

Operating manual | Inspection book

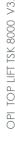
including spare parts list

Version: USA

Manual date: 29.11.2021

TOP LIFT TSK 8000

Serial No.:











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OPI_TOP LIFT TSK 8000_V3.2_EN

1 General informations

Important safety instructions – Save these instructions

1.1 Lift purpose

Nussbaum lifting systems are the result of over 35 years' experience in the automotive lifting industry. The high quality and superior concept ensures reliability, a long Lift lifetime, and a strong economic business solution for your automotive lifting needs. The TSK 8000 is a hydraulic symmetric In-Ground Lift with a lifting capacity of 8000 pounds. The Lift features a powerful integrated power unit and hard-chromed cylinders. The maximum load distribution is 2000 lbs per arm.

1.2 Liability

To avoid unnecessary damage, injury or death, read all operating instructions carefully. Nussbaum is not liable for any damages, injuries, or deaths resulting from misuse of the Lift. The user carries the risk alone.

There will be no guarantee or liability for incidents involving injuries, death, or damage to equipment if these incidents are the result of one or more of the following:

- Inappropriate use of the Lift to include: Inappropriate installation, operation, and maintenance of the Lift.
- Use of the Lift while security devices are inoperative, not working properly, or are installed incorrectly.
- Failure to follow the operating instructions regarding transport, storage, installation, initiation, operation, and maintenance of the Lift.
- Unauthorized changes to the design and operation of the Lift.
- Wrong or incorrect maintenance practice.
- Catastrophes, acts of God, or external reasons.
- Nussbaum Lifts are warranted with the use of Nussbaum original or replacement parts. Use only replacement parts approved by the original equipment manufacturer or parts meeting original manufacturer specifications. Use of unauthorized parts may void the warranty. For parts, call Nussbaum at 1-704-864-2470.
- It should be recognized that any piece of equipment can be dangerous when operated improperly.

1.3 Owner/Employer responsibilities

Automotive lift institute safety requirements for operation, inspection and maintenance (ANSI/ALI ALOIM)

The Owner/Employer shall insure that lift operators are qualified and that they are trained in the safe use and operation of the lift: ALI SM10-1 safety manual; AL-ST-17; ANSI/ALOIM:2008 (R2013), American National Standard for Automotive Lifts-Safety Requirement for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts and SAE J2184, Vehicle Lifting Points for Service Garage Lifting.

The Owner/Employer shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALOIM:2008 (R2013), American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

The Owner/Employer shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALOIM:2008 (R2013), American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.

The Owner/Employer shall maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALOIM:2008 (R2013), American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance.

The Owner/Employer shall display the lift manufacturer's operating instructions; ALI SM10-1 safety manual; AL-ST-17; ANSI/ALOIM:2008 (R2013), American National Standard for Automotive Lifts-Safety Requirement for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts; in a conspicuous location in the lift area convenient to the operator.

Additional owner/employer responsibilities

- Shall require that Personal Protective Equipment (PPE) be used according to the appropriate regulations.
- Shall display the "Safety Regulations" and adhere to them closely.
- Shall ensure that all safety- and danger signs on and around the Lift are observed and followed!
- Shall follow the specified time intervals between the recommended inspection and maintenance procedures and tests.



- Shall use only spare parts that comply with the technical requirements specified by the manufacturer.
- Shall ensure that loose screws, nuts, and bolts are firmly tightened after maintenance.
- Shall not modify the Lift without written consent of Nussbaum.
- Shall ensure that these instructions are maintained and available to all personnel that install, use or maintain the lift. This document contains important information about installation, operation, and maintenance of the automotive Lift. Any changes to the installation and or location of the automotive Lift must be documented.

1.4 Lift operator responsibilities

- Shall read and understand all safety and warning instructions in the manual or affixed to the lift.
- Shall be trained to operate and use the TSK 8000 Lift for its designed use.
- Shall be familiar with accident prevention and basic labor safety regulations.
- Shall not allow unauthorized personnel to operate the Lift.

Information of warning

Pay close attention to the danger and important information symbols shown below. Carefully read all marked passages throughout this manual.



Danger! This sign indicates danger to life. Improper handling of the described operation may cause serious injury or death.

- Caution! This sign warns against possible damage to the automotive Lift or other material defects in case of improper handling.
- Attention! This sign indicates an important function or note.

1.5 Safety regulations



The Safety Regulations must be observed and strictly adhered to while working with the automotive Lift. Read the safety regulations and the ANSI/ALI ALOIM manual included with the lift documentation carefully before working with the Lift!

Important safety instructions – read all instructions

- The total weight of the lifted vehicle must not exceed 8000 pounds.
- The automotive Lift must be in its lowest position,

- and the Lift Carry Arms must be swung out before a vehicle can be driven into the Lift area.
- Total load must be distributed evenly on all arms.
- The Lift must not be installed in a hazardous location or in washing bays.
- The Lift must be checked by a service technician after initial installation and after repairs or changes have been made to the Lift.
- The operating and maintenance instructions must be followed while working with the Lift.
- Pre-check low clearance or specially equipped vehicles for ample clearance to avoid damage to the vehicle and/or Lift.
- Only trained personnel are to operate the Lift.
- No one is to stand within the working area (danger area) during vehicle lifting and lowering operations.
- No one is to occupy a vehicle during any phase of Lift operation.
- No one is to climb onto the automotive Lift when in a raised position.
- For unusual vehicles you may choose to instruct the user to contact Nussbaum for lifting advice.
- The main electrical switch must be switched off and locked out or tagged out according to OSHA Regulations before maintenance or repair work is performed on the Lift.
- The operator must continue to observe the vehicle and Lift throughout the lifting or lowering operation
- Check the center of gravity of the vehicle if heavy parts, such as the engine are removed.
- If heavy parts such as the engine must be removed, the center of gravity will change. Secure the vehicle before removing parts to avoid the possibility of the vehicle becoming insecure.
- Read all instructions before operating lift.
- Care must be taken as burns may occur from touching hot parts.
- Do not operate the Lift with a damaged cord or if the Lift has been damaged – until it has been examined by a qualified service person.
- To reduce the risk of fire, do not operate Lift in the vicinity of open containers of flammable liquids (gasoline).
- Adequate ventilation should be provided when working on operating internal combustion engines.
- Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
- Use only as described in this manual. Use only manufacturer's recommended attachments.
- Always wear safety glasses. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
- The proper positioning of the carrier plate below the vehicle is to be checked again after the vehicle has been raised slightly.





- After each set down of the vehicle, check the lifting arm positions below the fixture points again and adjust as required.
- When disassembling heavy, consider any possible centre of mass shifts. The vehicle is to be appropriately secured using suitable materials (e.g. tensioning belts, beams, etc.) against falling.
- After design and maintenance on load bearing parts the lift must be inspected by a technical expert.
- Vehicles may only be attached at fixture points approved by the vehicle manufacturer.
- The entire lifting and lowering process is to be continuously observed.
- Initial access to the lift is only permitted after the main switch has been turned off and secured, and the operating lever is additionally secured against unauthorised use.

Save these instructions!

1.6 Safety devices

Nussbaum has designed several saftety features into each Lift to ensure safe and efficient operations under a variety of conditions. Warranties will be voided and dangerous working conditions exist if any of the listed devices are altered or disabled.

Over-pressure valve

Hydraulic system fuse against over-pressure.

Check valve

Secure the vehicle against unauthorised lowering.

- Main switch with curtain lock device
 Fuse to prevent unauthorised use.
- Command / downstream system with latch
 Secure against unauthorised lowering of the lift.

Deadman controls

Lift movement stops when the operating lever is released.

Lifting arm block

Secures the lifting arm against horizontal movement in a lifted condition.

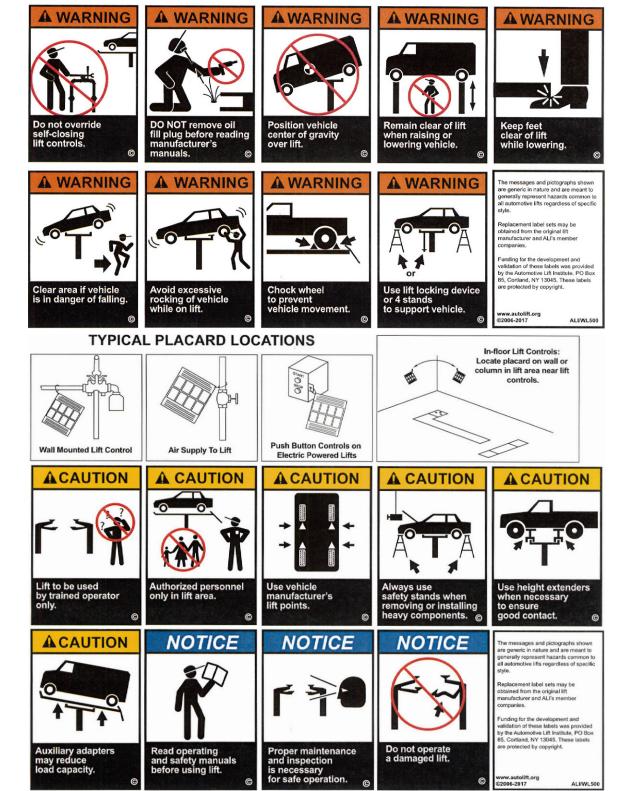


1.7 Safety labels affixed to lift

SAFETY WARNING LABELS FOR INGROUND LIFTS

Lift Owner/User Responsibilities:

- A. This Safety Warning placard **SHALL** be displayed in a conspicuous location in the lift area.
- B. Use one of the mounting arrangements illustrated on back of this placard.
- C. These Safety Warning labels supplement other documents supplied with the lift.
- D. Be certain all lift operators read and understand these labels, operating instructions and other safety related information supplied with the lift.

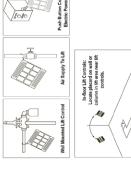


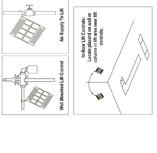
Warning Label pictographs used with permission of Automotive Lift Institute.





