



TW 445

Four post lift
Lifting Capacity: 4500 KG

twinbusch.de



INSTALLATION, OPERATION AND MAINTENANCE MANUAL



Read this entire manual carefully before installation or operation of the lift. Follow the instructions strictly.

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IMPORTANT SAFETY INSTRUCTIONS

1.1 Important notices

It will offer one-year's quality warranty for the whole machine, during which any quality problem will be properly solved to the user's satisfaction. However, we will not take any responsibility for whatever bad consequence resulted from improper installation and operation, overload running or unqualified ground condition.

Users must always bear in mind that this lift is specially designed for lifting cars or other vehicles, so never use it for any other purposes. Otherwise, we, as well as our sales agency, will not bear any responsibility for accidents or damages of the lift.

Make sure to pay careful attention to the label of the lifting capacity attached on the lift and never try to lift cars with its weight beyond.

Read this manual carefully before operating the machine so as to avoid economic loss or personnel casualty incurred by wrong operation.

Without our professional advice, users are not permitted to make any modification to the control unit or whatever mechanical unit.

1.2 Qualified personnel

1.2.1 Only properly trained personnel can operate the lift.

1.2.2 Electrical connection must be done by a competent electrician.

1.2.3 People who are not concerned are not allowed in the lifting area.

1.3 Danger notices

1.3.1 Do not install the lift on any asphalt surface.

1.3.2 Read and understand all safety warnings before operating the lift.

1.3.3 Do not leave the controls while the lift is still in motion.

1.3.4 Keep hands and feet away from any moving parts. Keep feet clear of the lift when lowering.

1.3.5 Only properly trained personnel can operate the lift.

1.3.6 Do not wear unfit clothes such as large clothes with flounces, tires, etc, which could be caught by moving parts of the lift.

1.3.7 To prevent evitable incidents, surrounding areas of the lift must be tidy and with nothing unconcerned.

1.3.8 The lift is simply designed to raise the entire body of vehicles, with its maximum weight within the lifting capacity.

1.3.9 Always insure the safety latches are engaged before any attempt to work near or under the vehicle. Never remove safety related components from the lift. Do not use if safety related components are damaged or missing.

1.3.10 Do not rock the vehicle while on the lift or remove any heavy component from vehicle that may cause excessive weight shift.

1.3.11 Check at any time the parts of the lift to ensure the agility of moving parts and the performance of synchronization. Ensure regular maintenance and if anything abnormal occurs, stop using the lift immediately and contact our dealers for help.

1.3.12 Lower the lift to its lowest position and do remember to cut off the power source when service finishes.

1.3.13 Do not modify any parts of the lift without manufacturer's advice.

1.3.14 If the lift is going to be left unused for a long time, users are required to:

a. Disconnect the power source;

b. Empty the oil tank;

c. Lubricate the moving parts with hydraulic oil.

1.4 Training

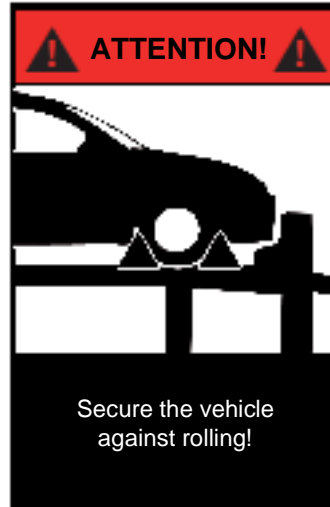
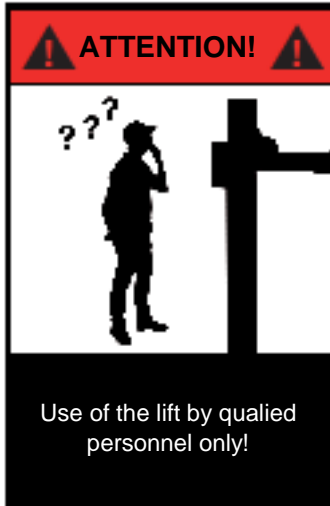
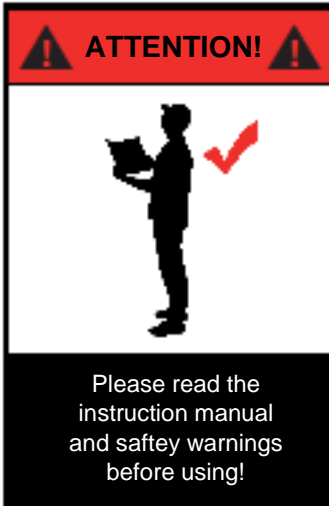
Only properly trained people are allowed to operate the lift. We are quite willing to provide professional training for the users when necessary.

Attention: For environment protection, please dispose the disused oil in a proper way.

Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.

1.5 Warnings (Read and understand all safety warnings before operation)

All safety warning signs attached on the lift are for the purpose of drawing the user's attention to safety operation. The labels must be kept clean and need to be replaced when they are worn-out or have dropped. Read the explanations of the labels carefully and try to memorize them.

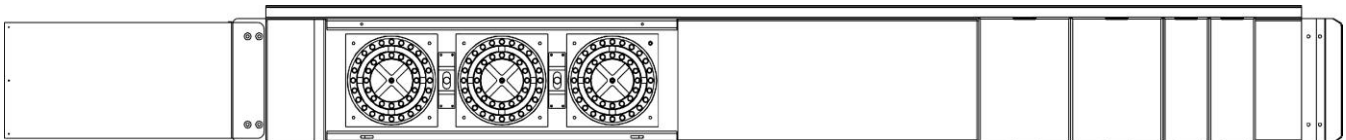


OVERVIEW OF THE LIFT

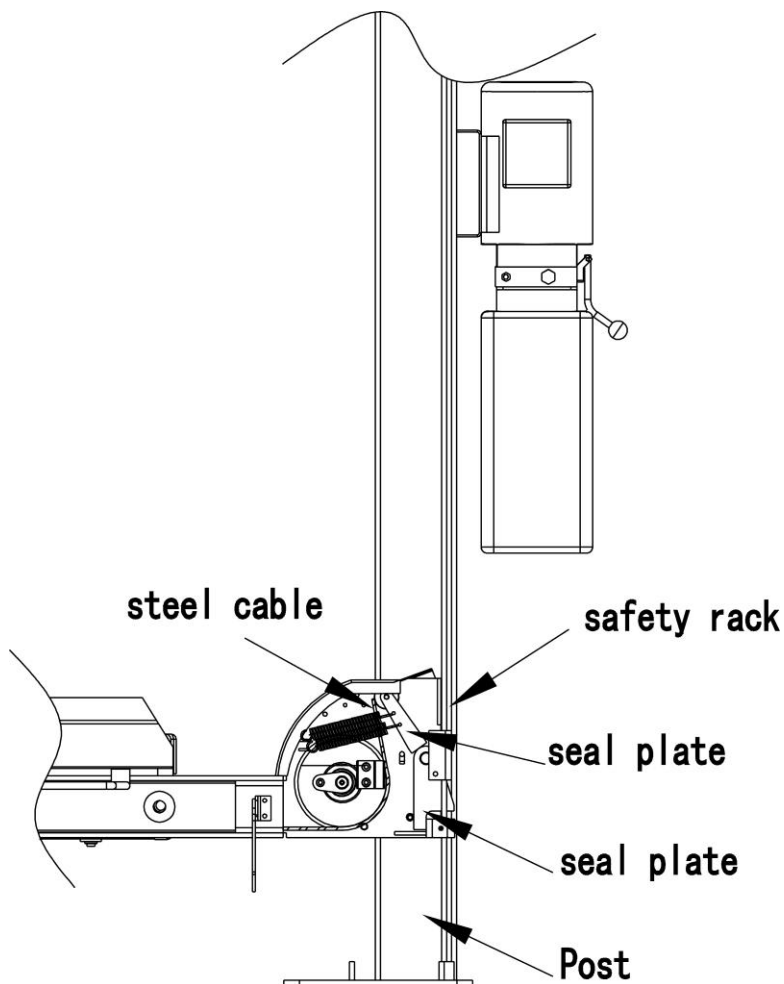
2.1 General descriptions

This four post lift is generally composed by four posts, two beams, two platforms, a hydraulic oil cylinder and a set of power unit. It is driven by an electro-hydraulic system. Up and down of platforms is controlled by the to and fro movement of the oil cylinder. To ensure ultra safety, it is equipped with mechanical safety locks in the four posts, which will automatically engaged in the process of lifting so as to prevent the platforms from sudden dropping down in case the hydraulic system fails to work.

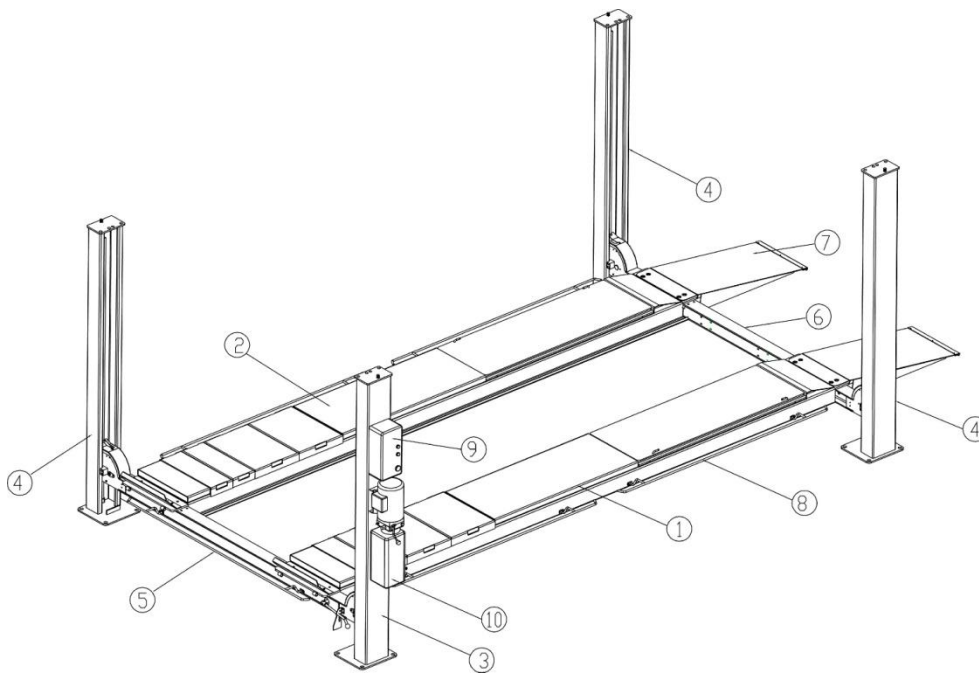
With flexible turntable position and rear side slip.



2.2 Safety construction:



2.3 General construction of the lift



- 1. Platform A
- 2. Platform B
- 3. Main post 1
- 4. Post 2
- 5. Main beam
- 6. Assistant beam
- 7. Ramp
- 8. Feet protector
- 9. Control box
- 10. Power unit

2.4 Nameplate

The nameplate is fixed beneath the oil tank

Check the work voltage and the lift capacity printed on the name plate.

Do not lift vehicles with weight beyond the capacity.

S/N and production date could be helpful for after sale service.

2.5 Optional parts

1. Movable jack beam



2. Turn table



Oil hose specification of the jack beam

Material #	Specification	Qty	Note
	PU oil hose L=400MM, with ball connector at one end and straight connector at the other	1	For air pump

INSTALLATION INSTRUCTIONS

3.1 Preparations before installation

3.1.1 Tools and equipments needed

- ✓ Appropriate lifting equipment
- ✓ Anti-abrasion hydraulic oil.
- ✓ Rotary Hammer Drill with 3/4" drill bit.
- ✓ Chalk and tape measure, magnetic plump, 8 metersΦ15 level pipe.
- ✓ Sockets and open wrenches, a set of inside hex wrenches, cross and straight screw drivers.
- ✓ Hammer, 4pounds, sharp nose pliers, Φ17,Φ19,Φ22 socket spanners.

3.1.2 List for parts checking ---Annex 1 (Packing list)

Unfold the package and check if any parts missed as per Annex 1. Do not hesitate to contact us in case any parts missed, but if you do not contact us and insist installing upon the lack of some parts, Friend as well as our dealers will not bear any responsibility for this and will charge for any parts subsequently demanded by the buyer.

3.1.3 Ground conditions

The lift should be fixed on a smooth and solid concrete ground with its strength more than 3000psi, tolerance of flatness less than 5mm and minimum thickness of 200mm. In addition, newly built concrete ground must undergo more than 28days' cure and reinforcement.

