saftey Inspection

Carried out by the manufacturer to check the following details:

Following plates present:

- ☐ Nameplate
- ☐ Operating instructions (abbreviated)
- ☐ Lifting capacity
- ☐ Mains pressure
- ☐ Raise "up",- lower "down"
- ☐ Company Logo
- ☐ CE- marking

Operation and saftey checked:

- ☐ **Safety valve set to 3.5 bar operating pressure**

Inspected:

- ☐ Unloaded function test
- ☐ Safety catch function
- ☐ The control valve automatically goes into the 0 position
- ☐ Automatic stop function 120 mm before end of travel and renewed startup with acoustic signal
- ☐ No damage to the surface of the air bags
- ☐ Secure fit of all supporting screws
- ☐ Safeguard of the scissor pins
- ☐ Condition of the pneumatic lines (proper position and do not leak)

Serial-No.: See cover sheet

Date: _____

Name: _____

Herkules Hebetechnik GmbH
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2 General infomation

The operating instructions (and test log book) contain important information concerning the installation, and ensure safe, proper, and economical operation as well as preservation of operational safety.
Observance of these operating instructions will help you to avoid danger, reduce repair costs and downtime as well as to increase the life of your service lift.

As evidence of regular **safety checks** this test log book contains a form. This should be used to provide documented details of tests. (It is advisable to make a copy of the form before starting to fill it out.)

Installation and testing
Safety-related work and safety inspections may only be performed by suitably trained personnel. In this documentation, personnel are designated as expert and qualified persons.

2.1 Hazard warning

To identify hazardous areas and important information, the following symbols with the described definitions are used. Please pay special attention to text sections marked with these symbols.

Signifies danger for life and limb, meaning improper execution of the process referred to by the symbol may be fatal!

Signifies a notification of a key function or an important notice!

2.2 Limitation of liability

All details and indications in this operating manual were compiled taking into account the applicable standards and regulations, and the latest technology as well as our many years of insight and experience.
The manufacturer accepts no liability for any damage caused by:

- Failure to adhere to the operating manual
- Improper use
- The intervention of non-qualified staff
- Arbitrary alterations
- Neglecting maintenance

2.3 Copyright

These operating instructions are to be treated as confidential and are solely intended for personnel working with the machinery. Transfer of the operating manual to third parties without the written consent of the manufacturer is prohibited.

Text, drawings, images and other illustrations are copyrighted and intellectual property rights apply.

2.4 Terms of guarantee

The terms of guarantee are included as a separate document in the sales brochures.

2.5 Customer service

For technical information, please contact our customer service center as follows:

Customer service:
Herkules Hebetechnik GmbH
Falderbaumstraße 34
D – 34123 Kassel
Tel.: +49 (0)561 58907-0
Fax: +49 (0)561 58907-34
Email: info@herkules.de

3 Master data sheet

Name; Type: .....

Serial-No.: **see cover sheet**

Producer: **HERKULES Hebetechnik GmbH**
Falderbaumstr. 34
D - 34123 Kassel

Intended use:

The lift with air bag and scissor system is a lifting machine for lifting vehicles with a permissible loading capacity (see technical data) of a maximum load distribution of 3:2 in the driving direction or 2:3 against the driving direction.

Any construction-related modifications as well as basic repairs are to be recorded on this master sheet!

Changes to the construction, testing by experts, **re-commissioning**
(Date, type of change, expert signature)

.....
Name Address of assessor

.....
Location Date Signature of assessor

4 Product description

4.1 Intended use

The HLQ-01 vehicle car-lift is solely intended for lifting passenger vehicles (PKW) with a permissible total weight up to 2500 kg. Lifting other motor vehicles, persons or other objects is not permitted.

Lifting individuals and other objects is prohibited.

Working under a lifted vehicle and during the lifting and lowering movement is not permitted.

Operation may only be performed by persons who have read and understood the operations manual and who are more than 18 years of age.

Vehicles may only be lifted at the designed lifting points (at framework or on the wheels). It is only allowed to lift vehicles as stated in the operating instructions.

The marking of the equipment is Ex II 3G c IIA T4

Intended use also includes reading the instruction manual, as well as complying with all the information contained in it, especially the safety information.

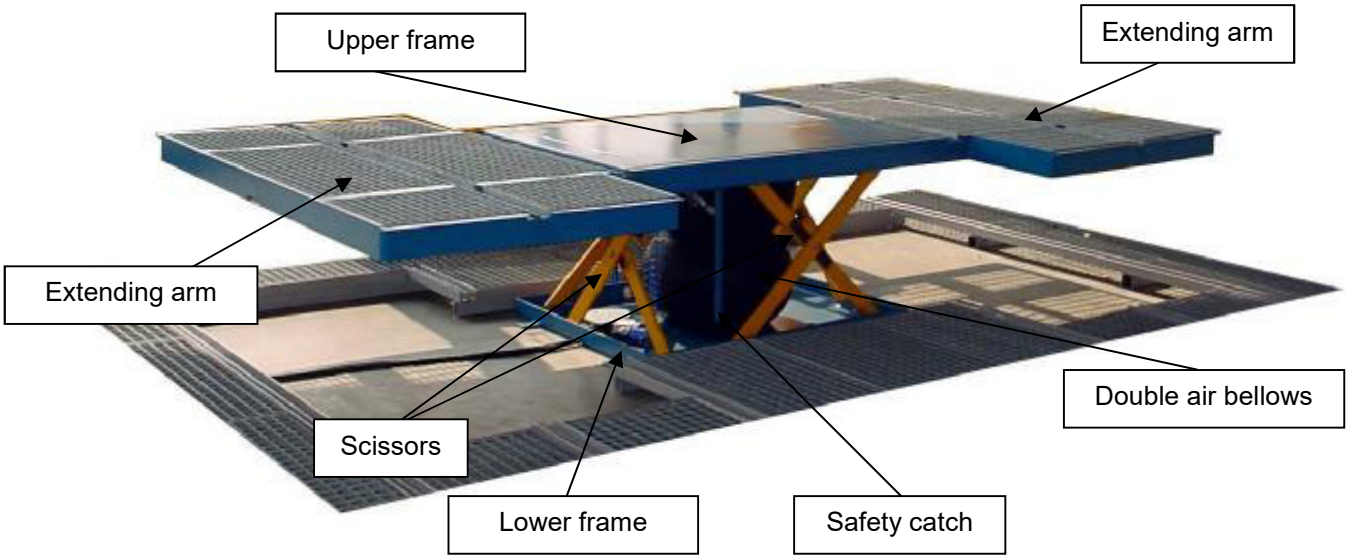
Furthermore, it also includes carrying out all inspection and maintenance works at the prescribed intervals.

If the vehicle lift system is not used according to its intended use, safe operation of the system cannot be guaranteed.

The operator, and not the manufacturer, is responsible for all personal injuries and damage to property resulting from improper use.

4.2 Product structure

The HLQ-01 vehicle car-lift consists of a lower frame, an upper frame with extending arm, four scissors, a double air bellows, an anti-fall locking device and an operating unit with a compressed-air hose.



The air bag performs an axial stroke movement that is carried out laterally by the scissors. The scissors also restrict the lifting height of the service lift. A safety catch prevents the service lift from lowering in case of deflation.

The car-lift is permanently fixed to the ground by means of screws, washers and plugs. The upper part of the platform is flush with the grid pads.

The vehicle is lifted at a standstill on four roller trucks. The platform is shorter than the distance between the outer tracks on which the roller trucks run. This causes the roller trucks to be placed on the outer edges of the platform when lifting and the vehicle is secured against rolling off. When lowered the bolsters roll back int o
the outer tracks and the vehicle can be easily pushed on the roller trucks.

The operation of the service lift ensures with an operating unit that is connected to the lift via two pneumatic tubes (air bags / safety catch).

4.3 Technical data

Technical changes reserved	HLQ - 01
Lifting capacity of the service lift	2500 kg
Maximum load distribution	3:2 in or against the drive-on direction
Lifting time	ca. 30 sec.
Lowering time	ca. 25 sec.
Effective stroke of the service lift	ca. 640 mm
Min. overall height	100 mm
Max. total height	740 mm
Length	Depends on the cabin type and spacing between the running tracks
Width	Depends on the cabin type and spacing between the running tracks
Drive	pneumatic (air bellows)
Safety valve operating pressure	3,5 bar
Pneumatic network connection P_{max}	8 bar (supplied by the customer)
Noise exposure less than	< 70 dB(A)
Foundations drawings	HLQ-012-3
Schematic drawing	HLQ-001-3 Bl. 1+2
Pneumatics / Pneumatics diagram	HLQ-003-3
Spare parts list – pneumatics	HLQ-017-3
	HLQ-018-3
	K966-043-3
Spare parts list - car-lift	HLQ-019-3
	K966-036-3
Safety devices	
Anti-fall locking:	Yes
Safety valve:	Yes
Acoustic signal while lowering (from approx. 120 mm before the end of travel)	Yes

4.4 Product designation

The details of the lifting platform are stated on the type plate on the machine frame as well as in the EC Declaration of conformity.

