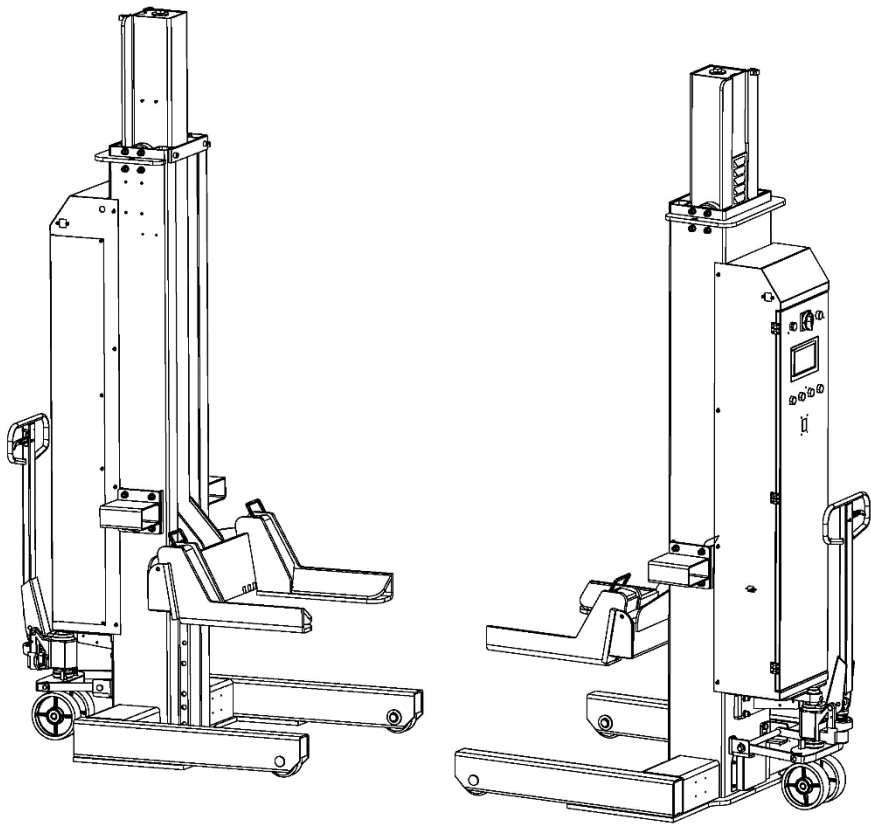


Model No. EE-HDM8 series
Mobile Columns
Wireless Technology
Capacity: 8000 kg each column
A maximum combination of 48 columns

**Installation, Operation
and Parts Manual
Translated Version**



EAE



Distributed by

DATE: 04/02/2024

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

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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 you 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 limit 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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IMPORTANT INFORMATION FOR SAFE USE

1.1 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.

<p>CAUTION</p>  <p>Installation must be performed by authorized and professional personnel.</p>	<p>CAUTION</p>  <p>Only properly trained staff who have read and understood the operation manual can be authorized to use the lift.</p>	<p>WARNING</p>  <p>Don't use outdoor in strong breeze with the wind speed being more than 14 m/s.</p>	<p>WARNING</p>  <p>Don't use on a slope of greater than 2.5 %.</p>
<p>CAUTION</p>  <p>Check the load on each column before lifting. Don't try to lift with excessive weight.</p>	<p>CAUTION</p>  <p>Watch closely throughout raising or lowering.</p>	<p>WARNING</p>  <p>Don't tilt the column when you are trying to position the wheel carrying devices.</p>	<p>WARNING</p>  <p>Check the stability of vehicle before lifting.</p>
<p>CAUTION</p>  <p>It is advised to use in enclosed areas. Don't expose to heavy moisture or strong sunlight.</p>	<p>CAUTION</p>  <p>Always keep lifting area clean and clear of obstacles before raising or lowering.</p>	<p>WARNING</p>  <p>Avoid excessive rocking of vehicle while on the lift.</p>	<p>WARNING</p>  <p>Engage the mechanical safety locking unit before working under the raised vehicle.</p>
<p>DANGER</p>  <p>Any attempt to modify or change the lift and safety devices is forbidden.</p>	<p>DANGER</p>  <p>It is forbidden to stand on the lifting mechanism.</p>	<p>DANGER</p>  <p>Don't lift vehicle with people stay inside.</p>	<p>DANGER</p>  <p>Keep hands, feet and other parts of the body away from the moving parts to avoid pinching or shearing.</p>

1.2 Qualified operators

- Read and digest the complete operation instructions before operating the lift.
- Only trained persons are permitted to operate the lifting system. Use by untrained people could result in severe injury or damage.

1.3 Floor and space conditions

- Only use this lift on a surface that is stable, level and dry and not slippery, and capable of sustaining the load.
- Do not use on wet surfaces or expose to rain.
- Do not use outdoors if the wind velocity exceeds 14m/s.
- Do not use in the vicinity of open containers of flammable liquids.
- The positioning of the lifting system must be done in a way that a safe working area will be obtained above and around the lifting columns, thereby creating escape paths for emergency situations. (Leave at least 600mm for passageways)

1.4 Good condition of the lifting system

- Run the lifting system without load for a complete cycle to ensure it is in good condition before loading.
- Read the battery meter and ensure the battery is enough charged before using.

- Do not use when capacity of the battery reduces to 20% and do not use while charging the battery.

