TW SA 42 U V2

Long platform scissor lift
Lifting Capacity: 4200 KG

twinbusch.de

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

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

Twin Busch GmbH | Amperestraße 1 | D-64625 Bensheim
Tel.: +49 (0) 6251-70585-0 | Fax: +49 (0) 6251-70585-29 | info@twinbusch.de

SAFETY NOTES

1. Operation of lifting platforms

This lift is specially designed for lifting motor vehicles. Users are not allowed to use it for any other purposes. The applicable national regulations, laws and directives must be observed.

Only users aged 18 or above who have been instructed on how to operate the lifting platform and have proven their ability to do so to the owner are to be entrusted with unsupervised operation of lifting platforms. The task of operating the lifting platforms must be granted in writing.

Before loading a vehicle onto the lifting platform, users should study the original operation instructions and familiarize themselves with the operating procedures in several trial runs.

2. Checking of the lifting platforms

Checks are to be based on the following directives and regulations:

- Basic principles for testing lifting platforms
- The basic safety requirements stipulated in the directive 2006/42/EC
- Harmonized European standards
- The applicable accident prevention regulations

The checks are to be organized by the user of the lifting platform. The user is responsible for appointing an expert or qualified person to perform checking.

The user bears special responsibility if employees of the company are appointed as experts or qualified persons.

2.1. Scope of checking

Regular checking essentially involves performing a visual inspection and a functional test. This includes checking the condition of the components and equipment, checking that the safety systems are complete and functioning properly and that the inspection log book is completely filled in. The scope of exceptional checking depends on the nature and extent of any structural modification or repair work.

2.2. Regular checking

After initial commissioning, lifting platforms are to be checked by a qualified person at intervals of not longer than one year.

A qualified person is somebody with the training and experience required to possess sufficient knowledge of lifting platforms and who is sufficiently familiar with the pertinent national regulations, accident prevention regulations and generally acknowledged rules of engineering to be able to assess the safe operating condition of lifting platforms.

2.3. Exceptional checking

Lifting platforms with a lift height of more than 2 meters and lifting platforms intended for use with people standing under the load bearing elements of the load are to be checked by an expert prior or reuse following structural modifications and major repairs to load bearing components.

An expert is somebody with the training and experience required to possess specialist knowledge of lifting platforms and who is sufficiently familiar with the pertinent national work safety regulations, accident prevention regulations and generally acknowledged rules of engineering to be able to check and give an expert option on lifting platforms.

3. Important safety notices

3.1. Recommed for indoor use only, DO not expose the lift to rain, snow or excessive moisture.

3.2. Only use this lift on a surface that is stable, level and dry and not slippery ,and capable of susutaining the load. Do not install the lift on any asphalt surface.

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

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

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

3.6. Only these properly trained personnel can operate the lift.

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

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

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

3.10. Always insure the safety locks 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.

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

3.12. 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.

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

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

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

a. Disconnect the power;

b. Empty the oil tank;

c. Lubricate the moving parts with grease.

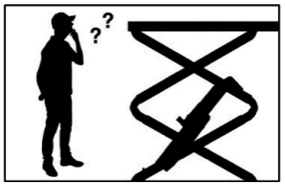
WARNING：the warnings ,cautions and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

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

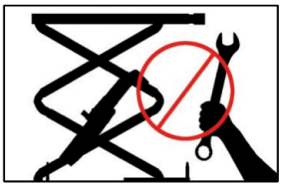
4. Warning labels

All safety warning labels are clearly depicted on the lift to ensure that the operator is aware of and avoid the dangers of using the lift in an incorrect manner. The labels must be kept clean and they have to be replaced if detached or damaged. Please read carefully the meaning of each label and memories them for future operation

Read the manual before use

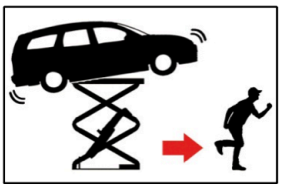


Only trained personnel should use the lift

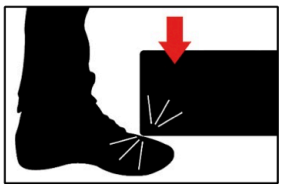


Repairs and service only through authorized personel, never tamper with the safety devices

No unauthorized persons under the lift when in use



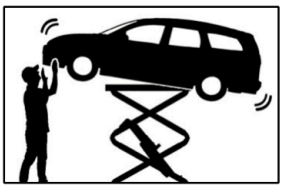
Always leave escape routs clear



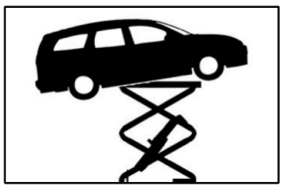
Please take care not to trap your feet

Danger of crushing when letting down

Never use only one side oft he lift



Avoid shaking



Vehicles should be evenly balanced

No obstcles under the lift

High voltage

5. Potential safety risks

5.1. Mains voltage


Insulation damage and other faults may result in accessible components being live

Safety measures:

- Only ever use the power cord provided or a tested power cord.
- Replace wires with damaged insulation.
- Do not open the operating unit.

5.2. Risk of injury, danger of crushing


In the event of excessive vehicle weight, incorrect mounting of the vehicle or on removing heavy object, there is a risk of the vehicle falling off the lifting platform or tipping up.

Safety measures:

- The lifting platform is only ever to be employed for the intended purpose.
- Carefully study and heed all the information given in Section 1.4.
- Observe the warning notices for operation.

1.6 Noise level

Noise emitted during operating the lift should be less than 70dB. For your health consideration, it is suggested to place a noise detector in your working area.

PACKING, STORAGE AND TRANSPORTATION

Packing, lifting, handling, transporting operations must be performed only by experienced personnel with appropriate knowledge of the lift and after reading this manual.

1. The lift was dismantled into 3 parts for transportation

Name	*Packed by*	*Dimension*	*Weight*	*Quantity*
Control cabinet	Wooden case	510*480*1300	84KG	1
Power side platform	Carton with wooden base	5100*700*360	1550KG	1
The secondary platform	Carton with wooden base	5100*700*360	1550KG	1
Ramp	Bubble film	1300*680*250	106KG	1

2. Storage

The packs must be kept in a covered and protected area in a temperature range 0f -10℃to +40℃. They must not be exposed to direct sunlight, rain or water.

Stacking the packs

We advise against stacking because the packs are not designed for this type of storage. The narrow base, heavy weight and large size of the packs make stacking difficult and potentially dangerous.

If stacking is unavoidable, use all appropriate precautions:

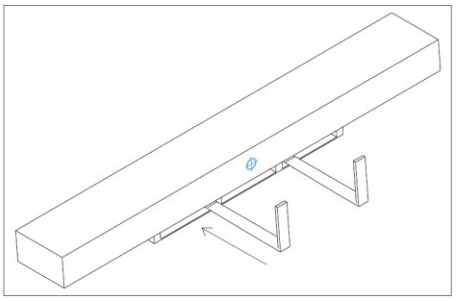
-never stack to more than 2 meters in height.

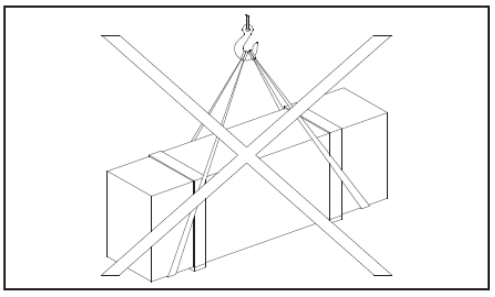
-never make stacks of single packs. Always stack pairs of packs in a cross pattern so that the base is bigger and the resulting stack is more stable. Once the stack is complete, restrain it using straps, ropes or other suitable methods.

A maximum of two packs can be stacked on lorries, in containers, and in railway wagons, on condition that the packs are strapped together and restrained to stop them falling.

3. Lifting and handling

The packs can be lifted and transported only by using lift trucks. The center of gravity and lashing points are marked on the packaging. Never attempt to hoist or transport the unit using lifting slings.





Opening the packs

When the lift is delivered make sure that it has not been damaged during transportation and that all the parts specified on the packing list are present.

Packs must be opened adopting all the precautions required to avoid injury to persons (keep at a safe distance when cutting the straps) or damage to parts of the machine (be careful that no parts are dropped while you are opening the packing)

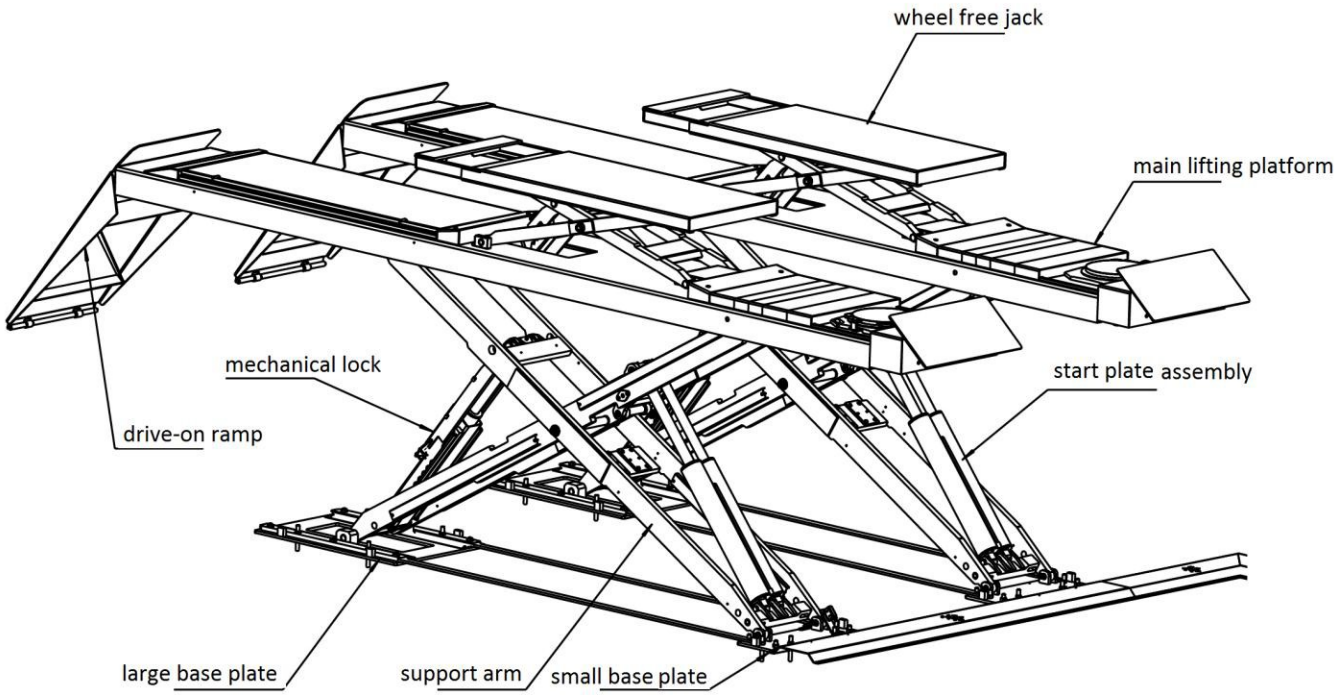
Take special care with the hydraulic power unit, the control panel and the platform cylinder.

PRODUCT DESCRIPTIONS

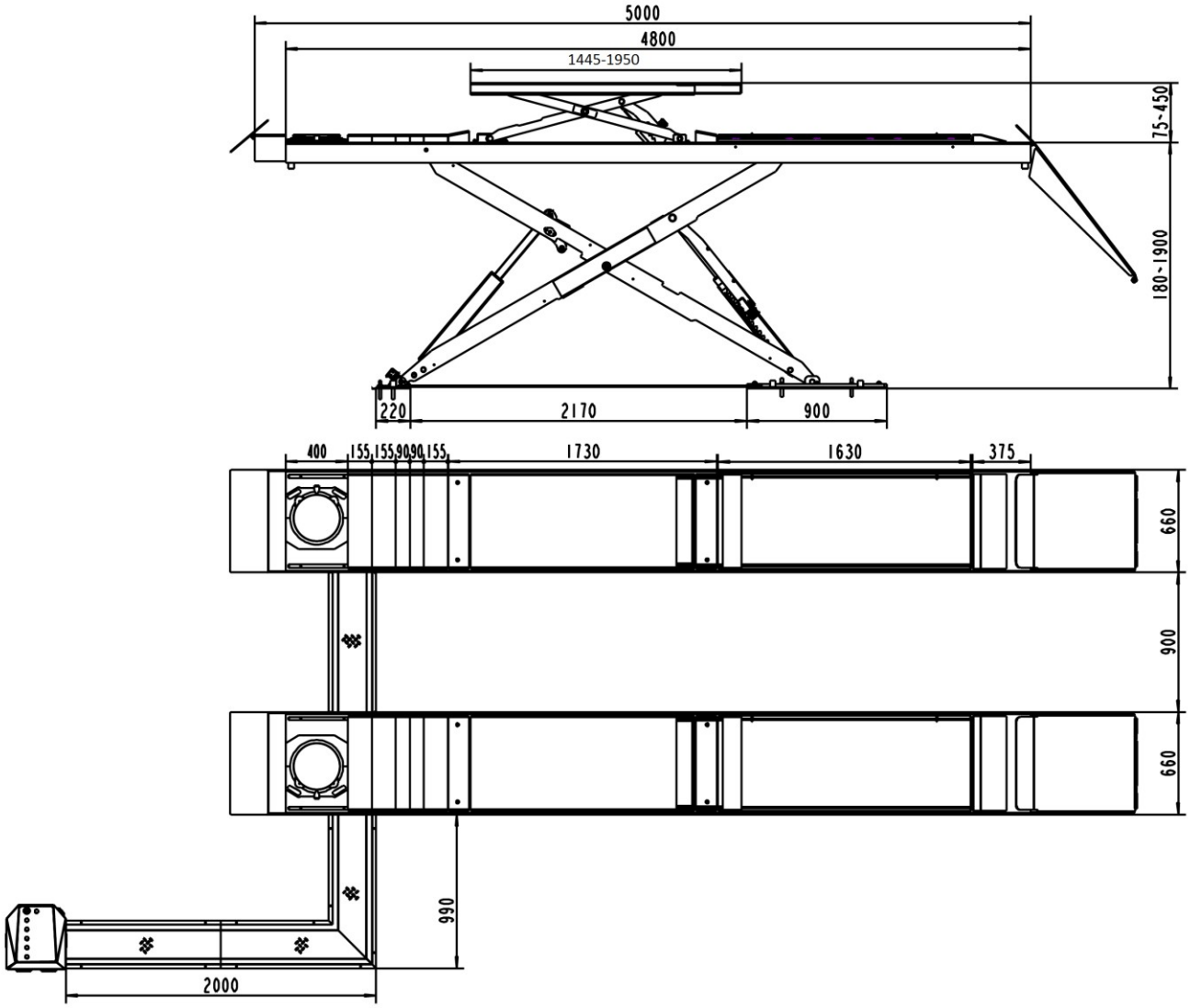
1. General descriptions

This model is surface mounted and is mainly composed by lifting platforms, base plates, oil cylinders and a set of operation unit. The gear pump works when power supply is connected and meanwhile oil in the pump pushes upwards the pistons of oil cylinders. Thus, scissor brackets of the lift rise accordingly.The mechanical lock will automatically engaged in case of failure of hydraulic system. Besides, designs like 24V working voltage of control box and limit switch, low-height alarming buzzer, anti-surge valves, etc have fully considered your personal security.