3.2 Precautions for installation

3.2.1 Make sure the four posts stand paralleled and are vertical to the ground. No slanting.

3.2.2 Joints of oil hose and steel cable must be firmly connected in order to avoid the looseness of steel cable and leakage of oil hose.

3.2.3 All bolts should be firmly screwed up.

3.2.4 Do not place any vehicle on the lift in the case of trial running.

3.3 Installation instructions

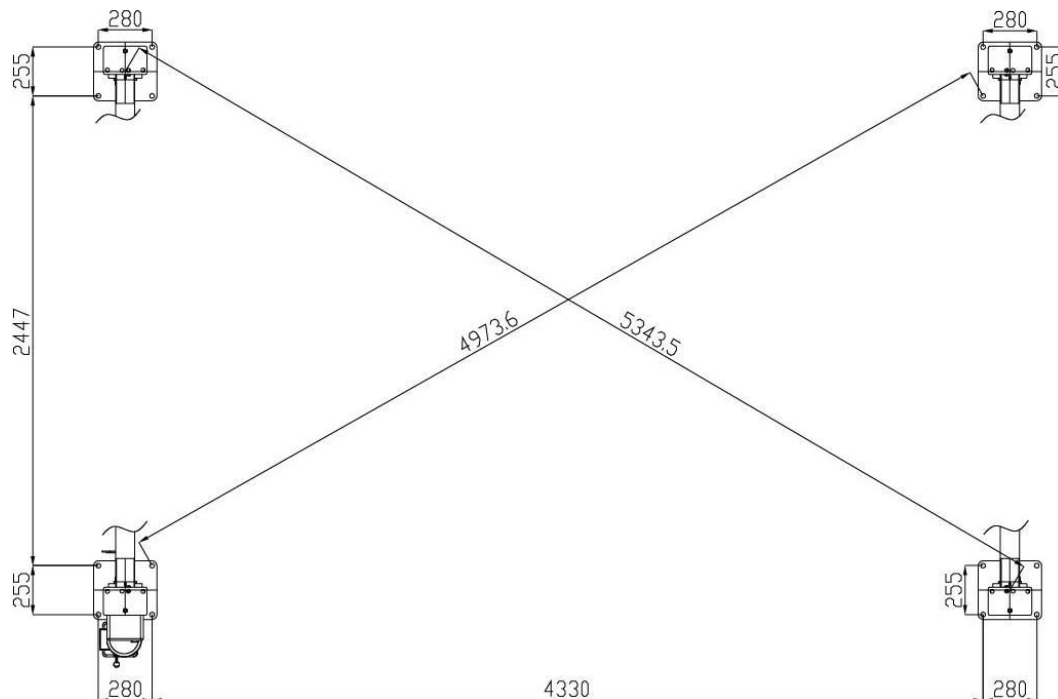
Step1: Choose a proper site.

Location requirement

If not specifically stated, our lifts are only for indoor use. It should be fixed on a smooth and solid concrete ground. Do not install this lift on expansion beams of concrete or on a second or an elevated floor without first consulting building architect. Make sure that the space around or over the lift should be free of obstructions like heaters, building supports, electrical lines etc.

Step 2: Fix the installation layout.

Once the installation site is determined, mark first the standing point of the four posts by a tape measure and chalk. Ensure two diagonal lines are of the same length.

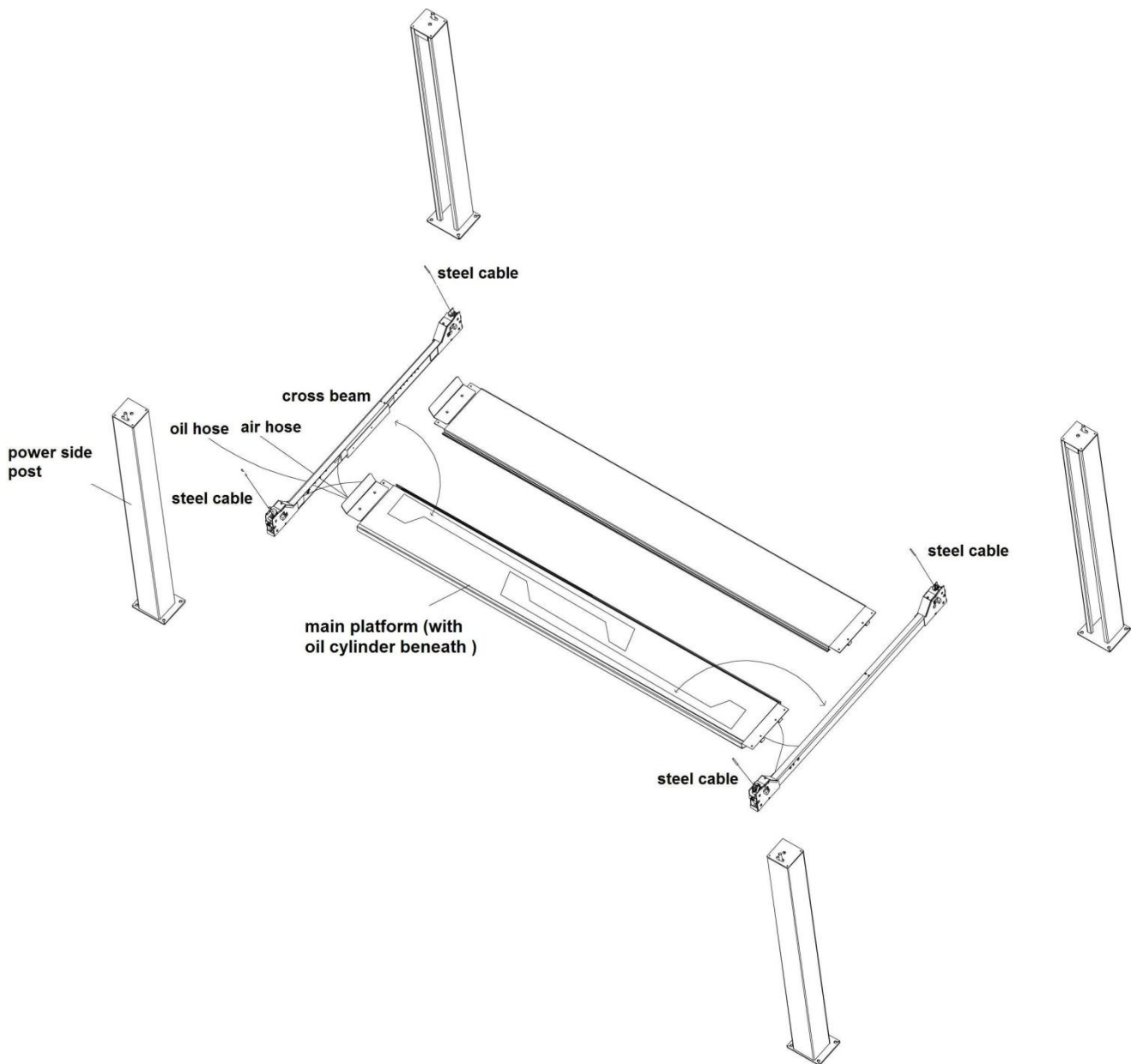


Step 3: Remove the package.

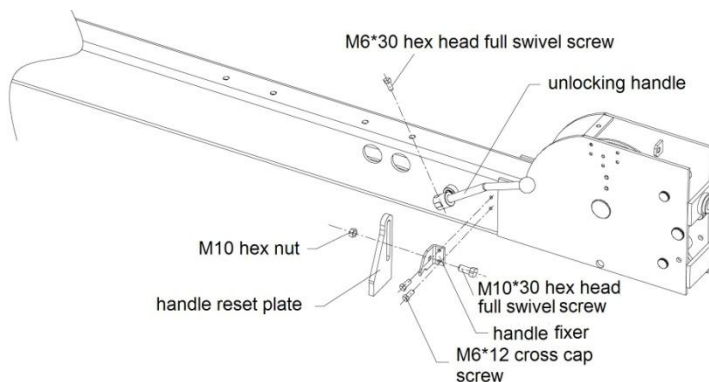
1. Place some wooden battens on the ground and then use a crane to have the packing rack removed on to the battens so as to make its base is of some clearance from the ground.
2. Have the platforms of the lift suspended by a crane and then screw off the upside bolt and remove the first platform on to the wooden battens initially prepared.
3. Screw off the downside bolt and take away the packing rack on both sides.
4. Remove the shock absorption plastic film with a knife.

Step 4: Use a crane to have the general parts positioned in accordance with following layout.

For convenient installation, it would be better to pad something supporting under the platform.
 Oil cylinder, steel cable and oil hose have already been fixed in the main platform before packing.
 Wires rope, oil hose, safety lock etc, have already been fixed in the beams before packing.



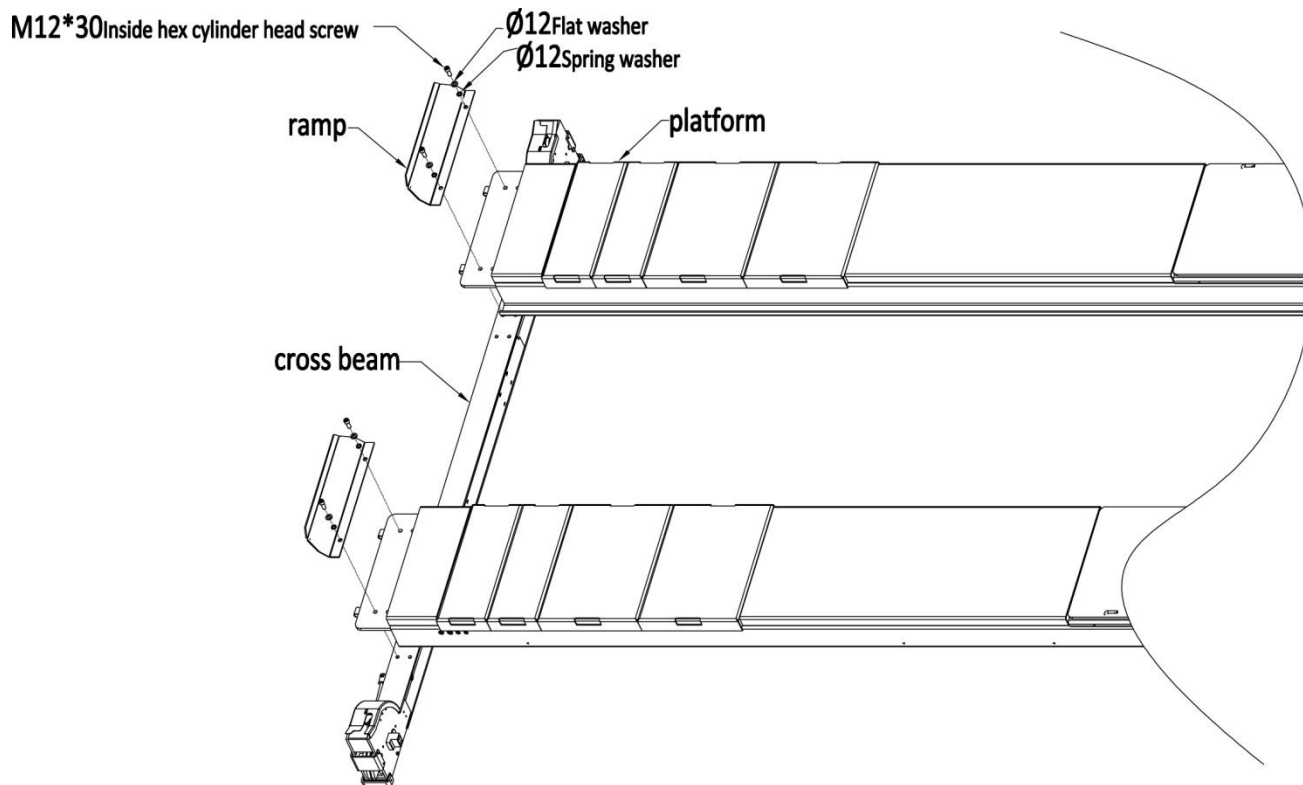
Step5: Mount the manual unlocking unit onto the main beam.



Step6: Connect the beam and platform.

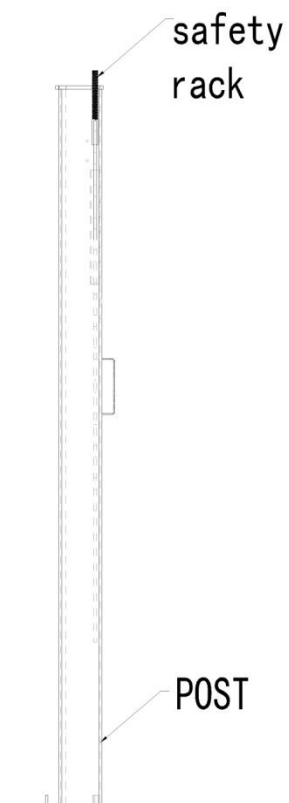
First connect the main beam to the two platform. Use M12*30 inside hex round head screw and M12 hex nut to fix the beam and platform through the holes. (Can adjust the distance between two platform according to different situation) ,then fix the block plate on the platform.(Attach picture, after installation, install the other beam)

Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.