Placards:

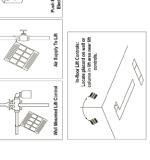


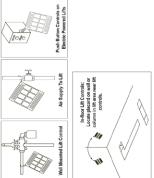


"IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME DELAY FUSES MARKED 'D'."

TSK 8000:

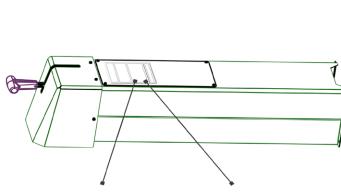
"SI CONNECTE A UN CIRCUIT PROTEGE PAR DES FUSIBLES, UTILISEZ DES FUSIBLES TEMPORISES COURBE,D". "CAUTION": "RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICE TO QUALIFIED SERVICE PERSONNEL."



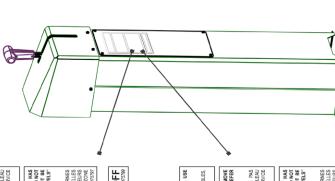


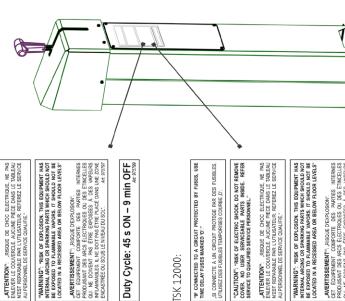






ALI/WL500 B





TSK 12000:

"ATTENTION": "RISOUE DE CHOC ELECTRIOUE, NE PAS BENÉGRE LE COUVERCLE. ADICUNE PIECE DANS LE TABLEAU NEST REPARABLE PAR L'UTILISATEUR REFEREZ LE SERVICE AU PERSONNEL DE SERVICE GUALIFIE." "WARNING": "RISK OF EXPLOSION. THIS EQUIPMENT HAS THERMAL ARCHOR OR SPARKING PARTS WHICH SHOULD NOT BE EXPOSED TO FLAMMABLE VAPORS. IT SHOULD NOT BE LOCATED IN A RECESSED AREA OR BELOW FLOOR LEVELS" "IF CONNECTED TO A CIRCUIT PROTECTED BY FUSES, USE TIME DELAY FUSES MARKED 'D'." "CAUTION": "RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICE TO QUALIFIED SERVICE PERSONNEL." "AVERTISSEMENT", AISOJE DEDROGOM.
CET COUPERBUT COMPORTE DE PRAFIES INTERLES
PRODUSANT DES ARCS ELECTROLES OU DES ETINCELLES
OUI NE DOWENT PAS ETINE EXPOSÉES À DES WAFLINS
INFLAMMABLES, IL NE OUT PAS ÉTINE PLACÉ DANS UNE ZONE
INFLAMMABLES, IL NE OUT PAS ÉTINE PLACÉ DANS UNE ZONE
ENANGAREE OU SOUS LE NIVEJAI DUS OL'. "SI CONNECTE A UN CIRCUIT PROTEGE PAR DES FUSIBLES, UTILISEZ DES FUSIBLES TEMPORISES COURBE D'.

Duty Cycle: 85 s ON - 9 min OFF



Read all labels and verify that all authorized users fully understand the meaning of each caution / warning / safety instruction. Do not remove or deface safety labels from the lift.

1.8 Protocols

Technical documentation contains important information for safe operation and for retaining functional safety of the lift.

- To verify lift set up, the assembly protocol form is to be completed, signed and sent to the manufacturer.
- Forms are available in this inspection book for use in verifying single, regular and extraordinary safety checks. Use the forms to document inspections and leave the completed forms in the inspection book.
- The lift master forms must record changes to the construction or changes to set up location.

1.9 Set up and test the lift

Safety relevant work on the lift and safety inspections may only be done by personnel specifically trained to carry it out. They are designated in general and in this documentation as technical experts and specialists (competent people).

- Technical experts are people (freelance expert engineers, TÜV specialists) that may inspect and assess due to their education and experience with lifts. They are knowledgeable in the appropriate work safety and accident prevention regulations.
- Specialists (competent people) are people who have sufficient knowledge and experience with lifts and have participated in a special factory training by the lifts manufacturer.





Set up protocol

After successful set up, complete this form fully, sign it, make a copy and send the original to the manufacturer within a week. The copy remains in the inspection book.

Nussbaum Automotive Solutions, LP 1932 Jordache Court Gastonia, NC 28052

Fax: 1-704-864-2476

Email: warranty@nussbaum-usa.com

The lift with serial number		was set up on (date)		
		_ in (town, city)		
checked for function and sa	fety and put into opera	ition.		
The set up was done by the After successful inspection of trical connection (e.g. plug) the power supply is to be do	f function and safety by to on-site power supply	a trained assembler, the lif An on-site electrical conn	ft is transferred without elec- lection between the lift and	
The operating company con in this operating manual and at all times.				
The specialist confirms prope book, and has transferred th			ting manual and inspection	
 Date	Name, operating company	and company stamp	Operating company signature	
 Date	Name, specialist		Signature of specialist	
Service partner:	Stamp			

*) See enclosed anchor manufacturer sheet



Transfer protocol

The lift with serial number		was set up on (date)				
at (company name)		in (town, city)				
checked for function and safety and put into operation.						
The following listed peop bler of the manufacture (Date, name, signature,	or a contract partner					
(Date, hame, signature,	empry lines most nave	scored out				
Date	Name	Signature				
Date	Name	Signature				
Date	Name	Signature				
Date	Name	Signature				
Date	Name	Signature				
Date	Name, specialist	Signature of specialist				
Service partner:	Stamp					





2 System master sheet

2.1 Manufacturer

Nussbaum Custom Lifts GmbH D-77694 Kehl-Sundheim, Germany Tel.: +49 78 53 899 100 www.nussbaumlifts.com info@nussbaum-group.de

2.2 Purpose

The lift is a lifting tool for raising vehicles up to a total weight of 8000 lbs (3500 kg). The lift is not set up for standing on the fixture or for personnel conveyance.

A standard lift may not be set up in explosion endangered spaces or wet environments.

2.3 Changes to the design / construction Inspections by a technical expert are required before recommissioning (date, type of change, technexpert signature).				
Name, address of technical expert				
Location, date	Technical expert signature			
2.4 Changing the assembly location Inspections by a technical expert are recisignature).	n Iquired before recommissioning (date, type of change, specialist			
Name, address of technical expert				
Location, date	Signature of expert for safety inspections			



3 Technical information

3.1 Technical data

Load carrying capacity	8000 lbs (3500kg)
Loading a lifting arm	A single load from only one lifting arm may not happen
Lift time	approx. 42 sec.
Lowering time	approx. 31 sec.
Motor capacity	2 HP
Motor speed	3450 rpm
Operating pressure	approx. 2700 psi (186 bar)
Pressure relief valve	approx. 3200 psi (220 bar)
Oil volume	approx. 4 GAL
Noise level L _{PA}	≤70 dB
One-site connection	1 ~/N+PE, 230 V, 60 Hz with maximum 25 Amp fuse

3.2 Safety devices

- Over-pressure valve
 - Hydraulic system fuse against over-pressure.
- Two redundant hydraulic circuits, load receivers connected via beams

Secure the vehicle against unauthorised lowering.

Check valve

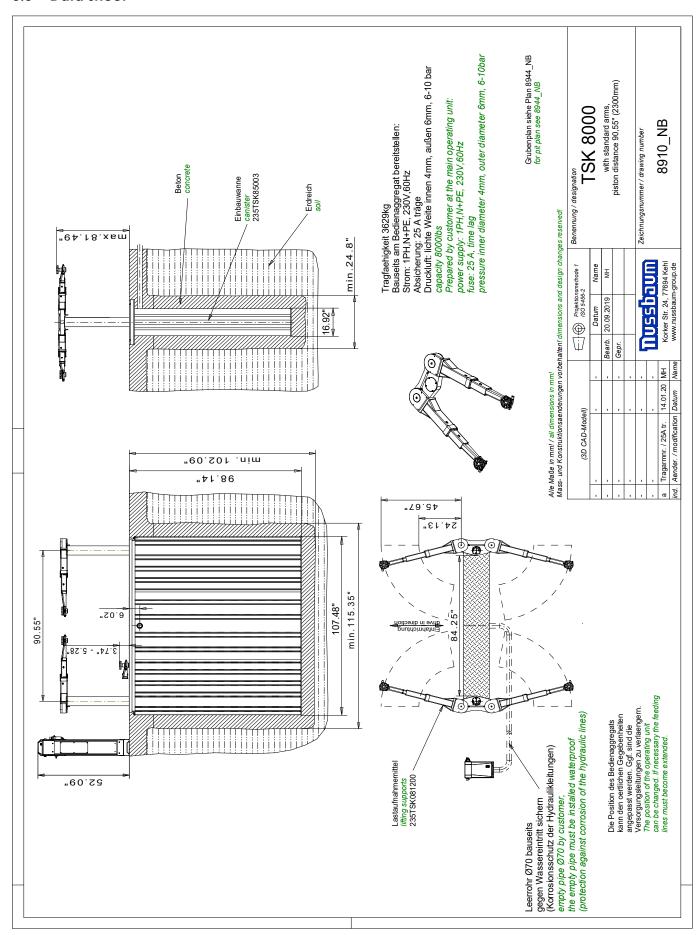
Secure the vehicle against unauthorised lowering.

• Main switch with curtain lock device Fuse to prevent unauthorised use.