2. Construction of the lift



3. Dimensions



4. Technical data

Rated capacity	4000KG	
Full raised height	1900mm	
Full lowered height	180mm	
Full raised time (with rated load)	≤55s	
Full lowered time (with rated load)	≤55s	
Hydraulic working pressure (Mpa)	20MPa	
Pneumatic working pressure (Bar)	6-8 kg/cm²	
Rated capacity of the secondary lift	4000KG	
Full raised height of the secondary lift	450mm	
Oil tank volume	18L	

INSTALLATION INSTRUCTIONS

1. Preparations before installation

1.1. Space requirements.

Refer to 3.3 for the dimensions of the lift. There must also be a clearance of at least 1 meter between the lifting platform and fixed elements (e.g. wall) in all lifting positions. There must be sufficient space at the ends of the lifting platform for driving vehicles on and off.

To stop vehicles colliding with the ceiling, it is advisable to fit an overhead light barrier in low ceiling buildings.

1.2. Foundations and connections

The user must have the following work performed before erecting the lift.

- Construction of the foundation following consultation with the manufacturer's customer service or an authorized service agent.
- Routing of the wiring to the installation location. The user must provide fuse protection for the connection.
- Routing of the compressed air connection to the installation location. The user must install a service unit upstream of the connection.

Refer also to the corresponding information in the commissioning instructions.

1.3. Foundations preparations

Please refer to Annex1 for floor dimensions.

1.4. Tools and equipments needed for installation

Tool Name	Specification	Qty
Electrical drill	With D16 and D18 drill bit.	1
Open spanner	D17-19mm	2
Adjustable spanner	bigger than D30mm	1
Cross socket screw driver	PH2	1
Quick spanner handle adapter/ Ratchet		1
Socket spanner	D24mm	1
Levelling device		1
Hammer	10 pounds	1
Truck lift	Capacity more than 2500KG	1
Lifting string	Capacity, 1000KG	2
Lifting string	Capacity, 2000KG	1
Torque spanner	MD400	1

1.5. Checking parts

Unfold the package and check if any parts missed as per the following list. 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, we as well as our dealers will not bear any responsibility for this and will charge for any parts subsequently demanded by the buyer.

S/N	Name	Specification	Qty
1	Lifting platform	6604	2
2	Expansion bolt	M16*120	16
3	Control cabinet	/	1
4	Drive-on ramp	6604V2-A9	2
5	Protective cover A(L=2200)	6604V2-A13	1
6	Protective cover B(L=1000)	6604V2-A14	1
7	Protective cover C(L=1000)	6604V2-A15	1
8	Protective cover D(L=1000)	6604V2-A16	1
9	Cross socket cap head tapping screw	ST4.8*35	20
10	Plastic expansion tube	M10*40	20
11	Cross socket cap head screw	M6*12	4
12	Hex nut	M6	4
13	Flat washer	M6	4

2. Installation attentions

2.1. Joints of oil hose and wiring must be firmly connected in order to avoid leakage of oil hose and looseness of electrical wires.

2.2. All bolts should be firmly screwed up.

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

3. General Installation Steps

Step1: Choose installation site.

Use a fork lift to place the machine at installation site as required. See Annex 1 for space requirements on the installation site.

Step 2: Connect hydraulic oil hoses.

Connect the oil hose as per the scheme for oil hose connection. (This step is very important and it is quite necessary to understand the diagram of oil hose connection before operation)

Step 3: Connect pneumatic hoses.

Connect the pneumatic release system by the scheme of pneumatic hose connection.

Step 4: Connect electrical wires.

Refer to the electrical connection scheme. Connect the power supply and the quick connecters for limit switch.

Step 5: Fill with hydraulic oil.

ONLY CLEAN AND FRESH OIL

ONLY

Attetion: Lift must be fully lowered before changing or adding hydraulic oil

Normally it needs 22 liters of hydraulic oil.

Initially, fill the tank full with about 18L of hydraulic oil . Run the main and the secondary lift for several cycles and add another 4L into the tank.

Note：As running speed of the lift is mainly decided by the density hydraulic oil, we suggest using NO.46 hydraulic oil when average temperature of the location is above 18 degree Celsius and using NO.32 hydraulic oil when temperature is below 18 degree Celsius.

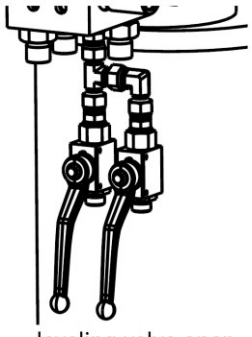
Step 6: Leveling

Check the connection of the hydraulic and electrical system before levelling operation

Review operation instructions and get familiar with lift controls by running the lift through a few cycles before leveling opearion.

Leveling platforms of the main lift

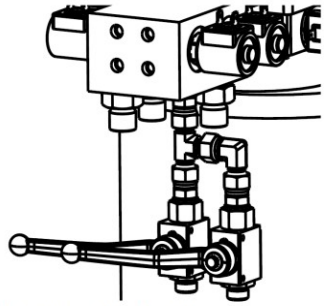
1)Turn on the main power switch and turn the selection switch SA2 to the main lift and SA1 to “Leveling” status. Turn the two handles of leveling valve to the following status.



leveling valve open

2) Push the UP button to raise the platforms to the max height and then lower to the minimum height. Repeat this for 3 cycles. Pay attendion to push the UP button very slightly and slowly when the platforms almost reach to the max height. After that,engage the mechanical safety locks and push DOWN I and DOWN II to completely lower the platforms. This step may needs pretty long time as there remained air in the oil cylinders and no load on the plafroms .

3) Repeat the cycles of step 2 for two or three times. Turn off the two leveling valves when platforms are fully lowered. Turn the two handles to the following status.



leveling valve closed

4) Turn SA1 to normal working status and push UP button to check the synchronization. (Normally, the two platforms are not synchronized till this step).

5) If not being synchronized and one platform rises faster than the other, open the leveling valve that controls the slower platform and turn SA1 to leveling status, push the UP button slightly until both platforms are at the same height. Close the leveling valve.

6) Turn SA1 to normal working status and check the synchronization.

7) IF still not being synchronized, repeat step 4 to step 6 until both platforms are synchronized.

Leveling platforms of the secondary lift (central jack)

1) Turn SA2 on control panel to JACK and turn SA1 to leveling status.

2) Press UP button until both platform of the jack go utmost top to bleed air in the cylinders.

3) Press DOWN I, until jacks lower to the lowest position.

PRESS UP BUTTON TO CHECK. THE JACKS SHOULD BE SYNCHRONIZED BY THIS STEP.

Repeat the above leveling steps until synchronization reached.

4. Items to be checked after installation.

S/N	Check items	YES	NO
1	Are two platforms adjusted with the same level?		
2	Are oil hose tightly connected?		
3	Are all electric connections correct?		
4	Are valves of the pump unit oil tight?		

OPERATION INSTRUCTIONS

5.1 Precautions

1. Check all the joints of oil hose. Only when there is no leakage, the lift can start work.

2. The lift, if its safety device malfunctions, shall not be used.

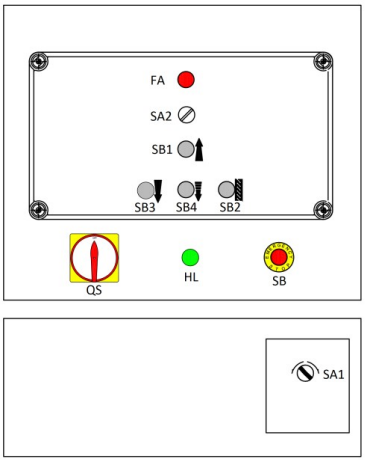
3. It shall not lift or lower an automobile if its center of gravity is not positioned midway of the runways. Failure to do so may cause damage to property and personel .

4. Operators and personnel concerned should stand in a safety area during lifting and lowering process.

5. When the platform are raised to the desired height, switch off the power to prevent any wrong operation done by unconcerned people.

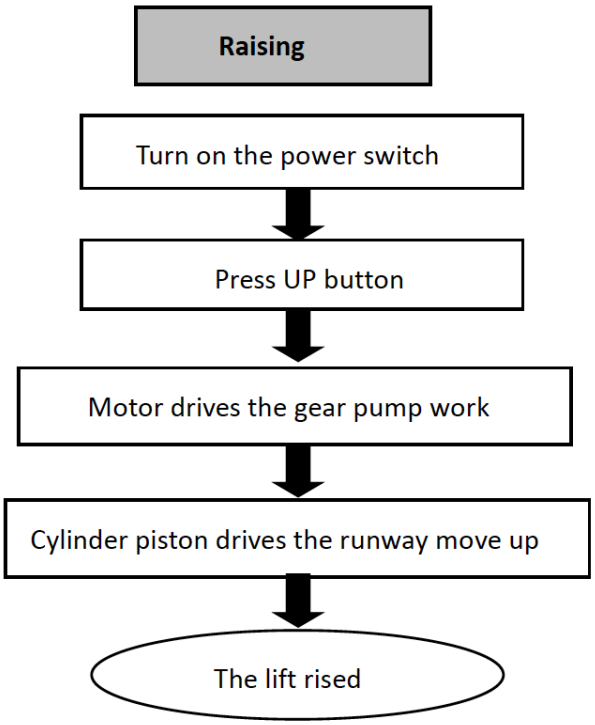
4.1.6. Make sure the safety lock of the lift is engaged before start working under the vehicle and no people under the vehicle during lifting and lowering process.

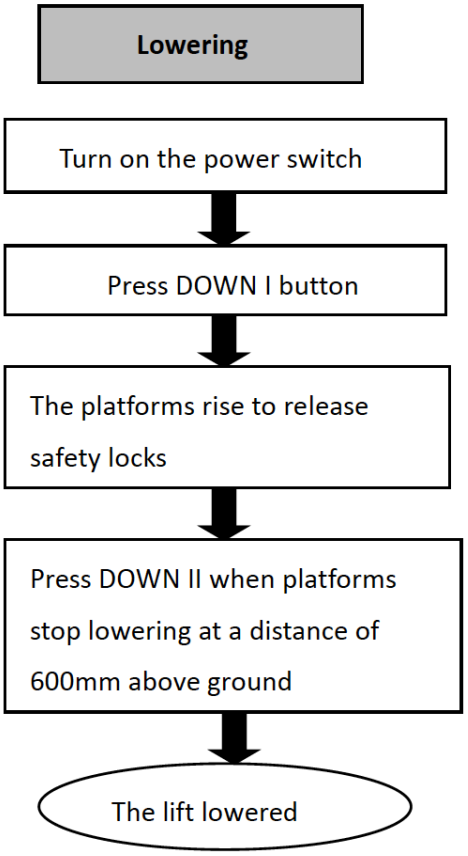
2. Descriptions of control panel



PO S.	Name	Function
FA	Alarm buzzer	Safety warning
SB1	UP button	Control the rising movement
SB3	DOWN button	Control the initial lowering movement
SB4	DOWN button	Control the final lowering movement
SB2	LOCK button	Engage the safety locks
SB	Emergency stop	Stop power in emergency cases
HL	Power indicator	Show if power is on
QS	Main switch	Power on /off
SA1	Selection switch	Control working or leveling condition
SA2	Selection switch	Main lift or secondary lift

3. Flow chart for operation





4. Operation instructions

To avoid personal injury and/or property damage, permit only trained personel to operate the lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles before loading vehicle on lift. Always lift the vehicle using both platforms . Never raise just one end, one corner or one side of vehicle.

The normal users are not allowed to open the door of control cabinet. Option switches in the control
cabinet need to be turned to 'working' before using the lift to raise vehicles.

Using the Main Lift

Raising

1. Drive and park the vehicle midway between two platforms. Make sure the vehicle is correctly positioned and secured against rolling.

2. Turn the optional switch on the control panel to **"Main Lift".**

3. Push the **"UP"** button on the control panel to lift the vehicle a bit higher from the ground and check again if the vehicle is in a safe position.

4. Having raised the vehicle to the height needed, push the **"Safety Lock"** button to ensure the mechanical safety lock is engaged. Press the **"Emergency Stop"** and check again the stability before performing maintenance or repair work.

Lowering

1. Switch on.

2. Push **"DOWN I"** button to lower the lift. Firstly, the lift will automatically rise to disengage the mechanical locks. Then the lift lowers. It will stop lowering when clearance between the platforms and the ground reaches to 600mm.

