

vehicle lift ST 4055 and 4070



Installation and Service Manual



WARNING

Please carefully read and understand the contents of this Installation and Service Manual.

Failure to read the manual can result in serious damage, injury or death.

Keep this manual. Make sure that all service engineers of the ST 4055 and 4070 have read and understand the contents of this manual.

The following table describes the main changes for each document version of this manual.

Table 1: Version history

Version	Date	Serial number	Changes
0			Original manual
A			
B		TQ/TR119371	
C	January 2020		

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This language version of the manual is verified by the manufacturer (Original manual).

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1 Preface

This is the Installation and Service Manual for the ST 4055 and 4070. The manual is intended for service engineers. This manual contains important information and instructions on safety, installation and maintenance. Please read all information and follow the instructions and guidelines in this manual carefully. This ensures that you will obtain long-term optimal performance and that possible accidents and serious injury will be prevented.

In addition to this manual, you also received a User Manual. That manual is intended for operators who work with the ST 4055 and 4070.

1.1 Limitations of the document

The English language version is the original version. This language version of the manual is verified by the manufacturer (Original manual). All other language versions are translations of the original English language version. Steril B.V. reserves the right to modify the construction and/or configuration of its products at any time without any obligation to modify products which have been previously supplied. The data provided in this manual is based on the most recent information. This data may be subject to change at a later date, without prior notification. For information regarding adjustment, maintenance or repair which is not described in this document, please contact the Customer Service department of Steril B.V.

The information in this document concentrates solely on the use of the product as intended by the manufacturer. In the event that the products, parts of the products or procedures are applied in any way other than that described in this manual, then confirmation must be obtained as to the correctness and suitability of that use.

No rights may be derived from this manual or from the documentation supplied together with the product. The supplier is bound by no agreement other than the order confirmation.

This manual contains useful and important information on the correct operation of the product. Furthermore, the manual contains instructions for preventing possible accidents and serious harm while the product is running. We have taken all possible steps to make this manual as correct and as complete as possible. Should you discover any errors or omissions, please bring this to the



attention of your local Stertil service department or distributor, so that we can make amendments. This will enable us to improve our documentation.

1.2 Version history

Every effort has been made to make this manual as accurate and complete as possible. Should you discover any errors or omissions, please bring this to the attention of your local Stertil B.V. service department or distributor, so that we can make amendments. This will enable us to improve our documentation.

The instructions in this manual do not take into account different national regulations and laws. When work with the vehicle lift, it is the sole responsibility of the service engineers to make sure that all applicable local laws and regulations are obeyed.

During the lifetime of the vehicle lift, engineering improvements may result in the need to revise this manual. It is then at the discretion of Stertil B.V., if a revision/new version of this manual is required. The following table describes the main changes for each document version of this manual.

The information in this document concentrates solely on the use and maintenance of the vehicle lift as intended by Stertil B.V.. In the event that the products, parts or procedures are applied in any way other than that described in this manual, then confirmation from Stertil B.V. must be obtained as to the correctness and suitability of that use.

1.3 Scope of the manual

This manual is a guide for the installation and maintenance of your machine. Each installation, commissioning and maintenance action is sequentially described in the relevant sections of this manual. Normal routine operation of the machine, requires that operators:

- Have enough technical knowledge and experience to carry out the assigned tasks.
- Can recognise and prevent hazards.
- Have read this manual and understand the contents.
- Have been adequately trained.
- Are able to follow the procedures in this manual.



1.4 Signs used in this manual

This manual contains numerous warnings and safety notices.

NOTICE

Provides additional information that is helpful to do a task or to avoid problems.

CAUTION

Warns of a situation that may cause material damage if one does not obey the safety instructions.

WARNING

Warns of a situation that may cause physical injury and/or material damage if one does not obey the safety instructions.

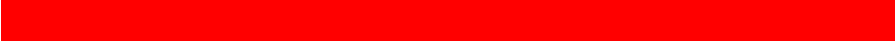
DANGER

Warns of a situation that will cause serious physical injury and/or heavy material damage if one does not obey the safety instructions.

1.5 Manufacturer details

If you need any assistance, please contact your regional service centre. If you still have questions after reading this manual, we would encourage you to contact us. We appreciate all advice, feedback and suggestions from our customers. Please contact:

Manufacturer:	Steril B.V.
Address:	P.O. Box 23, 9288 ZG, Kootstertille Westkern 3, 9288 CA, Kootstertille The Netherlands
Phone:	+31 (0) 512 334 444
Fax:	+31 (0) 512 332 638
Email:	info@steril.nl
Internet:	www.steril.nl



1.6 Guarantee and liability

Please refer to the order confirmation and the delivery terms and conditions for the applicable guarantee and liability.

1.7 Trademarks

All trademarks stated in this manual are registered trademarks of Stertil B.V. or her suppliers.

1.8 Statutory standards and regulations

The instructions in this document take no account of the different national regulations and laws that must be obeyed when operating the equipment. It is the sole responsibility of the purchaser to obey these regulations and laws.

1.9 Supplements to the manual

If you receive any supplements to the manual from Stertil B.V., these must be inserted into the manual immediately.

1.10 Additional documentation

The product contains components that have not been manufactured by Stertil B.V. but that are a part of the installation. The documentation of these components is part of the supplied documentation.

1.11 Recommissioning

In the event of a recommissioning (e.g. relocation of the machine or a transfer of ownership), you must contact Stertil B.V. and the representative subcontractor to discuss the procedures, terms and conditions, service contract, etc., so that the proper functioning and safety of the machine after recommissioning can be guaranteed. The Operation Manual should always be relocated with the vehicle lift.

If Stertil B.V. is not involved in a recommissioning, then Stertil B.V. is not liable for any claims of third parties arising from that recommissioning.

2 Safety

If performing maintenance and service activities, always carry out these activities with the greatest caution to avoid injuries or damage to the vehicle lift. All maintenance and service activities may only be performed by an authorized and sufficiently instructed person. It is the responsibility of those in charge of preparing and/or supervising such maintenance or overhaul work to take the necessary action(s) to ensure safe working conditions.

Our safety requirements may under no circumstances conflict with the legal ordinances and regulations that apply to the safety of the vehicle lift. If any one of the warnings or safety requirements should be in conflict with existing local regulations, then the strictest regulation shall take precedence. The safety instructions in this manual only serve as a guideline.



WARNING

Always adhere to the local safety regulations. Steril B.V. is not liable for damage or physical injury due to ignoring the safety instructions.

2.1 Risks

The machine has been carefully designed and expertly built for safe operation. The CE-marking confirms this. There are, however, still dangers and safety risks which cannot be ruled out. These risks are inherent to operators using the machine.

It is therefore of utmost importance that precautions will be taken when working with the machine to exclude potential risks.

2.2 Hazards

2.2.1 Electrical hazards

Precautions to be taken when working with electrical equipment:

- Consider all circuits live until you have personally turned off the main switch. Also lock out and tag the main switch with a safety sign.

- 
- Keep your clothing, hands and feet dry.
 - Do not wear rings, watches, metal-rimmed glasses or jewellery when working around electrical circuits.
 - Maintenance and repair activities on the electrical system of the machine may only be performed by special trained electricians which are familiar with the common and local electrical regulations in charge.
 - Static electricity can harm electronic parts. Always make sure that you are earthed when working on electronic parts.

2.2.2 Mechanical hazards

Precautions to be taken when working with mechanical equipment:

- Do not wear rings, watches, jewellery, ties or loose sleeves when working around moving mechanical parts.
- Keep long hair covered when working around moving mechanical parts.
- Stay away from moving machine parts.
- Always use spare parts of a type and part number recommended by Steril B.V.

2.2.3 Fall hazards

Precautions to be taken when working on assemblies at higher altitudes:

- Identify potential fall hazards prior to each project and during a daily walk-around.
- Pay attention to hazards associated with routine and non-routine tasks.
- Eliminate the need for fall protection where possible by rescheduling the task, isolating the task, or changing the task.
- Emphasize fall hazards unique to the site, such as open floor holes or shafts, riser penetrations, and skylights.
- Team up with other construction employers and employees to identify best practices and share fall prevention solutions.
- Choose the correct ladder for the task, read the instructions, and be sure that the ladder is in good condition. Check for surrounding hazards, stable footing, and the proper angle.
- Identify skylights and make sure they are properly protected.
- Contact your supervisor if you see fall hazards or have any other questions about fall prevention. Do not work until unsafe conditions have been corrected.

2.2.4 Radiated hazards

- This machine complies with part 15 of the FCC rules. Operation is subject to the condition that this device does not cause harmful interference.
- This machine must accept any interference received, including interference that may cause undesired operation.



2.3 General safety instructions

WARNING

To safely work with the vehicle lift, please follow the following safety precautions carefully.

- Persons working with the machine must follow local safety and health procedures, protocols and any additional local rules, laws and regulations in addition to following the manufacturer's safety instructions. Additional rules and guidelines can be, but are not limited to local health and safety regulations and the guidelines provided by professional associations.
- The operation manual must be available at the machine at all times.
- Read the operating instructions before you operate or maintain the machine.
- Make sure you have obtained, read and understood all instructions.
- Make sure you have obtained, read and understood any additional instructions for special accessories for the machine.
- Carry out all work with and on the machine as described in the manual.
- Never start or operate a damaged machine.
- Always make sure that the machine is complete before operation. Operating the machine with missing components can cause severe damage.
- Observe all signs with safety and danger notes.
- Do not perform any tasks for which you are not authorised. Only explicitly qualified and authorised personnel may operate, maintain or repair the machine.
- Personnel in training must be supervised at all times.
- Wear and use all needed personal protection equipment and safety gear appropriate for the job.
- Keep a safe working environment.
- If necessary, make sure the machine complies with federal and local standards before starting work.
- Do not use the machine for purposes other than those specified.
- All personnel working on or with the machine must be aware of possible hazards.
- Never make any changes or additions to the machine, without obtaining explicit written approval from the manufacturer/supplier. This also applies to the installation and adjustment of safety devices.
- Warn other personnel and bystanders before you start to operate the machine.

2.4 Safety measures

WARNING

To safely work with the vehicle lift, please follow the following safety measures carefully.

- Only use this machine for raising vehicles and not for any other purpose.
- Do not use this machine as an elevator to reach a higher floor level.
- Do not exceed the maximum load of the machine, not even while it is in the lowest position (e.g. to reach the area behind the machine). This can damage the tracks and cross beams.
- Install the machine so that a safe working area is obtained and also make adequate provision for emergency escape routes (minimum free passage of 600 mm).
- Only allow authorised persons to operate the machine. These persons must always be familiar with the machine operating instructions.
- When operating the machine, always ensure that there are no persons or objects in the working area of the machine (including the vehicle).
- Closely monitor the vehicle during machine raising and lowering operations.
- Place cameras or mirrors when the operating area is not completely visible from the control position.
- Never go on top of or underneath the vehicle (with load) when the machine is in operation.
- Always lower the lift into the safety locks whenever there is a need for persons to work underneath the vehicle.
- When work is finished, always set the machine to the lowest position and turn off the power with the mains switch, do this by turning the mains switch to the 0 position.
- In the event of a malfunction, make sure that the machine is safe to set it to the lowest position and turn off the power with the mains switch, do this by turning the mains switch to the 0 position, then secure it with a padlock.
- When doing welding work to vehicles on the machine, always ensure proper earthing; otherwise damage could be caused to the hydraulic cylinder, cabling, etc.

WARNING

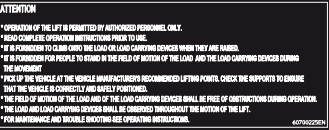
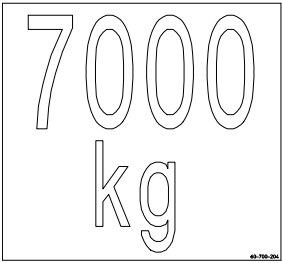
- *Obstacles (trestles etc.) under the vehicle may cause dangerous situations during lowering.*



- *Dangerous situations can arise when a vehicle that is too tall is placed on the machine.*

2.5 Safety signs

The machine is provided with the following safety and protection signs.

Pictogram	Description	Location
	Number of operational safety warnings.	At the control box side.
	The maximum lifting capacity of the machine. The capacity varies by model. See Technical specifications on page 21	At the front cross-beam.



Make sure that the labels are always legible. Replace the labels if they are damaged or illegible. Illegible safety signs may result in dangerous situations.

2.6 Safety features



It is not allowed to bypass or switch off the safety systems.

2.6.1 Emergency stop switch

The main switch of the vehicle lift functions as an emergency stop switch. Use the emergency stop switch only in case of emergencies. If the emergency stop is used, check:

- If anybody needs to be freed.
- If the vehicle is damaged.

2.6.2 Lock-out/tag-out

Lock-out/tag-out procedures are safety measures, designed to prevent application of power (energy) to the machine while it is being serviced. Only authorised personnel may carry out the lock-out/tag-out procedures. The established procedures for the application of energy control (the lock-out or tag-out procedures) shall cover the following elements and actions and shall be done in the next mentioned sequence.



Notify all affected employees that service or maintenance is required on the machine and that the machine must be shut down and locked out for service or maintenance.

2.6.2.1 Lock-out/tag-out procedure

This is the lock-out/tag-out procedure.

1. Preparation for shut-down. The machine may only be turned off by an authorised employee. Before turning it off, the employee must know:
 - The type and magnitude of the energy.
 - The hazards of the energy to be controlled.
 - The method or means to control the energy.
2. Shut down. If the machine is in operation, shut it down with the normal shut down procedure.
3. Machine isolation. Isolate the machine from the energy source(s). The machine uses:
 - AC power, this is de-energised by removing the AC connection to the machine.
4. Lock-out (or tag-out) device application. Lock-out the energy isolating device(s) with:
 - Individual locks.
 - Place a warning device on the main switch.
5. Remove residual or stored energy. Stored or residual energy (such as that in capacitors, air pressure, etc.) must be dissipated or restrained by methods such as grounding, bleeding down, etc.
6. Verification of isolation:
 - Make sure that there are no people in the direct vicinity of the machine.
 - Make sure that the machine is disconnected from the energy source(s).
 - Test to verify the isolation of the machine.



- Make certain that the machine will not operate (power cannot be turned on).

WARNING

Return all operating control(s) to the OFF position after verifying the isolation of the machine.

The machine is now locked out.

2.6.2.2 Ending lock-out/tag-out procedure

1. Make sure the service or maintenance is completed and the machine is ready to return to normal operation.
2. Check the machine and the immediate area around to make sure that all non-essential items have been removed.
3. Make sure that all components of the machine are operationally intact.
4. Make sure that all persons are at a safe distance from the machine.
5. Make sure that there is no power on the control box and the machine.
6. Remove the lockout devices.
7. Notify all personnel that the service or maintenance is completed and the machine is ready for use.

2.6.3 Safety mechanisms

The machine has a control and monitoring system, which ensures that:

- Both tracks always stay at equal height within the control limits.
- Lowering is halted in the event that obstacles underneath cause an elevation difference (5).
- The control current will be disconnected in the event of cable breakage so that operation is no longer possible (6).
- Lifting is halted when the highest position is reached (height safeguard) (2).
- The foot protection stops the lowering action at 14 cm above the floor. If the 'Down' button is pressed again, the vehicle lift will be lowered further, but with an accompanying acoustic signal (1).
- Lowering is mechanically blocked in the event of loss of control power (4).
- In the event of a hydraulic hose breakage the cylinder will be shut off by the hose break valve (3).

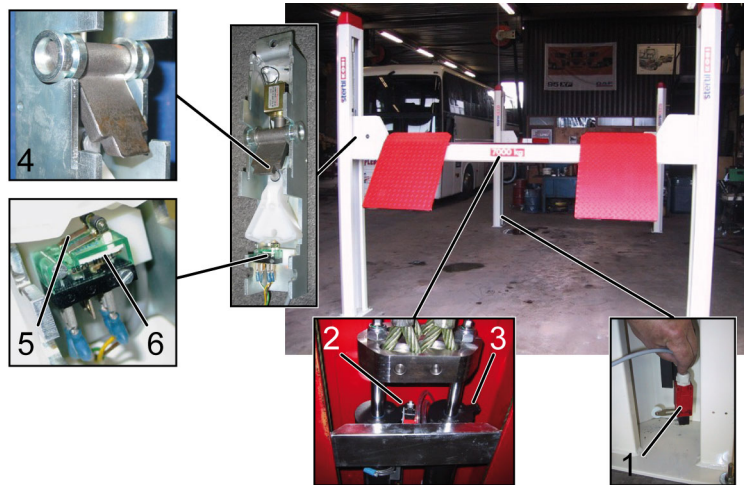


Figure 1: Safety mechanisms

1. Foot protection switch
2. Limit switch (highest position)
3. Hose burst check valve
4. Mechanical lock
5. Slack cable protection
6. Cable break protection

2.7 Requirements for service engineers

Normal operation of the vehicle lift requires that service engineers:

- have enough technical knowledge and experience to carry out the assigned tasks,
- can recognize and prevent hazards,
- have read this manual and understand the contents,
- have been adequately trained,
- are able to follow the procedures in this manual.

WARNING

The owner must ensure that employees are qualified and trained to perform all activities involved. The owner also must ensure that all persons working on the vehicle lift have free access to the instruction manuals.



2.7.1 Personal protection equipment

The following personal protection equipment is recommended for service engineers:

- Protective clothing (long sleeves and long trousers)
- Gloves
- Ear protection
- Safety shoes
- Helmet
- Safety glasses

2.8 Instructions to the owner and employer

The owner/employer shall:

- Ensure that operators are qualified and that they are trained in the safe use and operation of the vehicle lift using the manufacturer's operating instructions.
- Establish procedures to periodically inspect the vehicle lift in accordance with the manufacturer's instructions.
- Ensure that vehicle lift inspectors are qualified and that they are adequately trained in the inspection of the vehicle lift.
- Display the manufacturer's operating instructions in a clearly visible location in the machine area convenient to the operators.
- Do not modify the vehicle lift in any manner without the prior written consent of the manufacturer.

2.9 Training levels

Steril B.V. recommends the following training levels:

- Operator:
Lower vocational education or intermediate vocational education level and trained by the supervisor.
- Supervisor:
Intermediate vocational education level and trained after the installation of the machine by the installation personnel and service engineers.
- Service engineer:
Intermediate vocational education level.



Persons under 16 years of age are prohibited from working on this vehicle lift in any way whatsoever. Children under 14 years of age are not allowed in the immediate vicinity of the vehicle lift.

NOTICE

Please contact the service department of the manufacturer or dealer for more information about possible training and education.

2.10 Environmental aspects

2.10.1 Disposal

The owner and/or user of the vehicle lift is responsible for the disposal of waste materials (oil etc.) in accordance with the applicable local laws or regulations. When the machine has reached the end of its useful life, the owner and/or user is responsible for the safe disassembly of the machine and for the disposal of the components, in accordance with the local laws or regulations.

2.10.2 Waste disposal

Remove and dispose in a correct manner lubricating agents, used chemical products and other such matter. On this subject, the local environmental recommendations should be respected.

2.10.3 REACH declaration

The REACH regulation became effective on 1st June 2007. The aim of the REACH regulation is to ensure a high level of protection of human health and the environment from chemical substances.

Stertil B.V. manufactures articles in compliance with current revision of the REACH regulation, and is downstream-user of chemical substances.

Stertil B.V. has the intention to fully comply to REACH regulation and has checked its suppliers to make sure they comply with REACH requirements for all materials and substances used in our products.

Stertil B.V. will provide relevant information e.g. Material Safety Data Sheet (MSDS) on request.

3

Description

The vehicle lift ST 4055 and 4070 is designed for lifting vehicles.

The 4-column vehicle lift with tracks is installed in a fixed position on a concrete floor. The machine is used for lifting vehicles to facilitate maintenance to these vehicles.

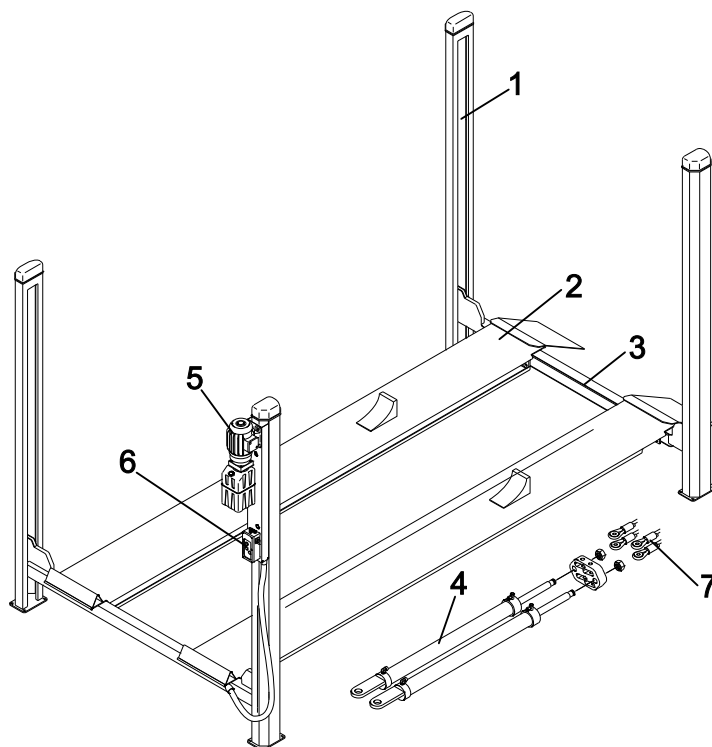


Figure 2: Description of the machine

1. Column (4)
2. Track (2)
3. cross-beam (2)
4. Cylinder (2)
5. Hydraulic unit (1)
6. Control box (1)
7. Cable (4)

The machine is equipped with a hydraulic unit. The hydraulic unit drives two cylinders which are mounted in the "fixed" track. The cylinders drive four cables

that run through the track and cross-beams via cable pulleys. The cables are attached to the columns.

3.1 Technical specifications

	ST 4055	ST 4070
Lifting capacity	5500 kg	7000 kg
Pressure relief valve	230 bar (factory sealed with plastic cap)	230 bar (factory sealed with plastic cap)
Stroke cylinder	1870 mm	1870 mm
Electrical power: 3 × 380/415 V, 50 Hz 3 × 220/240 V, 50 Hz 1 × 220/240 V, 50 Hz	5.5 kW 3,6 kW 1,8 kW	5,5 kW 3,6 kW 1,8 kW
Mains power: 380/415 V, 50 Hz 220/240 V, 50 Hz 1 phase 220/240 V, 50 Hz	3 × L, 1 × N, 1 × G 3 × L, 1 × G 1 × L, 1 × N, 1 × G	3 × L, 1 × N, 1 × G 3 × L, 1 × G 1 × L, 1 × N, 1 × G
Mains fuse: 380/415 V, 50 Hz 220/240 V, 50 Hz 1 phase 220/240 V, 50 Hz	3 × 16 A (slow blow) 3 × 16 A (slow blow) 1 × 16 A (slow blow)	3 × 16 A (slow blow) 3 × 16 A (slow blow) 1 × 16 A (slow blow)
Control voltage	24 V DC	24 V DC
Hose rupture valve adjustment	28 l/min (1.25 mm)	28 l/min (1.25 mm)
Raising and lowering times: 3 phases 380 / 415 V 3 phases 220 / 240 V 1 phase	31 / 28 s 47 / 28 s 94 / 28 s	39 / 35 s 59 / 35 s 117 / 35 s
Noise level	max. 74 dB(A)	max. 74 dB(A)
Installation	Indoors	Indoors
Weight	1600 kg	1650 kg

L = line, N = neutral, G = ground



WARNING

Never exceed the maximum weight (capacity) that the vehicle lift is allowed to carry. This leads to dangerous situations which can result in serious personal injury and/or damage to the machine.