1.5 Correct manner

- The lifting system should only be used for lifting of vehicles. Do not use for other applications.
- Only authorized persons are permitted in the lift area.
- Position the lifting columns properly and adjust the forks to the required distance so as to fit the tires.
- Check the vehicle after raising a short distance to ensure that it is correctly and safely positioned.
- The load carrying device shall be observed by the operator throughout the motion of the lift.
- Engage the safety locking mechanism before entering under the raised vehicle.
- Always remember to use safety stands before removing or installing heavy parts.
- Avoid excessive rocking of vehicle while on the lift
- Do not climb onto the load or load carrying device when they are raised.
- Do not stand in the field of motion during raising or lowering movement.
- Do not leave the vehicles unattended in the lifted position.
- The lift must be properly locked out or tagged in case that it needs repairs.
- Do not try to remove, interrupt or modify the safety devices.
- Do not make modifications without written permission of the manufacturer.

The instructions, cautions and warnings written above cannot cover all possible conditions and situations that may occur. The Common sense for safety must be always in the mind of the operator. For damages caused through willful misconduct or gross negligence, the lift manufacturer or its distributors are excluded of liability.

DESCRIPTIONS OF THE LIFTING SYSTEM

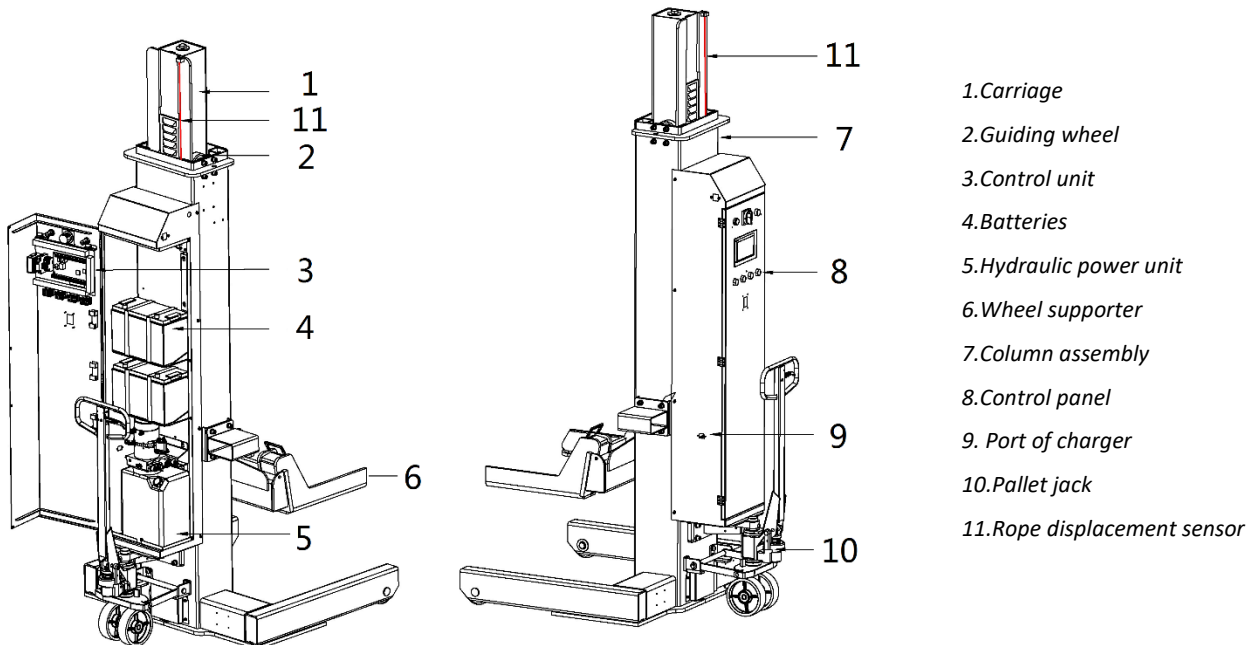
2.1 General descriptions

It is wheel supporting multiple mobile column lifting unit. Each column has a maximum lifting capacity of 8,000kg.

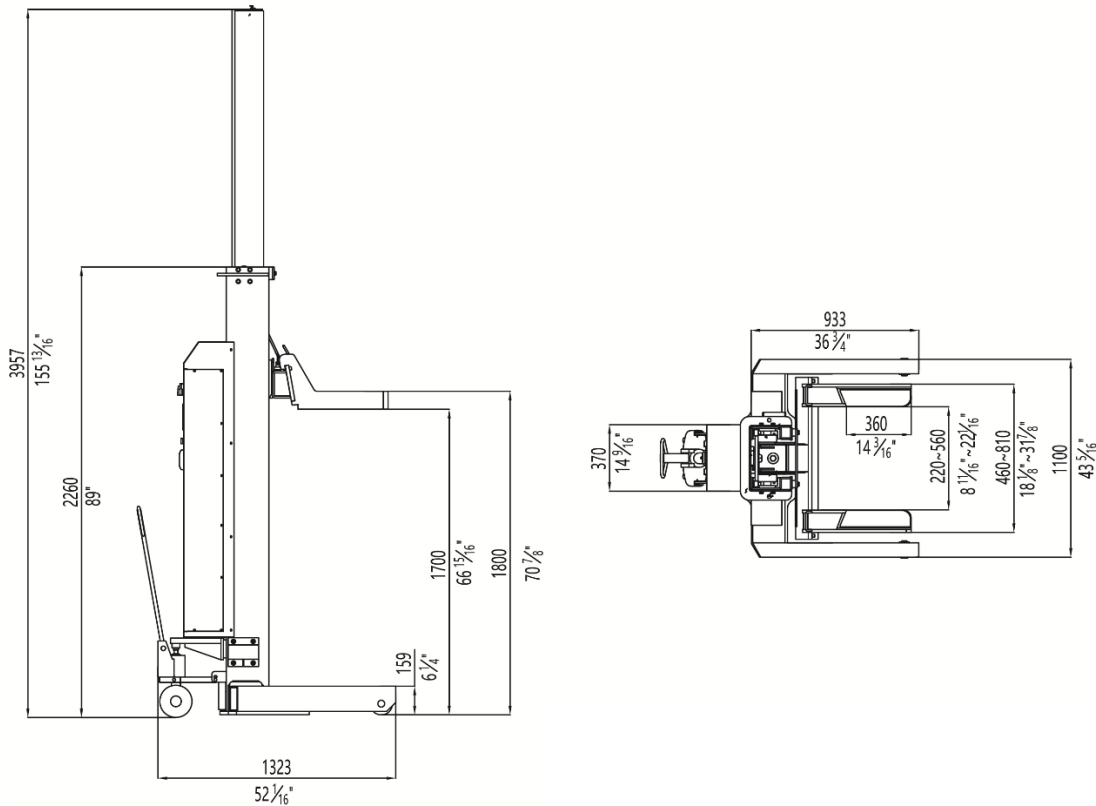
A maximum combination of 32 columns can work steadily in a group. It is an ideal lifting solution to heavy duty vehicles such as container trucks, coaches and army trucks. The required number of columns in a group depends on the weight of the vehicle and the number of axles. Normally, at least 4 columns are required to work as a group. For a combination of 4 columns, the model name is EE-HDM84, for a combination of 6 columns, the model name is EE-HDM86. The rest combinations are named in the same way.