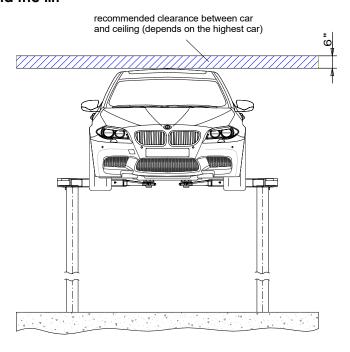


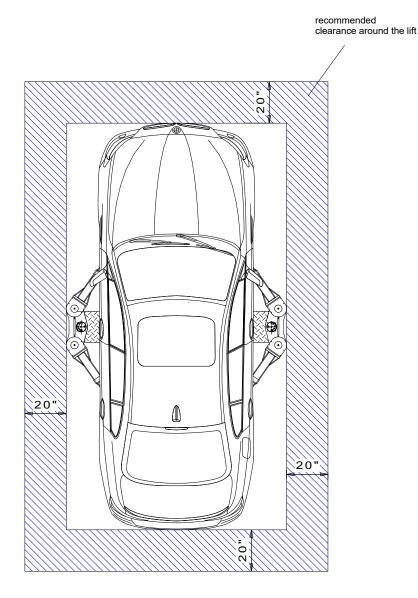
3.3 Data sheet





Clearance around the lift

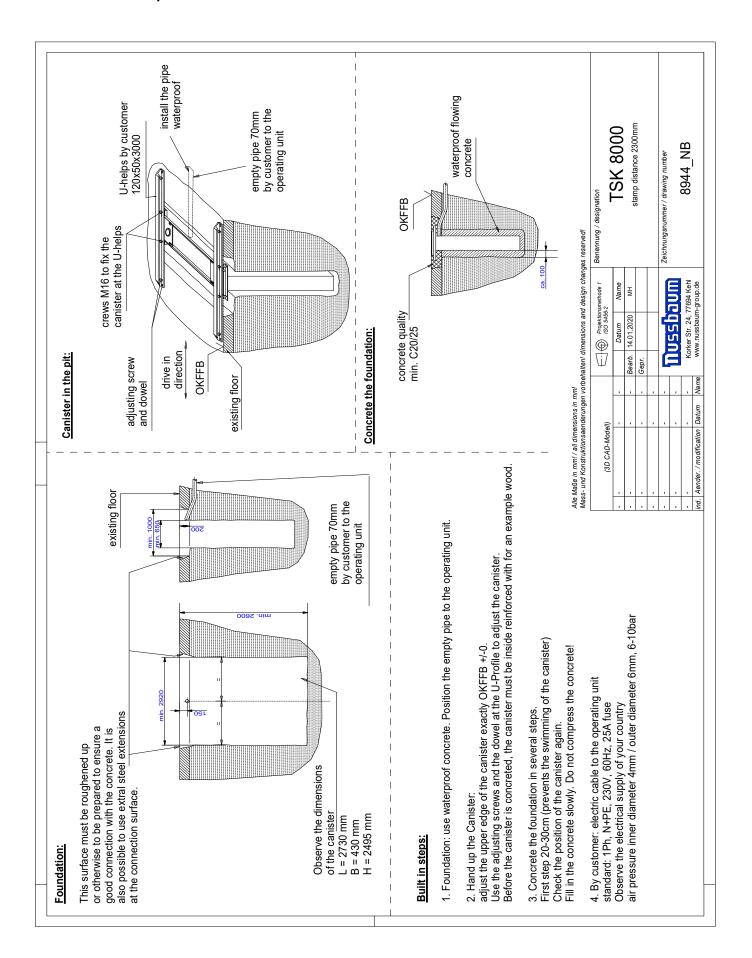






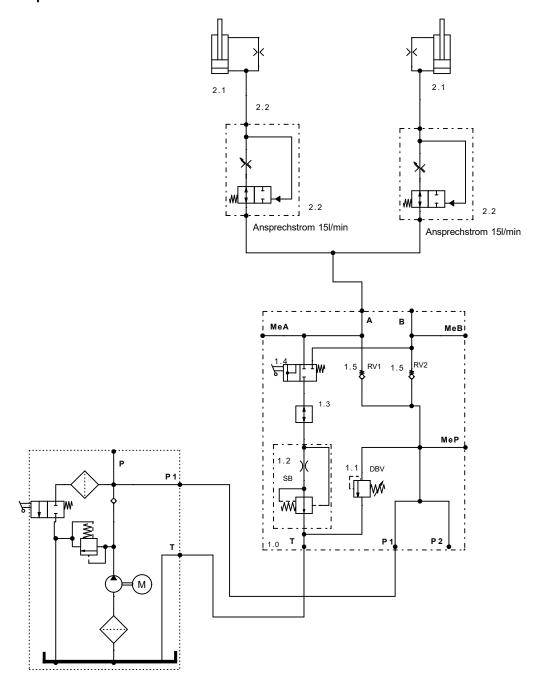


3.4 Foundation plan





3.5 Hydraulic plan



0.1	SPX240	POWER UNIT	1 4	974820	BALL VALVE
0.1	31 A240	TOWER OTT	1.5	983700	CHECK VALVE
1.0	000JL21151-SB15	HYDRAULIC BLOCK COMPL.			
1.1	155211	RELIEF VALVE	2.1	235TS22100	CYLINDER
1.2	983629	FLOW CONTROL VALVE	2.2	235TS22110	BURST PIPE PROTECTION
1.3	975535	CAVITY PLUG			





3.6 Electrical circuit diagram

Grounding according to local regulations

Before commissioning check whether the nominal motor current matches the motor protection relay. Check all terminal points for proper connection and that all contact screws are tight.

Before commissioning, check all wiring and controls for proper function. Do not permit commissioning from the unauthorised side.

These plans were generated on a CAD system. To keep plans to the current state, we ask that you request Nussbaum to make the changes.

These circuit diagrams are intellectual property. They may not be given to third parties or reproduced without our permission!

Rights to make changes are retained.

Circuit diagram and switch documents

Circuit diagrams were made to the best of our knowledge.

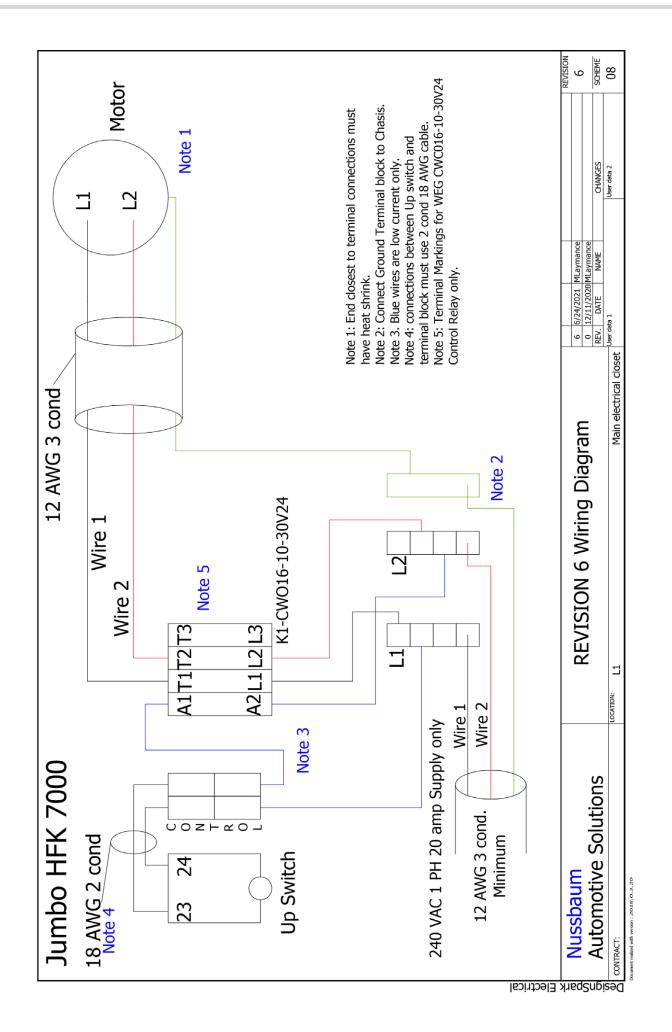
No guarantee is made for the accuracy of enclosed circuit diagrams and switch plans contained in this document. This is particularly relevant for switches that were completed by us according to third party plans. This was done by us from purchaser provided manufacturer documentation.

Functional test of switch systems

Circuit diagrams are not standard documents. When checking the control cabinet at the factory, field devices such as sensors, thermostats and motors cannot be included. For this reason, even with careful inspection, functional and switch errors cannot always be prevented.

Deficiencies are removed within the scope of guarantee during commissioning. During commissioning, if our services are not used, then no deficiency liability is accepted. Rework, including informing of circuit diagrams of switch systems not commissioned by us are therefore only done to an invoice according to our service terms and conditions. Costs for rework by third parties cannot be hounored.









4 Installation

The installation of the Lift is performed by manufacturer trained technicians or by the manufacturer's distribution partner. The Lift owner may use their trained mechanics to install the Lift. The installation must be performed according to the following regulations:

- Use architectural plans, if available, to determine Lift location.
- Lift is intended for indoor installation only. Installation in an outdoor application is prohibited and will void the warranties of the product.
- Always consult a qualified person regarding local regulations for seismic requirements. The owner has

to consult a qualified person to address any local or state requirements (per the ALCTV standard: "a qualified person should be consulted to address any seismic loads and other local or state requirements")

- Do not install Lift in hazardous locations, pit or depression areas, or washing stalls.
- Concrete must have compression strength (see chapter 8).
- Mount on a foundation deeper than the local external frost line.
- Be sure to read the ANSI/ALI ALIS prior to installation.
- The installer has to return the instructional materials furnished with the lift back to the owner.