NOTICE

The general specifications are also printed on the type plate on the vehicle lift.

3.2 Product identification

On the type plate, information is recorded to identify the product.

The type plate is located on column 3 under the control box.

The following data are present on the type plate:

- Serial number
- Model description
- Type description
- Lift capacity of lift
- No. of phase of electric motor
- Voltage of electric motor
- Frequency of electric motor
- Power of electric motor
- Max. hydraulic pressure
- Month of manufacture
- Year of manufacture

NOTICE

The data on the type plate is required for the (electrical) installation and for ordering spare parts.

3.3 Product specification

The maximum lifting capacity of the machine is based on a maximum load on one track of:

ST 4055	2750 kg
ST 4070	3500 kg

The design has been calculated for a load distribution between the vehicle axles in the ratio of 33 % - 66 % with a minimum wheel base of 3000 mm and a minimum track width of 1700 mm.

The overpressure safety in the hydraulic unit has been pre-set so that the lift can never raise more than the specified weight plus 10%.

In case the load distribution is unequal, the resulting capacity of the vehicle lift will be limited by the capacity of the most loaded column or columns.

3.4 Control box

The machine is operated by means of the buttons on the control box which is mounted on column III. Please refer also to the operation sticker on the machine.

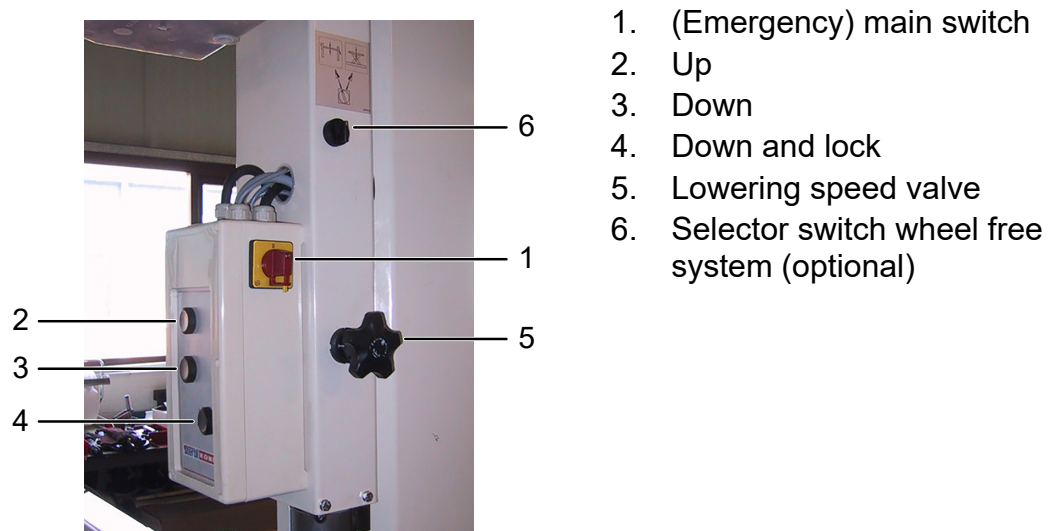


Figure 3: Control box



3.5 Options

You machine can be equipped with several options.

Option	Description
Lighting	Lighting is integrated in the tracks.
Second control box	A second control box can be fitted to another column. At this box all operating controls are available, except for the 'Lowering speed valve'.
Wheel free system	A wheel free system can be installed between the tracks. This system is used to raise one of the axles of the vehicle, so the wheels on this axle can be disassembled or assembled.
Axle stands	The axle stands can be used during disassembly and assembly of different parts, i.e. wheels.
Third track	A third track can be used for lifting a forklift with three wheels. The third track is mounted on the inner flanges of the outer tracks.



The maximum loading capacity of the third track is 2000 kg. This is also indicated on the loading sticker on the side of the track.

4 Installation

Proceed as described next when unpacking and setting up the vehicle lift.

WARNING

Improper set-up of the vehicle lift can lead to serious injury and/or damage. Make sure that only qualified technicians set-up the vehicle lift.

WARNING

Be careful when removing the fastening material. You can hurt yourself on parts and parts may fall.

NOTICE

Ensure that all packaging materials have been removed before starting the set-up of the vehicle lift. Inspect the parts for any damage and/or missing smaller parts. Always report damage or missing parts to Steril B.V. or your dealer and wait with the set-up until a suitable solution has been obtained.

4.1 Tools and materials

For the installation of the machine you need the following tools and materials:

Item	Steril B.V. number
Drilling jig	43508100
Support for cylinder and cable assembly	43508111
Cross keys (4x) for clamping the cross-beam in the posts.	43508112
Auxiliary tool	30008106
Allen keys of different sizes	



Item	Stertil B.V. number
Draw spring	

4.2 Installation procedure

4.2.1 Foundation

The vehicle lift can be installed on any suitable concrete floor. Concrete floors that are not reinforced (i.e. poured directly onto the foundation) must be at least 100 mm thick.

NOTICE

Consult an architect if you install the machine on a supported reinforced concrete floor above an area or above another storey. The maximum pressure exerted by each post is 23 kN (ST 4055) or 28 kN (ST 4070).

Before you begin:

Make sure that the concrete floor:

- is not cracked (in the securing area of the anchor bolts);
- does not contain expansion seams;
- is level;
- is at least 100 mm thick (without accounting for the coating);
- has a minimum concrete strength of C 20/25.

The minimum distance from the anchor to the edge of the concrete slab is 90 mm.

NOTICE

A level floor is suggested for proper installation and level lifting. Small differences in floor slopes may be compensated for by proper shimming. If a floor is of questionable slope, consider a survey of the site and/or the possibility of pouring a new level concrete slab.

Reinforced foundation blocks

Reinforced foundation blocks are only required:

- if there is no suitable concrete floor available (reinforced or not reinforced);

- if the floor is made up of tiles or stones;
- if the machine is installed directly on the ground;
- with strongly inclined floors to make sure that the base plates are level.

When the machine has to be installed on foundation blocks, use blocks as shown. Volume = 0.14 m^3 .

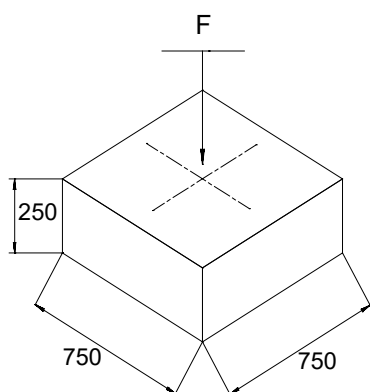


Figure 4: Reinforced foundation blocks

The centre line of the base plate is equal to the centre line of the concrete block.

The maximum ground pressure is 5.0 N/cm^2 .



Specifications of concrete must be adhered to. Failure to do so could cause lift failure resulting in personal injury or death.

4.2.1.1 Installing the chemical anchors

The standard method to secure the machine is with chemical anchors. Alternatively, key bolts can be used. Choose one of the following types:

- Anchor rod ASTA M10 × 130, capsule UKA 3 EAP M10
- Key bolts M10 × 100 × 50 - Torque 27 Nm

1. Keep an area of $350 \times 350 \text{ mm}$ free for securing the chemical anchors.



NOTICE

Use chemical anchors of sufficient length when installing on a concrete floor with a top layer (e.g. mortar or tiles). Make sure the extra length of the anchor is at least equal to the thickness of the top floor layer.

2. Determine the position of the chemical anchors. Use a drilling jig (No. 43508100) to achieve an accurate result.

Figure 5: Determine the drilling points with the drilling jig



NOTICE

Make sure that a free escape route of at least 600 mm is available at all sides of the machine.

- Refer to The position of chemical anchors without a drilling jig on page 29 if you do not have a drilling jig.
3. Drill the holes with a drill diameter of 12 mm. Make sure that the drilling machine cannot drill deeper than 85 mm (excluding the top floor layer).
-

NOTICE

We recommend the use of a diamond drill to drill as accurate as possible.

4. Make sure that the holes are not drilled through the concrete layer.

You can use a screwdriver or similar tool to check the hole depth.

NOTICE

Do not use chemical anchors if the holes are drilled through the concrete layer.

5. Position the chemical anchors and wait for the anchors to harden. Refer to the instructions of the anchor's manufacturer.

NOTICE

Cracks may have formed in the lower layer of the concrete during drilling, thus allowing resin or hardener to drain off without adequate mixing. To detect this, checking the strength of the anchor bolts is essential. The holding power of the anchor will definitely be insufficient when there are cracks in the concrete. The cracks will usually have filled up when the first anchor was placed, so that a second anchor can be positioned successfully.

4.2.1.2 The position of chemical anchors without a drilling jig

To determine the position of the chemical anchors without the help of a drilling jig:

1. Draw a rectangle as shown in this figure. Refer to the table for the dimensions.

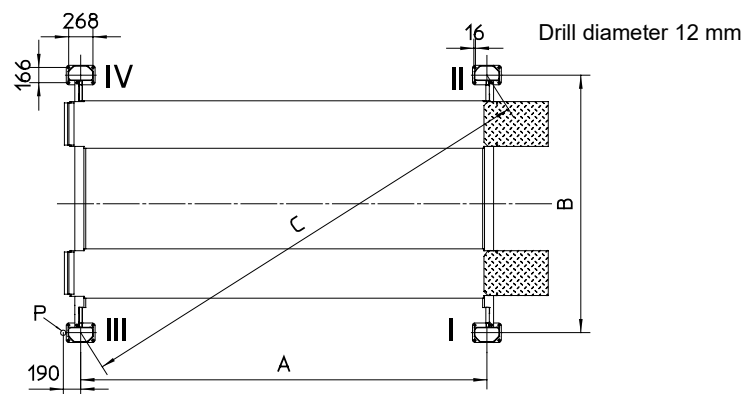


Figure 6: Position of the chemical anchors



Table 2: Distances between the columns

Model	A (mm)	B (mm)	C (mm)
ST 4055 + ST 4070-S	4900	3120	5809
ST 4055-L + ST 4070	5500	3120	6323
ST 4055-V + ST 4070-S/V	4900	3420	5975
ST 4055-L/V + ST 4070-V	5500	3420	6477
ST 4070-L	6000	3120	6763
ST 4070-L/V	6000	3420	6906
<i>Models with a free-wheel system (F) or wider tracks (M) have the same dimensions as their base model in the table.</i>			

2. Make sure that both diagonal distances (C) are correct.
3. Determine the position of the holes.

Continue with Installing the chemical anchors on page 27.

4.2.2 Mains power supply cable

Use the electrical power supply cable appropriate to the situation:

Power supply cable	Fuse
380/415V (3 × L + N + G)	3 × 16 A (slow blow)
220/240V (3 × L + G)	3 × 16 A (slow blow)
220/240V (L + N + G)	16 A (slow blow)

The machine must be connected to its own secured mains power supply. See the Technical specifications on page 21. The power supply can come from the ceiling or the floor. When the power supply cable comes from the floor, the projecting part must be 2.20 metres. The installation technician determines the cable core diameter with Table 3: Core diameter of the power supply cable on page 31 as a guideline.

Table 3: Core diameter of the power supply cable

Voltage	Cable length (maximum)	Diameter
380/415 V	85 m	2.5 mm ²
	135 m	4.0 mm ²
	200 m	6.0 mm ²
220/240 V	28 m	2.5 mm ²
	45 m	4.0 mm ²
	68 m	6.0 mm ²

4.2.3 Positioning the columns and cross-beams

For correct set up of the machine, the floor must comply with the requirements specified in Foundation on page 26.

Make sure that the position of the chemical anchors is as prescribed in Installing the chemical anchors on page 27.

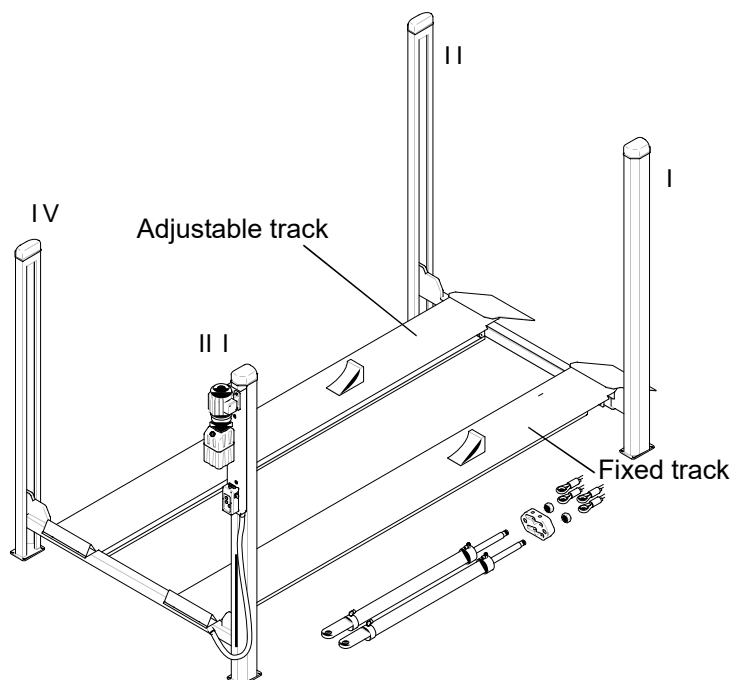


Figure 7: Column numbers

1. Place columns II en IV over the prepared chemical anchors or key bolts.



NOTICE

Do not secure the posts at this time.

-
2. Place the cross-beams between the columns at a height of approximately 8 cm from the floor. Use small blocks to support the cross-beam.

NOTICE

Make sure that cross-beam III - IV is positioned at column III. This cross-beam contains the cable and hose connections for the control box.



Figure 8: Column III with cross-beam

3. Place the locking profiles in the cross-beams.



Figure 9: Position the locking profiles in the cross-beams

4. Slide the cross-beams in columns II and IV.
5. Place columns I and III over the prepared chemical anchors or key bolts.
6. Tilt the columns a bit backwards in relation to the cross-beams.
7. Slide the columns as far as possible towards the cross-beam guide roller.



Figure 10: cross-beam guide roller

8. Make sure that all the columns are in alignment with each other and that all the columns are vertical:
 - a) Move the columns a bit forward so that the guide rollers have no slack in the uppermost position.
 - b) If necessary, place shims under the base plate to achieve vertical alignment.



Figure 11: Vertical position of the columns

9. Tighten the nuts on the base plates with a torque of 16 Nm.

4.2.4 Securing the locking profiles

1. Set bolt (3) with spring (5) and washer (6) in the hole at the top of the locking profile (4).

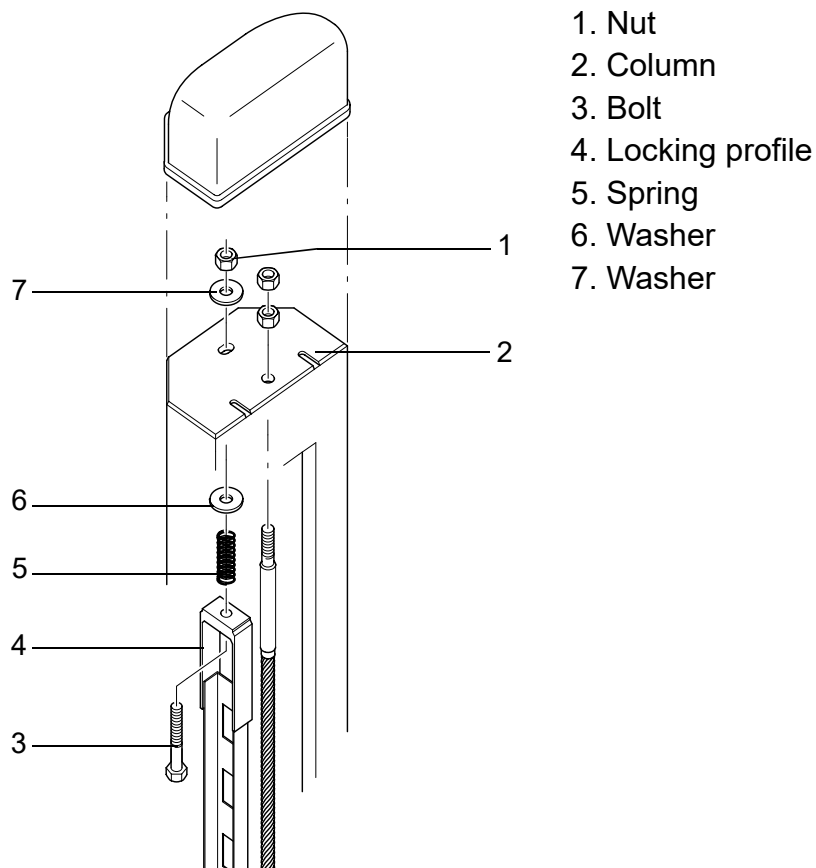


Figure 12: Securing of the locking profiles

2. Lift the locking profile (4) and secure it with washer (7) and nut (1).



Do not remove or disable the slack cable safety feature or the cable break safety feature. These features are an important part of the machine and can prevent dangerous situations.

3. Lift the cross-beams into the safety catch at a height of approximately 75 cm.
Make sure that the number of free holes above the cross-beams is the same for all four columns.



Figure 13: Secure the cross-beam

4. To level the cross-beams (see Figure 12: Securing of the locking profiles on page 34):
 - a) Put a spirit level on the cross-beam.
 - b) Use Allen key no. 14 to keep bolt (3) stationary.
 - c) Level the crossbeam by turning nut (1).



WARNING

The nut must be completely screwed onto the bolt to achieve maximum strength of the joint. Failure of this joint can cause serious personal injury and/or heavy material damage.

4.2.5 Installing the control box

1. Secure the bolts, spacers and plastic nuts on column III.



Figure 14: Installing the control box



Figure 15: Spacers for the control box

2. Install the control box with rings and self-locking nuts.

4.2.6 Installing the hydraulic unit

1. Install the hydraulic unit.



Figure 16: Install the hydraulic unit

2. Secure the ground cable to the motor and the control box.
3. Assemble the adapter socket in the threaded bush on the cross-beam.
4. Connect the plug and push it into the cross-beam.
5. Run the hydraulic hose through the cross-beam.

When installing the machine with the optional lighting, at this point run the cable through the flexible hose of the control box to the cross-beam (see also step 3 of Installing lighting armatures (option) on page 49).

6. Secure the flexible hose to the cross-beam.

4.2.7 Installing the foot protection switch

1. Install the foot protection switch under column III.



Figure 17: Install the foot protection switch

2. Saw the supplied cable channel to size.
3. Secure the cable in the column with the cable channel.
4. Connect the cables to each other



4.2.8 Installing the steel cables

The cables must run as indicated in the figure.

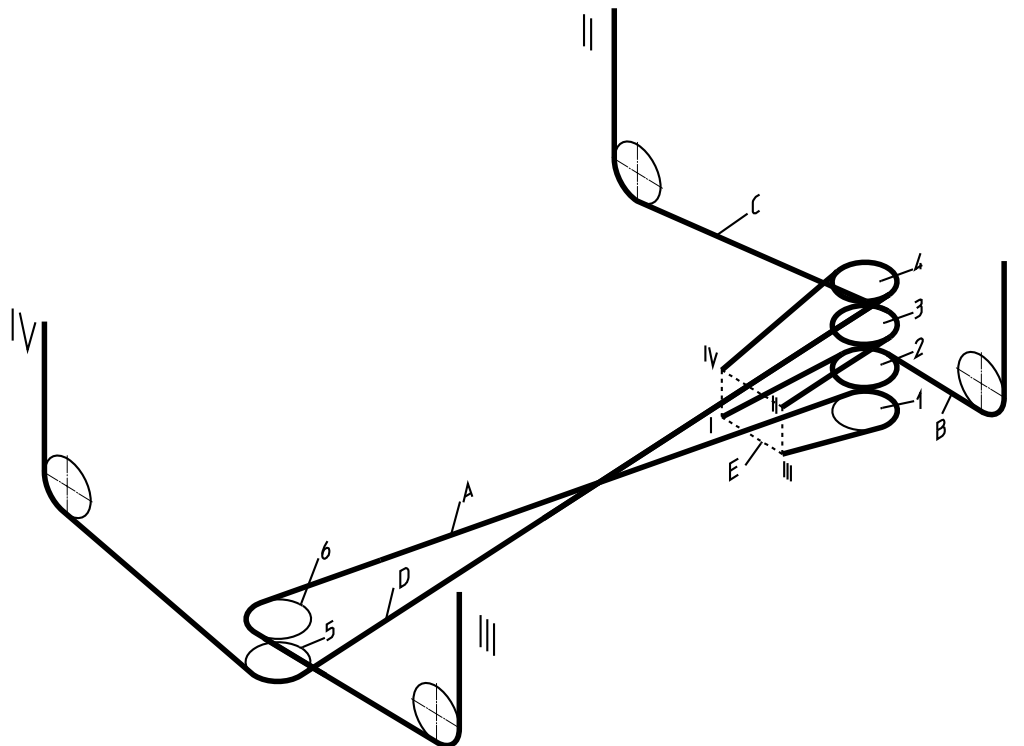


Figure 18: Cable run

1-4	Pulleys on cross-beam I-II
5-6	Pulleys on cross-beam III-IV
A	Cable from cylinders to column III
B	Cable from cylinders to column I
C	Cable from cylinders to column II
D	Cable from cylinders to column IV
E	Piston head

1. Remove the axle from the cable pulleys (1) - (4).
2. Place cable (A) (the second longest) with disc (1) in cross-beam I - II.
3. Place cable (B) (the shortest) with disc (2) through cross-beam I - II to column I.
4. Place cable (C) (the second shortest) with disc (3) through cross-beam I - II to column II.
5. Place cable (D) (the longest) with disc (4) in cross-beam I - II.
6. Lightly grease the axle with Molycote PG54.

7. Place the cable pulleys (1) - (4) on the greased axle and secure the axle with securing bolt M8×12.
8. Remove the axle from the cable pulleys (5) - (6).
9. Place cable (D) with disc (5) through cross-beam III - IV to column IV.
10. Place cable (A) with disc (6) through cross-beam III - IV to column III.
11. Lightly grease the axle with Molycote PG54.
12. Place the cable pulleys (5) - (6) on the greased axle and secure the axle with securing bolt M8×12.
13. Run the cable in each column through the pulley and secure the cable at the top with double nuts.



Figure 19: Cable run in column

Make sure that the terminals project approximately 80 mm above the end plate.

NOTICE

The cables will be adjusted later.

4.2.9 Installing the cylinders

1. Attach the cylinders with the pins to the cross-beam III - IV.
2. Lock the pins with M8×16 countersunk bolts.
3. Place the other end of the cylinders on a support.
The cylinder is now in a horizontal position.
4. Install the piston head on the piston rods. Use a M20 nut and tighten it with 270 Nm torque.



Figure 20: Install the piston head

5. Place the split pin to secure the nut on the cylinder.
6. Turn the stop from the bottom of the cylinders.
7. Remove the ball from the cylinder coupling.
8. Extract the piston rods.
9. Attach the cables to the piston head and secure them with adjusting screws M8×12. See also Figure 18: Cable run on page 38.



Figure 21: Secure the cables to the piston head

10. Attach the limit switch to the top of the cylinder.



Figure 22: Attach the limit switch

NOTICE

The limit switch will be adjusted later.

11. Install the ventilation line and the hydraulic hose.



Figure 23: Install the ventilation line and hydraulic hose

NOTICE

See Hydraulic diagram on page 107 for the hydraulic connections.

4.2.10 Installing the tracks

1. Temporarily tie the cables together with a cable binder.



Figure 24: Temporarily bind the cables together

2. Lubricate the top side of the transverse beam (where the fixed track is located) with grease to prevent corrosion.
3. Prevent the cross-beams from moving:
 - a) Use wedges to clamp the cross-beams with their slide plates against the columns.
 - b) Temporarily set an extra slide plate on the outside between the column and the cross-beam.

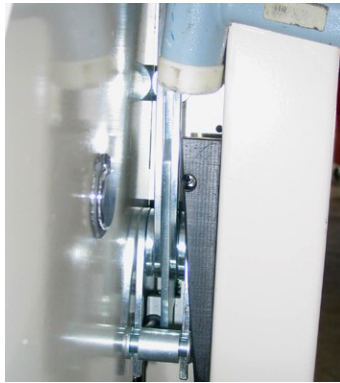


Figure 25: Clamp the cross-beam

4. Use a spirit level to make sure that the end plates on the cross-beams are vertical.
5. If the machine is fitted with the lighting option, run the electrical cable to cross-beam I - II. Also see Installing lighting armatures (option) on page 49.
6. Hoist the fixed track between the cross-beams:
 - a) Place a strap around the fixed track.
 - b) Attach the strap to a suitable hoisting installation.
 - c) Place the fixed track on the cross-beams.



Figure 26: Hoist the fixed track

7. Secure the slide plates with the support plates of the adjustable track to one side of the track.
8. Lay a few shims on the cross-beams at the place of the adjustable track.
9. Hoist the adjustable track between the cross-beams and place it on the shims.

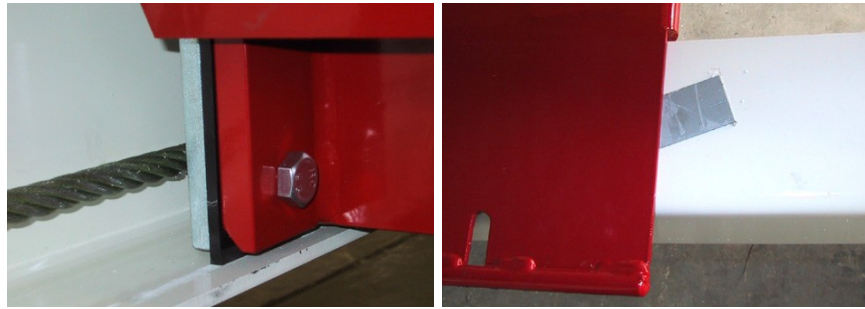


Figure 27: Slide plate and support plate (left) and shim on the cross-beam (right)

10. Assemble the slide plates and support plates on the ends of the adjustable track.
The slide plates must be supported by the cross-beams, see also Figure 30: Assemble the adjustable track: checking the end plates on page 44.
11. If the machine is fitted with the lighting option, secure the clamp for the pulley. Also see Installing lighting armatures (option) on page 49.
12. Remove the shims from under the adjustable track.
13. Lay the adjustable track parallel to the fixed track.
14. Make sure that the track moves correctly and that the space between the flanged faces and the cross-beam is 3 - 5 mm.

NOTICE

To adjust the space between the flanged face and the cross-beam, add or remove slide plates between the column and the cross-beam.

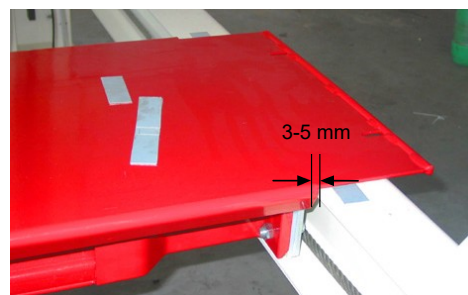


Figure 28: Assemble the adjustable track

15. Divide the space between the end plates of the fixed track and the plates on the cross-beams evenly between left and right. Fill up the space with shims if necessary.

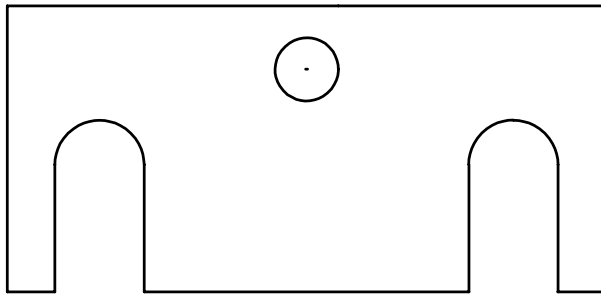


Figure 29: Shim

16. Assemble the bolt, spring retaining rings and nuts. Tighten them securely.
17. Remove the wedges from between the columns and cross-beams.
18. Use a spirit level to make sure that the end plates are still vertical.
Use half shims to adjust the cross-beam to a vertical position.



Figure 30: Assemble the adjustable track: checking the end plates

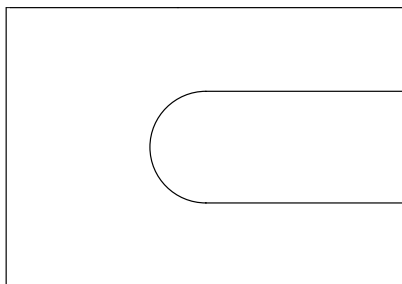


Figure 31: Half shim

19. Make sure that the space between the flanged faces of the track and the cross-beams is still 3 - 5 mm.

Insert or remove shims between the fixed track and the cross-beams to adjust the space between the flanged faces and the cross-beams.

NOTICE

If exact vertical adjustment is not possible, it is better to adjust the cross-beams a little to the outside rather than to the inside, considering the bending of the tracks under load.

20. Make sure that the space between the slide plates on the cross-beams and the columns is at least 2 mm.

Fill the space with extra shims if necessary.

21. Assemble the switch plate for the foot protection (1) between the slide plate and cross-beam on the control side.

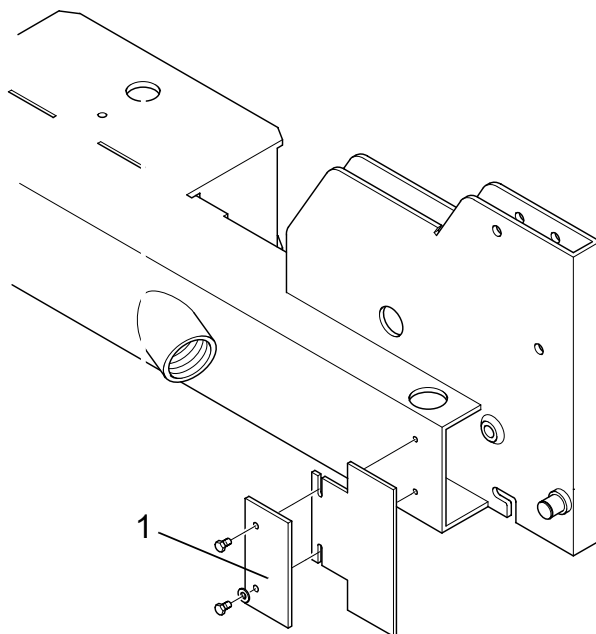


Figure 32: Switch plate foot protection

22. Adjust the limit switch:
 - a) Make sure that the limit switch clamp is not yet secured.
 - b) Raise the machine completely.
The cylinders are against their end stop and the pump is pumping over the overflow.
 - c) Set the limit switch as far as possible with the roller against the piston head.
 - d) Secure the limit switch clamp.The limit switch will now switch before the cylinders runs against their end stop.



23. Mount the drip tray under the cylinders and fix it diagonally with clamping brackets.

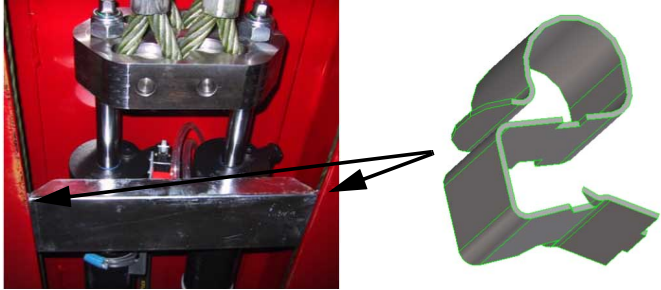


Figure 33: Secure the cylinder under the track

4.2.11 Tensioning the steel cables

The steel cables need to be adjusted to different heights on each column. This is done to compensate for the difference in elongation between the short and long steel cables. With these values, the lift is horizontal at 50% of the maximum load.

1. Lower the lift to its lowest position.
The cross-beams must be completely free of the base plates.
2. Readjust the steel cables with the nuts on top of each column (A12). See the table for the distances between the base plate and the cross-beam for each column:

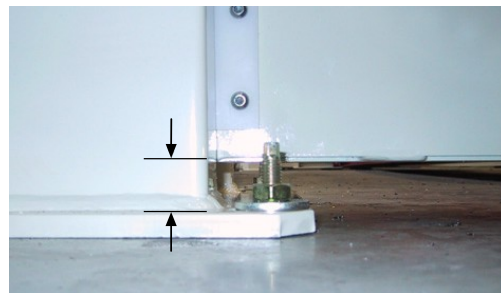
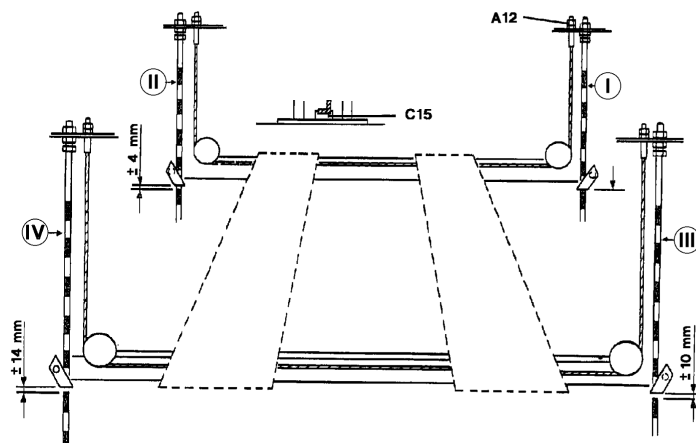


Figure 34: Tensioning the steel cables

Table 4: Distances between base plates and cross-beams

Column	Distance (without load)
I	0 mm, with maximal tension on the cable
II	4 mm
III	10 mm
IV	14 mm

WARNING

When the nuts cannot be tightened any further, the steel cables have reached the maximum safe elongation and must be replaced. Operating with worn-out cables increases the risk of a cable break. A cable break can cause severe injury and/or heavy material damage.

3. Move the lift up and down a few times without load. Make sure the pawls in the locking slots have the differences specified in the table.



4.2.12 Installing the stop plates and access ramps

1. Mount the fixed stop plates (1) to the end of the tracks and secure them with nuts and bolts.
2. Place the access ramps (2) in the slotted holes and secure them with nuts and bolts.

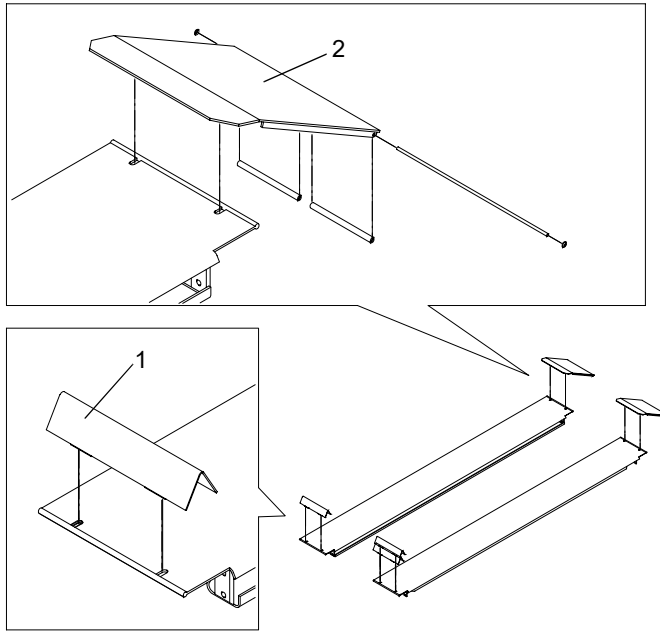


Figure 35: Stop plates and access ramps

4.2.13 Installing the protective caps and guards

1. Place the cage nut in the hole of the cross-beam.



Figure 36: Protective cap

2. Fit the cap and tighten the bolt.
3. Fit guards on the columns.



Figure 37: Column guards

4.2.14 Installing lighting armatures (option)

When installing a machine with the optional LED lighting, run the cable (3) through the flexible hose during the installation of the hydraulic unit.

The cable runs from the control box via the switch above the control box (16) to the 24 volt LED power supply (15). From this power supply the cable (3) runs through the flexible hose and is connected to the first LED armature (1) with a plug connector. The armatures are connected to each other with interconnecting cables (10). The armatures in the adjustable track are connected with a coiled cable (4) in the cross-beam.

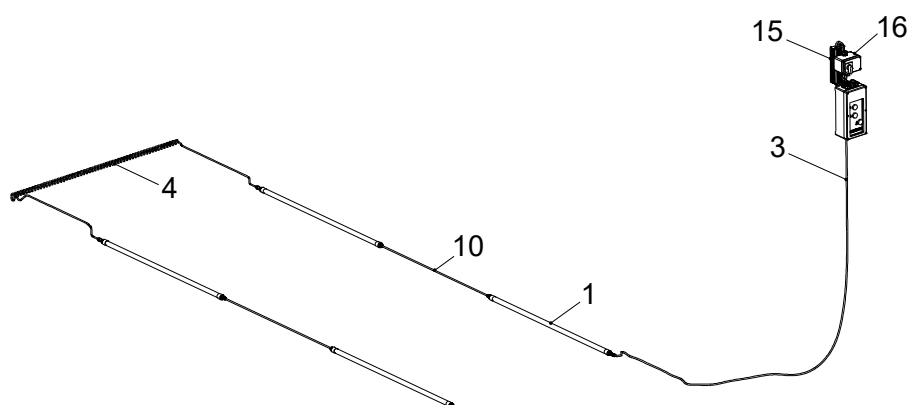


Figure 38: Lighting armatures

Pos.	Description	Pos.	Description
1	LED armature	10	Interconnecting cable
3	Cable from power supply to armature	15	LED power supply
4	Coiled cable	16	Lighting switch

1. Install the 24 volt LED power supply to the rear of the control box with bolts (20) and nuts (21).

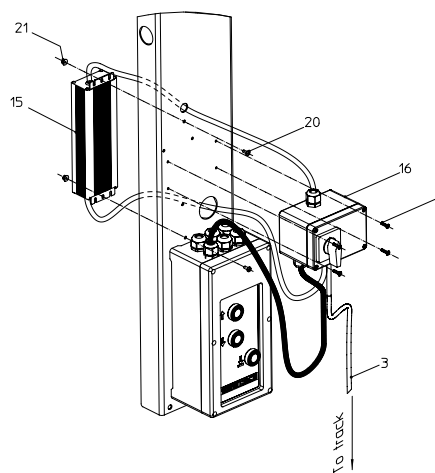


Figure 39: Lighting armature connections

Pos.	Description	Pos.	Description
3	Cable from power supply to armature	20	Bolt
15	LED power supply	21	Nut
16	Lighting switch	22	Self-tapping screw

2. Install the switch box (16) above the control box with self-tapping screws (22).
3. In case the cable is not installed during the installation of the hydraulic unit: run the cable (3) through the flexible hose.
4. Connect the cables according the diagram.

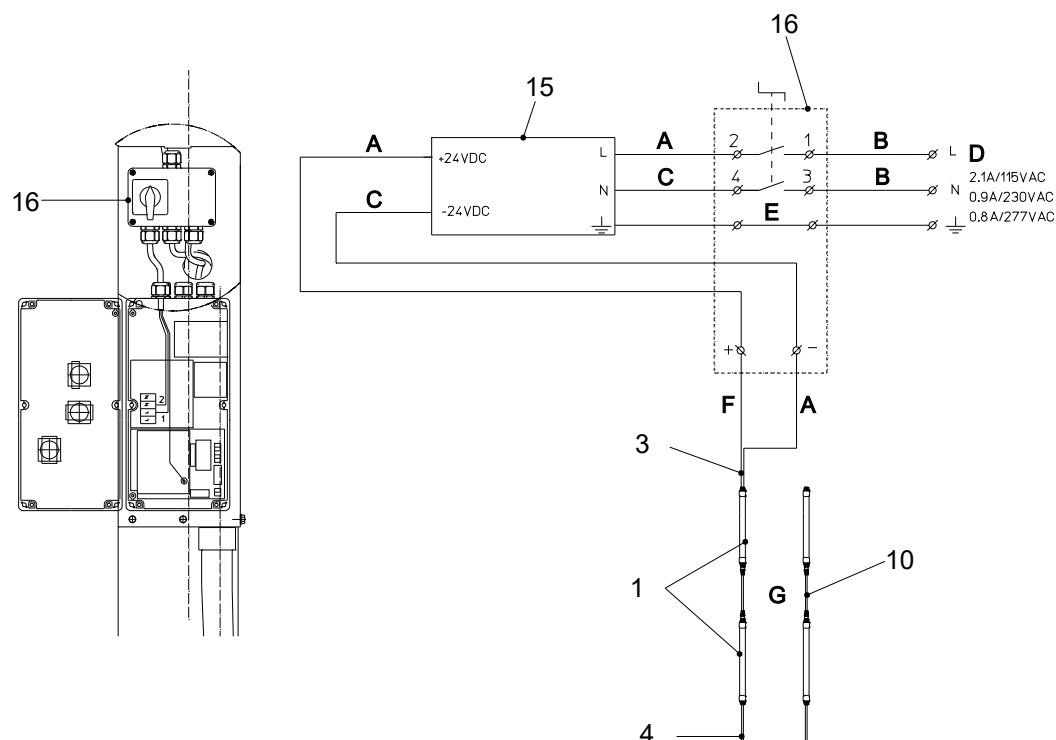


Figure 40: Diagram of lighting connections

Pos.	Description	Pos.	Description
A	White	1	LED fittings
B	Black	3	Cable from power supply to armature
C	Blue	4	Coiled cable
D	Input	10	Interconnecting cable 10 m
E	Yellow-green	15	LED power supply
F	Brown	16	Control box

NOTICE

Pay attention to the positive and negative poles.

5. Prepare the cable duct:
 - a) Place the first grommet (20) in the middle hole of the set of three large holes in the cable duct (2).
 - b) Attach the tube clips (17) to the middle hole of the cable ducts (2) with M6×12 bolts (18) and nuts (19).



NOTICE

The maximum space between the LED fittings is 950 mm because of the length of the interconnecting cables.

- c) Place the M5 expansion nuts (7) in the relevant holes of the tracks.

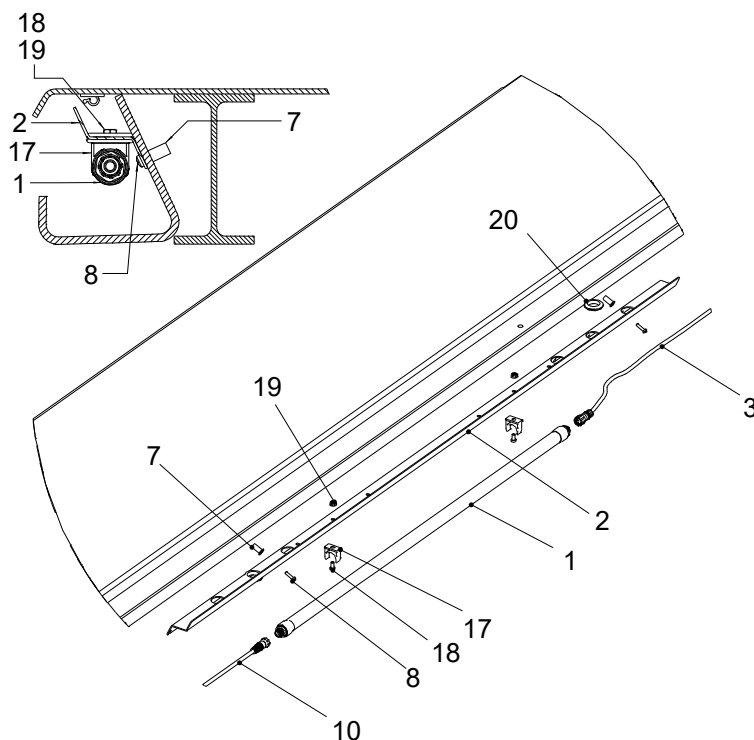


Figure 41: Mounting fittings

Pos.	Description	Pos.	Description
1	LED fittings	10	Interconnecting cable 10 m
2	Cable duct	17	Tube clips
3	Cable from power supply to armature	18	Bolt M6×12
7	Expansion nut M5	19	Nut M6
8	Bolt M5×20	20	Grommet

6. Fix the cable ducts to the tracks with the M5×20 bolts (8).
7. Feed the cable of the control box (3) through the grommet (20) to the first LED fitting (1).

NOTICE

Make sure the cam on the LED fitting fits the groove in the plug.

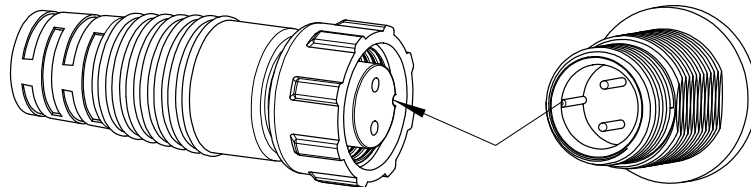


Figure 42: Cam and groove connection

8. Use the interconnecting cables (10) to connect each fitting to the previous one. Feed the cable through the grommets in the cable ducts.
9. Prepare the bracket with bar (5):
 - a) Feed the bracket with bar (5) through the coiled cable (4).
 - b) Feed the ends of the cable through the holes in both brackets (5 and 6).

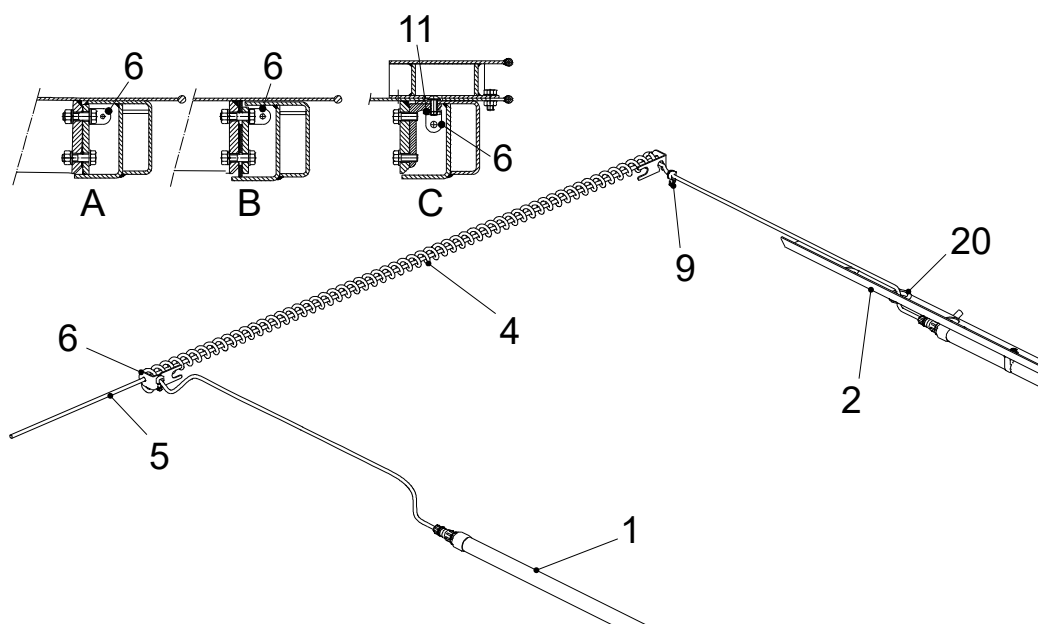


Figure 43: Cable path to the adjustable track

Pos.	Description	Pos.	Description
A	Fixed track	1	LED fittings
B	Adjustable track	2	Cable duct
C	Track with wheel alignment	4	Coiled cable
		5	Bracket with bar
		6	Bracket (adjustable)
		9	Cable ties
		11	Additional fixing tools
		20	Grommet

10. Attach the bracket with the bar (5) to the fixed track.

11. Attach the adjustable bracket (6) to the adjustable track.

NOTICE

The version equipped with wheel alignment comes with additional fixing tools.

12. Secure the coiled cable (4) to the brackets (5 and 6) with cable ties (9).

13. Where necessary, secure the cables with adhesive cable clips.

4.2.15 Installing the second control box (option)

The second control box is an option.

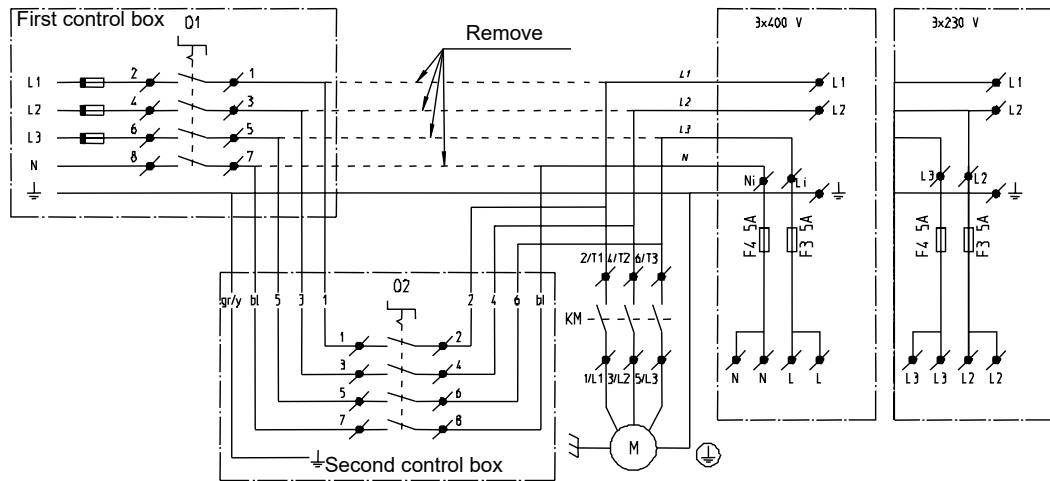


Figure 44: Installation diagram for the second control box

To connect the second control box:

1. Mount the printed circuit board in the main control box.
2. Mount the second control box to the correct column.
3. Disconnect the flexible hose and connector from the main control box.
4. Plug the connector in the second control box and attach the flexible hose.
5. Connect the second flexible hose and connector to the main control box.
6. Feed the cables through the cross-beam (and through the track, if necessary) to the main control box with a draw spring.
7. Feed the cables through the cable gland at the bottom of the main control box.
8. Remove the three cores between the main switch and the motor relay, see Figure 44: Installation diagram for the second control box on page 55.
9. Remove the neutral core (blue) between the main switch and the printed circuit board.
10. Connect cores 1, 3, 5 and the blue core to 1, 3, 5 and 7 on the main switch respectively.
11. Connect the ground (green/yellow) to the transformer.
12. Connect 2, 4 and 6 to 2/T1, 4/T2 and 6/T3 on the motor relay respectively.
13. Connect the blue core to the Ni connection on the printed circuit board.



NOTICE

The neutral core can be cut away if $3 \times 230\text{ V}$ is used. In this case the printed circuit board is powered by L2 and L3.

14. Remove the interconnections on the connector.
15. Connect the wires of the control current cable to the connector according the table below.

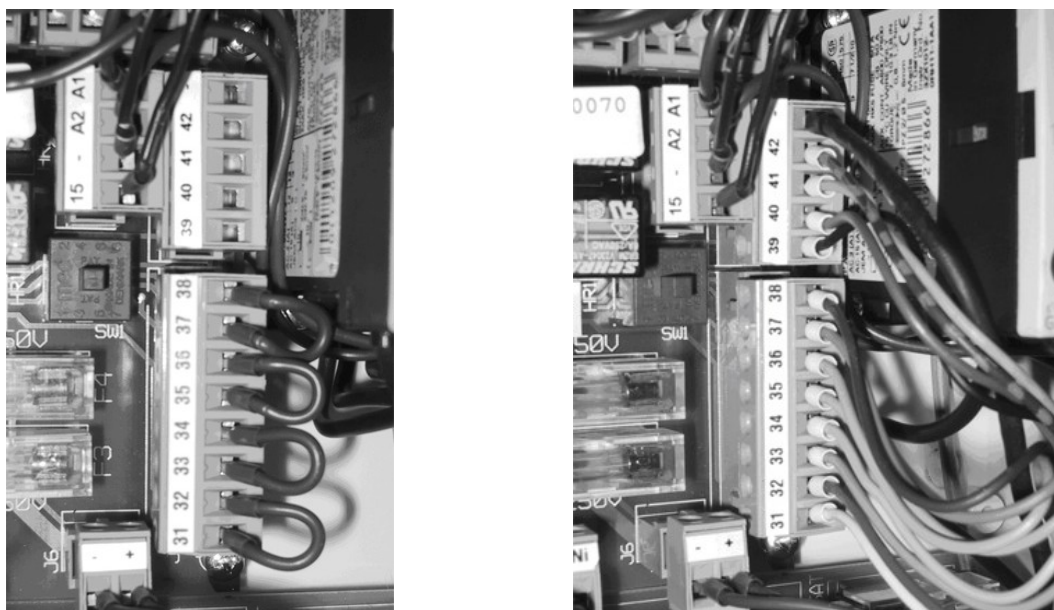


Figure 45: Control current cable connections

Number	Colour
31	White
32	Brown
33	Green
34	Yellow
35	Grey
36	Pink
37	Blue
38	Red
39	Black
40	Purple
41	Grey/pink



Number	Colour
42	Blue/red
-	<i>Shielding</i>

5 Commissioning

CAUTION

- *The checks and adjustments described in this chapter must be carried out by a service department engineer before the vehicle lift is put into service.*
- *There must be no vehicle on the vehicle lift during the checks and adjustments.*
- *It is not allowed to put the machine into operation if any of these checks fail. In this case, contact your local Steril B.V. service department or distributor.*

5.1 Locking mechanism

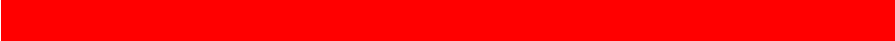
The locking pawls must be able to engage freely in every slot of the locking profile.

5.2 Slack cable protection and cable break protection

1. Place a support under a cross-beam at one of the columns.
2. Lower the machine until the cross-beam rests on the support.
3. Continue the downward motion until the machine stops.
The automatic stop must have triggered within 10 cm of becoming off level. If this is not the case, the check failed.
4. Press the raise button.
The machine must start ascending again. If this is not the case, the check failed. Make sure that the switches in the slack cable unit and the cable break unit are connected properly and try again.

NOTICE

The slack cable / cable break protection can be overruled with a switch inside the control box.



Repeat this procedure for every column of the machine.

5.3 Highest position limit

1. Raise the machine.
2. Manually press the limit switch during the upwards motion.
The machine must stop moving immediately.

6 Inspection and maintenance

6.1 Aim of maintenance

Maintenance can be divided into two categories:

- Preventive maintenance.
- Corrective maintenance.

Preventive maintenance is necessary to keep the machine in a good condition or restore it to that condition. Corrective maintenance is done after malfunctions have occurred.



WARNING

Only authorised personnel are allowed to carry out maintenance.

Always follow maintenance instructions.

NOTICE

All maintenance actions described must be done on schedule. Due to load differences and environmental influences certain parts may require more or less maintenance than specified.

The maintenance procedures will refer to special instructions when necessary.

6.2 When you carry out maintenance

- If you are in any doubt whether you should perform an action, please contact your local Steril B.V. service department or distributor.
- If you are allowed to perform an action but are unsure whether you have the ability to do so, please contact your local Steril B.V. service department or distributor.
- Always observe the safety procedures when carrying out maintenance; see Safety on page 10.
- After carrying out the maintenance, always perform the final checks.

6.2.1 Pay attention to safety



- *When carrying out inspection and maintenance, always follow the procedure for Lock-out/tag-out on page 15.*
 - *If the machine is in a higher position, always lower it into the safety catch.*
 - *Always pay attention to safety. Work on installations and devices can only be safe if the corresponding instructions are carried out exactly and all protection devices are left in place.*
 - *It is the responsibility of those in charge of preparing or surveying work, to take the necessary steps to guarantee safe working conditions.*
 - *The supply voltage may only be switched on temporarily and the machine set to a higher position if these actions are required for specific adjustments and checks.*
-

6.2.2 Recommendations for maintenance

When performing maintenance on your machine, keep in mind the following recommendations:

- Keep the machine clean at all times.
- Repair damaged or worn parts promptly.
- Ensure that all fasteners are secured after maintenance.
- Do not attempt to operate defective equipment.
- Follow the safety instructions in this manual.
- Follow the safety regulations that apply to your site.
- For repairs and maintenance, always use original Steril B.V. parts.

6.2.3 Waste disposal

Remove and dispose in a correct manner lubricating agents, used chemical products and other such matter. On this subject, the local environmental recommendations should be respected. See also Environmental aspects on page 19.

6.2.4 Forms and administration

It is recommended to keep a record for each periodic maintenance procedure performed on your equipment. The operator/engineer responsible for the maintenance should enter:

- His or her name.
- The date when the maintenance was carried out.
- The work carried out.



Daily periodic maintenance procedures do not require a signature or date – these procedures must be completed at the start of each work day.

6.3 Maintenance schedule

The following table gives an overview of all the required maintenance actions for the service engineer.

The maintenance schedule:

When	Action	Remarks
Monthly	• Check the operation of the safety catch. • Carry out the monthly lubrication programme.	• Raise the machine and lower it into the safety interlock. • If the safety lock does not work correctly, refer to the service department immediately.
One month after commissioning	• Readjust the tensioning of the steel cables.	See Tensioning the steel cables on page 46.
Yearly	• The user must have the vehicle lift inspected once a year by the Stertil technical services or another technical service authorised by Stertil. This inspection is recorded on the inspection check list.	

NOTICE

- *A maintenance contract can be arranged with technical services for this annual inspection. If no maintenance contract is arranged, the user should arrange for an annual inspection and maintenance service himself.*
- *If the safety interlock is not working correctly, refer to the service department immediately.*

6.4 Maintenance procedures

6.4.1 Annual maintenance

The annual maintenance must be performed by 'Trained lift service personnel'. This refers to personnel of the Stertil-Koni service department or another servicing agency recognized by Stertil-Koni, both also designated as 'service department'. The consequences of all repairs carried out on the vehicle lift by non-trained lift service personnel, are entirely at the user's risk.

1. Perform the daily and monthly checks. See the Maintenance schedule on page 62.
2. Check the oil level in the tank. When the oil level is too low, check for leaks (see steps 8 and 9).

The lift must be in the highest position when checking the oil level. The oil must be above the minimum oil level line, but not by more than 3 cm.

3. Make sure that the machine is filled with Unil HVC SX 15 hydraulic oil, filtered at maximally 4 micron.

NOTICE

- *Alternative oil: Mobil DTE 10 Excel 15.*
- *Alternative biodegradable oil: Panolyn Synth 15 (only on client request).*

-
4. Perform all the safety checks described in Commissioning on page 58.
 5. Make sure that the anchor bolt torque is in accordance with the data in Positioning the columns and cross-beams on page 31.
 6. Make sure that all the cables and cable pulleys are undamaged.

A cable is damaged if one of this conditions occurs:

- broken wires
- damaged wire ends and clamping bushes
- cable corrosion
- cable wear of more than 5%

7. Follow the procedure for Tensioning the steel cables on page 46.



WARNING

The cables may not be slack when the lift is in the lowest position. If the cables are slack and the adjustment area on the cable tensioning bars is used, the steel cables have reached the maximum safe elongation and need to be replaced. Operating with worn-out cables increases the risk of a cable break. A cable break can cause severe injury and/or heavy material damage.

8. Make sure that the hydraulic cylinder does not leak. Replace the seal and guide rings if the oil reception tank has filled in the inspection interval.
 9. Make sure that the hydraulic system does not leak. Replace any defective parts.
If the lift descends more than 6 mm in an hour, make sure that the system does not show external leaks (hoses, couplings) or internal leaks (valves).
 10. Make sure that there is no visible damage.
-

WARNING

Any part that shows signs of crack formation must be replaced. If the damaged part can cause a dangerous situation, it must be replaced immediately.

11. Lubricate all lubrication points in the Lubrication instructions on page 65.

6.4.2 Lubrication instructions

The following table gives an overview of all the required lubrication maintenance activities.

When	Action
Every month	• Lubricate the dry piston rod of the cylinder with oil.
Every year	• Make sure that the oil level in the tank is correct. Fill up when necessary: 1. Place the machine in the lowest position. 2. Open the hydraulic oil tank. 3. Fill until the oil reaches the maximum oil level. • Lubricate the fulcrum pins on the pawls and control racks with oil. • Lubricate the fulcrum pins on the slack cable and cable break protection with oil. • Lubricate the locking bar and guide parts in the columns. • Lubricate various fulcrum pins. • Lubricate cable pulleys with Molycote PG54. • Replace the hydraulic oil in the tank.
Every 2 years	Replace the hydraulic oil in the tank.

6.4.3 Replacing the hydraulic oil

The hydraulic oil has to be changed every two years. To change the hydraulic oil:

1. Lower the lift to the lowest position.
2. Perform the Lock-out/tag-out on page 15.
3. Drain off the old oil.
4. Fill the 12-litre tank with Unil HVC SX 15 hydraulic oil, filtered at maximally 4 micron.



- *Always replace the hydraulic oil and clean or replace the suction filter every 2 years, even if the lift is not in constant use.*
 - *Do not use incompatible oil and do not mix different oil types. This can damage the seals of the hydraulic pump, cylinders and valves and lead to dangerous situations.*
-



NOTICE

- *It is strongly recommended to have a maintenance contract. Consult your supplier/dealer about annual maintenance and repairs/adjustments.*
 - *The warranty will expire when not-prescribed oil is used and/or different types of oils are mixed.*
 - *Alternative oil: Mobil DTE 10 Excel 15.*
 - *Alternative biodegradable oil: Panolyn Synth 15 (only on client request).*
-

6.4.4 Replacing the steel cables

To replace the steel cables:

1. Lower the lift into a safety catch at working height until all the cables are slack.
2. Remove the nuts from the cables on the columns.
3. Remove the locking pin from the piston head and remove the relevant cable.
4. Remove the cable guides in the cross-beam and remove the cable.
5. Assemble the new cable in reverse order.
Make sure that there are no kinks in the cable.
6. Allow the piston to slowly pull the cable tight.
Make sure that the new cable moves correctly over the pulleys in its path.
7. Follow the procedure for Tensioning the steel cables on page 46.

6.4.5 Tensioning the steel cables

Follow the procedure for Tensioning the steel cables on page 46 if one of the following conditions occurs:

- The machine can no longer attain the maximum height (top surface of the track at 2 metres);
- The steel cables are slack when the machine is in its lowest position.

6.4.6 Cleaning

Regularly clean:

- Cylinders
- Pump unit
- Control box
- Columns and tracks



Avoid the electric system when pressure cleaning.

6.4.7 Cleaning the lighting armatures (option)

Clean the lighting armatures with a non-aggressive detergent.

6.4.8 Visual inspection

During a visual inspection:

- Check all visible wires and cables for damage.
 - Check the visible part of the hydraulic system for leakage.
 - Check the functioning of all moving parts.
-



Operators are not allowed underneath the vehicle lift for inspections, this may only be done by qualified personnel.

7 Troubleshooting

This chapter contains common faults and how to solve them.

WARNING

Only authorised personnel are allowed to carry out maintenance.

WARNING

Incorrect adjustments, repairs and maintenance can cause damage to goods or personal injury. Consult your dealer/supplier.

7.1 Service

It is not necessary to remove the vehicle from the vehicle lift to resolve most malfunctions. However, if the vehicle lift is in the lowest position, it is strongly recommended that you remove the vehicle.

Set the machine to its lowest position in the event of malfunctions or repairs. If the malfunction makes this impossible, then make sure that all safety catches are engaged in the locking profiles (push 'Down and lock').

Perform a Lock-out/tag-out on page 15 in case of malfunctions or repairs.

WARNING

Only authorised personnel are allowed to carry out maintenance.

Always follow maintenance instructions.

 WARNING

Incorrect adjustments, repairs and maintenance can endanger people, goods, etc.

 CAUTION

Never loosen or remove any part of the hydraulic system without first placing the machine in the lowest position or in the safety locks.

 CAUTION

Any repairs to the machine and the resultant consequences shall be completely at the user's own risk if such repairs have not been carried out by the technical service department.

7.2 Common faults and solutions

7.2.1 Lift cannot be raised

Table 5: Lift cannot be raised

There is no mains power or control power.	See No mains power supply on page 71 and No control voltage on page 71.
The oil level is too low (but motor is running).	Top up the oil level, see Lubrication instructions on page 65.
There is air in the pump (only possible after the tank has been emptied).	Simultaneously press and hold the buttons 'Up' and 'Down' for 1 minute.
The overload safety valve is open.	• The machine is overloaded. • The safety valve is installed incorrectly; let technical services fix the safety valve.
The pump yield is too low.	Have the pump replaced by the technical service department.
The cable break circuit is engaged due to an electrical fault or cable break.	• Check the electrical circuit. • Replace the steel cable.
The highest position circuit is engaged due to an electrical fault.	Lower vehicle lift and check the electrical circuit.



The electrical motor rotates in the wrong direction.	Incorrect electric connection to the motor: change over two phases.
--	---

7.2.2 Lift cannot be lowered

Table 6: Lift cannot be lowered

There is no mains power or control power.	See No mains power supply on page 71 and No control voltage on page 71.
The safety catch is engaged.	First raise the vehicle lift about 50 mm; see Operation sticker on the post.
The electrically operated lowering valve on the hydraulic unit does not open.	• There is no control current to the magnetising coil: replace the magnetising coil. • The lowering valve is defective: replace the lowering valve.
The lowering valve is dirty or damaged.	Clean or replace the lowering valve.
The hose rupture safety is not working.	• If the hose is ruptured: replace the hose. • Make sure that the safety catch is undamaged.
The machine is misaligned due to elongation of the steel cables.	Perform the procedure Tensioning the steel cables on page 46.
The slack cable circuit is engaged due to an electrical fault or cable break.	• Raise the lift and remove all obstacles from the lifting path. • If there are no obstacles: check electrical circuit.
The electrical cable has a break.	Replace the electrical cable.
The return filter is dirty.	Clean the return filter.

7.2.3 Lift lowers on its own accord

Table 7: Lift lowers on its own accord

The cylinder seal is damaged; there is a constant oil leak.	Replace the sealing ring or cylinder.
There is a leak in the hose couplings.	Tighten the couplings or coupling nuts.
There is an oil leakage.	Check the cylinder and lines for leakage.
The check valve is dirty or damaged.	Clean or replace the check valve.
The lowering valve is dirty or damaged.	Clean or replace the air valve.

7.2.4 Lift cannot raise sufficiently

Table 8: Lift cannot raise sufficiently

The oil level in the tank is too low.	Top up oil level, see Lubrication instructions on page 65.
The pump is drawing air.	Tighten the suction filter attachment or shut off.

7.2.5 No mains power supply

Table 9: No mains power supply

The mains switch is off.	Turn the mains switch on.
There is no mains power.	Get an approved electrician to resolve the malfunction.

7.2.6 No control voltage

Table 10: No control voltage

Fuse F1 or F3 is blown or defective.	Replace the blown or defective fuse.
The printed circuit board is defective.	Contact technical services.
There is a break in the electrical wiring.	Replace the defective cable.

7.2.7 Lighting does not work (if installed)

Table 11: Lighting does not work (if installed)

There is a failure in the control box or LED Power supply.	Replace the fuse(s) F3 and/or F4 (3.15 A slow-blow).
There is a break or loose core in the wiring of the lighting.	Check the wiring and replace if necessary. Make sure that the positive and negative poles are connected properly.
One of the LED armatures does not light up.	Replace the LED armature in question.



7.3 Emergency lowering

In an emergency situation, when it is not possible to lower the machine with the control box, the machine can be lowered manually.



The emergency lowering procedure is very complex and dangerous. Only persons who are trained in this procedure, are allowed to lower the machine manually.

7.4 Technical support

If the tips provided in this chapter do not answer your question or solve your problem, please contact your local Steril B.V. service department or distributor. For a complete list of Steril B.V. distributors and local service departments, please refer to the website: steril.com.



8 List of parts

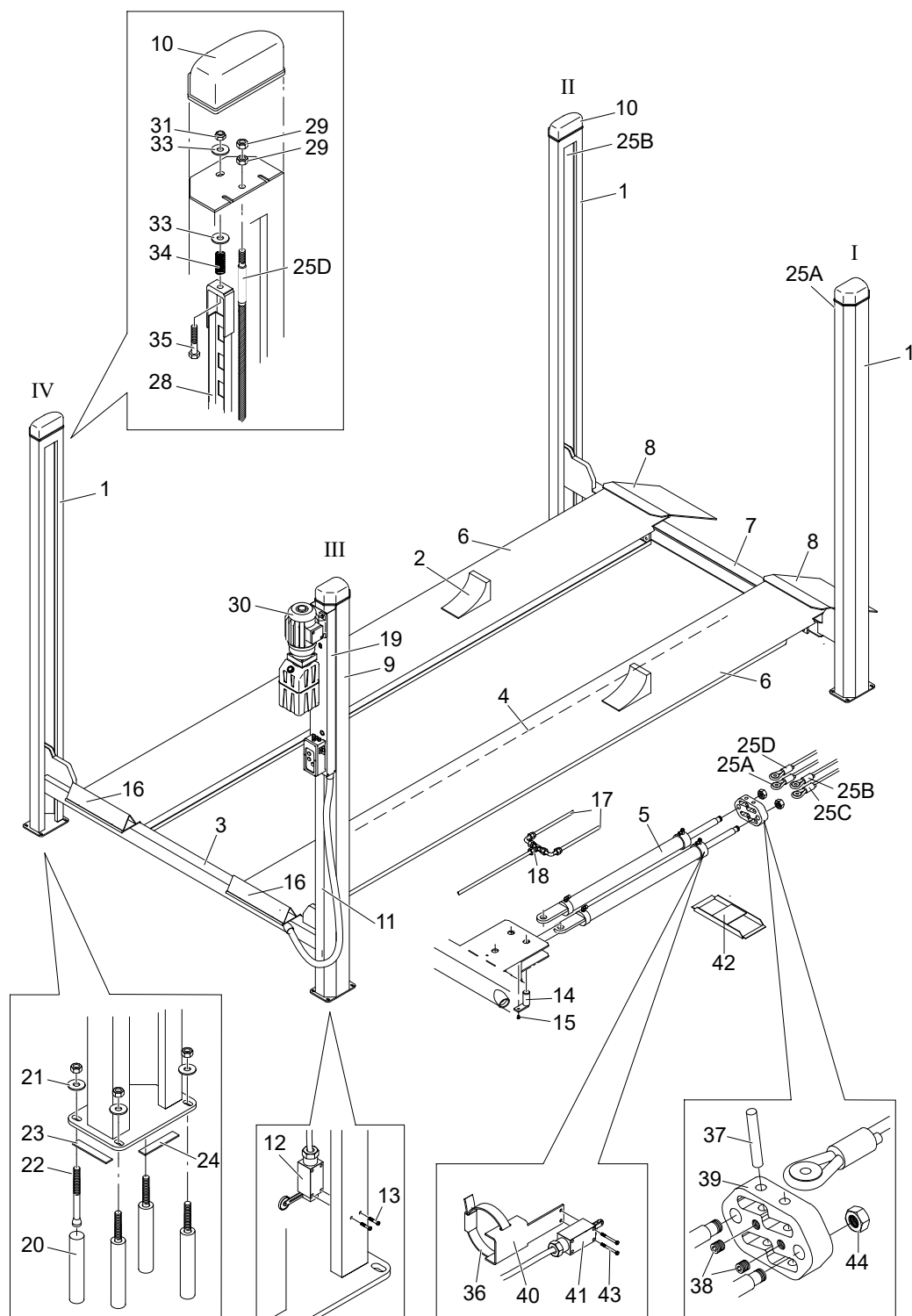
The following sections will give an overview of the main assemblies and their components.

Explanation of the titles of the columns in the parts list:

Pos.	This column contains the numbers that refer to the figure.
Total qty.	Total number of parts in the assembly.
Number	The numbers in this column are Steril B.V. order numbers. Please specify these numbers when ordering. R/H = right hand L/H = left hand
Description	This column contains the name of the parts.
Remarks	This column contains extra information.



8.1 Summary



Pos.	Total qty	Number	Description	Remarks
1	3	44501150	Column No. I, II and IV	

Pos.	Total qty	Number	Description	Remarks
2	2	1020.50.00.01	Stop block	
3	1	See Cross-beams on page 82	Cross-beam 3-4 assembly	
4	1	43507111	Electric cable track	
5	2	See Cylinder on page 78	Hydraulic cylinder assembly	
6	2	See Tracks on page 80	Track	
7	1	See Cross-beams on page 82	Cross-beam 1-2 assembly	
8	2	See Tracks on page 80	Ramp	
9	1	44501050	Post 3	
10	4	43500101	Post cover	
11	1	66102015	Cable duct	
12	1	43507108	End switch	
13	2	65045017	Screw M6x20	
14	2	44506020	Shaft	
15	2	65025039	Bolt M8x12 DIN7991 GV	
16	2	See Tracks on page 80	Stop plate	
17	2	43506004	Hydraulic hose L=640	
18	1	1003.91.23.10	T-joint T10-PS	
19	1	See Control box on page 99	Control box assembly, 400 V	
20	16	65016005	Capsule UKA 3 EAP M10, 420 upat	
21	16	65055310	Washer M10, DIN440R GV	
22	16	65016004	Anchor rod ASTA M10x130, 7831 upat GV	
23	1	43500110	Filling plates (18 pieces), 1 mm	



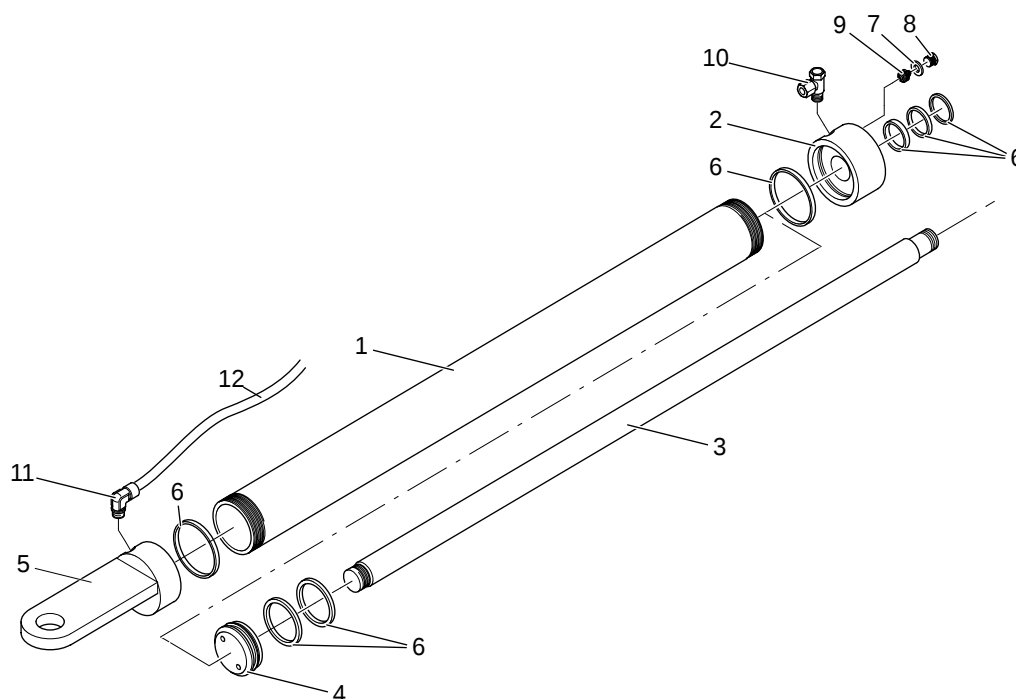
Pos.	Total qty	Number	Description	Remarks
23	1	43500115	Filling plates (18 pieces), 0.5 mm	
24	1	3583.04.60.00	Filling plates (12 pieces), 1 mm	
24	1	3583.04.61.00	Filling plates (12 pieces), 0.5 mm	
25A	1	44006050	Steel cable 1 L=3840	ST4055/ST4070-S
25A	1	44026050	Steel cable 1 L=3990	ST4055-V/ST4070-SV
25A	1	44506050	Steel cable 1 L=4425	ST4055-L/ST4070
25A	1	44526050	Steel cable 1 L=4575	ST4055-LV/ST4070-V
25A	1	44516050	Steel cable 1 L=4920	ST4070-L
25A	1	44536050	Steel cable 1 L=5070	ST4070-LV
25B	1	44006100	Steel cable 2 L=5550	ST4055/ST4070-S
25B	1	44026100	Steel cable 2 L=5700	ST4055-V/ST4070-SV
25B	1	44506100	Steel cable 2 L=6135	ST4055-L/ST4070
25B	1	44526100	Steel cable 2 L=6285	ST4055-LV/ST4070-V
25B	1	44516100	Steel cable 2 L=6630	ST4070-L
25B	1	44536100	Steel cable 2 L=6780	ST4070-LV
25C	1	44006150	Steel cable 3 L=8910	ST4055/ST4070-S
25C	1	44026150	Steel cable 3 L=9055	ST4055-V/ST4070-SV
25C	1	44506150	Steel cable 3 L=10095	ST4055-L/ST4070
25C	1	44526150	Steel cable 3 L=10240	ST4055-LV/ST4070-V

Pos.	Total qty	Number	Description	Remarks
25C	1	44516150	Steel cable 3 L=11085	ST4070-L
25C	1	44536150	Steel cable 3 L=11235	ST4070-LV
25D	1	44006200	Steel cable 4 L=10615	ST4055/ST4070-S
25D	1	44026200	Steel cable 4 L=10765	ST4055-V/ST4070-SV
25D	1	44506200	Steel cable 4 L=11800	ST4055-L/ST4070
25D	1	44526200	Steel cable 4 L=11950	ST4055-LV/ST4070-V
25D	1	44516200	Steel cable 4 L=12795	ST4070-L
25D	1	44536200	Steel cable 4 L=12945	ST4070-LV
28	4	44505050	Locking profile	
29	8	65050152	Nut M30, 8 DIN934 GV	
30	1	See Pump unit on page 90	Pump unit assembly	
31	4	65051040	Self-locking nut M16, 8 DIN985 GV	
33	8	65055432	Washer, DIN9021 GV	
34	4	43500103	Compression spring	
35	4	65012540	Bolt M16x90, 8.8 DIN912 GV	
36	1	65099028	Hose clip norma torro, DIN3017 60-80 B9 W3	
37	2	44506256	Pin	
38	2	65214359	Adjusting bolt M8x12, 45H DIN 916	
39	1	44506255	Plunger head	
40	1	43505020	Limit switch support	Level limit



Pos.	Total qty	Number	Description	Remarks
41	1	43507109	Limit switch level limit	
42	1	44500160	Cylinder support / drip tray	
43	2	65030226	Bolt M4x25, 4.8 DIN84 GV	
44	2	65051044	Self-locking nut M20, 8 DIN985 GV	Tightening torque 270 Nm

8.2 Cylinder

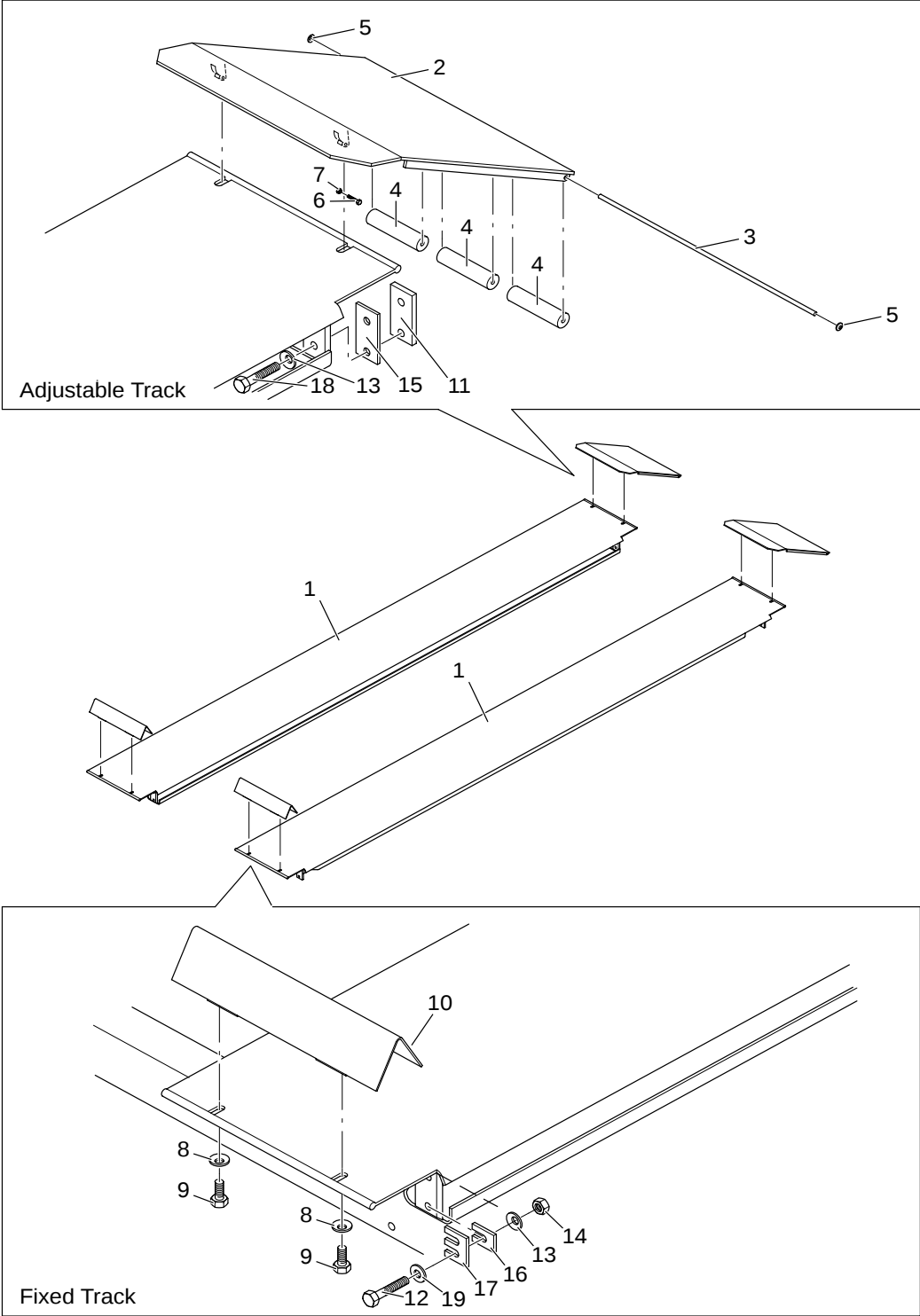


Pos.	Total qty	Number	Description	Remarks
	2	43006250	Cylinder assy, L=2173, Hub=1870	ST4055 all types
	2	43506250	Cylinder assy, L=2173, Hub=1870	ST4070 all types
1	1		Cylinder	
2	1		Cylinder head	
3	1		Piston rod	
4	1		Piston	

Pos.	Total qty	Number	Description	Remarks
5	1		Cylinder attachment	
6	1	43006901	Seal kit	ST4055 all types
6	1	43506901	Seal kit	ST4070 all types
7	1		Sealing ring 13,7x20x1,5, usit	
8	1	68790019	Plug G1/4" bzk, DIN908	
9	1	68228000	Hose burst check valve vp-n-14	28 l/min, Tightening torque 2 Nm
10	1	68702213	Coupling, SWVE 10- PSR	
11	1	1003.95.17.08	Elbow, KIKI 8x1/8	
12	1	70900033	Air hose PU Naturel, Round 8-6 Length 2 m.	



8.3 Tracks

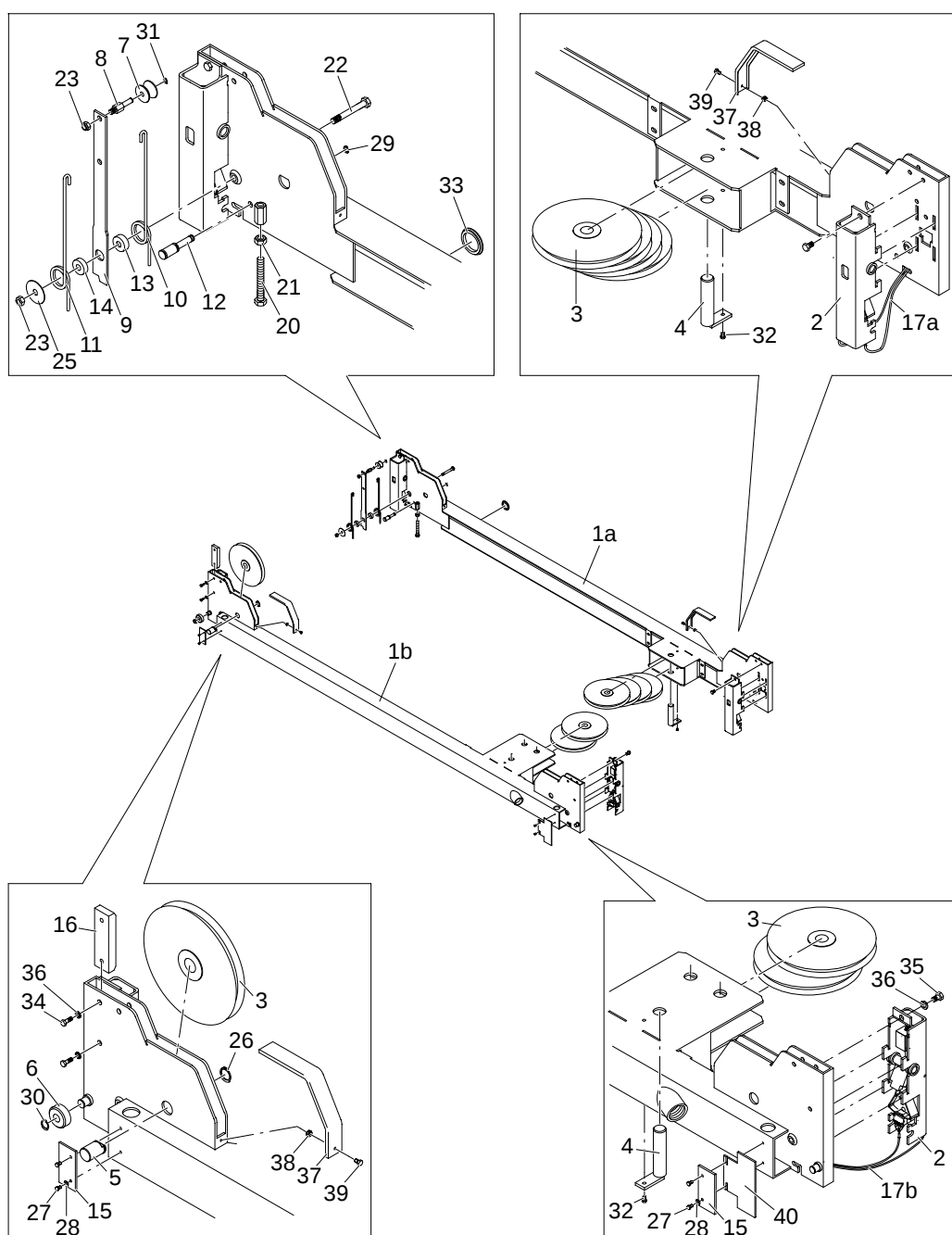


Pos.	Total qty	Number	Description	Remarks
1	2	44003050	Track 630-4900	ST4055/ST4055-V/ ST4070-S/ST4070-SV
1	2	44503050	Track 630-5500	ST4055-L/ST4055-LV/ ST4070/ST4070-V
1	2	44513050	Track 630-6000	ST4070-L/ST4070-LV
2	2	44504300	Drive on ramp 630 mm wide	
2	2	44504915	Drive on ramp 630 mm wide	Short for pit model
3	2	3621.14.02.00	Shaft 630 mm wide	
4	6	3617.58.03.00	Roller	
5	4	1038.34.01.00	Circlip with cap 10 mm	
6	4	65003283	Bolt M6x12, 8.8 DIN933 GV	
7	4	1037.86.06.06	Self locking nut M6, 8 DIN985 GV	
8	4	65058028	Spring ring M10, DIN127B GV	
9	4	65003401	Bolt M10x16, 8.8 DIN933 GV	
10	2	44504150	Stop plate	
11	4	44503061	Clamping plate	
12	8	65002450	Bolt M12x45, 8.8 DIN931 GV	
13	16	65058032	Spring ring M12, DIN127B GV	
14	8	65050136	Nut M12, 8 DIN934 GV	
15	4	44503060	Slide plate	
16	6	43500104	Filling plate	
17	10	44500105	Filling plate	
18	8	65003448	Bolt M12X35, 8.8 DIN933 GV	



Pos.	Total qty	Number	Description	Remarks
19	8	65055021	Washer M12, DIN125 GV	

8.4 Cross-beams



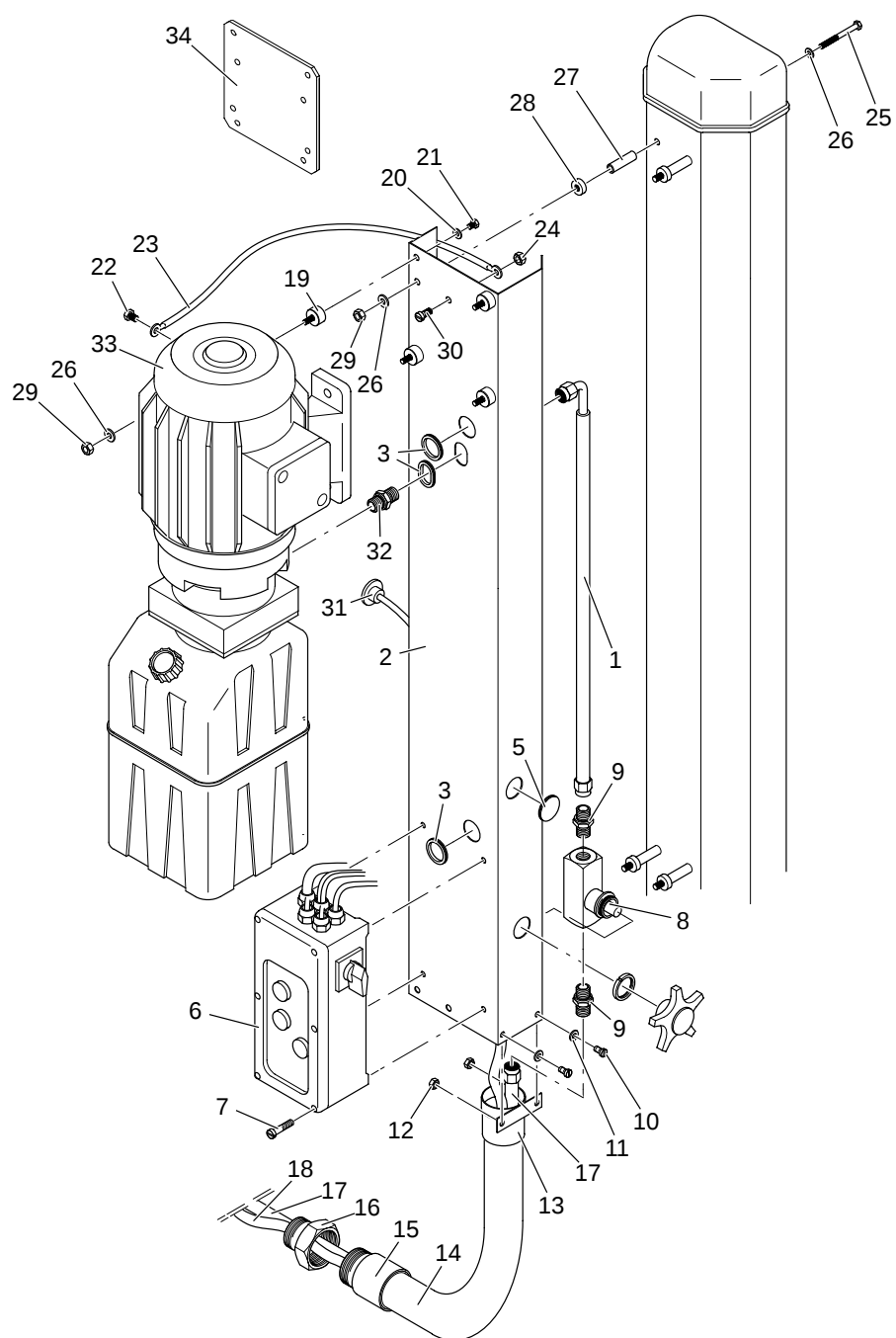
Pos.	Total qty	Number	Description	Remarks
1a	1	44502050	Cross-beam 1-2 L=3300	ST4055/ST4055-L/ ST4070-S/ST4070/ ST4070-L
1a	1	44522050	Cross-beam 1-2 L=3600	ST4055-V/ST4055- LV/ST4070-SV/ ST4070-V/ST4070- LV
1b	1	44502300	Cross-beam 3-4 L=3300	ST4055/ST4055-L/ ST4070-S/ST4070/ ST4070-L
1b	1	44522300	Cross-beam 3-4 L=3600	ST4055-V/ST4055- LV/ST4070-SV/ ST4070-V/ST4070- LV
2	4	43505400 See Cable safety device on page 88	Slack cable / cable breakage safety device	
3	10	44506001	Pulley	
4	2	44506010	Shaft	
5	4	44506002	Shaft	
6	4	43502003	Roller	
7	4	43505005	Roller	
8	4	43505012	Shaft	
9	4	43505013	Lever	
10	4	43505007	Torsion spring right	
11	4	43505006	Torsion spring left	
12	4	43505008	Shaft	
13	4	44505009	Bush	
14	4	43505010	Bush	
15	10	43502002	Guide strip	
16	4	44502004	Guide block	
17a	1	43507107	Cable assy Cross- beam 1-2	
17b	1	43507106	Cable assy Cross- beam 3-4	



Pos.	Total qty	Number	Description	Remarks
20	4	65003457	Bolt M12x80, 8.8 DIN933 GV	
21	4	65050136	Nut M12, 8 DIN934 GV	
22	4	65002421	Bolt M10x100, 8.8 DIN931 GV	
23	8	65051034	Self-locking nut M10, 8 DIN985 GV	
25	4	65055711	Washer M10x50	
26	4	1038.40.04.00	Retaining ring a40, DIN471 FF	
27	8	1036.30.06.16	Screw M6x16, uls-109 GV	
28	8	65055015	Washer M6, DIN125A GV	
29	4	65062028	Retaining ring No. 12, DIN6799 GV	
30	4	65062030	Retaining ring No. 15, DIN6799 FF	
31	4	65062024	Retaining ring No. 9, DIN6799 FF	
32	2	65025039	Bolt M8x12, 8.8 DIN7991 GV	
33	1	66201092	Plug GPN320 GL70, Black 021185 Emergo	
34	8	65025056	Bolt M10x25, 10.9 ISO7380 GV	
35	4	65003401	Bolt M10x16, 8.8 DIN933 GV	
36	12	65258228	Spring ring M10, DIN6798A GV	
37	4	44502001	Wheel cover	
38	4	65052910	Special nut M5 cv-4825	
39	4	65034251	Screw M5x16, 4.8 DIN7985 GV	

Pos.	Total qty	Number	Description	Remarks
40	1	43500102	Switching plate foot safety	

8.5 Column III



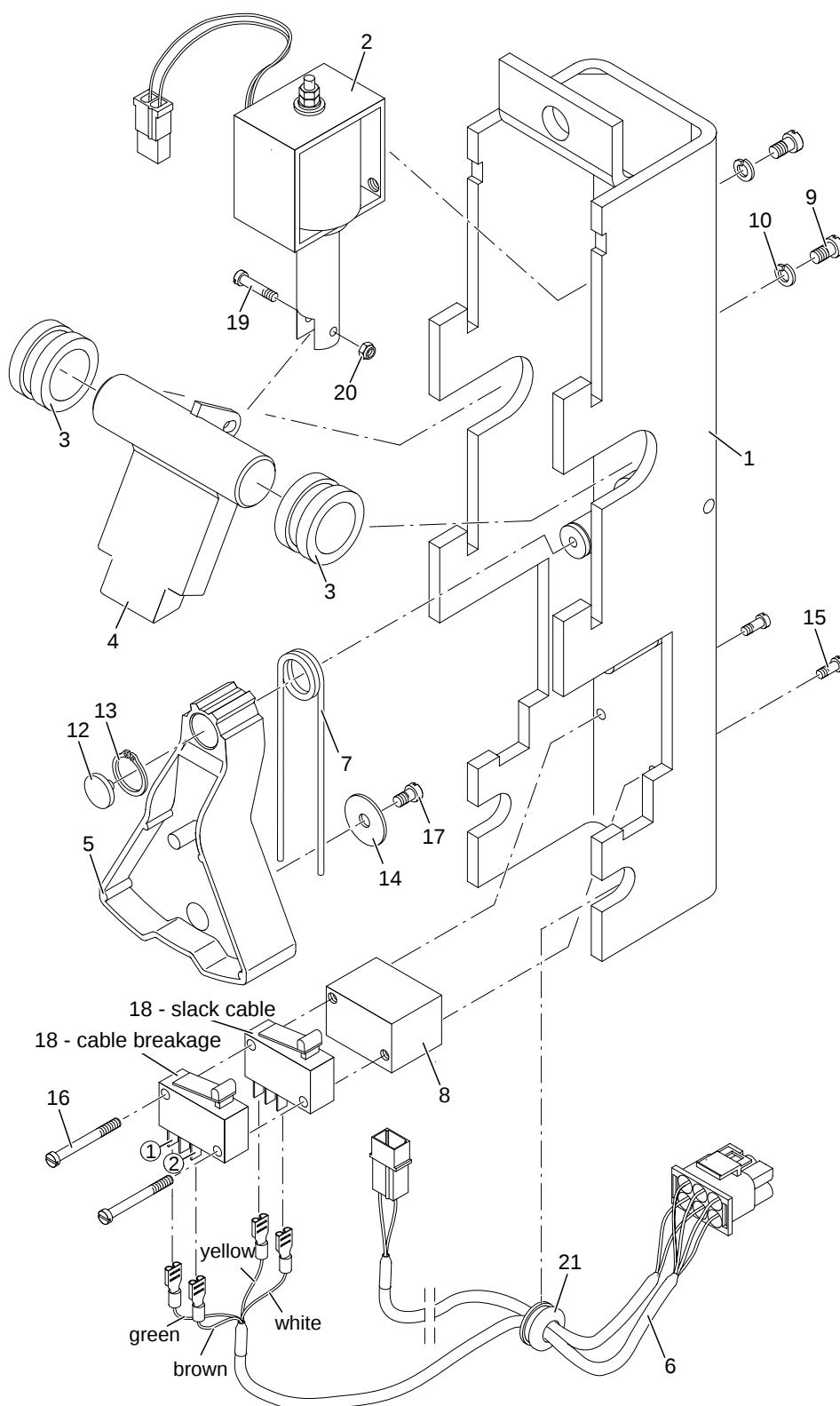


Pos.	Total qty	Number	Description	Remarks
	1	44507000	Operating panel assembly (400 V)	
	1	44507200	Operating panel assembly (230 V)	Included intermediate plate 34
	1	44507201	Operating panel assembly (3 × 230V)	
1	1	44506004	Hydr. hose, L=780	
2	1	44507001	Operating panel	
3	3	66201093	Side protection 387-6, L=125	
5	1	66201094	Plug	
6	1	See Control box on page 99	Control box	
7	4	1039.64.02.80	Drive screw M4×16	
8	1	68900041	Tap FT-257-5-38-G-MP	
9	2	68700450	Coupling, GE 10-PSR	
10	2	65003287	Bolt M6×20, 8.8 DIN933 GV	
11	2	65055015	Washer M6, DIN125A GV	
12	2	65051028	Self-locking nut, 8 DIN985 GV	
13	1	66201171	Hose swivel	
14	1	1002.02.04.08	Protective hose, L=1550	
15	1	1002.02.05.09	Hose swivel	
16	1	69061041	Reduction ring RED 48/36 M	
17	1	43506005	Hydr. hose, L=4500	
18	1	43507105	Extension cable SLK/KBR/ONT	
19	4	1009.19.00.75	Buffer	
20	4	65055018	Washer M8, DIN125A GV	

Pos.	Total qty	Number	Description	Remarks
21	4	65003359	Bolt M8×12, 8.8 DIN933 GV	
22	1	1039.55.02.60	Screw M4×10, DIN7516A GV	
23	1	02335602	Earth cable	
24	1	65050126	Nut M5, 8 DIN934 GV	
25	4	65002374	Bolt M8×65, 8.8 DIN931 GV	
26	12	65055018	Washer M8, DIN125A GV	
27	4	66201089	Distance bush 8.2 - 18-40	
28	4	1037.96.00.80	Nut, Skiffy 73-8	
29	8	65051032	Self-locking nut M8, 8 DIN985 GV	
30	1	65034251	Screw M5×16, 4.8 DIN7985 GV	
31	1	69202008	Acoustic alarm	
32	1	68700451	Coupling, GE 10-PS/R 1/4	
33	1	See Pump unit on page 90	Pump unit	
34	1	3574.95.00.01	Intermediate plate	230V unit



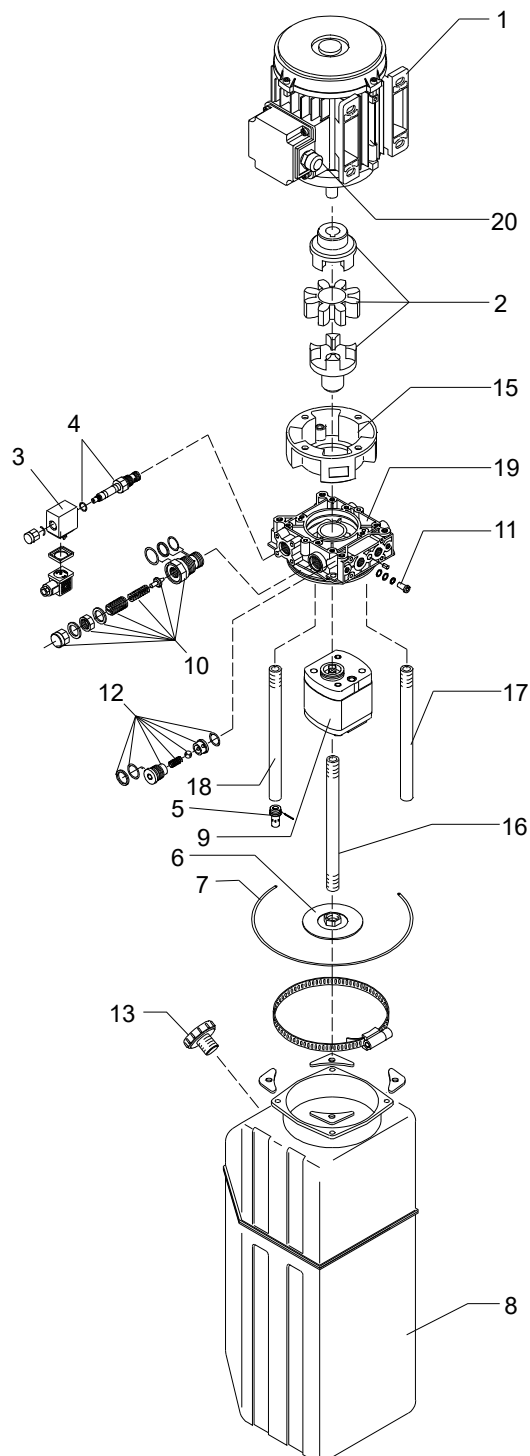
8.6 Cable safety device



Pos.	Total qty	Number	Description	Remarks
		43505400	Console assembly	
1	4	43505450	Console	
2	4	69451420	Lifting magnet	
3	8	43505401	Bearing bush	
4	4	43505404	Pawl	
5	4	43505402	Toggle lever	
6	4	43507110	Cable assy	
7	4	43505403	Torsion spring	
8	4	43505408	Distance block	
9	8	65034219	Screw M4x10, 4.8 DIN7985 GV	
10	8	1038.27.00.43	Lock washer M4, DIN6798A GV	
11	8	66201052	Ty-Rap	
12	4	66201085	Protective cap	
13	4	1038.40.01.20	Retaining ring a12, DIN471 FF	
14	4	66201100	Insulating ring	
15	8	1036.23.01.76	Screw M3x16, 4.8 DIN84 GV	
16	8	1036.23.01.83	Screw M3x30, 4.8 DIN84 GV	
17	4	65045018	Screw 3.9x9.5	
18	8	69175101	Safety switch	
19	4	65034224	Screw M4x20, 4.8 DIN7985 GV	
20	4	65051024	Self-locking nut M4, 8 DIN985 GV	
21	4	1002.22.01.35	Grommet	



8.7 Pump unit

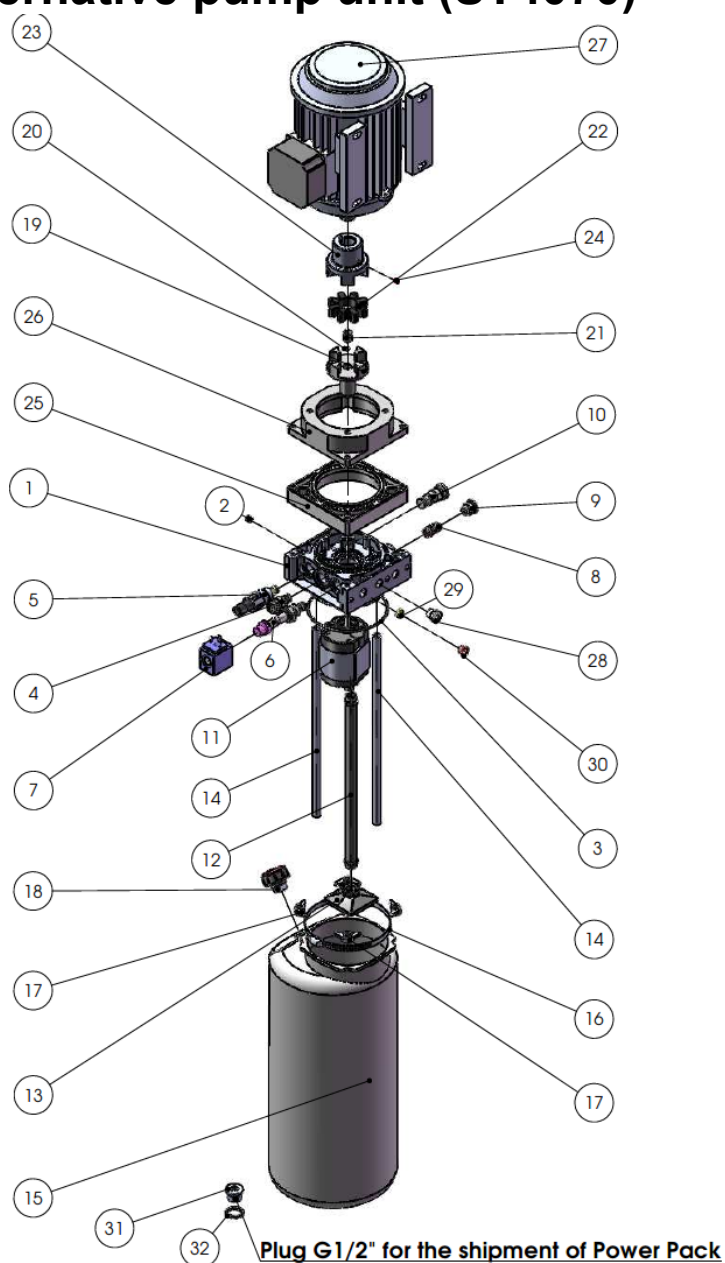


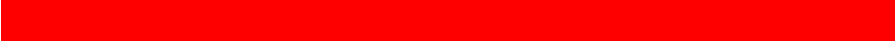
Pos.	Total qty	Number	Description	Remarks
		68051023	Hydr. unit 230 bar 3x400V 50Hz	

Pos.	Total qty	Number	Description	Remarks
		68050723	Hydr. unit 230 bar 3x230V 50Hz	
		68052023	Hydr. unit 230 bar 1x230V 50Hz	Single phase
1	1	68059022	Electric motor 3x400V 50Hz, 5,5kW	
1	1	68049001	Electric motor 3x230V 50Hz, 3,6kW	
1	1	68049026	Electric motor 1x230V 50Hz 1,8kW 1400rpm	Single phase
2	1	68059024	Coupling	3x400V 50Hz
2	1	68049003	Coupling	3x230V 50Hz
3	1	68059015	Solenoid 24 Vcc	
4	1	68049014	2/2 bi-dir valve	Tightening torque 45 Nm
5	1	68049020	Flow control valve 15 ltr/min.	
6	1	68049008	Suction filter 90 micron	
7	1	68049011	O-ring 112 x 3	
8	1	68059021	Tank reservoir 12 liter	
9	1	68059025	Pump K1PS7.5G 4,8cc	3x400V 50Hz
9	1	68049006	Pump K1PS5.0G 3,2cc	3x230V 50Hz
10	1	68049016	Relief valve	Tightening torque 45 Nm
11	1	68049017	Retour filter 1/4"BSPP	
12	1	68049018	Check valve	Tightening torque 18 Nm
13	1	68049022	Breather cap	
15	1	68059023	Flange	3x400V 50Hz
15	1	68049002	Flange	3x230V 50Hz

Pos.	Total qty	Number	Description	Remarks
16	1	68059007	Suction pipe, L=357	
17	1	68059009	Return pipe overflow, L=400	
18	1	68089008	Return pipe, L=250	
19	1	68049012	Pump housing A8F	
20	1	1002.15.00.53	Gland Pg16, Wiska KVG 16	

8.7 Alternative pump unit (ST4070)

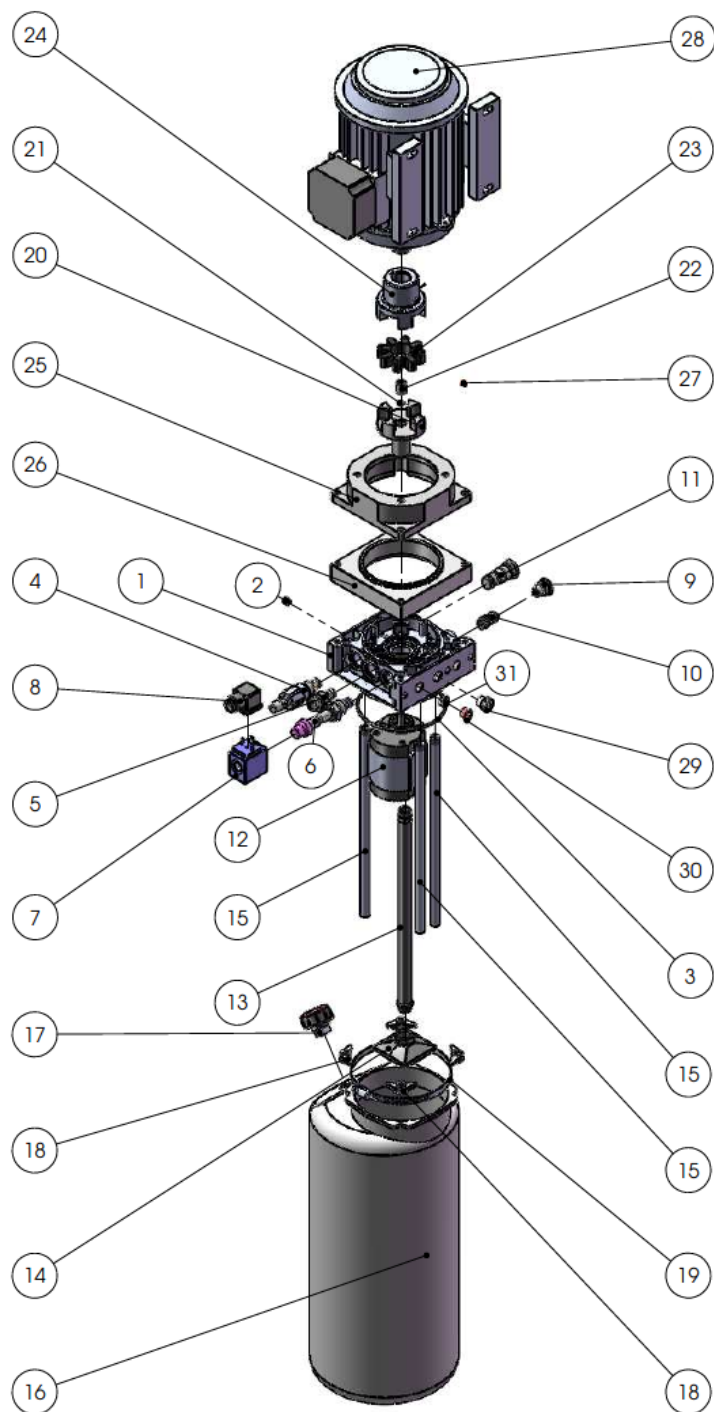




Pos.	Total qty	Structure	Description
	1	68056023-TF	Hydraulic unit 230 bar, 5,5 kW, 460 V, 60 Hz
4	1	68049018-TF	Non-return valve
5	1	68059036-TF	Pressure relief valve VMC1, 250 bar
6	1	68059035-TF	2/2 valve VE6-NC-EM
7	1	68059015-TF	Solenoid 24 V DC, 18 W, N- H13
8	1	68059020-TF	Pressure compensated flow regulator 15 l/min
11	1	68049043-TF	Hydraulic pump 3.65cc- S-131 SX



8.7 Alternative pump unit (400 V)



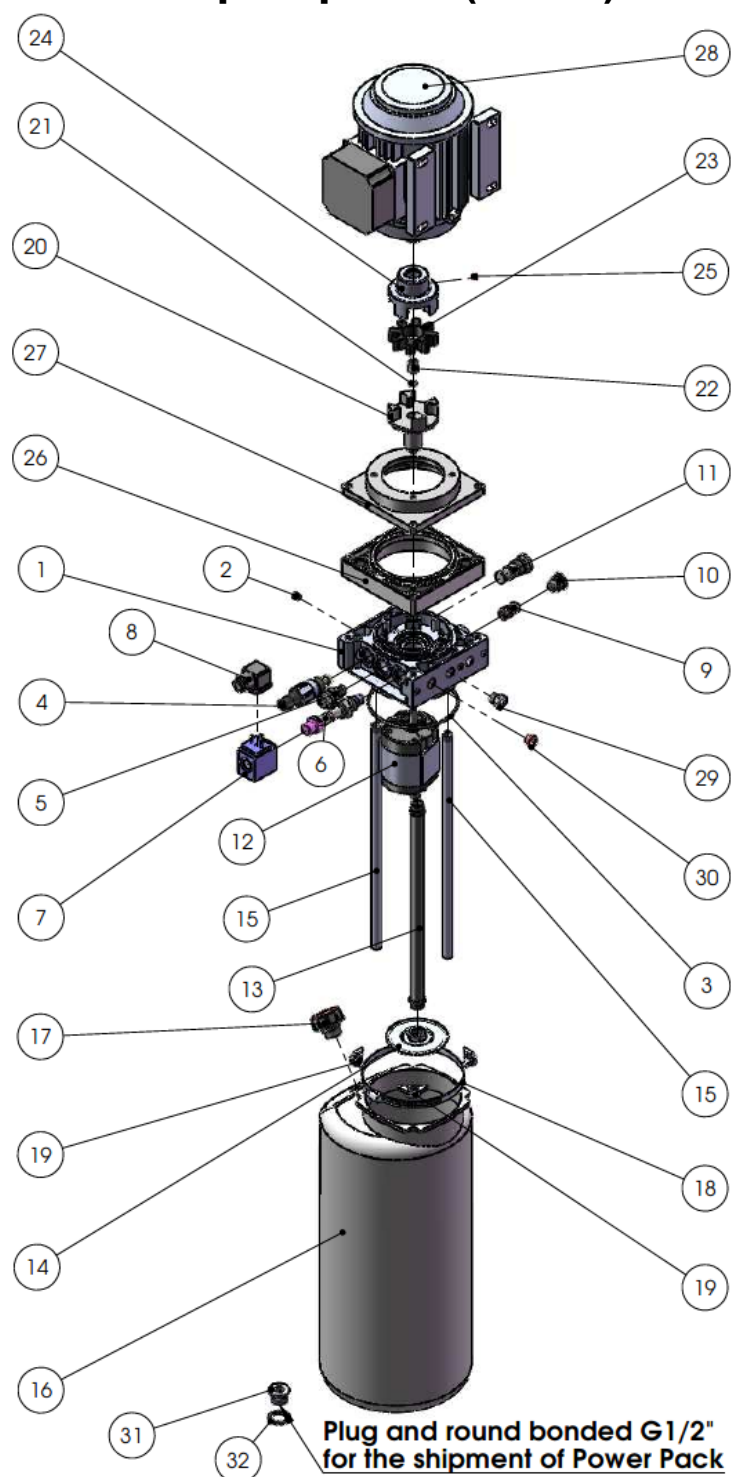
Pos.	Total qty	Structure	Description
	1	68051023-TF	Hydraulic unit 230 bar, 5,5 kW, 400 V, 50 Hz
4	1	68059036-TF	Pressure relief valve VMC1, 250 bar
5	1	68049018-TF	Non-return valve



Pos.	Total qty	Structure	Description
6	1	68059035-TF	2/2 valve VE6-NC-EM
7	1	68059015-TF	Solenoid 24 V DC, 18 W, N-H13
10	1	68059020-TF	Pressure compensated flow regulator 15 l/min
12	1	68059025-TF	Hydraulic pump 5cc-S-131 SX
28	1	68059022	Electric motor 230/400 V, 50 Hz



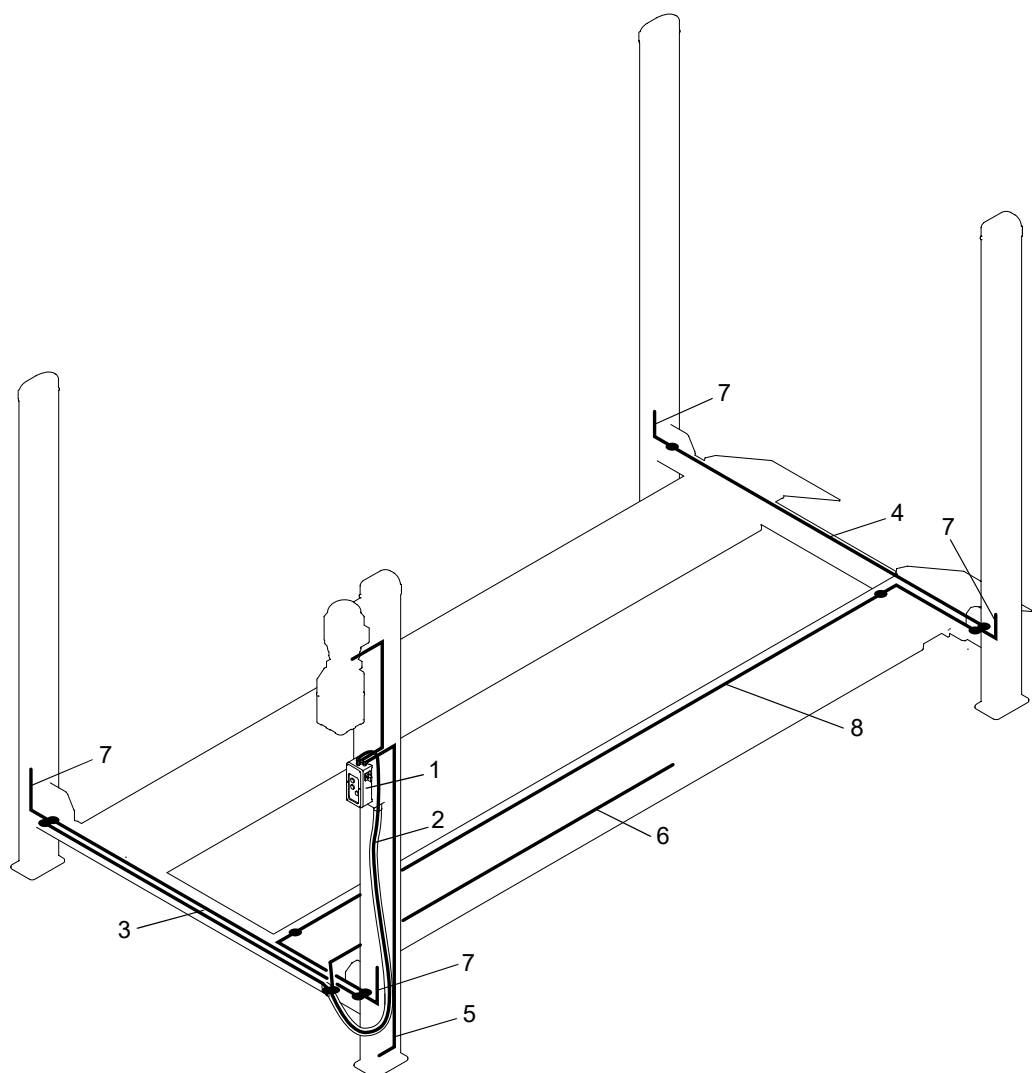
8.7 Alternative pump unit (230 V)



Pos.	Total qty	Structure	Description
	1	68050723-TF	Hydraulic unit 230 bar, 3,6 kW, 230 V, 50 Hz
4	1	68049016-TF	Pressure relief valve VMC1
5	1	68049018-TF	Non-return valve

Pos.	Total qty	Structure	Description
6	1	68059035-TF	2/2 valve VE6-NC-EM
7	1	68059015-TF	Solenoid 24 V DC, 18 W, N-H13
9	1	68059020-TF	Pressure compensated flow regulator 15 l/min
12	1	68049006-TF	Hydraulic pump 3,15cc-S-131 SX
28	1	68049028	Electric motor 230/400 V, 50 Hz

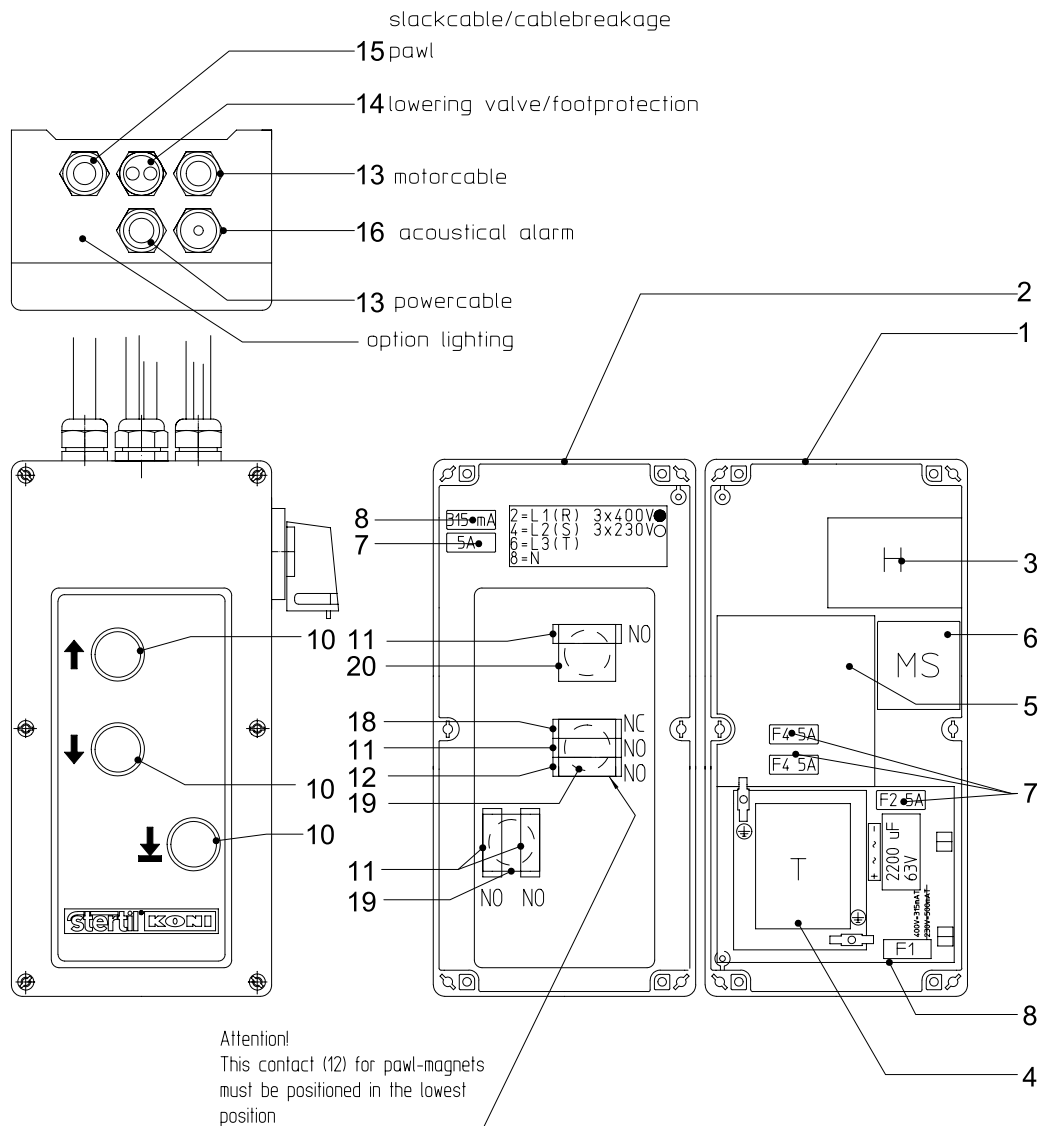
8.8 Electric cables





Pos.	Total qty	Number	Description	Remarks
1	1	43507100	Control box incl. cables	
2	1	43507105	Extension cable	
3	1	43507106	Cable tree cross-beam 3-4	
4	1	43507107	Cable tree cross-beam 1-2	
5	1	43507108	Switch foot protection (incl. cable)	
6	1	43507109	Switch highest position (incl. cable)	
7	4	43507110	Cable tree (slack-steel cable/steel cable breakage/locking pawl	
8	1	43507111	Cable track	

8.9 Control box

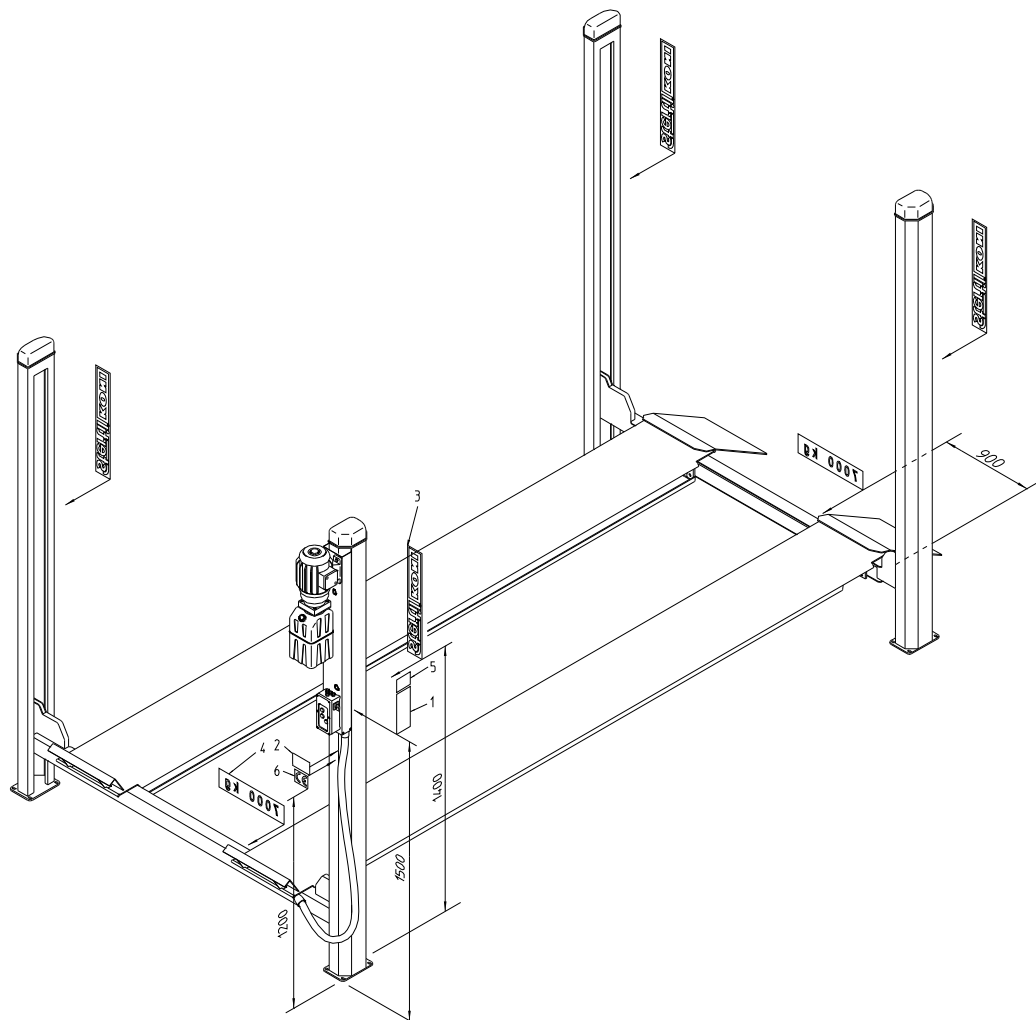


Pos.	Total qty	Number	Description	Remarks
		43507100	Control box 400V	
		43507300	Control box 230V	
1	1	3501.50.00.01	Bottom control box	
2	1	43507125	Cover control box, incl. sticker	
3	1	3501.50.90.02	Main switch, ASN AV4 ZM/Z20/F901 g/r	



Pos.	Total qty	Number	Description	Remarks
4	1	69900075	Power board 400V, incl. components	400V control box
4	1	69900080	Power board 230V, incl. components	230V control box
5	1	69900070	Control board, incl. components	
6	1	69152006	Magnetic switch, 3RT1017-1BB41 Siemens	
7	4	3501.50.90.08	Fuse 5A/slow, round 5x20	
8	2	69206005	Fuse 315mA/slow, round 5x20	400V control box
8	2	69206011	Fuse 500mA/slow	230V control box
10	3	69141170	Push button black	
11	4	69141177	Contact NO	
12	1	69141185	Contact NO, early make	
13	2	69062009	Rope swivel M20x1.5 22052u13 red, Pflitsch	
14	1	69062050	Rope swivel M20x1.5 22052um2x6 Pflitsch	
15	1	69062008	Rope swivel M20x1.5 22052u11 green Pflitsch	
16	1	69062006	Rope swivel M20x1.5 22052u8 grey Pflitsch	
17	4	69062033	Connection nut M20x1.5 1420/220 Pflitsch	
18	1	69141178	Contact NC	
19	3	69141184	Holder for contact modules	

8.10 Stickers

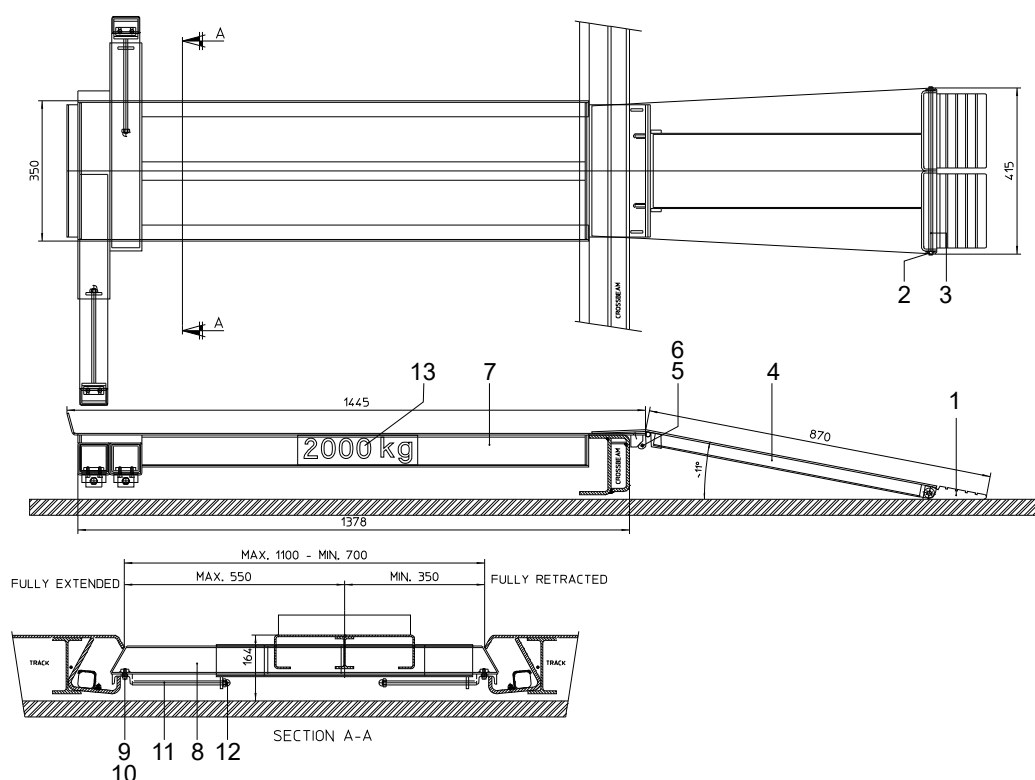


Pos.	Total qty	Number	Description	Remarks
1	1	60700179	Operation sticker	English
1	1	60700180	Operation sticker	German
1	1	60700181	Operation sticker	French
1	1	60700182	Operation sticker	Swedish
1	1	60700192	Operation sticker	Spanish
1	1	60700178	Operation sticker	Dutch
2	1	1005-01-01-92	Identification plate	
3	4	60700053	Stertil / Koni sticker	Medium
4	4	60700055	Capacity sticker 5500 kg	ST4055



Pos.	Total qty	Number	Description	Remarks
4	4	60700073	Capacity sticker 7000 kg	ST4070
5	1	1005-01-01-67	Service sticker	
6	1	60-700-006	CE sticker	

8.11 Third track (option)



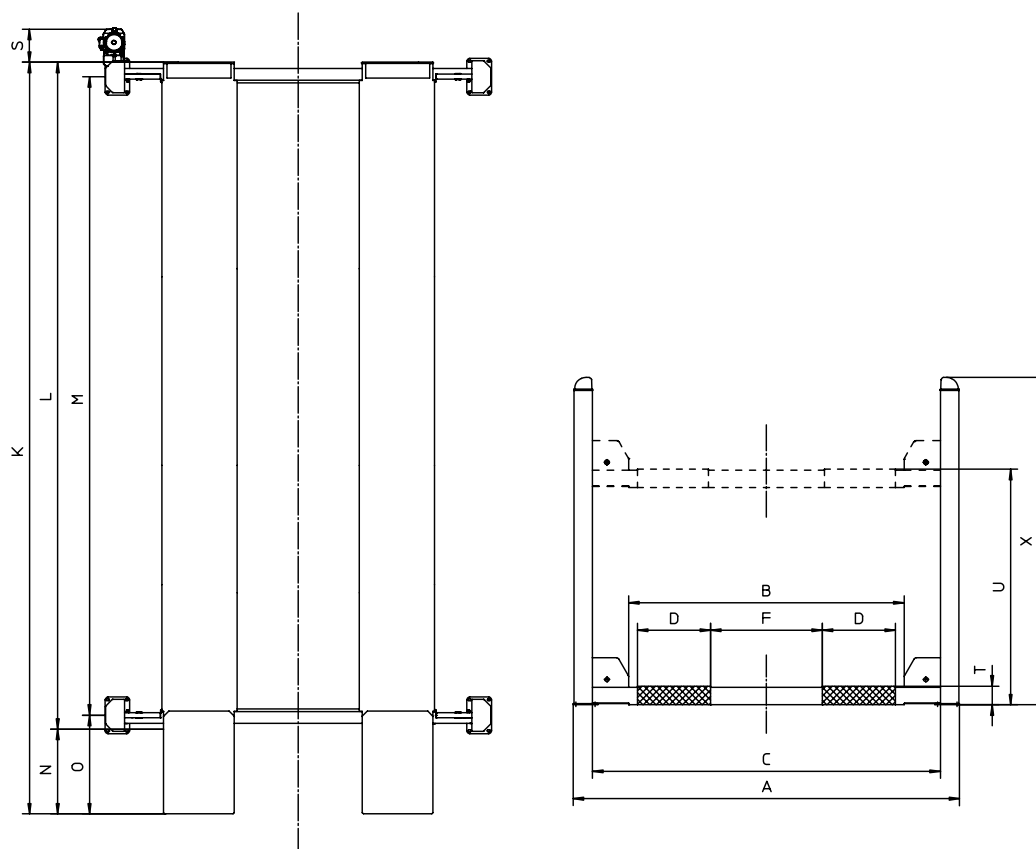
Pos.	Total qty	Number	Description	Remarks
		44509100	Third track	
1	2	44509006	Plastic drive on ramp	
2	2	1038.34.01.00	Quick locker / Aluminium head 10	
3	1	3609.58.02.00	Shaft Ø10h9 l=420	
4	1	44509105	Drive-on assembly	
5	2	65003283	Hexagonal cap screw M6x12, 8.8 DIN933 GV	

Pos.	Total qty	Number	Description	Remarks
6	2	65051028	Self locking nut M6, 8 DIN985 GV	
7	1	44509110	Assembly middle part	
8	2	44509120	Assembly movable part	
9	4	65055015	Flat washer M6, DIN125A GV	
10	4	65012285	Fillister head screw M6x16, 8.8 DIN912 GV	
11	2	44509115	Assembly detainer	
12	2	65052034	High blind nut M10, DIN1587 GV	
13	3	1005.01.01.55	Capacity sticker 2000 kg	

9 Appendices

9.1 Dimensions

Dimensions of the vehicle lift



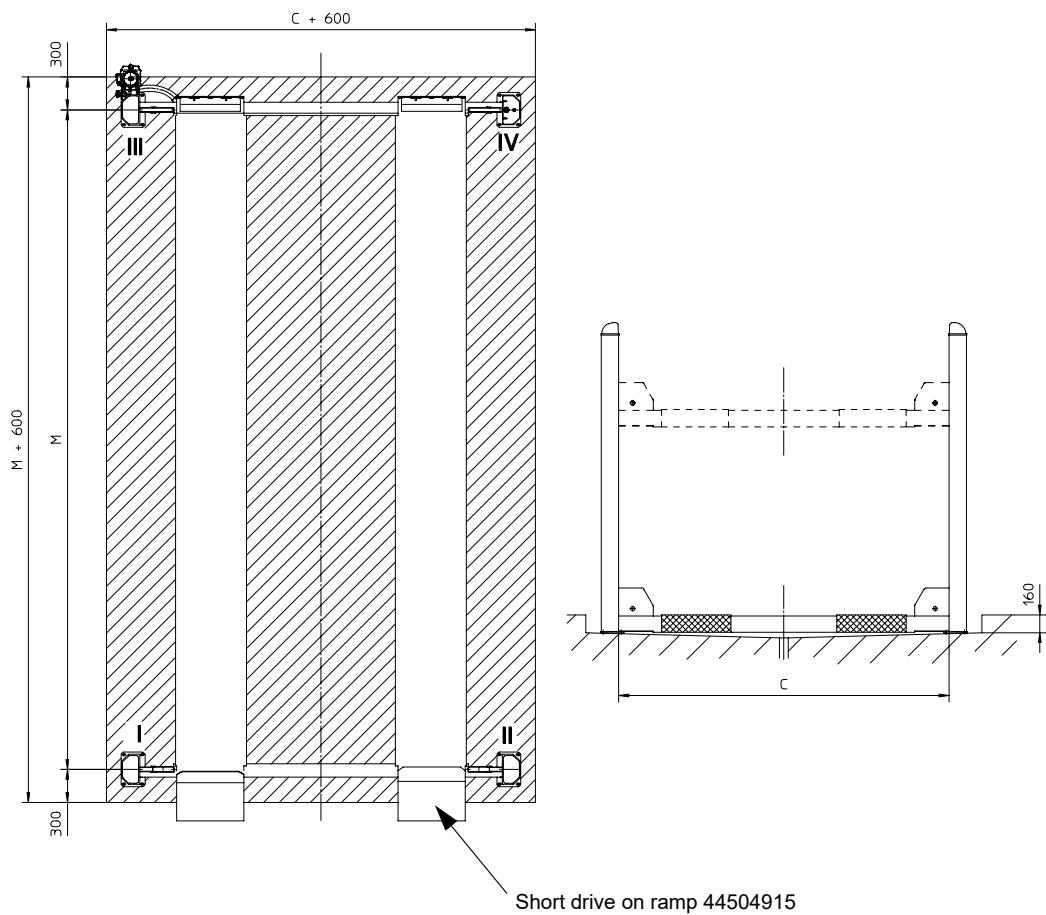
Model	A	B	C	D	F- max
ST4055	3330	2375	3000	630	1100
ST4055-L	3330	2375	3000	630	1100
ST4055-V	3630	2675	3300	630	1250
ST4055-LV	3630	2675	3300	630	1250
ST4070	3330	2375	3000	630	1100
ST4070-L	3330	2375	3000	630	1100



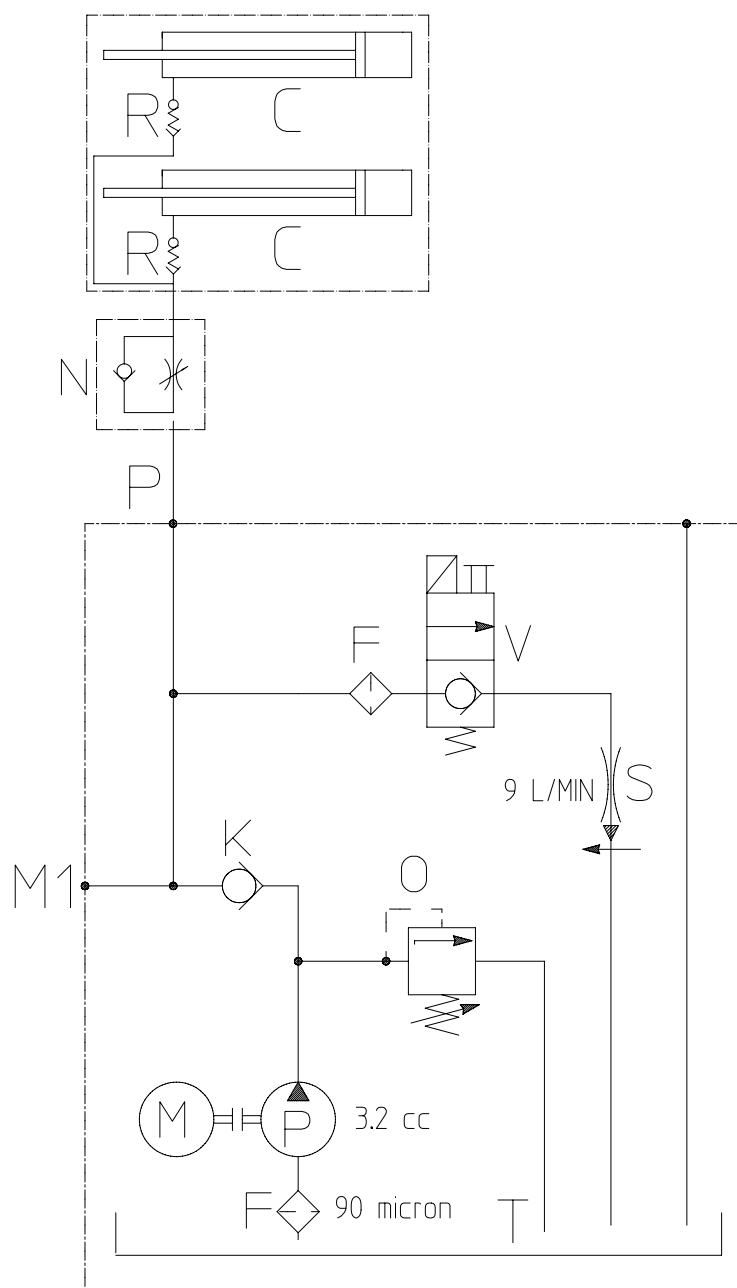
Model	A	B	C	D	F- max
ST4070-V	3630	2675	3300	630	1250
ST4070-LV	3630	2675	3300	630	1250
ST4070-S	3330	2375	3000	630	1100
ST4070-SV	3630	2675	3300	630	1250

Model	L	M	N	O	S	T	U	X
ST4055	5150	4900	730	840	300	160	2030	2820
ST4055-L	5750	5500	730	840	300	160	2030	2820
ST4055-V	5150	4900	730	840	300	160	2030	2820
ST4055-LV	5750	5500	730	840	300	160	2030	2820
ST4070	5750	5500	730	840	300	160	2030	2820
ST4070-L	6250	6000	730	840	300	160	2030	2820
ST4070-V	5750	5500	730	840	300	160	2030	2820
ST4070-LV	6250	6000	730	840	300	160	2030	2820
ST4070-S	5150	4900	730	840	300	160	2030	2820
ST4070-SV	5150	4900	730	840	300	160	2030	2820

Dimensions of the pit



9.2 Hydraulic diagram



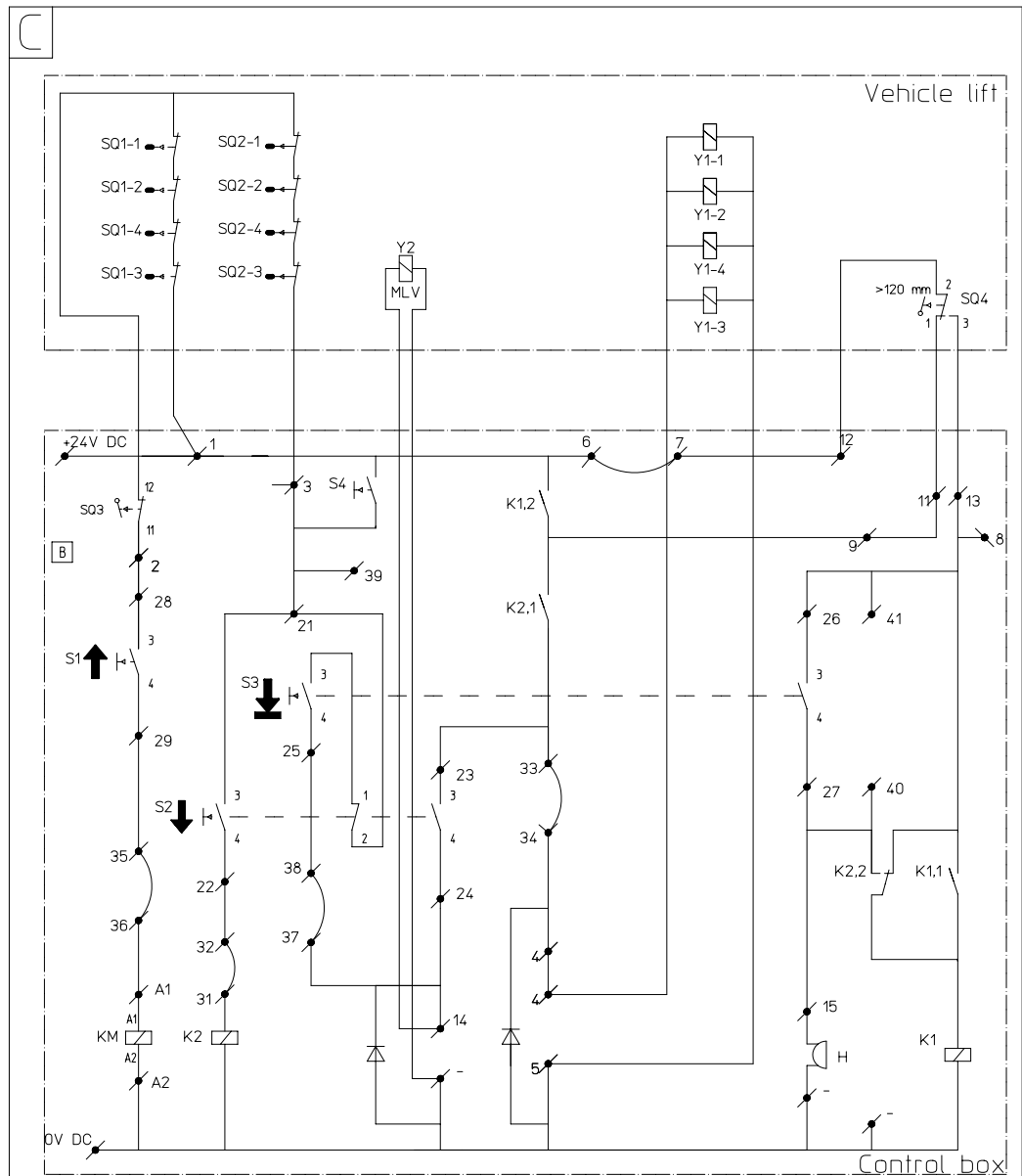
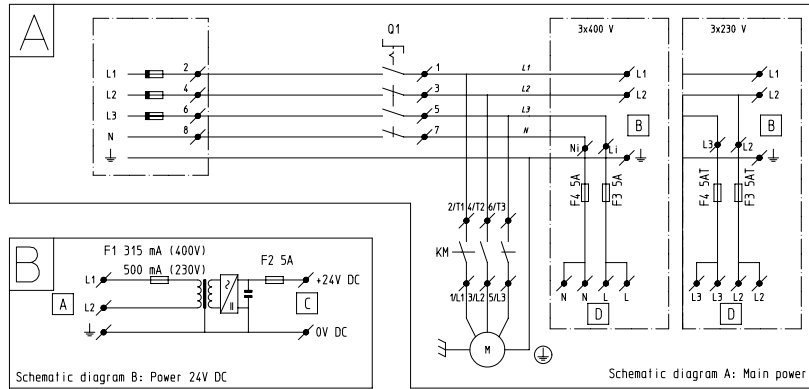
Pos.	Description
C	Cylinder
V	2/2 valve
S	Orifice
O	Safety pressure valve
F	Filter
K	Non-return valve



Pos.	Description
P	Pump
M	Motor
T	Tank
R	Hose burst check valve
N	Needle valve
M1	Measuring point

9.3 Electric diagram

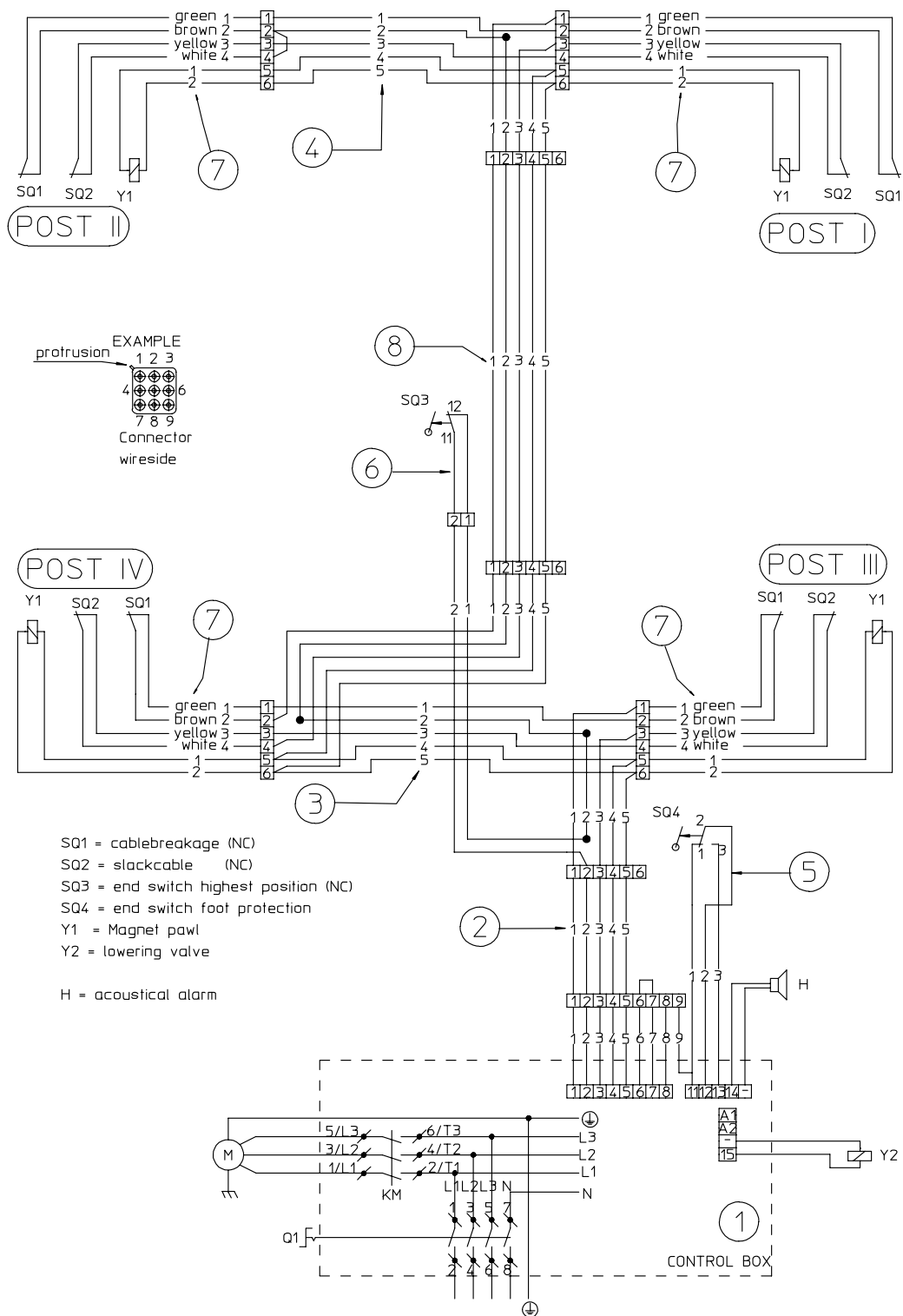
380/415V-220/240V





Pos.	Description
Q1	Main switch
M	El. motor
F	Fuse
SQ1	Cable break switch
SQ2	Slack cable switch
SQ3	Switch highest position
SQ4	Switch foot protection
S1	Switch raise
S2	Switch lower
S3	Switch lower by interlock
K1/K2	Relay
KM	Motor relay
Y1	Unlocking magnets
Y2	Lowering valve
H	Acoustic alarm

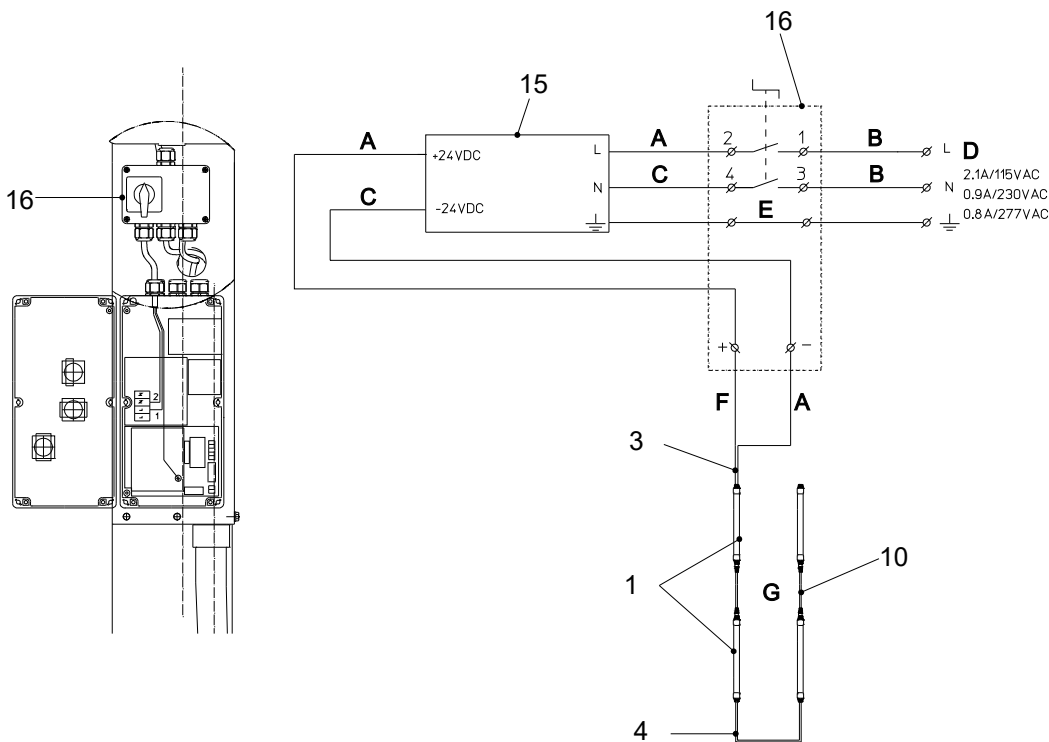
9.4 Wiring diagram



Refer to Electric cables on page 97 for the description of the positions.



9.5 Lighting diagram (option)



Pos.	Colours / Description
A	White
B	Black
C	Blue
D	Input
E	Yellow-green
F	Brown
1	LED fittings

ST 4055 / 4070



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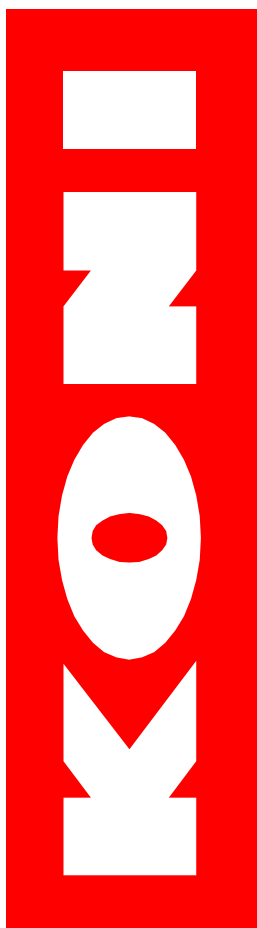
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Manufactured by:

stertil[®]

Stertil B.V.

P.O. Box 23

9288 ZG Kootstertille (The Netherlands)

Telephone: +31 (0) 512 334 444

Fax: +31 (0) 512 332 638

Email: info@sterdil.nl

Website: www.sterdil.nl