

**Model No. EE-HX150**

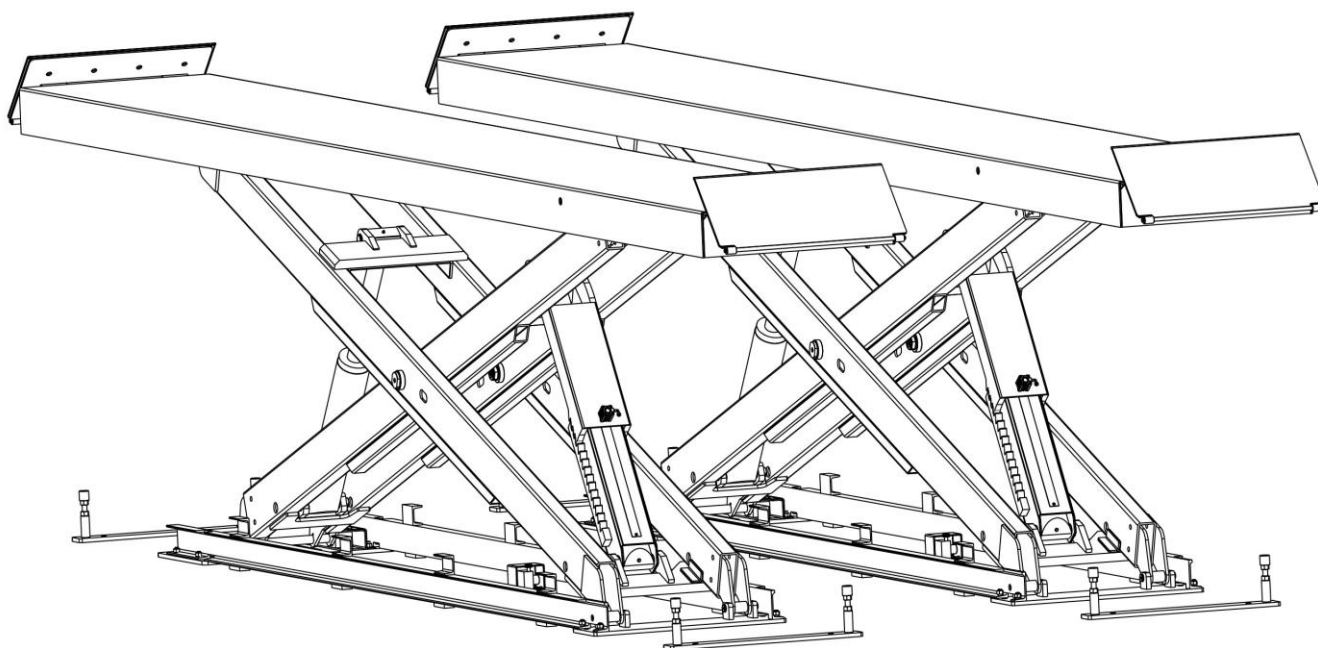
Long platform scissor lift

Lifting Capacity 15000kg

**Installation, Operation  
and Parts Manual**



**EAE**



*Distributed by*

*Please read this entire manual carefully and completely before installation or operation of the lift.*

**DATE: 21/02/2024**

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## IMPORTANT NOTES

Before start up, connecting and operating EAE products, it is absolutely essential that the operating instructions/owner's manual and, in particular the safety instructions are studied carefully. By doing so you can eliminate any uncertainties in handling EAE products and thus associated safety risks up front; something which is in the interest of your own safety and will ultimately help avoid damage to the device. When an EAE product is handed over to another person, not only the operating instructions but also the safety instructions and information on its designated use must be handed over to the person.

By using the product you agree the following conditions:

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The use of non-approved hardware will result in a modification of our products and thus to the exclusion of any liability or warranty, even if such hardware has been removed again in the interim.

It is not permissible to make any changes to our products and these are not only to be used together with genuine accessories and genuine replacement parts. Otherwise any warranty claims will be invalid.

### **Liability**

The liability of EAE is limited to the amount that the customer has actually paid for this product. This exclusion of liability does not apply to damages caused through willful misconduct or gross negligence on the part of EAE.

**All information in this manual is believed to be correct at time of publication.**

**EAE reserves the right to amend and alter technical data and composition without prior notice.**

**Please confirm at time of ordering.**

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# SAFETY NOTES

## 1.1 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.

## 1.2 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.

### 1.2.1 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.

### 1.2.2 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.

### 1.2.3 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 opinion on lifting platforms.

### 1.3 Important safety notices

- 1.3.1 Recommend for indoor use only. DO not expose the lift to rain, snow or excessive moisture.
- 1.3.2 Only use this lift on a surface that is stable, level and dry and not slippery, and capable of sustaining the load. Do not install the lift on any asphalt surface.
- 1.3.3 Read and understand all safety warnings before operating the lift.
- 1.3.4 Do not leave the controls while the lift is still in motion.
- 1.3.5 Keep hands and feet away from any moving parts. Keep feet clear of the lift when lowering.
- 1.3.6 Only these properly trained personnel can operate the lift.
- 1.3.7 Do not wear unfit clothes such as large clothes with flounces, tires, etc., which could be caught by moving parts of the lift.
- 1.3.8 To prevent evitable incidents, surrounding areas of the lift must be tidy and with nothing unconcerned.
- 1.3.9 The lift is simply designed to lift the entire body of vehicles, with its maximum weight within the lifting capacity.
- 1.3.10 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.
- 1.3.11 do not rock the vehicle while on the lift or remove any heavy component from vehicle that may cause excessive weight shift.
- 1.3.12 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.
- 1.3.13 Lower the lift to its lowest position and do remember to cut off the power source when service finishes.
- 1.3.14 do not modify any parts of the lift without manufacturer's advice.
- 1.3.15 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.

## 1.4 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.

# SAFETY ADVICE

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 <p>Only trained personnel are allowed to operate the lift.</p>	<p>Always keep lift area clear when lowering or raising vehicle.</p> 
 <p>Do not try to raise a vehicle exceeds the rated capacity.</p>	<p>Never raise or lower a vehicle with one side platform.</p> 
 <p>Watch closely the vehicle during raising or lowering.</p>	<p>It is not allowed to work under the vehicle if safety teeth are not engaged.</p> 
 <p>Make sure that two platforms are of equal height from the floor when safety teeth engaged.</p>	<p>Avoid excessive rocking of vehicle while on lift.</p> 
 <p>Do not climb onto the lift platforms or raised vehicle during lifting or lowering.</p>	<p>Always keep the lift pit clean and clear of any objects or contaminants.</p> 
 <p>Do not change the safety mechanism.</p>	<p>Carryout maintenance regularly as indicated in the manual.</p> 

## 1.5 Potential safety risks

### 1.5.1 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.

### 1.5.2 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 (A). 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.

### 2.1 Packages list for delivery

Package	Packed by	Dimension(mm)	Weight(kg)/ Package	Package QTY
Control cabinet	Wooden case	700x560x1300	Approx. 165	1
Platform assembly	Steel tube	8050x910x550	Approx.2690	2
Short ramp assembly	Plastic wrap	420x830x51	Approx.75	2
Support stand assembly	Plastic wrap	900x150x250	Approx.13.5	4
Rope sensor assembly	Plastic wrap	160x240x190	Approx.3.5	2
Long ramp assembly (optional)	Plastic wrap	2975x1050x450	Approx.690	1
Hose covers (optional)	Plastic wrap	2800x360x100	Approx.44	1

The packs must be kept in a covered and protected area in a temperature range of  $-10^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$ . 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.

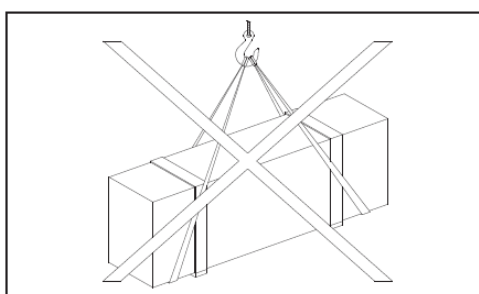
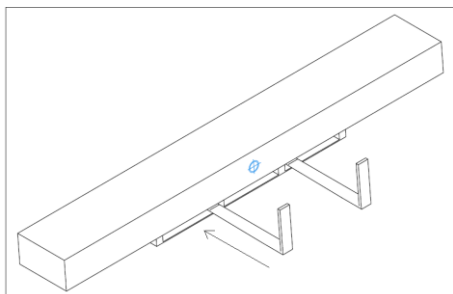
If stacking is unavoidable, use all appropriate precautions:

- 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.

### 2.2 Lifting and handling

The packs can be lifted and transported only by using lift trucks. 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.**

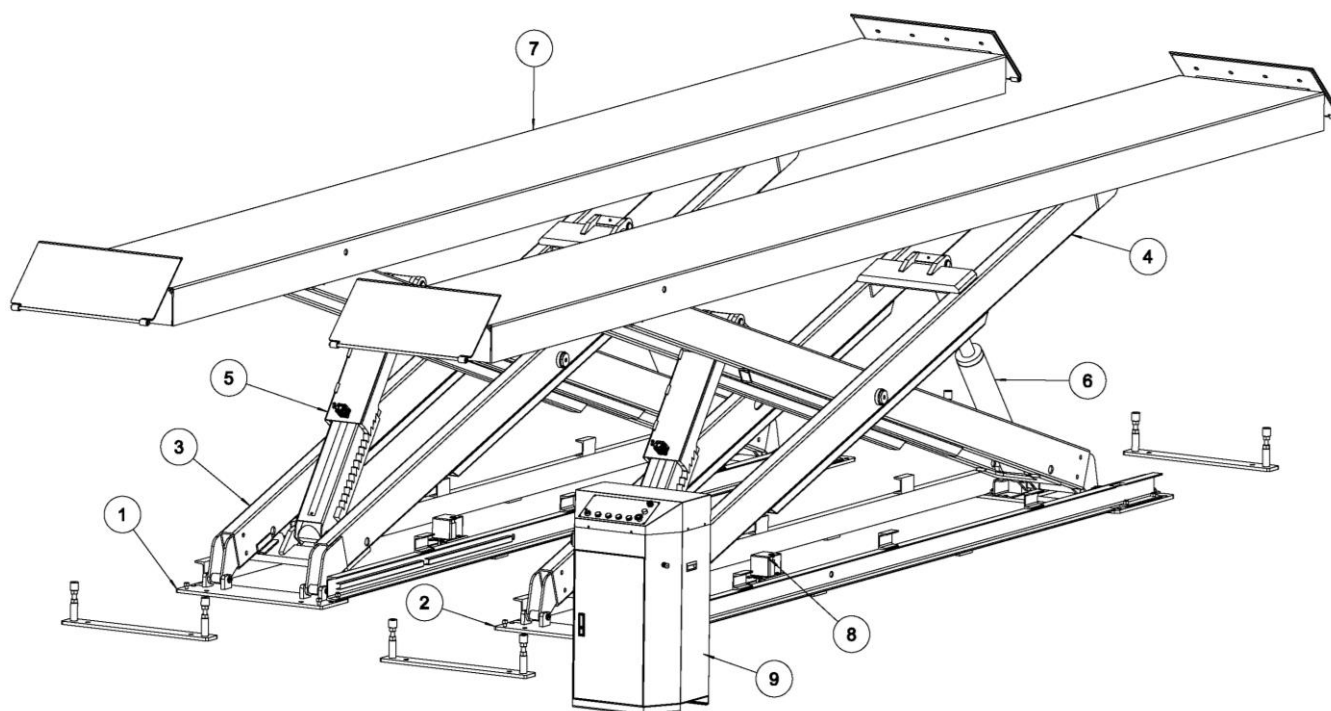


## PRODUCT DESCRIPTIONS

### 3.1 General descriptions

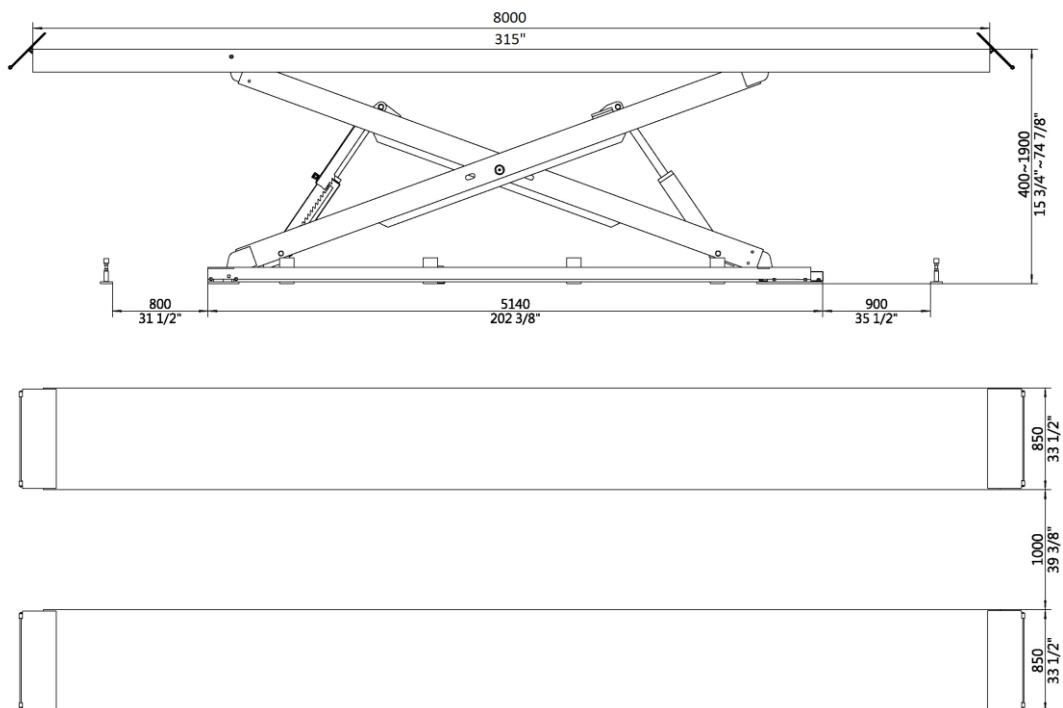
This is heavy duty wheel-support SCISSOR vehicle lift. It is preferably for recessed mounting and is mainly composed by two lifting platforms and a power and control cabinet. Being hydraulically powered, the gear pump delivers oil to push upwards the pistons of oil cylinders and let the scissor arms of the lift rise accordingly.