Shiping / parts list

1	POWER UNIT WITH HOLDER AND			
	STICKER "OIL FILLING"	235TSK01470	1	BOX
2	CONTROL UNIT WITH REAR PLATE,		_	
	NAMEPLATE AND WEIGHT STICKER	250TTKAS03100	1	BOX
3	CYLINDER SCREWS (LOW HEAD SCREW)			
	FOR GUIDING TUBE M16X40	9912M16X040ZN	8	PLASTIC BAG
4	Carrying arm (SET)	235TSK081200	1	BOX
5	CYLINDER SCREWS M16X80 10.9	9912M16X8010.9	12	PLASTIC BAG
6	CARRIAGE (2300)	235TSK86003	1	BOX
7	LEDGE FOR THE LATCH COMPLETE	235TS10010	1	BOX
8	CYLINDER	235TS22100	2	BOX
9	GUIDING TUBE	235TS86000	2	BOX
10	GALVANIZED TUB WITH COVER FOR LIFT	235TSK85000	1	BOX
11	HYDRAULIC PIPE	235TSK22028	2	BOX
12	BURST PIPE PROTECTON COMPLETE	235TS22110	2	PLASTIC BAG
13	HYDRAULIC CONNECTOR	980020	1	PLASTIC BAG
14	MANUAL	235TSK USA	1	BOX

5 Operating instructions



When handling the lift, it must absolutely comply with safety regulations. Carefully read the safety regulations in Section 4 before first operation! After raising the arms, we recommend, to always park them into the lock-ing mechanism.

5.1 Lifting the vehicle

• Drive the vehicle in the middle of the lift.



The total weight limit may not be exceeded, otherwise there may be damage to the lift.

• Secure the vehicle against rolling away. Apply the handbrake, put into gear.

- Position the lifting arms on the fixture points of the vehicle.
- Inspect the hazardous area. No person or object may stand in the working area of the lift, or on the lift.
- Lift the vehicle until the wheels are off the ground.

 Push the operating lever forwards → "Lift" (see figure 1)
- If the wheels are not blocked, interrupt the lifting process and check for proper seating of the carrier pad. Similarly check whether the lifting arm blocks are ratcheted in. Otherwise, lower the lift and reposition the vehicle.
- After each set down of the vehicle, check the lifting arm positions below the fixture points again and adjust as required.
- Check that there are no people or objects in the hazardous area of the lift.
- Afterwards, lift the vehicle to the desired working height.



- Check that the swivel arm safety is latched in on all lifting arms.
- The entire lifting process must continuously be observed by the operator.

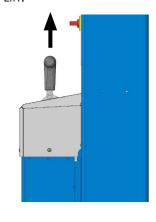


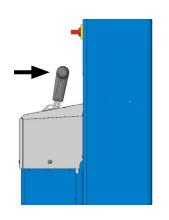


Operating element

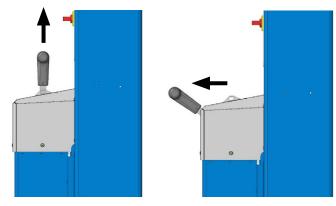
- 1 Lifting
- 2 Stop
- 3 Lowering

Lift:





Lower:

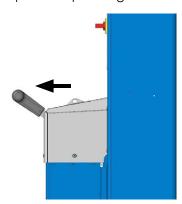


5.2 Lowering the vehicle

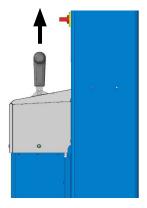
 Check that there are no people or objects in the hazardous area of the lift.

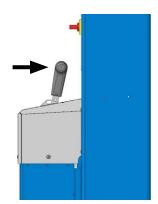
- Lower the vehicle to the desired working height or to its lowest position; pull the operating lever slowly → "Lower".
- Then lower onto the locks by pushing button #3 and at the same time lift and pull the operating lever #2.



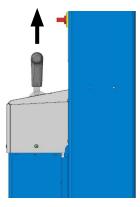


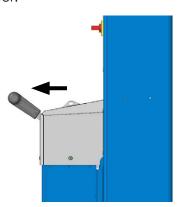
- The platform moves down a little and sets down in the latch.
- When a vehicle is serviced the lift must be engaged in the latch.
- Before starting the lowering process, the lift must be moved out of the latch again.
 - Lift and press the operating lever #2 briefly to unlock the latch.





• Lower the lift to the floor.





- For heavier vehicles, lift it slightly before lowering to prevent an "sticking" and any corresponding jolt during lowering.
- The lowering speed can be varied seamlessly.
- Once the lift is in the lowest position, push the lifting arms to the start position.





6 Behaviour in cases of error

Defective operational readiness of the lift may be due to a simple error. Check the system for the listed sources of error.

If the error cannot be removed after an inspection to the named causes, then inform customer service or your dealer.



Independent repair work on safety devices of the lift and checking the electrical system may only be done by specialists.

Problem: Motor does not start

Possible causes:	Remedy:
No power supply	Check the power supply
The main switch is not switched on, or is defective	Check main switch
Defective fuse	Have fuses checked
Power supply interrupted	Inform customer service
Thermal fuse of the motor is active	Let motor cool (cooling time dependent on ambient temperature)
Motor defective	Inform customer service

Problem: Motor starts, load is not lifted

Possible causes:	Remedy:
The vehicle is too heavy	Unload vehicle
Hydraulic oil filling level is too low	Refill hydraulic oil
The emergency discharge screw is not closed	Check the emergency discharge screws
Hydraulic valve defective	Inform customer service
Mechanical pump defective	Inform customer service
The coupling between the motor and pump is defective	Inform customer service

Problem: The lift cannot be lowered

Possible causes:	Remedy:
Lifting table is sitting on an obstacle	See Section 6.1
Hydraulic valve defective	Inform customer service
Defective fuse	Have fuses checked
Push button defective	Check push button

6.1 Moving onto an obstacle

If the lift drive-on rail/lift arm moves onto an obstacle during lowering, then it remains in position due to the mechanical resistance. By pushing the "Lift" button, the lift can be raised again to remove the object.

6.2 Emergency discharge with external unit and safety latch



An emergency discharge is an access into the lift controls and may only be done by experienced specialists. The emergency discharge must be done in the following described sequence, otherwise it can lead to damage and hazard to life and limb. Any kind of external leakage is not permitted and must immediately taken care of. This is absolutely necessary especially before an emergency discharge.





Fig. 2a (left): Hydraulic emergency lowering, re-move cap and open valve

Fig. 2b (right): Pneumatic air supply for actuating the ratchet cylinders.

6.2.1 Defect of the hydraulic valve

If there is a defect in the hydraulic valve there is still the option of moving the lift to its lowest position so the vehicle can be drive off the lift.

 Push the "Lower" button and the latches must unlock.



- If the safety latches are locked, they must be lifted with a suitable tool (hyd. lifter) if needed until the safety latch opens due to the attached com-pressed air.
- 3. Open the top cover of the external unit.
- 4. Unscrew the cap on the hydraulic valve (see Fig. 2a).
- Push the "Lower" button and simultaneously open the hydraulic valve to start the lowering procedure.

Lowering

- The entire lowering process must be continuously observed.
- 7. Once the lift is at the lowest position, the vehicle can be driven off the lift.
- 8. Close the hydraulic valve again and turn on the cap.
- The lift must be stopped until defective parts have been exchanges and the lift is in a technical perfect condition again.
- 10. If required, do maintenance.

6.2.2 Defect of the Pneumatic valve

If there is a defect on a pneumatic valve the safety latches cannot be opened.

However there is still the option of opening the valve using a hand pump or compressor.

- 1. Open the top cover of the external unit.
- 2. Remove the blue pneumatic hose coming from the lift at the pneumatic valve. (see Fig. 2b).
- 3. This air hose must be connected to a hand pump or compressor. The required operating pressure to unlock is 6 to a max. 10 bars.
- 4. Push the "Lower" button and lower the lift until the lowest position is reached.
- If the lift cannot be lowered, push the "Lift" button briefly until the latch is released. Push the "Lower" button again until the lift has reached the lowest position.

Lowering

- 11. The entire lowering process must be continuously observed.
- 12.Once the lift is at the lowest position, the vehicle can be driven off the lift.
- 13. The lift must be stopped until defective parts have been exchanges and the lift is in a technical perfect condition again.
- 14. If required, do maintenance.

6.2.3 Defect of the hydraulic valve, defect of the Pneumatic valve, or in case of power failure

If there is a defect in the hydraulic valve, a defect pneumatic valve or in the case of a power failure there is still the option of moving the lift to its lowest position so the vehicle can be drive off the lift.

1. Open the top cover of the external unit.

- 2. Remove the blue pneumatic hose coming from the lift at the pneumatic valve. (see Fig. 2b).
- 3. This air hose must be connected to a hand pump or compressor. The re-quired operating pressure to unlock is 6 to a max. 10 bars.
- 4. The latches must unlock.
- 5. If the safety latches are locked, they must be lifted with a suitable tool (hyd. lifter) if needed until the safety latch opens due to the attached compressed air.
- 6. Unscrew the cap on the hydraulic valve (see Fig. 2a).
- Open the hydraulic valve to start the lowering procedure.

Lowering

- 8. The entire lowering process must be continuously observed.
- 9. Once the lift is at the lowest position, the vehicle can be driven off the lift.
- 10. The lift must be stopped until defective parts have been exchanges and the lift is in a technical perfect condition again.
- 11.If required, do maintenance.

7 Maintenance and care of the system



Before maintenance, do all preparation work so there is no danger to life or limb or object damage during maintenance and repair work on the lift.





Value is placed on long lifetimes and safety in the development and production of Nussbaum products. To guarantee the safety of the operator, product reliability, low running costs, keep the warranty and also the long-lifetime of the product, proper set up and operation is just as important as regular maintenance and sufficient care.

Our platforms fulfil TUV, BG and CE certifications and exceed all safety standards of the countries we supply to. For example, European regulations require a service by qualified experts every 12 months of work of the platform. To guarantee the largest

possible availability and functional capacity of the lift system, ensure the list of any cleaning, care and maintenance work is done.

After first commissioning the lift is to be serviced at regular intervals of a maximum of one year by an authorised person according to the following plan. For intensive operation and higher degree of contamination shorten the service interval.

The complete function of the lift is to be observed during daily use. Customer service must be informed of any malfunctions.

7.1 Maintenance plan

Before beginning service, disconnect from power. The work area around the lift is to be secured against unauthorised use.