3. Push **"DOWN II"** button to continue lowering the platforms. Alarming buzz will be heard.

Using the Auxiliary

lift Raising

1. Turn the optional switch on the control panel to **"Auxiliary lift"**.

2. Place rubber pads under the pick-up points of vehicle. When it is necessary to use the platform extensions, press **"UP"** button to raise platforms of the jack a bit over the platforms of main lift and pull out the extensions.

3. Press **"UP"** button and check again if the rubber pads are directly under the pick-up points of the vehicle, when they are very close to the vehicle's chassis.

4. Keep on pushing **"UP"** button until reaches to the desired height. Full rise of the jack is 450mm over the platform of main lift.

Lowering

Attention: in case the platform extensions of the auxiliary lift are used, the operator needs to push the extension in after the four wheels of vehicle lay on the main platforms.

1. Turn the optional switch on the control panel to **"Auxiliary lift "**.

2. Push "**DOWN I"** button on the control panel to lower the jack.

3. Take away rubber pads.

TROUBLE 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.

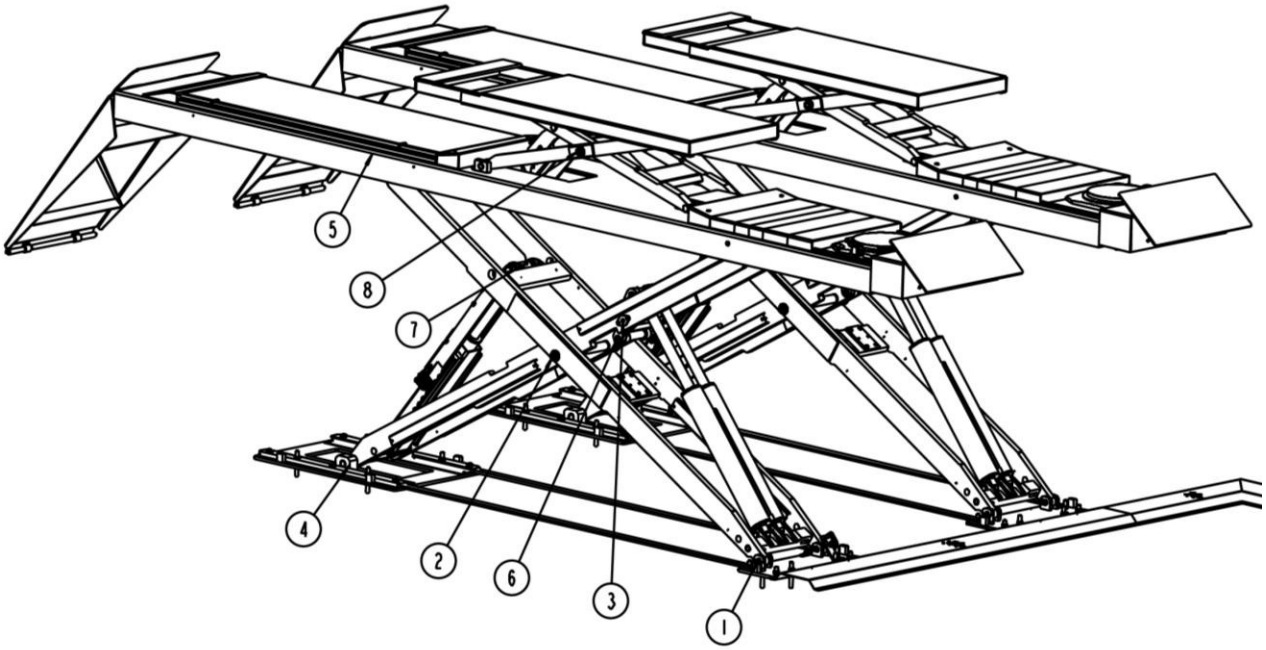
TROUBLES	CAUSE	SOLUTION
Motor does not run and will not raise	The wire connection is loose.	Check and make a good connection.
	The motor is burnt	Replace it.
	The limit switch is damaged or the wire connection is loose.	Connect it or adjust or replace the limit switch.
Motor runs but will not raise	The 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.
	Electrical unloading valve leaks.	Clean or replace it.
Raising 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.
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.

MAINTENANCE

It is advised to change the hydraulic oil three month after initial use and once per year thereafter for which could prolong the service life of the pump.

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

The following parts need to be lubricated with No.1 lithium base grease.



1. Daily checking items before operation

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

·Check whether oil hose well connected. No leakage is allowed.

·Check the electric connections .Make sure all connections are in good condition.

·Check whether the expansion bolts well anchored.

·Check if safety teeth and safety block matched well or not.

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 the expansion bolts well anchored.

3. Monthly checking items

·Check whether the expansion bolts well anchored.

·Check the tightness of the hydraulic system and screw firm the joints if it leaks.

·Check the lubrication and abrasion circumstance of moving parts.

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, Floor Plan

Requirements:

1.425# concrete base with strength more than 3000psi, tolerance of flatness less than 5mm and minimum thickness of 200mm. Newly built concrete ground must be older than 20days.

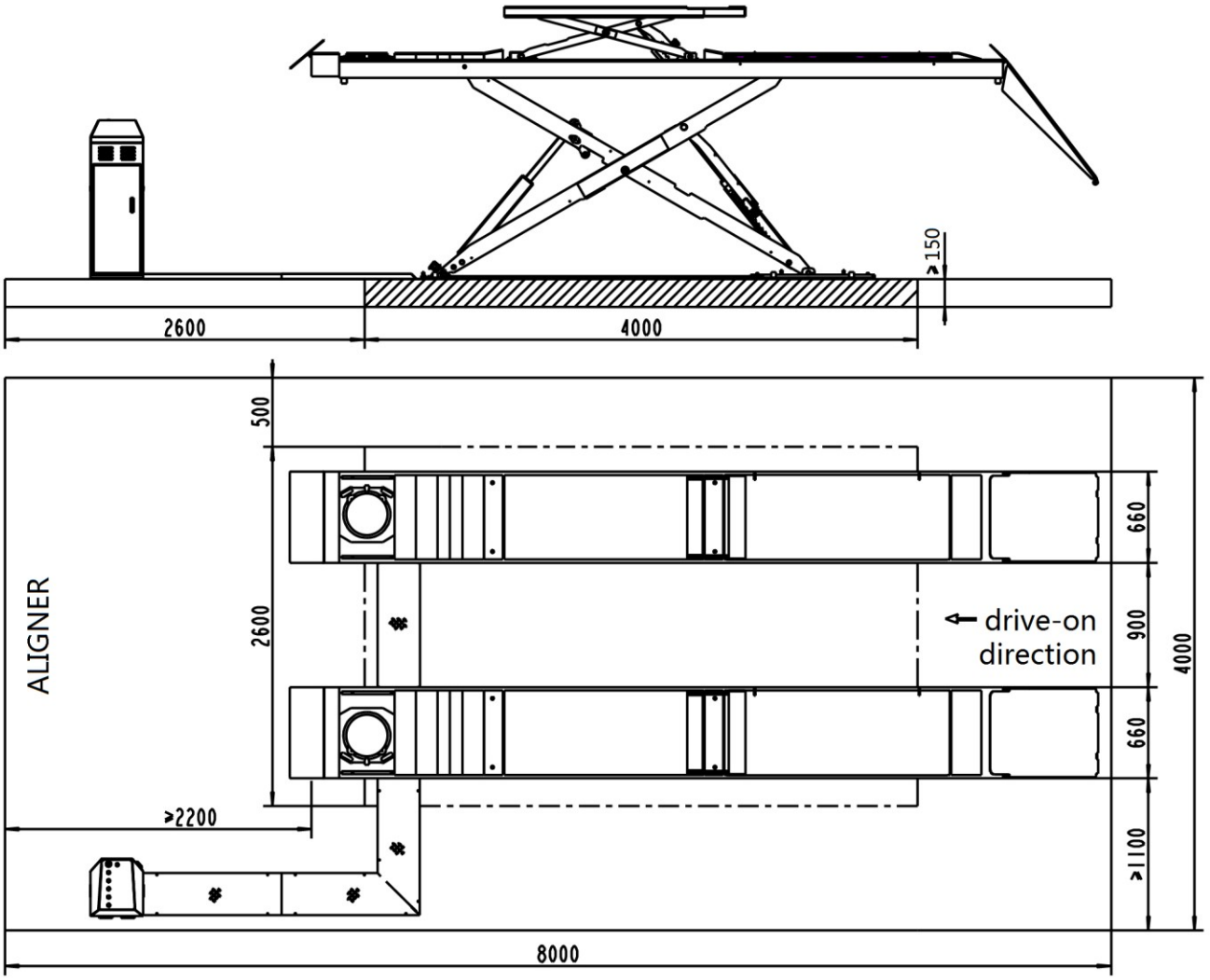
2. Concrete thickness of the base shall be more than 200mm and remove the peel-offs in the bit

3. Flatness of the two base shall within the tolerance of 5mm.

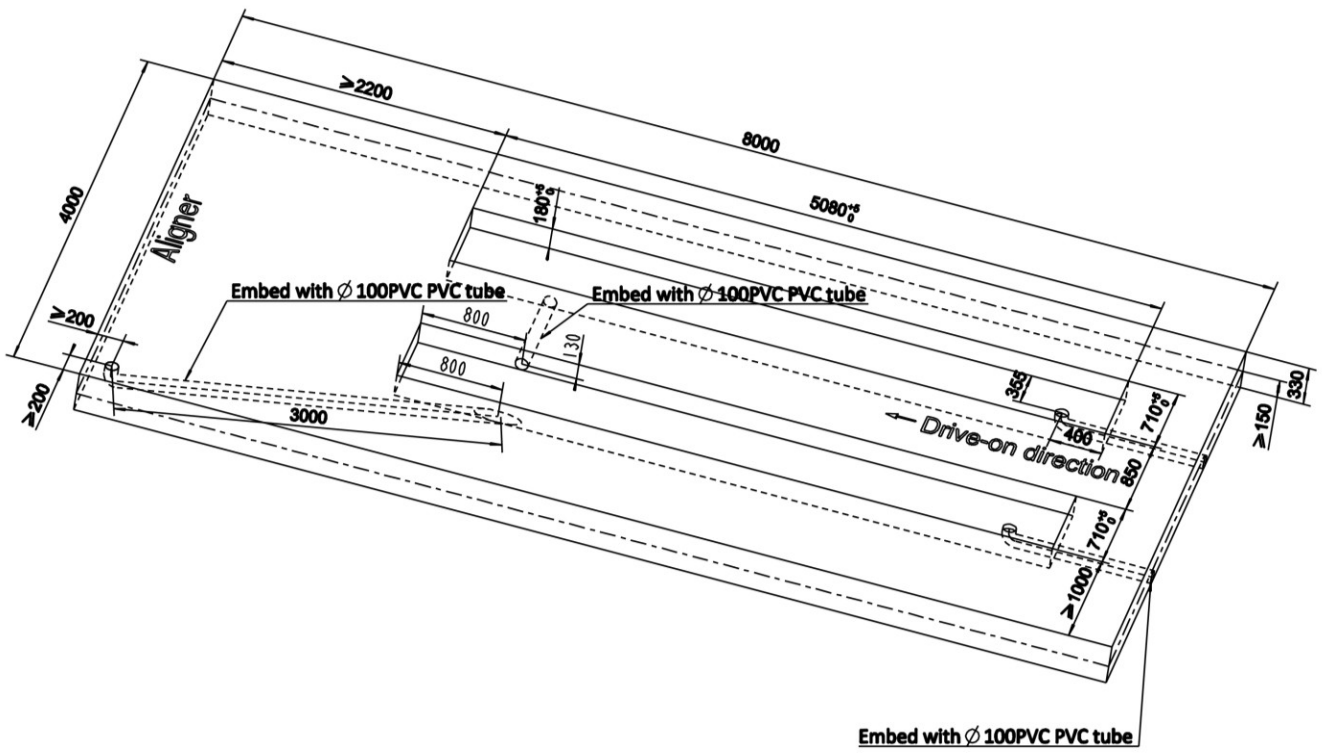
4. Embedded L40 angle iron around the pit for edging.