### 3.2 Construction of the lift

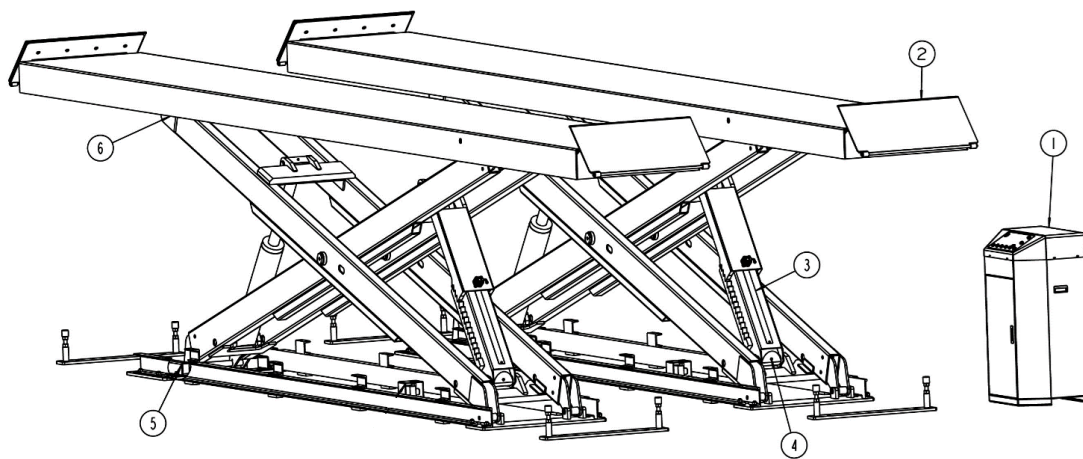


1. Base frame assembly -615067106
2. Base frame assembly -615067101
3. Support scissor arm B assembly-615067107
4. Support scissor arm assembly-615067104
5. Mechanical locking assembly-615067108
6. Hydraulic cylinder assembly
6. Platform assembly
7. Rope sensor assembly
8. Control unit

### 3.3 Dimensions



### 3.4 Safety device descriptions



POS.	Safety device	Function
1.	24V safe control voltage	Safety voltage for operator.
2	Wheel stop plate	Prevent wheels of the lifted vehicle from rolling off the platform.
3	Mechanical locking system	Protect the lifting platform from sudden collapse in case of hydraulic leakage.
4	Anti-surge restrictive valve	Slow down the speed of descending in case there is leakage in the hydraulic circuit.
5	Overturning protection	Stabilize the platform in case of unbalanced load distribution.

### 3.5 Technical data

Rated capacity of the main lift (kg)	15000
Full raised height of the lifting platform (mm)	1900
Initial height (mm)	400
Full raised time (with rated load)	Approx.85s (3.5kWx2, 3ph )
Full lowered time (with rated load)	70s
Max .Hydraulic working pressure (MPa)	24
Pneumatic working pressure (bar)	6-8
Oil tank volume (L)	40

## INSTALLATION INSTRUCTIONS

### 4.1 Preparations before installation

#### 4.1.1 Space requirements.

**Indoor installation only.** Refer to 3.4 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 for driving vehicles on and off.

#### 4.1.2 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. Requirements for power supply cable of the installation site: at least 2.5mm<sup>2</sup> wire core for 3Ph power.  
*Attention: electrical connection must be done by licensed technicians.*
- Refer also to the corresponding information on the name plate and in the operation instructions. Before doing electrical connection, make sure the lift is electrically adapt to the local power supply.
- Routing of the compressed air connection to the installation location.

#### 4.1.3 Foundations preparations (see Annex 1, floor plan)

C25/30 concrete base with a minimum thickness of 200mm.

Surface: Horizontal and even (Gradients max. 0.5 %).

Newly built concrete ground must be older than 20days.

#### 4.1.4 Tools and equipment needed for installation

Tool Description	Descriptions	Qty
Electrical drill	D18 drill bit. M18x160 D12 drill bit. M10X100	1
Open spanner	D17-19mm	2
Adjustable spanner	At least D30mm	1

Tool Description	Descriptions	Qty
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 3000kg	1
Lifting strap	Capacity,1000 kg	2
Lifting strap	Capacity,1500 kg	2
Torque spanner	MD400	1

### 4.1.5 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	Description	Specification	Qty
1	Platform assembly	HX15S	2
2	Control cabinet	(3.5kWx2, 3ph )	1
3	Short ramp assembly		4
4	Support stand assembly		4
5	Rope sensor assembly		2
6	Expansion bolt	M18x160	24
7	Expansion bolt	M10X100	4
8	Pneumatic hose	8mm	2m
9	Installation manual		1
10	Key		1
11	Oil tank label		1

### 4.2 Installation attentions

4.2.1 Tighten all hydraulic and electrical connections.

4.2.2 Tighten all screws, nuts and bolts.

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

### 4.3 General Installation Steps

#### **ONLY TRAINED AND QUALIFIED INSTALLERS CAN PERFORM LIFT INSTALLATION DUTIES.**

##### **Step 1: Dismantle the package of the lifting platforms.**

Remove the carton and plastic wraps on the platform.

**WARNING! : Take off oil hose protectors when cut off the packing strips.**

**WARNING! : Avoid scratching the painting surface and hoses.**

##### **Step 2: Place the lifting platform at expected installation site with a forklift and lifting straps.**

Raise the platform by using a forklift and 2 lifting straps until the mechanical lock is engaged. Hoist the platform onto the expected installation site.

**WARNING! : Before hoisting, make sure the hoses and wires are well protected against damage.**

**WARNING! : It is necessary to hold the platform during the hoisting process. Irrelevant person is not allowed in installation area.**

##### **Step 3: Open the package of the control cabinet and take out accessories in it.**

##### **Step 4: Connect hydraulic oil hoses.**

Connect the oil hoses fittings to the power unit as per the diagram for oil hose connection. Annex 3.

Connect as per the marks attached with the hoses. Don't let any solid substance go into the hydraulic line.

Adequate care must be taken to assure that all fittings and connectors are screwed tight against leakage.

##### **Step 5: Connect the pneumatic release system**

**Refer to Annex 4.**

Screw torque for pneumatic hose connector is 20Nm.

External compressed air shall be prepared by the end user before installation. Pneumatic pressure 6-8 bar.

Keep the hoses clean during the connection.

Set the pneumatic pressure between 6-8 bars.

Push upward the button indicated in the following fig and turn the button until the hand of the meter points to the NUMBER "6". Push the button down thereafter.



It is suggested to add ISO VG32 mechanical oil into the oil tank.

Adjust the oil dipping quantity using the button on top of the oil cup.

### Step 6: Connect the electrical system.

Refer to electrical connection diagram before making the connection.

**Attention:** *electrical system connection must be done by qualified electricians.*

Connect the wires of limit switches and sensors.

Connect the main power supply cable to external electricity supply.

(For three phase power supply, if the lift doesn't raise and the motor turn in the wrong direction, in such event, interchange the connection of wire L1 with L2 or L3 to correct the phase sequence.)

### Step 7: Fill with hydraulic oil.

**CLEAN AND FRESH OIL ONLY. DON'T FILL THE TANK COMPLETELY FULL.**

**Lift must be fully lowered before changing or adding hydraulic oil**

Fill at least **38** liters hydraulic oil into the oil reservoir.

Add more oil after running the lift for several cycles until the lift can rise to the maximum lifting height.

**Note:** It is suggested to use HM NO.46 hydraulic oil. Use HM NO.32 hydraulic oil when temperature is below 10 degree Celsius.

**Change the oil 6 months after initial use and change once per year thereafter.**

### Step 8: Zero the height sensors and bleed the hydraulic lines

Check the connection of the hydraulic and electrical system before zero and bleed operation.

Refer to 5.2 and get familiar with the function of control buttons and switches.

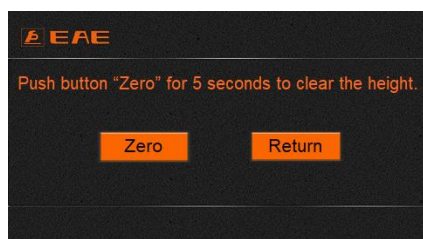
**Attention:** Correct the sequence order of the motor's wiring, in the case that the motor runs but the platform does not move upwards after pushing "UP" button for more than 30 seconds. Interchange wires U, V in the control cabinet).

#### 1. Steps to zero the height sensors

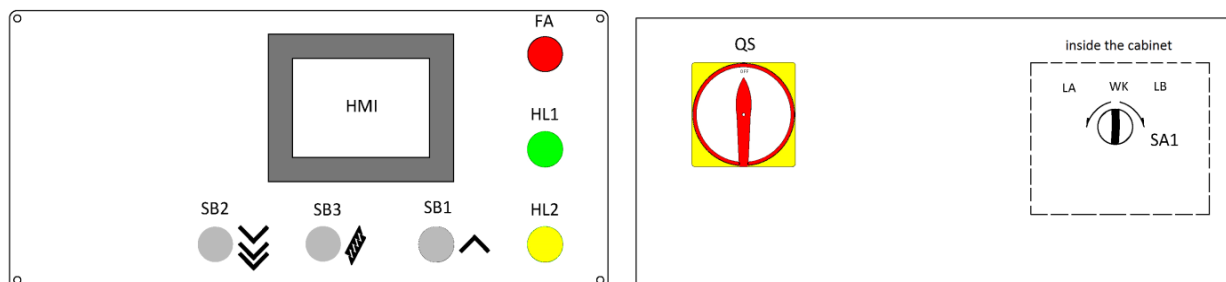
- 1) Connect the power supply and turn on the Main Switch.
- 2) Turn SA1 to LA and lower platform A till the bottom.
- 3) Turn SA1 to LB and lower platform B till the bottom.
- 4) Turn SA1 to WK and push "Zero" button on the right corner of the HMI screen.

It must be attended that "Zero" is only allowed when both platforms have been lowered completely to bottom position almost with no obvious physical height deviation. Never zero on condition of obvious desynchronization.

HMI screen



## 2. Steps to bleed the hydraulic lines



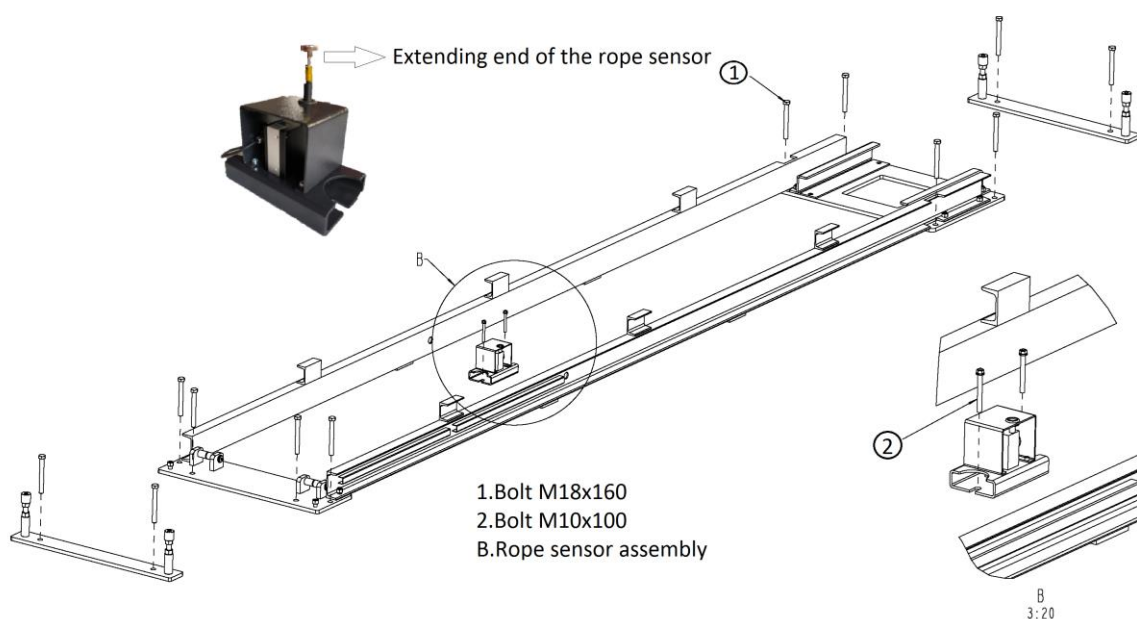
1. Connect the power supply and turn on the Main Switch.
2. Zero the height sensors. **(Refer to the instruction: Steps to zero the height sensors)**
3. Turn SA1 to LA and raise and lower Platform A for 2 or 3 complete cycles to bleed the hydraulic lines.
4. Turn SA1 to LB and raise and lower Platform A for 2 or 3 complete cycles to bleed the hydraulic lines.
5. Turn SA1 to WK, raise and lower both platforms to check the synchronization.

### Step 9: Fix with expansion bolts.

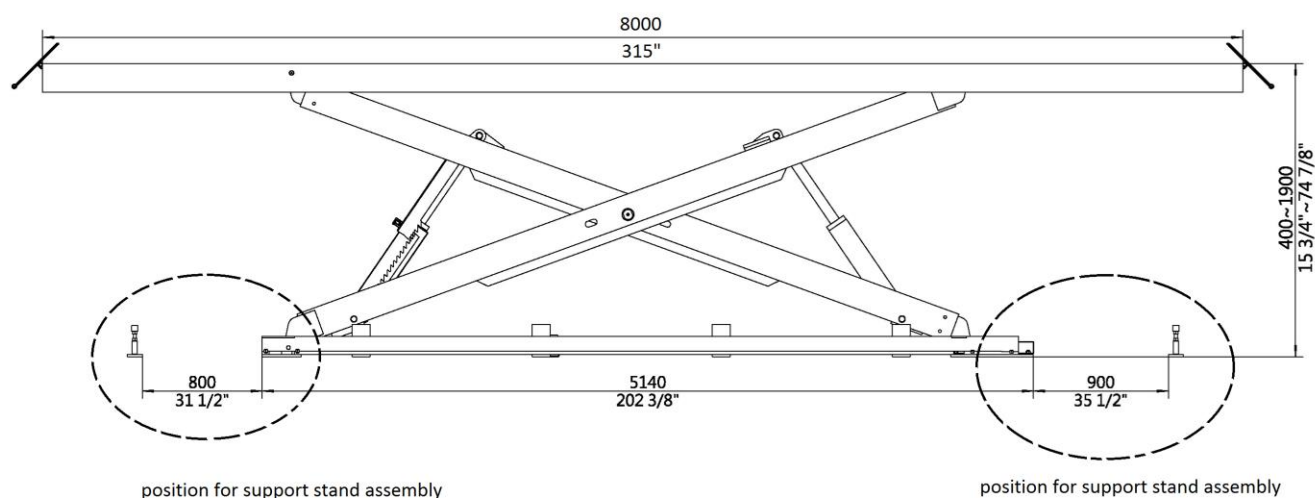
**Speciation of the bolts: M18x160 and M10x100.**

- 1) Before anchoring, it is necessary to check again the position for each base plates by referring to the dimension scheme as well as the corresponding installation requirements.
  - 2) Drill holes using D18 carbide tipped masonry drill bit. Make sure to drill vertically down.
  - 3) Clean the hole and check again the position of the base plates to ensure they are correctly positioned.
  - 4) Use a spirit level to check the vertical alignment of the two adjacent base plates.
  - 5) Impact and drive anchoring bolt into hole until its nut and washer contacts the base.
  - 6) For bolts **M18x160**, the nuts shall be tightened with torque wrench to 80Nm.
- For bolts **M10x100**, the nuts shall be tightened with torque wrench to 10Nm.