		T		T	M	X
Visual inspection	Spray	Oil	Lubricate	Clean with compressed air	Clean	Inspect

Ti	ime frame	Maintenance type position		Maintenance plan
Daily	9 365 x / 12 3 8 7 6 5		Lift owner / employer	Model and information signs, labels, brief operating instructions, safety stickers and warning information are to be cleaned and exchanged if damaged.
Daily	9 365 x / 12 3 8 7 6 5 4		Lift owner / employer	The rubber acceptance plate is to be checked for wear and replaced if necessary. (only for the version with lifting arms)
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	Check the lifting arm block and gear for wear. Exchange if there is visible damage. (only for the version with lifting arms)
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	Lifting arm booms, lifting arm bolts, carrier plate threaded bolts are to be checked for ease of running. If required, lightly grease with multi-purpose grease. Do not over-lubricate. (only for the version with lifting arms)



Ti	ime frame	Maintenance type position		Maintenance plan			
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	All weld seams must have a visual inspection. Stop the system and contact the manufacturer if there are cracks or breaks in weld seams of the lift.			
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	Check electrical components for function and condition. • Plug • Operating lever with button switch • During assembly and maintenance always check the condition of electrical lines. All cables and lines must be secured so they cannot be crushed, kinked or contact any moving assembly.			
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	Optional energy set: • Electrical socket • Pneumatic connection Check for condition and function.			
Annually	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Trained ser- vice personnel	Check all fastening screws and anchors with a torque wrench. Fastening class 8.8 0.08* 0.12** 0.14*** M8 17.9 23.1 25.3 M10 36 46 51 M12 61 80 87 M16 147 194 214 M20 297 391 430 M24 512 675 743 Fastening class 10.9 0.08* 0.12** 0.14*** M8 26.2 34 37.2 M10 53 68 75 M12 90 117 128 M16 216 285 314 M20 423 557 615 M24 730 960 1060 * Lubricated slide friction number 0.12 *** Ensured slide friction number 0.14 screw with micro-encaps sulated plastic			





Time frame		Maintenance type position		Maintenance plan		
Annually	9 1 x / 12 3 8 7 6 5		Trained service personnel	 Check the paint: Check the powder coating and improve if required. Damage by external influences is to be treated immediately after detection. If these points are not treated, infiltration of deposits of all kinds can cause wide-ranging and permanent damage. These points are to be lightly sanded (120 grit), cleaned and degreased. Afterwards, rework with a suitable touch up paint (note the RAL No.). Check galvanised surfaces, touch up as needed. White rust is fostered by permanent humidity, poor ventilation. The affected areas can be treated by using a sanding cloth (A 280 grit). If required, the parts are to be treated with a suitable, resistant material (paint etc). Check the RAL colour selection. Rust is brought out by mechanical damage, wear, aggressive deposits (de-icing salt, leaking operating fluids) cleaning that is not done or incomplete. The affected areas can be treated by using a sanding cloth (A 280 grit). If required, post-treat the areas with a resistant material (paint etc.). 		
Annually	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Trained ser- vice personnel	According to manufacturer instructions, the hydraulic oil should be changed every two years in normal operations. Various environmental influences e.g. location, temperature swings, intensive operation etc, can have an influence on the quality of the hydraulic oil. For this reason, the oil must be checked during annual safety inspections and maintenance. The oil is used if it has a milky colour or if the hydraulic oil smells unpleasantly. To change oil, lower the lift is to its lowest position then suction the oil out of the oil container and replace the contents. The manufacturer recommends high-quality clean hydraulic oil. The required oil volume and type is to be taken from the technical data. After filling (18), the hydraulic oil must be between the upper and lower marking on the oil dipstick, or approx. 2 cm below the oil filling opening. Dispose of the old oil according to regulations to the intended location (district offices, environmental protection office or commercial regulatory office has the obligation to disclose about disposal points).		



T	ime frame	Maintenance type position		Maintenance plan
Annually	9 1 x / 12 3 8 7 6 5			 Remove any sand and contaminants from the lifting post pipes and load lifting equipment using compressed air. Shorten the maintenance interval depending on the degree of contamination. Clean the wipers of the lifting post pipes with compressed air and check for damage. Check the condition and function of the pusher plates/ramps of the flat carrier fixtures. Check the rollers on the ramps. Exchange if damaged. Check the torque of the fastening screws of the load fixture for the lifting posts. Check the condition and function of the foot deflectors (footswitch), CE stop + warning signal.
Annually	9 1 x / 12 3 8 7 6 5		Trained ser- vice personnel	Hydraulic hose lines Storage and duration of use Excerpt from DIN20066:2002-10 • For permitted loading, hoses undergo a natural change. This limits the duration of use. • Improper storage, mechanical damage and unpermitted loads are the most frequent cause of breakdowns. • The duration of use of a hose line including any storage time should not exceed six years. Hose lines are to be replaced if/when, • Damage to the outer coating up to the insert (chafe marks, cuts, cracks) • The outer coating becomes brittle (crack formation) • Deformation from the natural shape in the depressurised and pressurised conditions • Leakage • Damage or deformation of the mounting fixture • Meandering of the mounting fixture • The lifetime has been exceeded Repair of the hose line using the implemented hose / mounting fixture is not permitted. Extending the replacement intervals given in the guideline is possible if the inspection for safe-work condition is done in adjusted, shortened time frames, if required and by competent personnel. If there is an extension of the replacement interval, no situation may occur which could result in injury of employees or other personnel.





Time frame		Maintenance type position		Maintenance plan		
Annually	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		Trained service personnel	Excerpt from BGR237: Specifications for the hydraulic hose lines Normal specification: Recommended exchange intervals: 6 years (operation duration including max. 2 years storage time) Increased demands e.g. by • increased usage times e.g. multi-shift, short cycle times and pressure impulses • increased exterior and interior (due to media) influences which significantly reduce the lifetime of the hose lines Recommended exchange intervals: 6 years (operation duration including max. 2 years storage time)		



7.2 Cleaning the lift

A regular and expert clean helps retain the value of the lift.

Additionally, it can also be a pre-requisite for the preservation of guarantee claims for any eventual corrosion damage.

The best protection for the lift is regular removal of contaminants of any kind.

This includes above all:

- de-icing salt
- sand, pebbles, earth
- industrial dust of all types
- water, also in connection with other environmental influences
- aggressive deposits of all types
- permanent humidity due to insufficient ventilation

The frequency of lift cleaning depends, among other things on the frequency of use, of lift handling, of workshop cleanliness, and the location of the lift. Furthermore, the degree of contamination depends on the time of year, the weather conditions and workshop ventilation. Under adverse circumstances, weekly lift cleaning might be required, however a monthly cleaning may be sufficient.

- For cleaning, do not use high pressure washers (e.g. steam cleaners).
 - Do not use any aggressive and abrasive materials. Instead, use mild cleaners, e.g. a commercially available detergent and lukewarm water.
- Carefully remove all contamination with a sponge, or if required with a brush.
- Make sure that there is no residue of the cleaner on the lift.
- Dry the lift with a cloth and spray it with a spray wax or oil.

8 Assembly and commissioning

8.1 Set up guidelines

- Lift assembly is done by trained manufacturer personnel or a contract partner. If the operating company has appropriately trained assemblers, the lift can also be assembled by them. Set up is to be done acc. to the assembly instructions.
- A standard lift may not be assembled in explosion endangered spaces or wash halls.
- Before setting up, verify that there is a sufficient foundation or make it according to the guidelines in the foundation plan (see foundation plan). The installation location must be level. Foundations in open air and spaces where winter storms or frost are to be expected, must have a foundation to frost depth.
- An on-site electrical connection of 1 ~/N + PE, 230V, 60Hz is to be provided. The supply line is to be correspondingly secured on-site. The connec-

tion point is located on the electrical boxes.

- To protect the electrical cable all cable conduits are to be fitted with cable sleeves or flexible plastic pipes.
- After successful lift installation and before first commissioning, the operating company must have the lift grounding conductors inspected onsite according to IEC regulation (60364-6-61). An insulation resistance test is also recommended.

8.2 Assembly of the lift

- The cavity must be created according to the specifications in the cavity plan.
- Reinforce the integrated pan, e.g. using wood to prevent it from collapsing inwards.
- Insert the pan into the cavity with the help of assemblers and align it precisely.
- Pour concrete around the pan in three steps.
 - 1. Step approx. 30 cm so the pan can not longer float up.
 - 2. Step until approx. 200 mm below the upper edge of the integrated pan.
 - Before the third step, connect the empty pipe connection of the integrated pan to the operating element/unit. Afterwards, in the third step, pour concrete for the load foundation.
- Do not stamp or shake when pouring concrete!
- After hardening, remove the internal reinforcement. Guide the lifting posts into the pan, align them and fasten using a torque wrench.
- (for an integrated unit) insert and fasten the hydraulic unit.
- Connect hydraulic lines. Guide and connect the electrical cables through the empty pipe to the unit.
- Fasten the hydraulic unit and operating boxes to the wall.
- Fill with hydraulic oil, the manufacturer recommends a high value hydraulic oil with a viscosity of 32 cst. The required oil volume is to be taken from section 3.1. After filling, the hydraulic oil must be between the lower and upper marking on the oil dipstick, or 2cm below the oil filling opening.
- Mount the load fixture. Tighten the fastening screws using a torque wrench.
- Check the hydraulic system (lines and screws) for leaks.
- Raise and lower the lift several times to the end positions while empty.
- Raise and lower the lift several times to the end positions with vehicle.
- Check the hydraulic system again for leak-tightness.
- Cover and seal the pan cover



When assembling the rail lift (in particular the fixture on the lifting post pipes) ensure that the proper fastening screws are used; also comply with





the minimum screw-in depth. Otherwise this can lead to damage and endanger life and limb.

These tables have been completed to give an overview about the required fastening screws.

Ensure that the listed screws are tightened to the required torque. For this, see the torque table.

The fastening screws are to be checked before first commissioning and as needed for the annual safety inspection and maintenance.

