UPLIFTING COMPANY

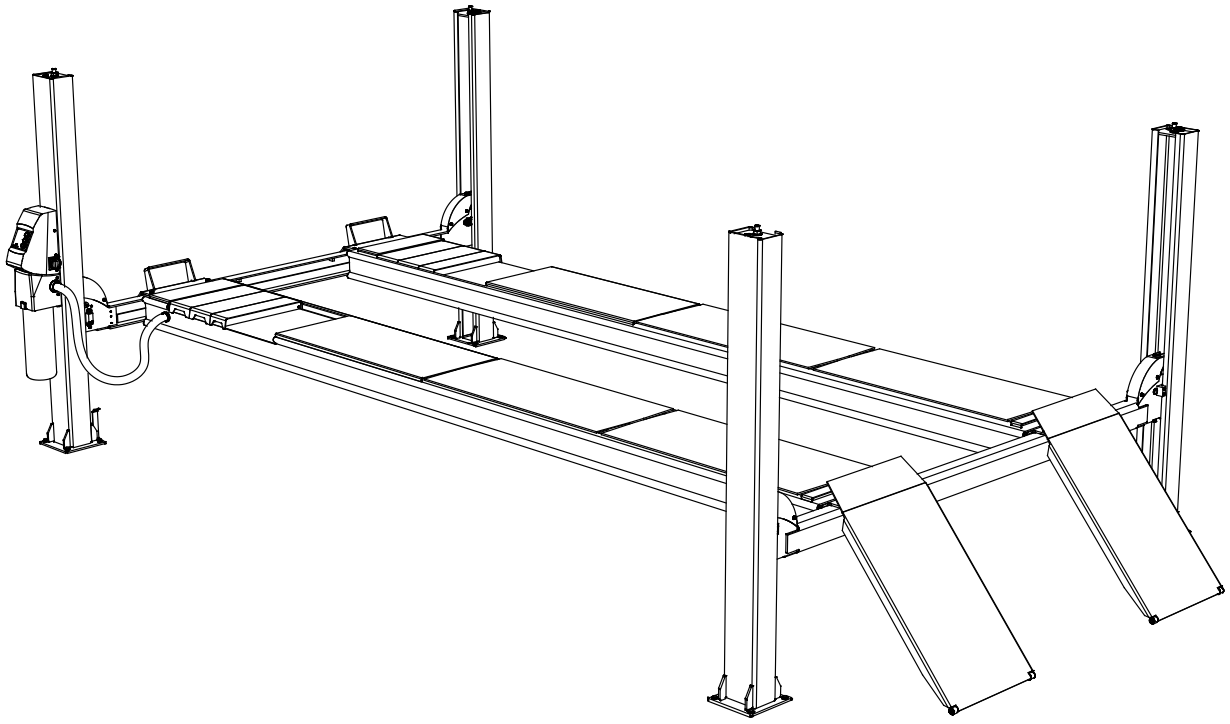
AUTOP STENHOJ

Major 2.0

4000-5000

Operation and maintenance instructions

(TRANSLATED VERSION)



ALWAYS KEEP operating instructions ready to hand on the unit

Read the operating instructions before working with the unit

Manual no.: T61788-GB
Date: 26.03.2024

Before taking into operation check system components, control, emergency stop and safety equipment for condition, damage and correct function!

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Table of contents

1 General

1.1 Information about the operating manual

This operating manual describes the installation, operation and maintenance of the machine.
Strict compliance with all the specified notes on safety and instructions is essential for safe working and proper handling of the equipment.

Apart from that, all accident prevention instructions valid at the place of use and the general safety regulations must also be adhered to.

This operating manual is part of the product and should always be kept in the immediate vicinity of the machine, accessible for the personnel entrusted with installation, operation, maintenance and cleaning.

For better representation of the explanations, the graphical artwork in this manual is not strictly according to scale, but may slightly vary from the actual design of the machine.

The operating manuals of the supporting components apply alongside this operating manual.
Please observe the notes contained therein - especially the safety notes.

1.2 Explanation of symbols

Important safety and machine-technical notes in this operating manual are marked with symbols. The notes must be adhered to in order to avoid accidents, personal injuries and damage to property.

 **WARNING!**
This symbolizes dangers that can lead to adverse effects on health, injuries, permanent physical damage or to death.
Adhere at all costs to the notes specified regarding work safety, and be particularly careful in these cases.

 **WARNING! Danger of electric current!**
This symbol draws attention to dangerous situations involving electrical currents. There is a danger of serious injury or death if the safety notes are not complied with. The work may only be carried out by qualified electricians.

 **ATTENTION!**
This symbolizes notes, which if not complied with, can lead to damages, malfunctions and/or breakdown of the machine.

 *NOTE!*
This symbol highlights tips and information that are to be observed for efficient and disruption-free operation of the machine.

1.3 Warranty and liability

All information and notes in this operation manual are provided under due consideration of valid regulations, the latest technical status of development as well as our years of expertise and experience.
The translation of this operation manual has also been made to the best of our knowledge.
We do not accept any liability for errors in translation. The version marked of the operation manual marked with “Original version” on the front page of the operation manual supplied with the lift shall be binding.
For optional design versions, the use of additional ordering options or the implementation of the latest technical modifications the actual scope of delivery may differ from the descriptions and illustrations in this manual. If you have any questions please contact the manufacturer.


NOTE!
This operation manual must be thoroughly read before starting any work with the equipment, especially before commissioning ! The manufacturer assumes no liability for damages or disruptions that occur as a result of non-compliance with the operation manual.

This operation manual must be kept at the lift and accessible for all persons working on or with the lift. Handing over the manual to third party is not permitted and is subject for compensation. Further rights remain reserved.

We reserve the right to technical changes to the product within the framework of improving the usability and further development.

This lift is guaranteed, covering faults due to manufacturing or material defects, provided that the installation, operation and maintenance instructions are observed. The warranty implies that during the warranty period the manufacturer is committed either to repair or to replace – after own decision - defective spare parts fitted in the lift. No other warranty claim can be put in under warranty.

1.4 Spare parts

IMPORTANT: Spare parts used in the lifts are quality tested and comply with the criteria laid down in DS/EN 1493:2010. Please note that the use of safety spare parts or other essential components which do not fulfill these criteria may result in the type approval becoming void and the lift will thereby no longer keep the safety regulations defined by the manufacturer together with the relevant authorities.

The manufacturer’s product/deficiency liability and warranty cannot be claimed if concrete damages or failures are a result of the use of spare parts not originating from the factory.

1.5 Copyright protection

This operating manual is to be treated as confidential. It is solely intended for persons having to work on or with the equipment. Passing this operating manual on to third parties without a written confirmation is not permitted. If this should be required, please contact the manufacturer.

NOTE!
Contents, texts, drawings, pictures and other representations are protected by copyright law and are subject to further commercial protection rights. Any misuse is punishable.

Reproduction of any kind - even in form of excerpts - as well as the utilization and/or disclosure of its content without the written consent of the manufacturer is not permitted.
Violations oblige to compensation. Further rights remain reserved.

1.6 Waste disposal

If no agreement concerning take-back or waste disposal has been made, disassembled components must be passed on for recycling after correct dismantling:
- Metal material residues must be scrapped
- Plastic elements must be forwarded for recycling of plastics
- Other components must be sorted by material properties

ATTENTION!
Electric scrap, electronic components, lubricants and other auxiliary materials must be treated as hazardous waste and must only be disposed of by specially approved waste disposal companies!

Consumables like greases, oils, conserving and cleansing agents must be removed from the device in a type specific and environmental manner. Use suitable and approved storage containers for the repective consumables. Mark these containers according to their content, filling level and data and store them until final waste disposal in such a way, that any accidental use is ruled out.

2 Safety

This section offers an overview of all important safety aspects for an optimal protection of personnel against danger and ensures safe and disruption-free operation of the machine.
In addition to this, concrete notes on safety to avert danger are provided and marked with symbols in the individual chapters. Furthermore, any pictograms, signs and labels on the machine are to be observed and kept legible at all times.

2.1 General

At the time of development and manufacture the equipment complies with the valid and established technical rules and regulations and is safe to operate. However, danger may arise from this machine if it is used unprofessionally by untrained personnel, or if it is used improperly or not for the purpose it is intended for. Each person entrusted with work on or with the machine must have read and understood the operating manual before starting work.
The customer is advised to demand a written confirmation that all relevant persons have read the operating manual.
Changes of any kind as well as attachments or conversions to the machine are prohibited.

Safety, warning and operation related decals on the machine must always be kept in legible condition. Damaged decals or stickers must be immediately replaced.
Specified settings and adjustment ranges must be strictly complied with.

On the following page you can find an example of the EC Certificate of Conformity.
The original certificate is part of the technical documentation supplied with the lift.

UPLIFTING COMPANY
AUTOP STENHOJ

Declaration of Conformity

in accordance with the Machine Directive 2006/42/EC, Annex II A

Major

Manufacturer: AUTOPSTENHOJ GmbH
Sandkampstraße 90
D-48432 Rheine
Tel. (DE) +49 5971 / 860202
Tel. (DK) +45 76 82 13 30

We hereby declare that the below mentioned machine, by its design and construction and equivalent with the version put on the market by us, complies with the essential fundamental health and safety requirements. In case of any modification in the machine unapproved by us this certificate becomes void.

Type: 4-post surface-mounted lift

Name plate:
(Duplicate)

Relevant EC-Directives:
- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- Directive 2011/65/EU

Harmonized standards applied:
- EN 1493:2010
- EN ISO 12100: 2013
- EN 60204-1:2019
- EN ISO 138491: 2016

Responsible for documentation:
CEO for AUTOPSTENHOJ GmbH, Sandkampstraße 90, D-48432 Rheine

Place, date: Barrit,

Signature: i.V.

Signer information: Wolfgang Naber, Engineering Manager

2.2 Customer's responsibility

This operating manual should always be kept in the immediate vicinity of the machine, accessible for the personnel entrusted with installation, operation, maintenance and cleaning.
The machine must only be operated in technically perfect and safe condition.
Always ensure free access to all safety features and check these at regular intervals.

Details concerning industrial safety refer to directives of the European Union valid at the time the machine was manufactured. The customer is obliged to determine compliance of work safety measures specified with the current status of legal statutes and to observe any new regulations over the entire period in which the machine is used. Outside of the European Union, the laws on industrial safety and regional directives and regulations valid at the place of use of the machine are to be complied with.
The generally valid notes on industrial safety and accident prevention instructions as well as the valid environmental protection regulations applicable at the place of use are to be observed and adhered to alongside the notes on industrial safety in this operating manual.

The customer and personnel authorized by him/her are responsible for the disruption-free operation of the machine as well as for unambiguous determination of responsibilities during installation, operation, maintenance and cleaning of the machine.

Details of the operating manual are complete and must be adhered to without limitation!

Furthermore, the customer must also ensure that:
- Other dangers that result from special working conditions at the place of use are determined in a risk assessment.
- All other instructions and notes on safety that result from the risk assessment of workplaces on the machine are summarized in operating instructions.

2.3 Intended use

Operational safety is only guaranteed when adhering to the intended use of the device.

This lifting device is specially developped to lift motor cars and we strongly recommend not to lift any other equipment with this automotive lift.

The lifting platform has been designed and built for the use inside workshops.
Use of the lift for undersealing of cars and car wash is not allowed.
Riding, climbing and/or standing on the lifting platform as well as using it for lifting or lowering loads other than the ones specified above or installing and operating it outside in an unprotected environment is prohibited.

! ATTENTION!
Any other use of the device that differs from this or exceeds this is prohibited and is not considered unintended use!

Claims of any kind against the manufacturer and/or his authorized representatives resulting from damage caused by unintended use of the device are excluded. The customer is solely liable for any damage occurring during unintended use.
Intended use also includes correct adherence to assembly, operating, maintenance and cleaning instructions.

2.4 Work safety

Compliance with the notes on safety can help to avoid personal injury and material damage when working on the machine. Failure to comply with these notes will cause a considerably risk of injury for persons and danger of damage or destruction of the machine.
Non-compliance with the safety regulations causes the exclusion of any liability or compensation claims against the manufacturer or his representative.

2.5 Personal safety equipment

In principle, the following is to be worn when working on or with the machine:

Protective working clothes
Tight fitting work clothing (minimal tear strength, no wide sleeves, no rings or other jewelers etc.)
Safety gloves

Safety boots
for protection against heavy falling down objects and slipping on non-skid proof ground

2.6 Dangers which may arise from the machine

The machine was subjected to a risk analysis. The resultant construction and design of the machine corresponds to the current status of technology.
However, certain remaining risks cannot be avoided!

This device works with electrical voltage.

WARNING! Danger of electric current!
Electrical power can cause severe injuries. There is a danger to life caused by electric current if the insulation or individual components are damaged.

Switch off the main switch and secure against switching on again before maintenance, cleaning or repair work.
Switch off the power supply before starting work in the electrical system and make sure that the system is dead.
Do not remove any safety features or do not modify such installations in a way that would adversely affect their function.

The equipment is supported by hydraulic components.

WARNING! Danger of injury!
Hydraulic power can cause severe injuries. In case of damage to individual components fluid may escape under high pressure and cause injury and material damage!

Always relieve all pressures before starting work in the hydraulic system.
Do not remove any safety features or make them inoperative as a result of modifications.
Do not change any pressure settings beyond the values specified in this operating manual.