The Rope sensor assembly shall be installed with its extending end being vertical to the floor when it is placed into the reserved socket under the platform.







#### 4.4 Items to be checked after installation.

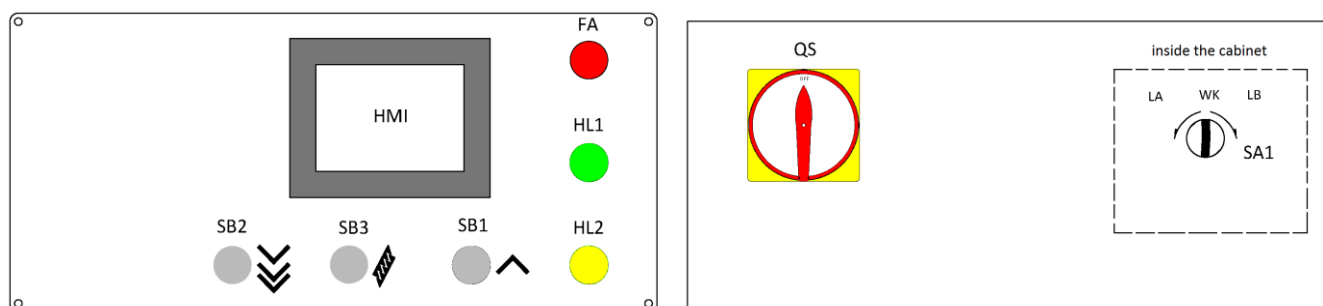
S/N	Check items	YES	NO
1	Screw torque of expansion bolts : 80-100Nm;	√	
2	Rising speed $\geq 20\text{mm/s}$ ;	√	
3	Noise with rated load $\leq 75\text{dB(A)}$ ;	√	
4	Grounding resistance: not bigger than $4\Omega$ ;	√	
5	Height difference of the two carriages $\leq 5\text{mm}$ ;	√	
6	Mechanical catch unit is robust and synchronized when running with rated load ;	√	
7	All control buttons works as "hold to run" ;	√	
8	The switches work well ;	√	
9	The grounding wire is connected ;	√	
10	The carriage rises and lowers smoothly ;	√	
11	There is no abnormal noise when run with load ;	√	
12	There is no oil leakage when run with load ;	√	
13	The expansion bolts, nuts or circlips are well secured or tightened ;	√	
14	The max lifting height can be reached ;	√	
15	All Safety advices, name plate and logos are clear.	√	

# OPERATION INSTRUCTIONS

## 5.1 Precautions

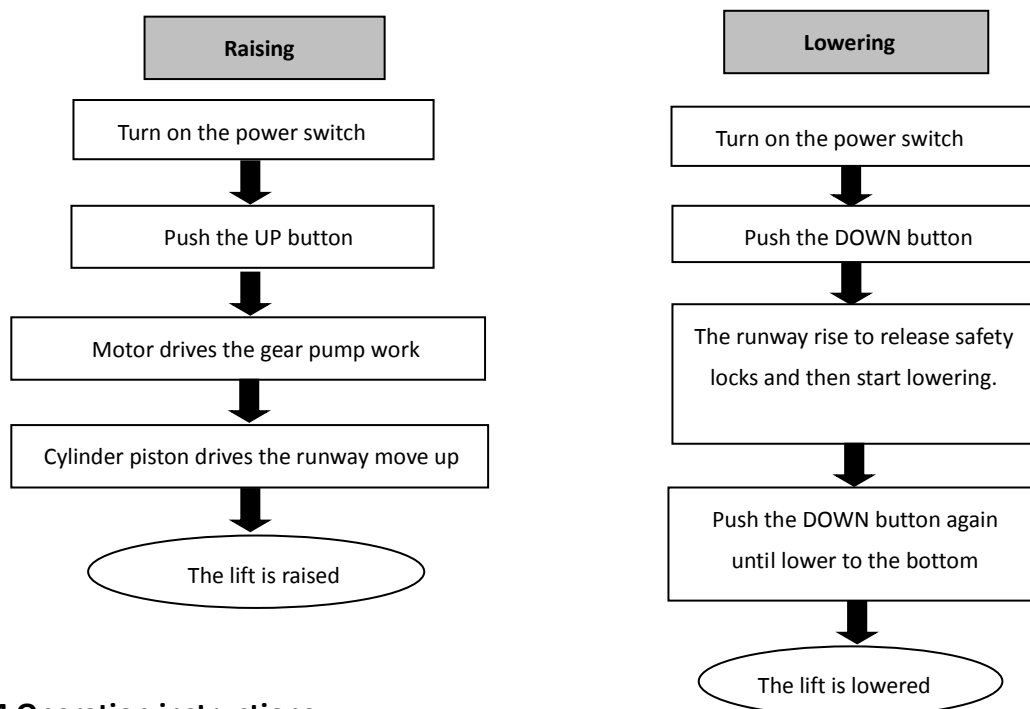
- 5.1.1 Read and digest the complete operation instructions before operating the lift.
- 5.1.2 Only authorized persons are permitted to operate the lift.
- 5.1.3 Do not try to raise the vehicle with excessive length or width.
- 5.1.4 The space above and below the load as well as of the loading carrying devices shall be free of obstructions.
- 5.1.5 Position supporting pads to pick-up positions recommended by vehicle manufacturers. (Not necessary for wheel support lifting)
- 5.1.6 Check the vehicle after raising a short distance to ensure that it is corrected and safely positioned.
- 5.1.7 The load carrying device shall be observed by the operator throughout the motion of the lift.
- 5.1.8 Engage the safety locking mechanism before entering under the raised vehicle.
- 5.1.9 Avoid excessive rocking of vehicle while on the lift
- 5.1.10 it is forbidden for people to stand in the field of motion during raising or lowering movement.
- 5.1.11 do not climb onto the load or load carrying device when they are raised.

## 5.2 Descriptions of control unit



POS.	Description	Function
HMI	Touch screen	Zero the sensor and display the rising height
FA	Alarm buzzer	Audible warning for descent of the final travel.
HL1	Green indicator	Light to show the power is on.
HL2	Yellow Indicator	Light to warn excessive desynchronization. (height deviation of the two platforms being more than 30mm)
SB1	UP button	Control the rising movement.
SB2	DOWN button	Control the initial lowering movement. Control the final lowering movement.
SB3	LOCK button	Engage the mechanical locking device.
SA1	Selection switch	Turn to LA to control platform A independently. Turn to LB to control platform B independently. Turn to WK to control both platform A and B synchronously.
QS	Main switch	Power on /off

### 5.3 Flow chart for operation



### 5.4 Operation instructions

**The lift must be only used in a static position for lifting and lowering vehicles.**

**Only use this lift on a surface that is stable and capable of sustaining the load. Do not install the lift on any asphalt surface.**

To avoid personal injury and/or property damage, permit only trained personnel 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 lifting platform.

Never raise just one end, one corner or one side of vehicle.

Turn SA1 to WK mode before normal use. The normal users are not allowed to open the door of control cabinet.

#### 5.4.1 Lift with the wheel-support platform

**Max. Capacity: 15000KG**

Park the vehicle to be lifted on the platform correctly, making it is positioned against rolling and its steering lock off

Make sure the platform is neither loaded too heavy at front nor at rear and center of balance shall be in the moving scope of support arms.

#### **Raising**

1. Turn on the main power switch.
2. Drive and park the vehicle midway between two platforms.
3. Push the "UP" button to raise the vehicle a bit off the ground and check again the stability of the vehicle.
4. Having raised the vehicle to the expected height, push the "Safety Lock" button to ensure the mechanical safety lock is engaged.
5. Check again the stability before performing maintenance or repair work.

#### **Lowering**

**When lowering the lift, pay careful attention that all personnel and objects are kept clear.**

1. Push the DOWN I button to lower the lifting platform. It will stop lowering at safety height.
2. Push DOWN II button to continue lowering the platforms which accompanies with an audible warning.

3. Having been lowered completely, remove rubber pads and other tools to provide an unobstructed exit for moving vehicle from the lift area.

4. Drive the vehicle away.

**Attention:** In case of excessive height deviation between the two platforms, the synchronization protection device will be activated to stop any raising or lowering movement. In this case the normal operator needs to ask professional help from maintenance operator to restore the lift to normal working condition.

***Methods for restoring the lift to run normally.***

***Clear the blockage if the load carrying device is blocked***

Open the door of the control cabinet;

Turn SA1 to LA;

Push the UP button or DOWN button to adjust the height of Platform A until it has no height deviation with Platform B.

Turn SA1 to WK

Lower till the bottom.

Check and find out if any other cause that leads to desynchronization.

## 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. The troubles will be judged and solved much faster if you could provide us more details or pictures of the trouble.

TROUBLES	POSSIBLE CAUSES	SOLUTIONS
<b>Motor does not run and will not raise.</b>	Excessive desynchronization (excessive deviation in rising height)	Check out cause and align the two platforms.
	The green indicating lamp was off due to no power supply	Connect the power supply.
	The green indicating lamp was off due to damaged power switch(QS ) or due to damaged circuit breaker (QF)	Replace with a new power switch or circuit breaker.
	Disconnected wires for button SB1 or SB2, contactor KM1 or KM2.	Reconnect the wire
	Damaged buttons SB1 or SB2 or damaged contactors KM1 or KM2	Replace with a new button or contactor.
	Burnt-out motor.	Replace with a new motor.
<b>Excessive desynchronization (excessive deviation in rising height)</b>	The rope height sensors (PG1, PG2) were not properly zeroed.	Refer to "Step 8: Zero the height sensors" and zero the sensor properly.
	Either of rope height sensor was damaged.	Replace with a new sensor.
	Leakage in the hydraulic lines	Check out the leaking points and repair correspondingly.
	Either of the balance valve was jammed or damaged.	Clean the valve or replace with a new valve.
<b>Motor runs but will not raise.</b>	The motor run reversely due to phase-sequence error.	Correct the phase-sequence.
	Untightened hose-connectors or ruptured hoses.	Tighten corresponding hose-connectors. Replace the ruptured hoses.
	Detached oil-sucking pipe of the power unit.	Tighten the oil-sucking pipe.
	Detached or damaged cushion valve.	Tighten the valve. Replace the damaged cushion valve with new one.
	Any of the 4 solenoid valve is jammed or damaged.	Clean the valve. Replace the damaged solenoid valve with new one.
	Damaged gear pump.	Replace with a new gear pump.
	Loose relief valve or the valve is jammed.	Tighten or clean the valve.
	No hydraulic oil or insufficient hydraulic oil.	Add enough oil.



TROUBLES	POSSIBLE CAUSES	SOLUTIONS
<b>Not lower (not due to excessive deviation in rising height)</b>	The mechanical locks cannot disengage due to leaking air hose.	Repair correspondingly
	The mechanical locks cannot disengage due to insufficient air pressure.	Repair correspondingly
	The mechanical locks cannot disengage due to non-functioned pneumatic cylinder.	Repair correspondingly
	The mechanical locks cannot disengage due to non-functioned pneumatic solenoid valve.	Repair correspondingly
	The supply wire (coded 0 in the electrical scheme) for the four solenoid was disconnected.	Check out the wire connection
<b>Platforms go down slowly after being raised.</b>	Damaged non-return valve ( Pos.6).	Replace it.
	Any of the 4 solenoid valve was not installed tight.	Tighten the valve.
	Any of the 4 solenoid valve leaks.	Clean the valve. Replace the leaking valve with new one.
	Untightened hose connectors or leaking hoses.	Tighten corresponding hose-connectors. Replace the hoses.
<b>Raise too slow.</b>	Over-worn gear pump	Replace with a new pump.
	Loose oil-sucking pipe	Tighten the pipe.
	Jammed filter	Clean or replace it.
	Unclean and too old hydraulic oil	Change with fresh oil.
<b>Lower too slow.</b>	Jammed oil hose	Check out the jammed points and repair correspondingly.
	Deformed connector	Check out the deformed connectors and repair correspondingly.
	Jammed connector of the cylinder	Clean it or replace with a new one
	Jammed solenoid valve.	Clean it or replace with a new one
	Jammed balance valve.	Clean it or replace with a new one
<b>Rise and lower with vibration</b>	Loose oil sucking pipe.	Tighten the pipe.
	No grease on the sliding surface.	Add grease.

## MAINTENANCE

Easy and low cost routine maintenance can ensure the lift work normally and safely.

Following are requirements for routine maintenance.

Follow the below routine maintenance schedule with reference to the actual working condition and frequency of your lift.