5. In case drain pipes are not applicable, it is necessary to reserve a plash.

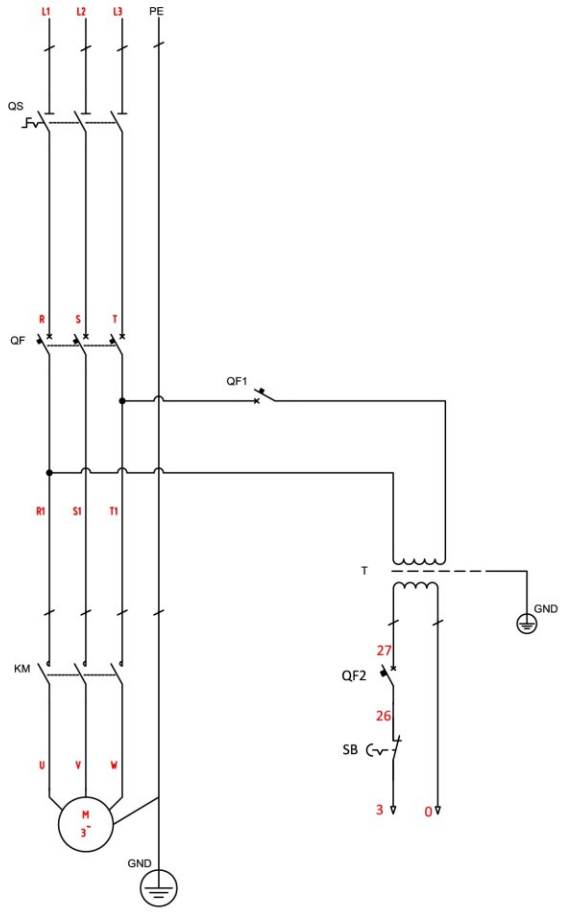
1.ON-GROUND

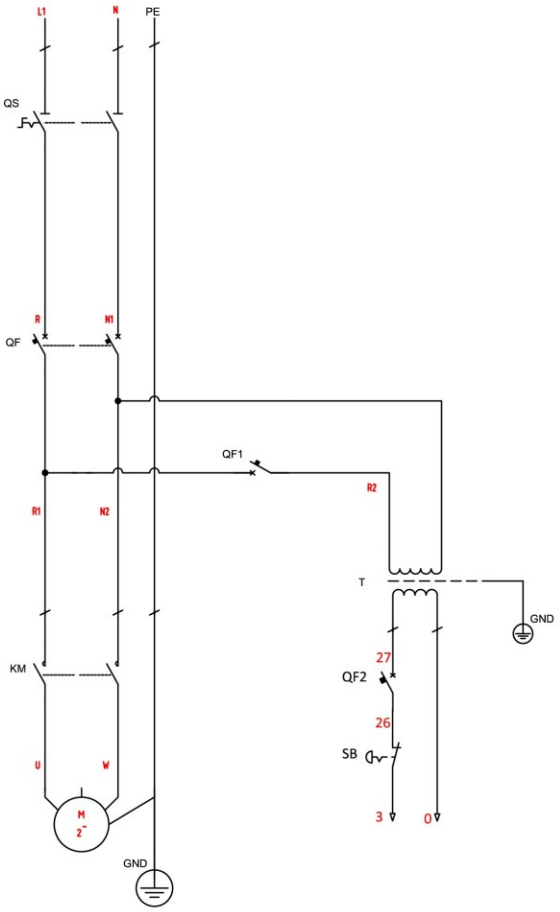


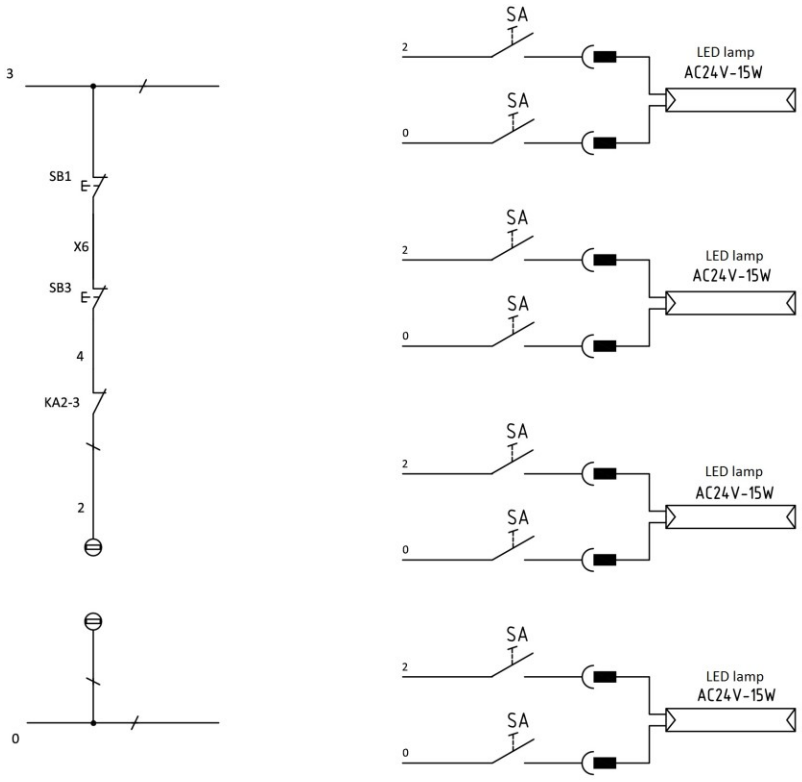
2.IN-GROUND

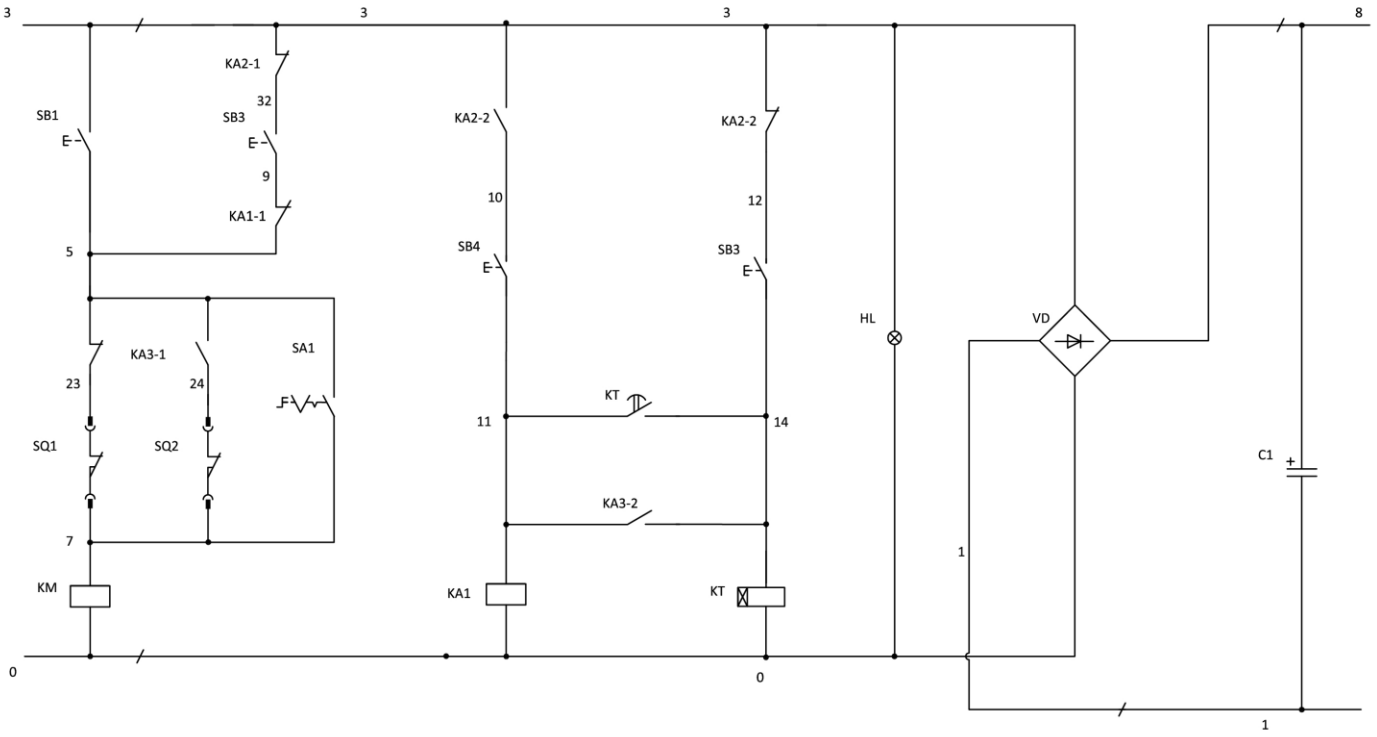


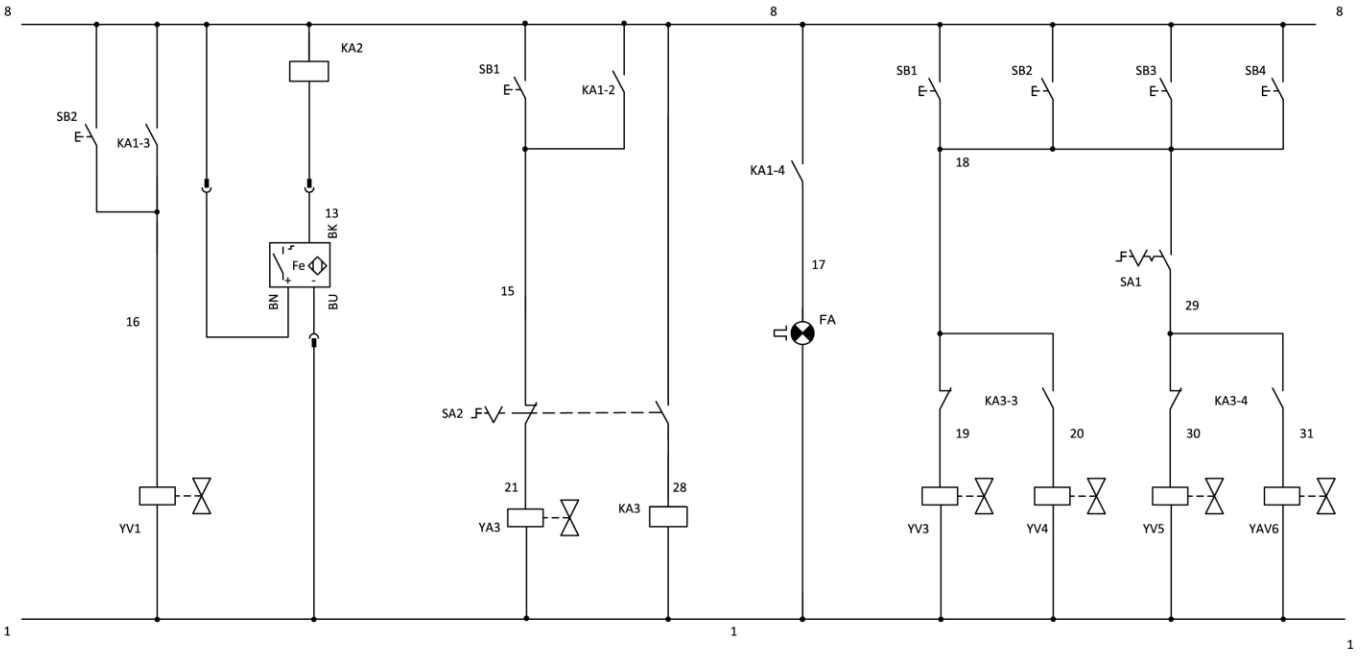
Annex2, Electrical schemes and parts list