Details Nameplate

Articel-No.		Year of construction	
Machine-Type		Operating pressure	
Serial-No.		Variable.	
Lifting capacity		Empty weight	

5 EC Declaration of Conformity

set out in Annex II A of the EC Machinery Directive (2006/42/EC)

The manufacturer	**Herkules Hebetechnik GmbH** **Falderbaumstraße 34** **D - 34123 Kassel**
Responsible for documentation	**Herkules Hebetechnik GmbH**
is responsible for the documentation and declares that the following machine described,	**Fahrzeug-Hebebühne** **HLQ-01**
Serial-No.:	**see cover page**
complies with the Health and Safety requirements of the following EC directives:	**Maschinenrichtlinie 2006/42/EG** **Richtlinie 94/9/EG** **Ex II 3G c IIA T6**

Applicable harmonised standards:

EN 1493	Vehicle lifting platform
EN 292; EN 294; EN 349	Safety of machinery; safety distances
EN 1127-1	Potentially explosive atmospheres

EC type examination	Test certification no.
HLQ-01	44 205 10 377983-006
Testing laboratory	TÜV Nord Cert GmbH

Any construction-related modifications, which affect the technical data specified in the operating instructions and thus significantly alter the intended use of the machine, shall render this declaration of conformity null and void!

Kassel, 10.01.2013

Location, Date

René Bartsch, executive direct

6 General safety instructions

6.1 Operator`s duty of care

The lifting platform was designed and built taking a hazard assessment into account and following careful selection of the harmonized standards to be met, as well as additional technical specifications. It thus corresponds to the state of the art and guarantees the utmost level of safety.

However, this safety level can only be reached during practical operation, when all measures required have been implemented. The due diligence is required on the part of the operator of the lifting platform, to plan these measures and ensure their implementation.

The operator must, in particular, ensure that

- The lifting platform is only used as intended (**see chapter on Product description**).
- The service lift is only be used in a fully functional and fault-free state and will be checked regularly for operational functionality with special attention to safety equipment.
- The placement of the service lift is located and designed so that the operator is able to observe all movements of the load as well as have an overview of the area under the lift and its load. The operator is responsible for supplying adequate lighting.
- Access to the danger area (area under the lifting platform and under the load) by individuals is forbidden. Operations in the danger area are prohibited. Maintenance operations are excluded, (see **Chapter on Maintenance)**.
- The operating instructions are to remain fully readable and available in the area in which the lifting platform is used.
- The lifting platform is only used by individuals having read and understood the operating instructions.
- Personnel are to be regularly instructed of all relevant information regarding work safety and environmental protection and familiar with the operating instructions and the safety notices therein.
- Only qualified individuals and experts may repair the lifting platform.
- None of the safety and warning notices linked to the lifting platform are to be removed and must remain readable.
- No interference with the service lift (for example, repairs) should take place without adhering adequately to protective measures (safeguard the base from lowering with a service support).

6.2 Operator`s duties

The operating safety ordinances are intended for the operators of work equipment used in vulnerable areas.

The operator must take a risk assessment of the area where the work equipment (service lift) will be used. The dangers that arise during the use of the work equipment related to the substances and working environment should be detected and taken into account.

The operator shall take the measures necessary and choose operating equipment suitable for the conditions prevailing at the workplace and assure the safety and health of employees.

For the execution of risk assessment and decision on suitable equipment, the operator must apply country-specific guidelines and standards.

6.3 Basic safety measures

When operating the service lift, the statutory accident prevention regulations in accordance with BGV A1 (General requirements) apply. Regulations BGR 500 (operators of work equipment) can be used for information purposes.

Make sure that the front wheels are in the straight-ahead position. Before lifting, prevent the vehicle from rolling away. Pull the hand brake and shift the car into reverse or first gear. For vehicles with automatic transmission shift the car into the P position.

The operator has to observe the vehicle during lowering and lifting.

Service lift parts like air bellows must be protected while working with high temperatures (welding, grinding, etc.) and from mechanical and chemical damage.

Compliance with the following points is particularly emphasized:

- The service lift is only to be used for raising passenger cars (PKW).
- Before using the service lift, check whether it is suitable for the vehicle to be lifted (e.g. vehicles witch extremely short or long wheelbase or extremely small or large track). In case of doubt, always contact the manufacturer of the service lift
- The total weight of the lifted car may not exceed the stipulated lifting capacity, whereby a maximum load distribution of 3:2 in the driving direction or 2:3 against the driving direction is permitted.
- During the lowering movement the service lift is automatically stopped 120 mm before end of travel. Then restart the lowering movement until the service lift, accompanied any acoustic signal, has fully lowered into its original position
- Only persons who are 18 years old or older and instructed in the use of the service lift are permitted to use it.
- Apart from the operator, no other persons are allowed to be in the working area of the service lift during lifting or lowering operation.
- Climbing on the service lift or in the car being lifted is prohibited.
- Following any modifications to the construction and repairs to load-bearing parts, the service lift must be inspected by an expert. Changes and repairs must be recorded on the master data sheet.
- Do not carry out any operations on the car-
  lift until it has reached the end of max travel (unloaded) and has been secured with supports.

Not complying with the safety regulations can cause serious injuries as well as damage to the lifted vehicle.

6.4 Requirements of operating personnel

The lifting platform must only be used by individuals who have been suitably trained, instructed and authorised. These persons must be familiar with the operating manual and proceed in accordance with the same. The respective authorisations of the operating personnel are to be clarified.

Moreover, for the following activities, specific qualifications are required:

Operation	Execution
Installation	Herkules service assemblyman / qualified person
Starting up	Herkules service assemblyman / qualified person
Briefing	Herkules service assemblyman / qualified person
Fault clearance	Herkules service assemblyman / qualified person
Servicing	Herkules service assemblyman / qualified person
Maintenance	Herkules service assemblyman / qualified person
Repairs	Herkules service assemblyman
Disassembly	Herkules service assemblyman / qualified person

Operating individuals in training should only operate the lifting platform when supervised by an experienced person. Evidence of completed and successful training should be confirmed in writing.

All control and safety installations must, generally speaking, only be operated by suitably trained persons.

All individuals engaging in activities involving the lifting platform must read the operating instructions and sign to confirm that they have understood them.

7 Transport und preparation

7.1 Transport inspection

Check the order upon receipt of delivery for damages caused during transport.
If there is identifiable damage, proceed as follows:

- Leave the goods and packaging in an unchanged state. Do not attempt to use the product.
- Immediately contact Herkules customer service.

Customer service:
Herkules Hebetechnik GmbH
Falderbaumstraße 34
D – 34123 Kassel
Tel.: +49 (0)561 58907-0
Fax: +49 (0)561 58907-34
Email: info@herkules.de

Do not send back damaged goods before receiving confirmation from the customer service centre!

7.2 Disposal of the packaging materials

The packaging material must be disposed of in accordance with the current environmental – and disposal guidelines

8 Installation and Assembly

The following important safety instructions must be observed during the assembly of the service lift. Adhering to safety instructions helps to avoid life-threatening injuries, personal damages, as well as damage to machinery.

- The installation work must only be performed by suitably-trained persons and with compliance of the safety instructions during the process.
- Before commencing the installation work, the lifting platform must be investigated for damage in transit.
- Always ensure that only authorized persons enter the working space and that no other persons are exposed to any risk from the installation work.
- All machine connections (tubes) are laid out so that there is no risk of stumbling.
- Also read the **Chapter "General Safety Instructions"**.

8.1 Environmental conditions for assembly

The service lift is only suitable for use in dry, closed, indoor rooms.

The ground where the car lift is to be assembled should be horizontal and flat (according to DIN 18202), and the load capacity of the floor must be able to support the total weight of the service lift.
The operator is solely responsible for the selection of the installation location.

The service lift must only be used within a temperature range of 5°C to 65°C. During the selection of the assembly location bear in mind the measurements of the service lift that are outlined in the **chapter on Technical data** as well as the **chapter on Additional information** (take note of the measurements with a lifted vehicle as well).

Adequate ceiling height must be present (at least the total height of the service lift plus the vehicle height). Care must be taken that the minimum distances specified are adhered (according to country-specific regulations and workplace ordinances) with regard to distance between walls and equipment respectively. It should be noted that the service lift must not block any emergency escape routes. Adequate lighting must be present at the assembly site (according to country-specific regulations and workplace ordinances).

A compressed air supply R1/2" of 8 bar mains pressure must be available at the service lift assembly location.

Care must be taken in selecting the assembly location so that the operator has an unobstructed view of the service lift and the car being lifted.

Only use dehumidified, non-lubricated compressed air! A filter regulator must only be installed in the mains connection (air filter and water separator)!

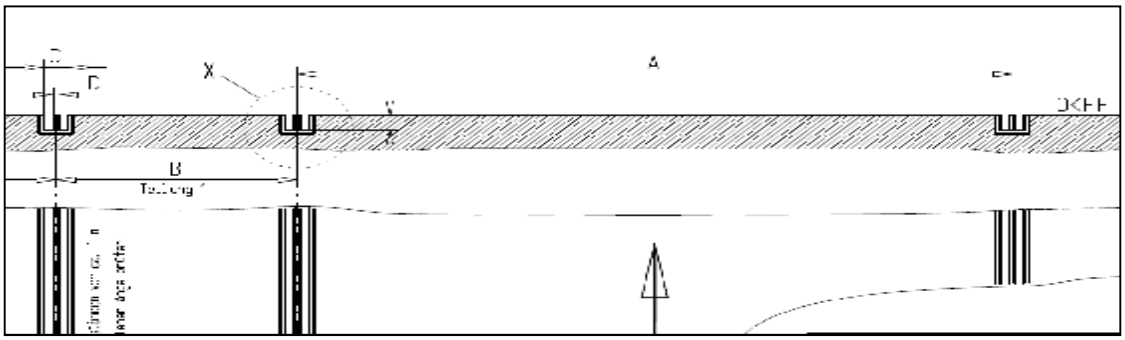
8.2 Preparation and placement

Preparation:

Bring the pallet with lift to the installation site with a fitting lifting device. Align the lift so that the air hoses show to the air supply. Remove foil and transport protection.
Connect the control unit (hand lever) with the pneumatic hose of the lift. Use included hose clamps. Connect the NW7 hand lever with the air pressure hose supplied by the customer. Fill the on the pallet standing lift with air until the safety fall has slipped over the last notch. Release hand lever.