**Lubricated moving parts with NO.1 lithium grease before use.**

S/N	Components	Methods	Period
1	Control buttons	Check if control buttons work as "hold- to -run " and check if they work as the function indicated.	Every day
2	Pneumatic filter	Listen and inspect the filter to ensure no leakage. Inspect and ensure the water level is below its max limit mark and the oil level is above the minimum limit mark.	Every day
4	Hydraulic block and valves	Inspect if the valves leak or not. Clean or change the valve if any leakage.	Every day
5	Oil hoses and connectors	Inspect to ensure no leakage before using the lift.	Every day
6	Pneumatic hoses and connectors	Inspect to ensure no leakage before using the lift.	Every day
7	Mechanical safety catch	Check if both mechanical catches can engage and disengage effectively and synchronously by pushing control buttons.	Every day
8	Terminals in the control unit	Open the control unit, inspect the wire terminals and tighten them if any terminals had become loose.	Every 3 months
9	Joint shafts	Add grease into the oil cups.	Every 3 months
10	Anchored expansion bolts	Check with torque spanner. Screw torque:80Nm	Every 3 months
11	Circlip on the shaft	Check and ensure it is in the slot of the shaft.	Every 3 months
12	Sliding blocks	Add grease onto the tracks for sliding blocks	Every 3 months
13	Lifting platform synchronization	Check the synchronization of both lifting platforms. Ensure both platforms ascend and descend synchronously.	Every day
14	Hydraulic oil	Change the oil 6 months after initial use and once per year thereafter. Inspect the hydraulic oil and change the oil if the oil becomes black or there is dirt in the oil tank.	Every year
15	Whole Lift	Running the lift for several cycles with and without rated load. The lift can run steadily and smoothly with no abnormal noise. Check the synchronization of both lifting platforms. Ensure both platforms ascend and descend synchronously.	Every 3 months

*If users stick to the above maintenance requirements, the lift will always keep a good working condition and its service life could be extended.*





### Annex 1, Floor Plan

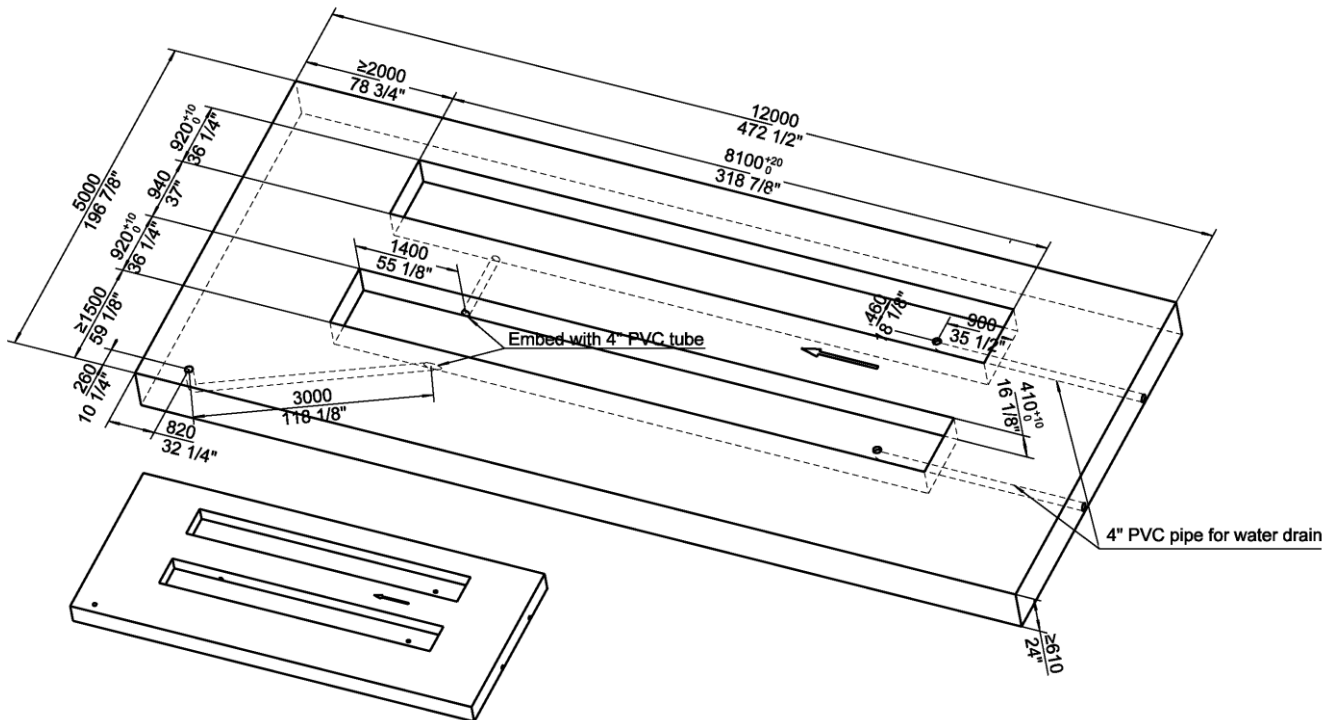
#### Requirements:

C25-C30 concrete base with a minimum thickness of 250mm.

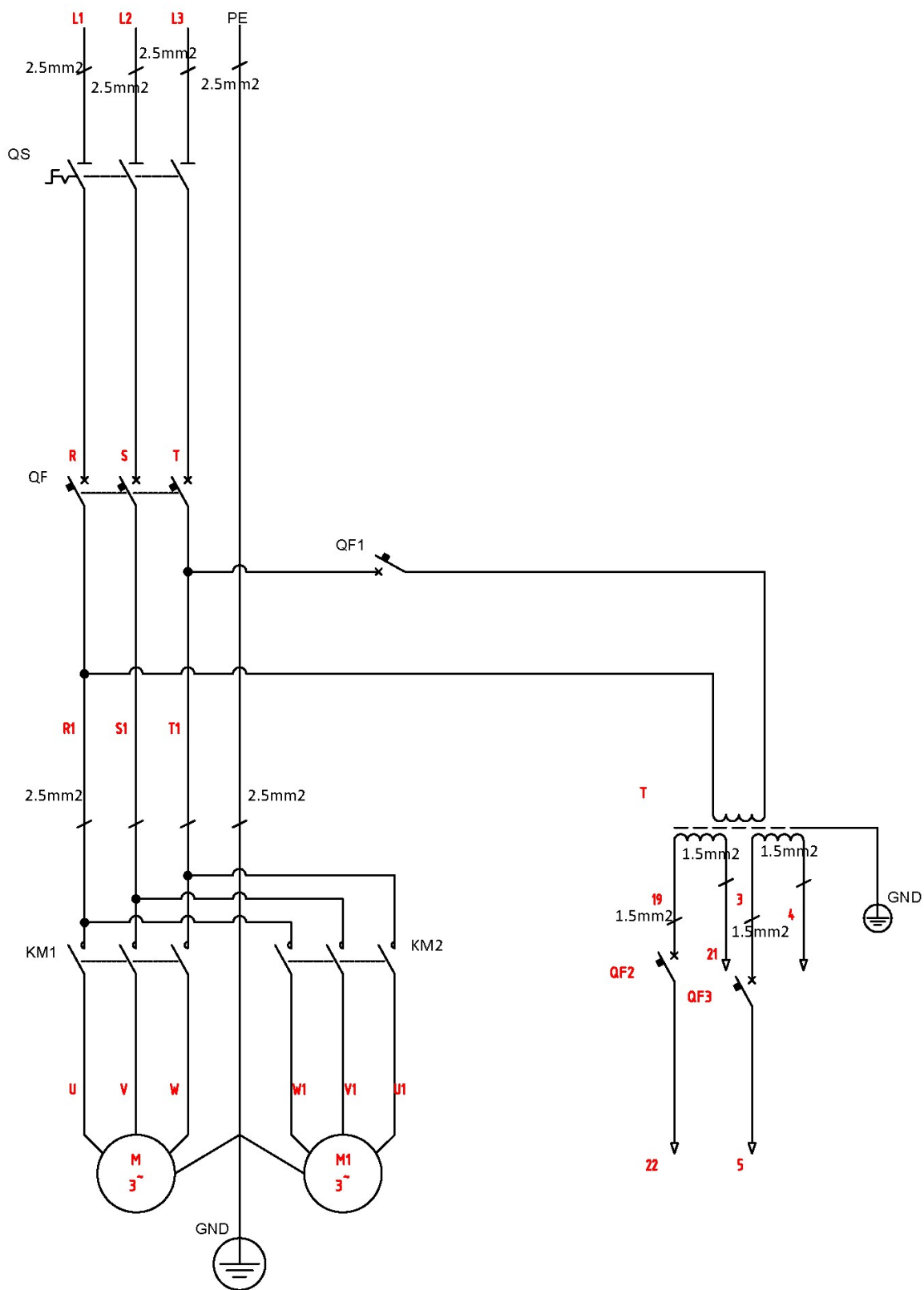
Surface: Horizontal and even (Gradients under the base plate max. 0.5 %)

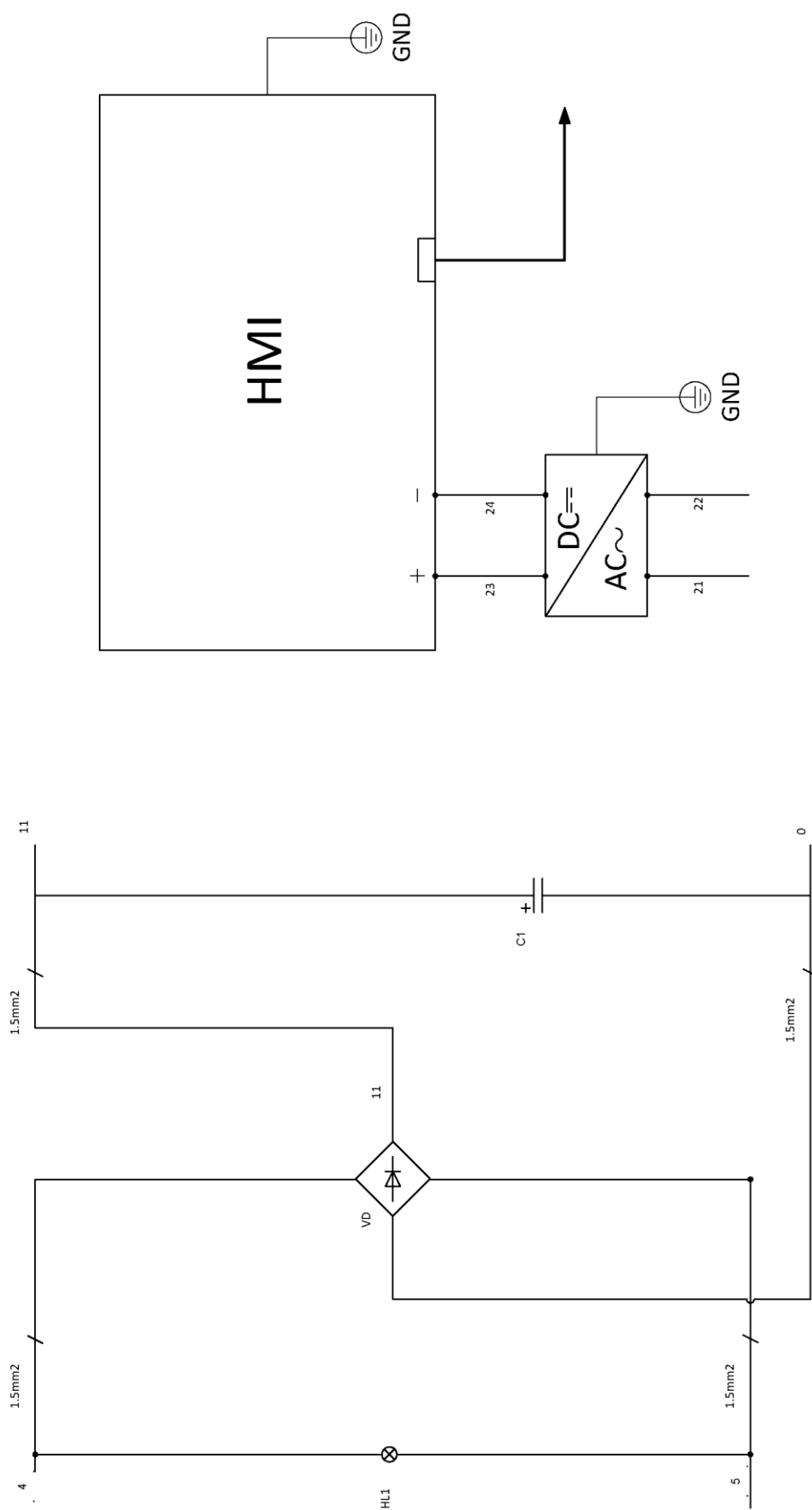
Newly built concrete ground must be older than 20days.

#### Floor Plan for recessed installation

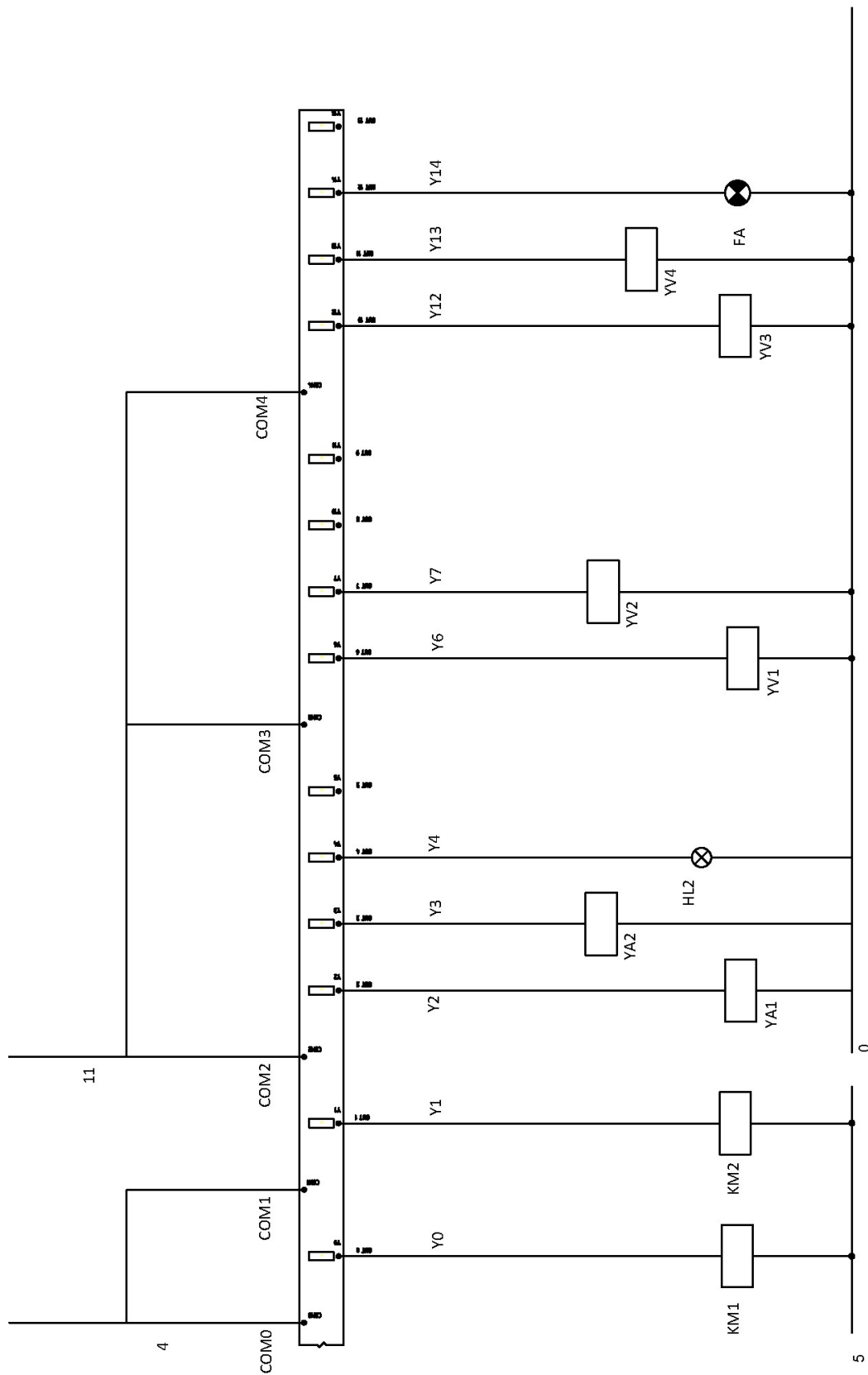


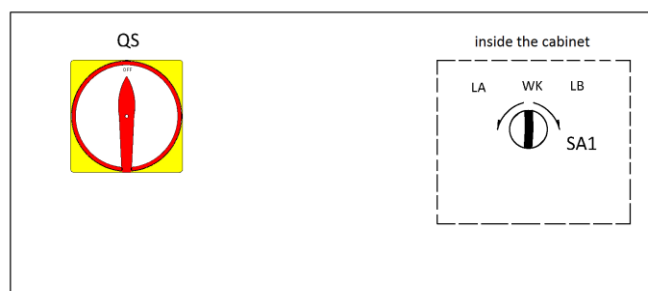
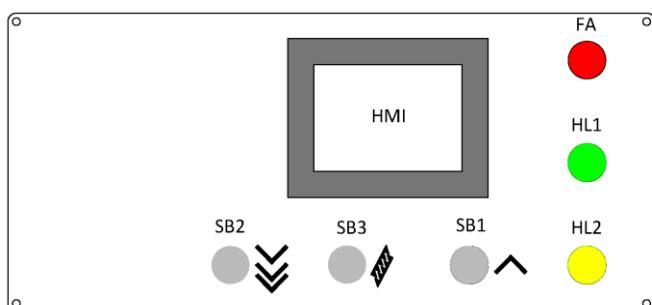
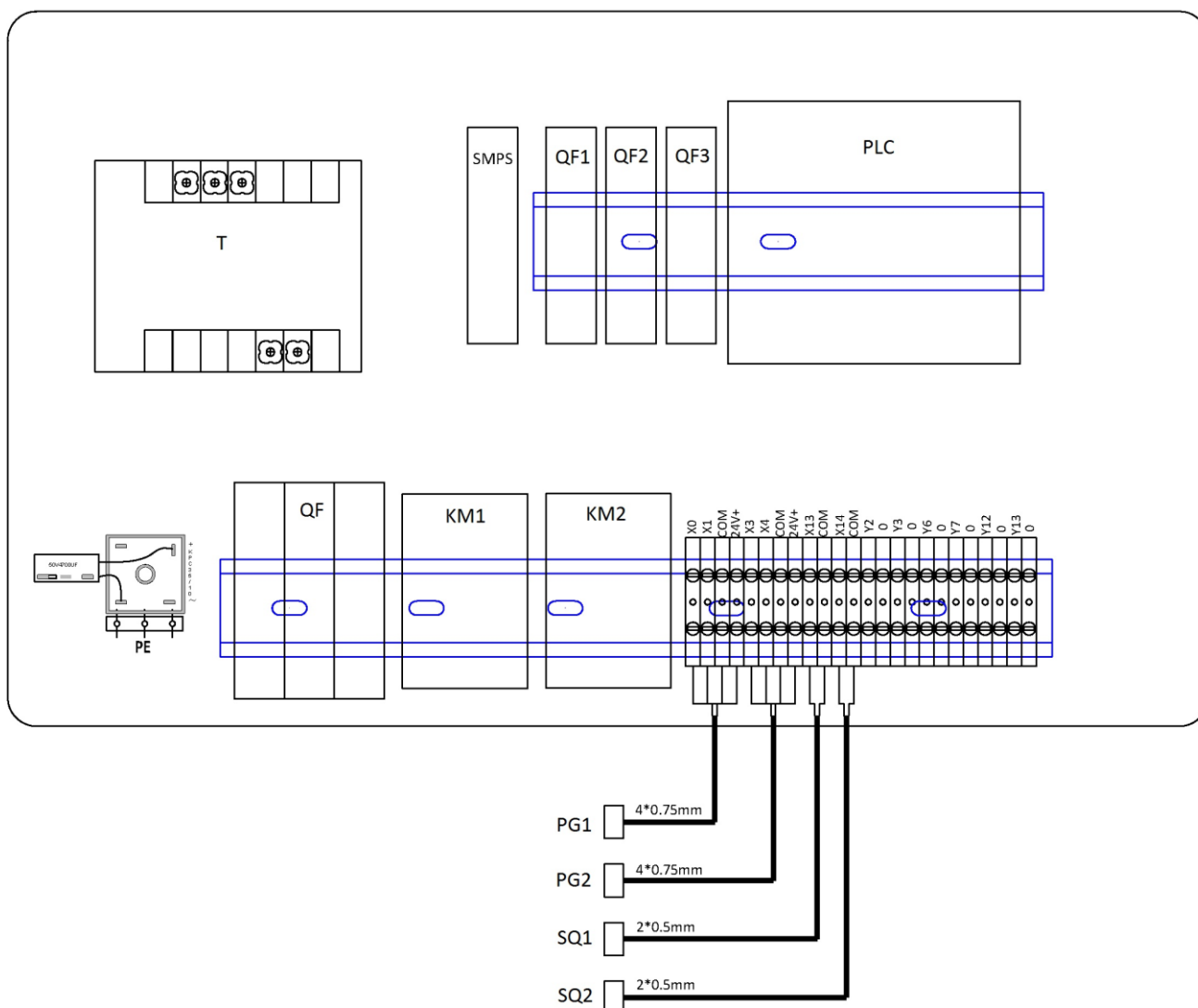
## Annex 2, Electrical schemes and parts list











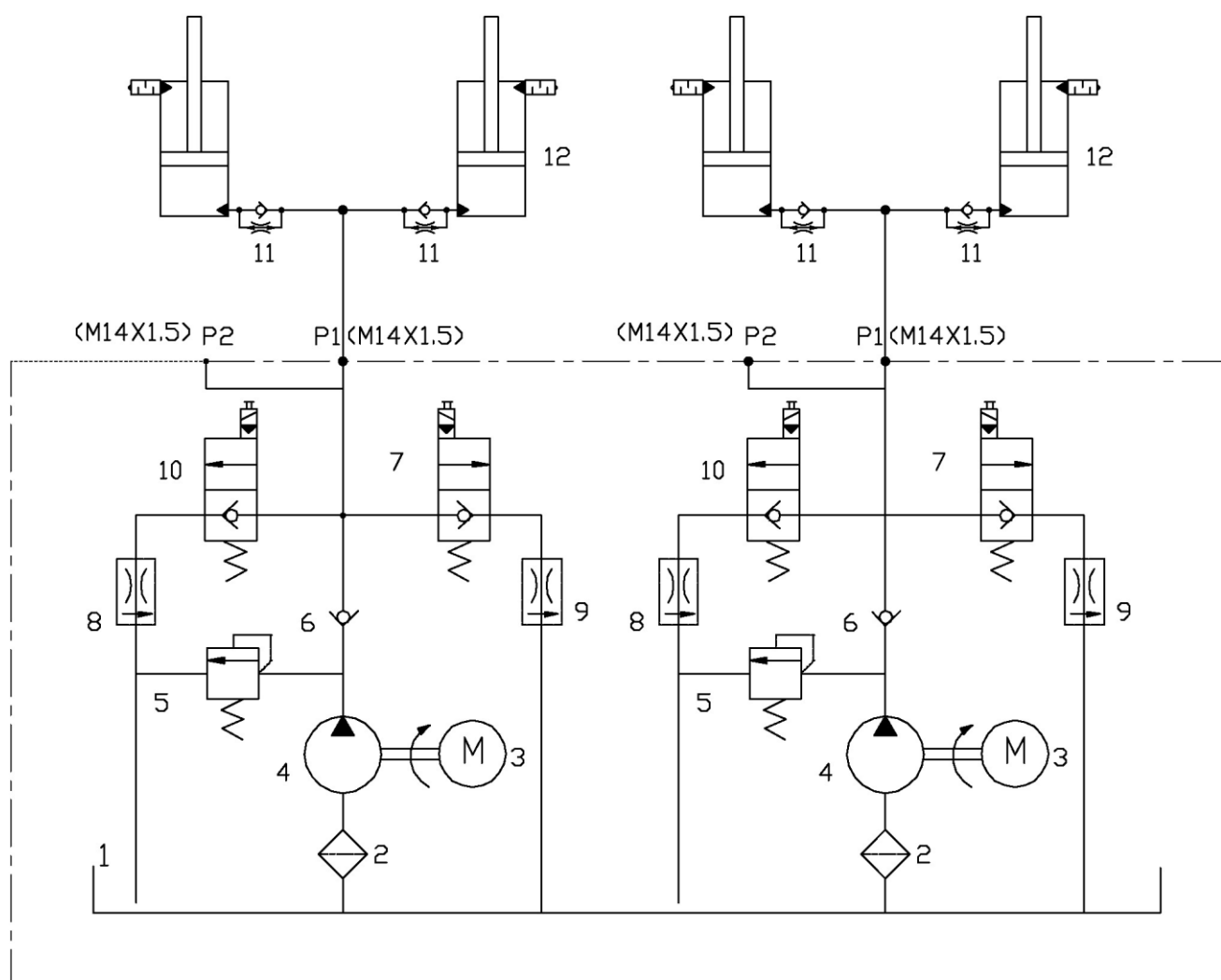
SQ1 Magnetic switch  
 SQ2 Magnetic switch  
 PG1 Rope sensor  
 PG1 Rope sensor

YV1 Solenoid unloading valve assembly  
 YV2 Solenoid unloading valve assembly  
 YV3 Solenoid unloading valve assembly  
 YV4 Solenoid unloading valve assembly  
 YA1 Solenoid pneumatic valve  
 YA2 Solenoid pneumatic valve

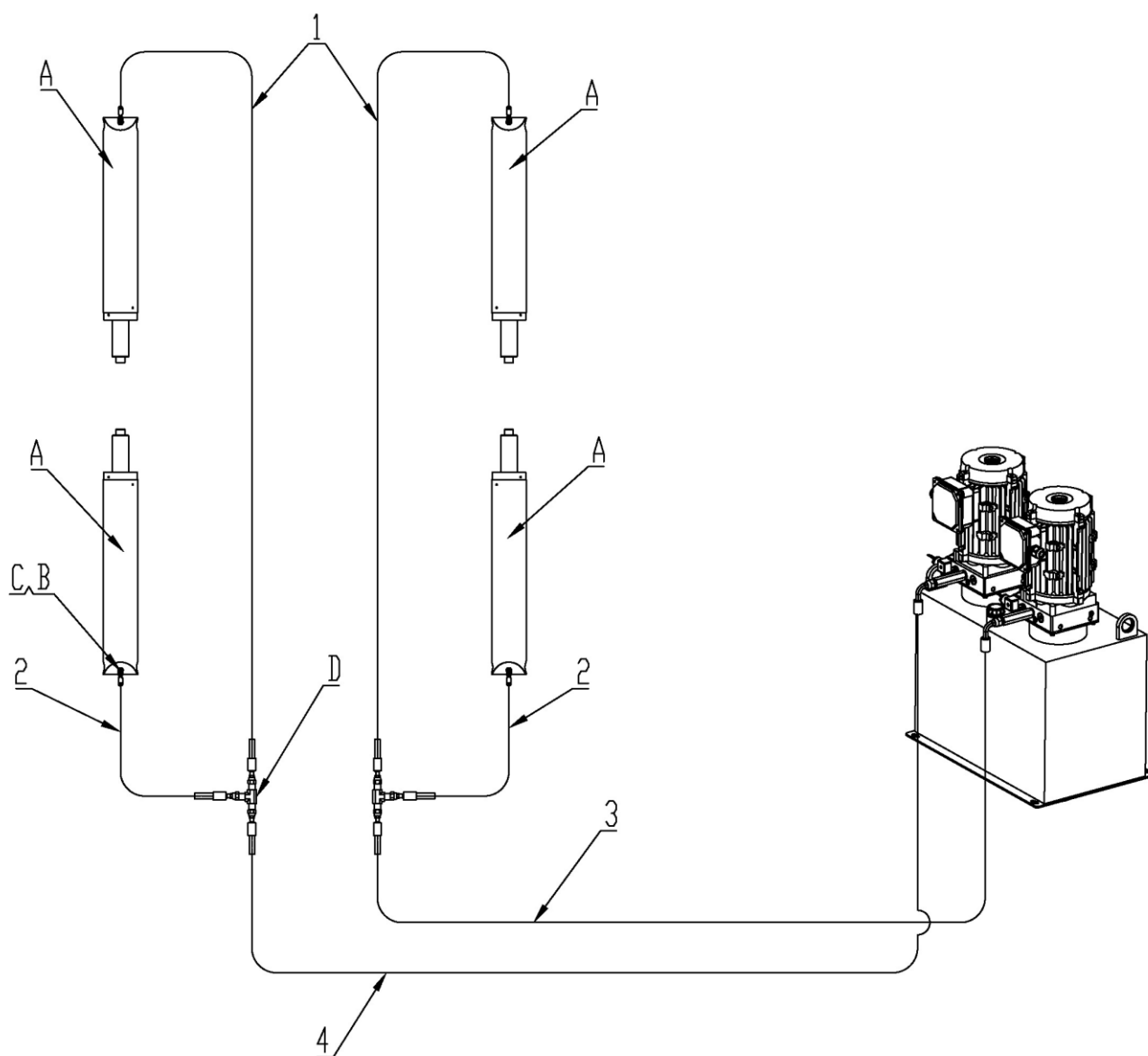
Code in the scheme	P-code	Description	Specification	Qty
T	320101141	Transformer	JBK5-160VA 208V-220V40VA 24V120VA	1
QF	320801003	Circuit breaker	CDB6iC25/3P (CB-60A C25)	1
QF1	320803003	Circuit breaker	CDB6iC3/1P	1
QF2	320803001	Circuit breaker	CDB6iC1/1P (CB-60A C1)	1
QF3	320803006	Circuit breaker	CDB6iC10/1P (CB-60A C10)	1
KM1,KM2	320901011	AC contactor	CJX2-1810/AC24V(CDC6i-1810/AC24V)	2
SQ1,SQ2	320307057	Magnetic switch	D-A93	2
PG1,PG2	321004033	Rope height sensor	KS60-2000-05-C	2
QS	320304001	Power switch	LW26GS-20-04	1
SB1,SB2,SB3	320401042	Button	NP2-EA11 (CDLA6H-EA11)	3
SA1	320303022	Selection switch	NP2-ED33C	1
PLC	321301004	PLC	FXIS(3SA)-30MR16in 14out	1
HL1	321201001	Indicating lamp (green)	ND16-22DS-2	1
HL2	321201026	Indicating lamp (yellow)	ND16-22DS/2	1
FA	321202001	Buzzer	AD118-22SM/R/AC/DC/24V	1
C1	321001004	Capacitor	4700UF/50V	1
VD	321002001	Bridge rectifier	KBPC5A-35A	1
SMPS	321103415	Switch power supply	24V 1.5A	1
HMI	321004104	HMI Screen	TK6051IP (MT8052iP)	1
YV1/YV2/ YV3/YV4	791150005	Solenoid unloading valve assembly	DC24V	4
YA1/YA2	310401001	Pneumatic solenoid valve	3V210-08DC24V	2



### Annex 3, Hydraulic schemes and parts list

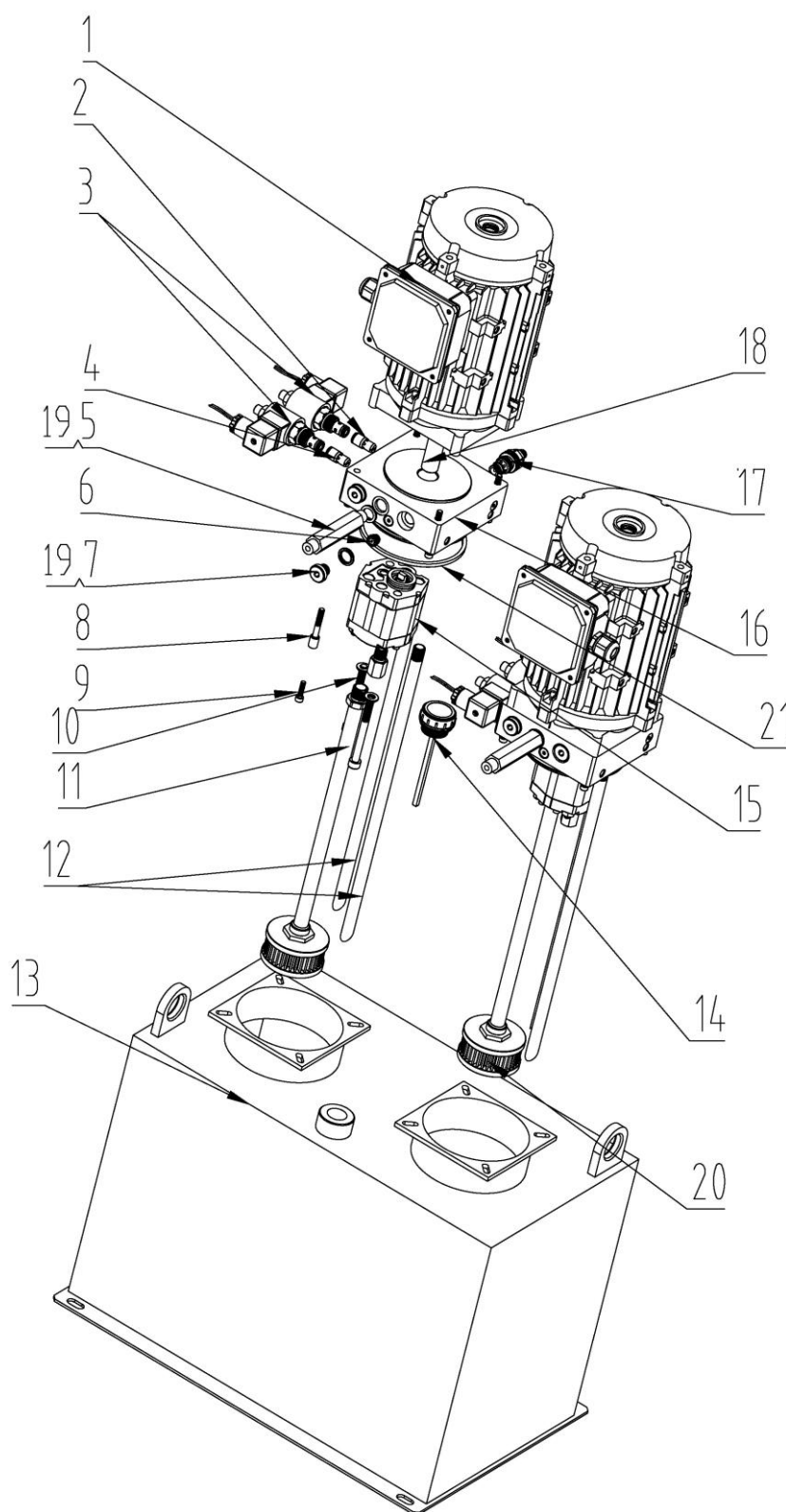


- |   |                  |    |   |
|---|------------------|----|---|
| 1 | Steel oil tank   | 7  | Solenoid unloading valve assembly (YV1,YV3) |
| 2 | Filter           | 8  | Balance valve                               |
| 3 | Motor            | 9  | Balance valve                               |
| 4 | Gear pump        | 10 | Solenoid unloading valve assembly (YV2,YV4) |
| 5 | Relief valve     | 11 | Non-return valve                            |
| 6 | Non-return valve | 12 | Cylinder                                    |



Pos.	Code	Component descriptions	Specification	Qty
1	624001888	Oil hose	L=5600mm	2
2	624008112	Oil hose	L=760mm	2
3	624002030	Oil hose	L=5000mm	1
4	624001217	Oil hose	L=6500mm	1
A	615067001	Cylinder	YG120140-67-640	1
B	330305009	Straight connector with restrictive valve	BDPF-G14-G14-l60	2
C	207103025	Composite washer	13_7X20X1_5	4
D	410210181	3-way connector	6603B-A9-B7	2

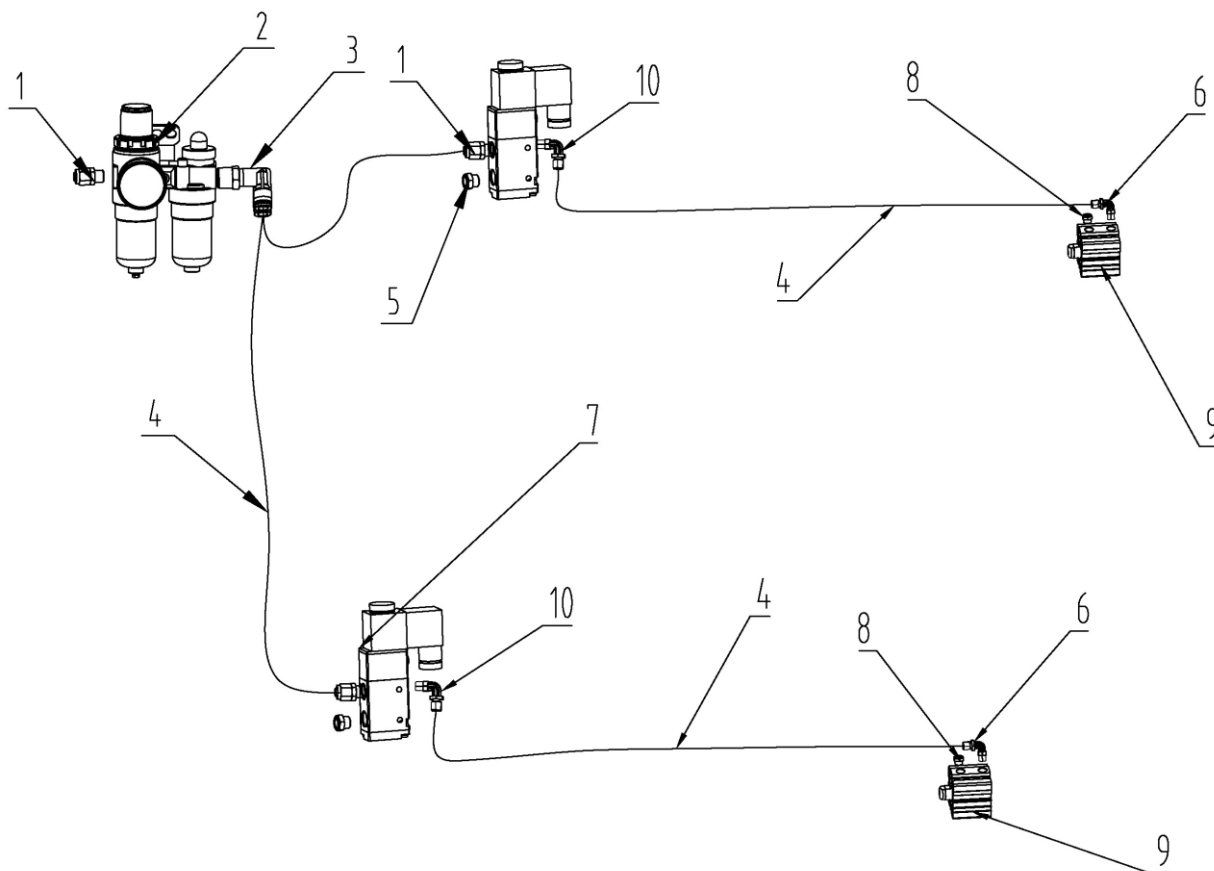
### Hydraulic power unit





Pos.	Code	Component descriptions	Specification	Qty
1	320204284	Motor	208V-3.5KW-3PH-50HZ-2P	2
2	330308042	Balance valve	BL-I2.8	2
3	791150005	Solenoid unloading valve assembly (YV1 ,YV2, YV3, YV4 in the electrical scheme )	DC24V	4
4	330308037	Balance valve	BL-I2.0	2
5	310101005	Straight connector	M14*1.5/G1/4 L=100	2
6	330302004	Non-return valve	ILCV2000-G1/4	2
7	210101004	Fitting	G1/4	2
8	202109145	Bolt	YBZ-E3D4H1/10-02	8
9	201103001	Hex flange bolt	M5x25-GB5789	8
10	202109072	Bolt	M8x85-GB70_1	4
11	330401002	Oil-sucking pipe	YX-BL=230	2
12	330402001	Oil-back pipe	YH-D	4
13	614060002	Oil tank	DKG01-HPU-TNK01	1
14	330502009	Oil tank lid		1
15	330201020	Gear pump	CBK-F233-H	2
16	330101111	Hydraulic block	LBZ-T202BK-1	2
17	330304007	Relief valve	YF08-40	2
18	330404007	Coupling	46mm(LBZ-T202BK-1)	2
19	207103025	Washer	13_7X20X1_5	2
20	330403003	Filter	YBZ-E2D311/1-10	2
21	207101098	O ring	109*5.3	2

#### Annex 4, Pneumatic schemes and parts list

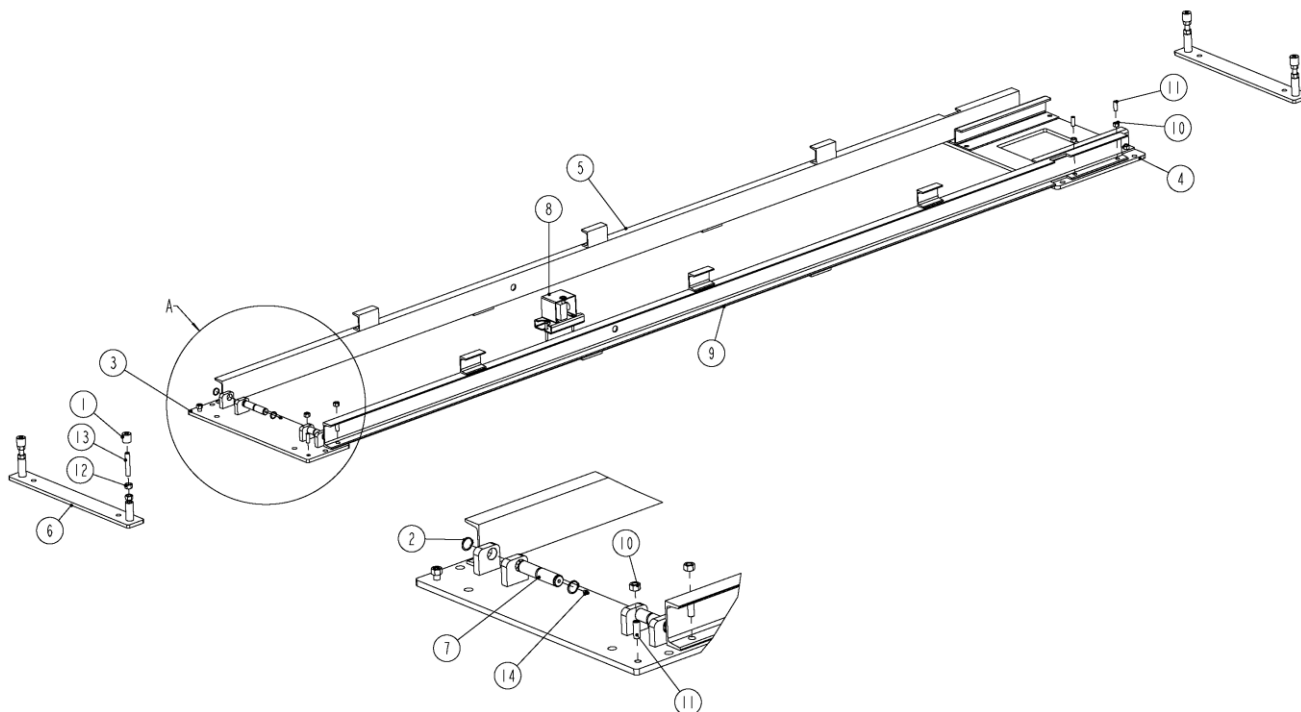


Pos.	Code	Component descriptions	Specification	Qty
1	310101015	Straight pneumatic connector (DQ)	KLC8-02(PT1/4)	3
2	321004006	AFC filter (DQ)	AFC2000-M	1
3	310103008	90 degree three-way elbow pneumatic connector	PX8-M14S	1
4	123010201	Air hose	D=8	
5	310201002	Silencer	SLM02-R1-4-M12	2
6	310102024	Elbow pneumatic connector	KLL8-01	2
7	310401001	Pneumatic solenoid valve	3V210-08DC24V	2
8	310201003	Silencer	SLM01-R1-8	2
9	310501023	Pneumatic cylinder	CDQ2B32X30-D-A93	2
10	310102015	Elbow pneumatic connector	KLL8-02	2

## Annex 5, Mechanical schemes and parts list

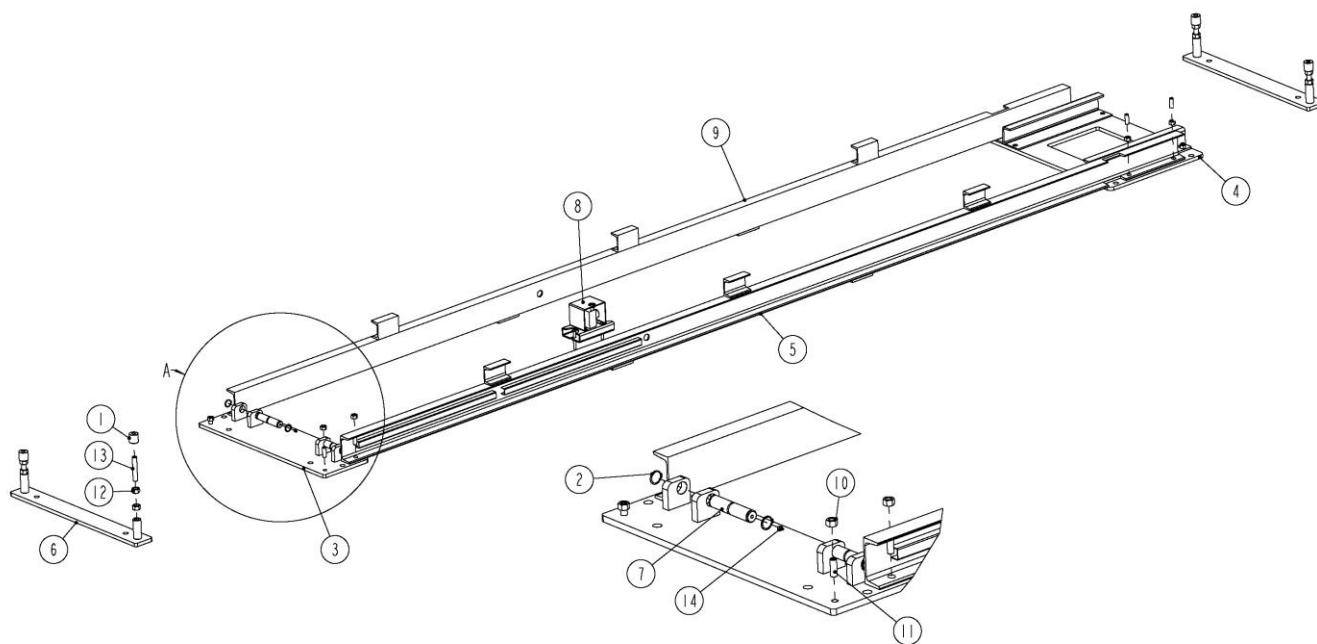
### Base frame assembly

-615067101



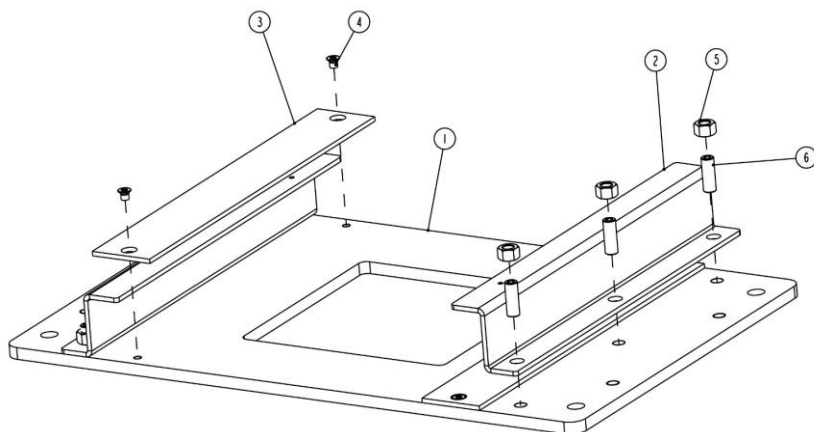
Pos.	Code	Component descriptions	Specification	Qty
1	420260010	Adjustable nylon block	6605B-A1-B8	4
2	204301011	Circlip B	D30-GB894_2	4
3	614067001	Welded small base plate	HX15-A1-B1	1
4	615067102	Large base plate	HX15-A1-B2	1
5	614067002	Welded connection steel slot A (with cover )	HX15-A1-B3	1
6	614067006	Welded support stand	HX15-A1-B5	2
7	410660201	Shaft	HX15-A1-B6	2
8	615067103	Rope sensor assembly	HX15-A1-B7	1
9	614067004	Welded connection steel slot B (without cover )	HX15-A1-B4B	1
10	203101009	Hex nut	M16-GB6170	8
11	202205002	Flat head tapping screw	M16X50-GB77	8
12	203101012	Hex nut	M20-GB6170	8
13	202205004	Hex socket tapping screw	M20X120-GB77	4
14	208106001	Lubricator cap	M8X1-JB9740_1	2

### Base frame assembly -615067106

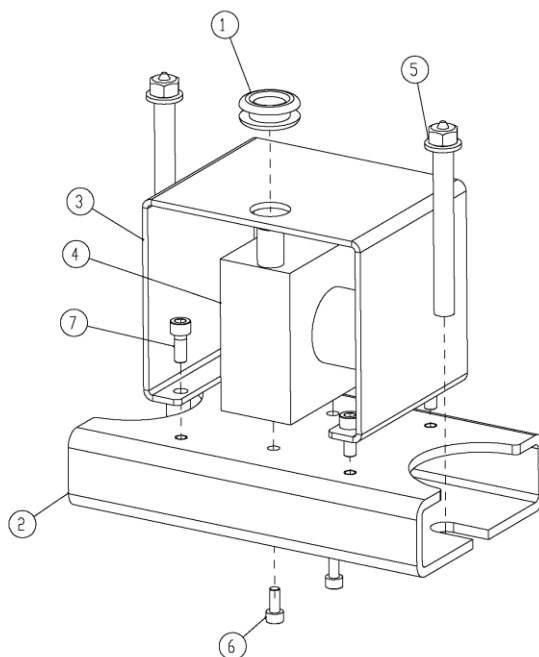


Pos.	Code	Component descriptions	Specification	Qty
1	420260010	Adjustable nylon block	6605B-A1-B8	4
2	204301011	Circlip B	D30-GB894_2	4
3	614067001	Welded small base plate	HX15-A1-B1	1
4	615067102	Large base plate	HX15-A1-B2	1
5	614067005	Welded connection steel slot A (with cover )	HX15-A1-B4	1
6	614067006	Welded support stand	HX15-A1-B5	2
7	410660201	Shaft	HX15-A1-B6	2
8	615067103	Rope sensor assembly	HX15-A1-B7	1
9	614067003	Welded connection steel slot B (without cover )	HX15-A1-B3B	1
10	203101009	Hex nut	M16-GB6170	8
11	202205002	Flat head tapping screw	M16X50-GB77	8
12	203101012	Hex nut	M20-GB6170	8
13	202205004	Hex socket tapping screw	M20X120-GB77	4
14	208106001	Lubricator cap	M8X1-JB9740_1	2



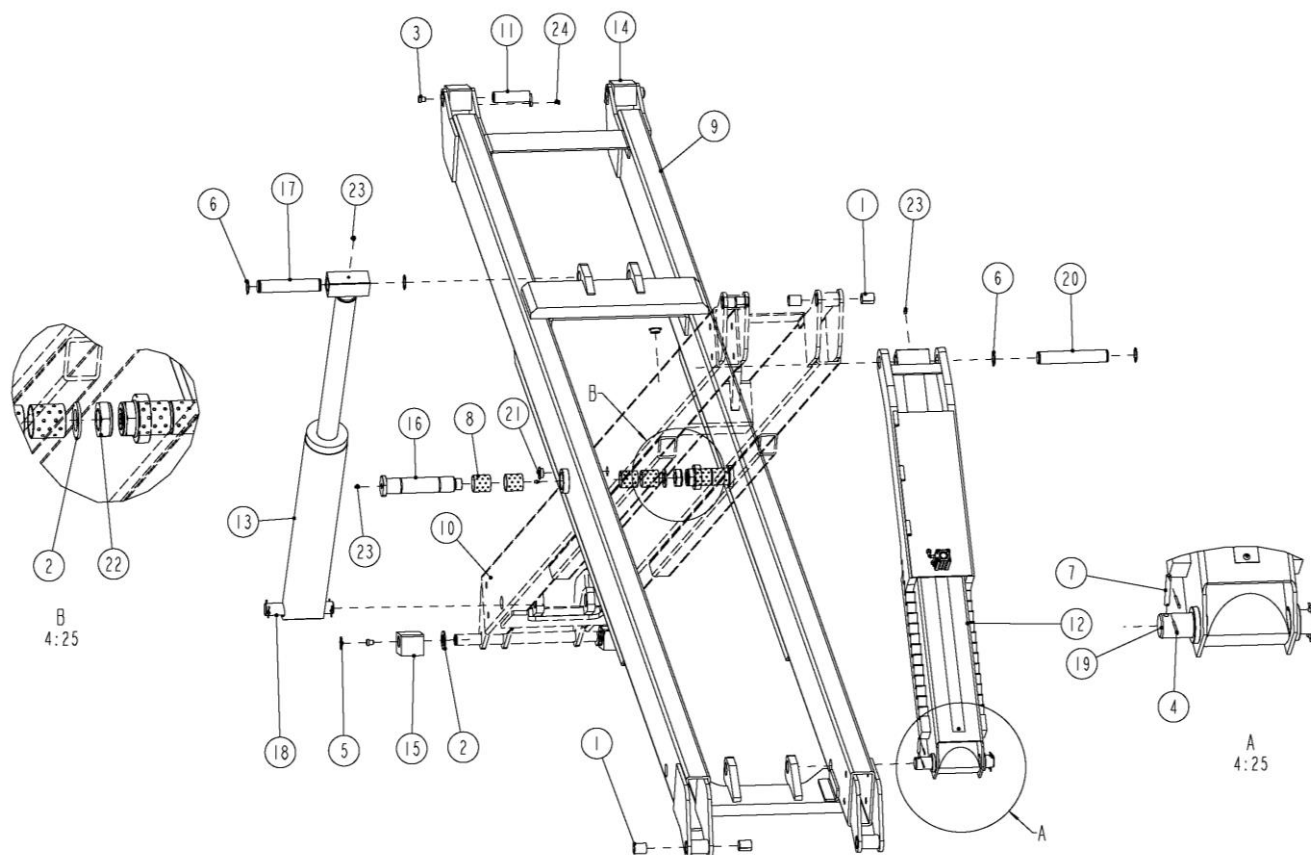


Pos.	Code	Component descriptions	Specification	Qty
1	410660343	Large base plate	HX15-A1-B2-C1	1
2	410660353	Stop plate for the sliding block	HX15-A1-B2-C2	2
3	410660361	Pad pate for the sliding block	HX15-A1-B2-C3	2
4	202111008	Hex socket flat head screw	M10X16-GB70_3	4
5	203101009	Hex nut M16	M16-GB6170	6
6	202205002	Flat head tapping screw	M16X50-GB77	6



Pos.	Code	Component descriptions	Specification	Qty
1	420040020	φ20 protective ring	6254E-A22	1
2	410660423	Holder for the sensor	HX15-A1-B7-C1	1
3	410660433	Protective cover for the sensor	HX15-A1-B7-C2	1
4	321004033	Rope sensor	KS60-2000-05-C	1
5	201201011	Expansion bolt	M10X100-PZHLSH	2
6	202109008	Hex socket cylinder head screw	M5X12-GB70_1	2
7	202109020	Hex socket cylinder head screw	M6X15-GB70_1	4