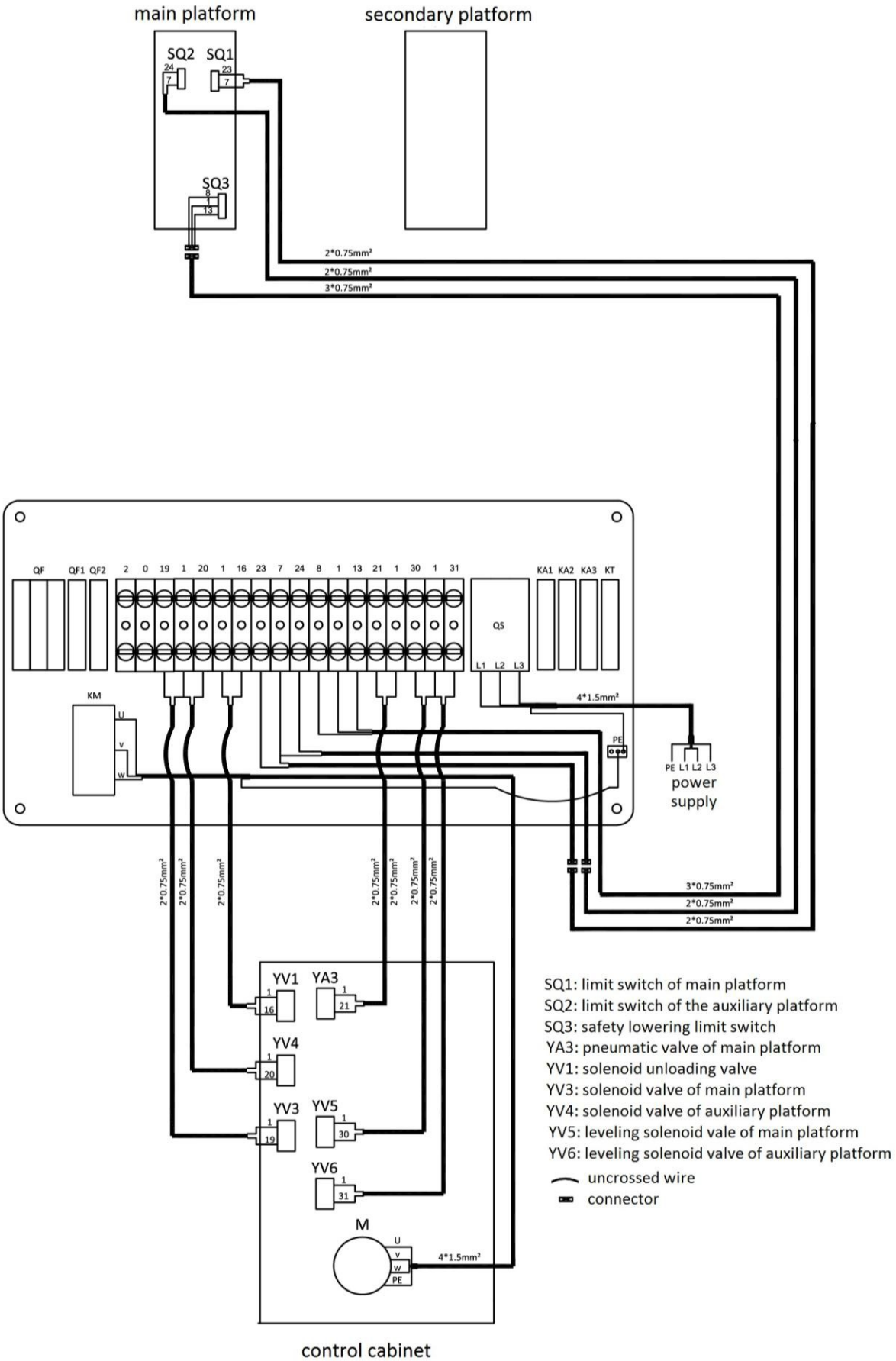


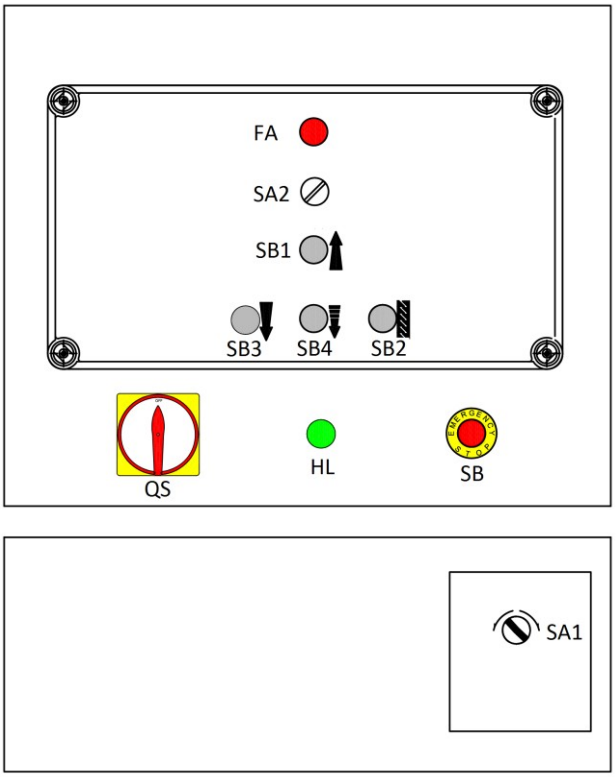










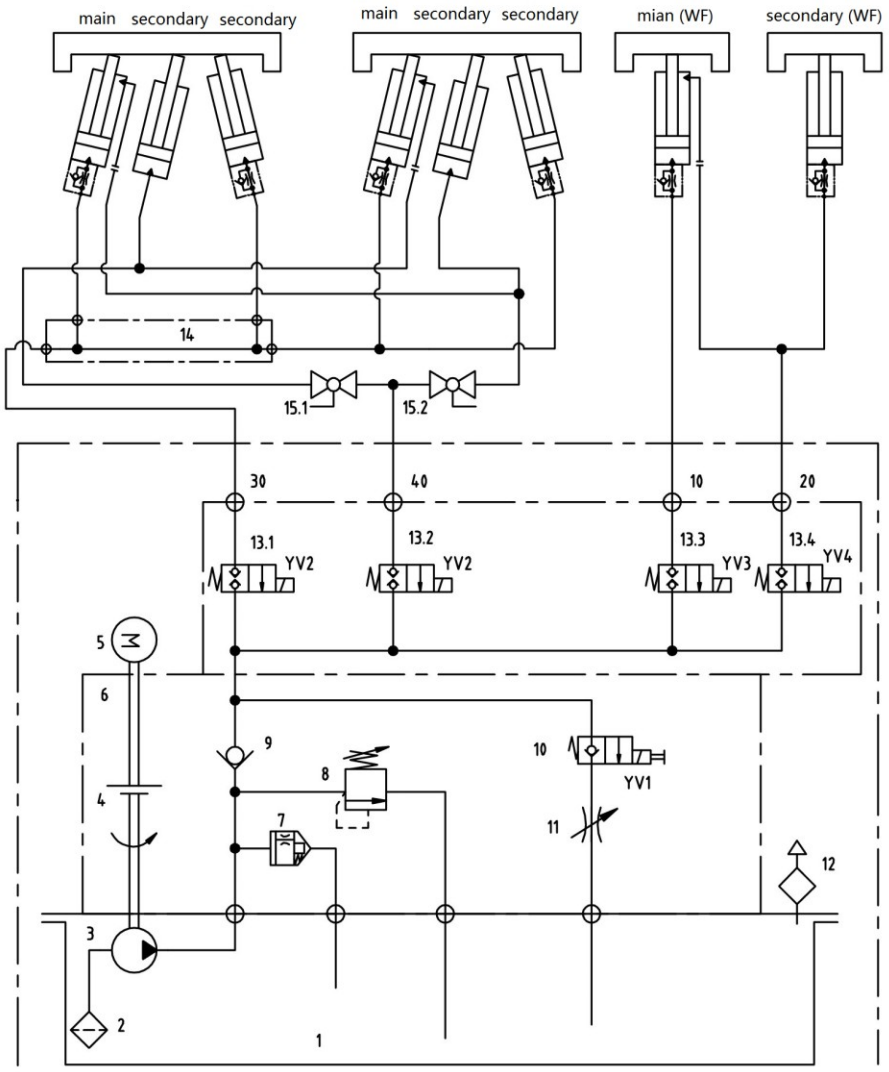


POS.	Code	Name	Specification	Qty
T	3201010 35	Transformer	JBK3(JBK5)-100VA 380V-24V	1
M	3202030 01	Motor	380V-3.5KW -3PH-50HZ-2P	1
SQ1	3203010 03	Limit switch	D4MC-5020	1
SQ2	3203010 11	Limit switch	TZ8108	1
SQ3	3203020 02	Proximity switch	PL05-N/1.8M	1
SA1	3203030 13	Selection switch	AR22PR-220B	1
SA2	3203030 09	Selection switch	AR22PR-211B	1
QS	3203040 01	Power switch	LW26GS-20/04	1
SB2	3204010 17	Button	AR22F0R-20-W	1
SB1,SB3, SB4	3204010 19	Button	AR22F0R-31-W	3
SB	3204020 02	Emergency stop	XB2BS542C	1
	3205030 02	Ground terminals	4:00 PM	1
	3205050 06	Wire terminal	VK-5N(UK-5N)	18

	3205050 11	Retaining chip	LT-2.5	2
KA2;KA3	3206010 01	Relay	HH54P-L/DC24V (MY4NJ)	2
KA1	3206010 02	Relay	HH54P-L/AC24V(MY4NJ)	1
	3206010 11	Relay holder	PYF-14A-E	3
	3206010 18	Relay feet fixer		6
KT	3206020 01	Time relay	ST6P-2AC24V5S	1

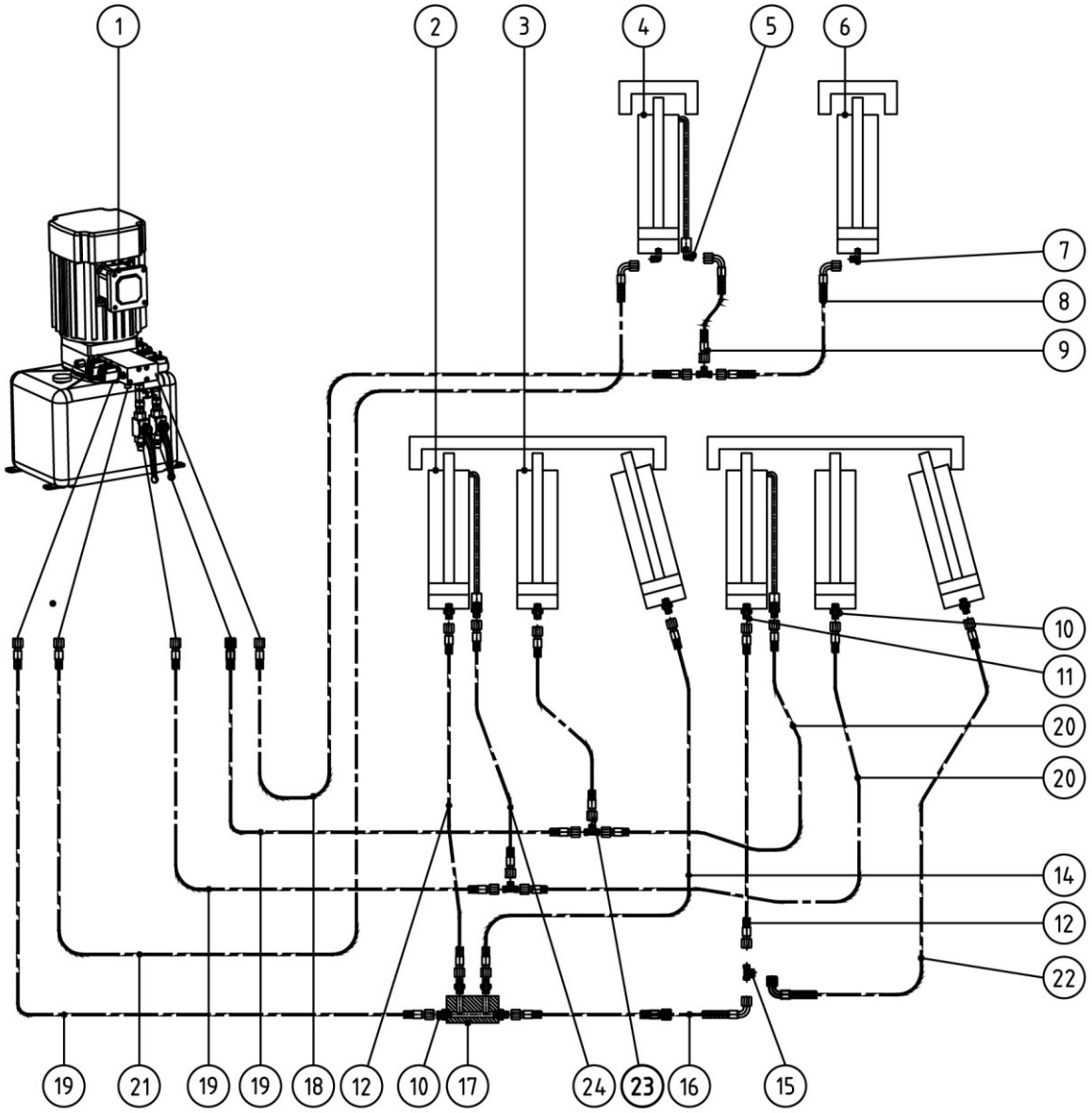
POS.	Code	Name	Specification	Qty
	3206020 06	Time relay holder	PYF-08A-E	1
	3206020 07	Time relay feet fixer		2
QF	3208010 01	Circuit breaker	DZ47-63C16/3P	1
QF1	3208030 01	Circuit breaker	DZ47-63C1/1P	1
QF2	3208030 05	Circuit breaker	DZ47-63C6/1P	1
KM	3209010 11	AC contactor	CJX2-1810/AC24V	1
C	3210010 04	Capacitor	4700UF/50V	1
VD	3210020 01	Bridge rectifier	KBPC5A-35A	1
HL	3212010 01	Power indicator	AD17-22G-AC24	1
FA	3212020 01	Alarm buzzer	AD17-22SM/DC24	1

Annex3, Hydraulic schemes and parts list



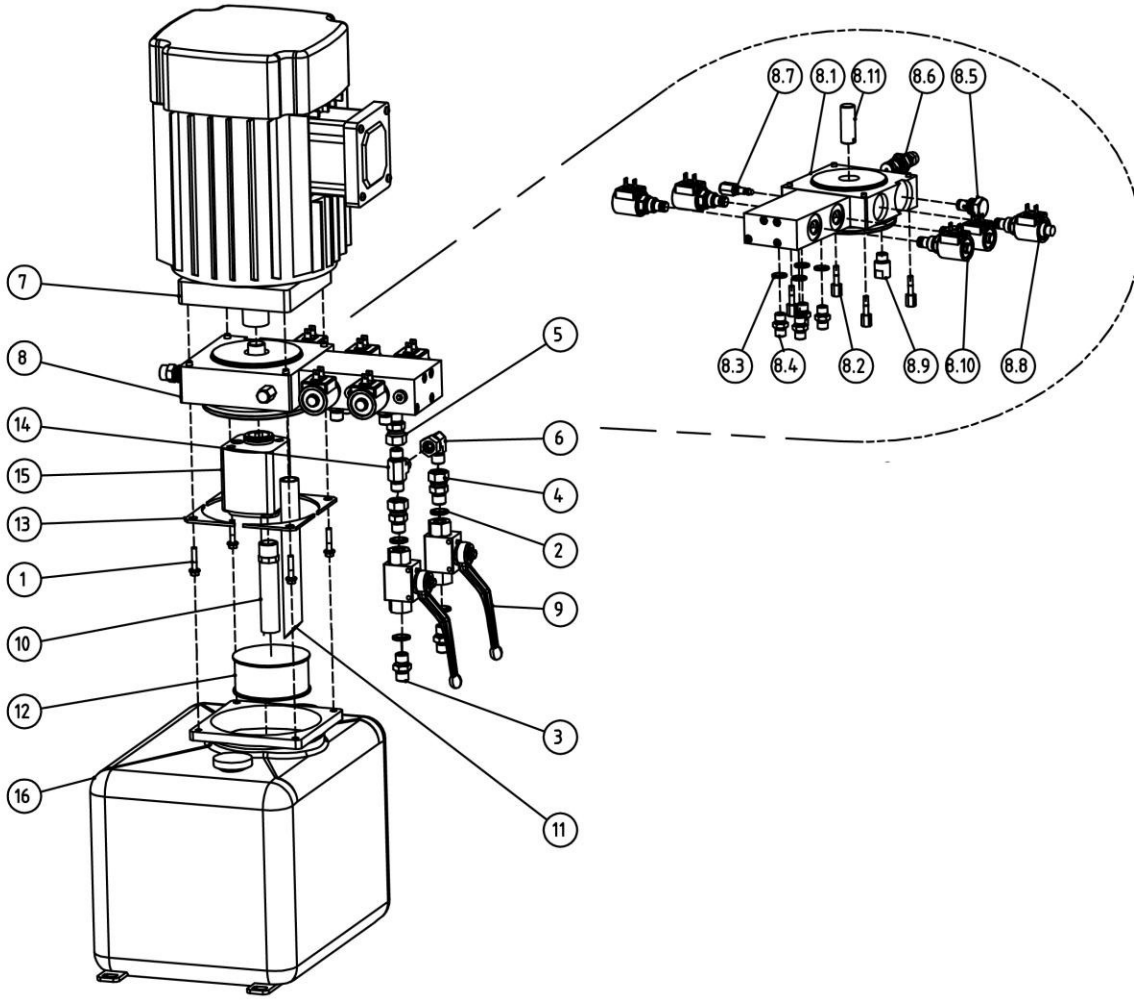
1.oil tank 2.oil sucking filter 3.gear pump 4.coupling 5.motor 6. Composite hydraulic block 7.cushoin valve 8.overflow valve 9.single way valve 10.solenoid unloading valve 11.flow control valve 12. Oil tank cover 13.Leveling valve 14.Four way connector 15.two-way ball

valve



POS.	Code	Name	Specification	Qty
1	610025487	Power unit	400V-3PH-3.0KW-50HZ-2P	1
2	615025004 B	Main cylinder of the main lift	6604B-A4-B1	2
3	615025017 B	Secondary cylinder of the main lift	6604B-A4-B2	4
4	615025012	Main cylinder of the secondary lift	6604B-A11-B1	1
5	410210011	Right angle connector	6603B-A9-B4	1
6	615025014	Secondary cylinder of the secondary lift	6604B-A12-B1	1
7	615018001	Right angle throttle valve	MR30-A24-B16	2
8	624001817	Rubber oil hose	φ6R1AT,L=6650mm	1
9	624001818	Rubber oil hose	φ6R1AT,L=5400mm	1

POS.	Code	Name	Specification	Qty
10	615019005	Tube connector B	6501-A4-B16	8
11	615019006	Straight throttle valve	6501-A4-B15	4
12	624001045	Rubber oil hose	Φ6,L=530mm	4
13	410210191	Straight connector	6603B-A9-B8	2
14	624001260	Rubber oil hose	Φ6,=3800mm	1
15	410210181	Three way connector	6603B-A9-B7	4
16	624001815	Rubber oil hose	Φ6,L=1700mm	1
17	410250271	Four way connector	6604B-A29	1
18	624001819	Rubber oil hose	φ6R1AT,L=4270mm	1
19	624001248	Rubber oil hose	Φ6,L=3700mm	3
20	624001281	Rubber oil hose	Φ6,L=2250mm	2
21	624001820	Rubber oil hose	φ6R1AT,L=9200mm	1
22	624001052	Rubber oil hose	Φ6,L=3800mm	1



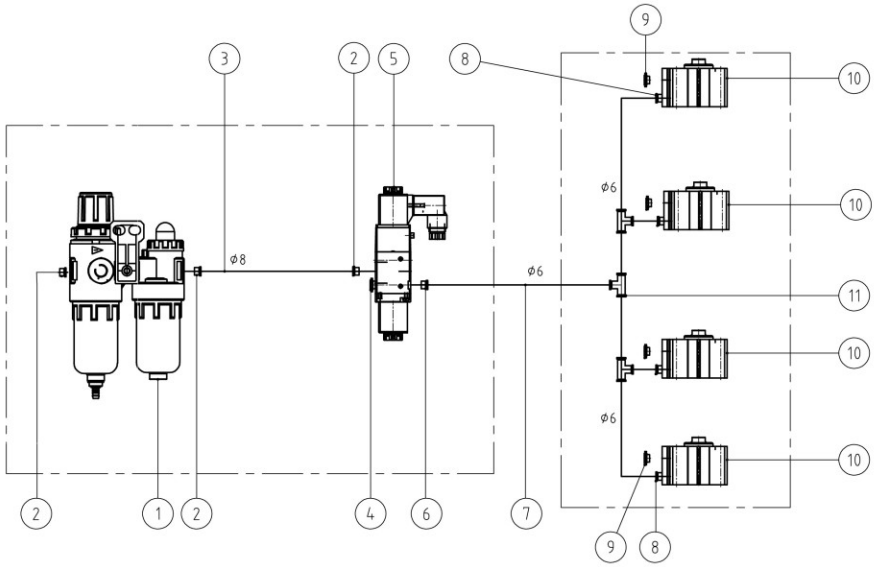
POS.	Code	Name	Specification	Qty
1	201103001	He flange screw	M5*25	4

POS.	Code	Name	Specification	Qty
2	207103025	Composite washer	G1/4	4
3	310101010	Straight connector	G1/4-G1/4	2
4	310101042	Adjustable straight connector	6604-BJMSC-G1/4	2
5	310101044	Adjustable straight connector	6604-BJMSC-M1415-G1/4	1
6	310102035	Adjustable right angle connector	EW-G1/4SR-G1/4 I60	1
7	320203104	Motor IE2	380V3.5KW3PH50HZ2P	1
8	330102003	Composite hydraulic block	YF-6603GNE	1
8.1	-	Hydraulic block	YF-8	1
8.2	202109064	Hex socket cylinder head screw	M6*30，	4
8.3	207103025	Composite washer	G1/4	4
8.4	310101010	Straight connector	M1415-G1/4	4
8.5	330302001	Single way valve	DYF-C	1
8.6	330304001	Over flow valve	EYF-C	1
8.7	330305002	Throttle valve	JYF-TJLD-C	1
8.8	330308006	Solenoid unloading valve	DHF06-220H/DC24	1
8.9	330308008	Leveling valve	HZYF-C1	1
8.1	330308008	Leveling valve	DHF06-228H/DC24	4
8.11	330404001	Coupling	YL-A	1
9	330307001	Two way ball valve	GE2G1/4111AB	2
10	330401001	Oil	YX-BL-170	1
11	330402001	Oil back tube	YH-D	1
12	330403001	Oil sucking filter	YG-C	1
13	410010091	Reinforced plate	6254E-A4-B12	4
14	410210181	Three way connector	6603B-A9-B7	1
15	330201014G	Gear pump	CBK-F242-G	1
16	330405017B	Oil tank	6503-A13	1

SEAL RINGS

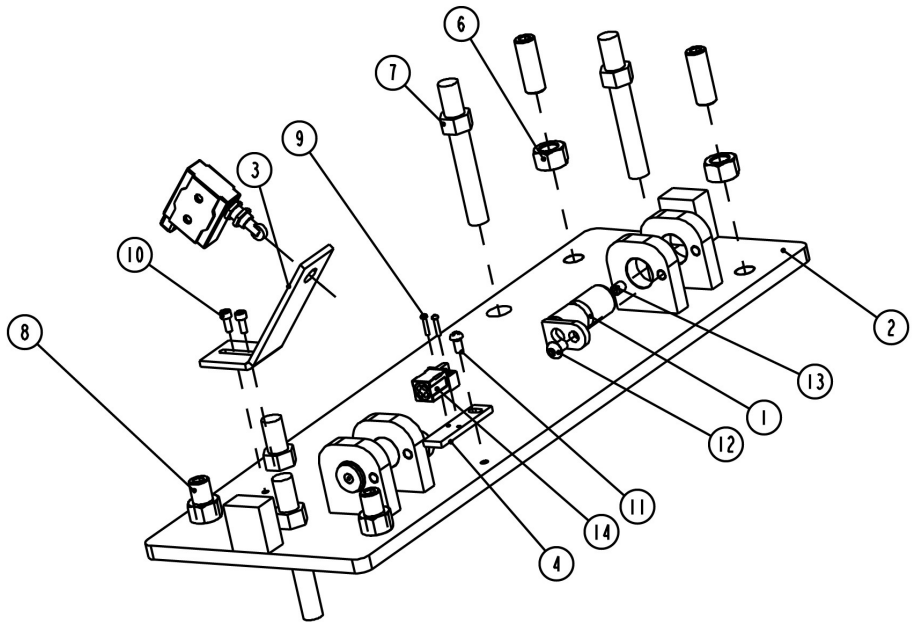
POS.	Code	Name	Specification	Qty	Note
1	20710303 1	Y seal ring	B7-90*75*9	2	Main of the main
2	20710302 2	Y seal ring	BS50*60*6	2	Main of the main
3	20710500 7	Dust proof ring	DHS50 (50*58*6)	1	Main of the main
1	20710303 2	Y seal ring	B7-75*60*9	1	Secondary of the main
2	20710500 8	Dust proof ring	DHS45 (45*53*6)	1	Secondary of the main
1	20710303 3	Y seal ring	B7-100*85*9	2	Main of the secondary
2	20710302 3	Y seal ring	BS60*70*6	2	Main of the secondary
3	20710500 9	Dust proof ring	DHS60 (60*68*6)	1	Main of the secondary
1	2071020008	Y seal ring	B7-80*65*9	1	Secondary of the secondary
2	2071050008	Dust proof ring	DHS45 (45*53*6)	1	Secondary of the secondary

Annex4, Pneumatic scheme and parts list

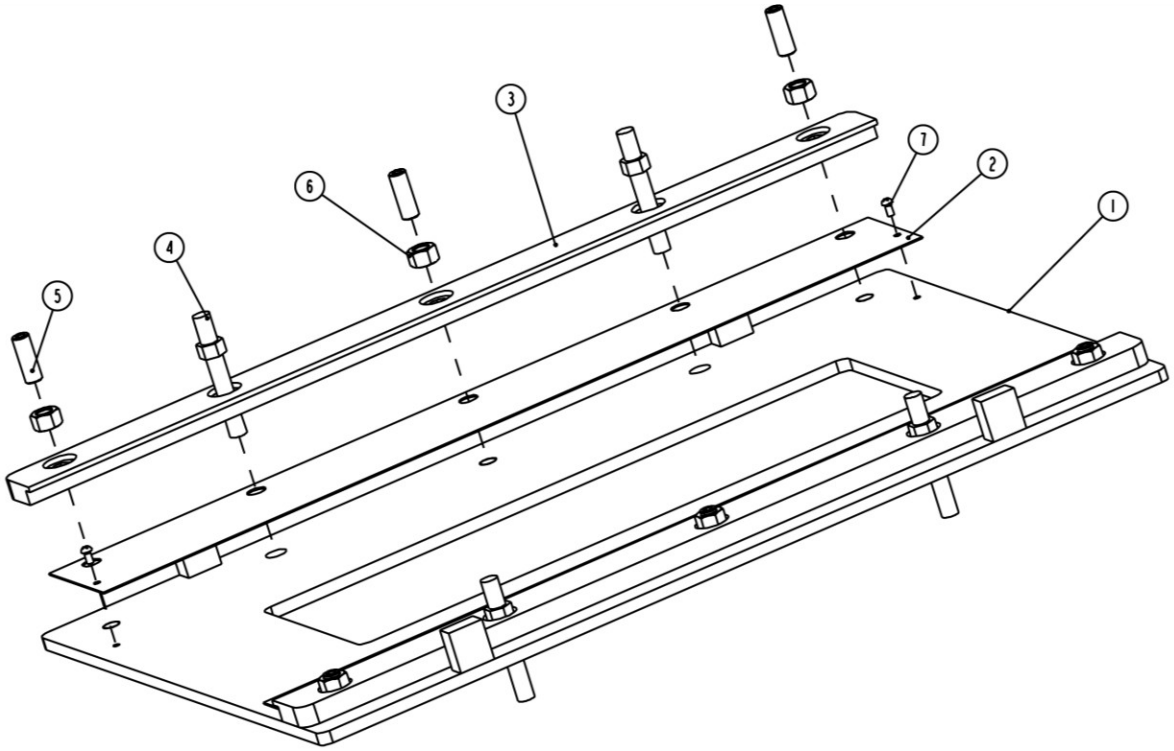


POS.	Code	Name	Specification	Qty
1	321004006	AFC Air filter combination	AFC2000	1
2	310102015	Pneumatic connector	KLL8-02	3
3	123010201	Pneumatic hose	DE8	1
4	310401001	Pneumatic solenoid valve	3V210-08DC24V	1
5	310201002	Silencer	SLM02 R1/4 (M12)	1
6	310103005	Three way pneumatic connector	KLE-6	3
7	310501005	Pneumatic cylinder	CQ2B32*30D	4
8	310201003	Silencer	SLM01 R1/8 (M8)	4
9	310101017	Pneumatic connector	KLC6-02	1
10	310101024	Pneumatic connector	KLC6-01	4

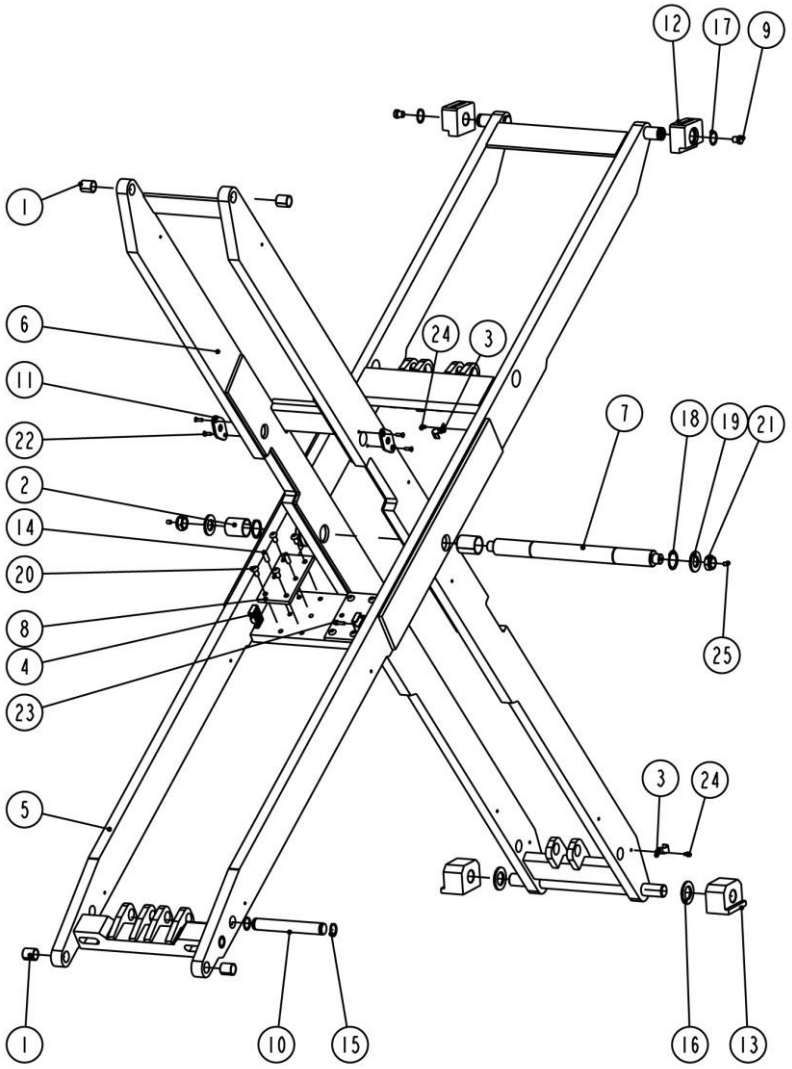
Annex5, Mechanically exploded drawings and parts list