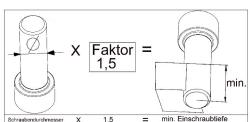
Torque (Nm) for shaft screws

Faste	ning clo	8.8 asc	
	0.10*	0.15**	0.20***
8M	20	25	30
M10	40	50	60
M12	69	87	105
M16	170	220	260
M20	340	430	520
M24	590	740	890

Fastening class 10.9

	0.10*	0.15**	0.20***
M8	30	37	44
M10	59	73	87
M12	100	125	151
M16	250	315	380
M20	490	615	740
M24	840	1050	1250

- * Slide friction no. 0.10 for very good surface, lubricated
- ** Slide friction no. 0.15 for good surfaces, lubricated or dry
- *** Slide friction number 0.20 surface black or phosphated, dry



Lift type	2.35 TSK
Fastening screws	M16x80*
Standard	DIN 912
Tensile strength	10.9
Pieces/lifting posts	6

^{*} Screws galvanised or blackened

8.3 Commissioning

Before commissioning, a single safety inspection must be done (use the "single safety inspection" form)

If the lift set up is done by a specialist (factory trained assembler) then he can also do the safety inspection. If the set up is done by the operating company then a specialist must be tasked with the safety inspection. The specialist confirms seamless operation of the lift on the set up protocol for single safety inspection and releases the lift for use.

After commissioning, the set up protocol must be completed and sent to the manufacturer.

9 Safety inspection

The safety inspection is required to guarantee operational safety of the lift. It is to be done.

- 1. Before first commissioning after setting up the lift Use the "single safety inspection" form
- After first commissioning, at regular intervals of a maximum of one year Use the "regular safety inspection" form
- 3. After changes to the lift construction
 Use the "extraordinary safety inspection" form
- Single and regular safety inspections must be done by a specialist. It is recommended to do maintenance at the same time.
- After a change in construction (for example changing the load carrying capacity or changing the lifting height) and after significant maintenance on load carrying parts (e.g. welding work), inspection by a technical expert is required (extraordinary safety inspection).

This inspection book contains forms with a printed inspection plan for safety inspections. Please use the appropriate form, record the condition of the inspected lift and leave the completed form in this inspection book.



Single safety inspection before commissioning Copy, complete and leave in the inspection book Serial number: OK **Defect** Remarks Test step Retest missing Condition model plate...... 🗆 🗆 Condition, load bearing capacity sticker..... Function button "lift / lower"...... Condition drive-on rails/flat carrier fixture....... Condition, function lifting arm...... Condition, function lifting arm block and Toothed washer..... Condition, function rubber plate...... General lift condition...... Condition, function cable riser...... Load bearing constr. (deformations, cracks) Cover conditions...... Hydraulic system leak-tightness...... Condition integrated pan...... Condition of concrete floor...... Hydraulic oil filling level..... Condition of hydraulic lines and screw fittings...... Condition electrical lines...... Condition, function lighting *) place a checkmark in the relevant, if a retest is required then check it again! Safety inspection done on: Performed by company: Name, address of specialist: ☐ Continued operation questionable, reinspection required Result of inspection: ☐ Continued operation possible, remove defects by _____ □ No deficiencies, continue to operate Signature of specialist Operating company signature If requested to take care of deficiencies Deficiency removed on:

(use a new form for reinspection!)

Operating company signature





9.2 Regular safety inspection and maintenance

Test step	OK	Defect missing	Retest	Remarks
Condition model plate		🗆		
Condition short operating manual				
Condition, load bearing capacity stic	:ker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆	
Condition drive-on rails/flat carrier fixture	e 🗆	🗆	🗆	
Condition, function lifting arm	🗆	🗆	🗆	
Condition, function lifting arm block of	and			
Toothed washer	🗆	🗆	🗆	
Condition, function rubber plate	🗆	🗆	🗆	
Condition, function drive-on ramps and r	rollers □	🗆	🗆	
Condition of polymer overlays	🗆	🗆	🗆	
Condition/ function pusher plates	🗆	🗆	🗆	
General lift condition	🗆	🗆	🗆	
Condition, function cable riser	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of paint / (galvanizing)	🗆	🗆	🗆	
Condition, function operating elemer	nt 🗆	🗆	🗆	
Load bearing constr. (deformations, c	cracks) 🗆	🗆	🗆	
Condition of the lifting post pipe	🗆	🗆	🗆	
Fastening screw torque	🗆	🗆	🗆	
Condition of weld seams	🗆	🗆	🗆	
Cover conditions	🗆	🗆	🗆	
Hydraulic system leak-tightness	🗆	🗆	🗆	
Condition integrated pan	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of concrete floor	🗆	🗆	🗆	
Hydraulic oil filling level	🗆	🗆	🗆	
Condition of hydraulic lines and screw fitti	ngs 🗆	🗆	🗆	
Condition electrical lines	🗆	🗆	🗆	
Functional test lift with vehicle	🗆	🗆	🗆	
Contidtion/funktion safety latch	🗆	🗆	🗆	
Condition, function lighting	🗆	🗆	🗆	
*) place a checkmark in the relevant, if a retes	t is required then	check it again!		
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	□ Continued	operation que	estionable, rei	inspection required
·		operation pos		·
	□ No deficie	ncies, continue	e to operate	
Signature of specialist	Operating comp	pany signature		
If requested to take care of deficienc	ies			
Deficiency removed on:				
(use a new form for reinspection!)			Oper	ating company signature



Regular safety inspection and maintenance					
$\overset{\circ}{\mathbb{I}}$ Copy, complete and leave in the in	spection bo	ok Serial numl	oer:		
Test step	OK	Defect missing	Retest	Remarks	
Condition model plate	🗆		🗆		
Condition short operating manual					
Condition, load bearing capacity sticke					
Function button "lift / lower"					
Condition drive-on rails/flat carrier fixture	🗆	🗆	🗆 💳		
Condition, function lifting arm					
Condition, function lifting arm block and					
Toothed washer	····· 🗆	🗆			
Condition, function rubber plate					
Condition, function drive-on ramps and roll					
Condition of polymer overlays					
Condition/ function pusher plates					
General lift condition					
Condition, function cable riser					
Leak-tightness integrated pan					
Condition of paint / (galvanizing)					
Condition, function operating element.					
Load bearing constr. (deformations, cro					
Condition of the lifting post pipe					
Fastening screw torque	∐	∐	💾		
Condition of weld seams	∐	∐	∐		
Cover conditions					
Hydraulic system leak-tightness					
Condition integrated pan					
Leak-tightness integrated pan					
Condition of concrete floor					
Hydraulic oil filling level					
Condition of hydraulic lines and screw fitting	s 🗆	🗆	🗆		
Condition electrical lines	🗆	🗆	🗆		
Functional test lift with vehicle	🗆	🗆	🗆		
Contidtion/funktion safety latch					
Condition, function lighting	🗆	🗆	🗆 🔣		
*) place a checkmark in the relevant, if a retest is	required then	check it again!			
Safety inspection done on:	4-	3 1 3 1 3 1			
Performed by company:					
Name, address of specialist: _					
	1 Continued	oneration au	estionable rei	nspection required	
	Continued	operation po operation po ncies, continue	ssible, remove		
Signature of specialist O	perating comp	pany signature			
If requested to take care of deficiencies	s				
•					
Deficiency removed on:			Oper	ating company signature	

(use a new form for reinspection!)





Regular safety inspection and maintenance

Test step	OK	Defect missing	Retest	Remarks
Condition model plate	🗆		🗆	
Condition short operating manual	🗆	🗆	🗆	
Condition, load bearing capacity st	icker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆 💳	
Condition drive-on rails/flat carrier fixtu	Jre □	🗆		
Condition, function lifting arm	🗆	🗆	🗆 💳	
Condition, function lifting arm block				
Toothed washer		🗆		
Condition, function rubber plate	🗆	🗆	🗆 💳	
Condition, function drive-on ramps and	d rollers	🗆	🗆 💳	
Condition of polymer overlays	🗆			
Condition/ function pusher plates	П			
General lift condition	П	П	П	
Condition, function cable riser	П	П	п	
Leak-tightness integrated pan	□	П		
Condition of paint / (galvanizing)	□			
Condition, function operating elements				
Load bearing constr. (deformations,				
Condition of the lifting post pine	CIUCKS)			
Condition of the lifting post pipe	□			
Fastening screw torque	□			
Condition of weld seams	∐	📙		
Cover conditions	∐	📙		
Hydraulic system leak-tightness		💾		
Condition integrated pan	∐	💾		
Leak-tightness integrated pan	∐	📙	∐	
Condition of concrete floor	∐	📙	∐	
Hydraulic oil filling level				
Condition of hydraulic lines and screw fit	tings \square	🗆	🗆	
Condition electrical lines	🗆	🗆	🗆	
Functional test lift with vehicle	🗆	🗆	🗆	
Contidtion/funktion safety latch				
Condition, function lighting	🗆	🗆	🗆	
*) place a checkmark in the relevant, if a rete	est is required then	check it again!		
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	☐ Continued		ssible, remove	nspection required defects by
Signature of specialist	Operating comp	oany signature		
If requested to take care of deficien	cies			
Deficiency removed on:			Oper	ating company signature
(use a new form for reinspection!)			Open	and a company signatore



Regular safety inspection and maintenance

Copy, complete and leave in the inspection book Serial number: _____ OK **Defect** Retest Remarks Test step missing Condition model plate...... 🗆 🗆 🗆 ____ Condition, load bearing capacity sticker..... Condition drive-on rails/flat carrier fixture....... Condition, function lifting arm...... Condition, function lifting arm block and Toothed washer..... Condition, function rubber plate...... General lift condition...... Condition, function cable riser...... Load bearing constr. (deformations, cracks) Cover conditions...... Hydraulic system leak-tightness...... Condition integrated pan...... Condition of concrete floor...... Hydraulic oil filling level..... Condition of hydraulic lines and screw fittings...... Condition electrical lines...... Condition, function lighting *) place a checkmark in the relevant, if a retest is required then check it again! Safety inspection done on: Performed by company: Name, address of specialist: ☐ Continued operation questionable, reinspection required Result of inspection: ☐ Continued operation possible, remove defects by _____ □ No deficiencies, continue to operate Signature of specialist Operating company signature If requested to take care of deficiencies Deficiency removed on: Operating company signature

(use a new form for reinspection!)