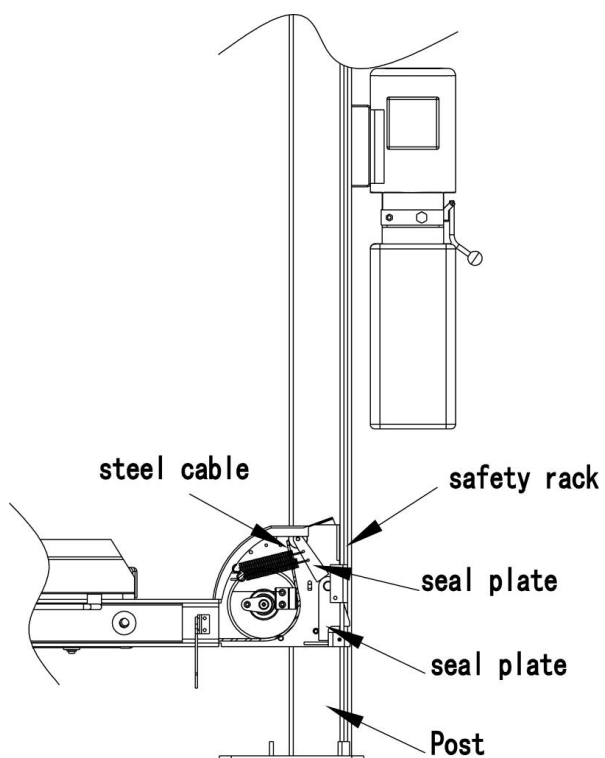


Step 7: Connect the beam and post

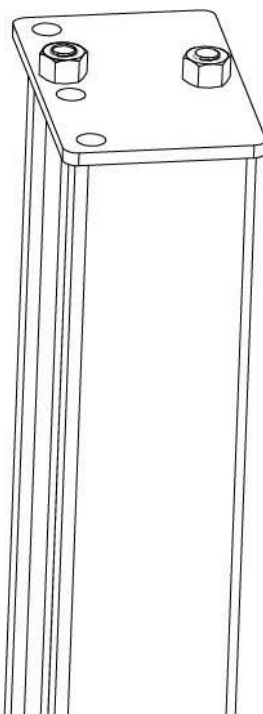
1. Insert the safety lock plate through the bottom of the post, like below picture.



2. Lever the safety rack higher, and move the post inside the beam, like below picture.



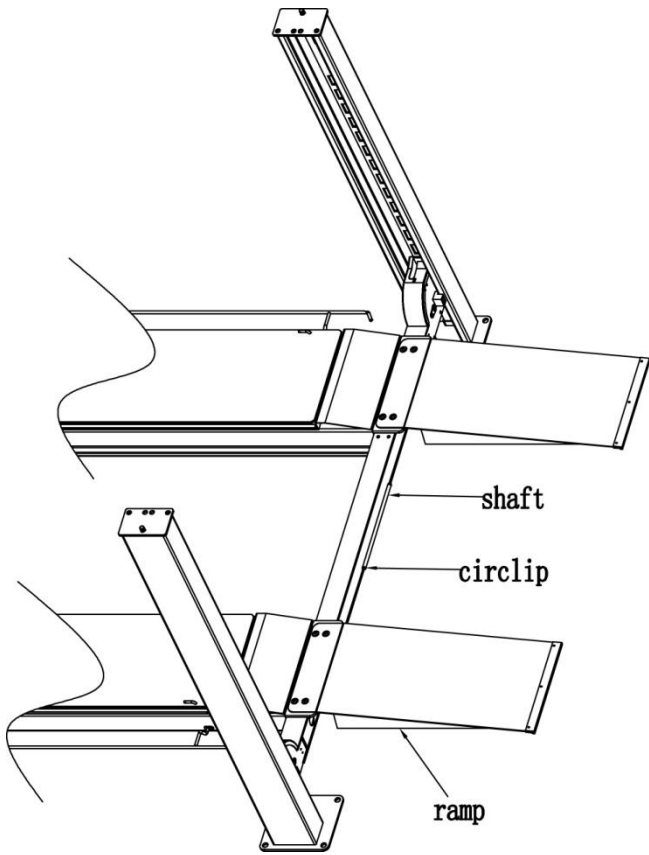
3. Take out the steel cable inside the beam and connect two the top of the post, use M20 washer and nut fixed on the post top plate, fix



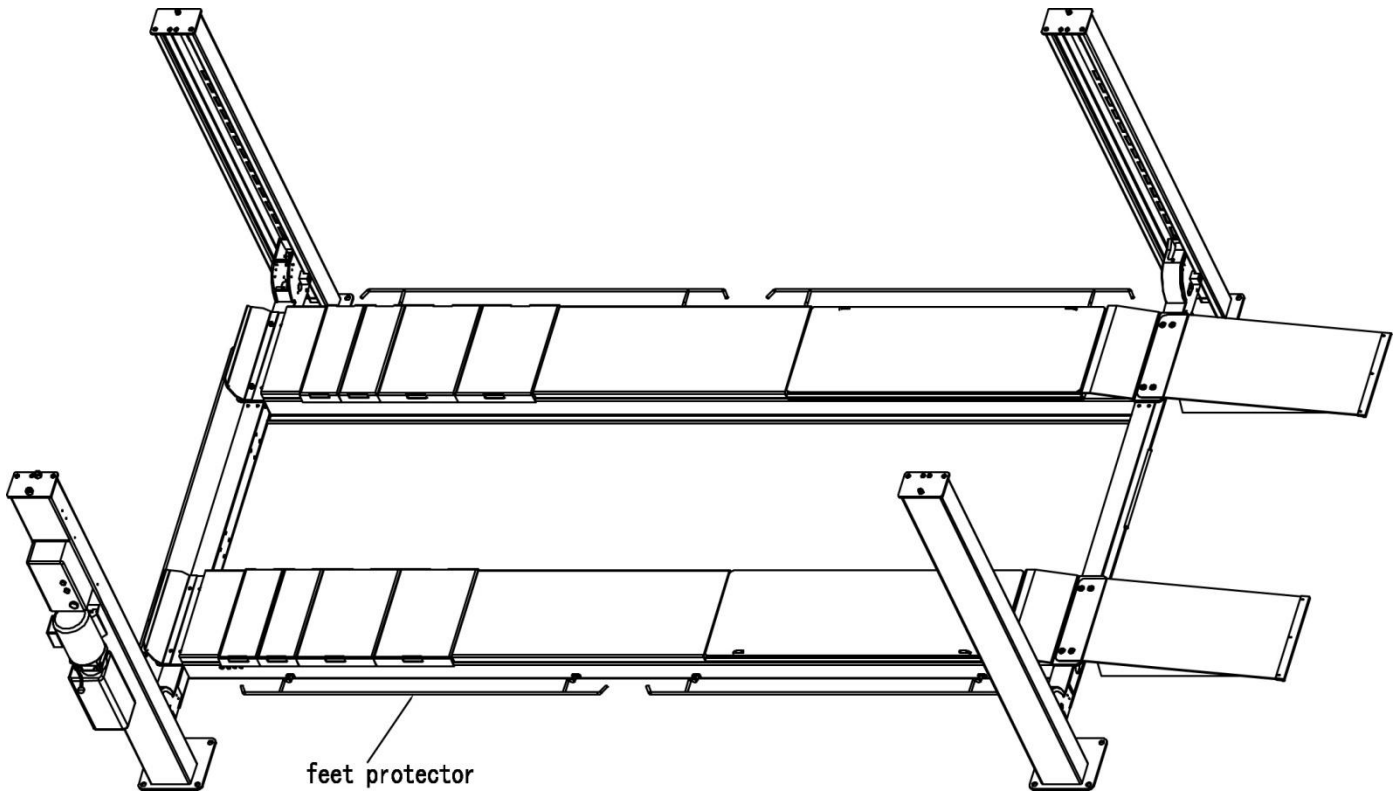
another M20 nut on the other side of the top plate too.

Step8: Fix ramp A.

Fix with shaft and cotter pins.



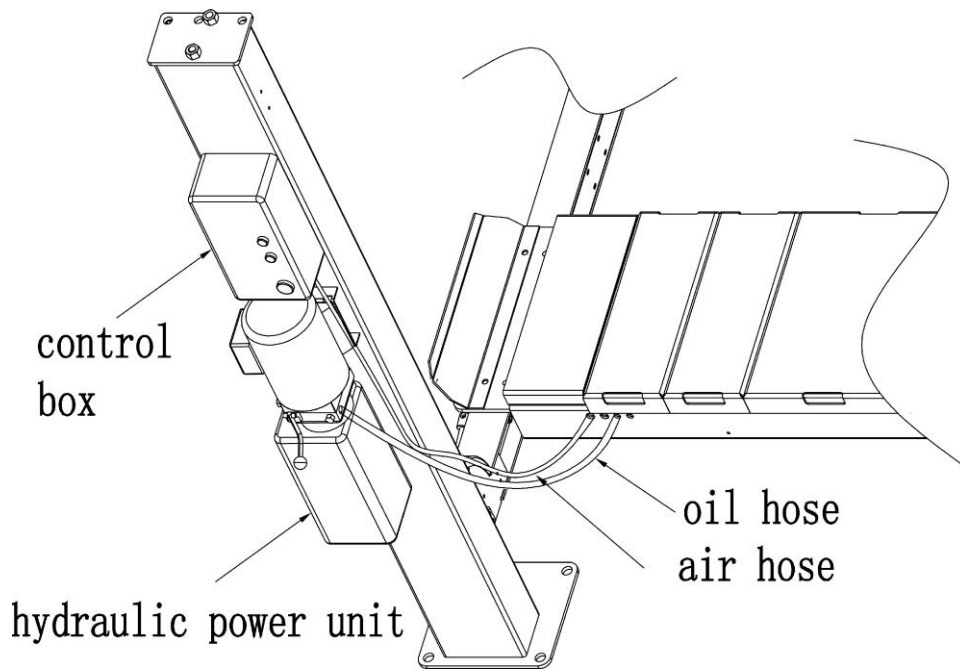
Step9: Install five feet protector



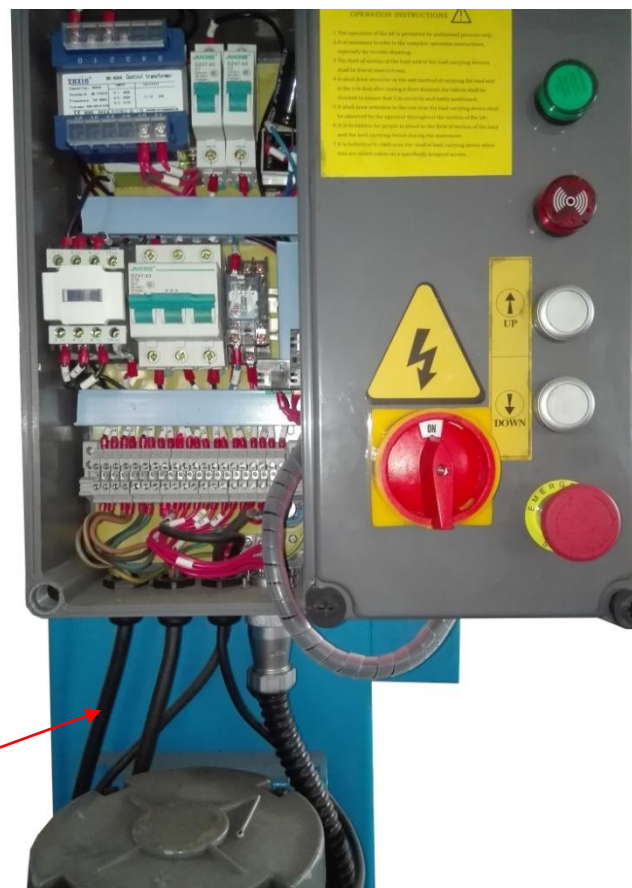
Step10: Mount the control box and hydraulic pump unit onto the power side post.

1. Mount on the hydraulic power unit and pull out the oil hose and air hose (if applicable) from the main platform and have them connected to the hydraulic block.

Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.



2. Fix the control box onto the power side post and connect wires



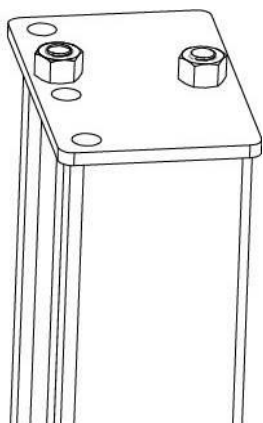
- 1. power supply cable
- 2. motor wire
- 3. up limit wire

Step 11: Fill with hydraulic oil (only fresh and clean oil is allowed).

Attention: Viscosity of the oil will influence the running speed of the lift. If average temperature of the installation site is higher than 18°C, it is suggested to fill with oil tank with 46# hydraulic oil while the temperature is lower than 18°C, it is suggested to use 32# hydraulic oil. Fill the oil tank until 80% of the tank is full.

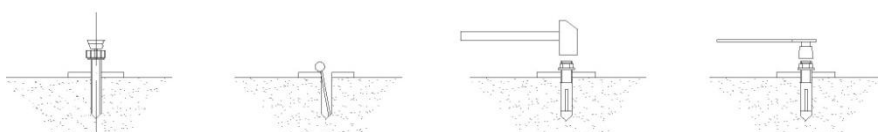
Step 12: Leveling

Attention: No vehicle on platforms when leveling.



1. Switch on and press the “UP” button when the green power indicator is on.
2. Measure if the two platforms are of the same height from the ground when the steel cable has been tightened. If not, adjust the tightening screw fixed on top of the power side post.
3. Check if the safety block and safety rack in the four posts could be engage synchronously. If not, adjust the tightening screw of steel cable to ensure the synchronization.

Step13: Fix expansion bolts.



4. Items to be checked after installation.

S/N	Check items	YES	NO
1	Are the posts vertical to the floor?		
2	Are oil hoses well connected?		
3	Are steel cables well connected?		
4	Are two platforms well connected?		
5	Are electrical connections right?		
6	Are the rest joints firmly screwed?		
7	Are all items need lubricating added with grease?		

OPERATION INSTRUCTIONS

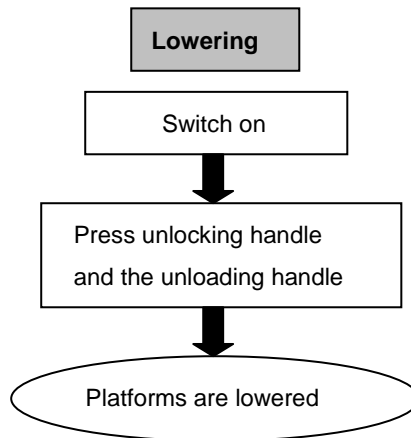
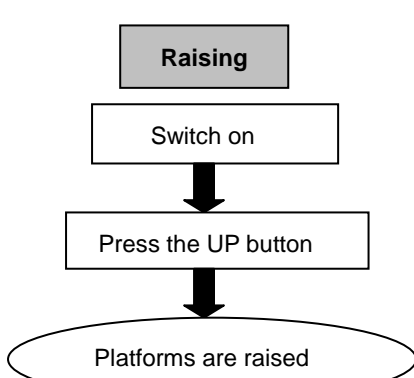
4.1 Precautions

- 4.1.1 Check all the joints of oil hose. Only when there is no leakage, the lift can start work.
- 4.1.2 The lift, if its safety device malfunctions, shall not be used.
- 4.1.3 The machine shall not lift or lower an automobile if its center of gravity is not positioned midway of the platforms. Otherwise, the Friend as well as our dealers will not bear any responsibility for any consequence resulted thereby.
- 4.1.4 Operators and other personnel concerned should stand in a safety area during lifting and lowering process.
Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.

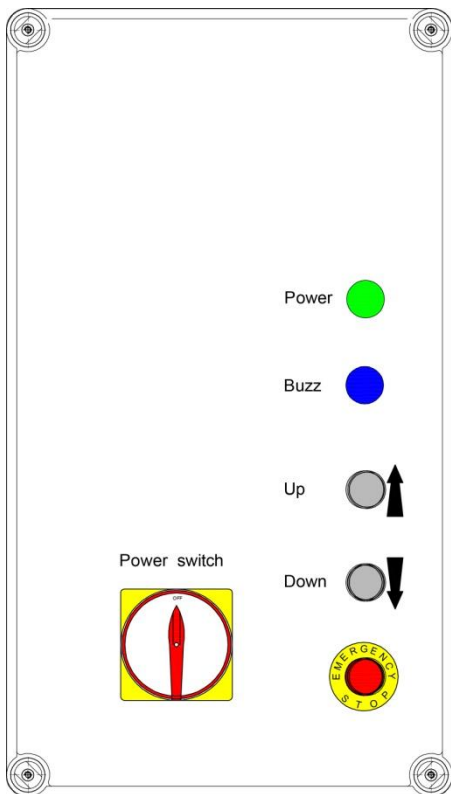
4.1.5 When the platforms rise to the desired height, switch off the power at once to prevent any mal-operation done by unconcerned people.

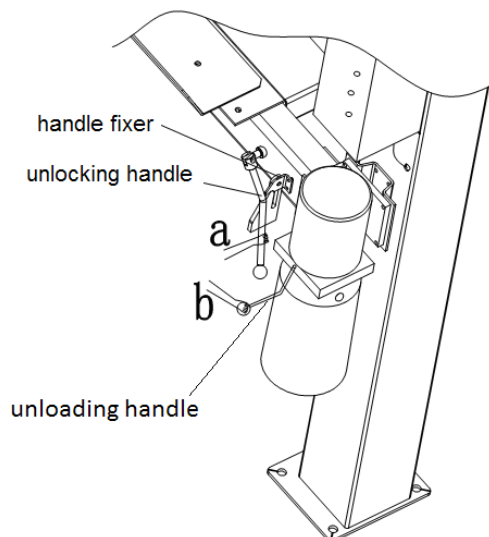
4.1.6. Make sure the safety lock of the lift is engaged before start working under the vehicle and no people under the vehicle during lifting and lowering process.

4.2 Flow chart for operation



4.3 Operation instructions





Raise the lift

Attention : Before perform any service around or under the vehicle, operators must press the handle of manual unloading valve to ensure the mechanical safety lock is fully engaged.

1. Make sure that you have read and understood the operation manual before operation.
2. Park the vehicle on the platforms to ensure its gravity is positioned midway of the platforms.
3. Switch on. When the power indicator is on, press the UP button until platforms rise to the desired height.
4. Before perform any service around or under the vehicle, operators must press the handle of manual unloading valve to ensure the mechanical safety lock is fully engaged, turn off the power so as to avoid any wrong operation done by irrelevant personnel and check again the stability of the vehicle.

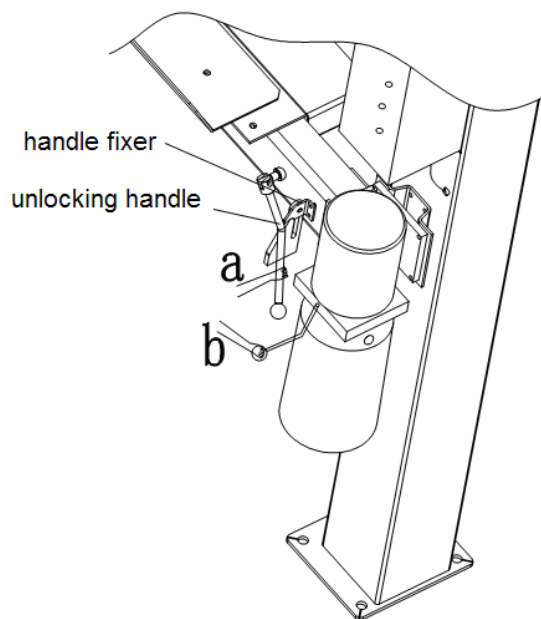
Lower the lift

1. Switch on. When the power indicating light is on, press the unlocking handle with your left hand and the unloading handle with your right hand and then platforms of the lift will go down gradually.
2. Drive away the vehicle when platforms have lowered to the lowest position.
3. Turn off the power.

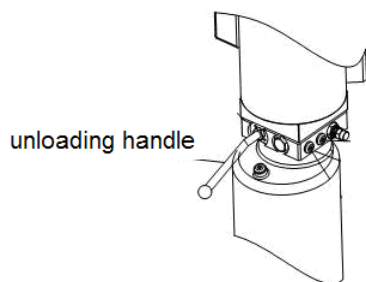
4.4 Emergency lowering in case of no power

In the case the safety lock is not fully engaged:

1. Press down the unlocking handle and have it positioned by the handle fixer.

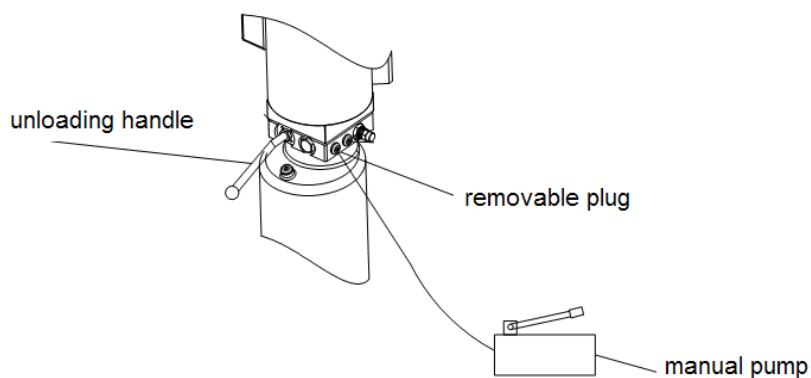


2. Press down the unloading handle to lower the platforms.

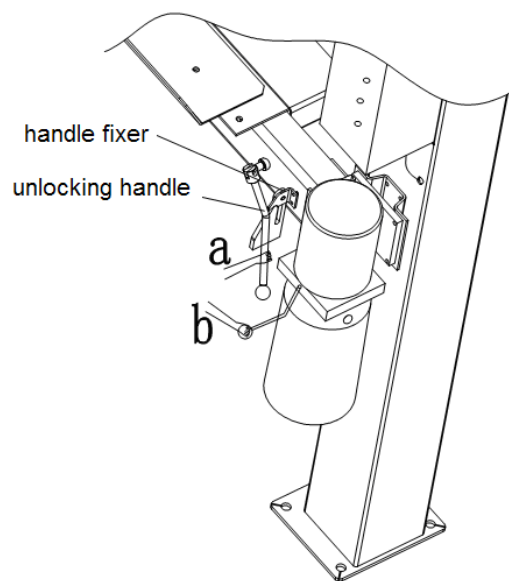


In the case the safety lock is fully engaged:

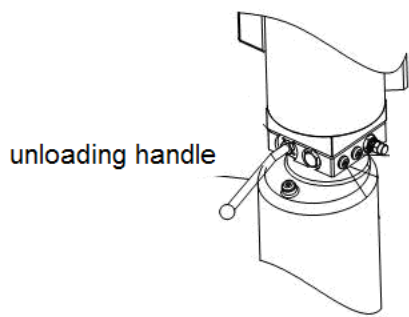
1. Remove the removable plug showed as the following draft and replace it with the oil hose of hand pump (optional). Press down the handle of the hand pump to supplement oil to the oil cylinder to release the safety teeth.



2. Press down the unlocking handle and have it fixed by the handle fixer.



3. Press the unloading handle to lower the platforms.



TROUBLT SHOOTING

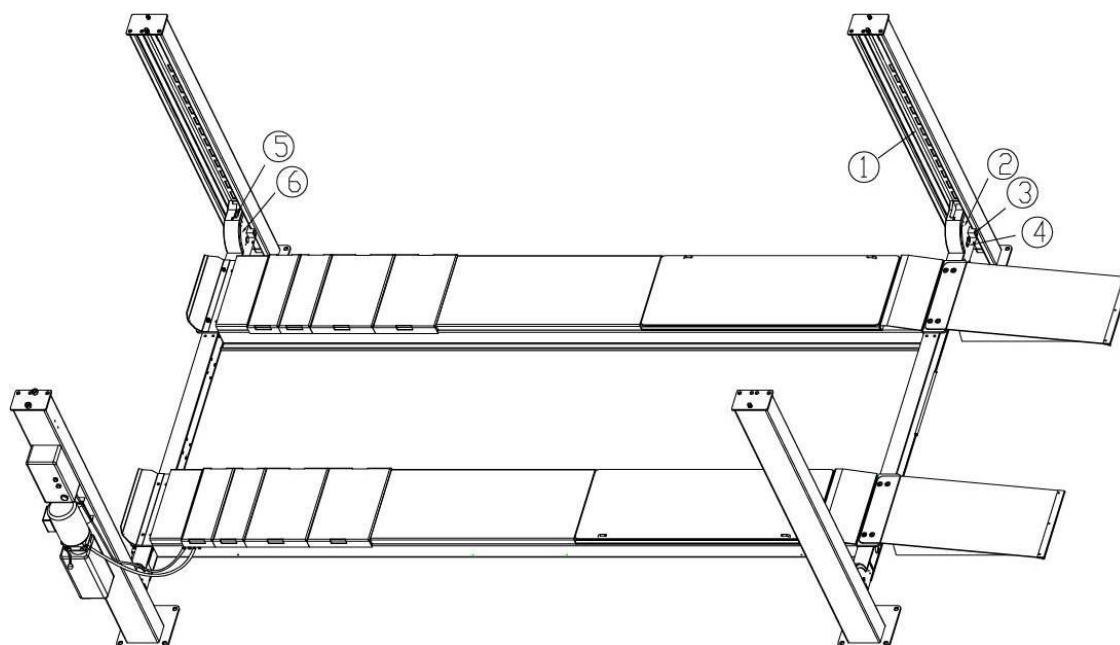
ATTENTION: If the trouble could not be fixed by yourself, please do not hesitate to contact us for help .We will offer our service at the earliest time we can. By the way, your troubles will be judged and solved much faster if you could provide us more details or pictures of the trouble.

TROUBLES	CAUSE	SOLUTION
Abnormal noise	Abrasion exists on insider surface of the posts.	Grease the inside of the post.
	Trash in the post.	Clear the trash
Motor does not run and will not rise	The wire connection is loose.	Check and make a good connection.
	The motor is blown.	Replace it.
	The limit switch is damaged or the wire connection is loose.	Connect it or adjust or replace the limit switch.
Motor runs but will not rise	The motor run reversely.	Check the wire connection.
	Overflow valve is loose or jammed.	Clean or adjust it.
	The gear pump is damaged.	Replace it.
	Oil level is too low.	Add oil.
	The oil hose became loose or dropped off.	Tighten it.
	The cushion valve became loose or jammed.	Clean or adjusts it.
Platforms go down slowly after being raised	The oil hose leaks.	Check or replace it.
	The oil cylinder is not tightened.	Replace the seal.
	The single valve leaks.	Clean or replace it.
	The overflow valve leaks.	Clean or replace it.
	Manual unloading valve or electrical unloading valve leaks.	Clean or replace it.
Rising too slow	The oil filter is jammed.	Clean or replace it.
	Oil level is too low.	Add oil.
	The overflow valve is not adjusted to the right position.	Adjust it.
	The hydraulic oil is too hot (above 45°) .	Change the oil.
	The seal of the cylinder is abraded.	Replace the seal.
	Inside surface of the posts is not well greased.	Add grease.
Lowering too slow	The throttle valve jammed.	Clean or replace.
	The hydraulic oil is dirty.	Change the oil.
	The anti-surge valve jammed.	Clean it.
	The oil hose jammed.	Replace it.
The steel cable is abraded	No grease when installation or out of lifetime	Replace it.

MAINTENANCE

Easy and low cost routine maintenance can ensure the lift work normally and safely. Following are requirements for routine maintenance. You may decide the frequency of routine maintenance by consulting your lift's working conditions and time.

THE FOLLOWING PARTS NEED TO BE LUBRICATED



SN	Name
1	steel cable
2	Cable wheel
3	slider
4	Wheel bracket
5	Small wheel
6	Spring

6.1 Daily checking items before operation

The user must perform daily check. Daily check of safety latch system is very important – the discovery of device failure before action could save your time and prevent you from great loss, injury or casualty.

- Before operation, judge whether the safety latches are engaged by sound.
- Check whether oil hose well connected and whether it leaks or not.
- Check the connections of chain and steel cable and check the power unit.
- Check whether plug bolts firmly screwed.
- Check if safety teeth and safety block matched well or not.

6.2 Weekly checking items

- Check the flexibility of moving parts.
- Check the working conditions of safety parts.
- Check the amount of oil left in the oil tank. Oil is enough if the carriage can be raised to highest position. Otherwise, oil is insufficient.
- Check whether plug bolts firmly screwed.

6.3 Monthly checking items

- Check whether plug bolts firmly screwed.
- Check the tightness of the hydraulic system and screw firm the joints if it leaks.
- Check the lubrication and abrasion circumstance of axial pins, carriages, lifting arms and other related parts and replace in time with new ones if they failed to work well.
- Check the lubrication and abrasion circumstance of steel cable.

6.4 Yearly checking items

- Empty the oil tank and check the quality of hydraulic oil.

·Wash and clean the oil filter.

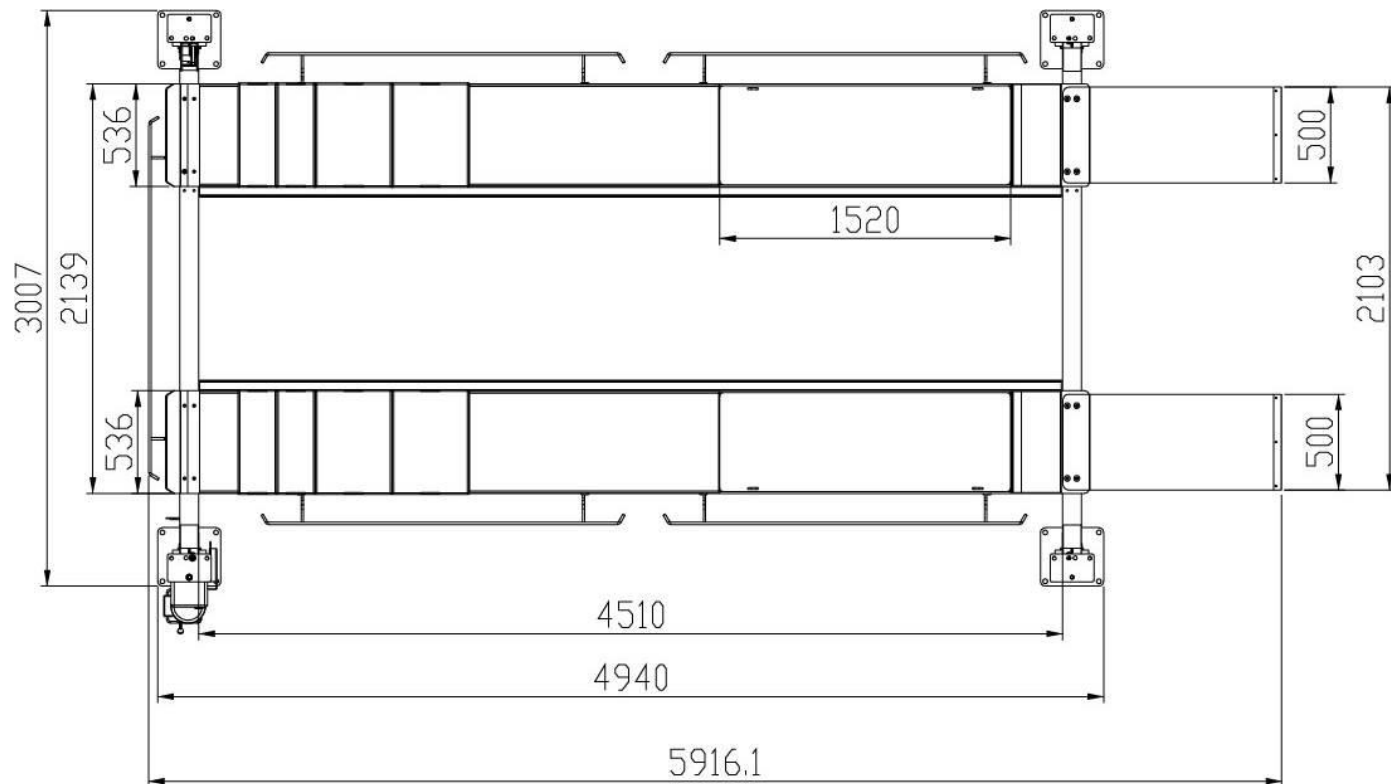
If users strictly follow the above maintenance requirements, the lift will keep in a good working condition and meanwhile accidents could be avoided to a large extent.

ANNEX

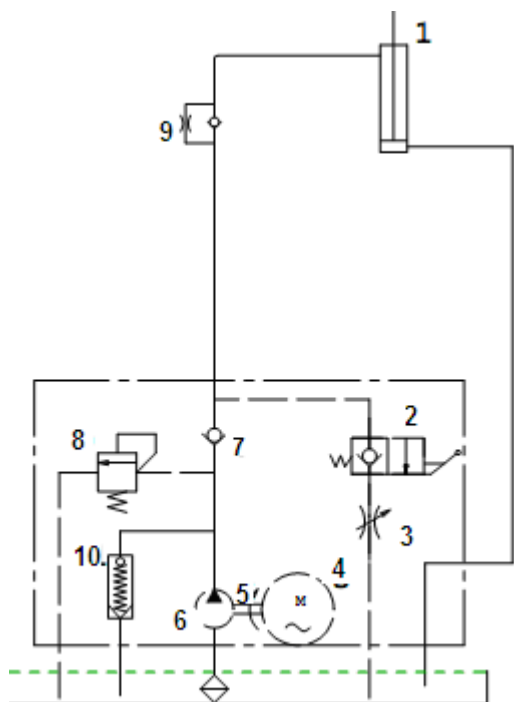
Annex1, Packing list of the whole lift

SN	Name	Description	Drawing&Spec	Qtn	Note
1		Main Platform	FL-8448T-A5	1	
2		Assistant Platform	FL-8448T-A6	1	
3		Main Beam	FL-8448T-A3	1	
4		Assistant Beam	FL-8448T-A4	1	
5		Ramp	FL-8448T-A5-B3	2	
6		Feet protector	FL-8448T-A10	5	
7		Main Post	FL-8448T-A1	1	
8		Assistant Post	FL-8448T-A2	3	
15		Expansion Bolt	M18*180	16	
10		Control Box	/	1	
11		Power Unit	/	1	
12		Manual Hand welding part	FL-8448T-A11-B8	1	
13		Manual fixed plate	FL-8448T-A14	1	
14		Handle recover plate	FL-8448T-A15	1	

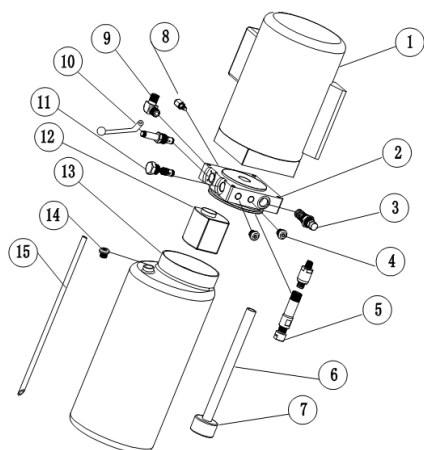
Annex2, Overall diagram



Annex 3, Hydraulic working system

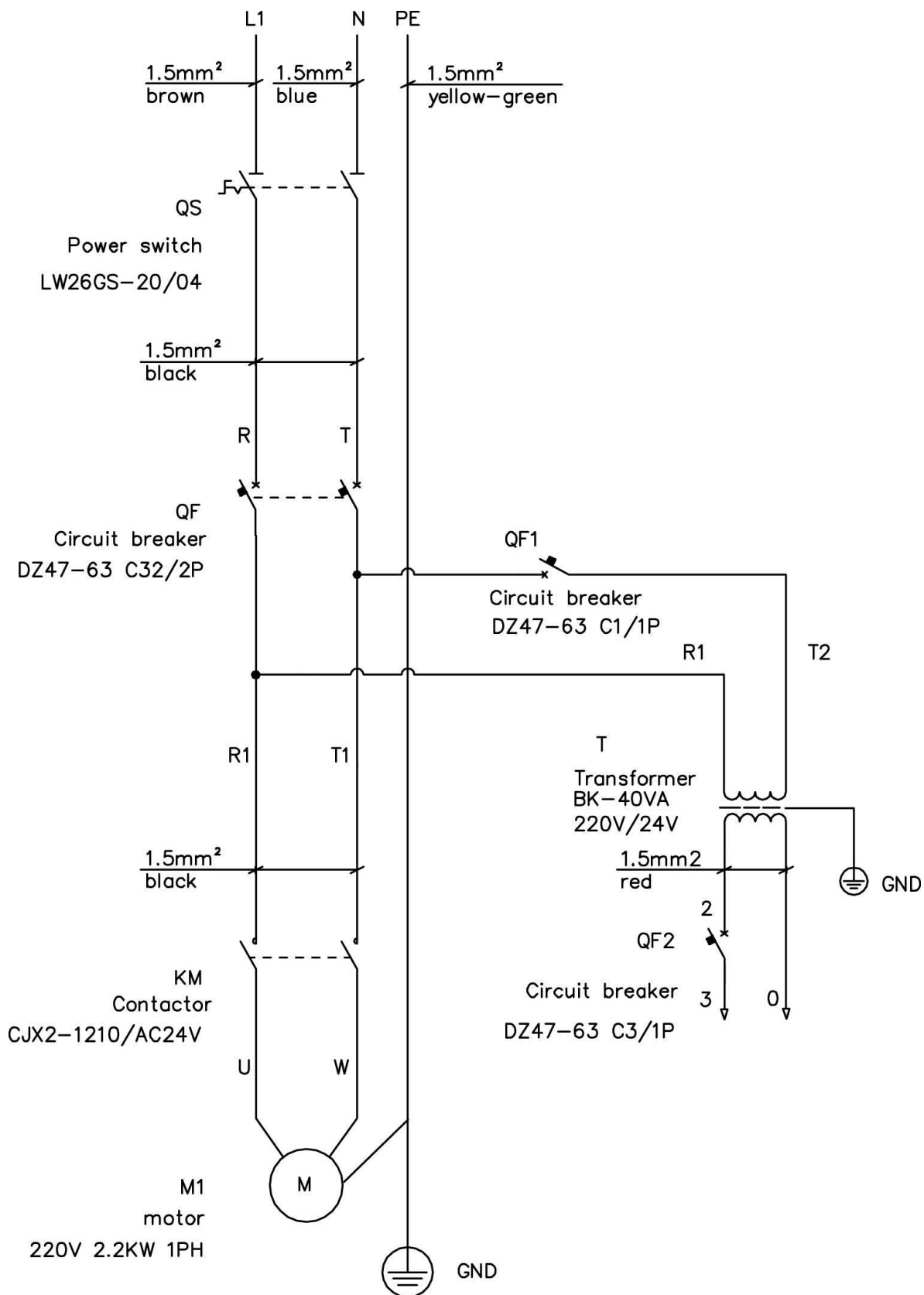


- 1. Oil cylinder
- 2. Manual unloading valve
- 3. Throttle valve
- 4. Motor
- 5. Coupling
- 6. Gear pump
- 7. One way valve
- 8. Overflow valve
- 9. Anti-surge valve
- 10. Cushion valve

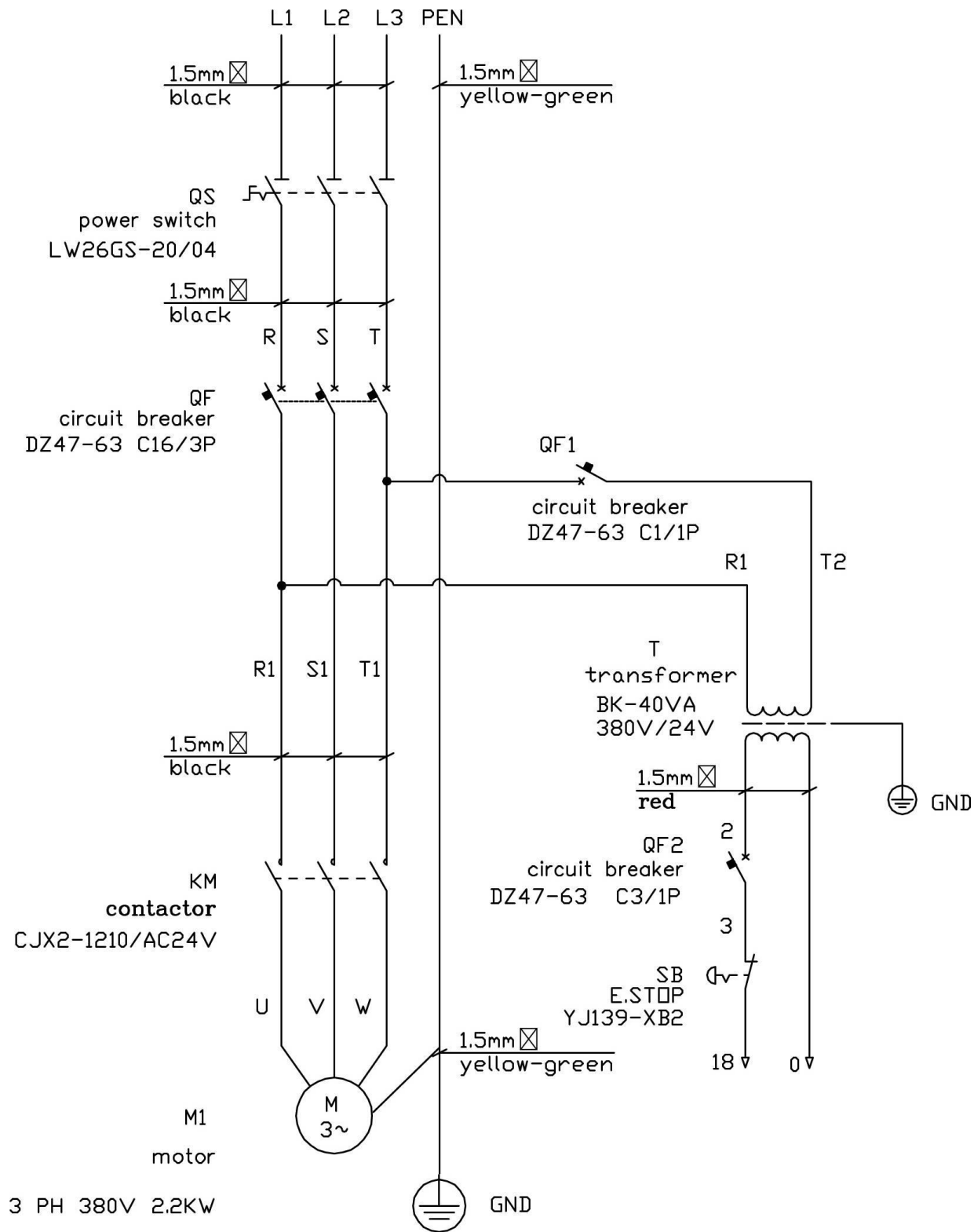


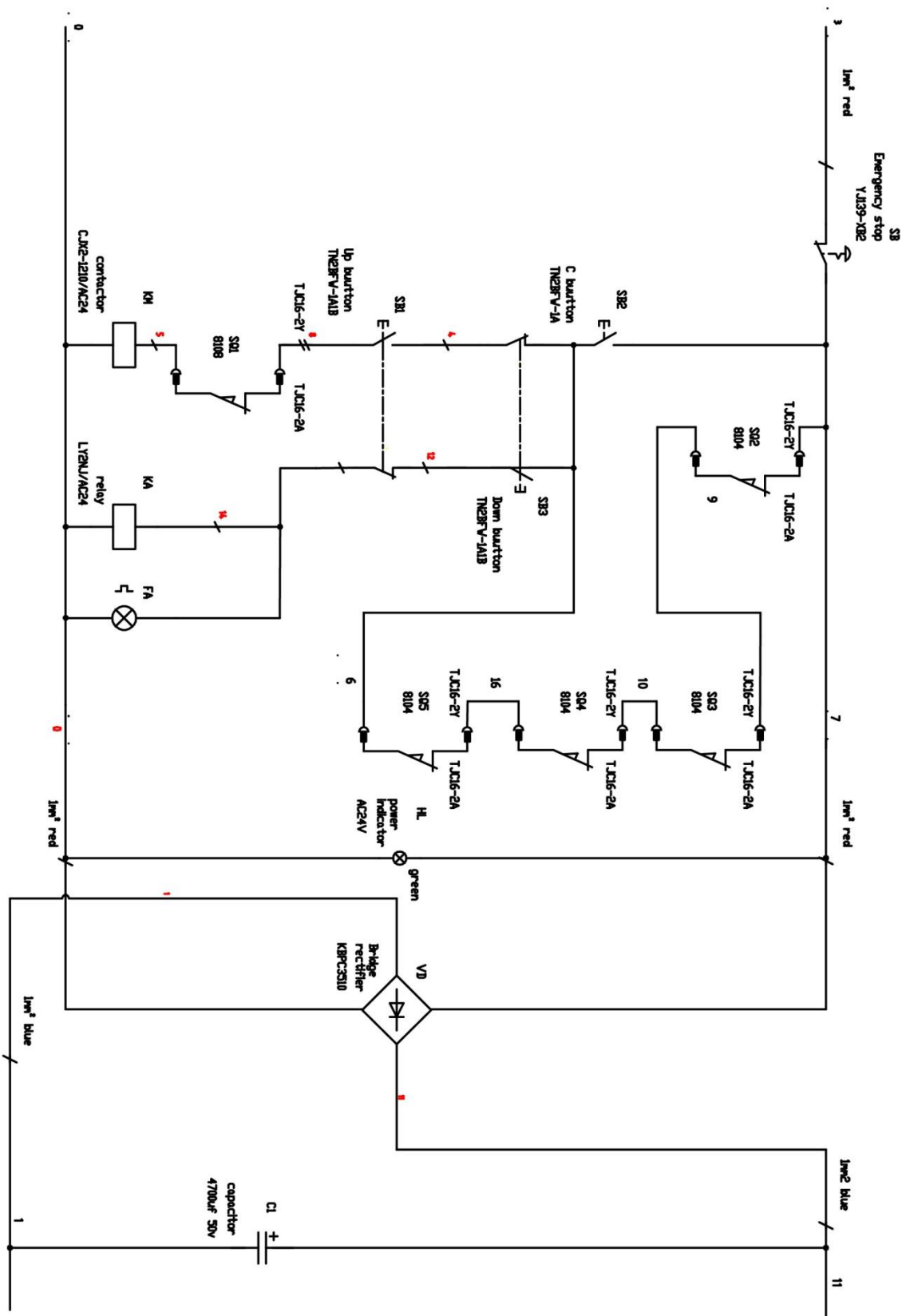
S/N	Name	Qty
1	Motor	1
2	Hydraulic block	1
3	Over-flow valve	1
4	Plug	2
5	Cushion valve	1
6	Oil-in tube	1
7	Oil filter	1
8	Throttle valve	1
9	Oil hose connector	1
10	Manual unloading valve	1
11	Single way valve	1
12	Gear pump	1
13	Plastic oil tank	1
14	Oil tank cover	1
15	Oil-back hose	1

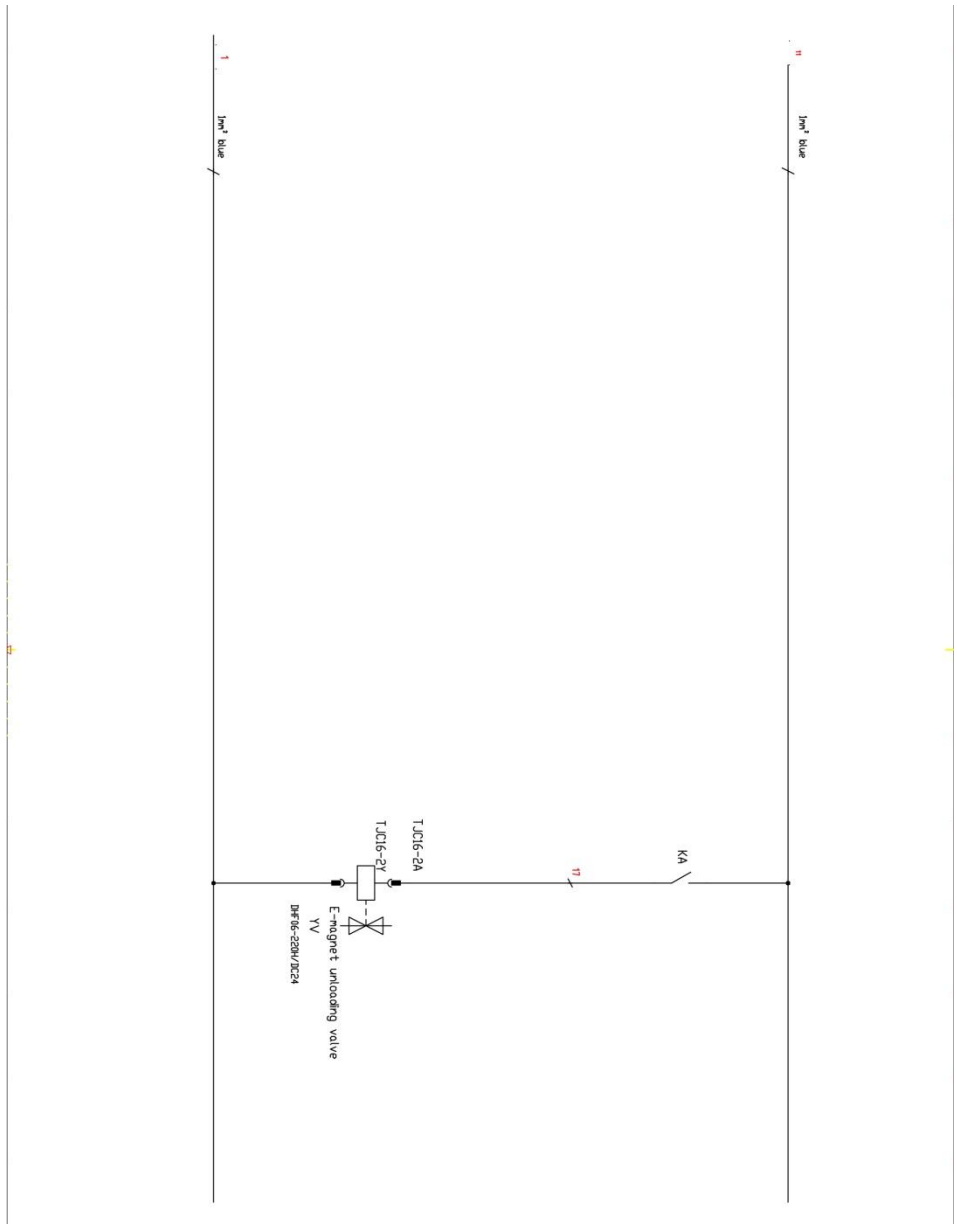
Annex 4, Wiring diagram
Single phase



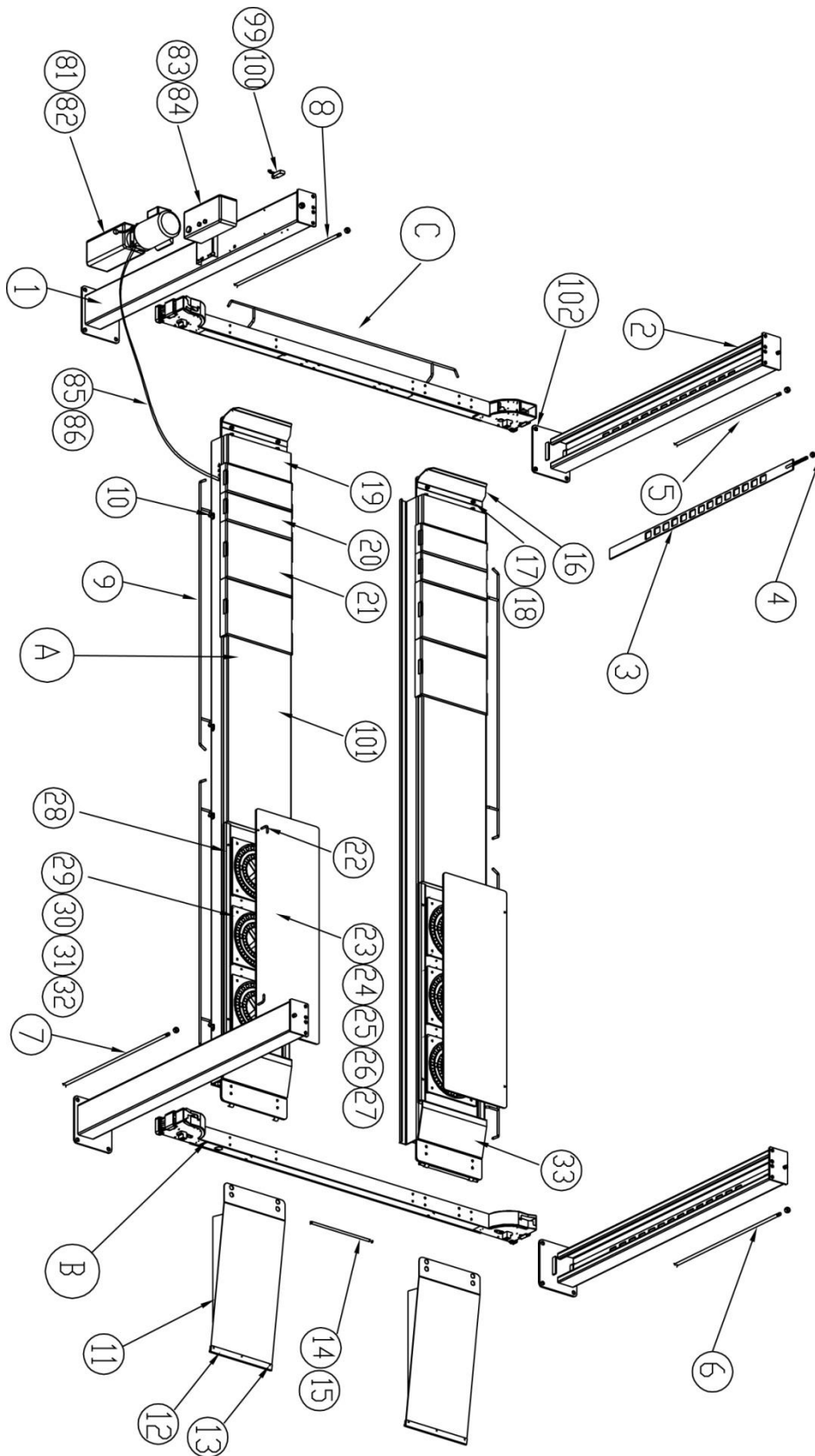
Three phase





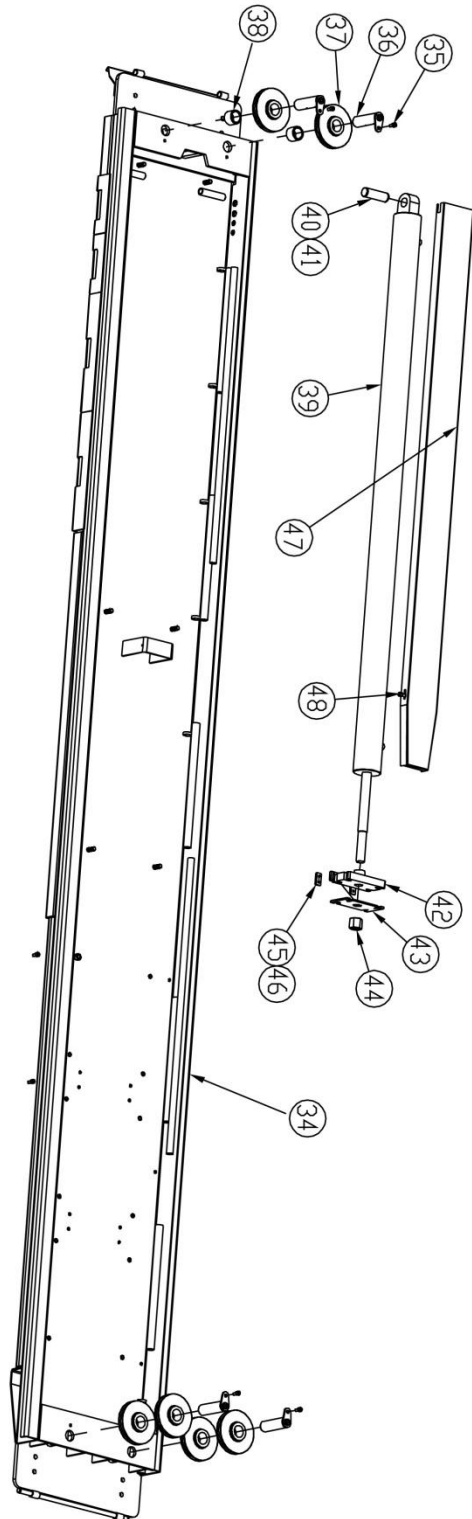


Annex6, Separate diagrams for the lift

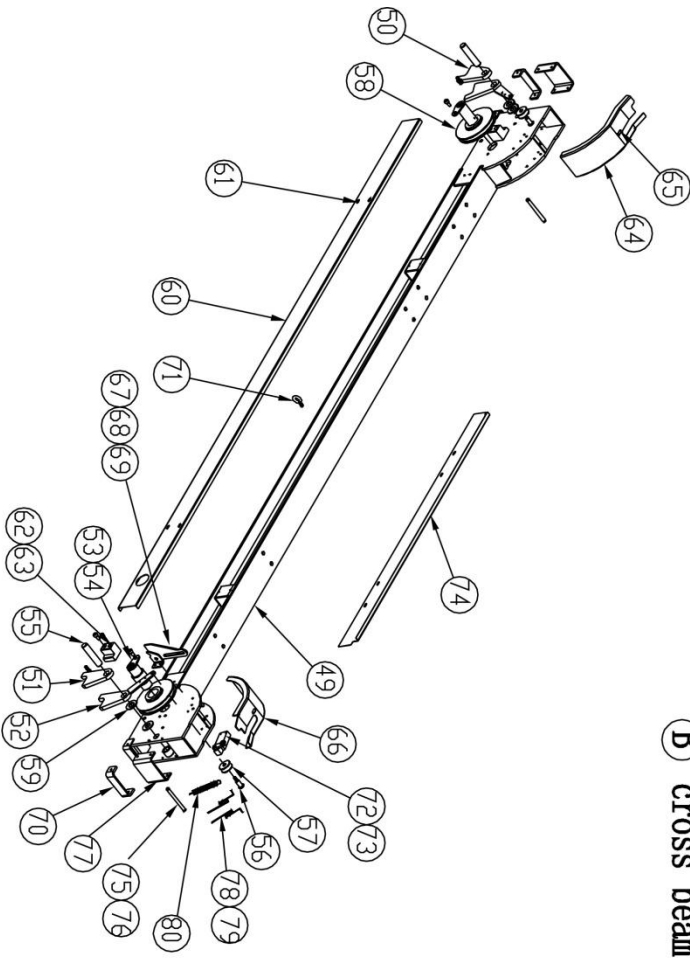


Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.

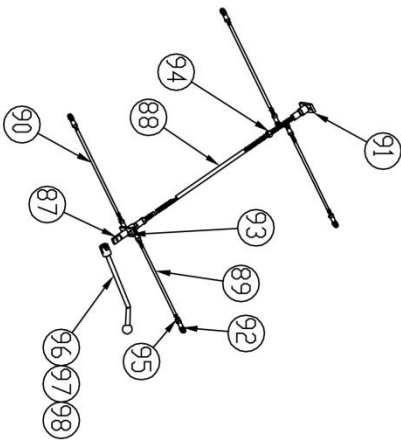
A platform



B cross beam



C unlocking system



SN	Material	Name	Spec	Qtn	Material	Notes
1		Main Post	FL-8448T-A1-B1	1	weld part	GB/T819.1-2000
2		Assistant Post	FL-8448T-A2-B1	3	weld part	
3		Safety rack	FL-8448T-A1-B2	4	weld part	
4		Hex nut	M18	4	standard	GB/T 6170-2000
5		Steel cable L=9650	FL-8448T-A9	1	standard	
6		Steel cable L=5020	FL-8448T-A9	1	standard	
7		Steel cable L=3520	FL-8448T-A9	1	standard	
8		Steel cable L=8150	FL-8448T-A9	1	standard	
9		Feet protector	FL-8448T-A16	5	weld part	
10		Inside hex round head screw	M6*12	10	standard	GB/T 70.1-2000
11		ramp	FL-8448T-A5-B3	2	weld part	
12		Ramp slider	FL-8448T-A5-B16	2	standard	
13		Cross recessed pan head screws	M5*12	6	standard	GB/T 818-2000
14		Guide shaft	FL-8803-A22-B4	2	45	
15		Washer	14	4	standard	GB/T 894.2-1986
16		Block plate	FL-8448T-A5-B2	2	Q235A	
17		Inside hex round head screw	M12*30	20	standard	GB/T 70.1-2000
18		Spring washer	M12	20	standard	GB/T 93-1987
19		Box1 weld	FL-8448T-A5-B4	2	weld part	
20		Box2 weld	FL-8448T-A5-B5	4	weld part	
21		Box3 weld	FL-8448T-A5-B6	4	weld part	
22		Insert shaft	FL-8806J-A4-B13	4	45	
23		rear slide plate	FL-8448T-A5-B10-C1	2	weld part	
24		rear slide fix plate	FL-8448T-A5-B10-C2	4	weld part	
25		Nylon sleeve	FL-8448T-A5-B10-C3	4	standard	
26		Big gasket		4	Q235A	
27		Open shaft	4	4	standard	
28		Long square pipe	FL-8448T-A5-B9	4	Q235A	
29		Ball plate	FL-8448T-A5-B8	6	weld part	
30		Ball base		6	standard	
31		ball		120	standard	
32		cross hex pan head screw	M10*10	6	standard	GB/T819.1-2000
33		Small ramp	FL-8448T-A5-B11	2	weld part	
34		Main platform	FL-8448T-A5-B1	1	weld part	
35		Inside hex round head screw	M8*16	10	standard	GB/T 70.1-2000
36		Slider wheel shaft 2	FL-8448T-A5-B13	8	weld part	
37		Cable wheel	FL-8448T-A3-B8	6	45	
38		Axle sleeve 1	FL-8448T-A5-B12	2	Q235A	
39		Cylinder	φ80*1750	1		
40		Cylinder shaft	FL-8448T-A5-B15	1	45	

Technical changes for purposes of a technical advancement as well as deviation in colour, errors and printing mistakes are reserved.

41		Spring washer B	D30	4	standard	
42		Steel cable fix plate	FL-8448T-A7-B2	1	weld part	
43		Steel cable close plate	FL-8448T-A7-B4	1	45	
44		Hex nut	M27	1	standard	
45		small slider	FL-8448T-A7-B3	2	Nylon 1010	
46		crossed head screw	M6*15	1	standard	GB/T819.1-2000
47		Oil sink	FL-8448T-A19	4	Q235A	
48		Inside hex round head screw	M6*15	2	standard	GB/T 70.1-2000
49		Main beam	FL-8448T-A3-B1	1	weld part	
50		Main safety rack	FL-8448T-A3-B2	2	weld part	
51		Assistant safety rack	FL-8448T-A3-B3	2	weld part	
52		Steel rope protect part	FL-8448T-A3-B4	4	weld part	
53		Slide wheel shaft 1	FL-8448T-A3-B5	4	weld part	
54		Inside hex head screw	M8*12	4	standard	GB/T 70.1-2000
55		Safety shaft	FL-8448T-A3-B6	4	45	
56		Small wheel shaft	FL-8448T-A3-B7	4	45	
57		Small wheel	FL-8448T-A3-B9	4	Nylon 1010	
58		Steel cable wheel	FL-8448T-A3-B8	4	45	
59		Small washer	FL-8448T-A3-B11	8	Q235A	
60		U Cover	FL-8448T-A3-B12	2	Q235A	
61		inside hex round screw	M6*12	8	standard	GB/T 70.1-2000
62		slider	FL-8448T-A3-B13	8	Nylon 1010	
63		inside hex round screw	M8*15	16	standard	GB/T 70.1-2000
64		main cover	FL-8448T-A3-B14	1	ABS	
65		Flat washer C	M8	2	standard	
66		Assistant cover	FL-8448T-A3-B15	1	ABS	
67		Handler fix plate	FL-8448T-A14	1	Q235A	
68		Handler recover plate	FL-8448T-A15	1	Q235A	
69		inside hex round screw	M10*12	1	standard	GB/T 70.1-2000
70		Safety fix plate	FL-8448T-A3-B18	4	Nylon 1010	
71		Round circle	FL-8448T-A3-B17	2	45	
72		Limit switch 8104			standard	
73		inside hex round screw	M5*15	2	standard	GB/T 70.1-2000
74		cover	FL-8448T-A3-B22	2	Q235A	
75		steel cable shaft	FL-8448T-A3-B23	4	45	
76		Spring washer B	M10	8	standard	
77		Fix plate	FL-8448T-A3-B16	4	Q235A	
78		Torsion Spring 1	FL-8448T-A3-B19	2	65Mn	
79		Torsion Spring 2	FL-8448T-A3-B21	2	65Mn	
80		spring	FL-8448T-A3-B20	8	65Mn	
81		Power Unit		1		
82		inside hex round screw	M10*15	4	standard	GB/T 70.1-2000
83		Control Box		1	weld part	

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84		Crosses head screw	M6*15	4	standard	
85		Oil pipe	L=1700	1	weld part	
86		Spring	FL-8448T-A17	1	65Mn	
87		Handler connect plate	FL-8448T-A11-B1	1	weld part	
88		Rob 1	FL-8448T-A11-B2	1	45	
89		Rob 2	FL-8448T-A11-B3	1	weld part	
90		Rob 3	FL-8448T-A11-B4	1	65Mn	
91		Handler connect plate2	FL-8448T-A11-B5	1	weld part	
92		Universal connector	FL-8448T-A11-B6	5	standard	
93		inside hex round screw	M8*30	4	standard	GB/T 70.1-2000
94		Hex nut	M12	2	standard	GB/T 6170-2000
95		Hex nut	M8	12	standard	GB/T 6170-2000
96		Handler	FL-8448T-A11-B8	1	standard	GB/T 5781-2000
97		Handler ball	M10×32	1	plastic	
98		Crosses head nut	M6*30	1	standard	GB/T819.1-2000
99		Limit switch 8108		1	standard	GB/T819.1-2000
100		inside hex round screw	M5*12	2	standard	GB/T 70.1-2000
101		Box 4	FL-8448T-A5-B7	2	weld part	
102		Expansion bolt	M18*180	16	standard	


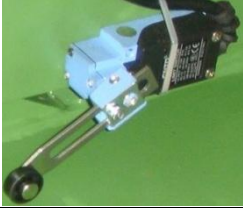
Annex7, Spare parts list

Spare parts list- mechanical part

SN	Mateiral	Name	spec	QT N	material	note
1		Safety fix slider	FL-8448T-A3-B18	4	Nylon	
2		slider	FL-8448T-A3-B13	8	Nylon	
3		small slider	FL-8448T-A7-B3	2	Nylon	





Spare parts list- electrical system

S/N	Material#	Name	Specification	Unit	Qty	Pic.
1		Power switch	LW26GS-20/04	Pcs	1	
2		Button	Y090-11BN	Pcs	3	
3		Power indicator	AD17-22G-AC24	Pcs	1	
4		Transformer	JBK3-40VA 220V-24V	Pcs	1	Same as item7
5		Transformer	JBK3-40VA 230V-24V	Pcs	1	Same as item7
6		Transformer	JBK3-40VA 240V-24V	Pcs	1	Same as item7
7		Transformer	JBK3-40VA 380V-24V	Pcs	1	
8		Transformer	JBK3-40VA 400V-24V	Pcs	1	Same as item7
9		Transformer	JBK3-40VA 415V-24V	Pcs	1	Same as item7
10		AC contactor	CJX2-1210/AC24	Pcs	1	
11		Circuit breaker	DZ47-63 C16 /3P	Pcs	1	
12		Circuit	DZ47-63 C32 /2P	Pcs	1	
13		Circuit	DZ47-63 C3 /1P	Pcs	1	
14		Circuit	DZ47-63 C1 /1P	Pcs	1	Same as item13
15		Limit switch	ME8104	Pcs	1	
16		Emergency stop	Y090-11ZS/red	Pcs	1	

S/N	Material#	Name	Specification	Unit	Qty	Pic.
17		Control box	190*430*135	Pcs	1	
18		Limit switch	8108	PCS	1	

Spare parts list- hydraulic system

S/N	Material#	Name	Specification	Unit	Qty	Pic.
1		Hydraulic block (manual release)	YF-1	Pcs	1	
2		Unloading handle	YF-2	Pcs	1	
3		Unloading valve	XYF-C	Pcs	1	
4		Single -way valve	DYF-C	Pcs	1	
5		Over-flow valve	EYF-C	Pcs	1	
6		Throttle valve		Pcs	1	
7		Cushion valve	HCYF-C	Pcs	1	
8		Hex socket plug	M14*1.5	Pcs	2	
9		Power unit connector	M14*1.5-G1/4inside swivel	Pcs	1	
10		Coupling	YL-A	Pcs	1	
11		Gear pump	CBK-F225	Pcs	1	
12		Gear pump	CBK-F220	Pcs	1	Same as item 11

S/N	Material#	Name	Specification	Unit	Qty	Pic.
13		Oil-in pipe	YX-B/270	Pcs	1	
14		Oil filter	YF-C	Pcs	1	
15		Oil –back pipe	YH-D	Pcs	1	
16		Plastic oil tank	10L	Pcs	1	

Space for notes:



Preparation protocol

The lift type with the
 serial number: was built on
 by the company in
 and was checked for safety and function and was put into operation.

The set up and preparation was carried out by the OPERATOR | EXPORT

The safety of the lift was checked by an .

The operator confirms the installation of the lift, and qualified experts have confirmed proper install before launching unit.

 Date Owner/ Operator Signature

 Date Installation expert Signature

Address Owner/ Operator:

Address Installation expert:



Inspection findings

Regular/ extraordinary inspection

On the date of this lift was put through a regular/ extraordinary and thorough inspection. During this inspection these issues were/ were not found.

.....

Scope of the audit:

.....

Outstanding partial inspection:

.....

The use of this equipment is authorized and the machine and all features have been inspected .

Location/ Date	Inspectors signature
----------------	----------------------

Operator or agent

Taken notes of the defects
----------------------------	-------	-------

Defect corrected
	Date	Signature

Verification

	Date	Signature
--	------	-----------

On the date of this lift was put through re-inspection. During this inspection these issues were/ were not found.

The use of this equipment is authorized and the machine and all features have been inspected.

Location/ Date	Inspectors signature
----------------	----------------------



Safety review pursuant to UVV type

Safety inspection before commissioning/ regular checks/ extraordinary
(Mark off those that do not apply)

Inspection	Good shape	defective	Re-inspection	Notes
Warning labels/ signs				
Name plate/ ID				
Limit switch function				
Condition of rubber plates				
Function of carrier arm locks				
Supporting structure (cracks etc.)				
Function of safety latches				
All screws tight				
Condition of steel cables				
Condition of covers				
Condition of chain				
Condition of cable pulleys				
Condition of hydraulic lines				
Fluid level of hydraulic unit				
Hydraulic system seals				
Condition of the piston rod				
Condition of electronics				
Function test of the lift				
Foundation condition (cracks)				
Lift Slides/guides in the lift column				
Other				
(Check the appropriate box, if re-inspection is necessary mark that box as well!)				

Inspector (Name, Address):

Inspected on:

Inspection result:

- Commissioning/ use possible. Resolve issues by
- Commissioning/ use prohibited. Re-inspection necessary.
- No defects. Commissioning/ use possible.

Signature owner/ operator:

Signature inspector:



Inspection findings

Regular/ extraordinary inspection

On the date of this lift was put through a regular/
extraordinary and thorough inspection. During this inspection these issues were/ were not
found.

Scope of the audit:

Outstanding partial inspection:

The use of this equipment is authorized and the machine and all features have been
inspected .

Location/ Date

Inspectors signature

Operator or agent

Taken notes of the defects

Defect corrected
Date Signature

Verification
Date Signature

On the date of this lift was put through re-inspection. During
this inspection these issues were/ were not found.

The use of this equipment is authorized and the machine and all features have been
inspected.

Location/ Date

Inspectors signature



Safety review pursuant to UVV type

Safety inspection before commissioning/ regular checks/ extraordinary
(Mark off those that do not apply)

Inspection	Good shape	defective	Re-inspection	Notes
Warning labels/ signs				
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All screws tight				
Condition of steel cables				
Condition of covers				
Condition of chain				
Condition of cable pulleys				
Condition of hydraulic lines				
Fluid level of hydraulic unit				
Hydraulic system seals				
Condition of the piston rod				
Condition of electronics				
Function test of the lift				
Foundation condition (cracks)				
Lift Slides/guides in the lift column				
Other				
(Check the appropriate box, if re-inspection is necessary mark that box as well!)				

Inspector (Name, Address):

Inspected on:

Inspection result:

- Commissioning/ use possible. Resolve issues by
- Commissioning/ use prohibited. Re-inspection necessary.
- No defects. Commissioning/ use possible.

Signature owner/ operator:

Signature inspector:



The company

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

declares hereby, that the **4-post vehicle lift**

TW 445 (F4.5D, TT8041) | 4500 kg

serial no.

in the configuration placed on the market by us, meets the relevant safety and health requirements, as required by the following EC directive(s) in it's/their current version(s).

EG-directive(s)

2006/42/EC machines

Applied harmonized standards and regulations

**EN 1493:2010 Hebebühnen,
EN 60204-1:2006+A1:2009**

CE Certificate

CE-C-0214-11-10-25-5A

date of issue:

20.06.2011

place of issue:

London

technical file no.:

TF-C-0323-09-12-11-5A

Certification body

CCQS UK Ltd.,
Level 7, Westgate House, Westgate Road,
London W5 1YY UK
Notified Body Appointment No. 1105

Any alteration to the equipment, improper use or installation void this declaration.

Authorized person to compile technical documentation is: Michael Glade (adress as below)



TWIN BUSCH GmbH
Amperestr. 1 · 64625 Bensheim
Tel. 06251 / 70585-0 · Fax: 70585-28

Authorized signatory: Michael Glade
Bensheim, 12.11.14 Qualitätsmanagement

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