Being battery powered, the lifting procedure starts without any cable connection between columns and without much work for setting up. In single mode, each column can raise and lower independently. In group mode, all columns in the group are synchronously controlled. By identifying the access ID card, any column in the group can be activated and act as an operative column.

2.2 Main components



2.3 Dimensions



2.4 Specifications

Capacity	8000kg for each single column
Charger	100-240VAC,4.5A, 50/60HZ
Pressure relief valve	14MPa
Electrical power	DC24V 2.2 kW
Power supply for the charger (UP on the voltage requirement)	AC110~240V-1Ph
Operating voltage	DC24V
Full rise (max stroke of the cylinder)	1700mm
Lifting time (under max lifting capacity)	Approx.85s
Lowering time (under max lifting capacity)	Approx.80s
Noise	≤75dB(A)
Net weight	Approx. 840kg for each single column
Operation temperature	0-60°C
Foundation concrete	C35
Foundation thickness	≥200mm
Oil tank	14L

2.5 Important information about the battery.

Normally it takes 8-10 hours to charge a new battery to 100% of its current capacity depending on the temperature of the environment. The normal voltage of a new battery ranges from 12 to 12.9V after being charged for 8 hours and put aside for another 4 hours.

In the case that the lift is to be stored and unused for a period of time as listed below, the lift shall be recharged regularly. Recharge the battery by referring to the following TABLE, otherwise the battery may become useless though it is unused or still very new.

Environment temperature(ET)	Time span for recharging	Recharging method
-15°C < ET < 25°C	180 days	Charge the battery at least for 8 hours using the original charger of the lift.
25°C ≤ ET < 35°C	90days	
35°C ≤ ET	45days	

For lead-acid battery, it is normal that the battery lose some portion of capacity as the charging cycle increases. Change the battery with a new one when its voltage is less than 10.5V. Warranty for the battery lasts 12 months starting from the manufacture date of the lift.

UNPACKING AND HANDLING

Each lifting column is reserved with two specialized steel tubes for transporting by a forklift.

The steel tubes are attached at both sides of the column marked with the following warning label.



ATTENTUONS:

- Only move the lifting column with the correct type of lifting equipment.
- Only raise the lifting column at the correct position. Damaged to the lifting column or injury to persons may happen if the lifting column is not moved in the correct manner.
- Do not stand under the lifting column when is suspended by the lifting equipment.

Transport the lifting columns to the intended place of use and remove the packing materials.

PREPARATION BEFORE USE

The lifting platform is assembled ready for use before it is packed and delivered.
The following work has to be done by the intended user before initial commissioning.

4.1 Fill the oil reservoir with hydraulic oil

CLEAN AND FRESH OIL ONLY

Don't let any solid substance go into the hydraulic line.

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

At least prepare 12 liters of hydraulic oil for each column.

Fill each tank almost full and run the lifting column up and down for 2 or 3 entire cycles.

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 once per year thereafter.

CAUTION:

The hydraulic pump contains NO oil. Please insert hydraulic oil before switch on.

4.2 Charge the battery

Check the information on the charger and ensure the charger is compatible with the external power supply.

Only use battery charger supplied by the manufacturer.

Don't charge while commissioning the lift.

It is advised to charge the battery to 100% before initial commissioning. In normal condition (temperature around 25°C), it takes about 10 hours to charge the battery to 100% capacity.

It is required to recharge when the capacity reduces to 30%.

4.3 Use the pallet jack

The pallet jack is used to move the column by lifting it off the floor.

Always descend the column onto the floor before raising.

The pallet jack is operated by a hand grip and a lever inside the grip.

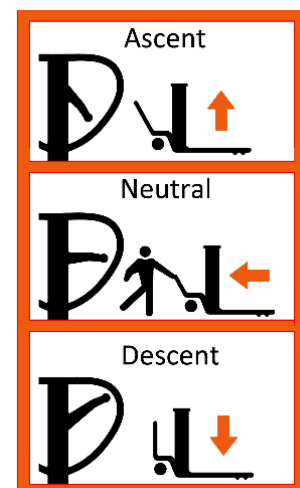
Push down the LEVER and move up and down the hand grip to raise the base frame of the lift.

Keep the LEVER at neutral position when moving the lift.

Pull up the LEVER to descend the base frame of the lift.

CAUTION:

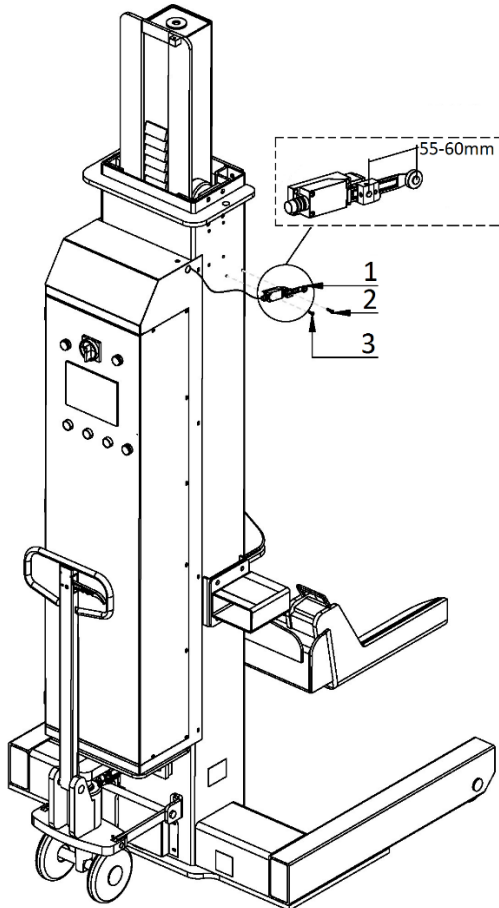
The pallet jack must have been descended before loading on to the lift. Otherwise, there could be risks of damage to the jacking system.



4.4 Fix and adjust the limit switch for max rise

Take the limit switch placed on the top of the cabinet and fix it to the corresponding position.

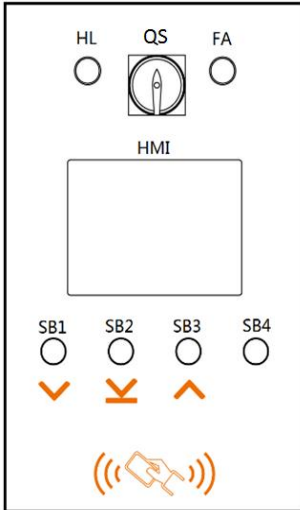
Adjust its LEVER making it is extended to 55-60mm.



1. Limit switch
2. Cross socket cap head screw M4x25
3. Cross socket cap head screw M4x14

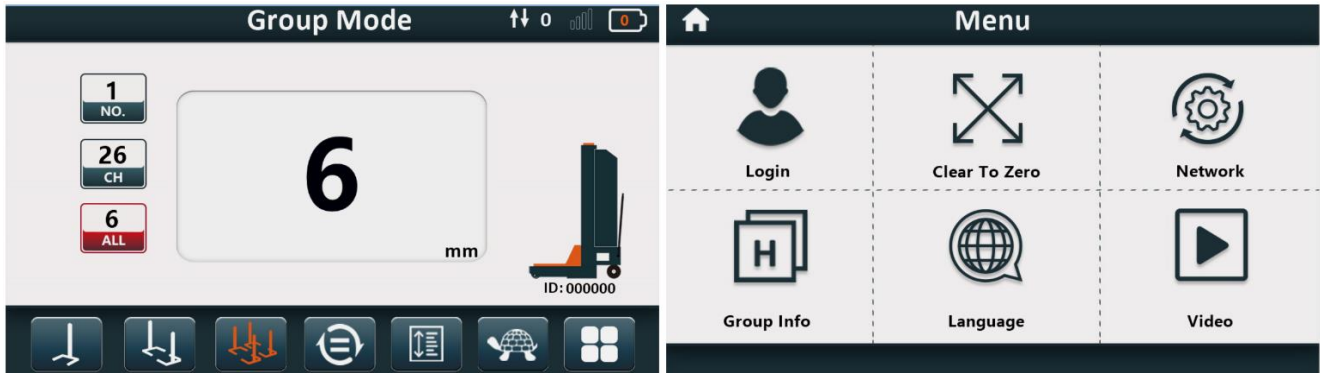
4.5 Get familiar with the control panel

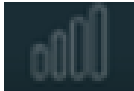
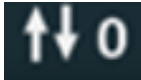

4.5.1 Layout of the control panel












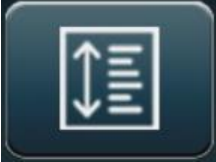


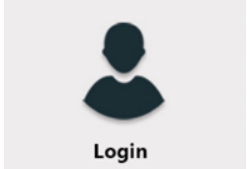

Code	Description	Function
HL	Power indicator	Display power status.
QS	Power switch	Turn on or turn off the control power.
FA	Alarm buzzer	Audible warning for desynchronization.
HMI	Display screen	Set up the control system and display the real time running status.
SB1	DOWN button	Push it to lower the carrying device.
SB2	LOCK button	Engage the mechanical lock.
SB3	UP button	Push it to raise the carrying device.
SB4	Emergency stop	Push it to disconnect operative power in emergency cases.
	Card scanner	Read the access ID card to make a non-operative column become the operative column.





4.5.2 Layout of the HMI screen



S/N	ICON	Descriptions
1		Indication of signal intensity.
2		Indication of the max height deviation in a lifting group.
3		<p>Indication of number mark for each independent column.</p> <p>It is automatically given by the software system.</p> <p>The first column which initiate to build a group-lifting network will be marked with NO.1. The rest columns which joined in the network will be marked correspondingly in numerical order, such as NO.2, NO.3, NO.4 and so on.</p>

S/N	ICON	Descriptions
4		Indication of the communication channel code. Columns in the same lifting group will display a same channel code.
5		Indication of the total column quantity in a lifting group and indicate whether the column is ready for operating or not. In single column mode, it displays number 1. In pair mode, it displays number 2. In group mode, it displays the total column quantity, such as 6. At the operative column, it displays in Green. At the rest non- operative columns, it displays in Red.
6		ID: Identity code for a lifting group. It differs from one lifting group to another. All columns in a same group will be given with a same ID code.
7		Indication of system height.
8		Single control mode. Control a single column independently. If any column in the group turns into single control mode, an audible warning will gives out at the rest columns until it turn into group mode again.
9		Pair control mode Control two paired columns synchronously. Before turning into pair control mode, make sure to check the column number icon  displayed on the screen of each column. The paired two columns must be positioned at both sides of the same axle.
10		Group control mode Control all columns in the same group synchronously.

S/N	ICON	Descriptions
11		<p>Synchronize work settings</p> <p>In pair or group control mode, on condition that the warning “Different work settings among columns ” appears on the screen (mainly caused by different working settings for memory height or slower descending among columns), you can click this icon to synchronize the work settings, making all columns share a same work setting with the column which initiates synchronizing.</p>
12		<p>Clear the physical rising height to zero and set a proper zero system height for initial rising.</p> <p>Physical rising height means the actual distance between the carriage and the floor.</p> <p>System height means the height value feedback by the sensor of the control system.</p> <p>The clearing can be activated in single control, pair control and group control mode. Once the icon for clearing has been activated, the current physical rising height will be assumed as an initial zero position for raising and an end position for lowering. For instance, when you rise the carriage of the column to a physical height of 500mm and do the clearing, the height indication on the screen will go back to zero and you cannot descend the carriage lower than 500mm.</p> <p>In pair or group control mode, the activation of clearing will synchronize automatically to the other column or the rest columns.</p>
13		<p>Slower descent</p> <p>Click this icon to slow down the lowering movement.</p>
14		<p>Click this icon to get access to the menu interface</p>
15		<p>Click this icon to enter the interface for “Log in”</p>
16		<p>Click this icon to do network settings, such as build a network and join the network.</p>

S/N	ICON	Descriptions
17	 <p>Clear To Zero</p>	<p>Zero system height for the control system. Lower the wheel-support carriage completely to the physical bottom before clearing. It must be attained that if you zero the height with the carriage being at a position above the physical bottom, a negative height value will be displayed when you lower the carriage to the physical bottom.</p>
18	 <p>Group Info</p>	<p>Display the system height information for all columns in the group. The system height may differ with the physical rising height. For instance, zero raised height in pair mode, return back to the group mode and view the Group Info, in this case the system height is less than the physical rising height.</p>
19	 <p>Language</p>	<p>Click this icon to set up the language.</p>
20	 <p>Video</p>	<p>Click this icon to watch videos saved in the control system</p>



Attention: You can only control at an activated column.

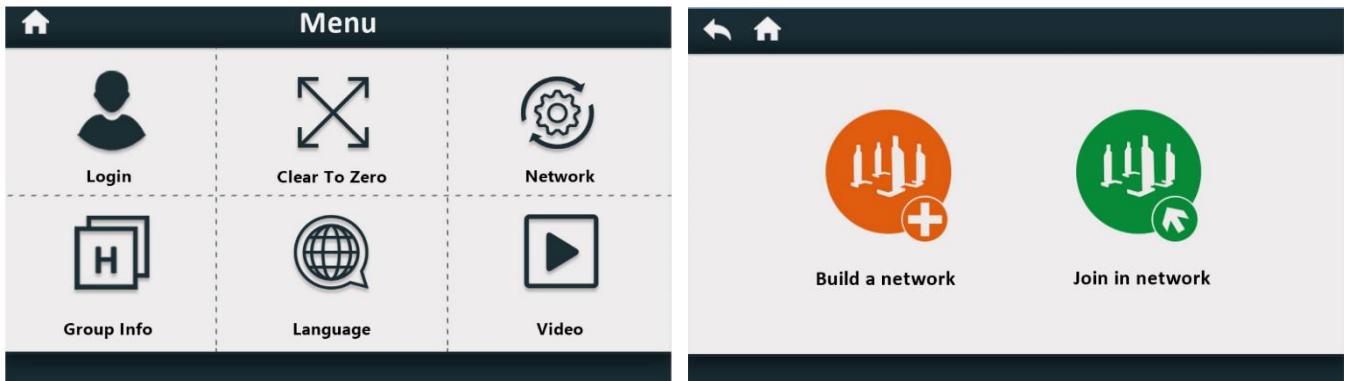
4.6 Build a group-working network

The columns with a same serial number on the marking plates have already been set up as a group before delivery.

Turn on the power switch at each column respectively and all the columns interconnect automatically as a group.

In case there needs to add or remove columns from the existed lifting group, it is necessary to rebuild a new network.

Log in and click the network icon on the Menu Page and access the page for building a network.



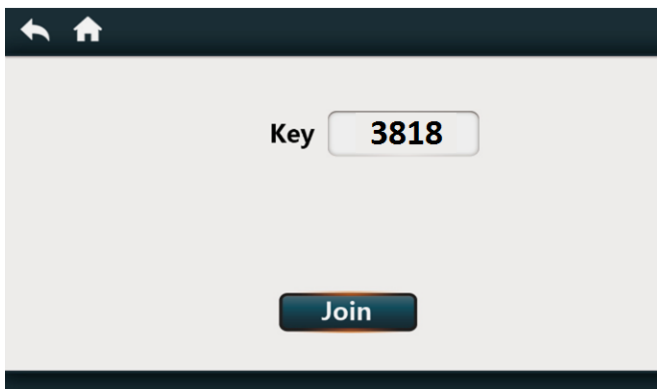
Input the total column quantity, click "Start" and you will get a **Key** number, which generated automatically.

For a lifting group including 4 columns, input 4 into the blank followed by "ALL". For a lifting group including 6 columns, input 6 and so forth.



Click the icon of "Join in network" at the second column and input the same key number given by first column so as to join the network built by the first column.

Do the same operation to make the rest columns join in the same network.



It shall be noted that the quantity of columns in a group must be in consistent with the quantity number input in the blank.

4.7 Zero the system height



Zero the initial system height value for the control system. Don't attempt to zero at a raised position.

Lower the wheel-support carriage completely to the physical bottom before clearing.

It must be attained that if you zero with the carriage being at a position above its physical bottom, a negative height value will be displayed on the screen when the carriage descends lower than the zeroing position.

1. Zero under single control mode.

Before turning into group control mode, each columns shall be cleared to zero independently.

Read the card / activate single control mode/ push the DOWN button to lower the wheel-support carriage till the bottom position / access the corresponding interface and click the icon "CLEAR TO ZERO"

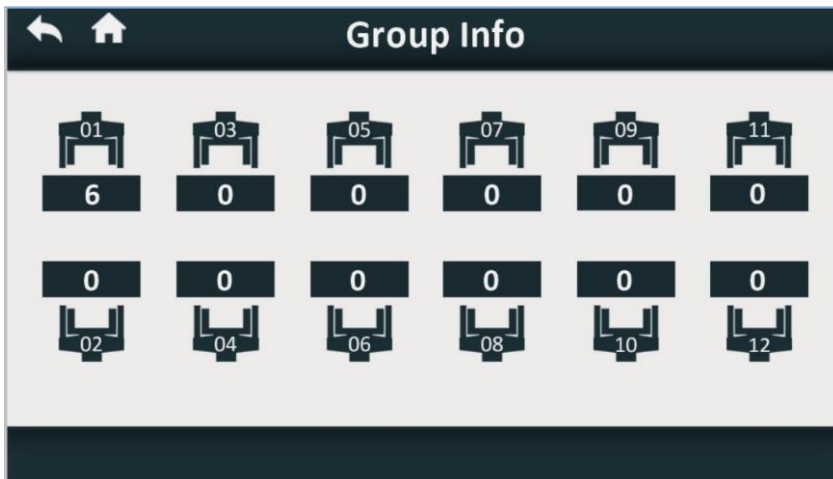


2. Zero under group control mode

Activate the control panel under group control mode, push the DOWN button until the carriage lowers completely.

Access the interface for Group Info and get the height values for all columns in the group.

Click the icon "CLEAR TO ZERO" to clear the difference.



4.8 Control modes

SINGLE CONTROL MODE

Under single mode, a single column can be independently controlled.

Read the ID card and click the single-column icon to turn into single control mode

The icon turns from white to yellow to indicate the activation of single control mode.



GROUP CONTROL MODE


Under group mode, all columns in a group are interconnected and operated synchronously.

Read the ID card and click the four-column icon to turn into group control mode.



PAIR CONTROL MODE



Attention: Before turning into pair control mode, make sure to check the column number  indicated on the screen of each column. The paired two columns shall be positioned at both sides of the same axle.

Read the ID card and click the two-column icon to turn into pair control mode.

The icon turns from white to yellow to indicate the command of pair control mode is activated.

After initiating a pairing command, all columns within the same group will be automatically divided in pairs according to their number marks. No. 1 can only pair successfully with and No. 2, No.3 can only pair with No. 4, No.5 can only pair with No.6 and so forth.

Once the pairing command is activated, you will get a flashing icon , click the flashing  at the corresponding column to confirm the command for pairing

Example for pairing:

When you initiate a pairing command at NO.1 column and confirm the command at NO.2 column, the two columns are paired successfully. In pair control mode, you can control at either of the two columns.

If you initiate a pairing command at NO.1 column and confirm the command at NO.3 column, the two columns will not be paired.

If you initiate a pairing command at NO.1 column and confirm the command at NO.3 and NO.4 column, then the columns NO.3 and NO.4 will be paired successfully.

COMMISSIONING

5.1 Correct manners in use

After the lifting system are correctly set up, get familiar with lift controls by running the lift through a few cycles before loading vehicle. Never raise just one end, one corner or one side of vehicle. The lifting system must be only used in a static position for lifting and lowering vehicles.

- Only authorized persons are permitted in the lift area.
- Position the lifting columns properly and adjust the forks to the required distance so as to fit the tires.
- Check the vehicle after raising a short distance to ensure that it is correctly and safely positioned.
- The load carrying device shall be observed by the operator throughout the motion of the lift.
- Engage the safety locking mechanism before entering under the raised vehicle.
- Always remember to use safety stands before removing or installing heavy parts.
- Avoid excessive rocking of vehicle while on the lift
- Do not climb onto the load or load carrying device when they are raised.
- Do not stand in the field of motion during raising or lowering movement.
- Do not leave the vehicles unattended in the lifted position.
- Don't charge while commissioning the lift.

5.2 Lifting Instructions

The lift has to be used only referring to the type of vehicle support specified by the manufacturer. The operator shall make the appropriate choice in relation to the lift /vehicle combination by evaluating the axles that apply on each independent lifting unit in order to avoid overloading or damage to the vehicle itself.

Make sure that the maximum wheel load does not exceed the lifting capacity of each independent lifting unit and the maximum axle load of the vehicle does not exceed the lifting capacity of the two independent lifting units supporting the axle.

It must be noted that the axle load of the vehicle cannot be equally distributed to the wheels and the rated load of the multiple lifting unit may not correspond to the sum of the lifting capacities of the individual lifting units.

CAUTION:

Evaluate the axle load that is going to be applied on the two independent lifting units.

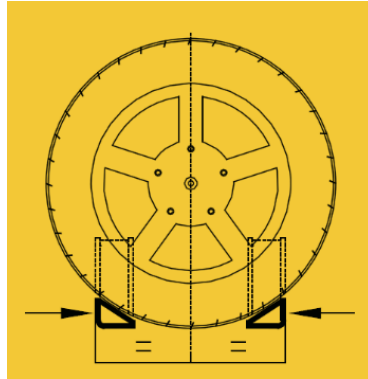
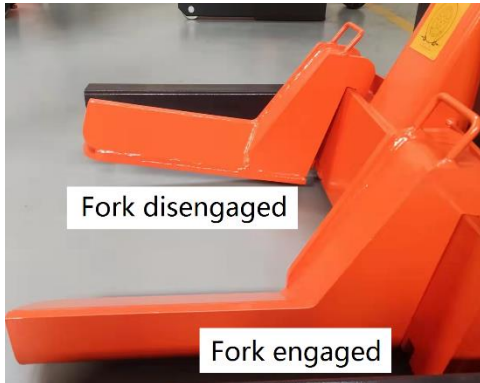
Make center of balance be centered over the lifting system.

CAUTION:

Check for the overhead obstructions before raising.

CAUTION:

Check the status of the fork before push it under the wheels. All forks must be engaged before loading. The two locking positions of the fork must be symmetric to the central axis of the columns



Raising

① Position the four lifting columns properly.

Adjust the forks making them fit just around the tires at bottom position.

Do not tilt the column when trying to position the wheel carrying fork so as to avoid collision with the vehicle.

② Lower the pallet jack completely.

③ Turn on the main switch on each column in the group.

Get access to the control system using the ID card.

The card identifier is available on each individual lift and it is able to control at any column in the group.

④ Push the UP button to raise a short distance and check the stability before raising to the expected height.

⑤ Push the LOCK button to engage the mechanical safety lock before doing maintenance or repair work underneath.

Lowering

① When lowering the lift pay careful attention that all personnel and objects are kept clear.

② Push the "DOWN" button.

On condition the locking device engages, the load carrying forks will go upwards for a short distance to release the mechanical locking unit. After that they start to descend.

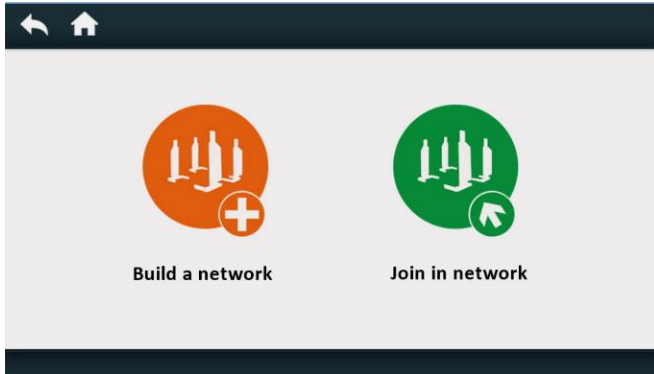
③ Lower till the bottom and move all columns to provide an unobstructed exit before removing vehicle from lift area.

5.3 Warning tips and solutions

5.3.1 Network non-allocated

If column NO.1 initiates building a network but no column joins in the network, the warning appears on the screen of column NO.1.

The warning removes when Column NO.2 to join in the network build by Column NO.1.



5.3.2 Incomplete group network

In case one or more columns in a group have turned into single control mode, the warning appears on the screen of the rest columns in the group. The warning removes when the single-controlled column or columns in the group have returned back to group control mode.

The warning also appears when the terminal for antennas were not tightened.

5.3.3 Occupied channel

If the communication channel code automatically given by the electrical system coincides with the communication channel number on other surrounding devices (with a low probability, but it is possible). In this case, remove the warning either by rebuilding a network or manually modifying the communication channel number.

5.3.4 Excessive height deviation

Asynchronization within the limited value can be automatically calibrated by the lifting system itself.

In case the deviation exceeds the limit, the warning tip appears at the column which has the least rising height among the group.

Correspondingly, an audible warning will be heard from this column.

Get rid of the deviation using the following method.

Turn the column that gives out an audible warning into single mode, adjust its rising height until the system height deviation is less than 50mm. Return back to group control mode and check the synchronization.

5.3.5 Unworking back-up starter

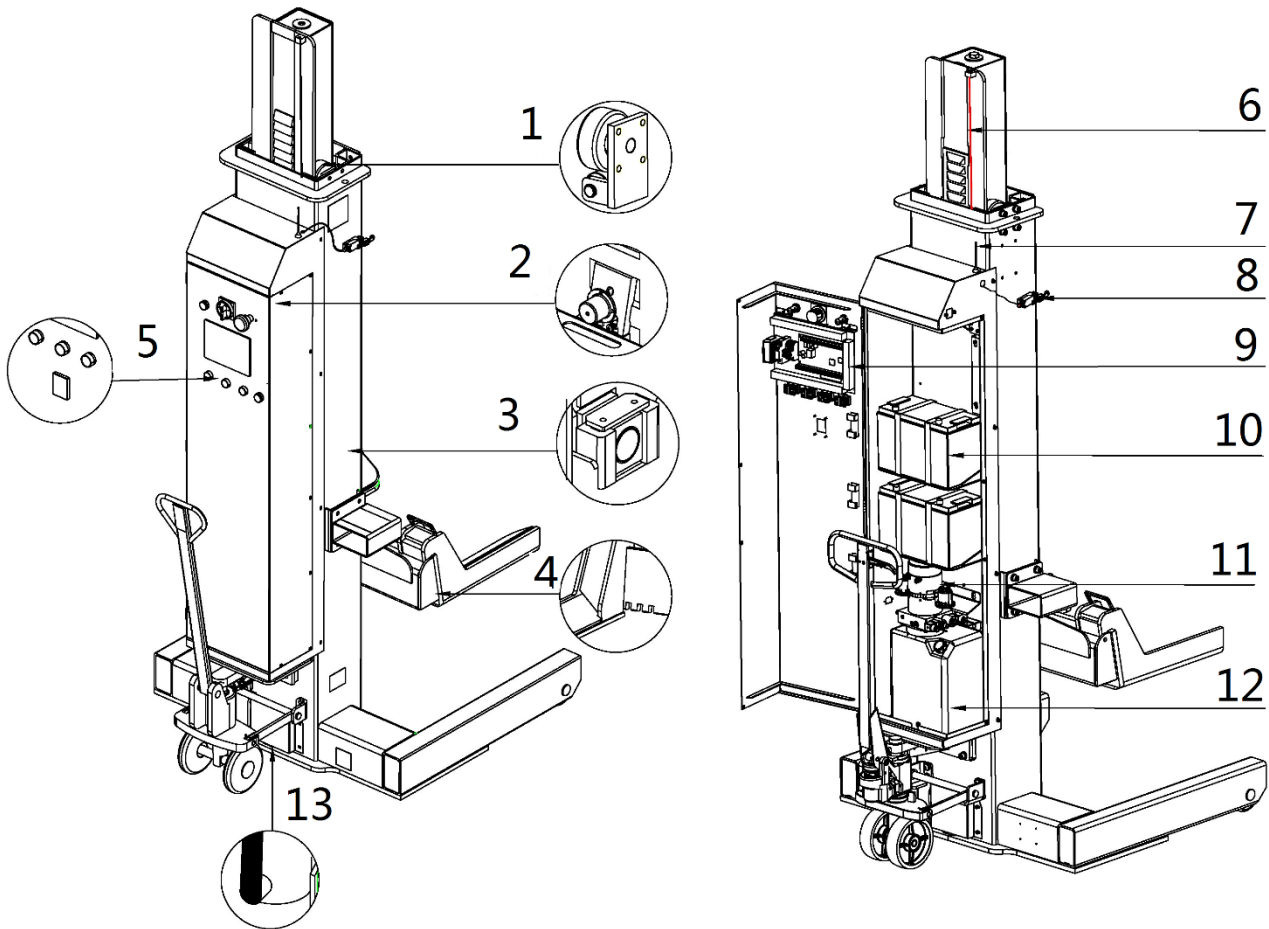
The warning tip appears in case the backup motor starter fails to work.