Test step	OK	Defect missing	Retest	Remarks
Condition model plate		🗆		
Condition short operating manual				
Condition, load bearing capacity stice	cker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆	
Condition drive-on rails/flat carrier fixtu	re □	🗆	🗆	
Condition, function lifting arm	🗆	🗆	🗆	
Condition, function lifting arm block	and			
Toothed washer	🗆	🗆	🗆	
Condition, function rubber plate	🗆	🗆	🗆	
Condition, function drive-on ramps and	rollers 🗆	🗆	🗆	
Condition of polymer overlays	🗆	🗆	🗆	
Condition/ function pusher plates	🗆	🗆	🗆	
General lift condition	🗆	🗆	🗆	
Condition, function cable riser	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of paint / (galvanizing)	🗆	🗆	🗆	
Condition, function operating eleme	nt 🗆	🗆	🗆	
Load bearing constr. (deformations,	cracks) 🗆	🗆	🗆	
Condition of the lifting post pipe	🗆	🗆		
Fastening screw torque	🗆	🗆		
Condition of weld seams	🗆	🗆	🗆 💳	
Cover conditions	🗆	🗆	🗆 💳	
Hydraulic system leak-tightness	🗆	🗆	🗆 💳	
Condition integrated pan	🗆	🗆	🗆 💳	
Leak-tightness integrated pan	🗆	🗆		
Condition of concrete floor				
Hydraulic oil filling level	🗆	🗆		
Condition of hydraulic lines and screw fitt	nas 🗆			
Condition electrical lines	🗆	🗆		
Functional test lift with vehicle	 П	П	П	
Contidtion/funktion safety latch	 П		п	
Condition, function lighting				
*) place a checkmark in the relevant, if a rete				
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	☐ Continued	operation au	estionable rei	Inspection required
		operation pos		·
		ncies, continue		
Signature of specialist	Operating company signature			
If requested to take care of deficienc	ies:			
Deficiency removed on:				
(use a new form for reinspection!)			Oper	ating company signature



Copy, complete and leave in the inspection book Serial number: _____ OK **Defect** Retest Remarks Test step missing Condition model plate...... 🗆 🗆 🗆 ____ Condition, load bearing capacity sticker..... Condition drive-on rails/flat carrier fixture....... Condition, function lifting arm...... Condition, function lifting arm block and Toothed washer..... Condition, function rubber plate...... General lift condition...... Condition, function cable riser...... Load bearing constr. (deformations, cracks) Cover conditions...... Hydraulic system leak-tightness...... Condition integrated pan...... Condition of concrete floor...... Hydraulic oil filling level...... Condition of hydraulic lines and screw fittings...... Condition electrical lines...... Condition, function lighting *) place a checkmark in the relevant, if a retest is required then check it again! Safety inspection done on: Performed by company: Name, address of specialist: ☐ Continued operation questionable, reinspection required Result of inspection: ☐ Continued operation possible, remove defects by _____ □ No deficiencies, continue to operate Signature of specialist Operating company signature If requested to take care of deficiencies Deficiency removed on:

(use a new form for reinspection!)

Operating company signature





Test step	OK	Defect missing	Retest	Remarks
Condition model plate		🗆		
Condition short operating manual				
Condition, load bearing capacity stice	cker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆	
Condition drive-on rails/flat carrier fixtu	re □	🗆	🗆	
Condition, function lifting arm	🗆	🗆	🗆	
Condition, function lifting arm block	and			
Toothed washer	🗆	🗆	🗆	
Condition, function rubber plate	🗆	🗆	🗆	
Condition, function drive-on ramps and	rollers 🗆	🗆	🗆	
Condition of polymer overlays	🗆	🗆	🗆	
Condition/ function pusher plates	🗆	🗆	🗆	
General lift condition	🗆	🗆	🗆	
Condition, function cable riser	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of paint / (galvanizing)	🗆	🗆	🗆	
Condition, function operating eleme	nt 🗆	🗆	🗆	
Load bearing constr. (deformations,	cracks) 🗆	🗆	🗆	
Condition of the lifting post pipe	🗆	🗆		
Fastening screw torque	🗆	🗆		
Condition of weld seams	🗆	🗆	🗆 💳	
Cover conditions	🗆	🗆	🗆 💳	
Hydraulic system leak-tightness	🗆	🗆	🗆 💳	
Condition integrated pan	🗆	🗆	🗆 💳	
Leak-tightness integrated pan	🗆	🗆		
Condition of concrete floor				
Hydraulic oil filling level	🗆	🗆		
Condition of hydraulic lines and screw fitt	nas 🗆			
Condition electrical lines	🗆	🗆		
Functional test lift with vehicle	 П	П	П	
Contidtion/funktion safety latch	 П		п	
Condition, function lighting				
*) place a checkmark in the relevant, if a rete				
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	☐ Continued	operation au	estionable rei	Inspection required
		operation pos		·
		ncies, continue		
Signature of specialist	Operating company signature			
If requested to take care of deficienc	ies:			
Deficiency removed on:				
(use a new form for reinspection!)			Oper	ating company signature



Copy, complete and leave in the inspection book Serial number: _____ OK **Defect** Retest Remarks Test step missing Condition model plate...... 🗆 🗆 🗆 ____ Condition, load bearing capacity sticker..... Condition drive-on rails/flat carrier fixture....... Condition, function lifting arm...... Condition, function lifting arm block and Toothed washer..... Condition, function rubber plate...... Condition, function cable riser...... Load bearing constr. (deformations, cracks) Cover conditions...... Hydraulic system leak-tightness...... Condition integrated pan...... Condition of concrete floor...... Hydraulic oil filling level...... Condition of hydraulic lines and screw fittings...... Condition electrical lines...... Condition, function lighting *) place a checkmark in the relevant, if a retest is required then check it again! Safety inspection done on: Performed by company: Name, address of specialist: ☐ Continued operation questionable, reinspection required Result of inspection: ☐ Continued operation possible, remove defects by _____ □ No deficiencies, continue to operate Signature of specialist Operating company signature If requested to take care of deficiencies Deficiency removed on:

(use a new form for reinspection!)

Operating company signature





Test step	OK	Defect missing	Retest	Remarks
Condition model plate	🗆		🗆	
Condition short operating manual	🗆	🗆	🗆	
Condition, load bearing capacity st	icker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆 💳	
Condition drive-on rails/flat carrier fixtu	Jre □	🗆		
Condition, function lifting arm	🗆	🗆	🗆 💳	
Condition, function lifting arm block				
Toothed washer		🗆		
Condition, function rubber plate	🗆	🗆	🗆 💳	
Condition, function drive-on ramps and	d rollers	🗆	🗆 💳	
Condition of polymer overlays	🗆			
Condition/ function pusher plates	П			
General lift condition	П	П	П	
Condition, function cable riser	П	П	п	
Leak-tightness integrated pan	□	Π		
Condition of paint / (galvanizing)	□			
Condition, function operating elements				
Load bearing constr. (deformations,				
Condition of the lifting post pine	CIUCKS)			
Condition of the lifting post pipe				
Fastening screw torque	□			
Condition of weld seams	∐			
Cover conditions	∐	📙		
Hydraulic system leak-tightness		💾		
Condition integrated pan	∐	💾		
Leak-tightness integrated pan	∐	📙	∐	
Condition of concrete floor	∐	📙	∐	
Hydraulic oil filling level				
Condition of hydraulic lines and screw fit	tings \square	🗆	🗆	
Condition electrical lines	🗆	🗆	🗆	
Functional test lift with vehicle	🗆	🗆	🗆	
Contidtion/funktion safety latch				
Condition, function lighting	🗆	🗆	🗆	
*) place a checkmark in the relevant, if a rete	est is required then	check it again!		
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	☐ Continued		ssible, remove	nspection required defects by
Signature of specialist	Operating comp	oany signature		
If requested to take care of deficien	cies			
Deficiency removed on:			Oper	ating company signature
(use a new form for reinspection!)			Open	and a company signatore



Regular safety inspection and maintenance Copy, complete and leave in the inspection book Serial number: _____ OK **Defect** Retest Remarks Test step missing Condition model plate...... 🗆 🗆 🗆 ____ Condition, load bearing capacity sticker..... Condition drive-on rails/flat carrier fixture....... Condition, function lifting arm...... Condition, function lifting arm block and Toothed washer..... Condition, function rubber plate...... General lift condition...... Condition, function cable riser...... Cover conditions...... Hydraulic system leak-tightness...... Condition integrated pan...... Condition of concrete floor...... Hydraulic oil filling level...... Condition of hydraulic lines and screw fittings...... Condition electrical lines...... Condition, function lighting *) place a checkmark in the relevant, if a retest is required then check it again! Safety inspection done on: Performed by company: Name, address of specialist: ☐ Continued operation questionable, reinspection required Result of inspection: ☐ Continued operation possible, remove defects by _____ □ No deficiencies, continue to operate Signature of specialist Operating company signature If requested to take care of deficiencies Deficiency removed on:

42

(use a new form for reinspection!)