2.7 Operating personnel

The device must only be operated and serviced by authorized, trained and instructed expert persons who:
- are at least 18 years of age and
- have been thoroughly instructed in operation and
- can provide evidence of their suitability to operate lifting platforms and
- have been entrusted in writing by the operating company to operate the lifting platform

An instructed person is someone who has been trained and, if necessary, instructed practically in the tasks entrusted to him/her and the possible dangers resulting from improper actions; and who has been instructed both about the necessary protective features and about protective measures.

Qualified personnel include those who can assess the work entrusted to them and recognize potential dangers based on their specialist training, knowledge and experience as well as their knowledge of appropriate conditions.

If personnel do not have the necessary knowledge, then they are to be trained accordingly.
The equipment must only be operated and serviced by persons who are able to perform their work in a reliable manner. For this purpose, any mode of operation that adversely affects the safety of persons, the environment or the machine is to be avoided. Persons who are under the influence of drugs, alcohol or medication that affects their responsiveness may under no circumstances carry out work on or with the machine.

The employment of personnel must be based on the applicable regulations concerning age and qualification.

The responsibilities concerning operation and maintenance must be clearly specified in order to avoid uncertainties in competence.

The operator must ensure that unauthorized persons keep a sufficient clearance to the equipment.

The operator is obliged to report immediately any changes to the equipment which adversely affect the safety to the operator.

2.8 Behavior in case of danger or accidents

2.8.1 Preventive measures

- Always be prepared for accidents or fire !
- Keep first aid equipment (first aid kit, blankets, etc.) and firefighting equipment close to hand.
- Make personnel familiar with the location and use of safety, accident reporting, first aid and rescue equipment and have this training confirmed.
- Clear access routes for rescue vehicles.

2.8.2 If the worst comes to the worst: Do the right things!

- Shut down the machine immediately.
- Inform the responsible person at the place of use.
- Alarm a physician and the fire brigade.
- Rescue persons from the danger zone, start first aid measures.
- Keep access routes for rescue vehicles clear.

3. Technical data

3.1 Type designation

Example: Major 2.0 4030 -51 S 400/3/50

- 400/3/50 — Mains voltage
- S — Platforms: S = Flush platforms; WL = Recesses front, slip plates rear, center plates
- -51 — Platform length: -42 = 4180 mm; -47 = 4680 mm; -51 = 5100 mm; -55 = 5500 mm
- 30 — Cross beam width: 26 = 2600 mm; 30 = 3000 mm; 31 = 3100 mm
- 40 — Capacity: 40 = 4000 kg; 55 = 5500 kg
- Major 2.0 — Series designation: Major 2.0

3.2 Name plate

The name plate is located on the control post and contains following information:

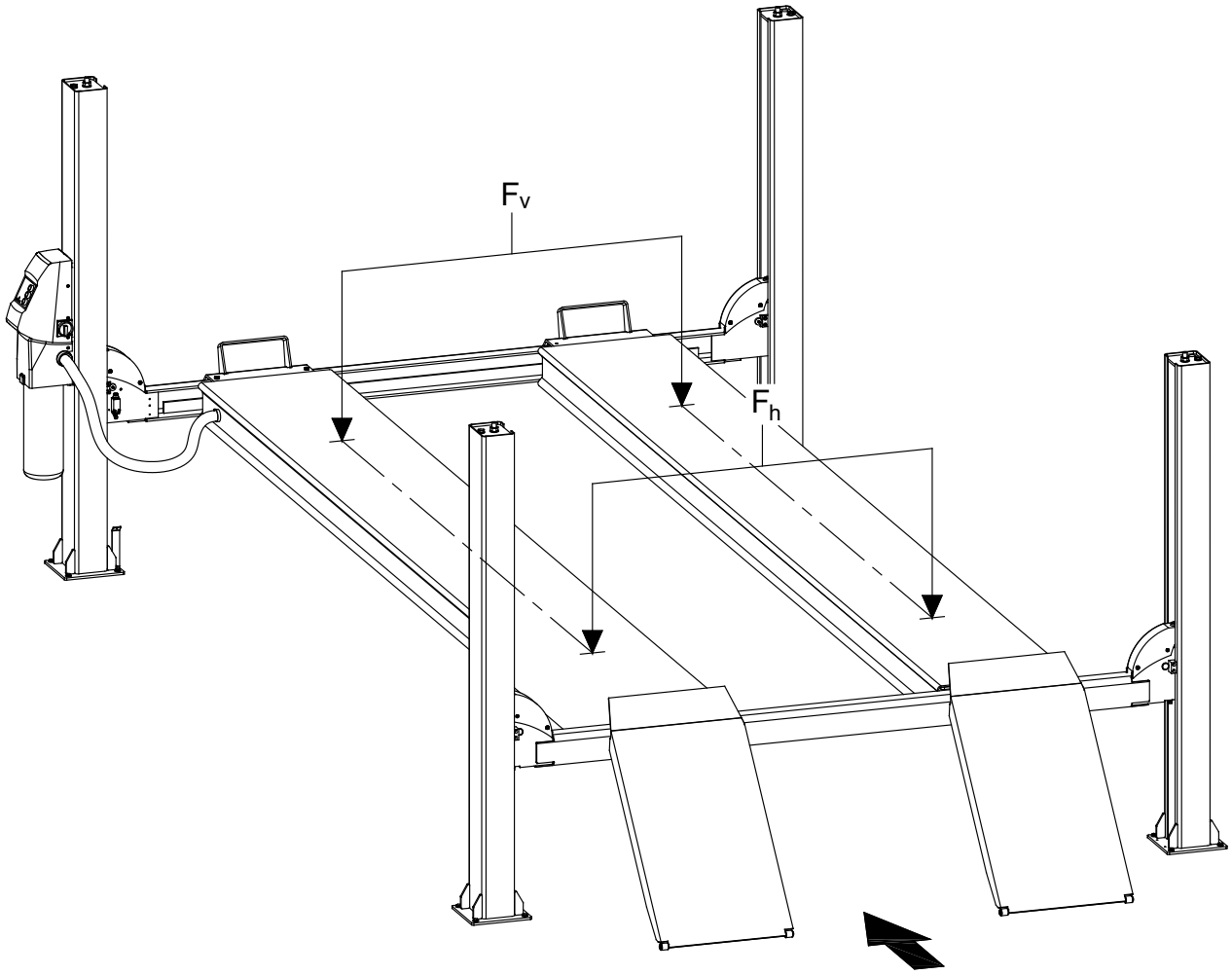
- Manufacturer
- Serial no.
- Model no.
- Year of manufacturing
- Max. capacity

3.3 Load distribution

Front load ratio (Fv) : rear load ratio (Fh)
Fv : Fh = 2 : 1 and 1 : 2

This assumption is based on a track width at front (v) and rear (h) of 300 mm each from the middle of the wheel to the end of the platform.

= Recommended drive-on direction



3.4 Technical specifications

	Major 2.0 4000:	Major 2.0 5500:
Max. lifting capacity	4.000 kg	5.500 kg
Lifting time	24 sec.	32 sec.
Lowering time	26 sec.	26 sec.
Max. lifting height (mm)	1840 (S) 1860 (WL)	1870 (S) 1890 (WL)
Operation temperature range	÷10°...60°	÷10°...60°
Sound level (measured at control unit at 1,6 m height)	74dB (A)	74dB (A)
Mains voltage	230-400/3/50-60 +N +PE	230-400/3/50-60 +N +PE
Fuses (400V)	16A Class C (slow)	16A Class C (slow)
Fuses (230V)	25A Class C (slow)	25A Class C (slow)
Motor	3 kW	3 kW
Working pressure max.	210 bar	300 bar
Setting of pressure control valve (at 50 Hz)	230 bar	330 bar
Output (at 50 Hz)	10 L/min.	7,4 L/min.
Oil volume	6,5L	6,5L
Air pressure	7-10 bar	7-10 bar

4. Structure and function

4.1 Description

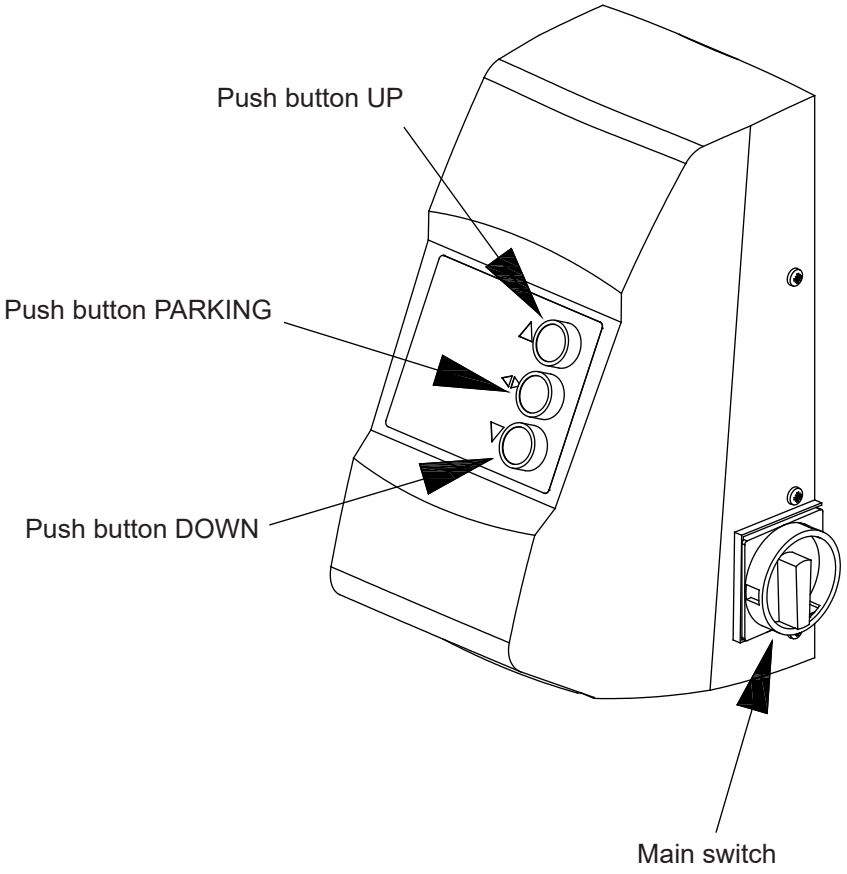
The lift is an electro-hydraulic 4 post surface-mounted lift.

The lift consists of 2 pairs of posts connected with cross beams. The 2 platforms rest on the cross beams.

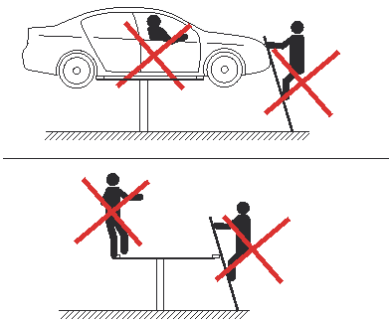
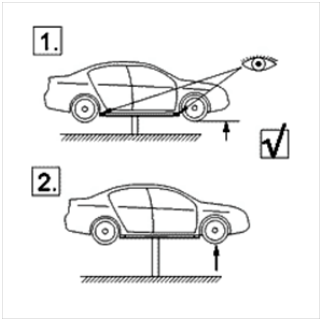
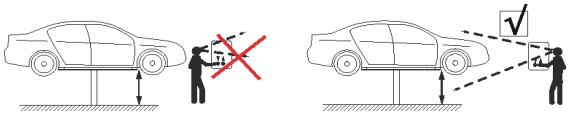
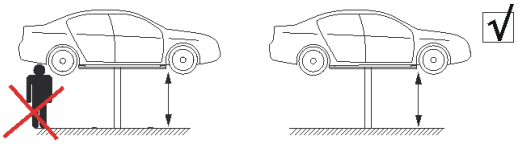
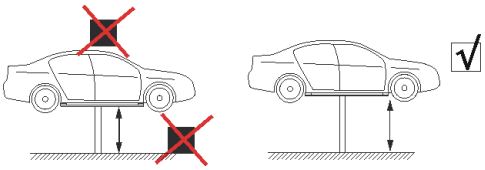
Platforms and cross beams are raised and lowered by means of cables and a hydraulic cylinder placed under one platform. The cables are attached to a yoke on the piston rod and run via cable pulleys to the four post tops with an incorporated adjustment device.

The hydraulic pump unit and control box are placed on the front left post.

The lift is operated by means of pushbuttons showing the UP, DOWN and PARKING functions with indicators. The pushbuttons are placed on the control box - see illustration below



4.2 Symbols of short operating instructions

	The lifting platform must only be operated by authorized persons. Strict compliance with the comprehensive operating manual is mandatory, especially in case of faults.
	Climbing up or standing on lifted load or load bearing device is strictly prohibited.
	After slight initial lifting the operator must check that the load is correctly positioned on the load bearing device. Only then the load may be lifted further.
	Always keep an eye on load bearing device and load when moving the lifting platform.
	No persons must be in the movement range of load bearing device or load while the lifting platform is in motion.
	The movement range of load and load bearing device must be kept clear of any obstructions.

5 Transport, packing and storage

5.1 Safety notes

WARNING! Danger of injury!
There is a danger of injury from falling parts when lifting, swinging and lowering.
The machine can be damaged or destroyed by improper transporting.