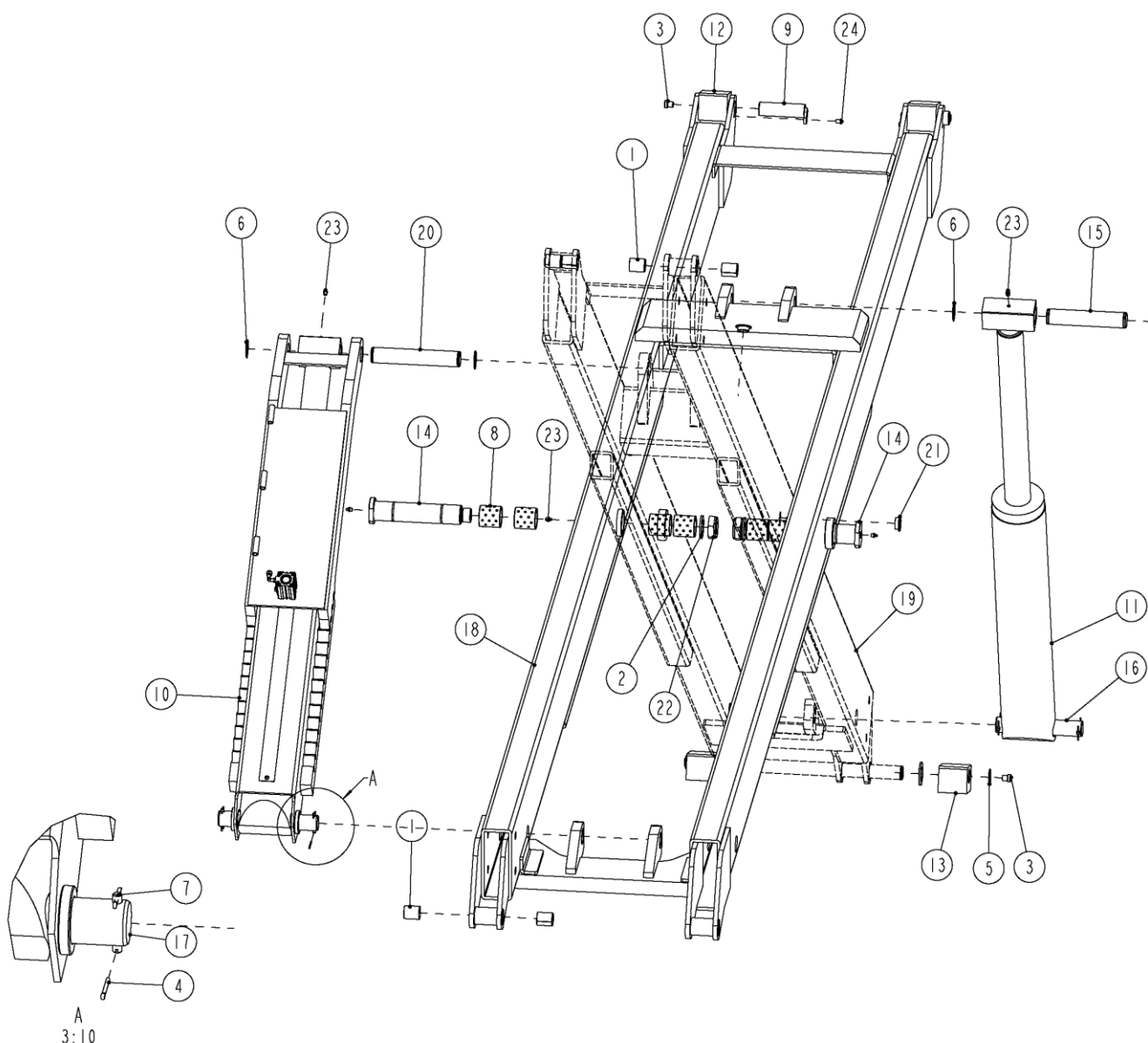
### Support scissor arm assembly-615067104



Pos.	Code	Component descriptions	Specification	Qty
1	205101055	Bushing 3040	3040_SF-2X	8
2	410200111	Space sheath	6503-A3-B4	4
3	420250090	Small pad block	6604V2-A3-B5	4
4	206201001	Cotter pin	D2_5X30-GB91	8
5	204301012	Circlip	D35-GB894_2	2
6	204301014	Circlip	D40-GB894_2	4
7	208101023	Pin	D8X55-GB880	4
8	205104001	Bronze bushing	FB090-5055	8
9	614067007	Welded outside support arm	HX15-A2-B1	1
10	614067008	Welded inside support arm	HX15-A2-B2	1
11	612067009	Welded shaft for the upside sliding block	HX15-A2-B3	2
12	615067108	Mechanical lock assembly	HX15-A2-B4	1
13	615067109	Assisting cylinder assembly	HX15-A2-B5	1
14	420660010	Platform sliding block	HX15-A2-B6	2
15	420660020	Baseplate sliding block	HX15-A2-B7	2
16	410660071	Middle shaft of the support arms	HX15-A2-B8	2
17	410660081	Upside shaft of the assisting cylinder	HX15-A2-B9	1
18	410660291	Downside shaft of the assisting cylinder	HX15-A2-B10	1
19	410660301	Upside shaft of the cylinder	HX15-A2-B11	1

Pos.	Code	Component descriptions	Specification	Qty
20	410266041	Down shaft of the cylinder	HX6-A2-B6	1
21	208107019	Protective ring 30	JYS-7037	2
22	203103017	Hex locking nut	M36X3-GB6172_1	2
23	208106001	Lubricator cap	M8X1-JB9740_1	6
24	202110004	Hex socket button head screw	M8X12-GB70_2	2

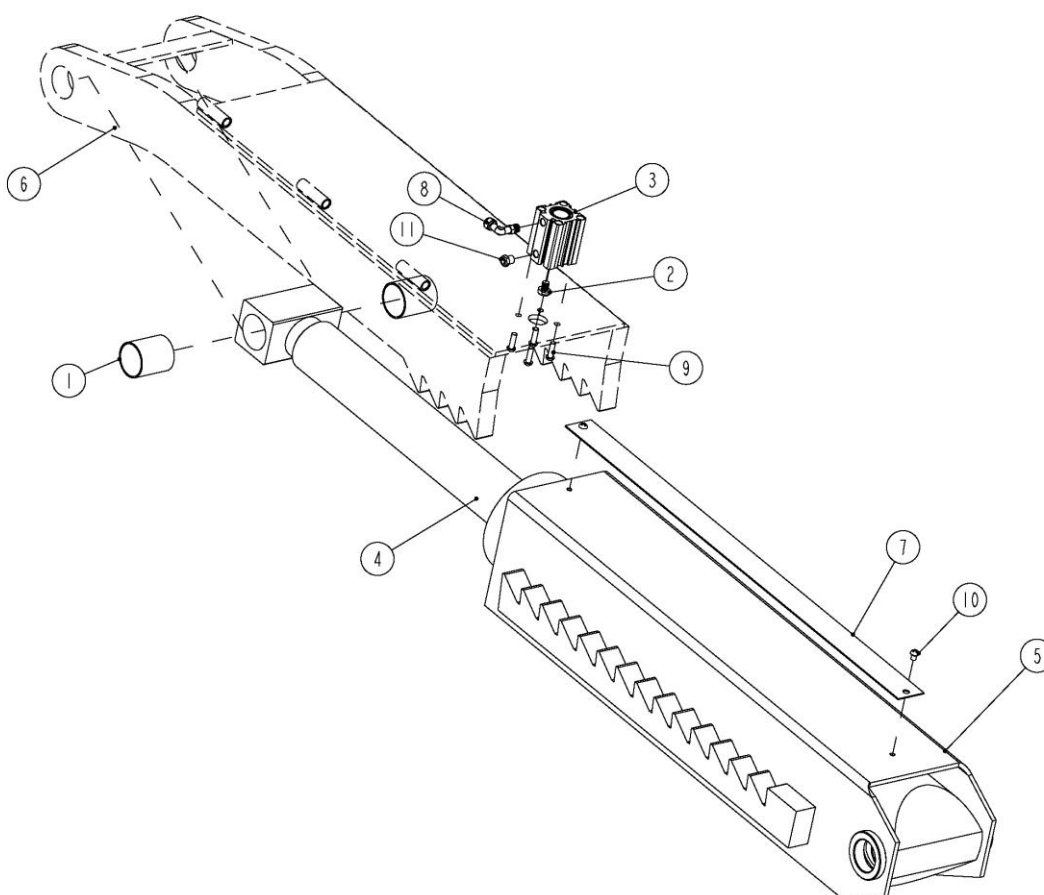
Support scissor arm B assembly-615067107



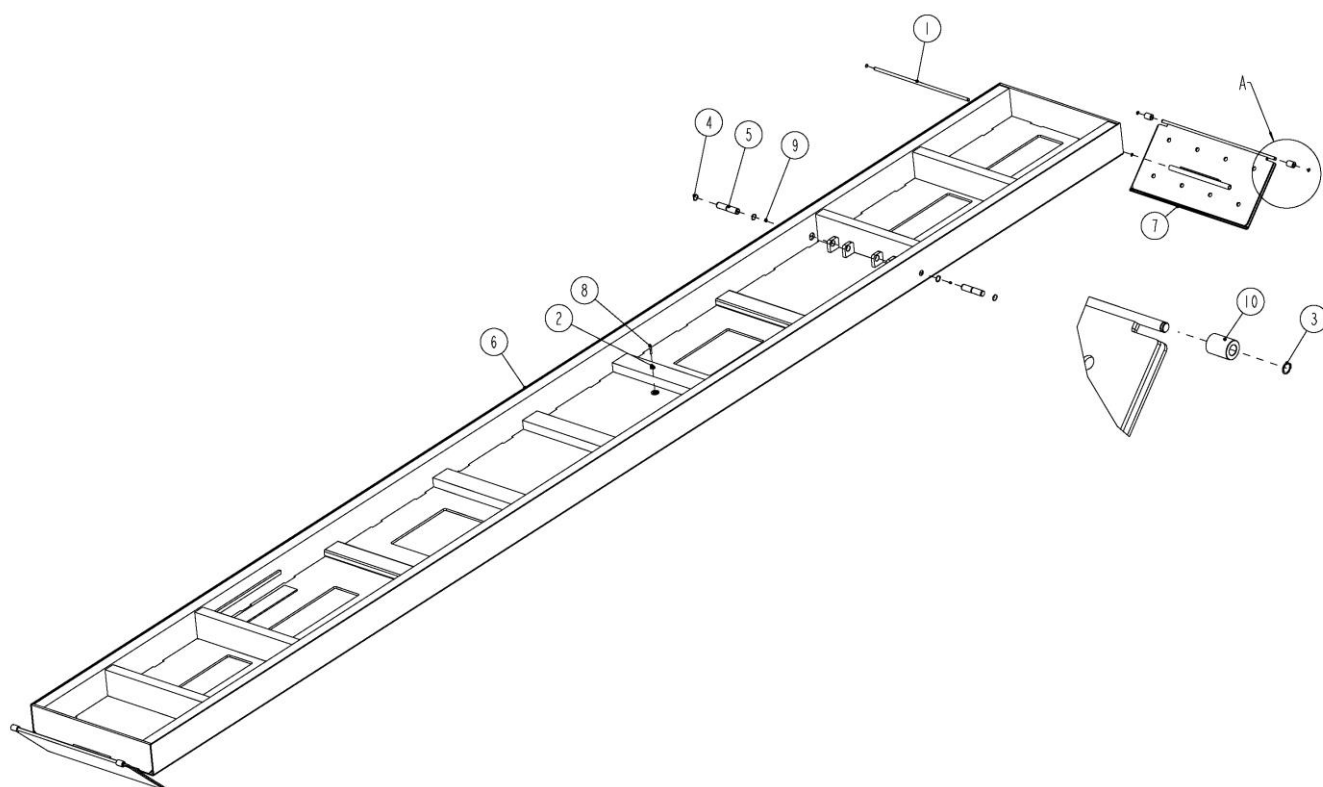
Pos.	Code	Component descriptions	Specification	Qty
1	205101055	Bushing 3040	3040_SF-2X	8
2	410200111	Space sheath	6503-A3-B4	4
3	420250090	Small pad block	6604V2-A3-B5	4
4	206201001	Cotter pin	D2_5X30-GB91	8



Pos.	Code	Component descriptions	Specification	Qty
5	204301012	Circlip	D35-GB894_2	2
6	204301014	Circlip	D40-GB894_2	4
7	208101023	Pin	D8X55-GB880	4
8	205104001	Bronze bushing	FB090-5055	8
9	612067009	Welded shaft for the upside sliding block	HX15-A2-B3	2
10	615067108	Mechanical lock assembly	HX15-A2-B4	1
11	615067109	Assisting cylinder assembly	HX15-A2-B5	1
12	420660010	Platform sliding block	HX15-A2-B6	2
13	420660020	Baseplate sliding block	HX15-A2-B7	2
14	410660071	Middle shaft of the support arms	HX15-A2-B8	2
15	410660081	Upside shaft of the assisting cylinder	HX15-A2-B9	1
16	410660291	Downside shaft of the assisting cylinder	HX15-A2-B10	1
17	410660301	Upside shaft of the cylinder	HX15-A2-B11	1
18	614067014	Welded outside support arm B	HX15-A2B-B1	1
19	614067015	Welded inside support arm B	HX15-A2B-B2	1
20	410266041	Down shaft of the cylinder	HX6-A2-B6	1
21	208107019	Protective ring 30	JYS-7037	2
22	203103017	Hex locking nut	M36X3-GB6172_1	2
23	208106001	Lubricator cap	M8X1-JB9740_1	6
24	202110004	Hex socket button head screw	M8X12-GB70_2	2



Pos.	Code	Component descriptions	Specification	Qty
1	205101060	Bushing	4050-SF-2X	4
2	420420010	Adjustable nut	66035-A03-B09	1
3	310501023	Pneumatic cylinder	CDQ2B32X30-D-A93	1
4	615067110	Oil cylinder assembly	HX15-A2-B4-C1	1
5	614067012	Welded lock ratchet	HX15-A2-B4-C2	1
6	614067013	Welded lock ratchet	HX15-A2-B4-C3	1
7	410911982	Padding plate for pneumatic cylinder	HX15-A2-B4-C4	1
8	310102024	Elbow pneumatic hose connector	KLL8-01	1
9	202101033	Cross socket cap head screw	M6X20-GB818	4
10	202101027	Cross socket cap head screw	M6X8-GB818	2
11	310201003	Silencer	SLM01-R1-8	1



Pos.	Code	Component descriptions	Specification	Qty
1	410195071	Shaft of the ramp	65012-A5-B1-C4	2
2	208107020	Magnet	D25	1
3	204301004	Circlip	D15-GB894_1	8
4	204301011	Circlip	D30-GB894_2	4
5	410660201	shaft of the support holder	HX15-A1-B6	2
6	614067010	Welded platform	HX15-A3-B1	1
7	614067011	Welded ramp	HX15-A3-B2	2
8	208103003	Bolt	M5X30	1
9	208106001	Lubricator cap	M8X1-JB9740_1	2
10	420180010	Small roller	MR30-A22-B5	4