Operating company signature





9.3 Exceptional safety inspection

Test step	OK	Defect missing	Retest	Remarks
Condition model plate		🗆		
Condition short operating manual				
Condition, load bearing capacity stic	:ker □	🗆	🗆	
Function button "lift / lower"	🗆	🗆	🗆	
Condition drive-on rails/flat carrier fixture	e 🗆	🗆	🗆	
Condition, function lifting arm	🗆	🗆	🗆	
Condition, function lifting arm block of	and			
Toothed washer	🗆	🗆	🗆	
Condition, function rubber plate	🗆	🗆	🗆	
Condition, function drive-on ramps and r	rollers □	🗆	🗆	
Condition of polymer overlays	🗆	🗆	🗆	
Condition/ function pusher plates	🗆	🗆	🗆	
General lift condition	🗆	🗆	🗆	
Condition, function cable riser	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of paint / (galvanizing)	🗆	🗆	🗆	
Condition, function operating elemer	nt 🗆	🗆	🗆	
Load bearing constr. (deformations, c	cracks) 🗆	🗆	🗆	
Condition of the lifting post pipe	🗆	🗆	🗆	
Fastening screw torque	🗆	🗆	🗆	
Condition of weld seams	🗆	🗆	🗆	
Cover conditions	🗆	🗆	🗆	
Hydraulic system leak-tightness	🗆	🗆	🗆	
Condition integrated pan	🗆	🗆	🗆	
Leak-tightness integrated pan	🗆	🗆	🗆	
Condition of concrete floor	🗆	🗆	🗆	
Hydraulic oil filling level	🗆	🗆	🗆	
Condition of hydraulic lines and screw fitti	ngs 🗆	🗆	🗆	
Condition electrical lines	🗆	🗆	🗆	
Functional test lift with vehicle	🗆	🗆	🗆	
Contidtion/funktion safety latch	🗆	🗆	🗆	
Condition, function lighting	🗆	🗆	🗆	
*) place a checkmark in the relevant, if a retes	t is required then	check it again!		
Safety inspection done on:				
Performed by company:				
Name, address of specialist:				
Result of inspection:	□ Continued	operation que	estionable, rei	inspection required
·		operation pos		·
	□ No deficie	ncies, continue	e to operate	
Signature of specialist	Operating comp	pany signature		
If requested to take care of deficienc	ies			
Deficiency removed on:				
(use a new form for reinspection!)			Oper	ating company signature







Spare parts list

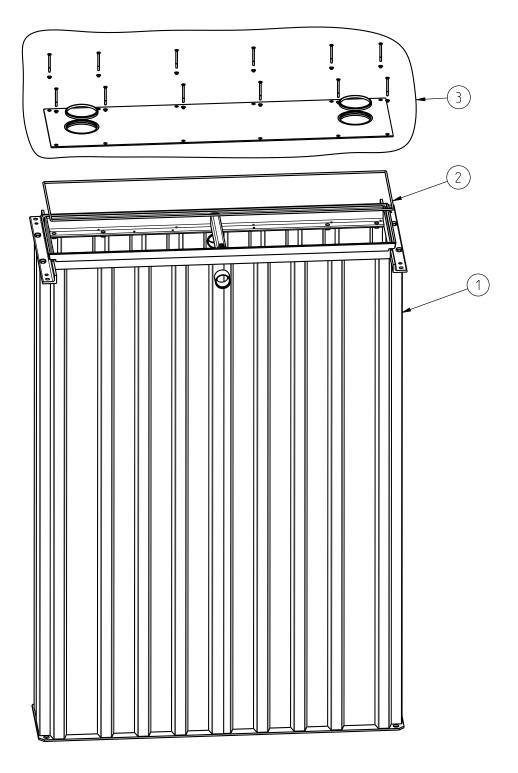
TOP LIFT TSK 8000

Serial No.:





Complete pan

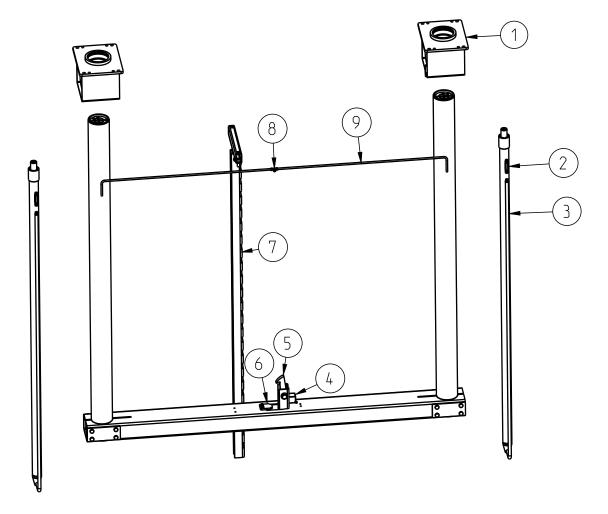


POS. DESIGNATION	2.35 TS (2.35 R)	2.35 TSK (2.35 B)
PAN, WELDED PART CUSTOM PROFILE SEA COVER + ACCESSORI	235TS85003 137785 235TS29000	235TSK85003 149806 235TSK49000





Complete lifting unit

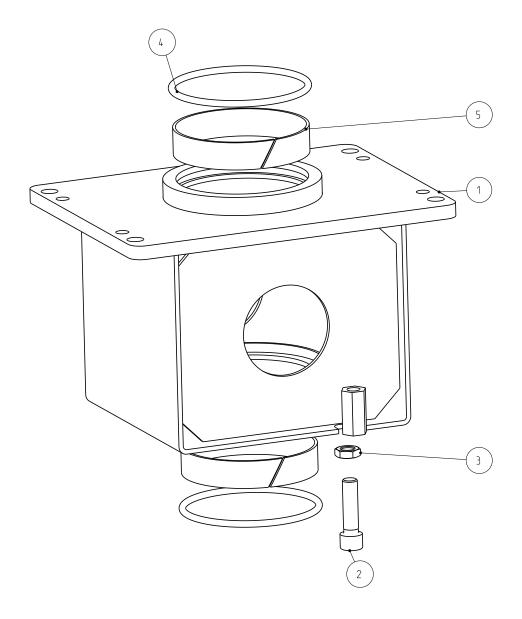


POS. DESIGNATION

1	GUIDE PIPE	235T\$86000
2	BURST PIPE PROTECTION	235TS22110
3	HYDRAULIC CYLINDER	235TS22100
4	SAFETY LATCH CYLINDER	235TS02010
5	SAFETY CATCH	250TTKA\$10009
6	SAFETY LATCH GUIDE	235TS30039
7	SAFETY LATCH BAR + HOLDER	235T\$10010
8	HYDRAULIC CONNECTOR	980020
9	HYDRAULIC PIPE	235TSK22028



Complete guide pipe

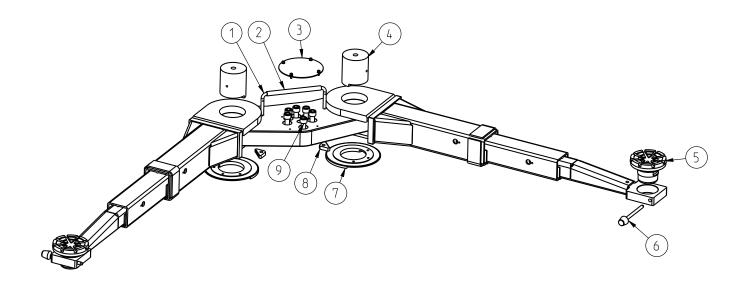


POS.	DESIGNATION	TS, TSK	TSK
1	GUIDE PIPE CYLINDER SCREW NUTS O-RING GUIDE RING	235TS26053	235TS26053
2		9912M16X60	9912M16X60
3		9439M16ZN	9439M16ZN
4		9ORAR00433	9ORAR00433
5		970183	970183





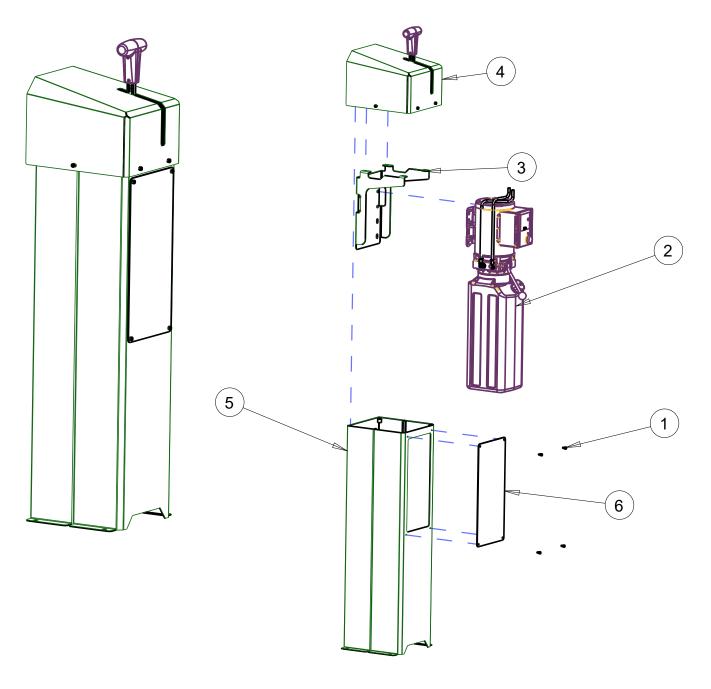
Lifting Arm



PO:	S. DESIGNATION	TS, TSK	TSK
1	LOCKING PIN	235TTKA48010	235TTKA48010
2	HOSE	235TSK08953	235TSK08953
3	COVER	235TSK08619	235TSK08619
4	BOLTS	235TTKA08033	235TTKA08033
5	TELESCOPE MOUNT	235TSK08980	235TSK08980
6	LOCKING PIN TELESCOPE MOUNT	250HDL48119	250HDL48119
7	LOCK WASHER	235TTKA08037	235TTKA08037
8	LOCKING SEGMENT	125SH08010	125SH08010
9	CYLINDER HEAD SCREW	9912-M16X80 10.9	9912-M16X80 10.9



Power Unit



1 M5X10 SOCKET BOLTS 9912-M5X10 2 SPX MOTOR W/ TUBES 235TSKUS01352 3 MOTOR HOLDER 066JLUS01310 4 CONTROL ASSEMBLY 066JLUS01351 5 MAIN COVER WELD 066JLUS01303	POS.	. DESIGNATION	PART NUMBER	
6 FRONT COVER 066JLUS01309	3	SPX MOTOR W/ TUBES MOTOR HOLDER CONTROL ASSEMBLY	235TSKUS01352 066JLUS01310 066JLUS01351	





Dealer address/phone:

