



2-POST-LIFT
TW236PE-400
(Lifting capacity: 3600 kg)

TW236PE

INSTALLATION, OPERATION AND MAINTENANCE MANUAL



Always read these operating instructions carefully before operating the lift. Follow the instructions carefully.

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Further attachment:

- **EU Declaration of Conformity**

Important information:

ASSEMBLY



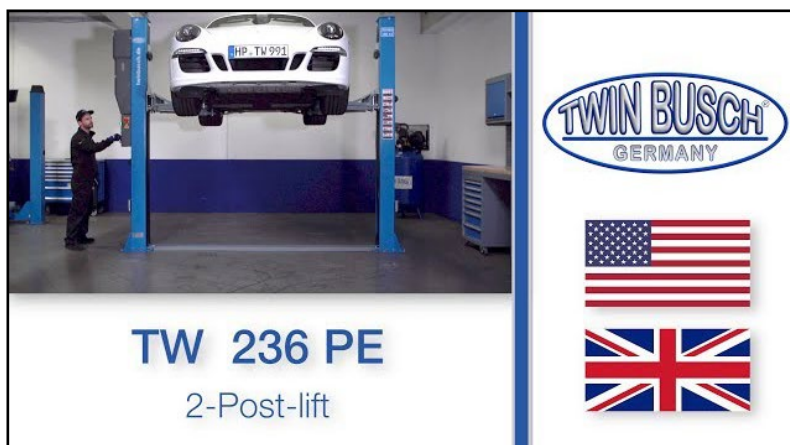
You can find the assembly video for this lift on YouTube: https://youtu.be/b52lQ-uLe_g or scan the QR code.



PRODUCT PRESENTATION



You can find the product presentation video for this lift on YouTube: <https://youtu.be/2acymPlgjlQ> or scan the QR code.





TIPS & TRICKS



In the "Tips & Tricks" section we show you simple solutions to work even more efficiently with your TWIN BUSCH® products.

<https://www.twinbusch.co.uk/2-post-lifts/2-post-lift-3-6-t-Prof-Line::4.html#horizontalTab4>

24/7 Service Center:



Our **24/7 Self-Service Center** is a mobile website designed for self-diagnosis of issues with your Twin Busch lift. Here, we provide an extensive video collection covering a wide range of relevant topics for your Twin Busch lift, from fine-tuning and maintenance to component replacement.

With the **24/7 Self-Service Center**, you have a versatile tool at your disposal to learn how to independently maintain and repair your Twin Busch lift.

To access the site on your mobile device, please visit [twinbusch.com/qr](https://www.twinbusch.com/qr) or scan the QR code provided alongside.

For Twin Busch lifts shipped from mid-2020 onwards, you'll also find the QR code on a sticker attached to the control box.

1. General information

The Profi-Line model series meets the high performance requirements of a professional workshop and has a very comprehensive range of standard equipment such as lifting pad turntable with double thread, flat drive-over plate (if not barrier-free), column protection covers, motor cover, 230 V EU socket directly on the control box and the plug adapter extensions included in the scope of delivery as well as practical plug adapter holders to match.

2. Identification of the instructions for use

Operating instructions **TW 236PE**

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Status: -00, 18.04.24

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3. Technical data

Power supply	400 V / 3 phases or 230 V single phase
Protection	C 16A (sluggish response)
Load capacity CE	3,600 kg
Degree of protection	IP 54
Lifting time	approx. 45 sec
Lowering time	approx. 30 sec
Net weight	630 kg
Noise level	< 70 db
Working environment	Working temperature: -15°C to +40°C
	rel. Humidity: 30 % to 85 %

4. Modification of the product

Improper use, as well as modifications, conversions and attachments of the lift and all its components not agreed with the manufacturer are not permitted. The manufacturer will not accept any liability in the event of improper installation, operation or overloading. Likewise, improper use will invalidate the CE certification and the validity of the expert opinion.

If there are any modification requests, please contact your dealer or the expert personnel of the Twin Busch GmbH beforehand.

5. Safety-related information

Read the instruction manual carefully before operating the lift. Keep the instructions for reference. Follow the instructions carefully to obtain the best performance from the machine and to avoid damage due to personal fault. Unpack all parts and check with the help of the packing list whether all components are present. Check all connections and components thoroughly for damage. The lifting platform may only be put into operation if it is in a safe operating condition.

5.1 Safety instructions

- Do not install the lift on an asphalt surface.
- Read and understand the safety instructions before operating the lift.
- Do not under any circumstances leave the control panel when the lift is in motion.
- Keep your hands and feet away from moving parts. Pay particular attention to your feet when lowering.
- The lifting platform is to be operated by trained personnel only.
- Uninvolved persons are not allowed near the lifting platform.
- Wear suitable work clothing.
- The area around the lifting platform should always be kept free of obstructing objects.
- The lift is designed for lifting motor vehicles that do not exceed the maximum permissible weight.
- Always ensure that all safety precautions are taken before working near or under the vehicle.

Never remove safety-relevant components from the lifting platform. Do not use the lifting platform if safety-relevant components are missing or damaged.

- Do not under any circumstances move the vehicle or remove heavy objects from the vehicle that could cause significant weight differences while the vehicle is on the lift.
- Always check the mobility of the lift to guarantee its performance. Ensure regular maintenance. If any irregularity occurs, stop working with the lift immediately and contact your dealer.
- Lower the lift completely when not in use. Do not forget to disconnect the power supply.
- If you do not use the lift for a longer period of time, then:
 - a. Disconnect the lift from the power source.
 - b. Empty the oil tank.
 - c. Lubricate the moving parts with lubricating oil/grease.

Caution: To protect the environment, dispose of the oil that is no longer used in the prescribed manner.

- For safe lifting of transporters, it is essential to use the optional special lifting adapters.
You can find these at: www.twinbusch.co.uk

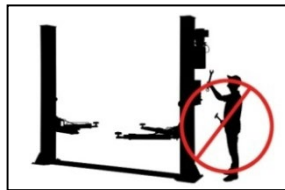
5.2 Warnings and symbols

All warning labels are clearly visible on the lift to ensure that the user uses the equipment in a safe and appropriate manner.

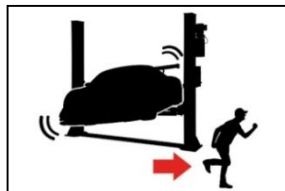
The warning signs must be kept clean and replaced if they are damaged or missing. Please read the signs carefully and memorise their meaning for future operations.



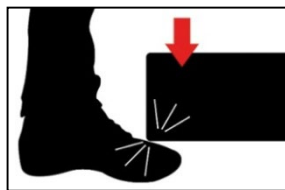
Read Instructions and safety instructions carefully before use!



Repairs and maintenance only by qualified personnel, never disable safety devices!



Always keep escape routes clear!



Watch your feet when lowering!
Danger of crushing!



Observe the vehicle manufacturer's mounting points!



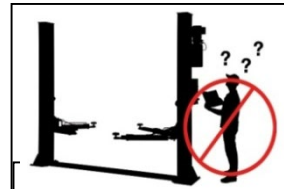
Do not exceed the specified load capacity!



Never try to load only one side of the lifting platform!



Avoid strong shaking. Avoid shaking the vehicle.



Operation of the lifting platform only by qualified personnel!



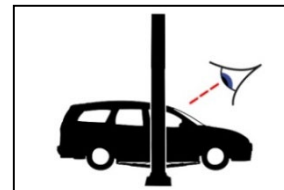
Only qualified personnel allowed in the vicinity of the lifting platform!



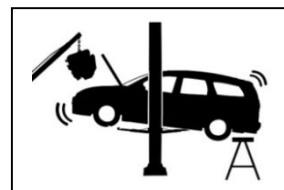
It is forbidden for persons to stand under the lift (when lifting or lowering)!



It is forbidden for persons to climb up onto the lift.



After briefly lifting the vehicle a few inches, check that it is securely seated!



When installing and removing heavy parts the vehicle can tip over!



Protect the lifting platform from moisture!
Electrical connections must be dry!



CAUTION!
Electrical voltage!

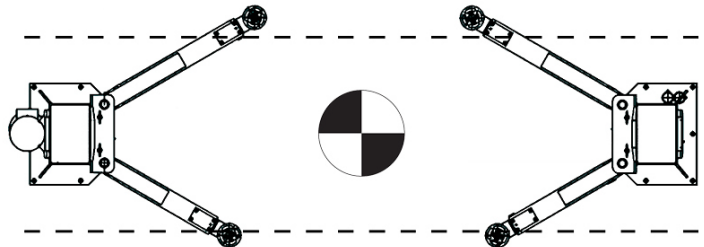
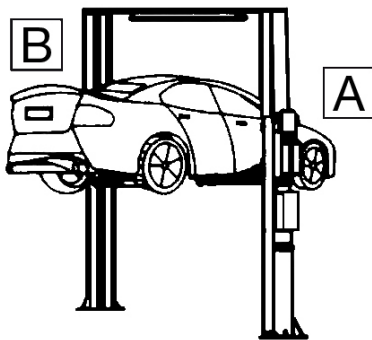
5.3 Safety equipment

For safe operation of the lifting platform, it is equipped with the following safety devices *):

- Safety detents
- Throttle valve in hydraulic line
- Limit switch
- Carrying arm locking device
- Devices against jamming and crushing (shaft protection, foot deflector)
- Synchronisation cables

**) depending on the design and type of the lifting platform*

5.4 Load distribution



 center of gravity

Lifting Capacity	Load distribution	
	B	A
3.6 T	1.5 T	2.1 T
4.2 T	1.9 T	2.3 T
5.0 T	2.5 T	2.5 T
6.0 T	3.0 T	3.0 T

8. Structure of lifting platform

8.1 Before installation

Tools and equipment required:

- Suitable lifting tool for bulky and heavy components
- Hammer, pliers
- Phillips and slotted screwdriver
- Set of Allen spanners
- Spanner attachments and open-end spanners
- Impact drill
- Hydraulic oil HLP 32

8.1.1 Packing list:

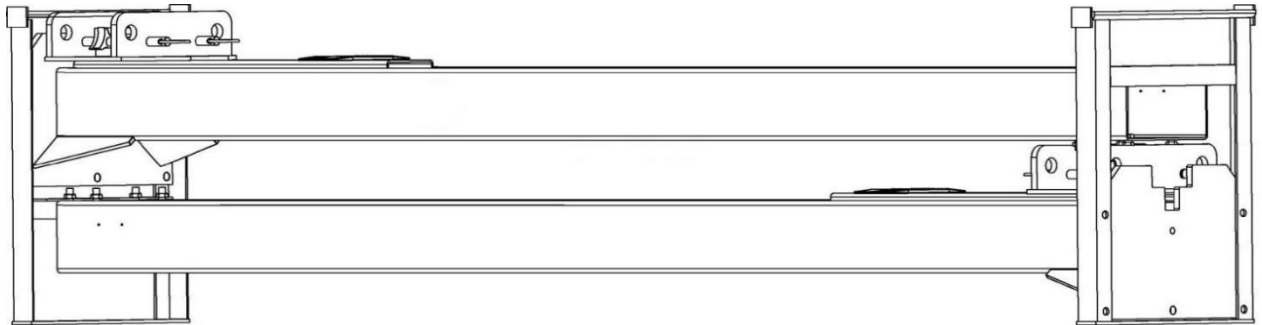
Unpack all components of the lifting platform and check the completeness of all components with the help of the packing list (see **appendix: Packing list**).

8.2 Ground conditions

The lifting platform must be installed on a solid foundation with a compressive strength of more than 3 kg/mm², a flatness of less than 5 mm and a minimum thickness of 200 mm. Detailed information can also be found in the corresponding foundation plan on our homepage at www.twinbusch.co.uk.

Note: If a new concrete floor is to be poured, it must cure for at least 28 days until a lifting platform can be installed.

8.3 Assembly instructions



- 1) Remove the packaging and take out the box with the accessories and cover plates. Read and understand the operating instructions before proceeding.
- 2) First you have to put a support between both columns or lift one of the columns with the help of a lifting tool. Then remove the upper bolts from the frame.

Attention: Please take special care that the column cannot fall down. The accessories could be damaged or people could be injured.

- 3) After removing the first column, place a support under the lower column. Then remove the bolts from the transport frame.
- 4) Set up both columns. Align the main and secondary columns with each other (outer edge of base plate to outer edge of base plate approx. 3436 mm).
 - a) After unpacking, you must decide where you want to place the column with the power supply and the control unit.
 - b) Set up one column, place the drive-over plate against this column and determine the exact distance by setting up the second column and placing it against the second side of the drive-over plate.
- 5) First attach the main column, then the secondary column.
 - a) Drill the holes in the foundation for each ground anchor using a percussion drill. Drill perpendicular to the ground level.
 - b) Remove dirt and dust carefully after drilling (vacuum and blow out if necessary).

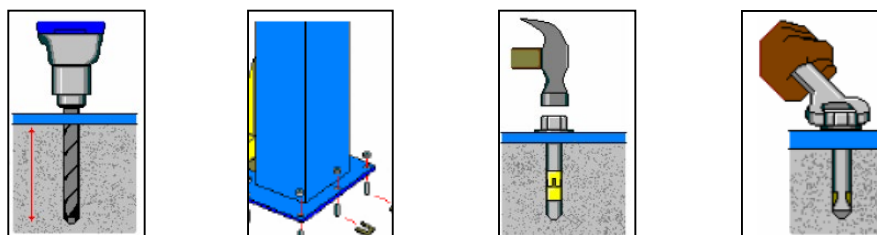
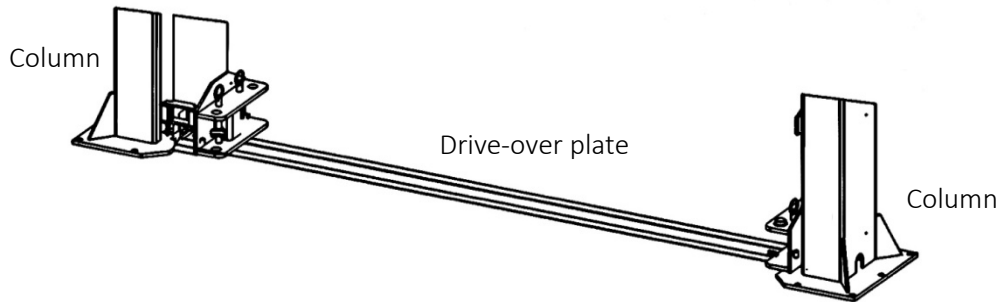
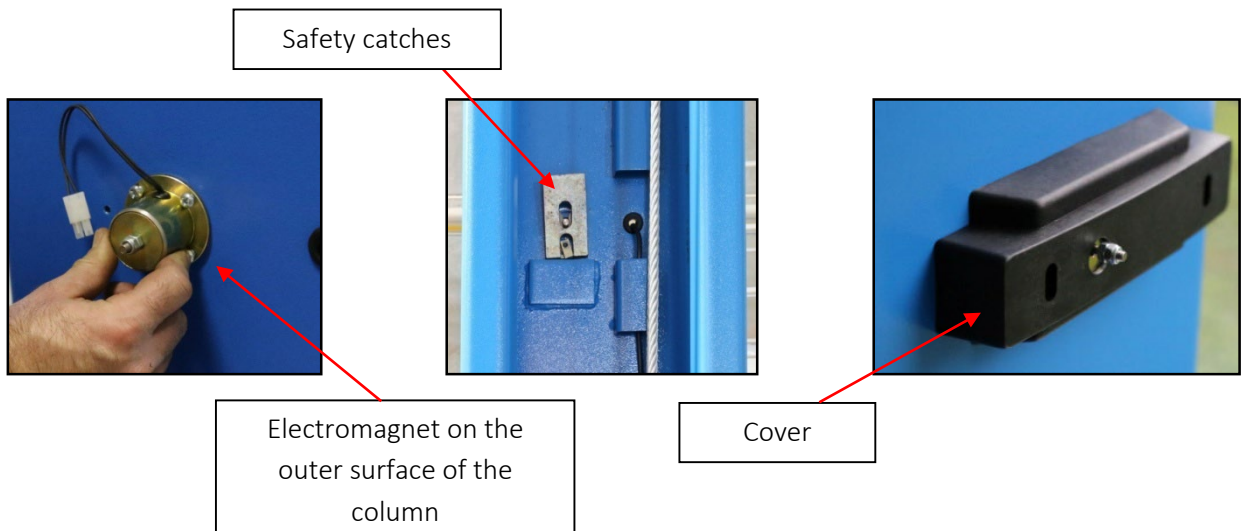


Figure: Work steps for fixing the pillars

6) Install the Drive-over plate



7) Fit the safety catches, the four electromagnets and the corresponding covers



8) Fit the control unit or control box to the main column



9) Connect the electromagnet cables to the cable plugs (B) in the switch box

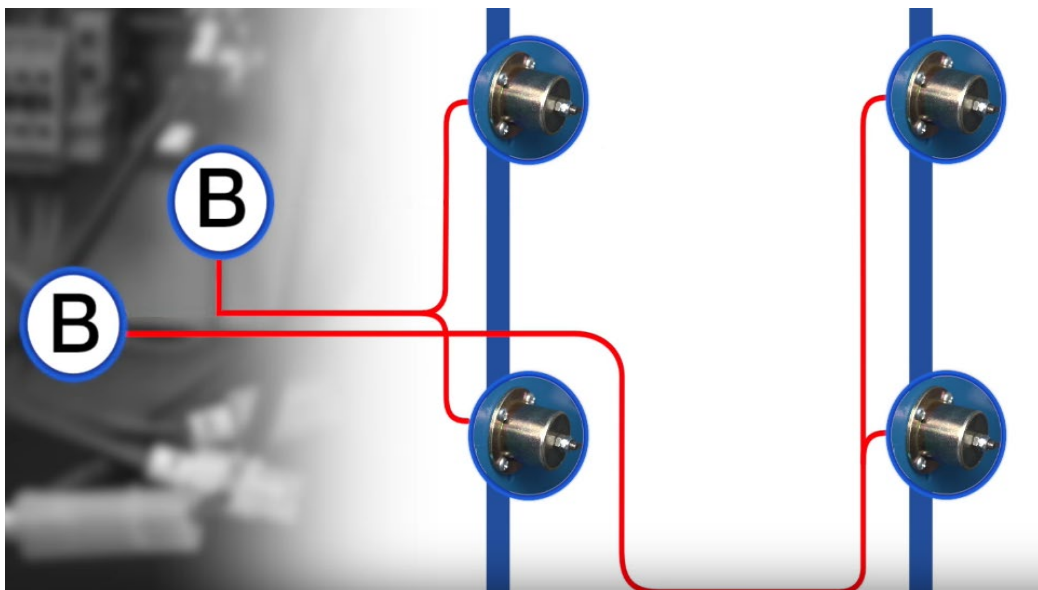
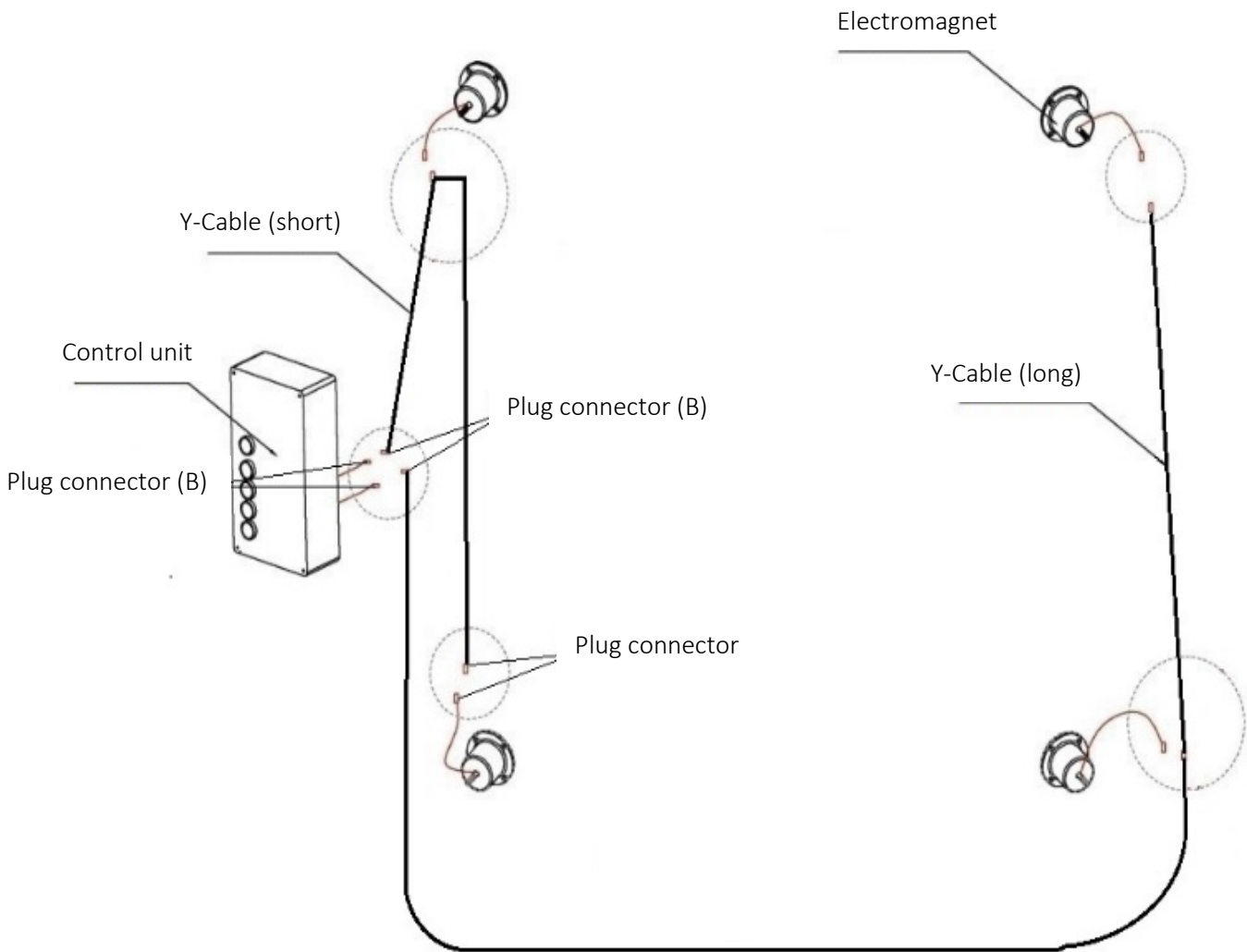
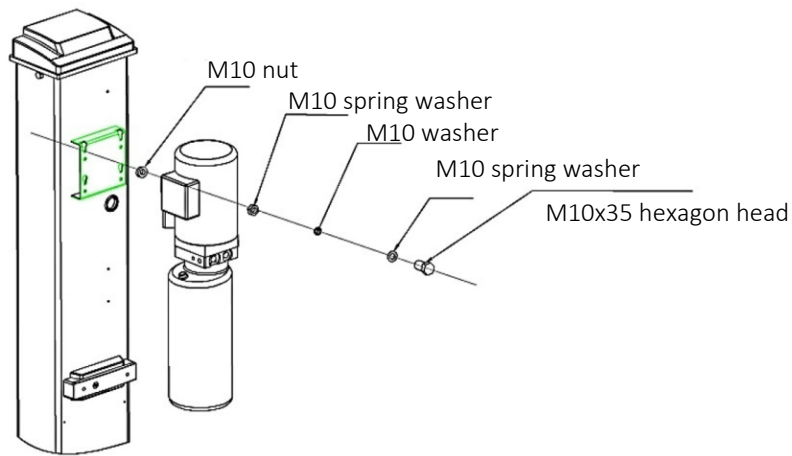


Figure: Electromagnet release connections

10) Assemble the hydraulic system

a) Mount the motor unit

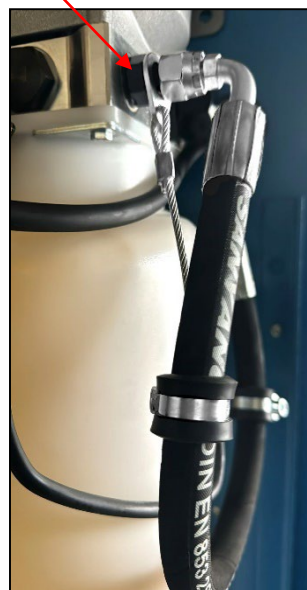
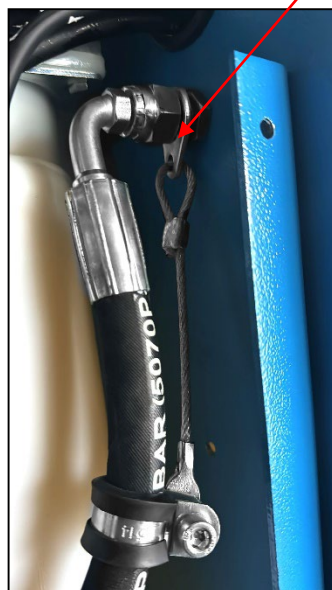


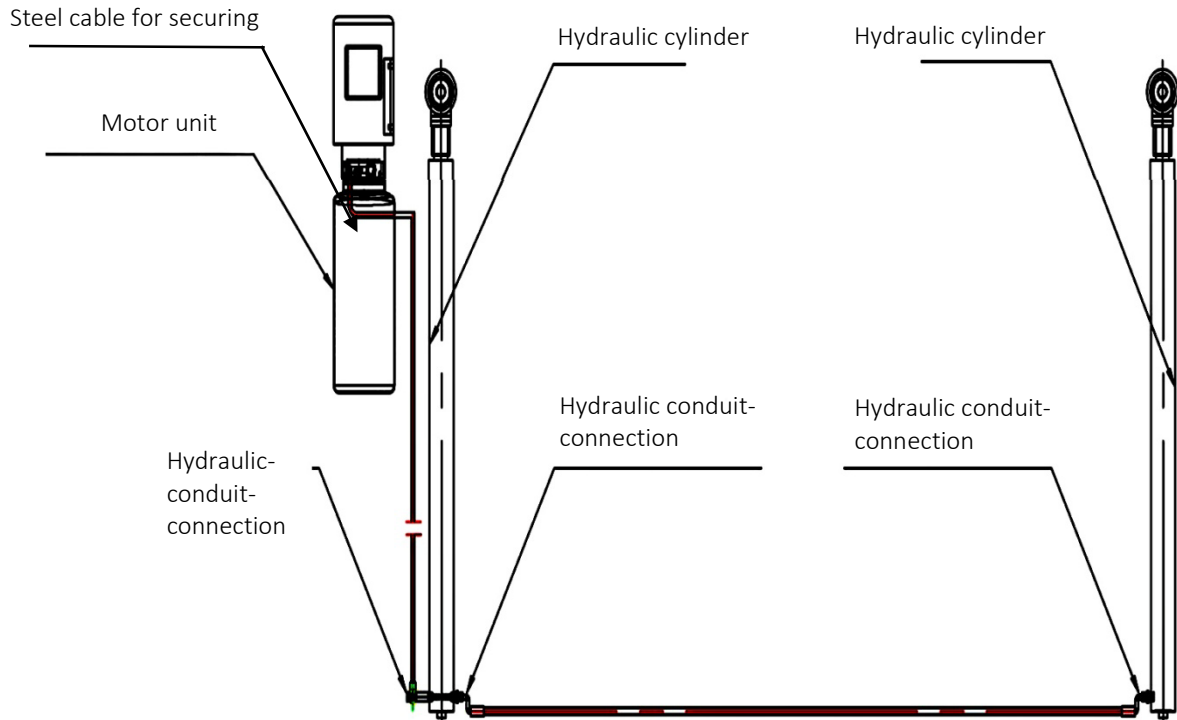
b) Make sure that all hose ends are clean and free of dirt.

c) Connect the hydraulic lines as shown in the following illustration or in the hydraulic circuit diagram.

d) Fit the two steel cables to secure the pressurised hydraulic hose so that it is not thrown around uncontrollably.

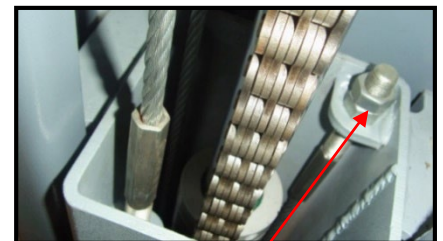
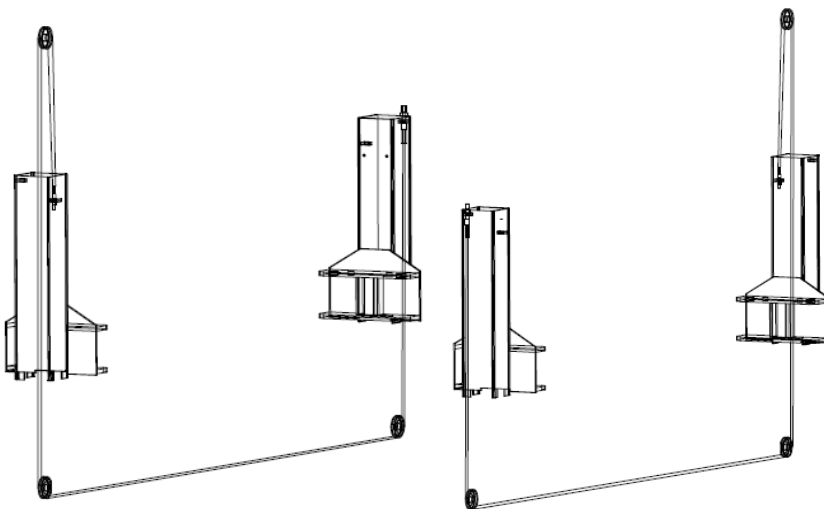
Steel cable for securing





11) Connect the carriages to the steel cables

- a) Align the carriages on both sides of the column approx. 800 mm above floor level.
- b) Make sure that the safety catches on both sides of the column are engaged before you start installing the steel cables.
- c) **The carriages must be level with the ground before you proceeding.**
- d) Pull in the steel cables as shown in the following illustration.
- e) The steel cables must be set "tight" on both sides of the column. Make sure that during a later test run the safety catches on both sides can be heard synchronously. If this is not the case, the steel cables or a steel cable must be retightened.
- f) The ropes must always be secured against unintentional loosening (locked off) and oiled with WD40 to ensure a long service life.

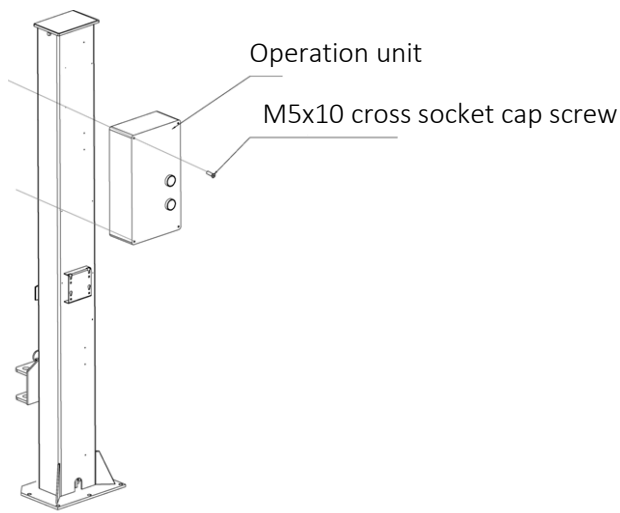


Thread for adjusting the steel cable tension

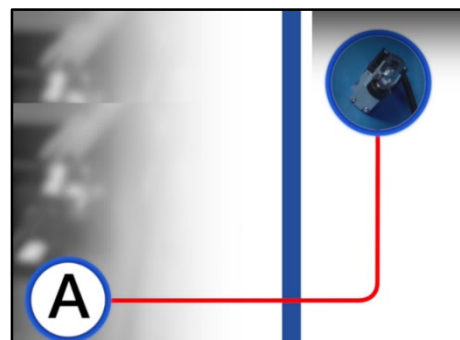
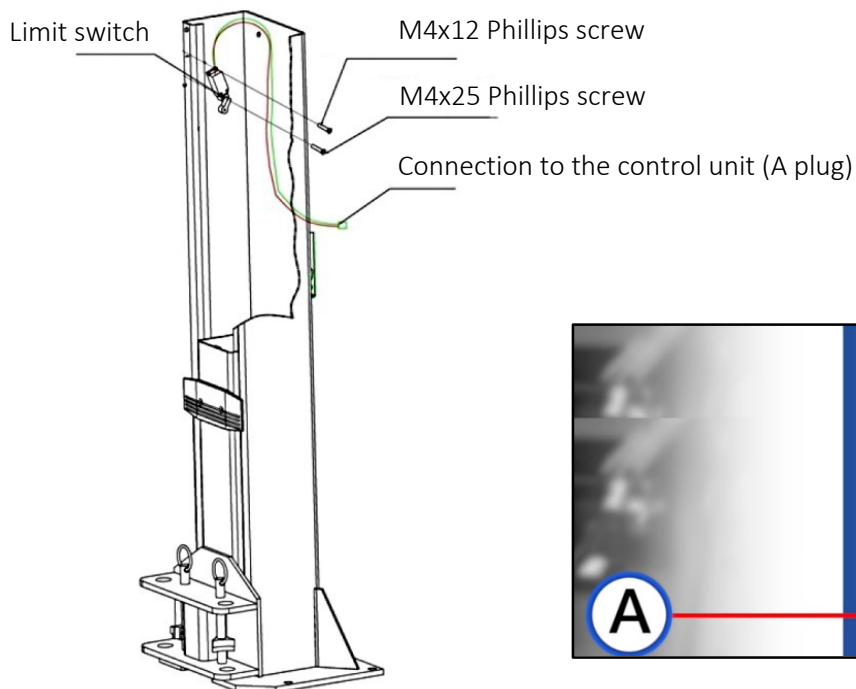
Caution: After adjusting the steel cable tension, the adjusting nuts on both sides of the column must be locked with another nut!

12) Mount the operating control unit on the control box

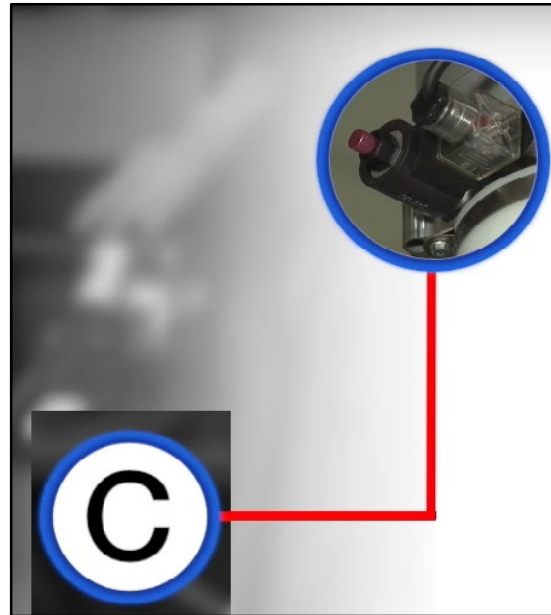
- a) Mount the control unit on the main column.
- b) Connect the power supply to the control unit as shown in the following figure.



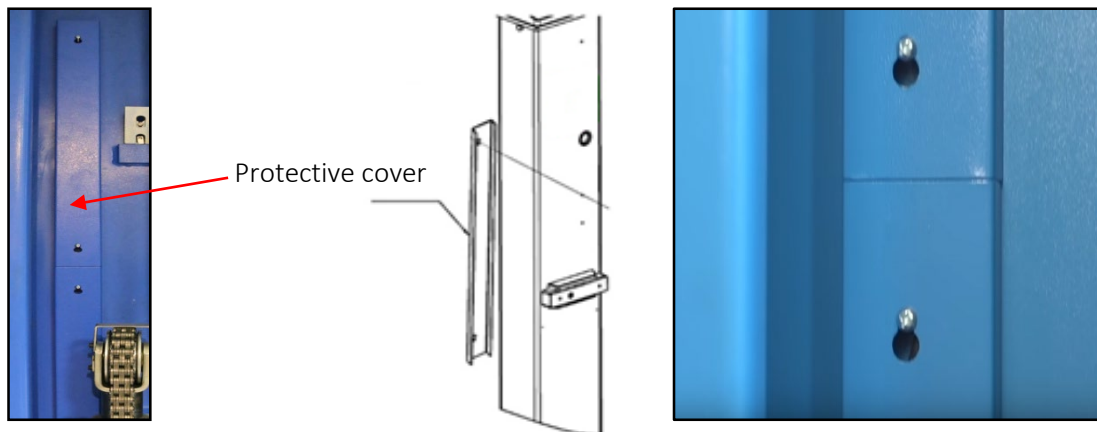
c) Mount the limit switch at the top end of the main column as shown in the following figure.



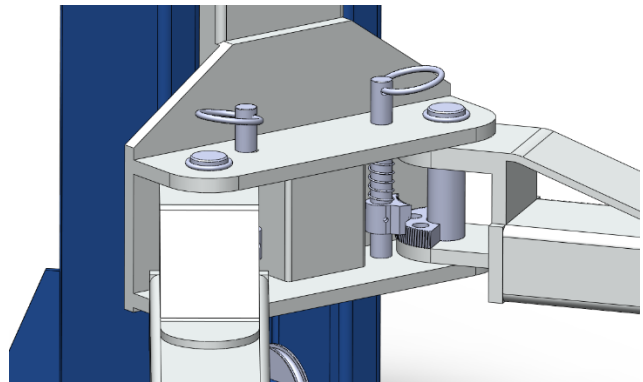
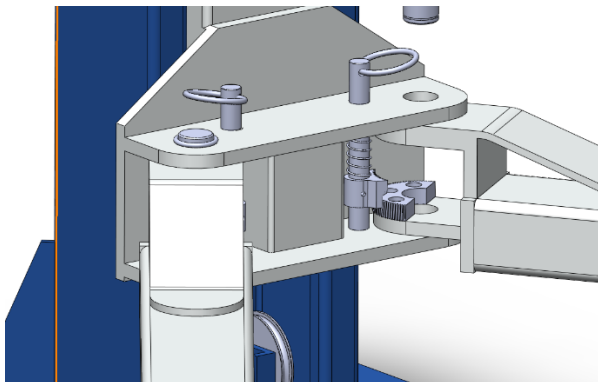
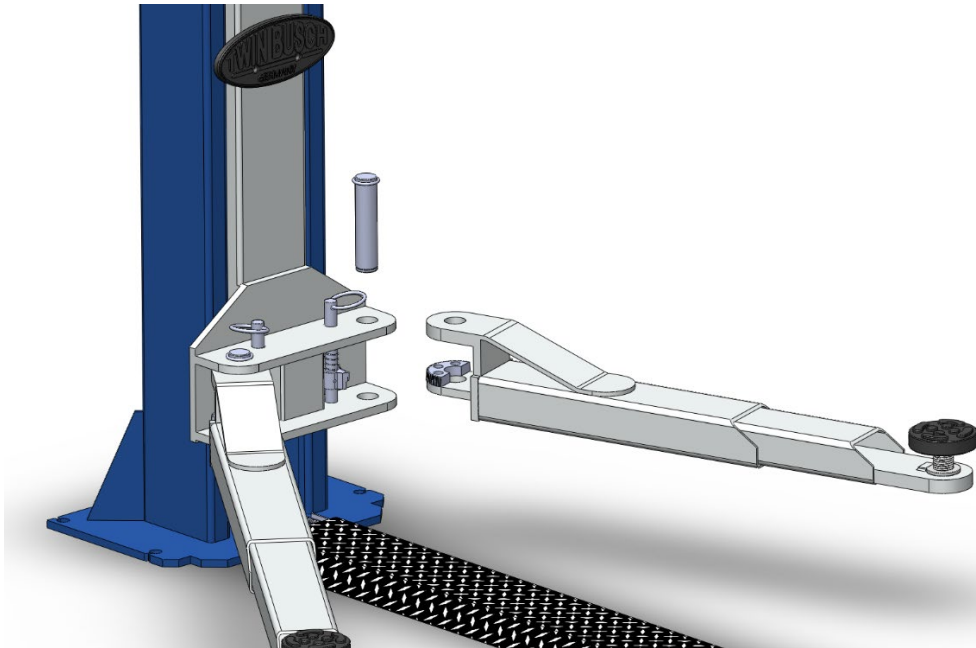
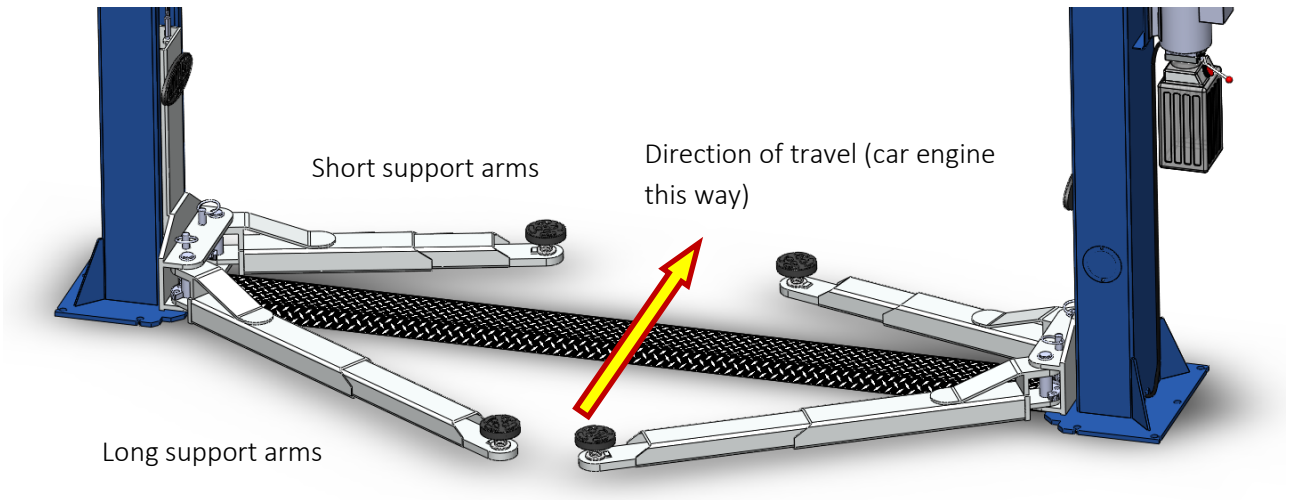
- 13) Fit the drain coil and connect the plug connection C (plug) to the control unit.



- 14) Fit the protective covers for the hydraulic lines from bottom to top.
Important: Make sure that the narrow opening points upwards.



- 15) Mount the support arms
- Insert the support arms into the lifting carriages, pay attention to the interlocking of the anti-rotation blocks. If necessary back off the bolts holding the half moons in place and then re-tighten.
 - Place the support arm bolts in the holes provided, as shown in the following figure.



Insert the support arm, lifting the support arm rotation lock. Insert bolt, secure with circlip.

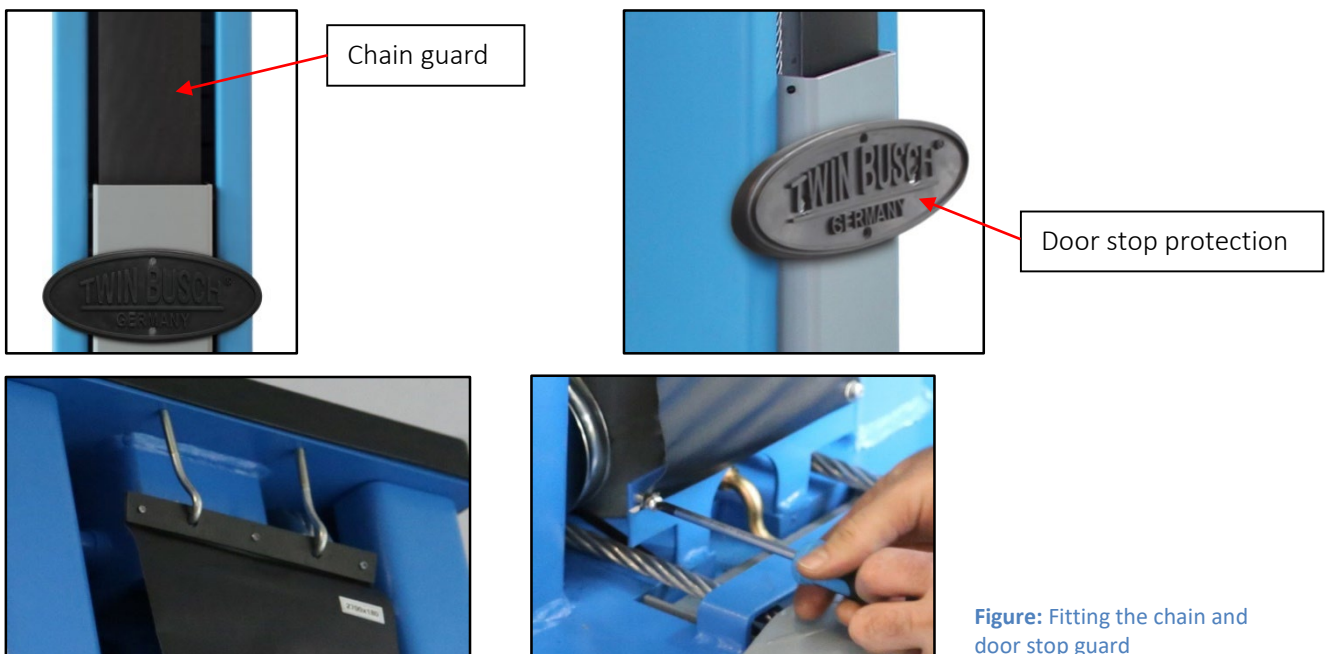
16) Filling the hydraulic system

The hydraulic oil tank has a capacity of approx. 10 litres. To ensure that the lift functions correctly, you should fill the oil tank to 80 % with hydraulic oil. **Hydraulic oil type: HLP 32**

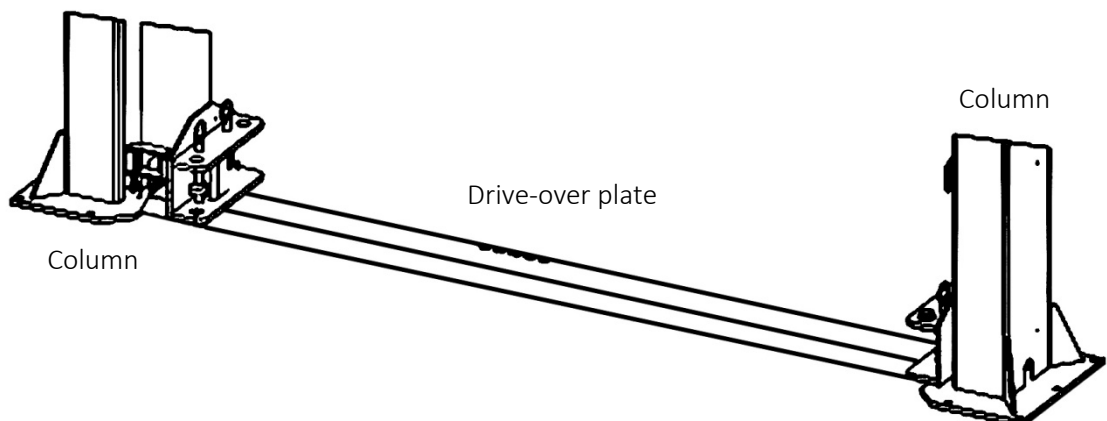
17) Test run

- a) Follow the procedure in paragraph **9 Commissioning** and make absolutely sure that NO vehicle is on the lifting platform during a test run.
- b) Before the test run, check all connections and terminals for correct functioning.

18) Fit the door stop guard



19) Fit the Drive-over plate



8.4 Test points after assembly

S/N	Check	YES	NO
1	Are the columns vertical to the floor? (90°)		
2	Are the two columns parallel to each other?		
3	Is the oil hose connected correctly?		
4	Is the steel cable correctly and firmly connected?		
5	Are all support arms correctly and firmly mounted?		
6	Are the electrical connections correct?		
7	Are the joints all screwed tight?		
8	Are all parts that need greasing greased?		

9. Commissioning

9.1 Safety precautions

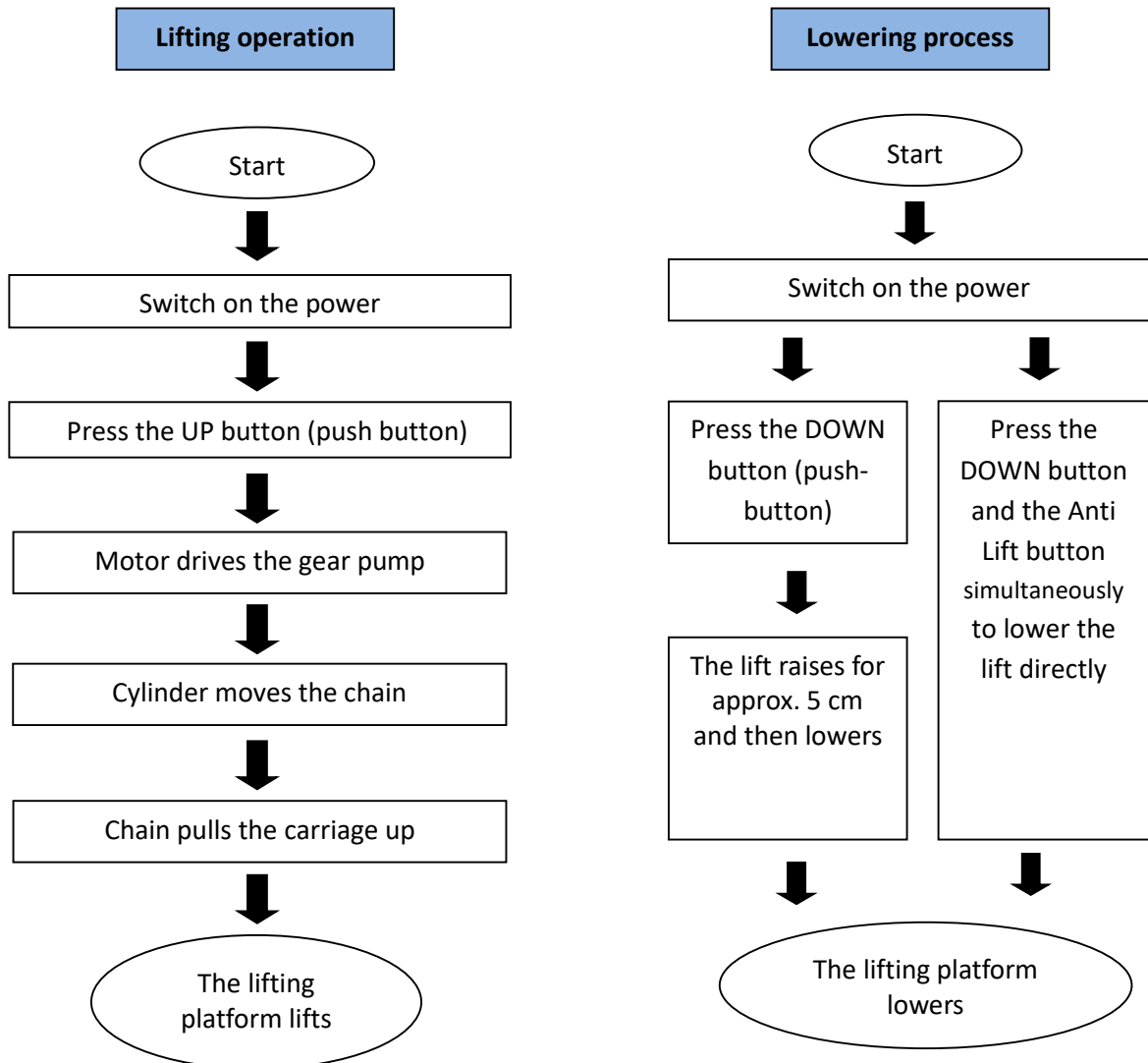
- a) If the safety devices are defective or show any abnormalities, the lifting platform must not be operated under any circumstances!
- b) Check all connections of the hydraulic lines for tight fit and proper functioning. If there are no leaks, a lifting operation can be started.
- c) Only the operator should be near the lift during a lifting or lowering operation. Always ensure that there are no persons in the danger zone.
- d) Vehicles should always be aligned so that the vehicle's center of gravity is centrally located between the lift columns. If this is not the case, the lift should not be used. Otherwise, neither we nor the intermediary dealer, if any, will accept responsibility for any problems or damage caused as a result.
- e) When the desired lifting height has been reached and the safety catches are engaged, switch off the power supply to the lifting platform before starting work in order to avoid incidents caused by unintentional operation by other persons.
- f) Make sure that the safety catches are engaged before starting work on or under a vehicle. No persons should be in the working area of the lift during the lifting and lowering process.

9.2 Description of the control unit (control box)



Description	Function
Main switch	Switch on or off
Operating light	Indicates whether there is power
UP button (push-button)	Lifting the lifting platform
Safety catches	Lowering into the safety catches
Anti Lift Button	Lowering the lift without lifting
DOWN button (push-button)	Lowering the lifting platform
230 V socket outlet	Connect consumer
Emergency stop switch	Switches the system off in an emergency

9.3 Lifting and lowering process flow chart



9.4 Operating instructions

9.4.1 Lifting operation

1. **Read and understand the operating instructions before starting work.**
2. Connect the power supply and turn the main switch to ON.
3. Park the vehicle with the vehicle's center of gravity centered between the two pillars.
4. Align the lift's support arms so that the vehicle's pick-up points are aligned with the lift's pick-up points. Make sure that the vehicle is positioned correctly.
5. Switch on the lift and press the UP button (push button) on the control unit until the pick-up of the support arms touches the vehicle at the pick-up points specified by the vehicle manufacturer and the vehicle has lifted about 10-15 cm. Stop the lifting process and make sure that the vehicle has been picked up correctly and safely.
6. After final alignment and check, press the UP button again and keep it pressed until the desired lifting height is reached.
7. Press the lock button to lower the lift carriages into the safety catches.
8. Turn the main switch to OFF and start working on or under the vehicle.

9.4.2 Lowering process

1. Connect the power supply and switch the main switch to ON
2. Press the DOWN button on the control unit. The lifting carriages of the lifting platform will now raise by about 5 cm to release the locking mechanism of the safety catches. The electromagnetic release valve then opens and the lifting carriages lower.
3. As soon as the lifting carriages have reached the lowest position, the support arms can be swivelled out from under the vehicle.
4. The vehicle can now be removed.

9.5 Emergency lowering function in the event of a power failure.

1. If the lifting carriage is not engaged.

- a) Pull all the electromagnets to the outside of the two columns at the same time in order to open the safety catches and tie back with cable ties.

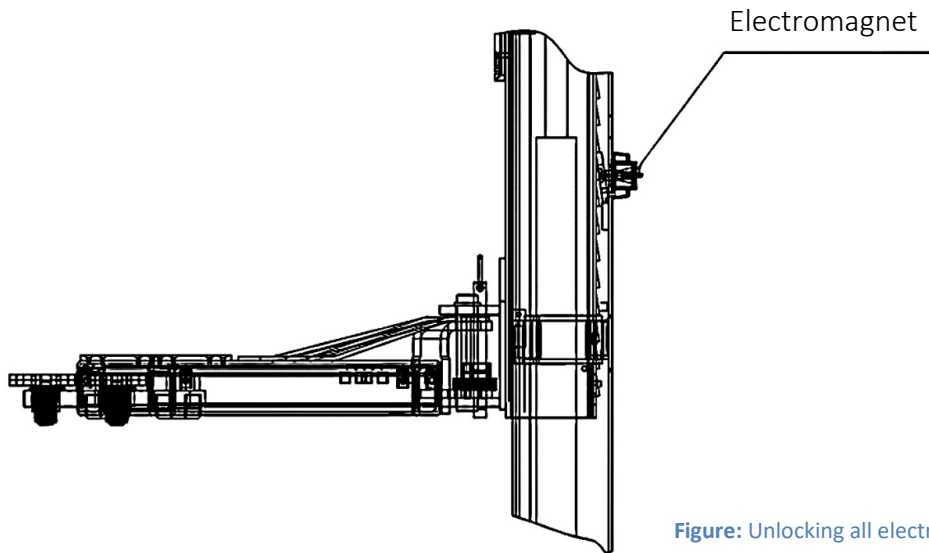
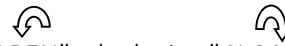


Figure: Unlocking all electromagnets

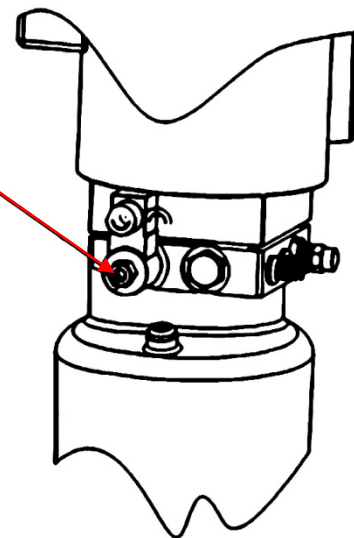
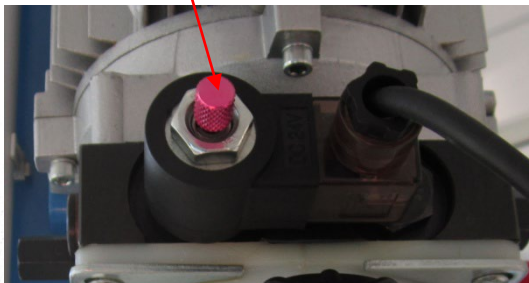
- b) Actuate the manual drain (bayonet catch).

(Push in the knurled screw and turn anti-clockwise "OPEN", clockwise "CLOSED")



Electromagnetic

Drain valve



2. With the lifting carriage engaged.

- a) Unscrew the sealing plug to open the manual hydraulic pump. to be able to connect.

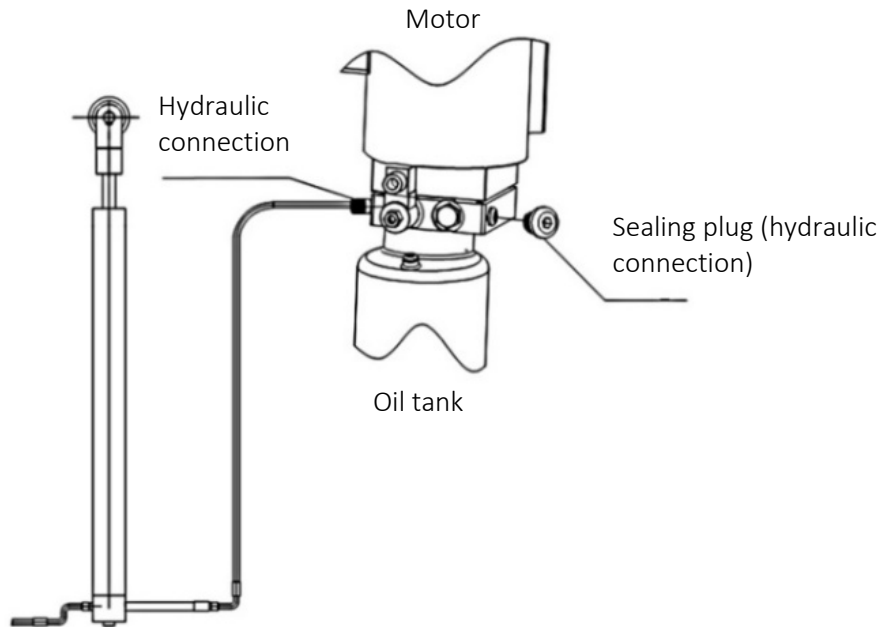


Figure: Sealing plug

- b) Actuate the lever of the hydraulic pump to supply the cylinder with oil and release the lock.

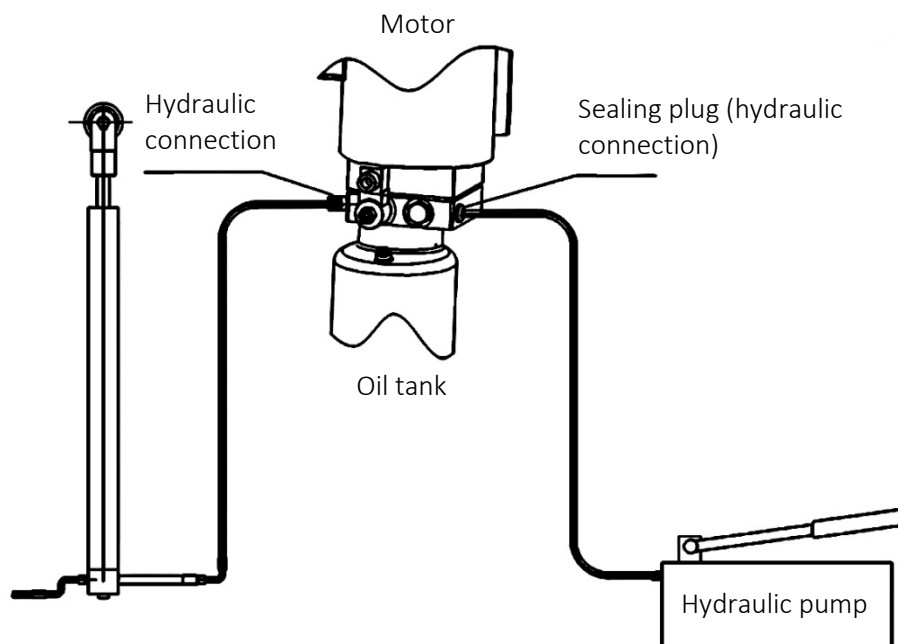


Figure: Hand pump connections

10. Troubleshooting

Attention: Do not hesitate to contact the expert staff of Twin Busch GmbH if you are unable to rectify an error yourself. We will be happy to assist you in rectifying the problem. In this case, document the error and send us pictures and a precise description of the error so that we can identify and remedy the cause as quickly as possible.

The following table lists possible errors, their cause and the corresponding troubleshooting for quicker identification and self-remedy.

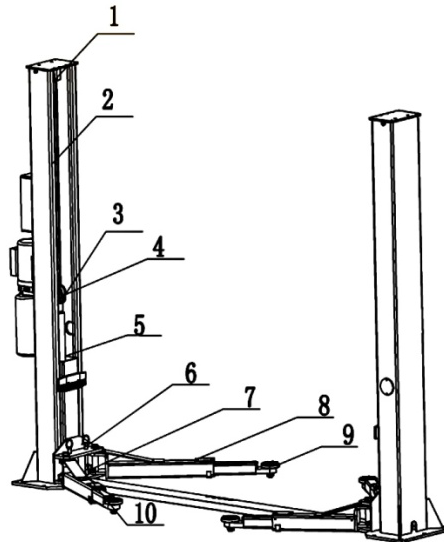
PROBLEMS	CAUSE	SOLUTION
Unusual noise.	Wear on the inside of the pillars.	Grease the inside of the pillars.
	Contamination in the columns.	Remove the dirt.
The motor cannot be started, nor does the lift move up.	The cable connections are loose.	Check the cables and reconnect them.
	The motor is defective.	Replace it.
	The limit switch is defective/damaged or the cable connection is loose.	Reconnect the cables or replace the limit switch.
Motor runs, but does not raise the lift.	The motor is running backwards/in the wrong direction of rotation.	Check the cable connection.
	The pressure relief valve is loose or dirty.	Clean or screw it tight.
	The gear pump is defective.	Replace them.
	The oil level is too low.	Top up with oil.
	The oil hose has come loose or is torn off.	Fasten or replace it.
	The damping valve is loose or jammed/blocked.	Clean or fasten it.
The beams lower slowly after they have been raised.	The oil hose is leaking.	Check or replace it.
	The oil cylinder/piston is leaking.	Replace the seal.
	The directional valve is leaking.	Clean or replace it.
	The pressure relief valve is leaking.	Clean or replace it.
	Manual or electric drain valve is leaking/dirty.	Clean or replace it.
Lifting too slowly.	The oil filter is dirty or jammed.	Clean or replace it.
	Oil level is too low.	Top up with oil.
	The pressure relief valve is installed incorrectly.	Mount it correctly.
	The hydraulic oil is too hot. (over 45°C)	Change the oil.
	The cylinder seal is worn.	Replace the seal.
Lowering too slowly.	The throttle valve is jammed/dirty.	Clean or replace it.
	The hydraulic oil is contaminated.	Change the oil.
	The drain valve is blocked.	Clean it.
	The oil hose is damaged/kinked.	Replace it.
The steel cable is worn.	Not greased during installation or it is worn.	Replace it.

11. Maintenance

Regular maintenance of your lift will ensure a long and safe use of the lift. The following are suggestions for the maintenance intervals and the activities to be carried out. How often you service your lift depends on the environmental conditions, the degree of contamination and, of course, the stress and load on the lift.

The following points must be lubricated:

S/N	Description
1	Upper pulley
2	Steel cable
3	Sprocket
4	Chain
5	Sledge
6	Bolt
7	Safety block
8	Support arm
9	Screw threads
10	Lower pulley



11.1 Daily inspection and maintenance of the lifting platform elements before use

A daily check of the safety-relevant components must be carried out before each commissioning! This can save you a lot of time due to a failure, major damage or even injuries.

- Check all connections and screw connections for tightness.
- Check the hydraulic system for leaks and functionality.
- Check the support arm locks for correct operation.
- Check in a test run (without vehicle) whether the safety catches function properly.
- Clean heavily soiled lifting platform elements.
- Lubricate all lifting platform elements that are not well lubricated.

11.2 Weekly inspection and maintenance of the lifting platform elements

- Check the mobility of all adjustable and flexible lifting platform elements.
- Check the condition and correct functioning of all safety-relevant lifting platform elements.
- Check the level of the hydraulic oil (lowered lift carriage - level high, max. raised lift carriage - level low).

11.3 Monthly inspection and maintenance of the lifting platform elements

- Check all screw connections and joints for tightness.
- Check the lifting carriage, the support arm bolts, the support arms and all other moving lifting platform elements for wear and lubricate them.
- Check the condition of the steel cable for signs of wear and oil the steel cable with thin lubricating oil.

11.4 Annual inspection and maintenance of the lifting platform elements

- Empty and clean the hydraulic oil tank and replace the hydraulic oil.
- Replace the oil filter.

If you follow the above maintenance intervals and maintenance activities, your lift will remain in good condition and damage and accidents will continue to be avoided.

12. Behaviour in the event of an incident

If the lift malfunctions, simple faults may be the cause. Use the following list for troubleshooting *).

If the cause of the error is not listed or cannot be found, please contact the expert Twin Busch GmbH team.

Never attempt to carry out repairs yourself, especially on safety devices or electrical system parts.

*) Points depending on the design and type of the lifting platform





Work on electrical systems only by qualified electricians!

Problem: Lifting platform can neither be raised nor lowered.

Possible causes

- No power supply available.
- Power supply interrupted.
- Main switch not switched on or defective.
- Emergency stop pressed or defective.
- Fuse in power connection has blown or is defective.
- Fuse in the switch box has blown or is defective.

Remedy



- Check power supply.
- Check power supply line.
- Check main switch. 
- Unlock emergency stop, check. 
- Check fuse.
- Check fuse.

Problem: Lifting platform cannot be raised.

Possible causes

- With three-phase current: one phase is missing.
- With three-phase current: Direction of rotation of motor reversed.
- Oil pump defective.
- Emergency drain open.
- Motor is defective.
- Overload.

Remedy

- Check power supply. 
- Check direction of rotation, change phase if necessary. 
- Notify Twin Busch Service.
- Close emergency release valve.
- Notify Twin Busch Service.
- Overload valve has opened, reduce load.

Problem: Lift cannot be lowered.

Possible causes

- Lifting platform sits in safety catches.
- Lifting platform has moved into limit switch.
- Motor is defective.
- Lifting platform has been blocked during lowering.

Remedy

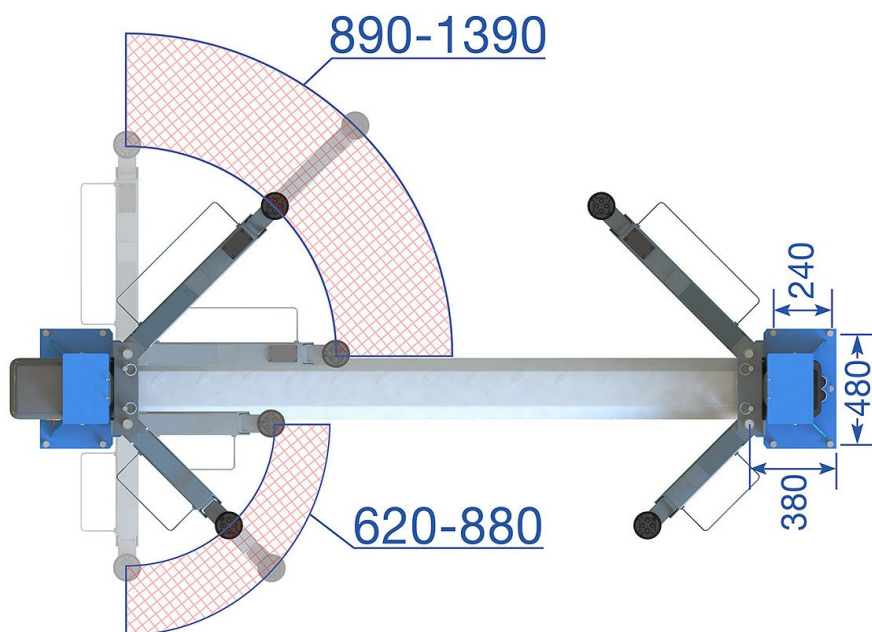
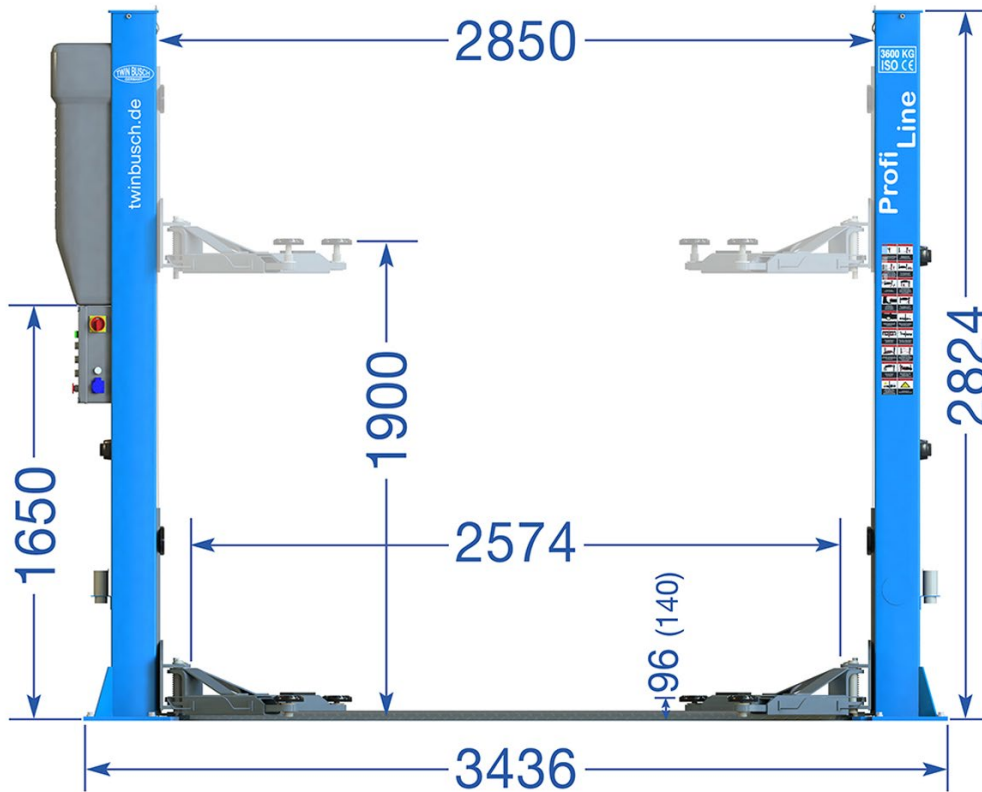
- Raise platform a little, pull detents, lower.
- If necessary, loosen limit switch, raise 1 cm and lower.
- Open safety latch and lift over.
- Lower emergency drain.
- Raise the lifting platform slightly again and remove the obstacle.

13. Appendix

13.1 Packing list

S/N	Material	Name	Drawing	Property	Qty
1		Columns (motor side)	FL-8224E-A1	Component	1
2		Columns	FL-8224E-A2	Component	1
3		Sledge	FL-8224E-A3	Component	2
4		Hydraulic unit		Component	1
5		Master cylinder	FL-8224-A4-B3	Component	1
6		Master cylinder	FL-8224-A4-B2	Component	1
7		Electrical system		Component	1
8			Steuereinheit		1
9			Kabeln		1
10		Steel cable L = 8785 mm	FL-8224E-A6	Component	2
11		Long support arm	FL-8224-A7	Component	2
12		Short support arm	TW-235E-A8	Component	2
13		Cover plate	FL-8224-A9		1
14		Base plate	FL-8224-A10		1
The box contains the following parts.					
17		Cover	FL-8224E-A1-B6	ABS	2
18		Pull-out arm	FL-8224 -A12	Galvanised	4
19					
20		Support arm bracket (short)	FL-8224 -A18-B4	Component	2
21		Support arm bracket	FL-8224-A7-B4	Component	2
22		Recording set	FL-8224 -A7-B3	Component	4
23		Short oil hose L = 2550 mm		Component	1
24		Long oil hose L = 2880 mm	8224E-B4-B2	Component	1
25		Safety catches	FL-8224E -A1-B2	Component	
26					
27		Guide pin	FL-8224E -A1-B3	Galvanised	
28		Hose cover	FL-8224E -A1-B8	Sheet metal part	6
29		Chain guard	FL-8224 -A11	Component	2
30		Chain guard holder	FL-8224 -A13	Galvanised	4
31		Door stop protection	FL-8224 -A3-B7	Rubber part	2
32		Nylon disc	FL-8224 -A17		10
33					
34		Hex mother	M10*35	Standard part	4
35		Hex mother	M8*12	Standard part	8
36		Screw	M6*10	Standard part	28
37		Screw	M6*30	Standard part	12
38		Screw	M6*16	Standard part	4
39		Screw	M8*16	Standard part	4
40		U.Disc	M6	Standard part	8
41		U.Disc	M10	Standard part	4
42		Spring washer	M10	Standard part	4
		Hex mother	M6	Standard part	8
		Hex mother	M10	Standard part	4
		Type B Seeger ring	38	Standard part	4
		Fixing bolt	M18*180	Standard part	10

13.2 Lifting platform dimensions



13.3 Foundation requirements and working area

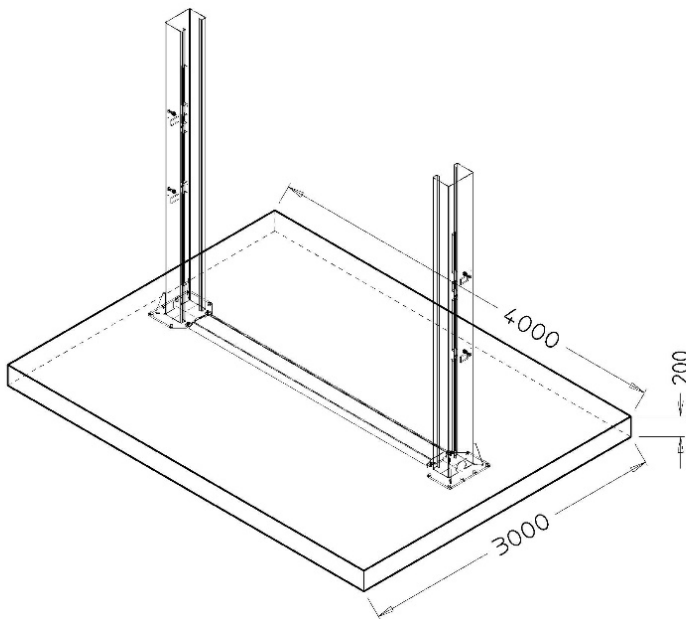
Requirements for the concrete:

- Concrete C20/25 according to DIN 1045-2 (previous designation: DIN 1045 concrete B25).
- The floor must be level and have a flatness of less than 5 mm/m.
- Newly poured concrete must cure for at least 28 days.

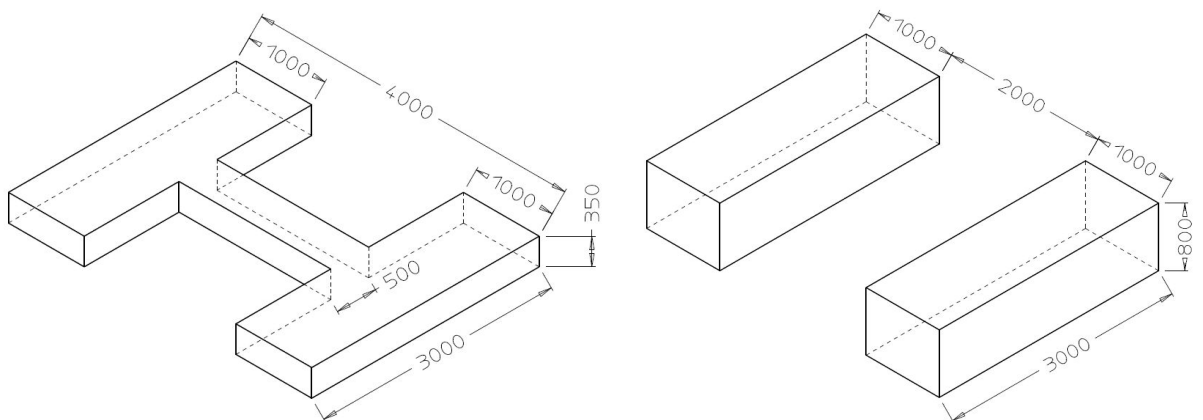
Foundation dimensions:

- Ideally, the entire hall floor should be made of concrete C20/25 with a thickness of at least 200 mm.

Minimum dimensions of the foundation slab (lifting platform placed centrally):



Alternatively, in H-shape or two blocks:



Other requirements:

- The surrounding soil must be suitable for the load, e.g. no sandy soils, etc.
- Reinforcements in the concrete are not mandatory for proper use of the lifting platform, but are recommended.
- In case of doubt, the foundation should be determined and checked by a structural engineer.

For soil exposed to frost, note the following:

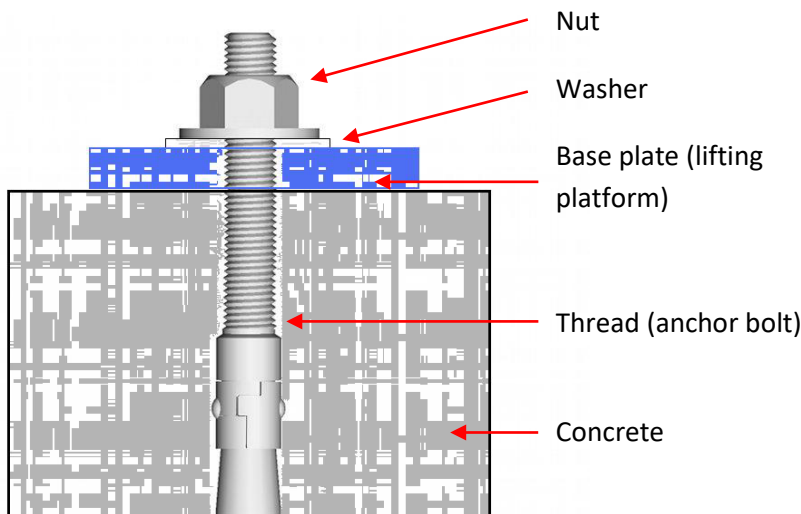
For frost exposure, the concrete must comply with exposure class XF4, as dripping de-icing agent cannot be ruled out.

This results in the following minimum requirements for the concrete when exposed to frost:

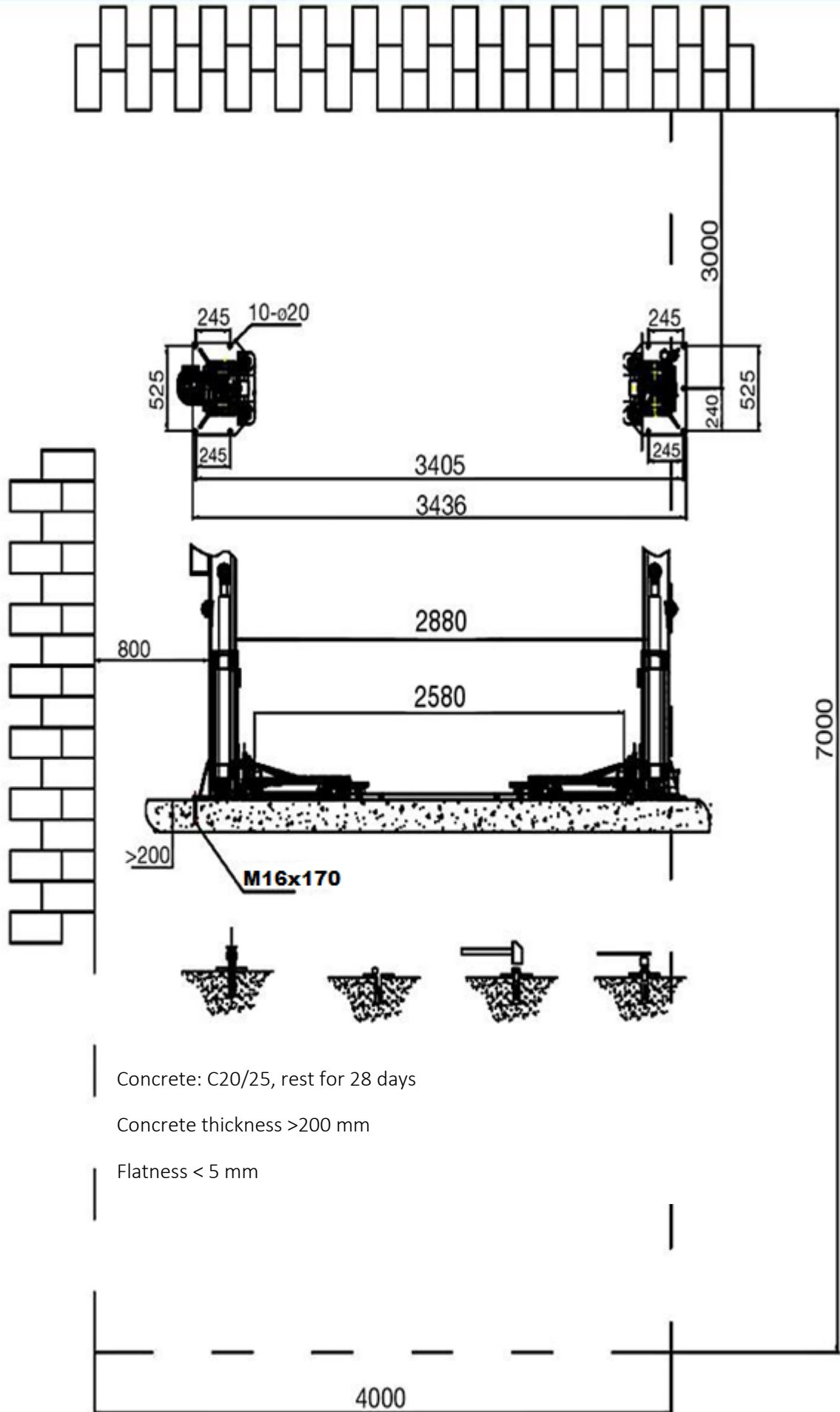
Exposure class:	XF4
Maximum w/c:	0,45
Minimum compressive strength:	C30/37 (instead of C20/25)
Minimum cement content:	340 kg/m ³
Minimum air void content:	4.0 %

It must be noted, however, that the lifts are not designed for outdoor use. The control box is IP54, but the rest of the electrics, motors and limit switches are IP44 at most.

Anchor bolt fastening



Tightening torque of the anchor bolts
is: 110 Nm (for M16)

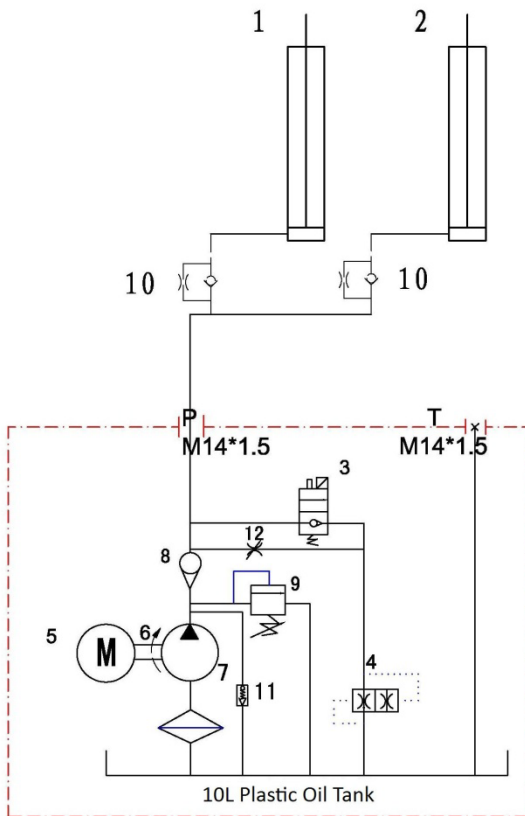


Concrete: C20/25, rest for 28 days

Concrete thickness >200 mm

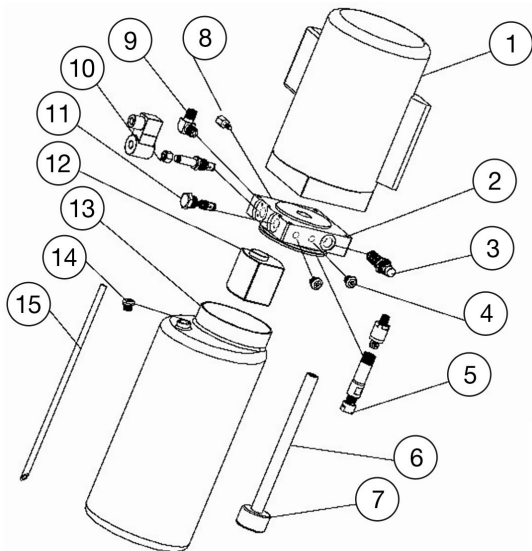
Flatness < 5 mm

13.4 Hydraulic system



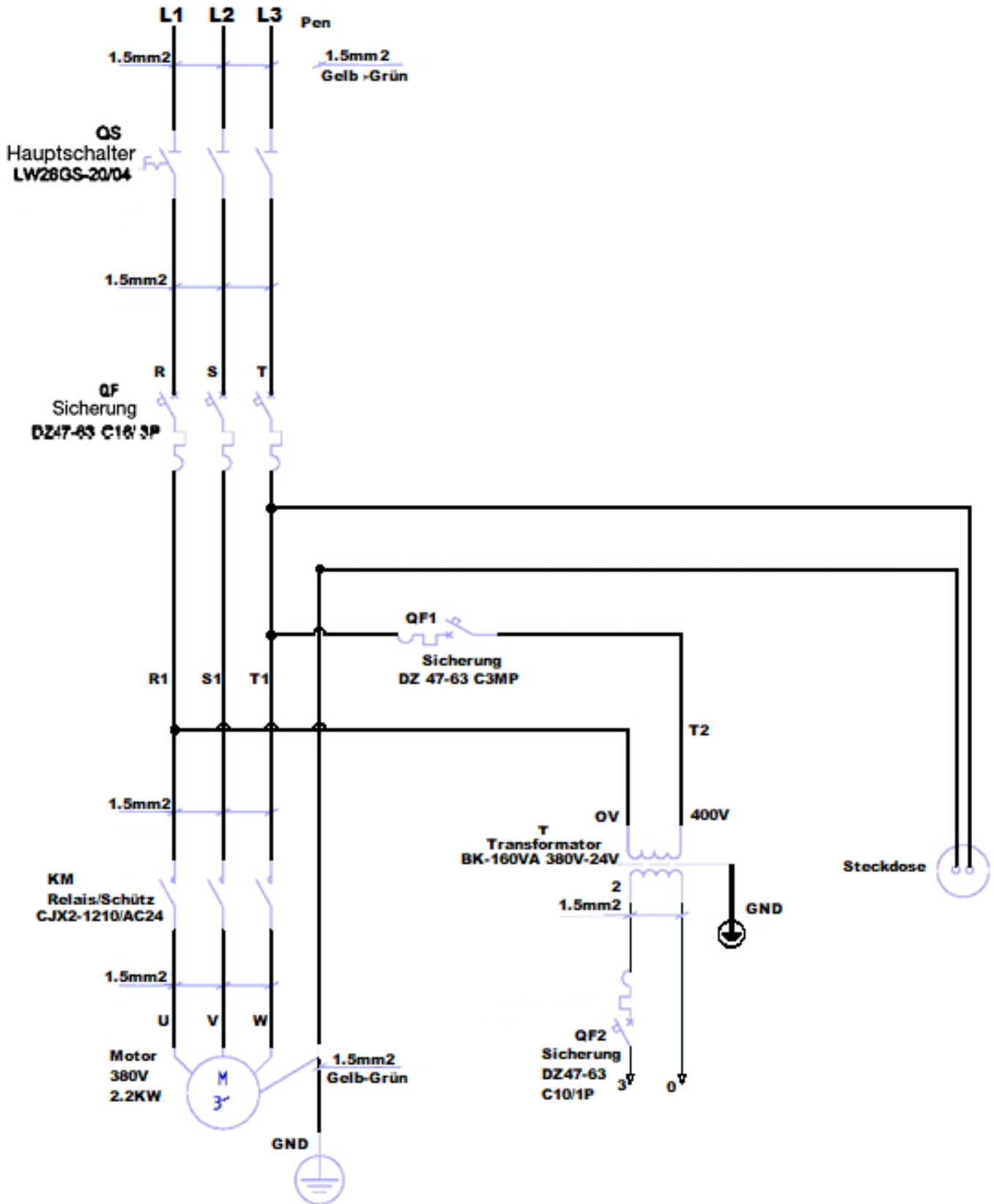
1. Master cylinder
2. Secondary cylinder
3. Manual drain valve
4. Throttle valve
5. Motor
6. Clutch
7. Gear pump
8. Check valve (one-way valve)
9. Pressure relief valve (max.: 19.4 Mpa)
10. Throttle check valve
11. Pressure regulating valve
12. Emergency release valve

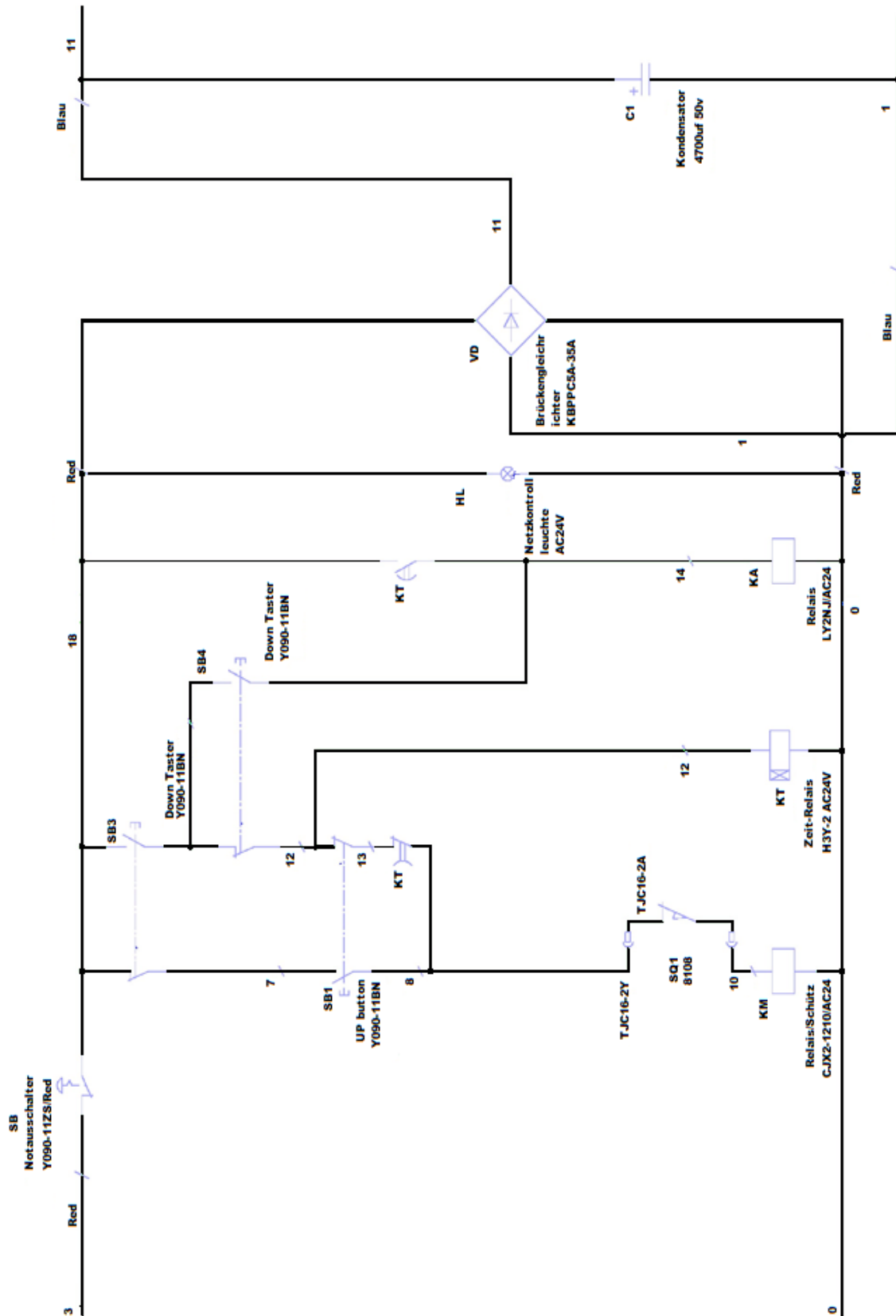
10 litre Oil Tank

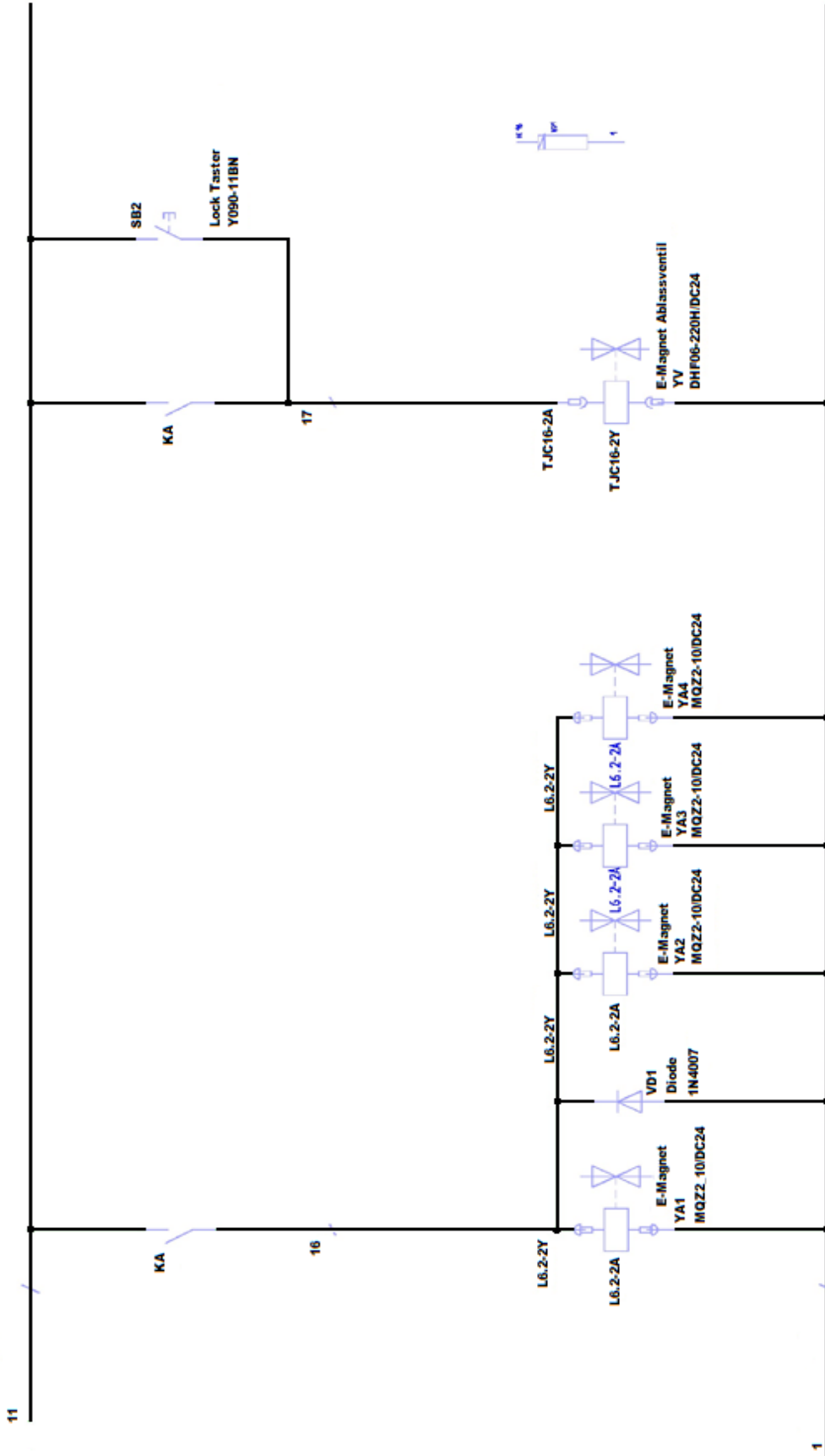


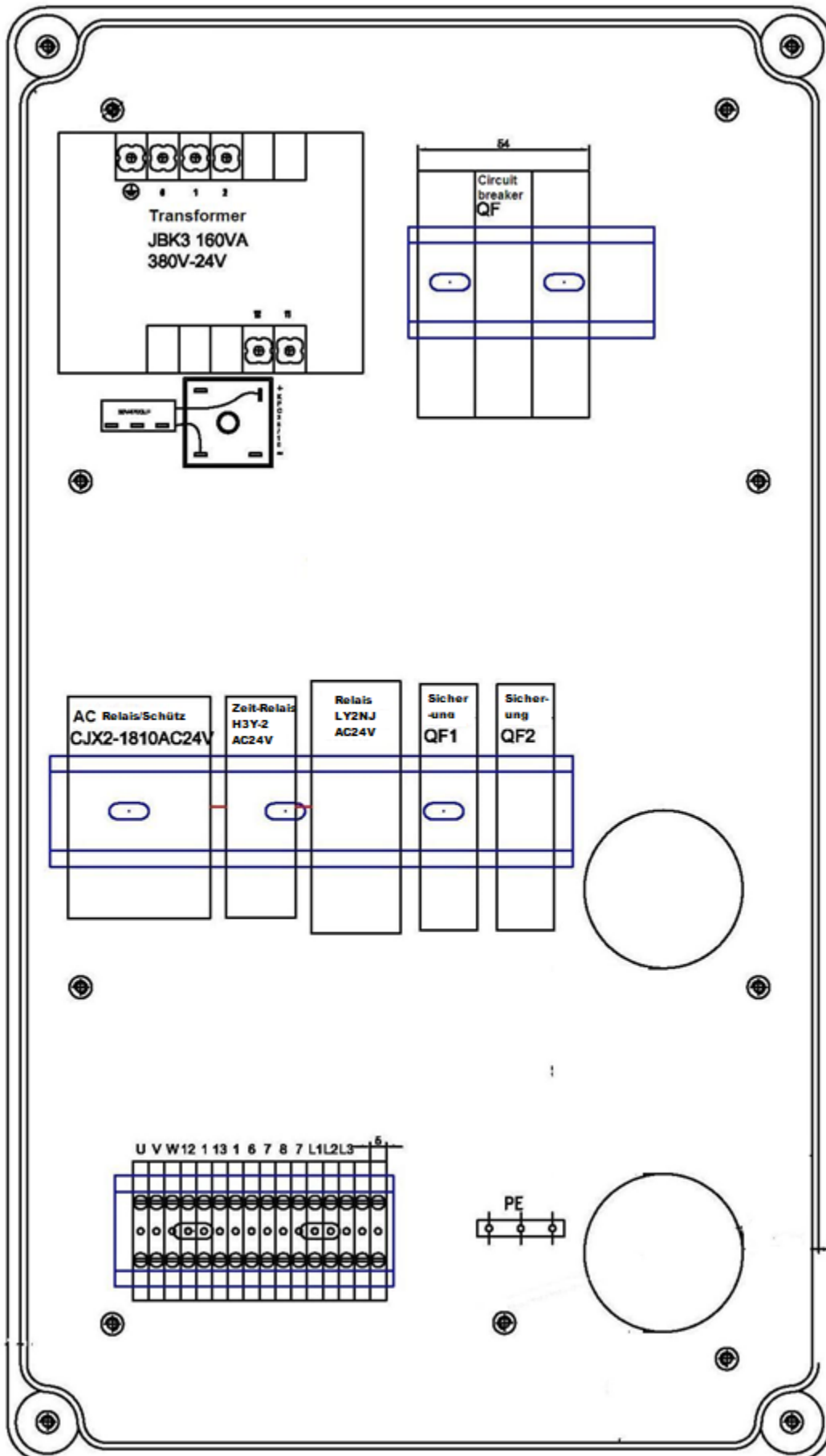
S/N	Name	Quantity
1	Motor	1
2	Hydraulic block	1
3	Pressure relief valve	1
4	Screw plug	2
5	Pressure regulating valve	1
6	Oil suction pipe	1
7	Oil filter	1
8	Throttle valve	1
9	Connection	1
10	Electromagn. drain valve	1
11	One-way valve	1
12	Gear pump	1
13	Plastic oil tank	1
14	Oil tank plug	1
15	Oil return line	1

13.5 Circuit diagrams

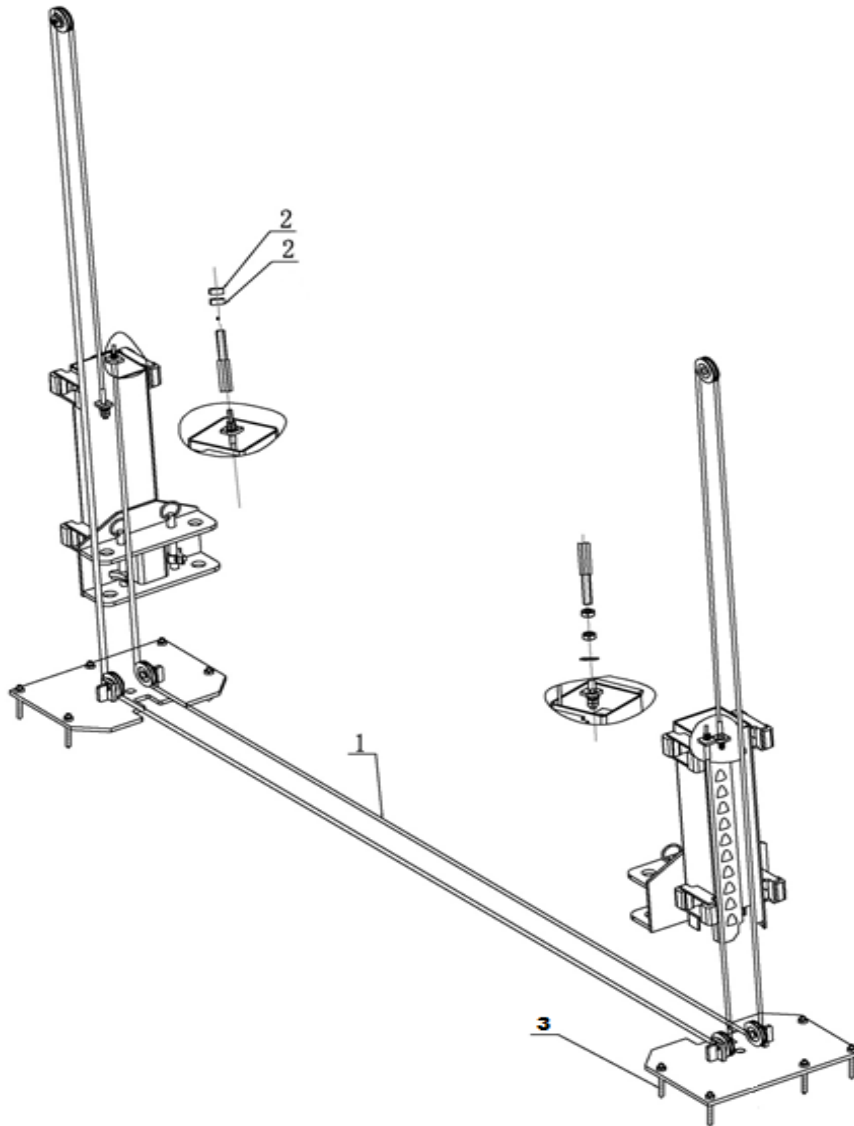




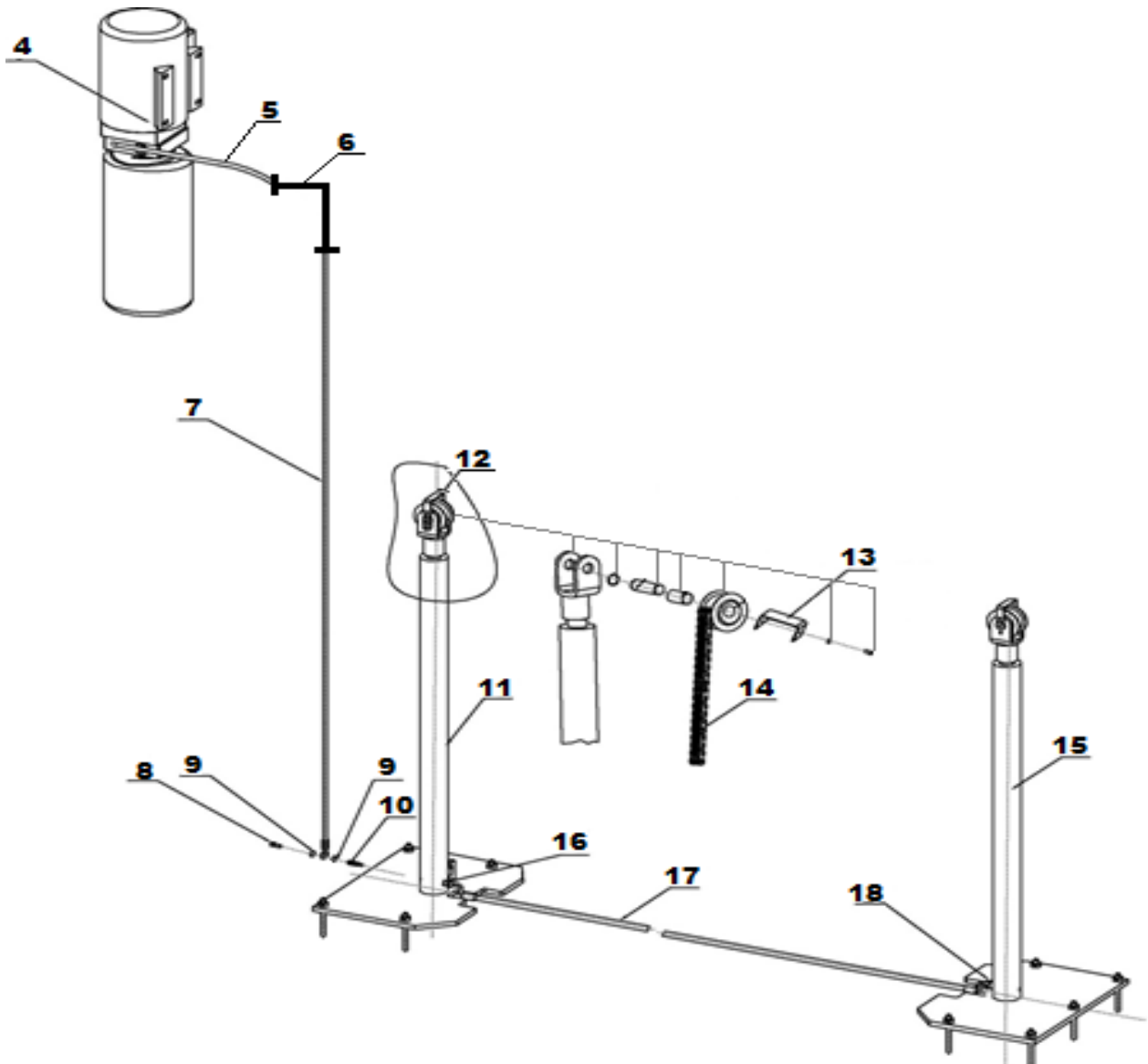




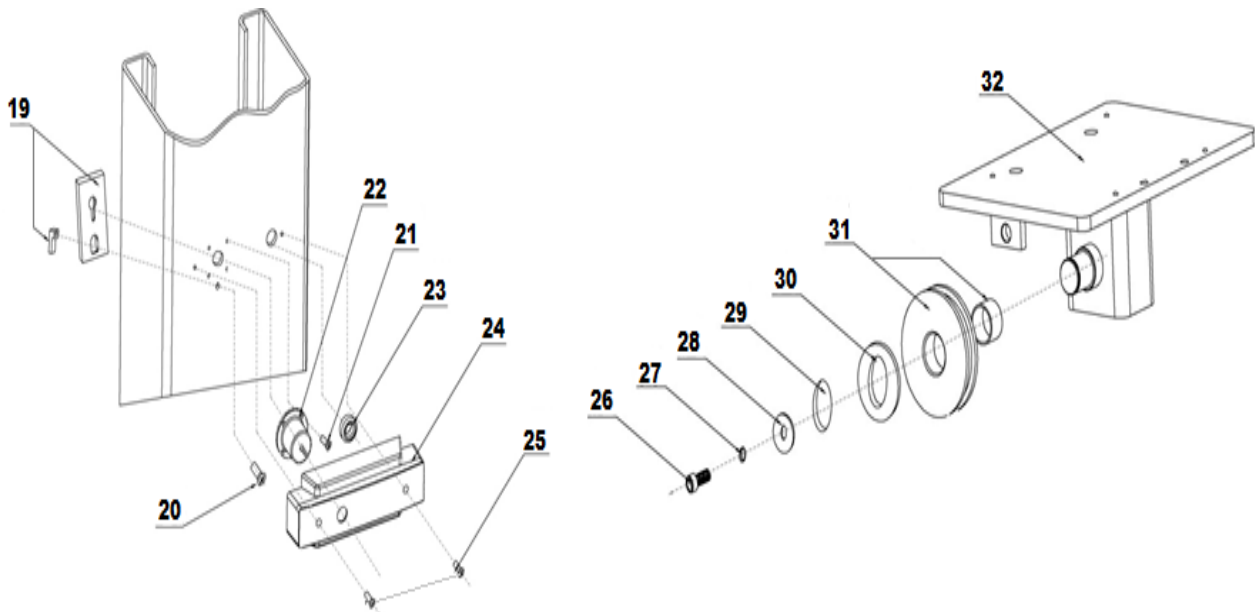
13.6 Detailed drawing and parts description of the lifting platform



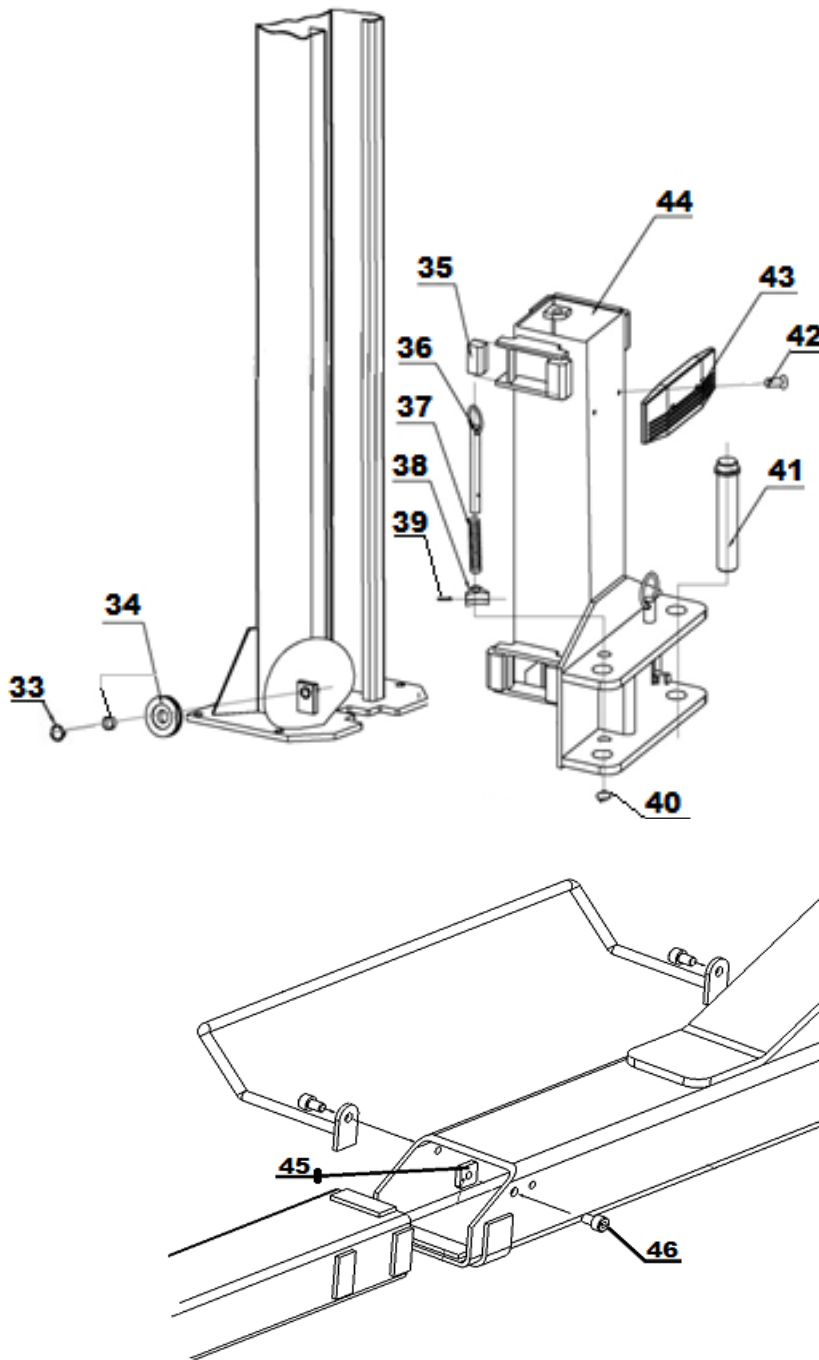
S/N	Spare part number	Name	Specification	Quantity	Feature
1	HEB0018	Steel cable L=8820 mm	FL8224-A6	2	Assembly
2		M16 hexagon nut	GB/T610-2000	8	Standard
3	HEB0515	M16*170 anchor bolt	***	10	Standard



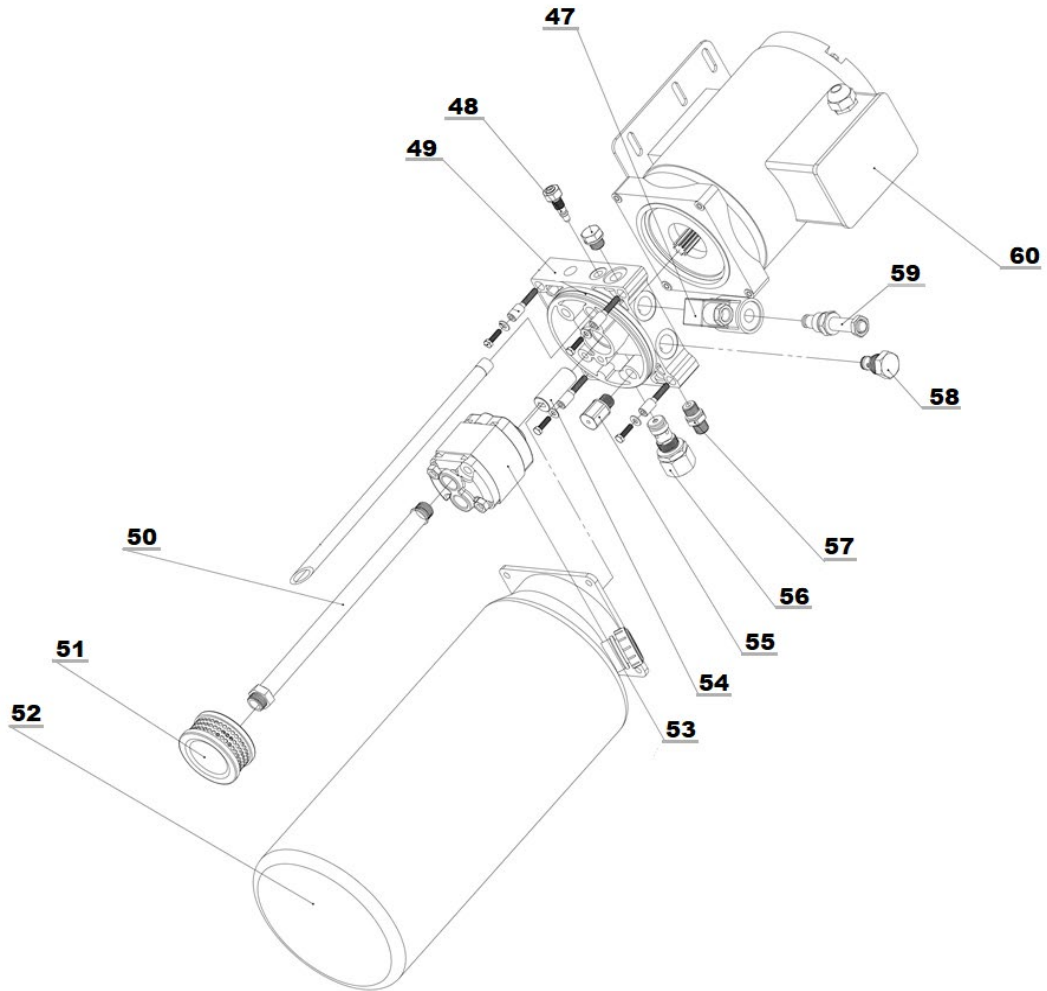
S/N	Spare part	Name	Specification	Quantity	Feature
4	E-HEB0172	Motor/hydraulic unit		1	Assembly
5	E-HEB0099	Oil line L=500 mm		1	Assembly
6	E-HEB0064	Hydraulic contra-angle		1	Assembly
7	E-HEB0100	Oil line L=2250 mm		1	Assembly
8	E-HEB0066	Cylinder connection		1	Assembly
9	E-HEB0066	Sealing ring		2	Standard
10	E-HEB0066	Cylinder connection		1	Assembly
11	E-HEB0118	Hydraulic cylinder (2-	FL-8224-A4-B2	1	Assembly
12	E-HEB0085	Chain roller	FL-8224-A4-B9	2	Welded
13	E-HEB0085	Bracket chain roller	FL-8224-A4-B12	2	Galvanised
14	E-HEB0461	Chain to lifting carriage	LH1234-127LGB/6074-199	2	Standard
15	E-HEB0117	Hydraulic cylinder (1	FL-8224-A4-B3	1	Assembly
16	E-HEB0165	Screw-in nozzle	FL-8224-A4-B4	1	Q235A
17	E-HEB0102	Oil line L=2900mm		1	Assembly
18	E-HEB0166	Screw-in nozzle	FL-8224-A4-B5	1	Q235A



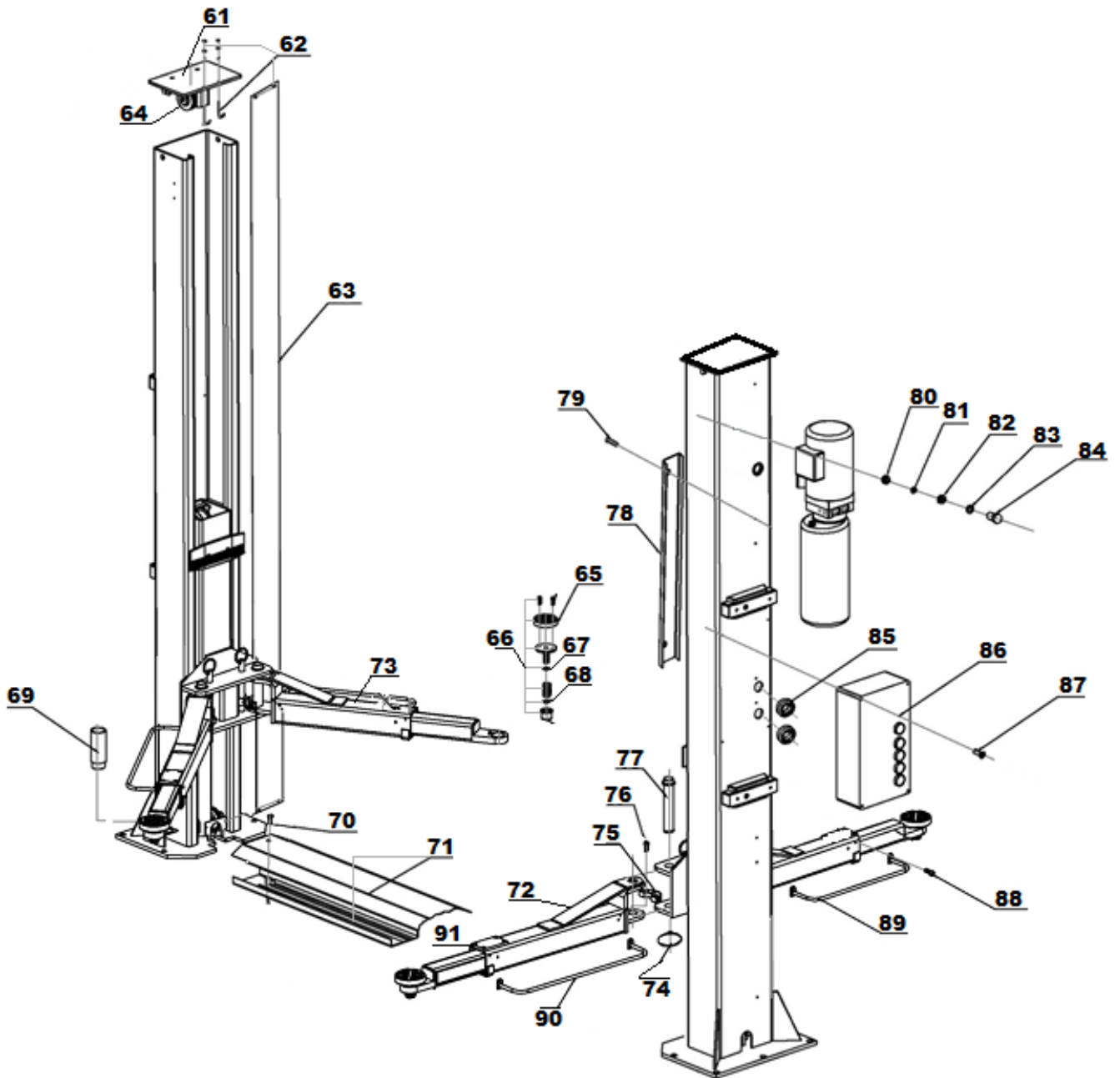
S/N	Spare part	Name	Specification	Quantity	Feature
19	E-HEB0013	Safety catch	8224E-A1-B2	4	Galvanised
20	E-HEB0013-3	Screw to holder M6*16	GB/T818-2000	4	Standard
21		M6*10 (cross recess)	GB/T818-2000	24	Standard
22	E-HEB0014	Electromagnet MQZ2-10	8224E-A1-B4	4	Assembly
23		Ø20 Cable entry ring	8224E-A1-B6	4	Rubber
24	E-HEB0034	Electromagnet cover	8224E-A1-B5	4	Plastic
25		M5*10	GB/T818-2000	8	Standard
26		M8*20 (hexagon socket)	GB/T70.2-2000	2	Standard
27		M8 (spring washer)	GB/T93-1987	2	Standard
28		Retaining ring	8224-A1-B3-C2	2	galvanised
29		Type B Circlip 25	GB/T894.2-1986	2	Standard
30		Washer	8224-A1-B3-C2	2	galvanised
31	E-HEB0381	Idler pulley (top)	8224-A1-B2	2	galvanised
32	Enquiry	Column cover	8225E-A1-B3-C1	2	Welded



S/N	Spare part	Name	Specification	Quantity	Feature
33		Snap ring		4	Standard
34	E-HEB0381	Idler pulley (bottom)	FL-8224-A1-B2	4	galvanised
35	E-HEB0080	Lifting carriage guide	FL-8224-A3-B6	16	Nylon
36	E-HEB0538	Unlocking rod Tooth piece	FL-8224-A3-B2	4	galvanised
37	E-HEB0539	Pressure spring unlocking rod	FL-8224-A3-B5	4	galvanised
38	E-HEB0056	Tooth piece support arm locking	FL-8224-A3-B6	4	galvanised
39	Enquiry	Parallel key pin 5*35	GB/T879.1-2000	4	Standard
40	Enquiry	Type B Circlip 22	GB/T894.2-1986	4	Standard
41	E-HEB0074	Support arm bolts	FL-8224E-A12	4	galvanised
42		M8*16 countersunk head screw Phillips	GB/T819.1-2000	4	Standard
43	E-HEB0029	Door stop protection	FL-8224-A3-B7	2	Rubber
44	Enquiry	Lifting carriage	FL-8224-A3-B1	2	Welded
45	E-HEB0327	Pull-out limiter plate		4	Standard
46	E-HEB0442	Screw for pull-out limiter plate Pull-out		4	Standard



S/N	Spare part number	Name	Specification	Quantity	Feature
47	E-HEB0008	Solenoid coil for drain valve DC/24V		1	Standard
48	E-HEB0326	Lowering speed valve		1	Standard
49	E-HEB0090	Hydraulic pump block		1	Standard
50	E-HEB0134-2	Oil suction pipe		1	Plastic
51	E-HEB0012	Oil filter		1	Standard
52	E-HEB0149	Oil tank (round)		1	Plastic
53	E-HEB0127-1	Oil pump		1	Assembly
54	E-HEB0082	Clutch shaft		1	galvanised
55	E-HEB0487	Soft start valve		1	Standard
56	E-HEB0054	Pump pressure control valve		1	Assembly
57	E-HEB0067	Screw-in nozzle		1	Standard
58	E-HEB0068	Directional valve		1	Standard
59	E-HEB0016	Drain valve		1	Standard
60	E-HEB0094	Electric motor 400 V		1	Assembly



S/N	Spare part number	Name	Specification	Quantity	Feature
61	Enquiry	Cover plate	8225E-A1-B3	2	Assembly
62	TW SAK	Threaded hooks/nuts/column protection cover (set)	8224-A13	1	Standard
63	E-HEB0035	Column protection cover	2700*140	2	Fabric
64	E-HEB0381	Rope deflection pulley incl. bearing		2	Standard
65	E-HEB0051	Mounting rubber D12cm		4	Rubber
66	E-HEB0041	Turntable with double thread		4	Assembly
67	E-HEB0357	Circlip 21mm	GB/T894.2-1986	4	Standard
68	E-HEB0345	Circlip 26mm	GB/T895.2-1986	4	Standard
69	TW 235 AD09	Plug-in adapter extensions (set of 4)		4	galvanised
70	Enquiry	M12*16 countersunk head screw	GB/T70.3-2000	2	Standard
71	E-HEB0534	Drive-over plate (set)	FL-8224-A10	1	Welded
72	TW242-ARM-L	Support arm long (1 pair) 890-1390		2	Welded
73	TW236-ARM-K	Support arm short (1 pair) - 620-880		2	Welded
74	Enquiry	Circlip 38	GB/T894.2-1986	4	Standard
75	E-HEB0059	Semicircular tooth piece	FL-8224-A7-B5	4	Standard
76	Enquiry	M10*35 hexagon socket screw	GB/T70.1-2000	12	Standard
77	E-HEB0074	Support arm bolts	8224-A12	4	galvanised
78	E-HEB0290	Cover plate	8224E-A1-B8	6	Q235A
79	Enquiry	M6*25 Phillips head screw	GB/T818-2000	12	Standard
80		M10 nut	GB/T6170-2000	4	Standard
81		M10 spring washer	GB/T93-1987	4	Standard
82		Washer	8224-A14	4	Rubber
83		M10 washer	GB/T95-1985	4	Standard
84		M10*35 hexagon head screw	GB/T5781-2000	4	Standard
85	Enquiry	Ø 40 Cable bushing	FL-8224-A1-B7	2	Rubber
86	E-HEB0098-2	Switch box complete (400V)		1	Assembly
87	E-HEB0027	M6 switch box screw		4	Plastic
88	Enquiry	M8*12 hexagon socket screw	GB/T70.2-2000	8	Standard
89	E-HEB0168	Foot guard 33cm	FL-8224-A18-B4	2	Welded
90	E-HEB0170	Foot protection bar 60cm	FL-8224-A7-B4	2	Welded
91	E-HEB0053	Rectangular rubber holder		2	Rubber

13.7 Spare parts list

S/N	Spare part number	Name	Specification	Quantity	Picture
1	E-HEB0002	Main switch	LW26GS-20/04	1	
2	E-HEB0071-1	Pushbutton UP	Y090-11BN	1	
3	E-HEB0071-3	Pushbutton Lock	Y090-11BN	1	
4	E-HEB0071-1	Pushbutton Down	Y090-11BN	1	
5	E-HEB0071-1	Pushbutton Antilift	Y090-11BN	1	
6	E-HEB0011	Mains indicator light	AD17-22G-AC24	1	
7	E-HEB0073-4	Transformer	BK-160VA / Voltage: 380V - 24V	1	
8	E-HEB0003	Motor contactor CJX2-1210/AC24	CJX2-1210/AC24	1	
9	E-HEB0077-C16	Automatic circuit breaker 3-fold C16	DZ47-63 C16/3P	1	
10	E-HEB0075-C03	Automatic fuse 1-fold C3	DZ47-63 C3/1P	1	
11	E-HEB0075-C010	Automatic fuse 1-fold C10	DZ47-63 C10/1P	1	
12	E-HEB0010	Limit switch	TZ8108	1	
13	E-HEB0001	Emergency off switch	Y090-11ZS/RED	1	

S/N	Spare part number	Name	Specification	Quantity	Picture
14	E-HEB0043	Bridge rectifier with capacitor	KBPC5A-35A 4700UF/50A	1	
15	E-HEB0004-AC8	Switching relay LY2NJ/AC24, red LED, 8-pin	LY2NJ/AC24V	1	
16	E-HEB0005-8	Relay base for switching relay	PTF-08A	1	
17	E-HEB0006	Time relay	ST6PA-5S/AC24V	1	
18	E-HEB0006a	Socket for timing relay	PYF-08AE	1	
19	E-HEB0044	Built-in socket outlet 220V IP44		1	
20	E-HEB0097-3	Empty switch box		1	
21	E-HEB0346	Switch box sticker		1	
22	E-HEB0146	Piston seal hydraulic cylinder	63-48-10	2	



The company

Twin Busch GmbH | Amperestr. 1 | D-64625 Bensheim

hereby declares that the **2-post vehicle lift**

**TW236PE-400, TW236PE-230, TW236PEB3.9-400, TW236PEB3.9-230,
 TW242PE-400, TW242PE-230, TW242PEB4.3-400, TW242PEB4.3-230
 TW250-400, TW250-230, TW250B4.5-400, TW250B4.5-230 | 3,6 t, 4,2 t, 5,0 t**

Serial number:

in these configurations we have placed on the marked complies with the relevant essential health and safety requirements of the following EC-directive(s) in its/their current version(s).

EC-directive(s)

2006/42/EC

Machinery

2014/35/EU

Low Voltage

Applied harmonized standards and regulations

EN 1493:2022

Vehicle Lifts

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In the case of improper use, as well as in the case of assembling, modification or changes which are not agreed with us, this declaration will lose its validity.

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