POS.	Code	Name	Specification	Qty
1	612019504	Shaft of the support holder	65012-A1-B5	2
2	614025056	Base A	6604V2-A1-B1	1
3	410254270	Bracket for limit switch	6604V2-A1-B2	1
4	410250013	Plate for down limit switch	6604V2-A1-B3	1
5	320301003	Limit switch	D4MC-5020	1
6	203101009	Hex nut M16	M16-GB6170	4
7	201202001	Expansion bolt M16*120	M16X120	4
8	202205002	Hex socket flat head tapping screw	M16X50-GB77	4
9	202101002	Cross socket cap head screw	M3X15-GB818	2
10	202109008	Hex socket cylinder head screw	M5X12-GB70	2
11	202101029	Cross socket cap head screw	M6X12-GB818	1
12	202110004	Hex socket cap head screw	M8X12_GB70_2	2
13	208106002	Pressed oil cup M8	M8YP_GB7940_4	2
14	320302002	Proximity switch	PL-05P	1

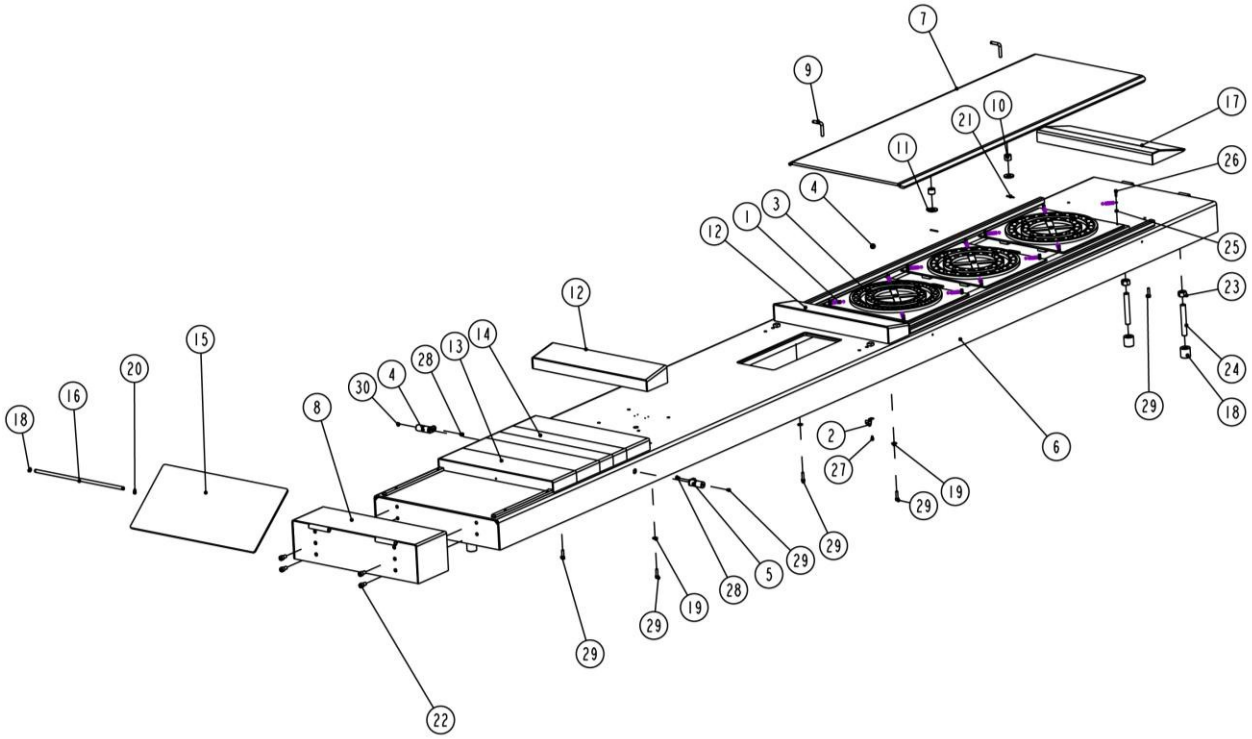


POS.	Code	Name	Specification	Qty
1	615025032	Large base frame	6604V2-A2-B1	1
2	410253550	Pad plate for slider	6604V2-A2-B2	2
3	410253681	Pressure plate for Base B	6604V2-A2-B3	2
4	201202001	Expansion bolt M16*120	M16X120	4
5	202205002	Hex socket flat head tapping screw	M16X50-GB77	6
6	203101009	Hex nut	M16_GB6170	6
7	202101029	Cross socket cap head screw	M6X12-GB818	4



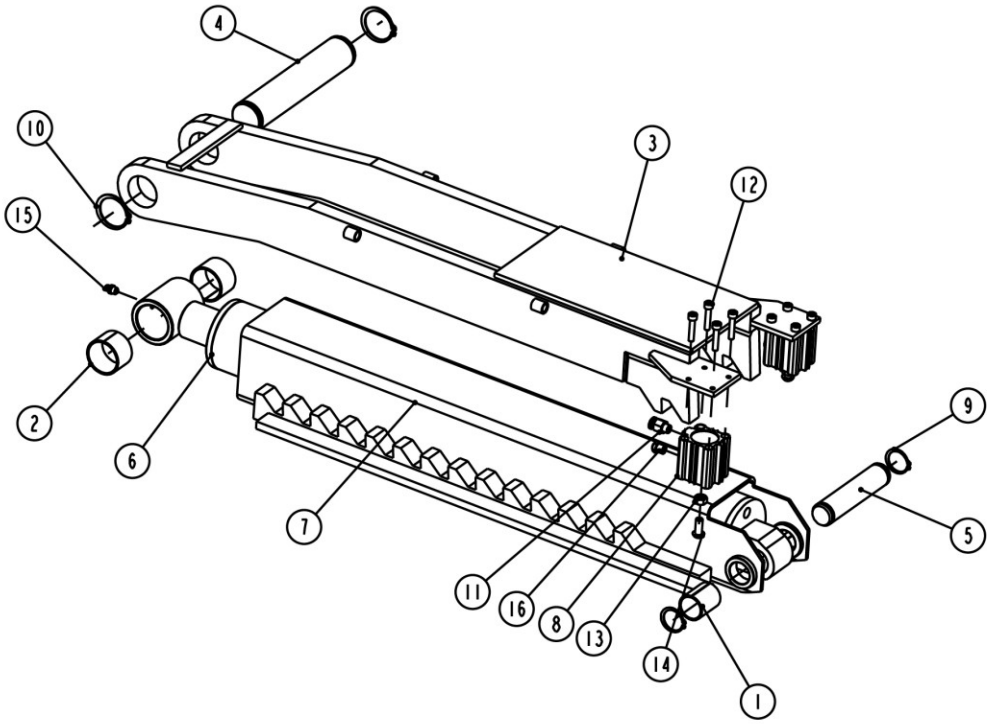
POS.	Code	Name	Specification	Qty
1	205101052	Bearing	2530_SF-2X	4
2	205101060	Bearing	4050_SF-2X	2
3	410060021	Oil hose clip	6254-A1-B4	2
4	420270070	Oil hose protective sheath	6435B-A3-B27	2
5	614025059 B	Outside support arm	6604V2-A3-B1	1
6	614025060	Inside support arm	6604V2-A3-B2	1
7	410252281	Mid shaft of support bracket	6604V2-A3-B3	1
8	410250061	Rotor wheel pad	6604V2-A3-B4	2
9	420250090	Small pad plate	6604V2-A3-B5	2
10	410252321	DOWN cylinder shaft	6604V2-A3-B6	1
11	410251750	Shaft retaining block	6604V2-A3-B7	2
12	420260020 B	Platform slider	6605B-A6-B1-C2	2
13	420260030 B	Base slider	6605B-A6-B2-C2	2

POS.	Code	Name	Specification	Qty
14	206101008	Post pin	D10X30_GB119	4
15	204301010	Circlip	D28-GB894_1	2
16	204101015	Flat washer D30	D30-GB95	2
17	204301011	Circlip	D30-GB894_1	2
18	204301014	Circlip	D40-GB894_1	2
19	204101014	Flat washer C	M27	2
20	202110007	Hex socket button head screw	M10X20_GB70_2	8
21	203103018	Hex locking nut	M24ZS	2
22	202103015	Cross socket flat head screw	M6X16-GB819	4
23	202109021	Hex socket cylinder head screw	M6X20-GB70	2
24	202101027	Cross socket cap head screw	M6X8-GB818	2
25	208106002	Pressed oil cup M8	M8YP_GB7940_4	2

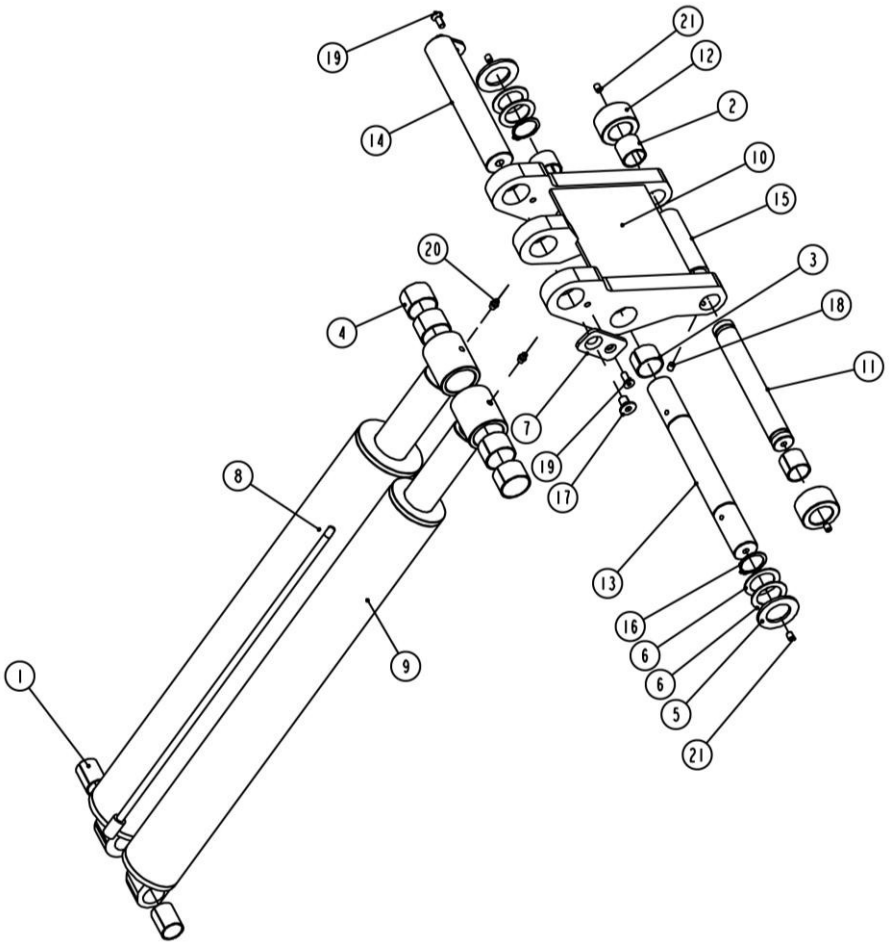


POS.	Code	Name	Specification	Qty
1	410274470B	Pull spring	410274470B	12
2	410060021	Oil hose clip	6254-A1-B4	3
3	420270100B	Ball holder	6435B-A20	3
4	420270110	Ball	6435B-A21	120
5	612019504	Shaft of the support holder	65012-A1-B5	2
6	614025061	Platform	6604V2-A4-B1	1
7	614025062	Side slip	6604V2-A4-B2	1

POS.	Code	Name	Specification	Qty
8	614025063	Box	6604V2-A4-B3	1
9	410250221B	Bolt	6604V2-A4-B4	2
10	420250010	Nylon sheath	6604V2-A4-B5	2
11	410250011	Washer	6604V2-A4-B6	2
12	614025071	Mid ramp	6604V2-A4-B7	2
13	614025064	BOX A	6604V2-A4-B8	3
14	614025065	BOX B	6604V2-A4-B9	2
15	614025066B	Small ramp	6604V2-A4-B10	1
16	410250211	Ramp shaft	6604V2-A4-B12	1
17	614025067	Slanting plate	6604V2-A4-B13	1
18	420260010	Adjustable nylon slider	6605-A1-B8	4
19	204101006	Flat washer D10	D10-GB95	4
20	204301002	Circlip	D12-GBT894_2	2
21	206201001	Cotter pin	D2_5X30-GB91	2
22	202109050	Hex socket cylinder head screw	M12X20_GB70	4
23	203101012	Hex nut	M20-GB6170	8
24	202205005	Hex socket flat head tightening screw	M20X140_GB77	4
25	203101004	Hex nut M6	M6-GB6170	12
26	202109021	Hex socket cylinder head screw	M6X20-GB70	12
27	202101027	Cross socket cap head screw M6*8	M6X8-GB818	3
28	202110004	Hex socket button head screw	M8X12_GB70_2	2
29	202109031	Hex socket cylinder head screw M8*30	M8X30-GB70	6
30	208106002	Pressed oil cup M8	M8YP_GB7940_4	2

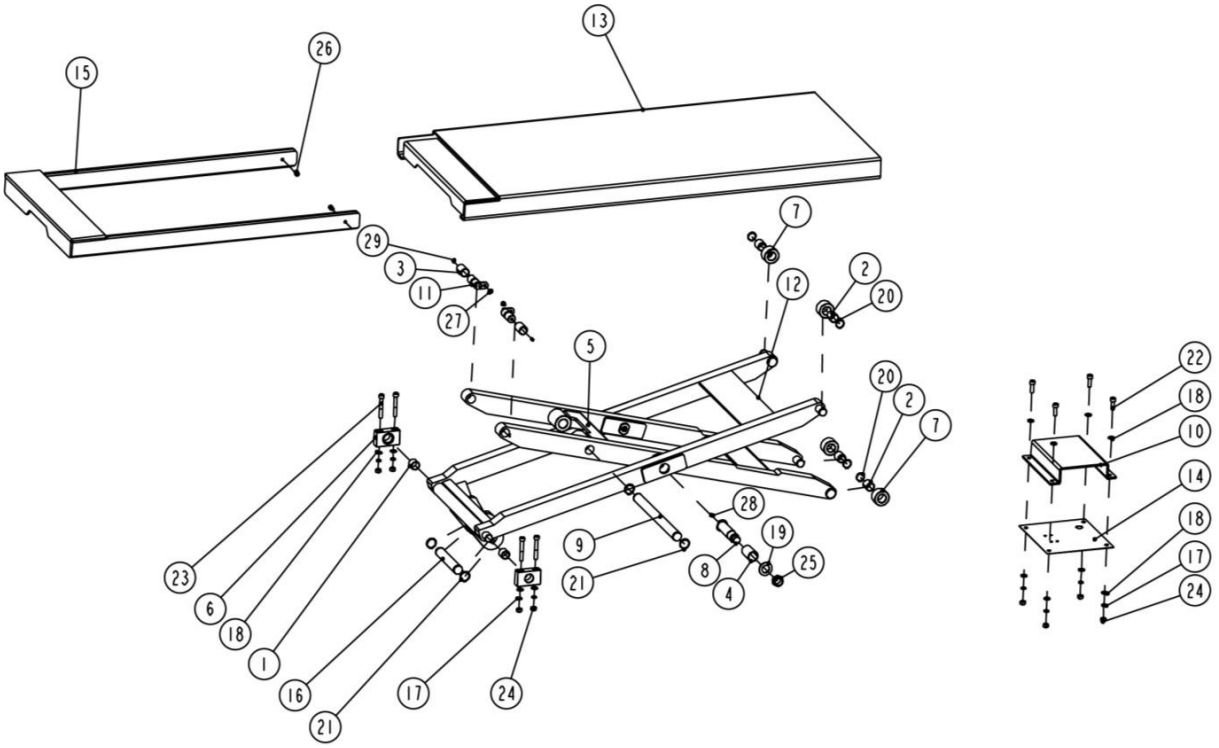


POS.	Code	Name	Specification	Qty
1	205101015	Bearing	2840_SF-2X	1
2	205101034	Bearing	4030_SF-2X	2
3	614025069	Mechanical lock	6604V2-A5-B3	1
4	410252381	Shaft of UP auxiliary cylinder	6604V2-A5-B4	1
5	410252391	Shaft of DOWN auxiliary cylinder	6604V2-A5-B5	1
6	615025017B	Secondary oil cylinder	6604V2-A5B-B1	1
7	614025070	Oil cylinder sheath	6604V2-A5B-B2	1
8	310501005	Air cylinder	CQ2B32-30D	2
9	204301012	Circlip	D28_GB894_1	2
10	204301014	Circlip	D40-GB894_1	2
11	310101024	Pneumatic straight connector	KCL6-01	2
12	202109023	Hex socket cylinder head screw	M6X30-GB70	8
13	203101005	Hex nut	M8-GB6170	2
14	202110005	Hex socket button head screw	M8X20_GB70_2	2
15	208106001	Oil cup	M8YB_GB9740_1	1
16	310201003	Silencer	PSV1_8	2



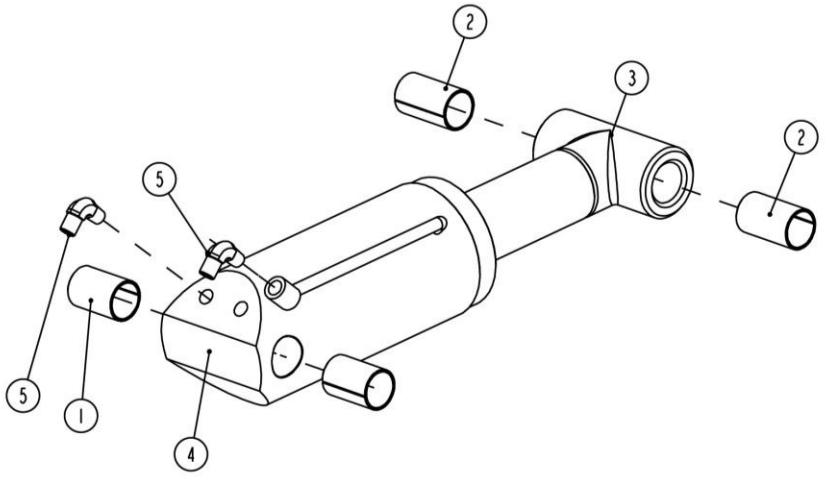
POS.	Code	Name	Specification	Qty
1	205101015	Bearing	2840_SF-2X	2
2	205101054	Bearing	3030_SF-2X	2
3	205101026	Bearing	3525_SF-2X	2
4	205101034	Bearing	4030_SF-2X	4
5	410200111	Spacer	6503-A3-B4	2
6	410240031	Adjustable washer	6603GN-A10	4
7	410250291	Pressure plate	6604B-A7-B7	1
8	615025004B	Main oil cyliner	6604V2-A5-B1	1
9	615025017B	Secondary oil cylinder	6604V2-A5B-B1	1
10	614025045	Start plate	6604V2-A6-B1	1
11	410252401	Wheel shaft of start plate	6604V2-A6-B2	1
12	410250231	Start rotor wheel	6604V2-A6-B3	2
13	410252411	Mid shaft of start plate	6604V2-A6-B4	1
14	614025081	UP shaft of oil cylinder	6604V2-A6-B5	1
15	410252430	Spacer	6604V2-A6-B6	1
16	204301012	Circlip	D35-GB894_1	2
17	202111014	Hex socket flat head screw M12*20	M12X20_GB70_3	1

POS.	Code	Name	Specification	Qty
18	202206007	Hex socket tapping screw M8*12	M8X12-GB78	2
19	202111007	Hex socket flat head screw M8*20	M8X20_GB70_3	2
20	208106001	Oil cup	M8YB_GB9740_1	2
21	208106002	Pressed oil cup M8	M8YP_GB7940_4	4

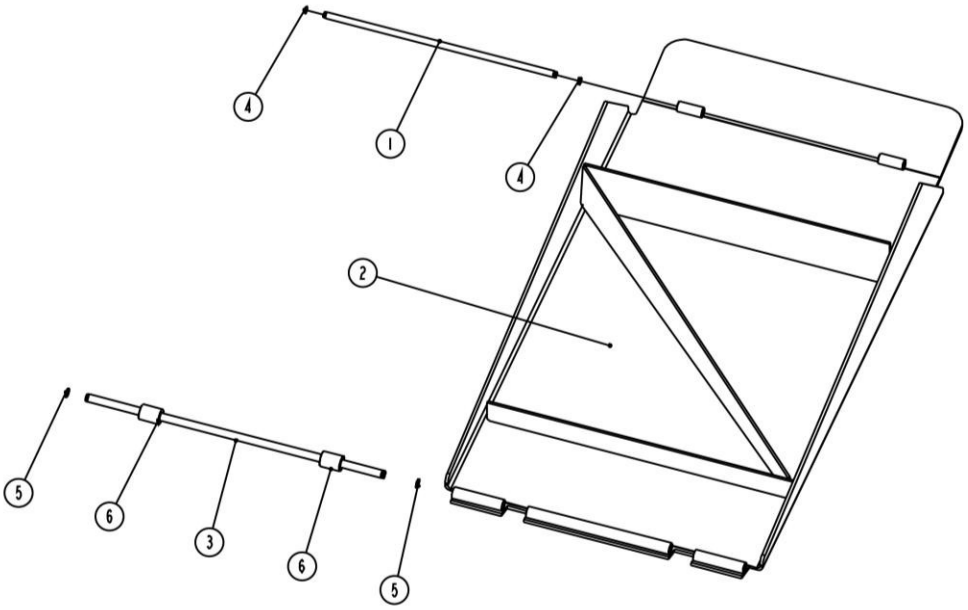


POS.	Code	Name	Specification	Qty
1	205103003	Flange bearing	2525_SF-1X	2
2	205101012	Bearing	2530_SF-1X	4
3	205101094	Bearing	2540_SF-2X	2
4	205101025	Bearing	3058_SF-2X	2
5	614027270 B	Inside connection rod of the secondary lift	6435BWF-C05	1
6	410276701	DOWN holder of secondary lift	6435BWF-C03-20	2
7	410276711 B	UP and DOWN wheel	6435BWF-C03-21	4
8	410276721 C	Middle shaft	6435BWF-C03-22	2
9	410276731	Piston shaft	6435BWF-C03-23	1
10	410276813	Limit switch plate of secondary lift	6435BWF-C11-1	1
11	612019504	Bracket holder shaft	65012-A1-B5	2
12	614025046 B	Outside bracket of the secondary lift	6604V2-A7-B1	1
13	614025048	Platform of the secondary arm	6604V2-A7-B3	1

POS.	Code	Name	Specification	Qty
14	410254430 B	Anti-abrasive plate	6604V2-A7-B4	1
15	614025050	Extension platform	6604V2-A7-B5	1
16	410254541	DOWN shaft of the secondary lift	6604V2-A7-B7	1
17	204201005	Spring washer	D10_GB93	8
18	204101006	Flat washer	D10_GB95	12
19	204101012	Flat washer	D24-GB95	2
20	204301009	Circlip	D25-GB894_1	4
21	204301011	Circlip	D30-GB894_1	4
22	202109043	Hex socket cylinder head screw	M10X30_GB70	4
23	202109080	Hex socket cylinder head screw	M10X70_GB70	4
24	203101006	Hex nut	M10_GB6170	8
25	203103018	Hex locking nut	M24ZS	2
26	202109027	Hex socket button head screw	M8X12-GB70	2
27	202110004	Hex socket cap head screw	M8X12_GB70_2	2
28	208106001	Straight pressed oil cup	M8X1_GB7940_1	2
29	208106002	Pressed oil cup M8	M8YP_GB7940_4	2

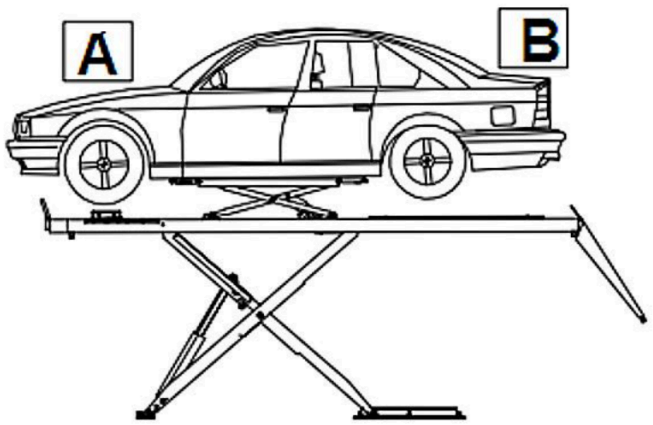


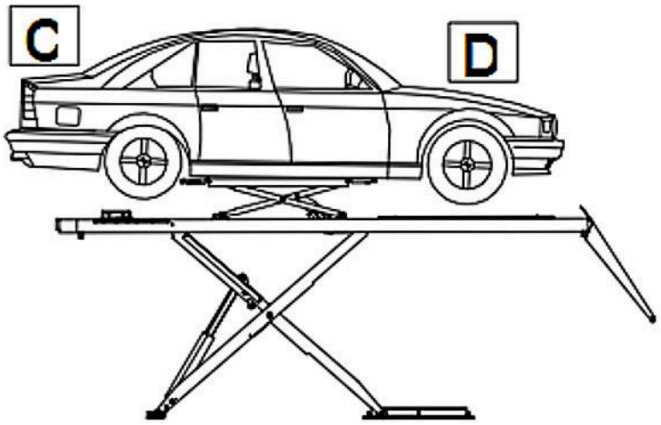
POS.	Code	Name	Specification	Qty
1	205101023	Bearing	3050_SF-1X	2
2	205101025	Bearing	3058_SF-2X	2
3	410212090	Three way oil cylinder connector (small)	6603B-A3-B8	1
4	615025012	Drive cylinder of the jack	6604V2-A8-B1	1
5	410210011	Right angle connector	EEB-WJT-002	2



POS.	Code	Name	Specification	Qty
1	410250211	Ramp shaft	6604V2-A4-B12	1
2	614025055	Ramp	6604V2-A9-B1	1
3	410250161	Ramp wheel shaft of the JACK	6604V2-A9-B2	1
4	204301002	Circlip	D12_GB894_2	2
5	204301012	Circlip	D15_GB894_1	2
6	420180010	Small wheel	MR30-A22-B5	2

Vehicle weight distribution





Model	A (kg)	B (kg)	C (kg)	D (kg)
TW SA-42U-V2 (4.2 t)	2500	1700	2500	1700

Space for notes:

Space for notes:

Space for notes:

EG-declaration of conformity

The company

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

declares hereby, that the **scissor vehicle lift**

TW SA-42U V2 | 4200 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, EN 60204-1/A1:2006/A1:2009;
2014/35/EU

CE Certificate

M6A 17 04 87411 021
N8MA 17 04 87411 022

date of issue: 02.05.2017
place of issue: München
technical file no.: 646641704401

Certification body

TÜV Süd Product Service GmbH,
Ridlerstraße 65
D-80339 München
Notified Body Appointment No. 0123

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: 70585-29

Authorized signatory: Michael Glade
Bensheim, 08.05.17 Qualitätsmanagement

Twin Busch GmbH | Amperestraße 1 | D-64625 Bensheim
Tel.: +49 (0) 6251-70585-0 | Fax: +49 (0) 6251-70585-29 | info@twinbusch.de