Placement:

Align the lift according to the installation plans and customer's location. Make sure that the supplied rails on the lift are aligned to the rails in the cabin.



- Raise the car-lift and drill holes in the base of the lower section to fix the service lift to the floor.
- Screw the service lift into the floor using the screws, washers and plugs supplied.
- Connect the manual / foot-operated lever valve with the air hoses located on the end face, A – Ø: 6 mm and 14 mm and place on the floor close to the car-lift or fix to a wall. Ensure that the hoses are laid safely, without a risk of being tripped over.

Care must be taken in selecting the assembly location so that the operator has an unobstructed view of the service lift and the car being lifted.

- Connect the network air supply to be provided by the customer (Pmax = 8 bar) with connector socket and hose (I – Ø = 9mm) to the connector of the manual / foot-operated lever valve.

Only use dehumidified, non-lubricated compressed air! A filter regulator must only be installed in the mains connection (air filter and water separator)!

- The HLQ-01 vehicle car-lift is ready to use.
- Now carry out a functional test with a vehicle.

8.3 Grounding, electrostatic charge

If the lifting platform HLQ-01 is used in potentially explosive areas, all metal parts must be grounded to prevent an electrostatic charge. The required material can be ordered if needed as an optional accessory from the Herkules Hebetechnik GmbH.

All installed and removable parts of the lifting platform, also installed grids must be grounded for safety reasons. The grounding must be reliable and durable and able to withstand the expected loads. It is important to ensure a positively locking connection of the parts.

Metal parts of the machine are considered to be conductive and grounded to each other by means of electrical bonds to prevent any kind of electrically insulating layers. Paint-, powder coating, rust and grease are regarded as insulating layers.

Optional accessories grounding (item number see chapter additional information)

Hints for grounding:

- All grids are reliable with the help of the optional accessories components attached to the main body / cantilever and connected with each other.
- The grounding line of the installed grids for ground connection on the main body must be properly connected (metallic contact).
- Pneumatic lines from the lifting platform must be grounded through hose clamps.
- All components of the lifting platform must be inspected during the installation and after any maintenance of adequate grounding.
- During operation of the lifting platform make sure that wear, tear, dirt, dust deposition or changes in the chemical and physical properties do not affect the explosion protection.

Consult a qualified electrician if you do not understand the grounding instructions.

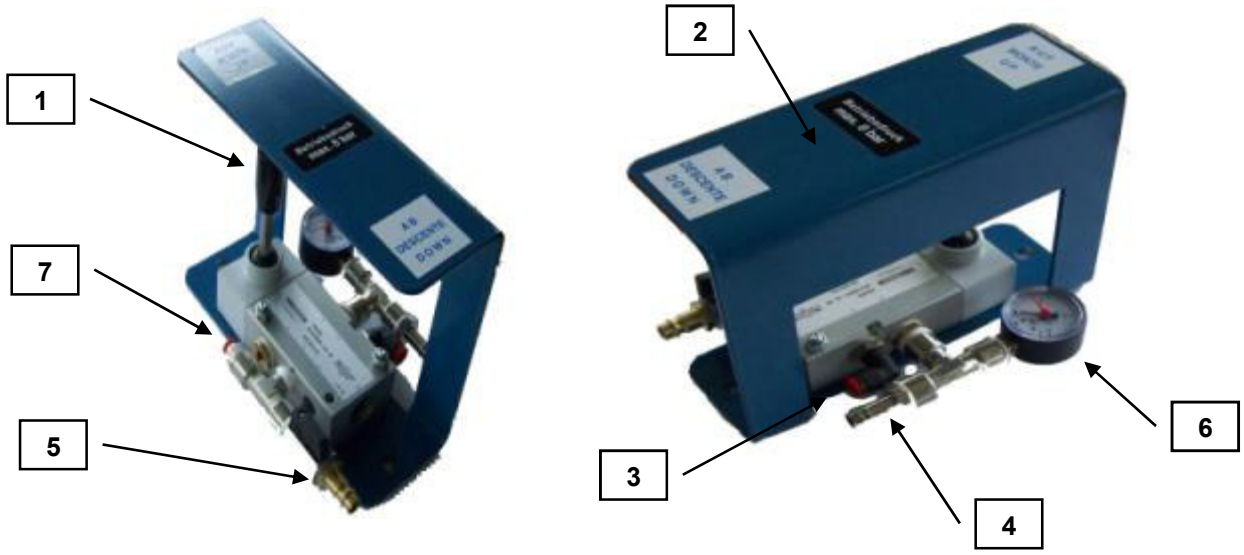
9 Operation

It is essential that the following safety instructions are followed while operating the service lift and the guidelines in the Chapter on **General safety instructions** are observed. Adhering to safety instructions helps to avoid life-threatening injuries, personal damages, as well as damage to machinery.

The lifting platform may only be used / deployed in accordance with its intended use. Please ensure that you are aware of what to do in the case of an accident or emergency before using the lifting platform.

Individuals working with the lifting platform must wear safety shoes and be familiar with the operating instructions.

9.1 Description of control elements



No.	Description	Additional information
1	hand lever	
2	Stable framework	
3	to safety catch	
4	to air bellows	
5	compressed air intake with stock cock	
6	manometer	air bags pressure display (max. 3.5 bar)
7	to roll valve	

The service lift is actuated with a hand lever valve. The control valve has three settings (with relevant markings): lift, 0-position, and lower. A stable framework protects the control valve. The manometer shows the amount of pressure in the air bags.

Always observe the saftey information when operating the platform

9.2 Working on the lifted vehicle

- Follow the legal regulations for the prevention of industrial accidents.
- Make sure that no one is in the space under the lifted vehicle.
- It is not allowed to put spare parts or tools on the lifted vehicle or lifting platform.
- Pay attention to the shift of the center of gravity when installing or dismantling heavy parts to or from the vehicle.
- Respect the weight shifting when install or dismantle heavy parts. Thereby the vehicle can tilt over the lifting platform.

Secure the vehicle against tilting.

9.3 Commissioning

Read the following functional checklist before using the service lift:

- Make sure that no persons or objects are present in the area of operation of the service lift.
- Secure the compressed air supply.
- Open the main tap on the operating control unit.
- Confirm that the operating control unit switch is in the lifting position - 'lift' until the service lift reaches the upper end limit.
- Confirm that the operating control unit switch is in the lowering position - 'lower' until the service lift reaches the lower end limit.
- Release the lever of the valve in the 0-position - lift should stop
- Repeat lifting and lowering movements several times without load.
- The safety catch should lock into place at the end of each lift movement or in the intermediate position on both sides in the gear teeth.

Observe the operating instructions for the respective work places on the service lift. Only the operating personnel may stand in the vicinity of the service lift while in use.

Also read the **Chapter "General Safety Instructions"**.

9.4 Operating

Carefully read through the safety measures in Chapter 6 before starting up the machine and always comply with them while handling the service lift.

Before using the service lift check whether the lift is suitable for the vehicle to be liftetd (e.g. vehicles with extremely short or long wheelbase or extremely small or large track). In case of doubt, always contact the manufacturer of the service lift

During the lifting and lowering operation the operator must maintain constant eye contact with the service lift and with the vehicle.

9.4.1 Driving onto /off the service lift:

- Drive the vehicle so that its wheels sit on the four track-guided roller trucks, ensure the vehicle is placed centrally in the longitudinal and transverse direction.
- Secure the vehicle against rolling off, apply the hand brake and put the vehicle into gear.
- Push the vehicle onto the lift with the roller trucks and secure the roller trucks with the pegs.
- Before removing the vehicle from the lift, remove the pegs and push the vehicle from the service lift with the roller trucks.

9.4.2 Lifting the platform:

- Ensure that the service lift can be raised safely.
- Set the operating lever / pedal of the operating valve to “Lift“ and hold in place until the vehicle has been raised directly above the roller trucks.
- Check that the vehicle sits securely on the lift.
- Proceed with lifting until the desired height is achieved. After the desired height is achieved, put the gear lever into the 0 position (neutral). The lifting platform remains at this height. After releasing the gear lever, the lever automatically returns to the 0 position (neutral) and lifting ceases. Lifting automatically stops once the maximal lift height is achieved.

Care must be taken during lifting, that the safety catch is securely engaged in the gear teeth on each side after each lifting movement (especially between movements smaller than the lift max.) This is noticeable through a clearly audible "clicking" sound.

9.4.3 Lowering the platform:

- Before lowering the service lift, check the hazard area to ensure there are no people or objects in the working area of the lift.
- Set the operating lever / pedal of the operating valve to “Lower“ and, while constantly observing the Service lift, hold the lever in place until the service lift automatically stops approx. 120mm above the floor.
- Release the operating lever / pedal to move it into the 0 - setting.
- Restart the lowering movement until the restart the lowering movement until the lift, accompanied by an acoustic signal, has fully lowered into its original position.
- The lowering movement can be interrupted at any time by moving the operating lever / pedal into the 0 - setting.
- During the lowering movement too, the operating valve automatically returns to the 0 – setting when the operating lever / pedal is released, and the lowering movement stops.

9.5 Description of safety catch

- During the lifting the safety catch is swivelled down. The catches of the safety catch slide on both sides of the detents of the inner scissoring. After the lifting the safety catch should be fully engaged on both sides to ensure safety.

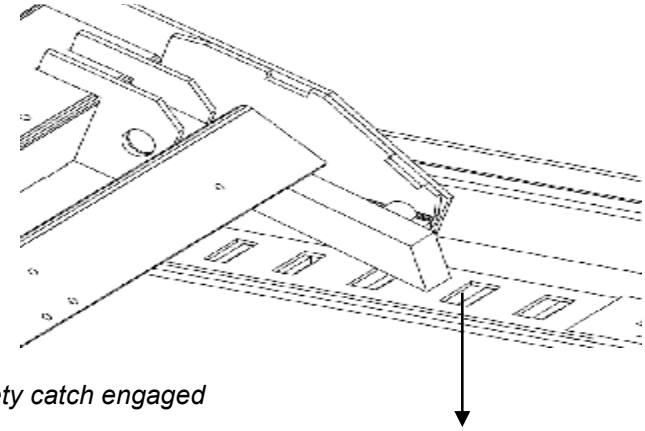


Diagram 3: *safety catch engaged*

- The safety catch is lifted up by means of the cylinder during lowering movement. At the end of the lowering movement or by interruption of the movement, the safety catch automatically drops and thereby grips into the detents of the service lift.

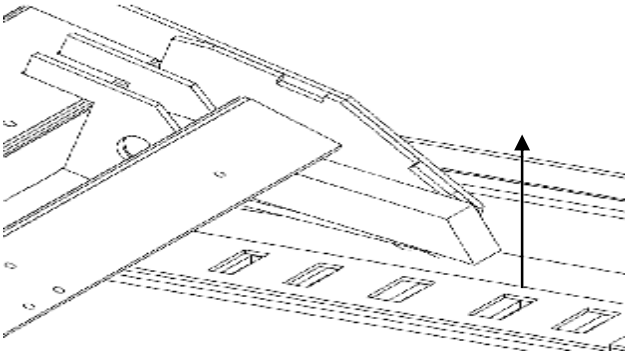


Diagram 4: *safety catch lifted during lowering operation*

Should the service lift not lower:
In this case briefly lift the service lift until the drop is free. Afterwards repeat the lowering movement.

9.6 End of work

After having completed work with the service lift the following points should be adhered to:

- The service platform must be in the lower end limit.
- Close the main tap of the operating control unit.
- Guard the main tap from unauthorized use with a padlock (not included in delivery).

No.	Description
1	main tap locked
2	padlock (not included in delivery)

Requirements of padlocks:

- padlock width: 38-43 mm
- closed shackle height: 28-35 mm
- shackle diameter: max. 6 mm

10 Troubleshooting

To avoid machine damage or life-threatening injuries while resolving faults with the lifting platform, the following points must be observed at all times:

- Only attempt to repair a malfunction if you are suitably qualified to perform such work.
- Protect the service lift from unintentional restart by disabling the compressed air supply.
- Secure the upper frame in the lifted position with a stand or a proper support.
- Also read the **chapter "General Safety Instructions"**.

10.1 Possible problems and their resolutions

Malfunction	Source of fault	Rectification of errors
Malfunction while lifting	Pressure gauge of the maintenance unit without bar mains pressure. Hose lines squashed, bent, or damaged. Gauge pressure 1 bar above allowable pressure of the safety valve	Make sure there is a mains pressure of Pmax = 8 bar. Open the shut-off valve. Check the hose lines and if necessary replace them with new ones. Check the safety valve for contamination and replace if necessary.
Malfunction while lowering	Lift platform is resting on top of an obstacle Safety catch engaged	Raise the lift platform, remove the obstacle, and then continue lowering. For bar mains pressure Pmax = 8 bar make sure the gear lever is switched to "Lift" until the safety catch is free. Afterwards repeat the lowering movement.

If, despite the above measures, the lifting platform cannot be lifted or lowered, the customer service department must be notified.

Customer service: Herkules Hebetechnik GmbH
Falderbaumstraße 34
D - 34123 Kassel
Tel.: +49 (0)561 58907-0
Fax: +49 (0)561 58907-34
E-mail: info@herkules.de

When replacing defective parts, always only use original spare parts from the manufacturer.

11 Maintenance

Maintenance work should be carried out at the specified maintenance intervals and only by qualified persons.
Neither water nor flammable liquids may be used during the cleaning process.
To ensure durability and continuous operation of the service lift, the following points should be observed:

- Only spare parts from the original manufacturer and suitable tools may be used.
- Regular maintenance intervals must be observed.
- For all maintenance work not outlined or explained in this instruction manual, please contact your supplier or customer service of the manufacturer.

Only perform maintenance when the lift achieves a max. (unloaded), the lift platform is braced with service supports, and the compressed air supply is disabled!

Maintenance intervals	Points to follow	Comments
Monthly	All moveable parts such as pivot bolts, sliding pads, and sliding surfaces should be checked for wear and tear, cleaned, and lubricated. Check air bags and air tubes for any damages. Visually inspect and check for leaks. Examine the surface of the air bags for impurities, then clean, and maintain. Inspect valves for functionality and check for leaks. Check that the dowels are properly fixed. If necessary re-install or renew the support. Inspect the maintenance unit (filter regulator, provided by the customer), and consult the product manufacturer's instructions.	Only use lubricants that contain no adhesive-repelling substances in the area to be lubricated. Only suitable care and cleaning agents are to be used on rubber surfaces.
Yearly	Regular safety check (In accordance with §10 (2) German Plant Health and Safety regulations)	For test protocol see **Chapter Regular safety check.**
Replace the safety valve	After every 2 years of operation.	
Every 6 years of operation	Replace the complete air hoses.	

11.1 Air bags characteristics and durability

The air bags are a flexible element developed and designed specifically for use in lift platforms. The rubber covering reduces the aging process and should be especially carefully checked. Experience shows that well-kept air bags have a life expectancy of over 20 years.

Tips for a long operating life:

- Use dry as well as non-lubricated compressed air.
- Protect from UV radiation (i.e. through welding or the use of a UV dryer).
- Avoid the use of chemical agents.
- Protect the unit from damage (grooving, etc.).
- Adhere to maintenance and care instructions (see **Chapter Maintenance**).

Damaged air bags must be replaced. Only original parts from the manufacturer are permitted to be used.

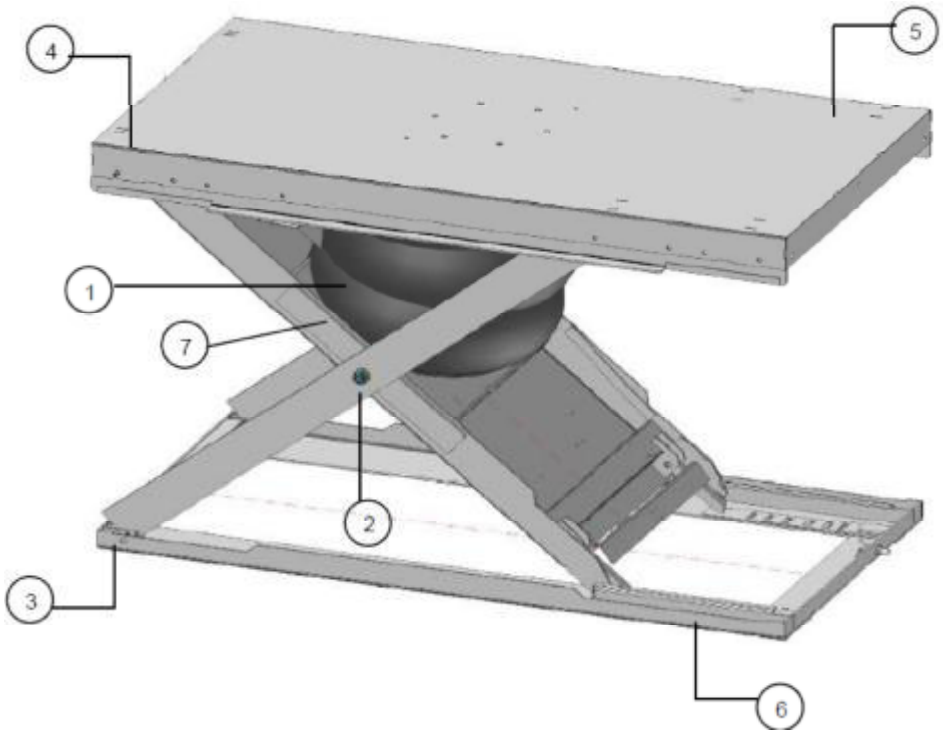
11.2 Notice about filter regulator and air line

The filter regulator is not included in the scope of delivery of the lifting platform. A filter regulator must be installed in the mains connection (provided by the customer). Only dehumidified, non lubricated compressed air should be used. Follow maintenance and cleaning of the filter regulator, consult the information and instructions of the manufacturer of the filter regulator.

11.3 Notice about the sliding area of the scissors

Due to the design principles of the sliding surfaces of the scissors, great force is exerted. This force can lead to scoring on the sliding surfaces. However, the function of the service lift will not be compromised. The maintenance intervals and instructions outlined in the **Chapter Maintenance** are to be observed.

11.4 Lubrication and test points



No.	Description	Lubrication and test points
1	air bags	• check air bags for damage. • check the screws on the air bags reinforcement both above and below for proper fit. • treat the surface of the air bags with the appropriate rubber care product.
2	scissor pins (right and left)	• check that the scissor pins are properly fixed. • check the safety nuts.
3	bottom bearing pins(right and left)	• check the safety washers from both bearing pins for proper fit. • lubricate bearing pin
4	top bearing pin (right and left)	• check the safety washers from both bearing pins for proper fit. • lubricate bearing pin
5	sliding pads and guide rails above (right and left)	• check sliding pads for damage and wear. • lubricate sliding pads and guide rails.
6	bearing pin safety catch (right and left)	• check the safety washers from both of the bearing pins for proper fit. • lubricate bearing pin
7	sliding surfaces of the scissors (right and left)	• check the sliding surfaces of the scissors for wear. • lubricate sliding surfaces

12 Safety Inspection

Safety inspection is required to guarantee the operational safety of the service lift.

It should be performed:

Before starting up the lifting platform for the first time by the manufacturer.
The form to fill in can be found under the section "operation and safety inspection"(**Chapter operation and safety inspection**).

After the first commissioning, check at regular intervals in accordance to §10 (2) BetrSichV (German Plant Health and Safety Regulations)!
The form to fill in can be found under the section "regular safety check"(**Chapter regular safety check**).
Document the condition of the service lift in a separate copy and attach it to the operating instructions and inspection log.

Regular safety checks must be performed by a suitably-trained person. It is advisable to also implement maintenance at the same time.

12.1 Regular safety check

(In accordance §10 (2) German Health and Safety regulations !)

Device type	
Serial number	

Inspection step	OK	Not OK	Re-examination	Remark
Type plate				
Sign with lifting capacity				
Sign with bar mains pressure				
Operating instructions (abbreviated)				
Designation lift - lower				
Secure fit of all supporting screws				
Safeguard of the scissor pins				
Condition of the pneumatic lines				
Safety valve set to 3.5 bar operating pressure				
Pressure gauge bar mains pressure P_{max} = 8 bar				
Control lever returns automatically to the '0' position when released				
Safety catch function				
Function automatically stopping 120 mm before end of lifting process and anew approach with acoustic signal				
Roll-off protection function				
Condition of the air bags				
Condition of the supporting structure				
Functionality of the service lift with vehicle				

Inspection result	
	Start-up not permitted, verification required
	Start-up possible, faults to be rectified by: .....
	No fault, start-up possible immediately

Safety inspection performed on: …….....

Name and address of qualified personnel .....

…… ……..
Signature of competent person Signature of operator

With the required rectification of faults

…… ……..
Signature of competent person Signature of operator

13 Disassembly and Disposal

13.1 Disassembly

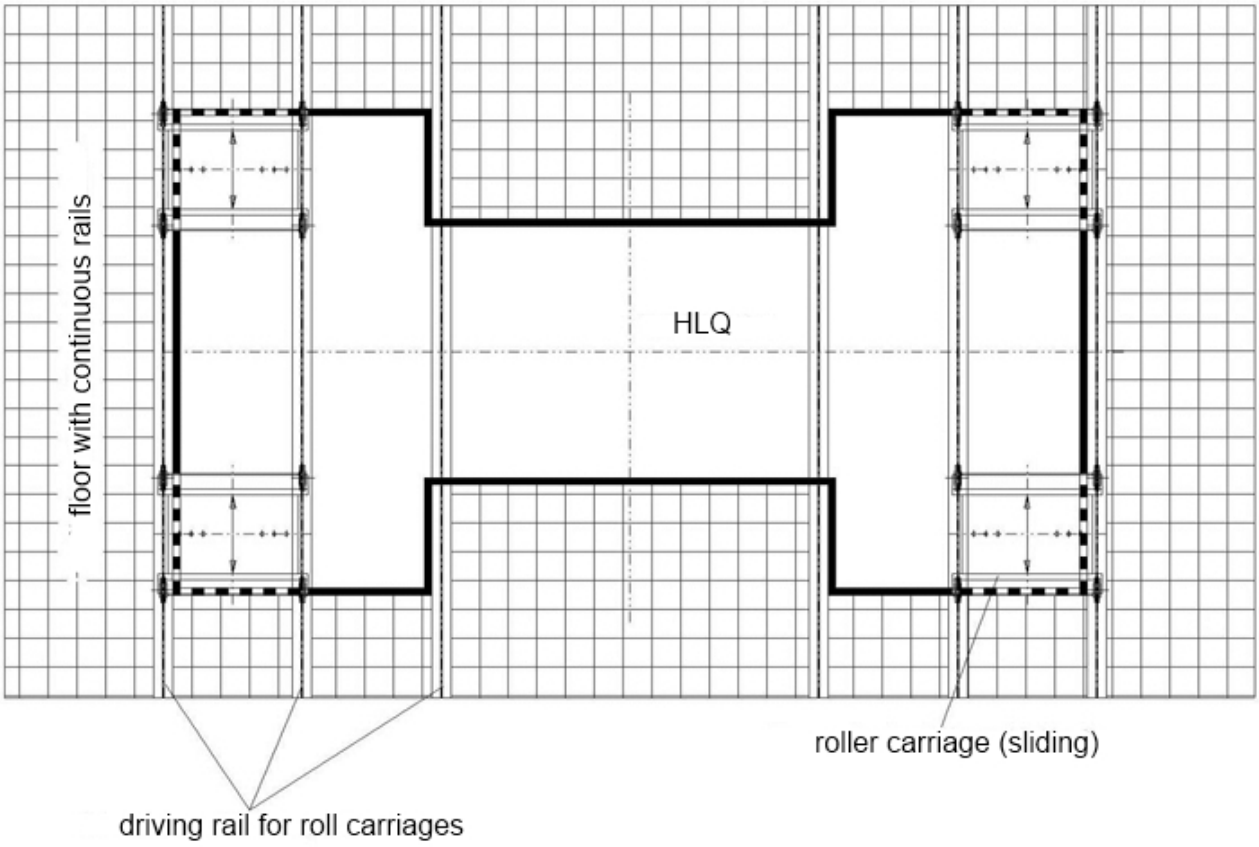
To disassemble the system correctly, perform the steps in the assembly instructions found in **Chapter Assembly instructions** in the reverse order.

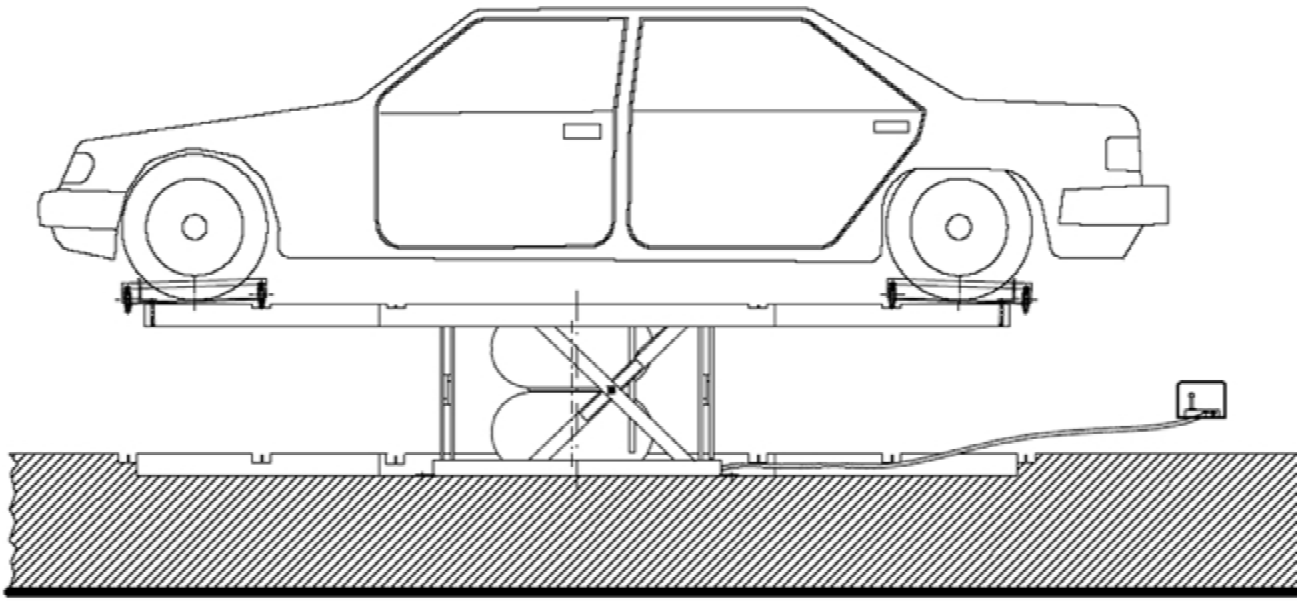
The safety regulations in **Chapter General Safety Instructions** must be observed when disassembling the system.

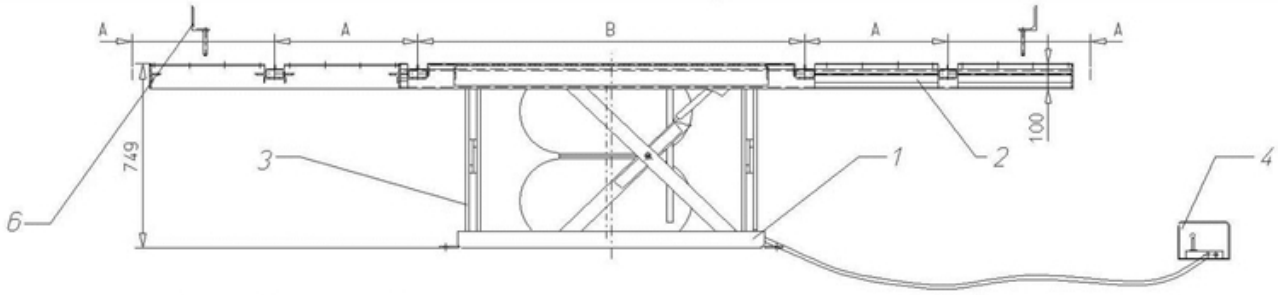
13.2 Disposal

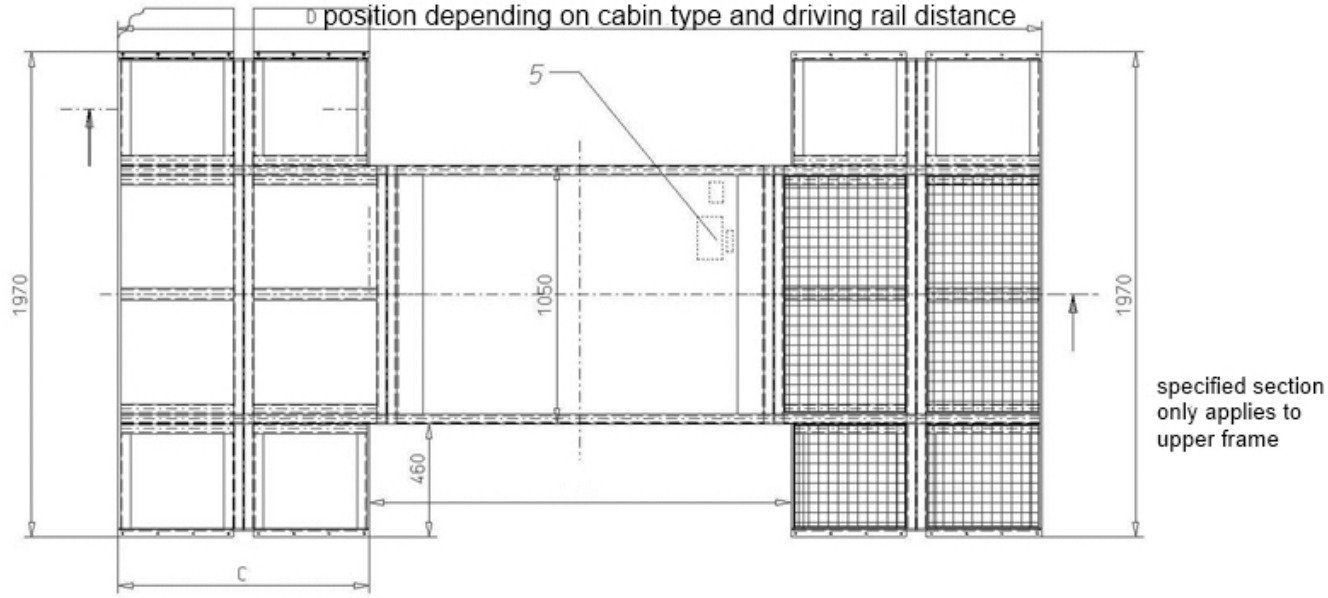
The service lift must be disposed of in accordance with the current environmental and disposal guidelines.