For this reason, fundamentally observe the following safety notes:

- Only use permissible lifting tackle and sling gear with sufficient bearing capacity.
- Only secure the machine on the fastening points provided; do not fasten onto projecting machine parts or eyelets of attached components. Make sure the sling gear is secure !
- Ropes and chords must be equipped with safety hooks. Do not use any torn or worn ropes. Do not lay ropes and chords on sharp edges and corners, do not knot and do not twist. Pay attention to the centre of gravity of the machine when fastening tackle.
- Never lift, swing or lower loads over people.
- Always move the machine with the greatest of care and attention.

WARNING! Danger of life!
Suspended loads can fall down and lead to severe injuries. Do not stand or pass under suspended loads when transporting with lifting tackle!

5.2 Transport inspection

Check delivery immediately on receipt for completeness and transport damage.
Do not accept delivery or only accept under proviso if there is externally recognizable transport damage. Note the scope of damage on the transport documents/delivery note of the carrier. Start complaints procedure. Complain about hidden deficiencies as soon as they are discovered as compensation claims can only be asserted within the applicable complaints period.

5.3 Packaging

If there is no returns agreement for the packaging, separate materials according to type and size and direct to further use or re-cycling.

ATTENTION!
Always dispose of packaging materials in an environmentally friendly manner and in accordance with the applicable, local disposal guidelines. If necessary, commission a re-cycling company.

NOTE! Good for environmental protection!
Packaging materials are valuable raw materials and can continue to be used in many cases or sensibly reconditioned and re-cycled.

5.4 Storage

Keep packed goods packed up until installation and store such items as specified on the externally attached installation and storage information.
Store packing units only under the following conditions:

- Do not keep in the open-air.
- Store in a dry and dust-free environment.
- Do not subject to aggressive media.
- Protect against direct sunlight.
- Avoid mechanical vibrations.
- Storage temperature: 15 to 25 °C
- Relative humidity: max. 60 %
- For longer periods of storage (> 3 months), check the general condition of all parts and the packaging at regular intervals. If necessary touch up or renew the conservation.

6 Installation and start-up

6.1 Installation

In order to come up to your expectations now and in the future the lift must be installed in strict accordance with the installation instructions and maintained according to our recommendations.

As agreed, the equipment will be installed by employees of the manufacturer or by authorized partner companies.
Unauthorized assembly or installation work is not permitted.

WARNING! Danger of injury!
Improper installation and assembly can lead to severe personal injury and/or material damage. Installation and assembly work may only be carried out by trained technical staff while observing the safety instructions.

Contact your distributor for the name and address of the nearest authorized service shop.

6.2 Start-up

As agreed, initial start-up of the equipment will be carried out by employees of the manufacturer or by authorized partner companies.
Unauthorized initial start-up is not permitted.
The machine is handed over to the customer following set-up, initial start-up and implementation of test runs by the manufacturer. After this the machine can be operated in strict compliance with the information in the operating instructions.

WARNING! Danger of injury!
Start-up may only be carried out by qualified technical personnel while observing the safety instructions.

7 Operation

7.1 Safety

Please read the paragraphs “Work safety”, “Personal safety equipment” and “Operating personnel”.

WARNING! Danger of injury!
During lifting and lowering movements the lifting platform generates dangers which could lead to severe injury, such as crushing or shearing off of limbs or by heavy objects slipping off or falling down.

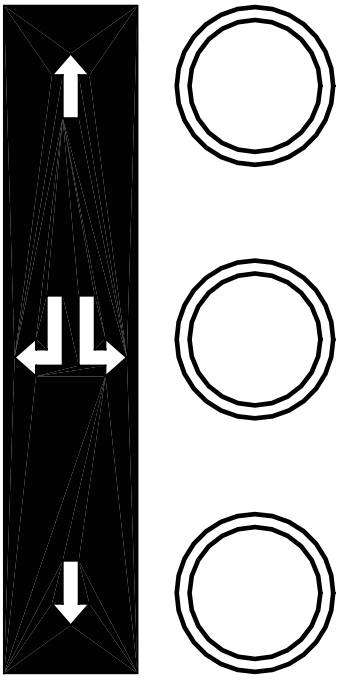
In order to avoid accidents the following should be noted when operating lifting platforms:

- During the up or down movement of the lifting platform the danger zone and the immediate vicinity of the lifting platform should be free of persons. The distance between persons and the lifting platform should be at least 2 m.
- Accessing the load bearing devices, riding on, climbing onto and standing on the lifted platform is strictly prohibited.
- Do not load the lifting platform beyond the max. permitted load bearing capacity.
- Observe the permitted load distribution (see section “Technical Data”).
- Load the lifting platform evenly. Possible shifting of the vehicle’s centre of gravity caused by the disassembly of vehicle components must be taken into account.
- Do not initiate any vibration of the lifting platform while performing assembly work on the vehicle.
- Always keep the main switch locked to avoid unauthorized operation and unintended switching on.

7.2 Operation

The lift should only be operated by trained personnel !

Approach
Before driving the vehicle onto the lift, check that platforms are parallel (the same indicator position at both ends and the two locking pins for movable platform must be fitted).



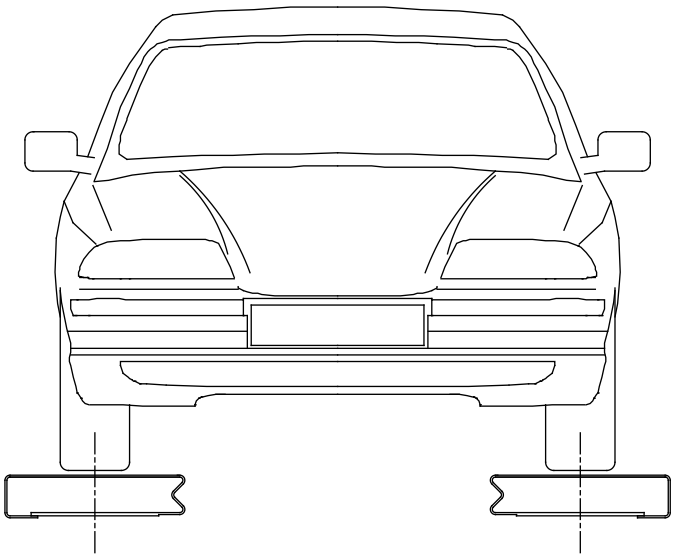
Raising
Push UP-button ↑ (motor starts): raise lift to a bit above required working height.

Parking
Let go of UP-button and push PARK-button ←→ until platforms rest on all 4 ratchets.

Lowering
Check that no person or obstruction is under platforms. Push UP-button shortly (to release the 4 ratchets) and then press DOWN-button ↓ . The lift then lowers until it reaches the automatic anti-toe trap device and the lowering stops. Let go of DOWN-button and re-activate it after approx. 1 sec., the lowering continues, until the lift reaches bottom position or until pushbutton is not pressed any more.

NOTE: Always park lift (press ←→ button) before starting to work under it.

Adjust the platforms to the wheel track of the vehicle. Place the vehicle centrally on the platforms compared to the wheel track.



It is not allowed to operate the main lift while the vehicle is raised on one or two scissor jacks and it is not fastened.

8 Maintenance

8.1 Safety

WARNING! Danger of injury!
Improperly performed maintenance work can lead to severe physical injury or damage to property. Any work related with care and maintenance must only be carried out by qualified and authorized expert personnel.

Strictly observe when performing maintenance work:
- Switch off the system and secure against switching on again.
- Perform work only with the device stopped.
- Secure movable parts against unintended movement.
- See paragraph “Personal safety equipment”

WARNING! Poisoning hazard!
Lubricants are harmful to health! Skin damage (rashes, inflammation, allergies, etc.) can occur on contact of skin with oils and lubricating greases.

Therefore:
- Please observe instructions and safety data sheets from the manufacturer !
- Lubricants are not to be consumed or swallowed. In case of unintended consumption seek medical advice immediately (bring along the packing).
- When handling lubricants, use suitable skin protective and skin-care products or oil-resistance gloves.
- Rinse any spatters in the eye immediately with a lot of water!
- If the skin is dirtied by any lubricants, wash off immediately with soap and water.

WARNING! Danger of injury!
Lubricants which fall on the ground are a source of danger as they present a risk of slipping. Lubricants are to be adsorbed and removed by spreading sawdust or oil adsorption and afterwards scrapped according to local environment regulation.

8.2 Maintenance

Oil level check: Oil level check Check regularly the oil level in the reservoir under the pump. Fill up as necessary, correct oil level is in the middle of the oil glass alternatively of dip stick.

Oil change: First oil change after one year of operation, thereafter every 6 years.

Oil contents: See chapter 3.4 "Technical specifications".

Oil type: See chapter 13 "Oil specifications".

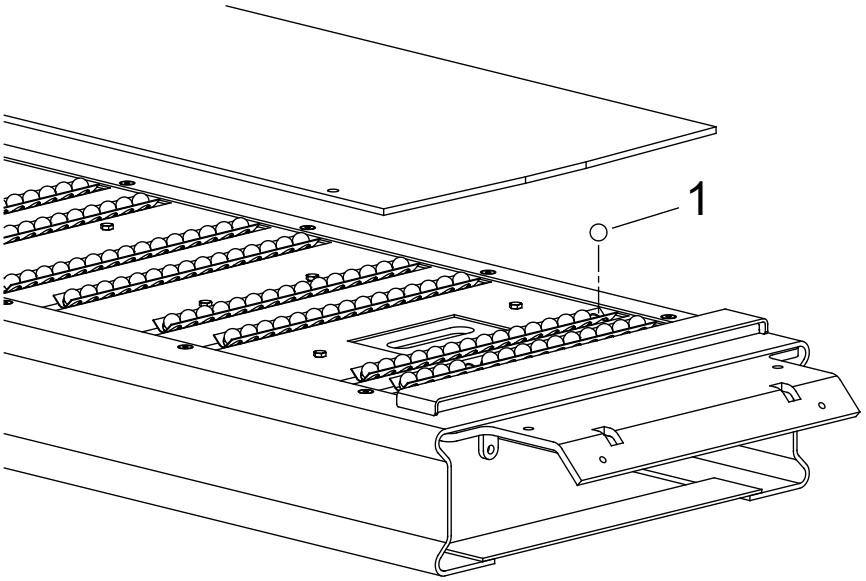
Lubrication and maintenance:

Check and lubricate lift at least once a month as follows:

Where	What	When
Axles for cable pulleys (with grease nipples)	Grease	Once a month
Cables and rollers *)	Lubricating oil	Once a month

*) Check cables for wear

Maintenance of the sliding plate device (wheel alignment lifts):
Grease the sliding shoes, the guides and the nylon bushes in the sliding plate device once a year.



The sliding plates slide on Ø20 balls of plastic (item 1) placed in rows of guiding rails under the sliding plates.
These ball guides are very easily moving and simultaneously robust.
They normally require no maintenance but can if necessary be blown clean with compressed air.
If damage to some of the balls occurs over time, they can easily be replaced with new ones, simply by removing the screws under the platforms and lifting the sliding plates.

8.3 Cables

8.3.1 Adjustment of cables

Steel cables will stretch depending on the operational load and therefore require adjustment as follows:

a. Load the lift with approximately 2500 kg.
b. Switch off air supply. Adjust wires to make the 4 ratchets engage simultaneously when UP-button is activated.
c. Raise lift to top position. Check distance from underside of ratchet to underside of hole in ratchet rail; this distance must be min. 20 mm.
d. Lower the lift to bottom position and check that the platforms rest against their stops. If not, adjustment of cables is necessary.

8.3.2 Control of cables

Check cables for wear at the monthly lubrication intervals and replace as necessary (see below paragraph concerning scrapping).

NOTE: The monthly lubrication with thin penetrating oil reduces cable wear and prolongs cable life appreciably.

GENERAL: At least once a year the cables must be checked-up by an authorized engineer.
Contact your distributor for the name and address of the nearest authorized service shop.

If documentation on cables and/or cable construction is required, please state the stamp on the cable lock. On this request, copy of original certificate will be forwarded.

8.3.3 Scrapping of cables

The steel cable must be discarded when:

- the cable is worn-down on more than10% wear of its nominal diameter
- an individual wire is worn more than 1/3 of the wire diameter
- the number of wire ruptures on a twisting length exceeds 10 on any spot of the cable
- the cable has a kink (pulled-out loop)
- the cable is flattened or cornered, even if there is no wire ruptures
- the wires in a strand are burst
- the cable is damaged by corrosion, even if there is no wire ruptures
- the cable has been damaged through chemical influence.

8.4 Cleaning:

Cleaning of lifts to prevent corrosion damages.

Corrosive fluids as brake fluid, oil, fuel or other solvents must be wiped off immediately, otherwise damage will occur to the coating.
Special attention must be paid to the corrosive effect of salt in fall and winter periods.
The cleansing agents must not have any abrasive effect, nor contain solvents.

The lift must be cleaned at least once a week.

The lift must be cleaned with a non-corrosive cleansing agent.
Clean and wipe the lift according to the following scheme:

When:	Where:	How:	Remarks:
Every week	Platforms	Clean and wipe	Wearing surfaces must be slightly oiled
	Drive-on ramps		
	Post / base plate		
	Cross beams		
	Ball guides for sliding plates	Clean	Blow clean with compressed air

The manufacturer does not accept any claim concerning the paint peeling off or corrosion damages caused by missing or insufficient cleaning or maintenance.

Repair of damages:
Repair of damages on the coating must be carried out immediately in order to minimize the extent of the repair.

The damages will typically be:
Damages which do not affect the metal surface but affects the coating itself
Damages going down into the metal surface.

Repairs:
Contact the manufacturer for guidance.
Please state RAL number of paint.

8.5 Service

High pressure cylinder replacement - main lift
To be carried out by trained personnel. Please contact your dealer.

a. Raise the lift to the appropriate working height and allow the safety ratchets to engage.
b. Remove cables from yoke.
c. Remove lock nut and screw off yoke. If the piston rod is seized in the yoke, protect the rod surface with either rubber or fibre before using a pipe wrench.
d. Remove pipe connection to the cylinder, push the piston rod in until the thread reaches the stuffing box and remove the clip holding the cylinder to the platform.
e. Fit the new cylinder in the reverse order as above.
f. Raise the lift to the top and lower again to the floor to vent the new cylinder.
g. Test the lift under load and check pipe connections and stuffing box for possible oil leaks.

Replacement of packings in high pressure cylinder
To be carried out by trained personnel. Please contact your dealer.

Spare parts kit for the cylinder contains above mentioned seals:

For Major 2.0 4000-5000:
792425 (for AC cylinder with external stuffing box)
or
792408 (incl. stuffing box, for black or white Büter cylinder
792426 (Piston seals kit)

8.6 Emergency lowering

(in case of power cut-out) (not single phase lifts)

a. Turn mains on 0-position.
b. By means of a jack raise one corner of the cross beam 3-4 mm. Pull out the ratchet and block it with a piece of band. Repeat this in the 3 other corners.
c. Remove cover of pump unit.
d. Open carefully emergency lowering valve and lower lift carefully to bottom position. Close emergency lowering valve again and re-fit cover.

9 Inspections

Before commissioning the lift must be inspected according to the local national health and safety regulations.

Operational safety and reliability can only be guaranteed when the condition and function of the lift are inspected at regular intervals – still according to the local national safety regulations.

10. Trouble shooting

10.1 Action in case of breakdown

In case of breakdown check the following points:

1. Electricity cut
2. Main fuses
3. Electric motor
4. Cable fracture
5. Obstruction under lift

If these points are found in order but the lift is still not working, the safety system has probably been activated, and the lift must not be started or repaired by unqualified staff. Contact the nearest authorized service shop.

Do not start repairing the lift until the main switch has been cut off.

Do not disconnect the safety system and do not operate the lift after breakdown and prior to repair.

10.2 Trouble shooting chart

Symptom:	Cause:	Remedy:
A. Platforms no longer horizontal when resting on the ratchets	Incorrect adjustment	Adjust platforms and cross beams until they are horizontal. Slacken nut under top plate for rail. Raise or lower ratchet rails as required by means of adjustment bolts in top of posts. After adjustment tighten lock nut under top plate for rail. Ratchet rails should preferably be adjusted to lowest possible position.
B. Platforms no longer horizontal when hanging in cables under load (approx. 1000 kg, 2200 lbs)	One or several cables stretched	Adjust cables (see chapter 8.3)
C. Activation of control to lower lift from topmost position does not release ratchets	One or more of the cables have stretched	Adjust cables (see chapter 8.3).
D. Ratchets are not released regardless of parking height	Air source failure	Cure fault
	Incorrect air pressure	Cure fault (min. 7 bar - max. 10 bar)
	Platforms are not lifted free from ratchet rails	Raise lift a little and lower.
	One ratchet binding	Let an assistant operate UP-button so that lift ascends in small jerks. Meanwhile pull ratchet free manually. Use pliers or grips.
	Defective solenoid valve	Replace solenoid valve
E. Ratchets fail to activate	Air system blocked	Strip and clean air system
F. Oil leakage	High pressure hose defective	Replace hose
	Leaks at fittings	Tighten
	Cylinder seals defective	Replace or renovate cylinder

Trouble shooting chart - continued

Symptom:	Cause:	Remedy:
G. Unusually high noise level	Pump worn	Replace pump
	Lift overloaded	Max. load - see decals
	Seal in high pressure cylinder defective	Replace or renovate cylinder
	Incorrect post position	Re-position posts according to installation instructions
	Oil pressure release valve out of adjustment	Adjust: 4T = 230 bar 5,5T = 330 bar
H. Lift cannot ascend	Overloading	Max. load - see decals
	Insufficient pressure from pump unit	See step M
I. Lift cannot descend	Pump does not start	See step L
	One or more of the ratchets still activated	Lift free from ratchet rails before lowering
	Air system blocked	See step E
J. Lift cannot reach topmost position	Insufficient oil in pump unit	Fill up oil until middle of oil glass/dip stick with platforms at floor level. Oil type: see oil specifications
	Incorrect cable adjustment (too long)	See chapter 8.3
K. Platform descends when ratchets are not engaged	Leaks in hydraulic system	See step F
	Lowering valve/ non-return valve leaking (internal in the pump unit)	Call authorized service engineer
L. Pump unit cannot start	Electric failure	Check fuses.
	Incorrect electric connections	Call authorized electrician
	Fault in control box	
	Faulty electric motor	
	Defective pushbutton	Replace
M. Pump unit delivers none or insufficient pressure	Pump defective	Replace pump
	Air in hydraulic system	Lower platforms to bottom position without load and keep pressing DOWN-button for approx. 20 sec.
	Non-return valve or oil pressure relief valve defective (internal in pump unit)	Call authorized service engineer

11. Service

11.1 Spare parts ordering

In order to ensure correct spare parts deliveries please state part number, designation, and quantity (to be seen from spare parts list included in delivery) as well as lift serial number and year of production (to be seen from serial number plate).

12. Control list

CHECK that the technical manuals are delivered with the lift (installation instructions, operation and maintenance instructions, the EC-certificate of conformity, the electrical diagram in the control box)		☐
CHECK that all components are enclosed (see installation instructions and the accessory kit packing list)		☐
CHECK the lift for any paint damages occurred during transportation, or paint faults from the production		☐
Follow the installation instructions delivered with the lift and check the following points:		
PLATFORMS AT FLOOR LEVEL	Cross beams rest against their stops at floor level (all cables loose)	☐
	Posts are vertical in both directions	☐
	Right-hand platforms can be slid freely along cross beams	☐
	The two nuts for cables at top of posts are counter-tightened	☐
	Eccentric brake sensory rollers are free to rotate on axles	☐
	Oil level in accordance with "oil level control" (oil level: middle of sight glass)	☐
	Important signs/decals:	
	- Max. kapacity	☐
	- Maintenance + safety instructions (placed on control post)	☐
	- Several warning labels	☐
	- Name plate with CE-label	☐
PLATFORMS HANGING IN RATCHETS AT APPROX. 1 M'S HEIGHT	High pressure hose fittings are tight	☐
	Armoured hose hangs freely as a "U" without strain	☐
	Air system checked for leaks	☐
	Platforms and cross beams are horizontal when lift is parked in ratchets	☐
	Cables are correctly fitted (see installation drawing)	☐
NON LOADED LIFT	Excess-pressure valve is activated when platforms reach the topmost position (audible)	☐
LOADED LIFT (APPROX. 1.5 T)	Platforms can be parked in the topmost ratchet holes (cable adjustment)	☐
	Platforms can be released and lowered from topmost ratchet holes (tolerance approx. 20 mm)	☐
	Nylon slide blocks on cross beams must not touch (tolerance 0-0.5 mm) (post adjustment – cross beam adjustment). Check that ratchet rail does not fret the cross beam.	☐
	Platforms horizontal when hanging in cables with load and no air connected. If the lift is adjusted correctly, ONE click is to be heard from the ratchets when raising the lift. If not - adjust.	☐
INSTRUCTION	The enduser has been thoroughly instructed in correct use and maintenance.	☐

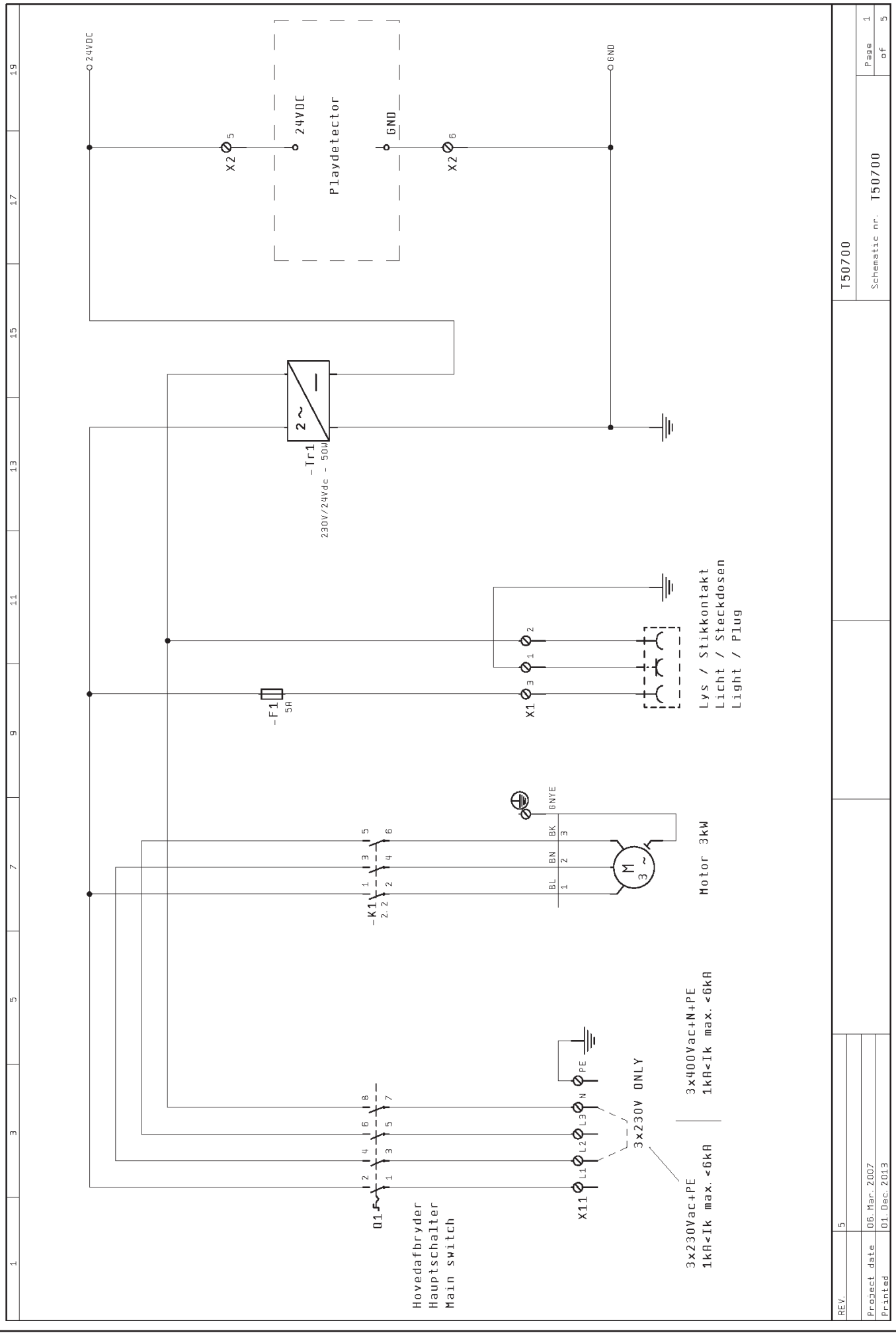
13. Oil specifications

	- Semi-hydraulic lift (oil in lift cylinder)	- Full-hydraulic lift - High-pressure No lift - 4-post hydraulic lift - Mistral H - Multiflex	- Scissor lift (3T) - 2-post hydraulic surface-mounted - Micro 20/26	Lubrication oil for high-pressure lift
Additives:	Anti-foam, anti-corrosion, anti-oxidation			
Other characteristics:	Water-separating			
Viscosity: (cSt=mm²/s)	75-120 cSt (40°C)	215 cSt (0°C) 32 cSt (40°C)	140 cSt (0°C) 22 cSt (40°C)	65 - 110 (40°C)
Viscosity index:	Min. 90	150	90	min. 70
Pour point:	Max. -10°C	Max. -10°C	Max. -10°C	Max. -10°C
ARAL	Aral vitam gf 100			Aral konit 30
AVIA	Abilub hydr.oil rsl 100			Avilub mk 2000
BP	Energol hlp 100	Bratran hv 32/shf 32	Bartran hv 22	Vannellus m 2030
CHEVRON	Hydraulic oil 100	Mechanism lps 32		EP industrial oil 68
GALP	Hidrolep 100			NR 30
ESSO STATOIL	Nuto hp 100	Hydraway hv 32	Hydraway hv 22	Protectway 32
FINA	Hydran tsx 100	Hydran ts 32	Hydran ts 22	Arusan 30
GULF - Q8	Q8 haydn 100	Q8 haydn 32	Q8 haydn 22	Q8 wagner 68
MOBIL	Mobil dte 18	Mobil dte 24	Mobil dte 22	Mobilarma 524
NYNÄS	Td 39 ex			Td 31 ex
OK	Ok hydraulic oil 65	Super hydr. oil 32		Ultima eph 68
SHELL	Tellus oil (S) 100	Tellus oil 32	Tellus oil 22	Remula x 20 w
NOROL	Hydraulikolje hm 100			Lagringsolje sae 20
TEXACO	Rando oil 150	Rando oil hd 32	Rando oil hd 22	Regal oil R&O 100
IGOL	Sonhodro 100 / hydro 30			Relax
VALVOLINE	Ultramax hlp 100	Ultramax hvlp 32	Ultramax hvlp 22	Ultramax hlp 68
SUNOCO	Sonvis 8100 wr 100	Sunvis 832 wr-hv	Sunvis 822 we-hv	Sunfill 2630
CASTROL	Hyspin aws/awh 100	Hyspin awh 32	Hyspin aws 22	Rustilo 652

14 Appendix: Electrical diagrams

14.1 Electrical diagram 3-phase (diagram no. T50700)

14.2 Electrical diagram 1-phase (diagram no. T50702)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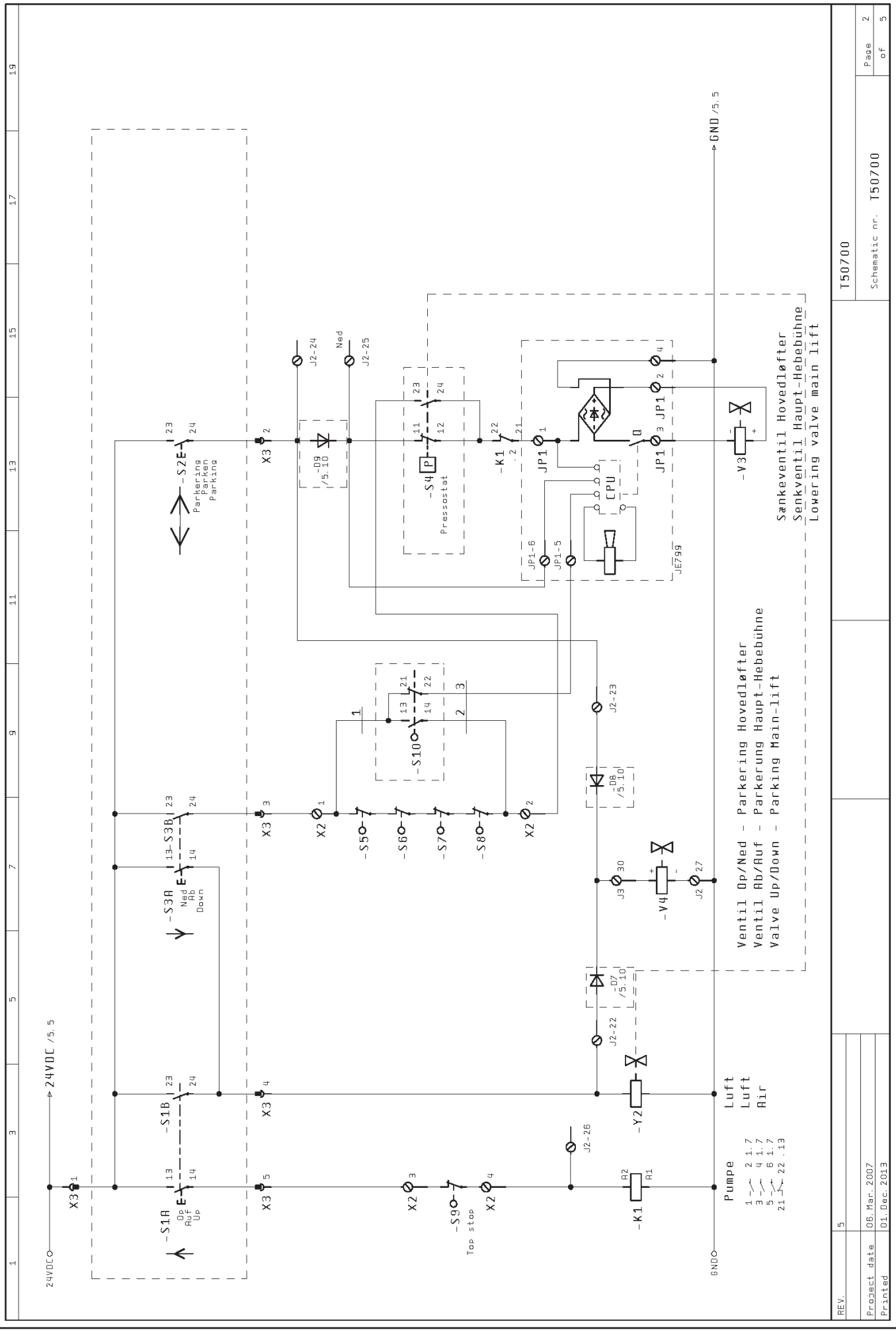
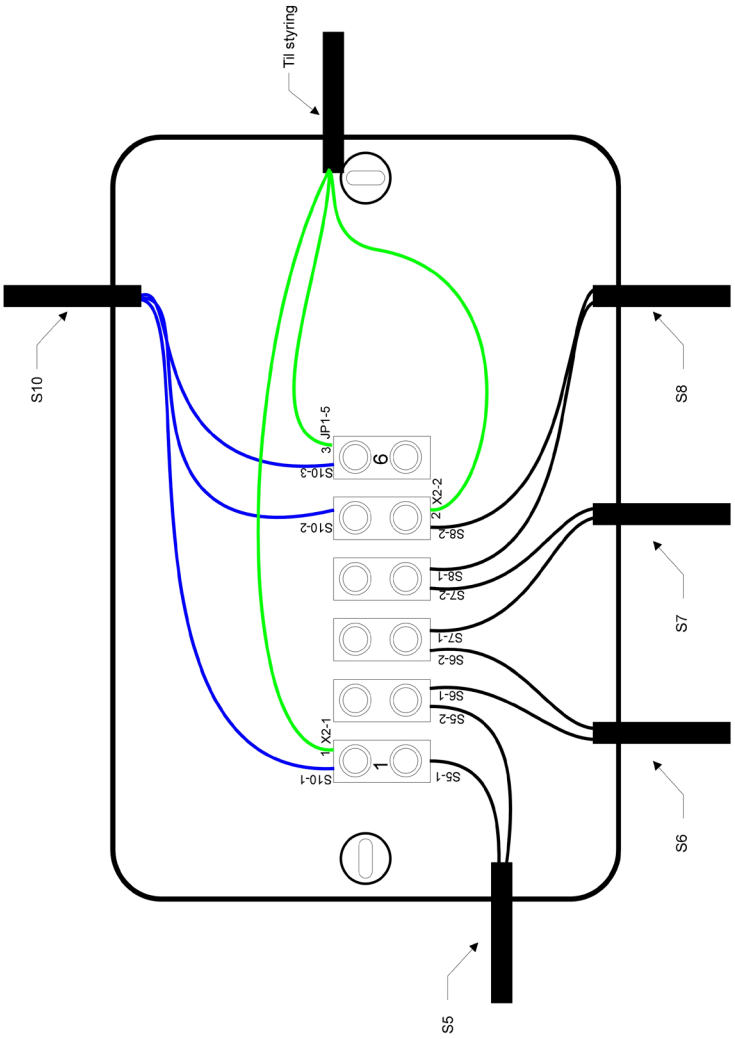
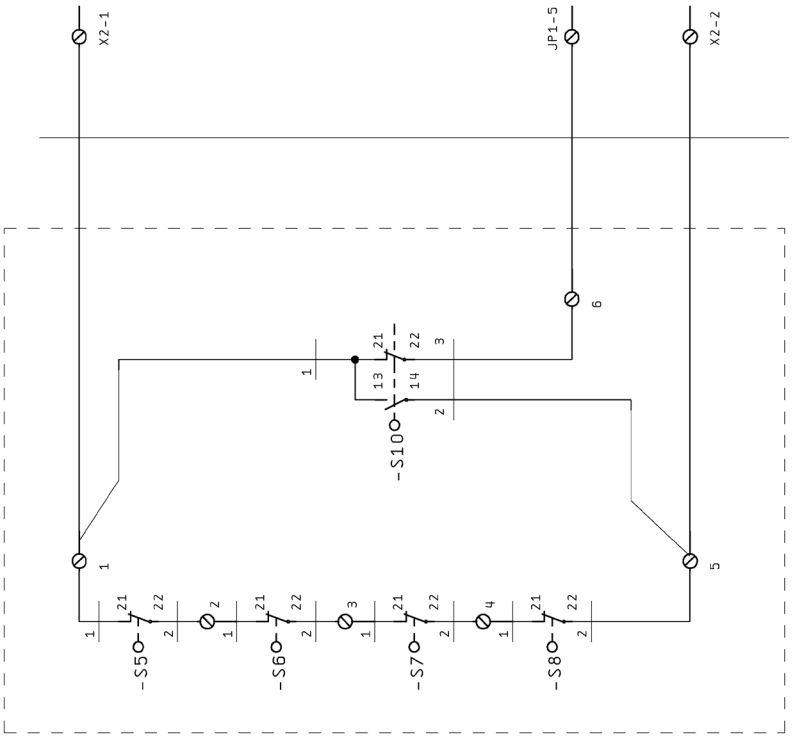
X2 5
24VDC
Playdetector
GND
X2 6
GND
-Tr1
230V/24Vdc - 50W
-F1
5A
X1
Lys / Stikontakt
Licht / Steckdosen
Light / Plug
-K1
2.2
GNYE
BK
BN
BL
M
3 ~
Motor 3kW
Q1
X11
L1
L2
L3
N
PE
3x230V ONLY
3x230Vac+PE
1kA<Ik max. <6kA
3x400Vac+N+PE
1kA<Ik max. <6kA
Hovedafbryder
Hauptschalter
Main switch
T50700
Schematic nr. T50700
Page 1
of 5
REV. 5
Project date 06. Mar. 2007
Printed 01. Dec. 2013


24VDC /5.5
GND /5.5
-S1A Op Auf Up
-S1B
-S2E Parkering Parken Parking
-S3A Ned Ab Down
-S3B
-S4 Pressostat
-S5
-S6
-S7
-S8
-S9 Top stop
-S10
-K1
-Y2
-Y3
-Y4
-D7 /5.10
-D8 /5.10
-D9 /5.10
CPU
JE799
JP1
JP1-5
JP1-6
J2-22
J2-23
J2-24
J2-25
J2-26
Ned
Pumpe
Luft
Luft
Air
Ventil Op/Ned - Parkering Hovedløfter
Ventil Ab/Auf - Parkerung Haupt-Hebebühne
Valve Up/Down - Parking Main-lift
Sænkeventil Hovedløfter
Senkventil Haupt-Hebebühne
Lowering valve main lift
T50700
Schematic nr. T50700
Page 2 of 5
REV. 5
Project date 06.Mar.2007
Printed 01.Dec.2013





Obstruktion
Obstruction
Behinderung

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Schematic nr. T50700
Page 3 of 5
REV. 5
Project date 01. Dec. 2013
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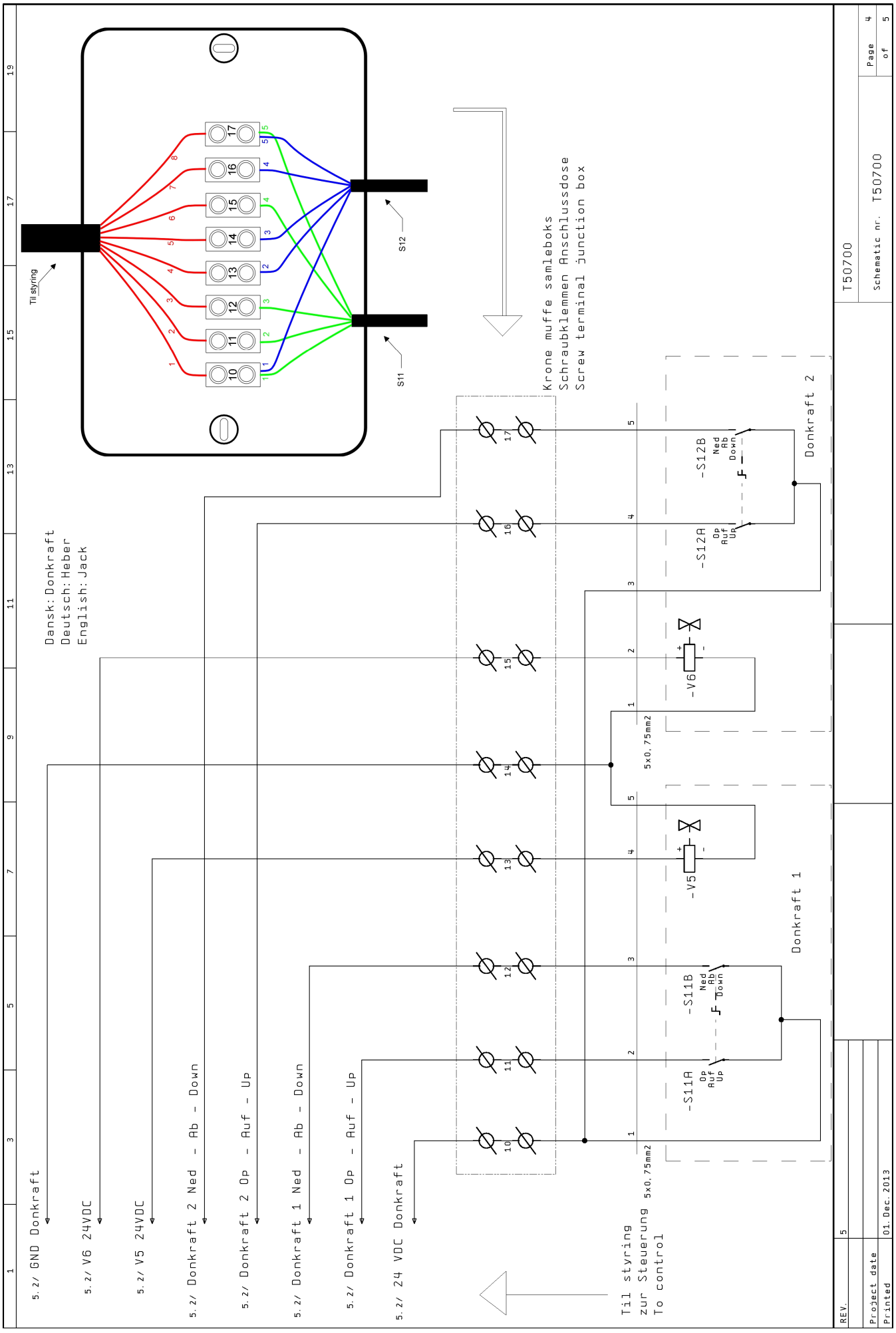
Til styring
S12
S11
Krone muffe samleboks
Schraubklemmen Anschlussdose
Screw terminal junction box
Dansk: Donkraft
Deutsch: Heber
English: Jack
5.2/ GND Donkraft
5.2/ V6 24VDC
5.2/ V5 24VDC
5.2/ Donkraft 2 Ned - Ab - Down
5.2/ Donkraft 2 Op - Auf - Up
5.2/ Donkraft 1 Ned - Ab - Down
5.2/ Donkraft 1 Op - Auf - Up
5.2/ 24 VDC Donkraft
Til styring
zur Steuerung
To control
5x0.75mm2
-S12B
-S12A
-S11B
-S11A
-V6
-V5
Donkraft 2
Donkraft 1
T50700
Schematic nr. T50700
Page 4
of 5
REV. 5
Project date 01. Dec. 2013
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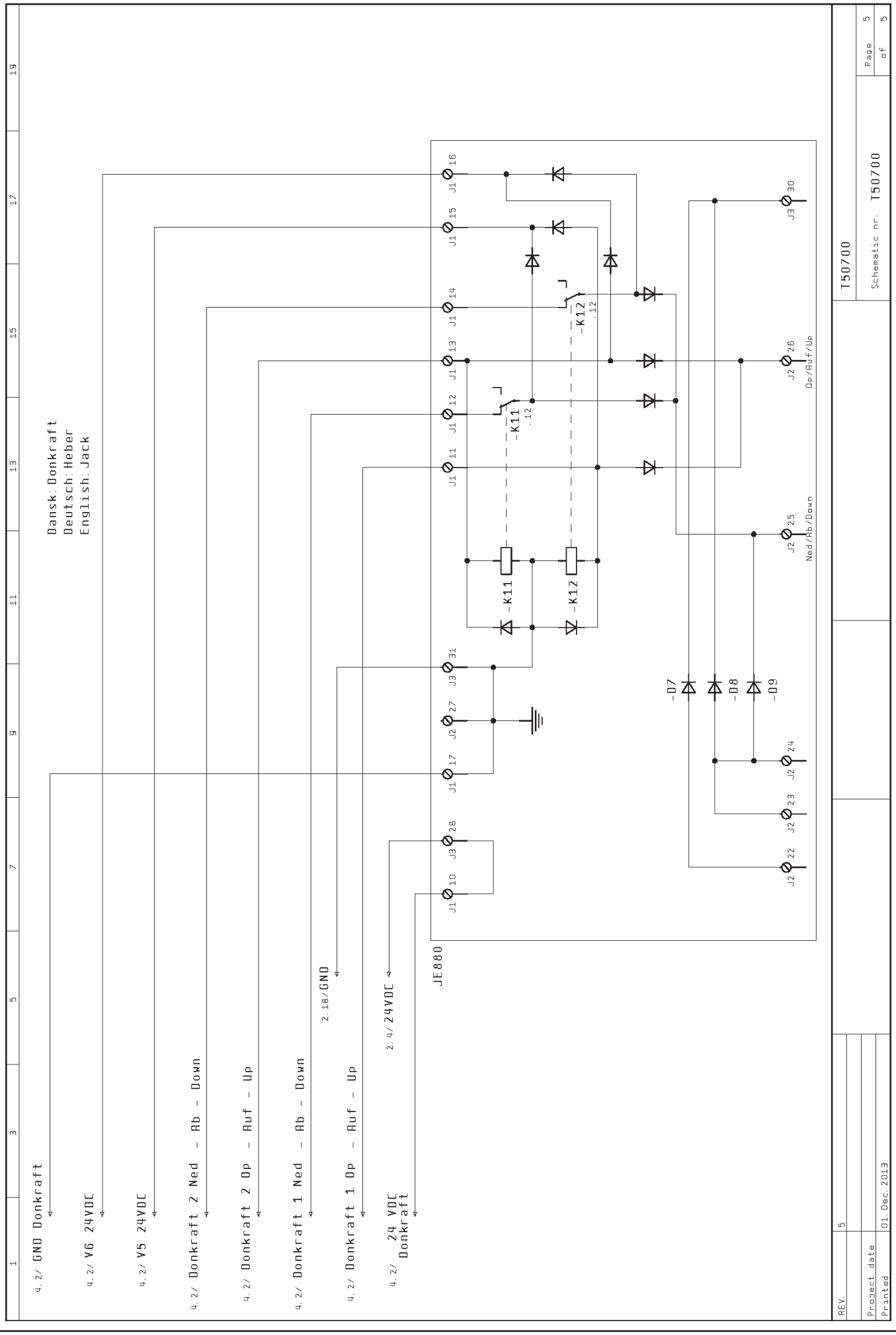
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English: Jack
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4.2/ V6 24VDC
4.2/ V5 24VDC
4.2/ Donkraft 2 Ned - Ab - Down
4.2/ Donkraft 2 Op - Auf - Up
4.2/ Donkraft 1 Ned - Ab - Down
2.18/GND
4.2/ Donkraft 1 Op - Auf - Up
4.2/ 24 VDC Donkraft
2.4/ 24VDC
JE880
-K11
-K12
-D7
-D8
-D9
Op/Auf/Up
Ned/Ab/Down
T50700
Schematic nr. T50700
Page 5 of 5
REV. 5
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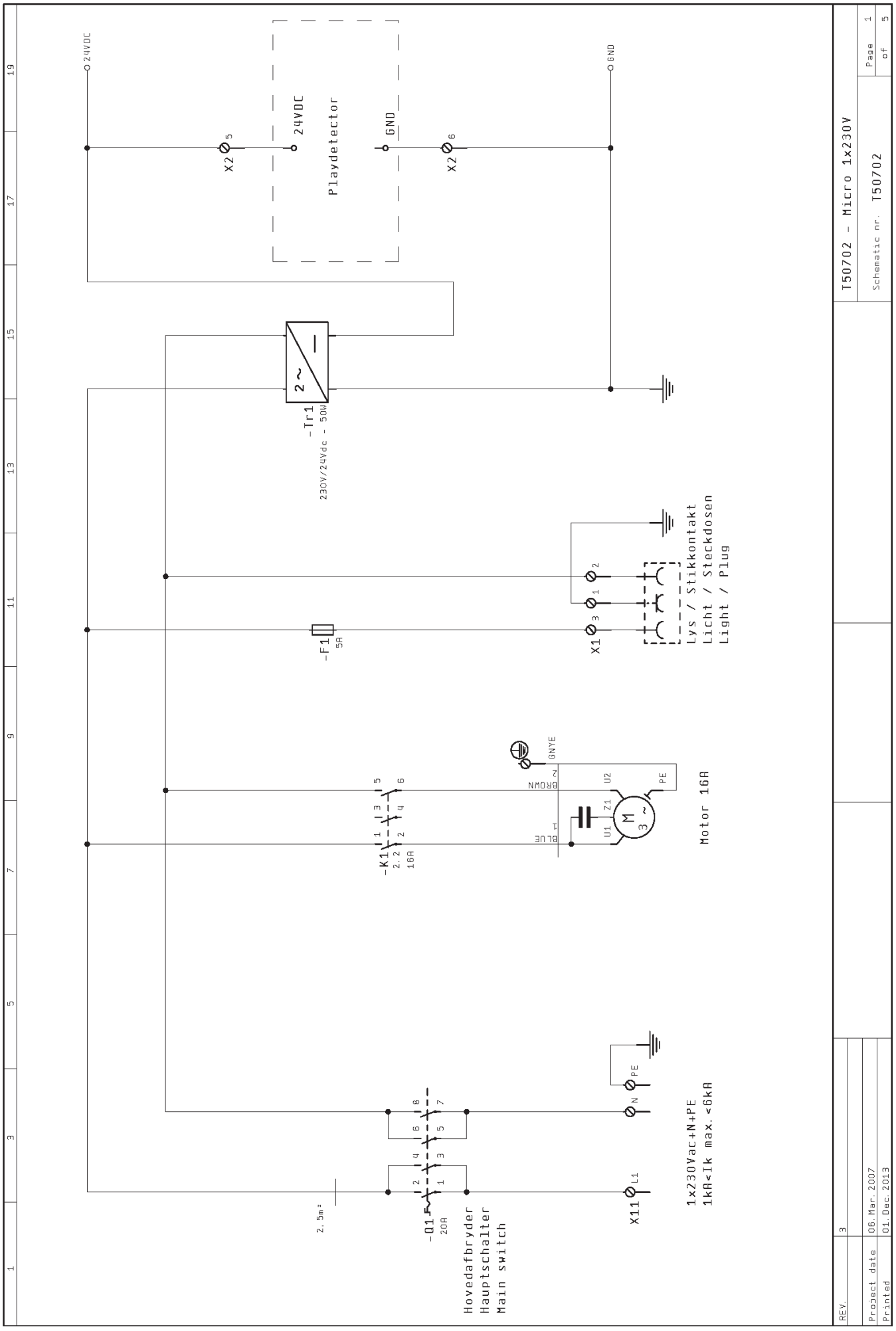
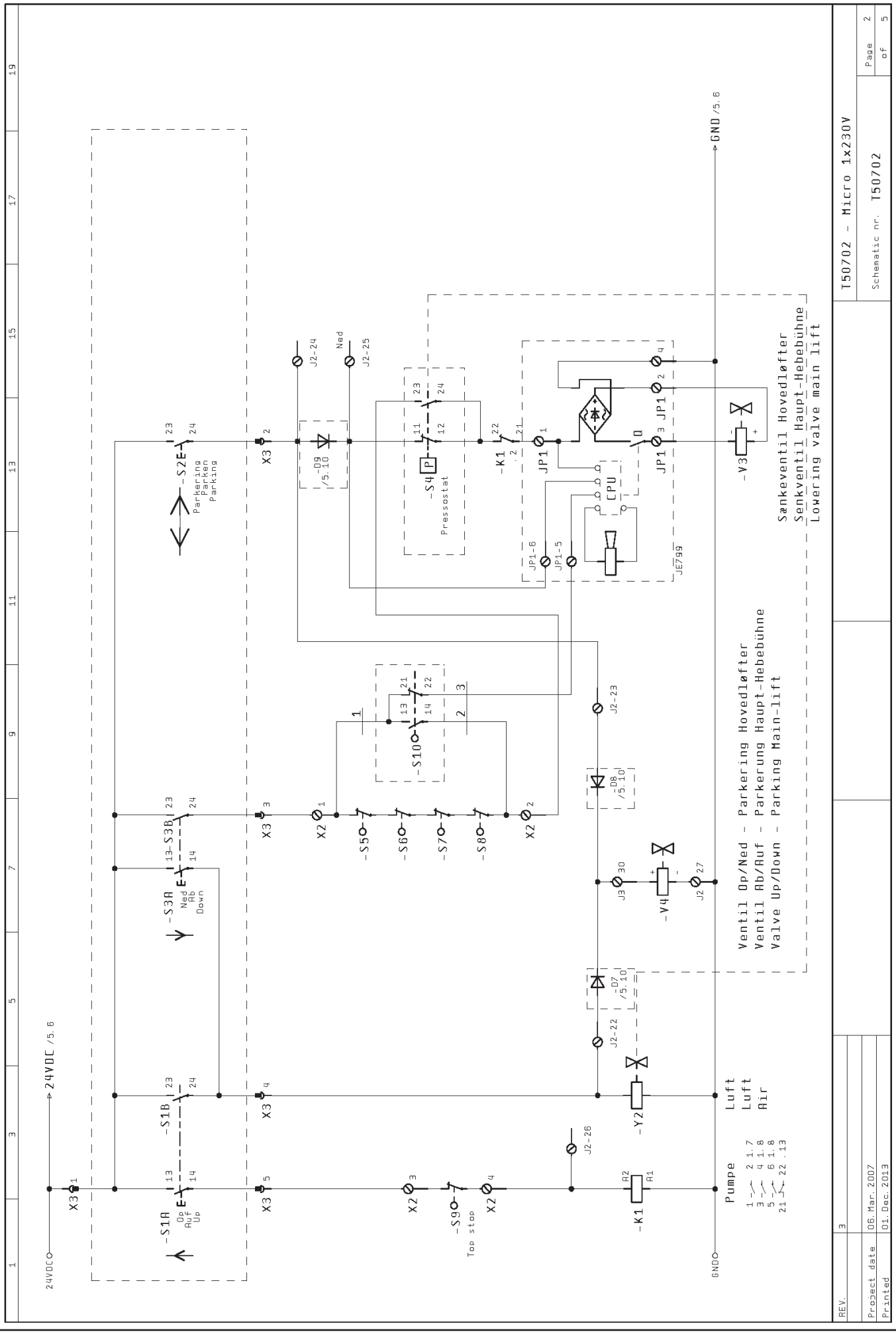