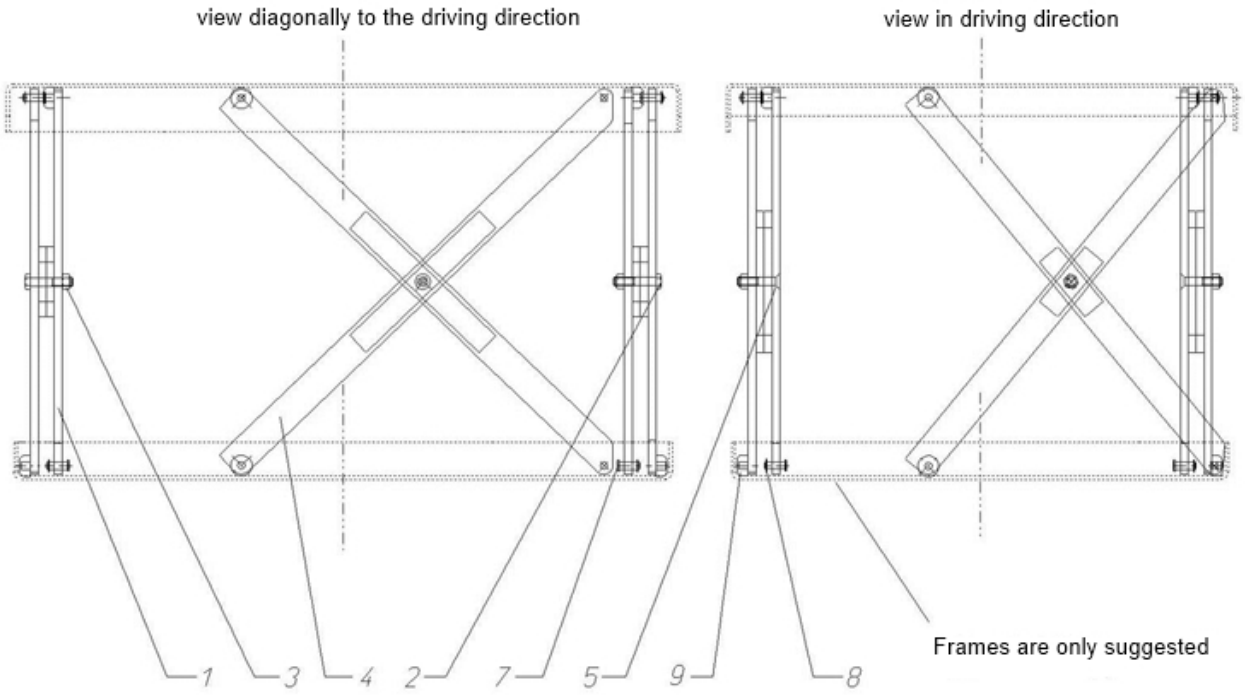
14 Additional information



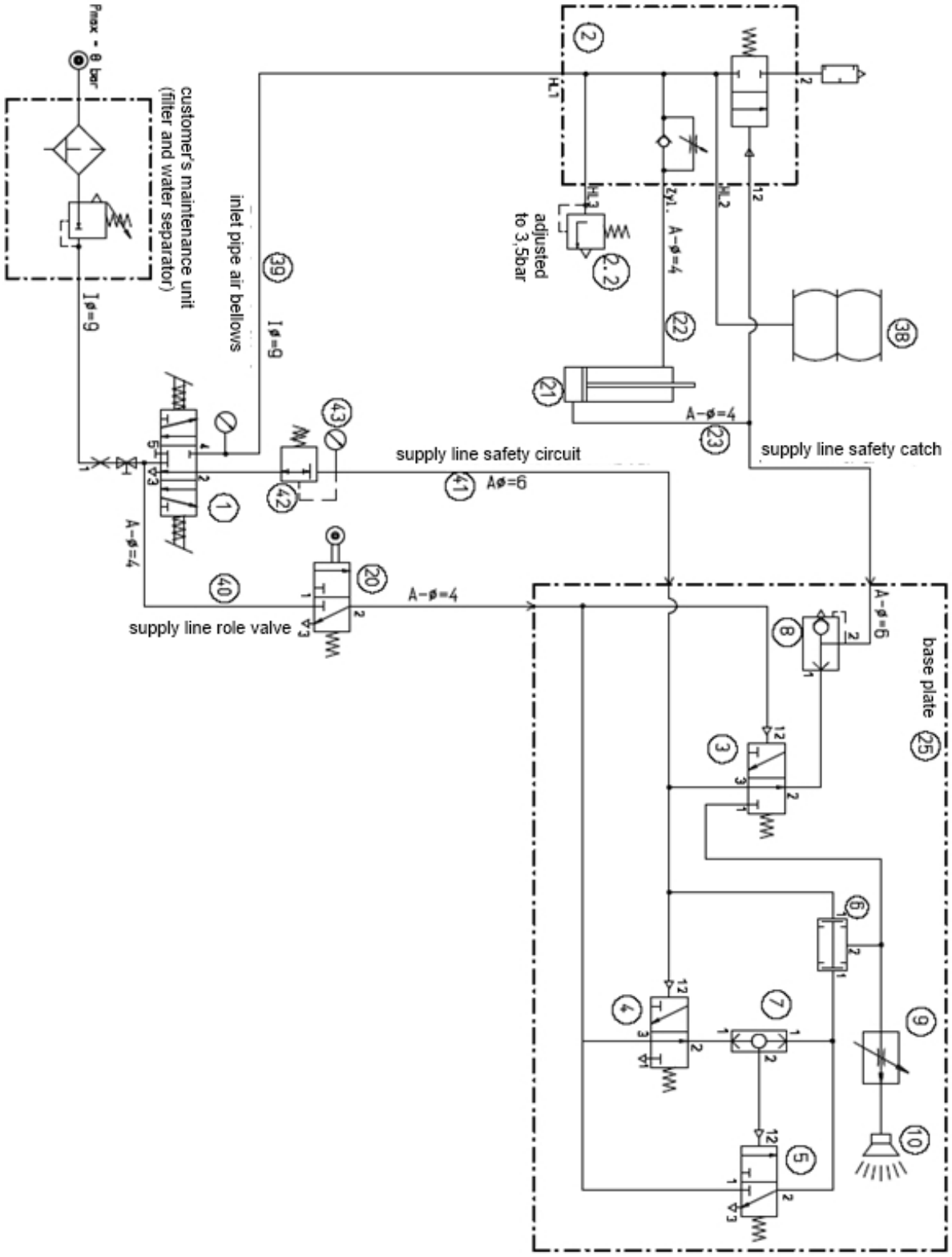



A
A
B
A
A
749
100
6
3
1
2
4


D position depending on cabin type and driving rail distance
5
1970
1050
1970
460
C
specified section only applies to upper frame


view diagonally to the driving direction
view in driving direction
1
3
4
2
7
5
9
8
Frames are only suggested

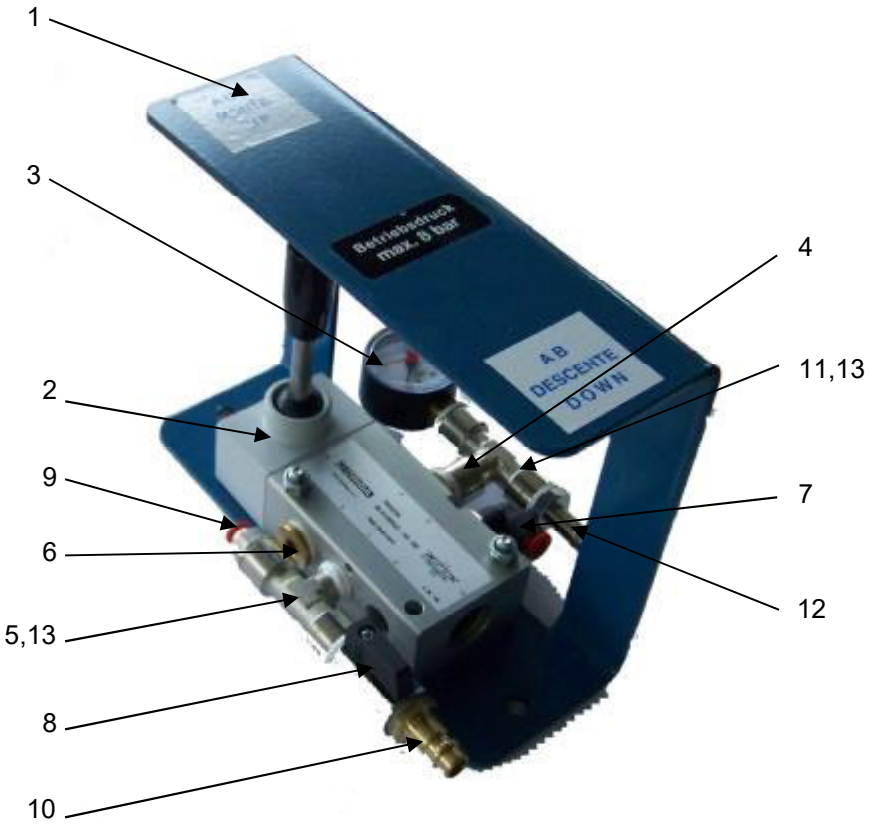
pneumatic plan HLQ



Pneumatic HLQ – Partlist

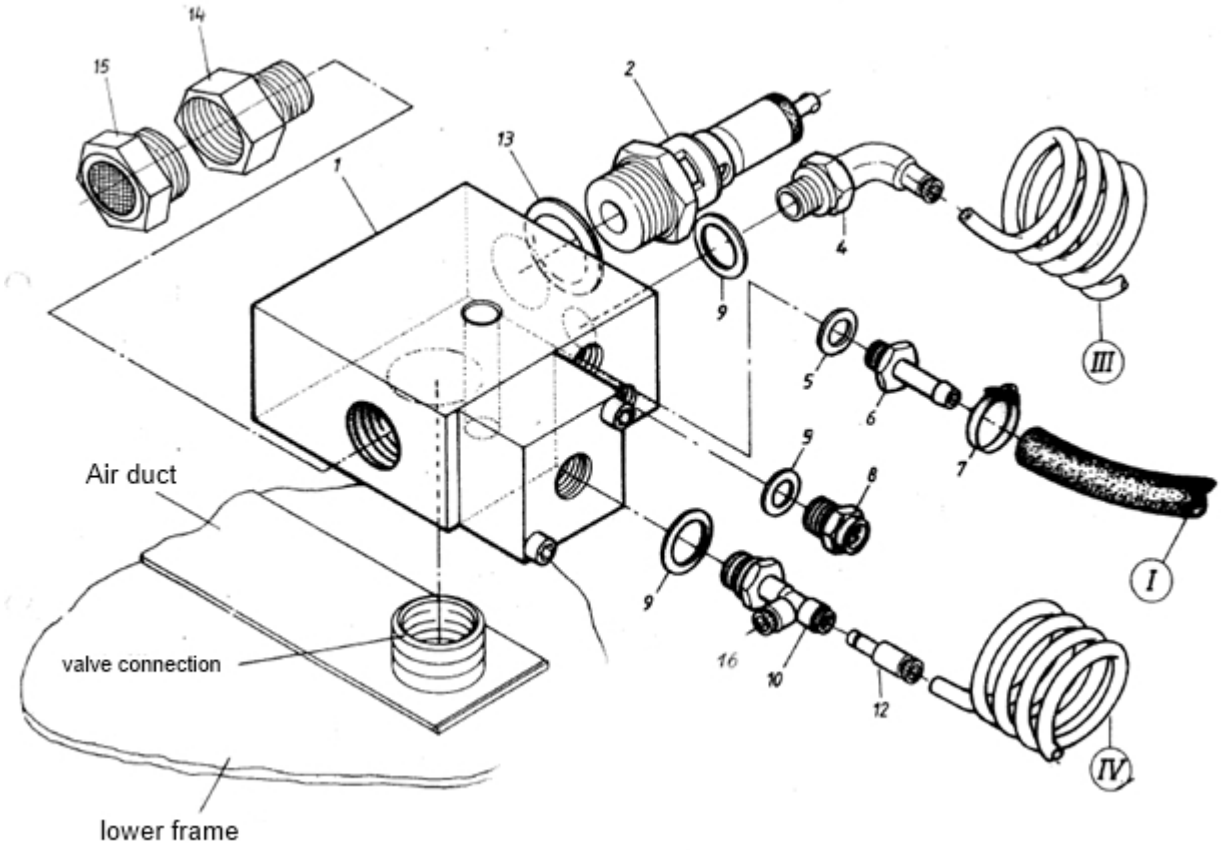
Pcs.	Name	No.	Drawing	Article No.
1	**Operating unit-hand lever valve**	1	HLQ-017-3	
1	Quick exhaust unit	2	HLQ-018-3	
1	3/2 Way-Valve	3		700-144
1	3/2 Way-Valve	4		700-144
1	3/2 Way-Valve	5		700-144
1	Dual pressure valve	6		700-206
1	Shuttle valve G 1/8“	7		700-304
1	Quick exhaust valve 1/8“	8		700-182
1	Choke valve	9		700-305
1	Pneumatic whistle	10		700-200
3	Silencer 1/8“	11		810-128
6	Straight connection	12		730-290
4	Angle connection	13		730-003
4	Angle connection	14		730-170
4	Connector	18		730-004
1	Ball valve	20		700-100
1	Pneumatic cylinder	21		710-127
1	Spiral hose plug	22		720-310
1	Spiral hose plug axial	23		720-309
3	Sheet 3x190x190	25	HLQ-015-4	
1	Hex-head screw M4x25	26		500-019
1	Hex nut M4	27		600-100
2	Hex-head screw M6x55	30		500-239
1	Hex-head screw M5x35	31		500-196
1	Hex-head screw M5x55	32		500-422
2	Hex nut M6	33		600-230
2	Hex nut M5	34		600-102
2	Washer 6,4	35		650-106
4	Washer 5,3	36		660-105
1	Air bellows	38		300-001
1	Hose	39		720-111
1	Plug hose	40		720-103
1	Plug hose	41		720-107

Operating unit-hand lever valve HLQ (drawing HLQ-017-3)
Item no. 300-057
The protection frame No. 1 may also have other shape



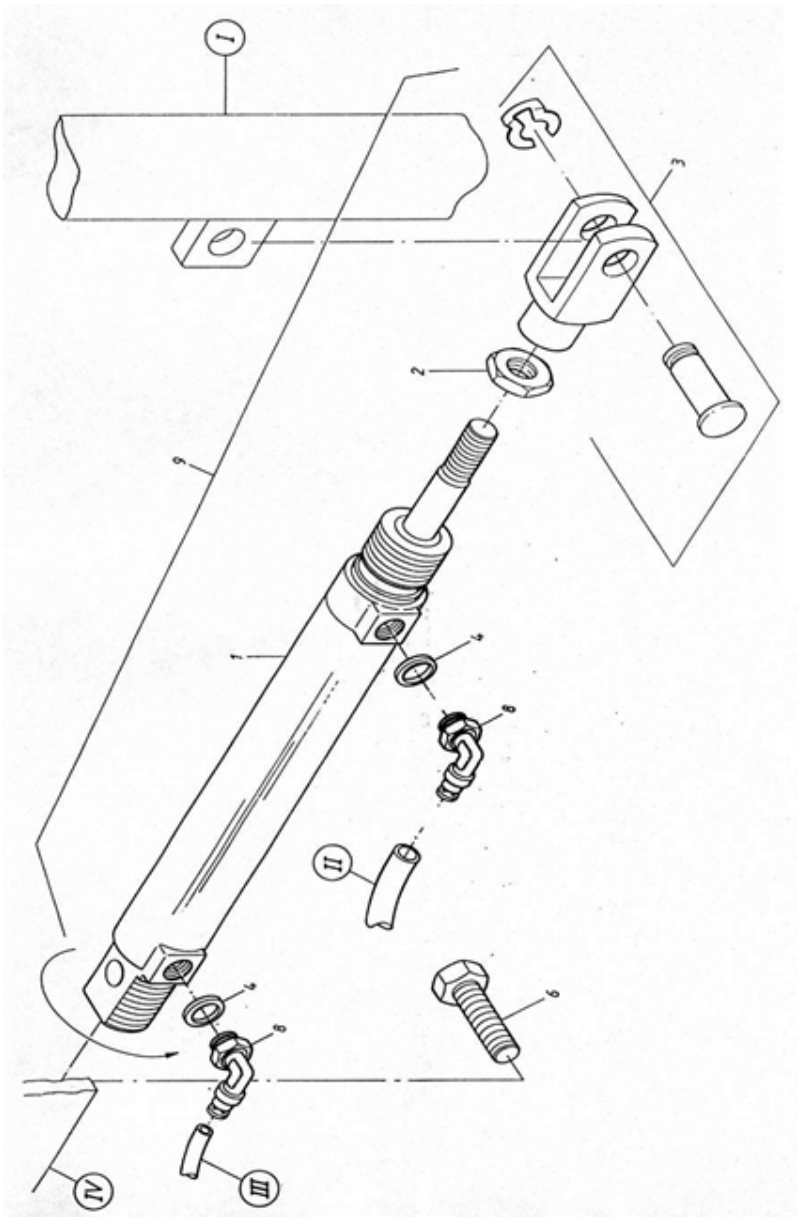
Pcs.	Name	No.	Drawing	Article No.
1	Protection frame	1	LM 01-091-3	
1	Operating and hand lever valve	2		300-063
1	Manometer	3		735-104
1	Double nipple	4		730-237
1	T-piece 1/4“i x1/4“a x1/4“i	5		730-027
1	Blind plug 1/4“	6		730-108
1	Angle connection	7		730-134
1	Ball valve 1/4“	8		730-107
1	Straight connection 1/4“-6	9		730-251
1	Connection plugNW 7	10		730-128
1	T-piece, 1/4“x1/4“x1/4“	11		730-472
1	Hose nozzle 1/4“	12		730-122
7	O-ring PA 1/4“	13		810-112
2	Counter sink screw M6x45	14		510-107
2	Hex nut M6	15		600-230

Quick exhaust unit HLQ (drawing HLQ-018-3)

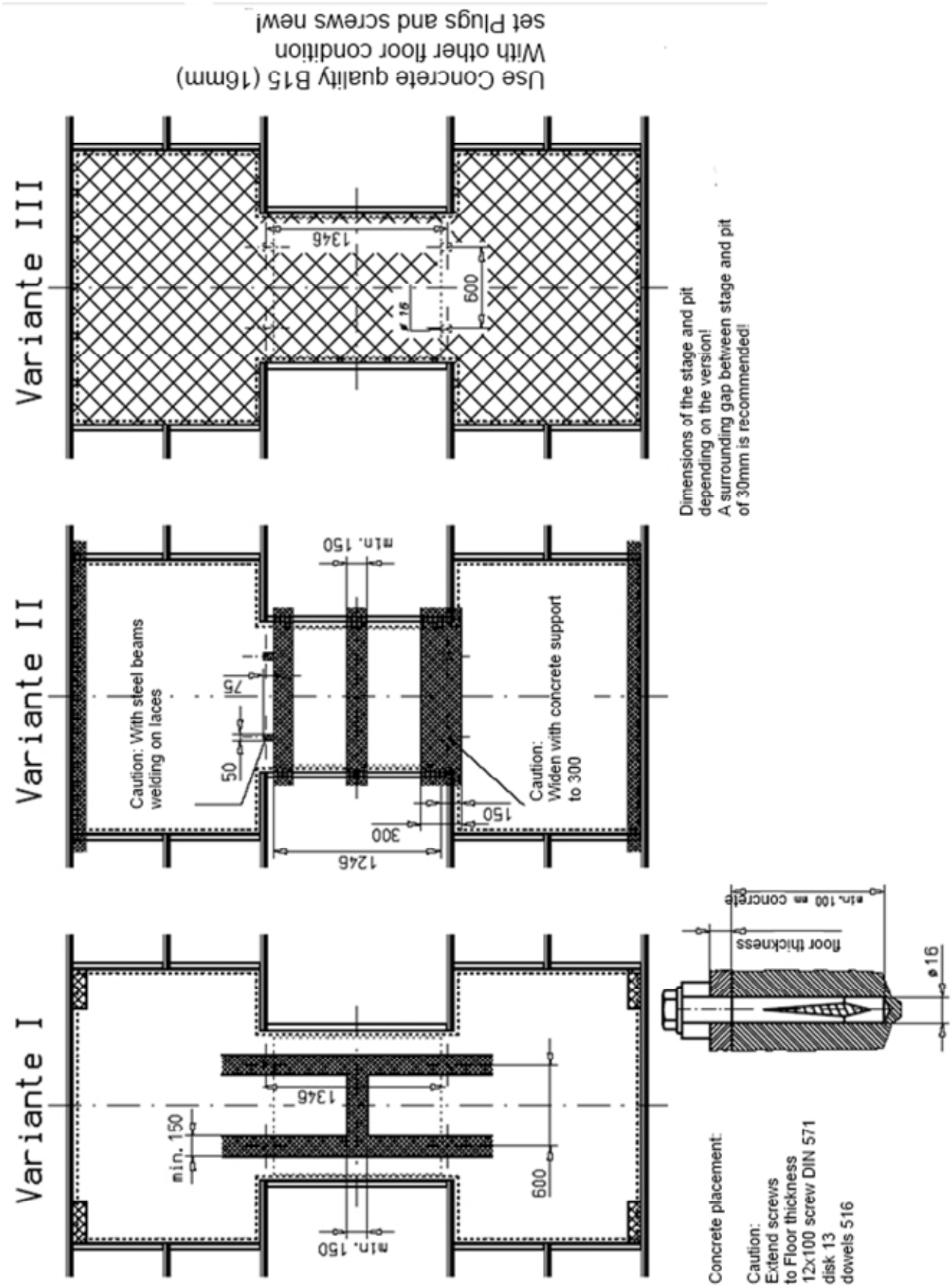


Pcs.	Name	No.	Drawing	Article No.
1	Quick exhaust valve	1		700-000
1	Safety valve 3,5 bar	2		700-112
1	Spiral plug hose ends axially	3		720-309
1	Angle connection 1/8“x4	4		730-109
1	O-Ring 1/4“	5		810-112
1	Hose nozzle 1/4“ax9	6		730-122
2	Hose clamp 10-16	7		720-119
1	Throttle screw 1/8“	8	Part of der No.1	
2	O-Ring 1/8“	9		810-113
1	T-piece 1/8“x6x6	10		700-128
1	Spiral hose plug	11		720-310
1	Reducing plug connector 6x4	12		730-577
2	O-Ring 1/2“	13		810-114
1	Reducing	14		730-297
1	Silencer 3/4“	15		810-135
1	Hose nozzle pluggable 6x6	16		730-138

Safety catch cylinder HLQ (drawing K966-043-3, No.: 200-092)



Pcs.	Name	No.	Drawing	Article No.
1	Pneumatic cylinder	1		300-012
1	Hex nut M10x1,25	2		600-109
1	Fork head	3		690-103
2	O-Ring 1/8“	5		810-113
1	Hex-head screw M8	6		500-101
2	Angle connection 1/8“x4	8		730-109


Use Concrete quality B15 (16mm)
With other floor condition
set Plugs and screws new!
Variante III
1346
600
16
Dimensions of the stage and pit
depending on the version!
A surrounding gap between stage and pit
of 30mm is recommended!
Variante II
min. 150
Caution: With steel beams
welding on laces
75
50
Caution:
Widen with concrete support
to 300
150
300
1246
Variante I
1346
min. 150
600
min. 150
Concrete placement:
Caution:
Extend screws
to Floor thickness
12x100 screw DIN 571
disk 13
dowels 516
min. 100 mm concrete
floor thickness
ø16