24VDC
GND
X2 5
X2 6
24VDC
GND
Playdetector
-Tr1
230V/24Vdc - 50W
-F1
5A
X1
Lys / Stikkontakt
Licht / Steckdosen
Light / Plug
-K1
2.2
16A
GNYE
BROWN
BLUE
U2
Z1
U1
PE
Motor 16A
-Q1
20A
2.5m²
X11
L1
N
PE
1x230Vac+N+PE
1kA<Ik max.<6kA
Hovedafbryder
Hauptschalter
Main switch
T50702 - Micro 1x230V
Schematic nr. T50702
Page 1
of 5
REV. 3
Project date 06.Mar.2007
Printed 01.Dec.2013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Schematic nr. T50702
Page 2 of 5
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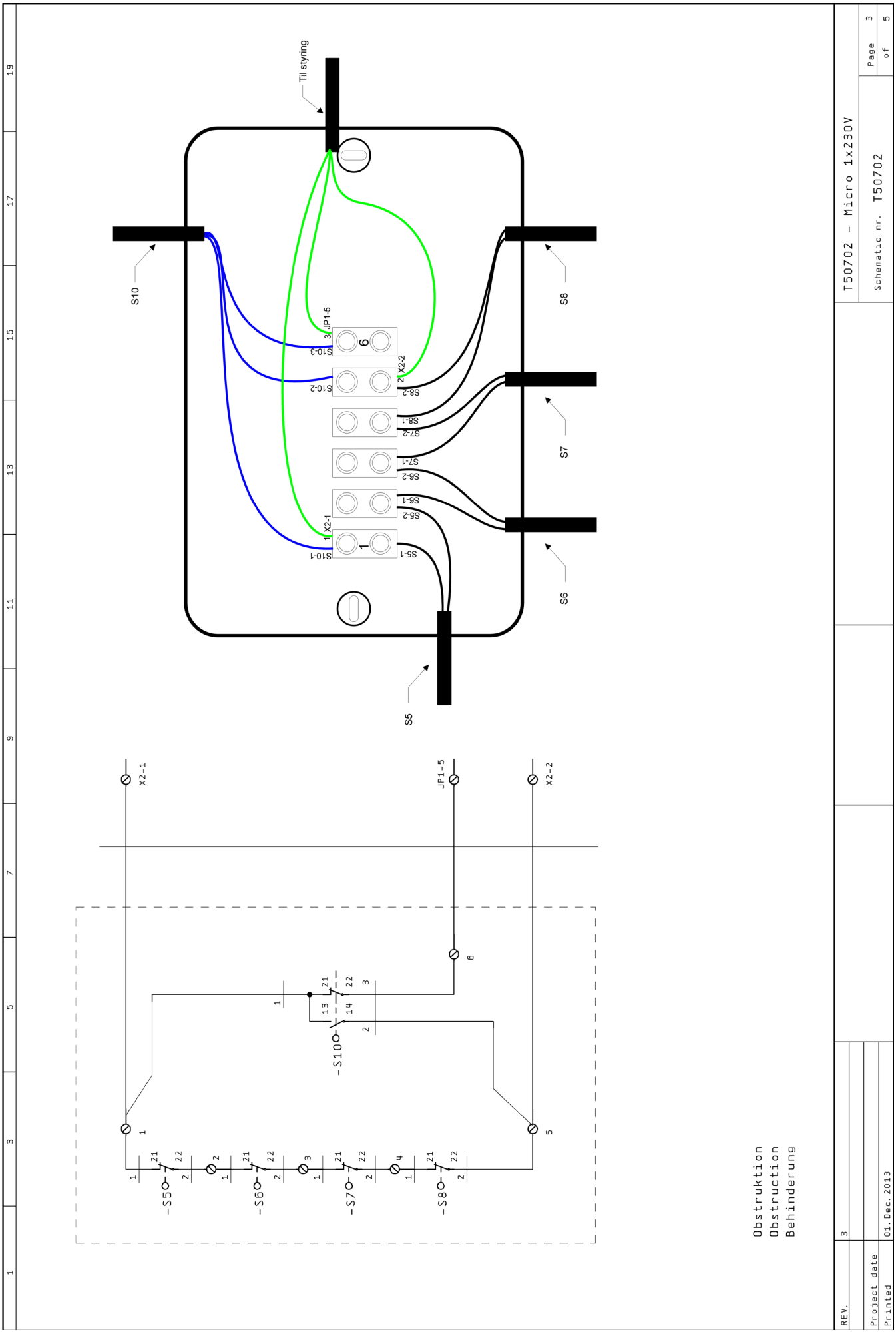
GND /5.6
-S1A Op Auf Up
-S1B
-S2E Parkering Parken Parking
-S3A Ned Ab Down
-S3B
-S4 Pressostat
-S5
-S6
-S7
-S8
-S9 Top stop
-S10
-K1
-Y2 Luft Luft Air
-Y3
-Y4
CPU
JE799
JP1
JP1-5
JP1-6
X2
X3
J2-22
J2-23
J2-24
J2-25
J2-26
J2-27
J2-30
-D7 /5.10
-D8 /5.10
-D9 /5.10
Ned
Pumpe
Ventil Op/Ned - Parkering Hovedløfter
Ventil Ab/Auf - Parkerung Haupt-Hebebühne
Valve Up/Down - Parking Main-lift
Sænkeventil Hovedløfter
Senkventil Haupt-Hebebühne
Lowering valve main lift


Til styring
S10
S8
S7
S6
S5
JP1-5
X2-2
X2-1
S10-3
S10-2
S10-1
S8-2
S8-1
S7-2
S7-1
S6-2
S6-1
S5-2
S5-1
X2-1
JP1-5
X2-2
-S10
-S5
-S6
-S7
-S8
Obstruktion
Obstruction
Behinderung
T50702 - Micro 1x230V
Schematic nr. T50702
Page 3 of 5
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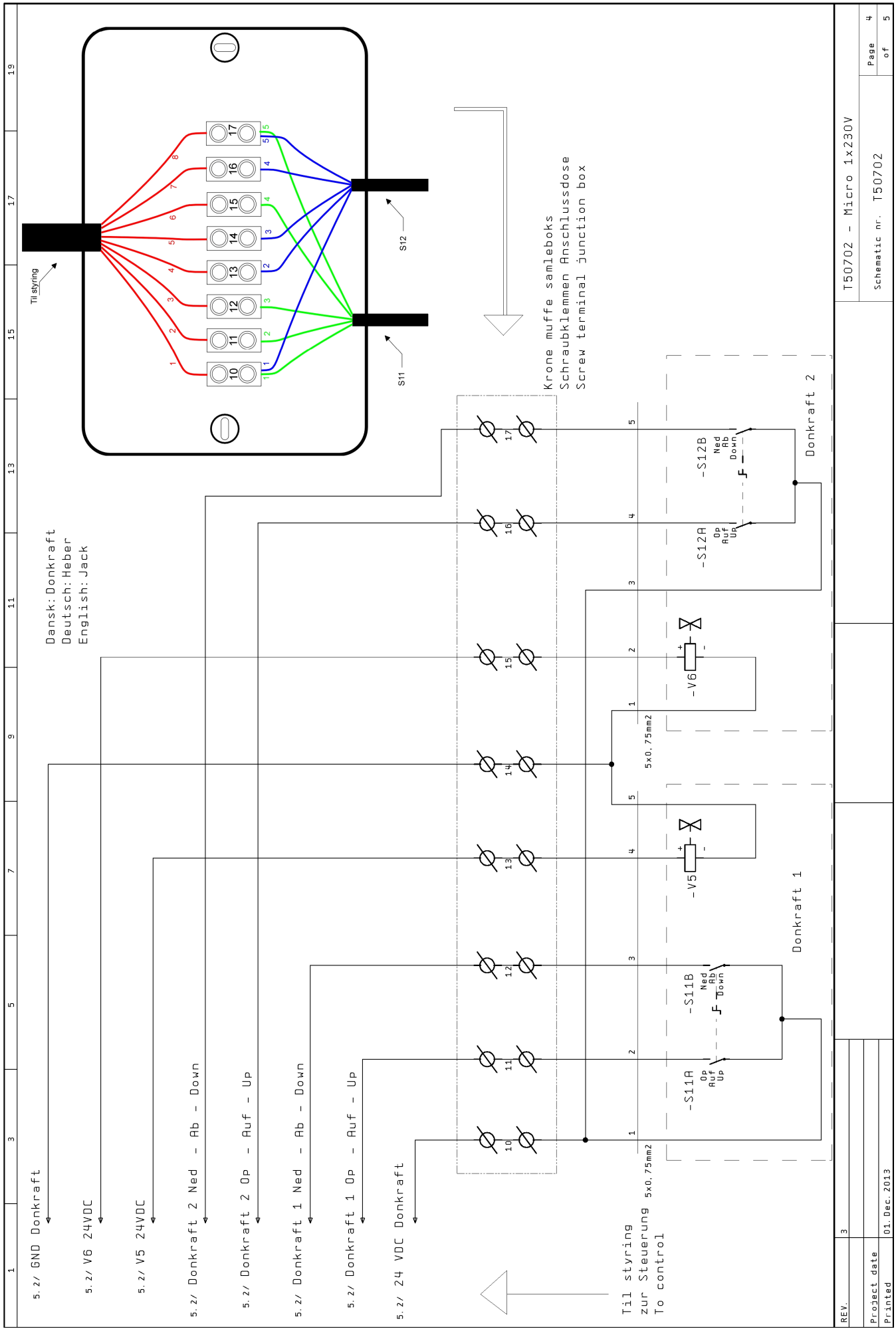
Printed


Til styring
S12
S11
Krone muffe samleboks
Schraubklemmen Anschlussdose
Screw terminal junction box
Dansk: Donkraft
Deutsch: Heber
English: Jack
5.2/ GND Donkraft
5.2/ V6 24VDC
5.2/ V5 24VDC
5.2/ Donkraft 2 Ned - Ab - Down
5.2/ Donkraft 2 Op - Auf - Up
5.2/ Donkraft 1 Ned - Ab - Down
5.2/ Donkraft 1 Op - Auf - Up
5.2/ 24 VDC Donkraft
Til styring
zur Steuerung
To control
5x0,75mm2
-S12B
-S12A
-S11B
-S11A
-V6
-V5
Donkraft 2
Donkraft 1
T50702 - Micro 1x230V
Schematic nr. T50702
Page 4
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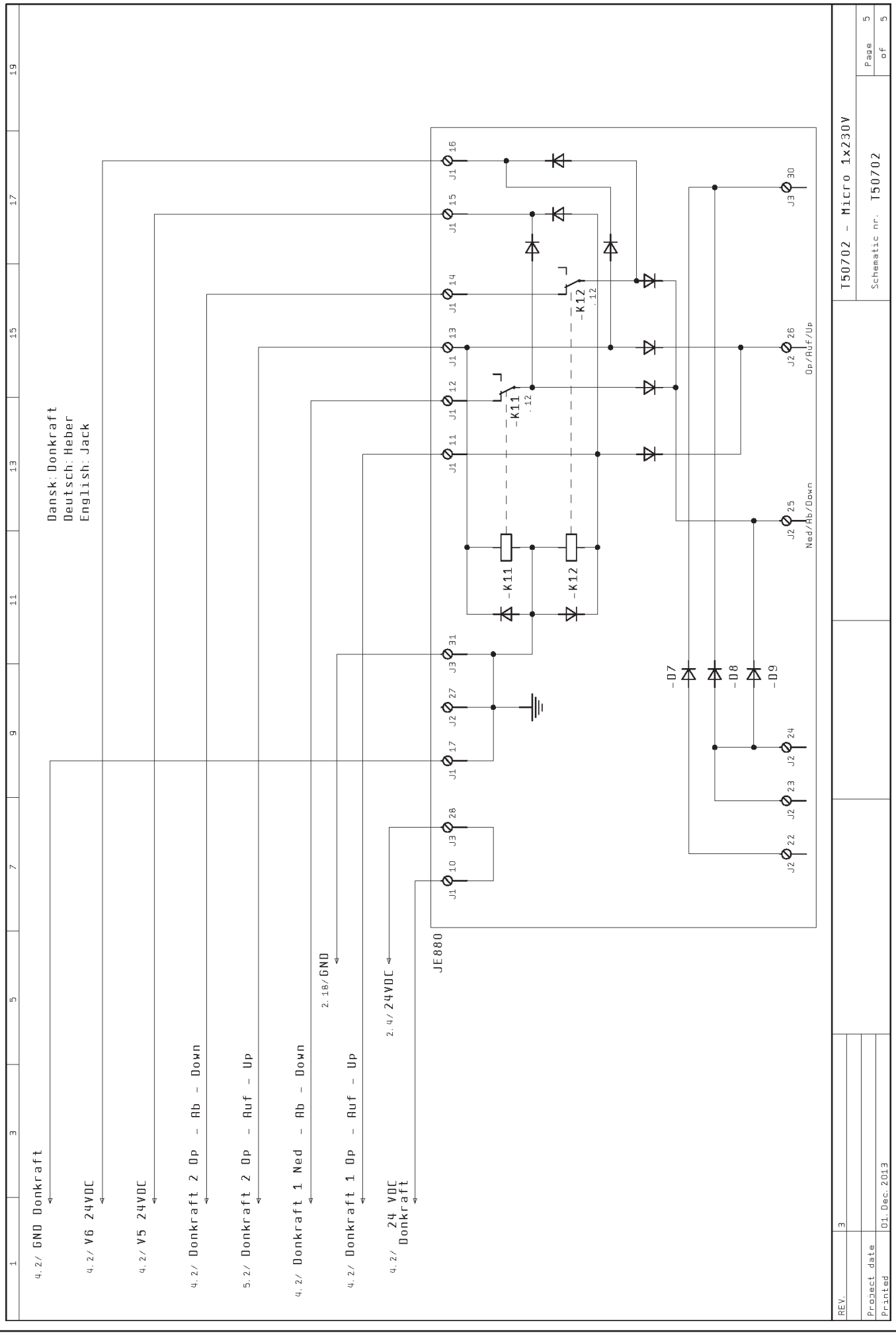
Project date
Printed
01. Dec. 2013


Dansk: Donkraft
Deutsch: Heber
English: Jack
4.2/ GND Donkraft
4.2/ V6 24VDC
4.2/ V5 24VDC
4.2/ Donkraft 2 Op - Ab - Down
5.2/ Donkraft 2 Op - Auf - Up
4.2/ Donkraft 1 Ned - Ab - Down
2.18/GND
4.2/ Donkraft 1 Op - Auf - Up
4.2/ 24 VDC Donkraft
2.4/24VDC
JE880
-K11
-K12
-D7
-D8
-D9
Op/Auf/Up
Ned/Ab/Down
T50702 - Micro 1x230V
Schematic nr. T50702
Page 5 of 5
REV. 3
Project date 01. Dec. 2013
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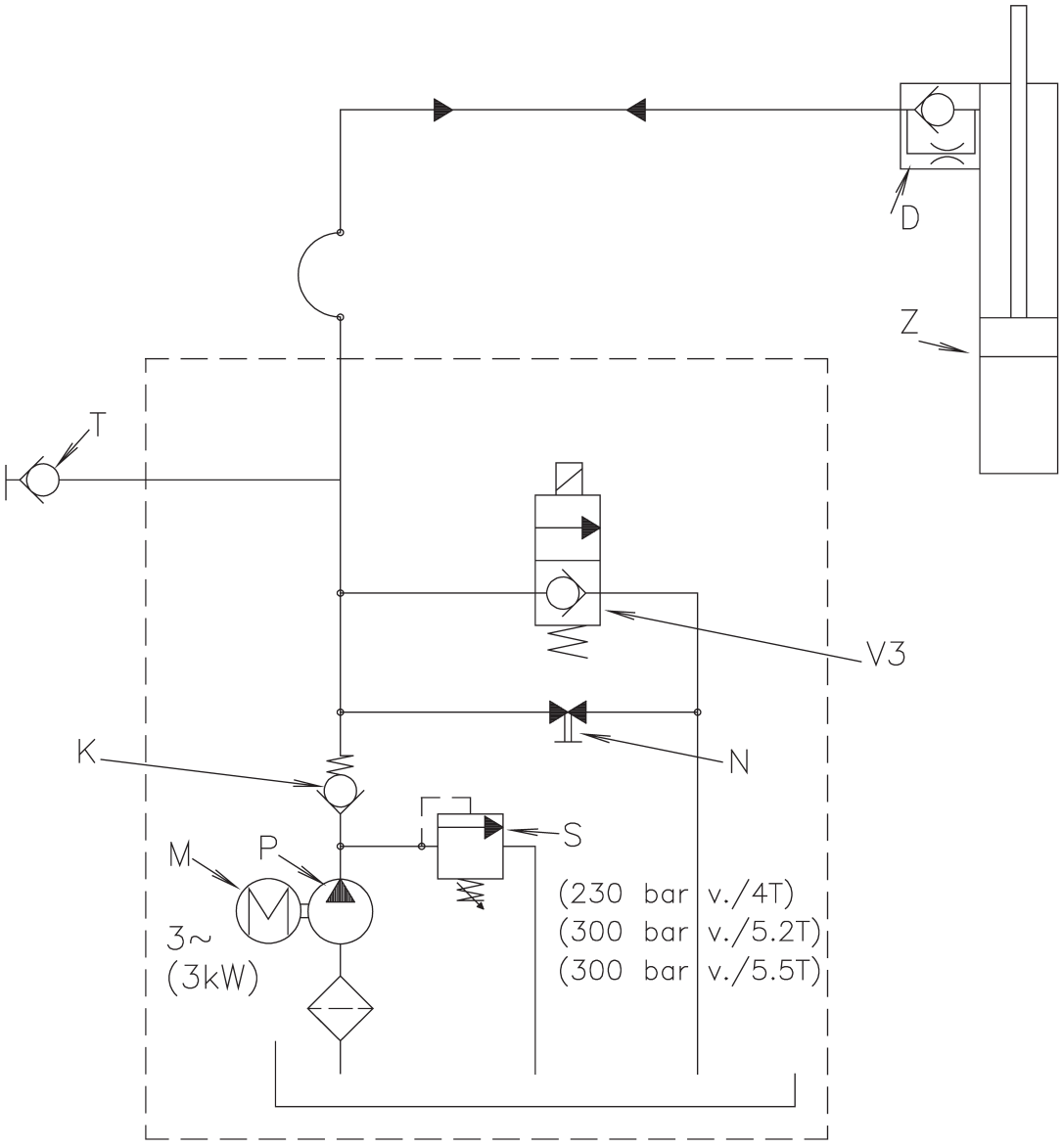
15 Appendix: Hydraulic diagrams

15.1 Hydraulic diagram Major 4000-5000 (diagram no. T60757)

Date: 030523	Sign.: PML	Scale:	No. T60757
			Hydraulic diagram for Major 4T / 5.2T / 5.5T (Flutec)



Date: 030523	Sign.: PML	Scale:	No. T60757
			Hydraulic diagram for Major 4T / 5.2T / 5.5T (Flutec)

DK:

V3: Hydraulisk sænkeventil
S: Overtryksventil
K: Kontraventil
P: Pumpe
M: Motor (2800 omdr./min.)
Z: Cylinder (Ø60/22, slaglængde ca. 1700mm)
D: Drosselventil
N: Nødsænkeventil
T: Tilslutning for prøvemanometer

Last	Flow
4T	↑ : 10 L/min.
5.2T / 5.5T	↑ : 7.4 L/min.

GB:

V3: Hydraulic lowering valve
S: Excess-pressure valve
K: Non return valve
P: Pump
M: Motor (2800 r.p.m.)
Z: Cylinder (Ø60/22, stroke approx. 1700mm)
D: Throttle valve
N: Emergency lowering
T: Connection for test pressure switch

Charge	Flow
4T	↑ : 10 L/min.
5.2T / 5.5T	↑ : 7.4 L/min.

DE:

V3: Hydrauliches Senkventil
S: Überdruckventil
K: Rückschlagventil
P: Pumpe
M: Motor (2800 Umdr./Min.)
Z: Zylinder (Ø60/22, Schlaglänge ca. 1700mm)
D: Drosselventil
N: Notsenkung
T: Anschluß für Probedruckmesser

Belastung	Durchfluß
4T	↑ : 10 L/min.
5.2T / 5.5T	↑ : 7.4 L/min.

FR:

V3: Clapet de descente hydraulique
S: Clapet de surcharge
K: Clapet anti-retour
P: Pompe
M: Moteur (2800 t.p.m.)
Z: Vérin (Ø60/22, course env. 1700mm)
D: Reniflard
N: Descente d'urgence
T: Raccord pour manomètre d'essai

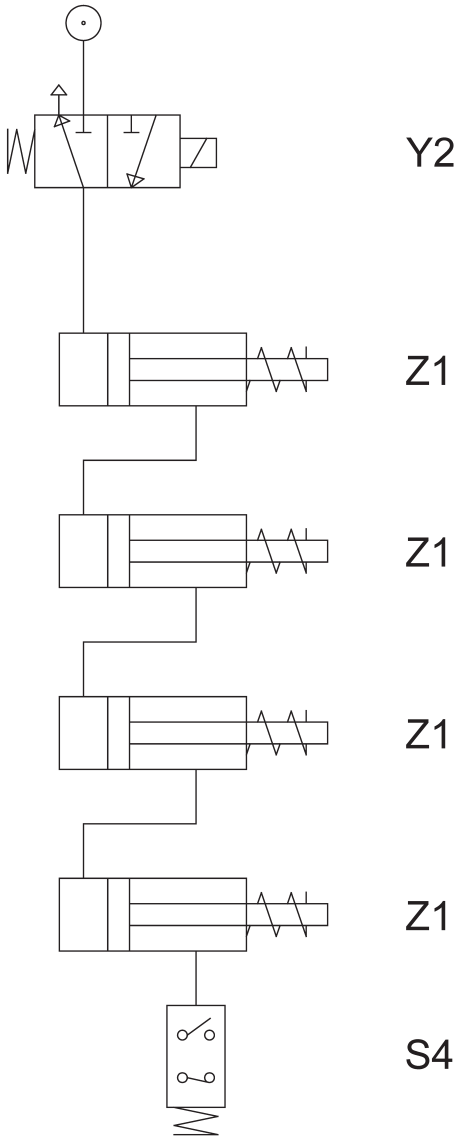
Charge	Débit
4T	↑ : 10 L/min.
5.2T / 5.5T	↑ : 7.4 L/min.

16 Appendix: Pneumatic diagram

16.1 Pneumatic diagram (diagram no. T60761)

16.2 Pneumatic diagram (diagram no. T82428)

Date: 030523	Sign.: LJE	Scale:	No. T60761
			Pneumatik diagram for Major / Maxi 100



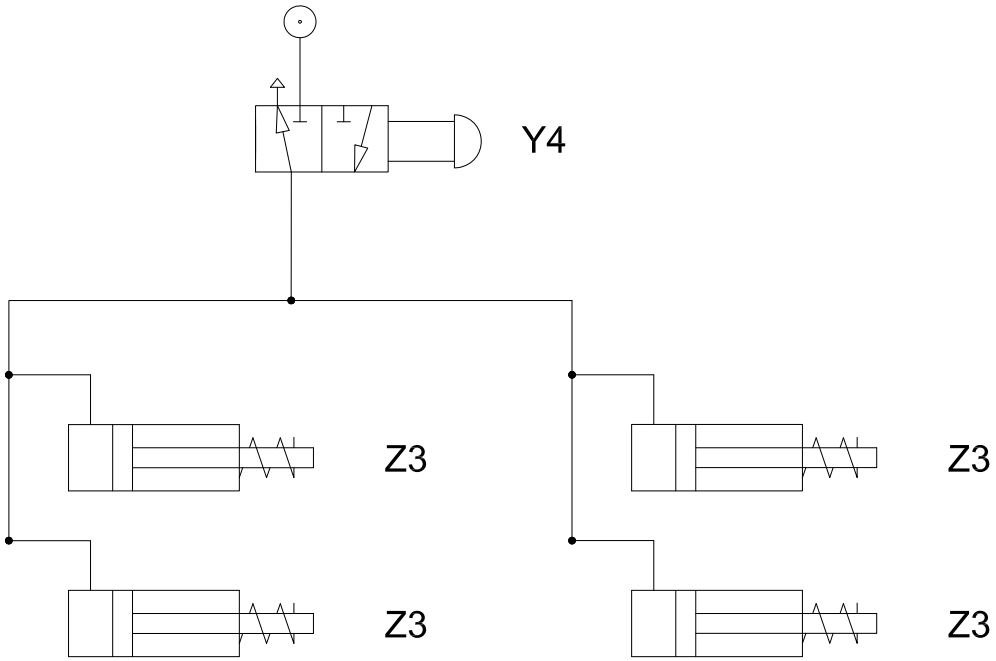
Y2 - Magnetventil / Solenoid valve / Magnetventil / Électrovanne
Z1 - Palcylinder / Ratchet cylinder / Klinkenzylinder / Vérin de cliquet
S4 - Pressostat / Pressure switch / Druckschalter / Pressostat

Date: 010618	Sign. LJE	Scale:	No. T82428

UPLIFTING COMPANY

AUTOP STENHOJ

Pneumatic diagram
Lock system
Major 2.0 – WL



Y4 : Magnetventil / Solenoid valve
Z3 : Låsecylinder glideplader / Lock cylinder sliding plates

For -42/-47/-51 WL kørebaner: 2 cylindre / For -42/-47/-51 WL platforms: 2 cylinders
For -55 WL kørebaner : 4 cylindre / For -55 WL platforms: 4 cylinders