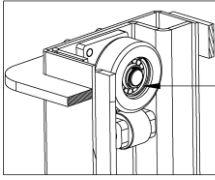
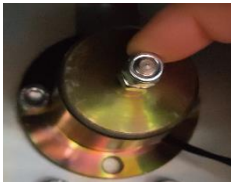
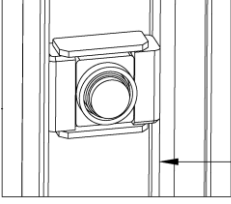
Turn off and turn on the main power switch to restart.


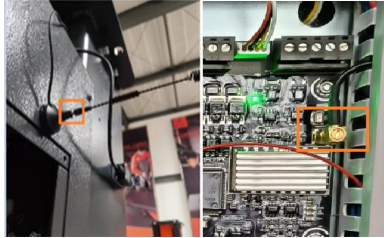

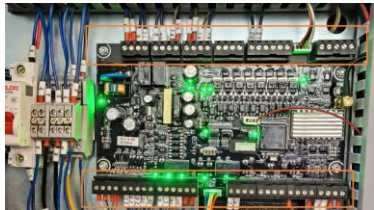
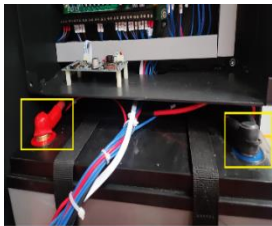
TROUBLE SHOOTING

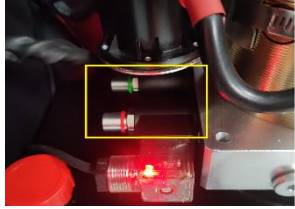
TROUBLES	POSSIBLE CAUSES	SOLUTIONS
Column does not lift	Poor contact of the button for raising.	Check with a voltage meter. Replace the button.
	No battery power.	Check and charge the battery.
	Insufficient oil level in the tank.	Add oil.
	Insufficient output of the pump.	Replace the pump.
	Exceeded difference in lifting heights.	Identify the column which gives out an audible warning. Turn the column that gives out an audible warning into single mode, adjust its rising height until the height deviation with all the rest columns is less than 50mm. After that turn it to group mode making it join in the group again. Push the button UP or DOWN to check when the breakdown has been eliminated.
	Jammed or damaged non-return valve	Clean or replace the valve.
Column does not lower	The relief valve does not set properly.	Get in contact with the manufacturer and set the valve as instructed by the manufacturer.
	No battery power.	Check and charge the battery.
	Poor contact of the button for lowering.	Check with a voltage meter. Replace the button.
	The mechanical lock is not disengaged.	The electromagnet is burnt or there is a fault in its wiring.
	The valve for unloading does not open.	Firstly, check the relay with a voltage meter. Replace the relay if it is off in the circuit. In case the relay is on in the circuit, check lowering solenoid valve. Replace the solenoid valve for unloading if it is off in the circuit.
	Jammed valve for unloading.	Clean or replace the valve.
	Exceeded deviation in height.	Identify the column which gives out an audible warning. Turn the column that gives out an audible warning into single mode, adjust its rising height until the height deviation with all the rest columns is less than 50mm. After that turn it to group mode making it join in the group again. Push the button UP or DOWN to check when the breakdown has been eliminated.
The highest lifting position is nearly equal to the highest locking position.	Add oil and push the button for raising.	
Column lowers by itself	Damaged cylinder seals.	Replace the seals.
	Leaks at the oil line connectors.	Tighten or replace the connectors.
	Jammed or damaged non-return valve.	Clean or replace the valve.
	Damaged valve for unloading.	Replace the valve.
Column does not lift properly	Insufficient oil level in the tank.	Add oil.
	Air sucked into the pump.	The cushion valve is damaged. Replace the valve.
	Jammed breather cap.	Clean or replace the cap.

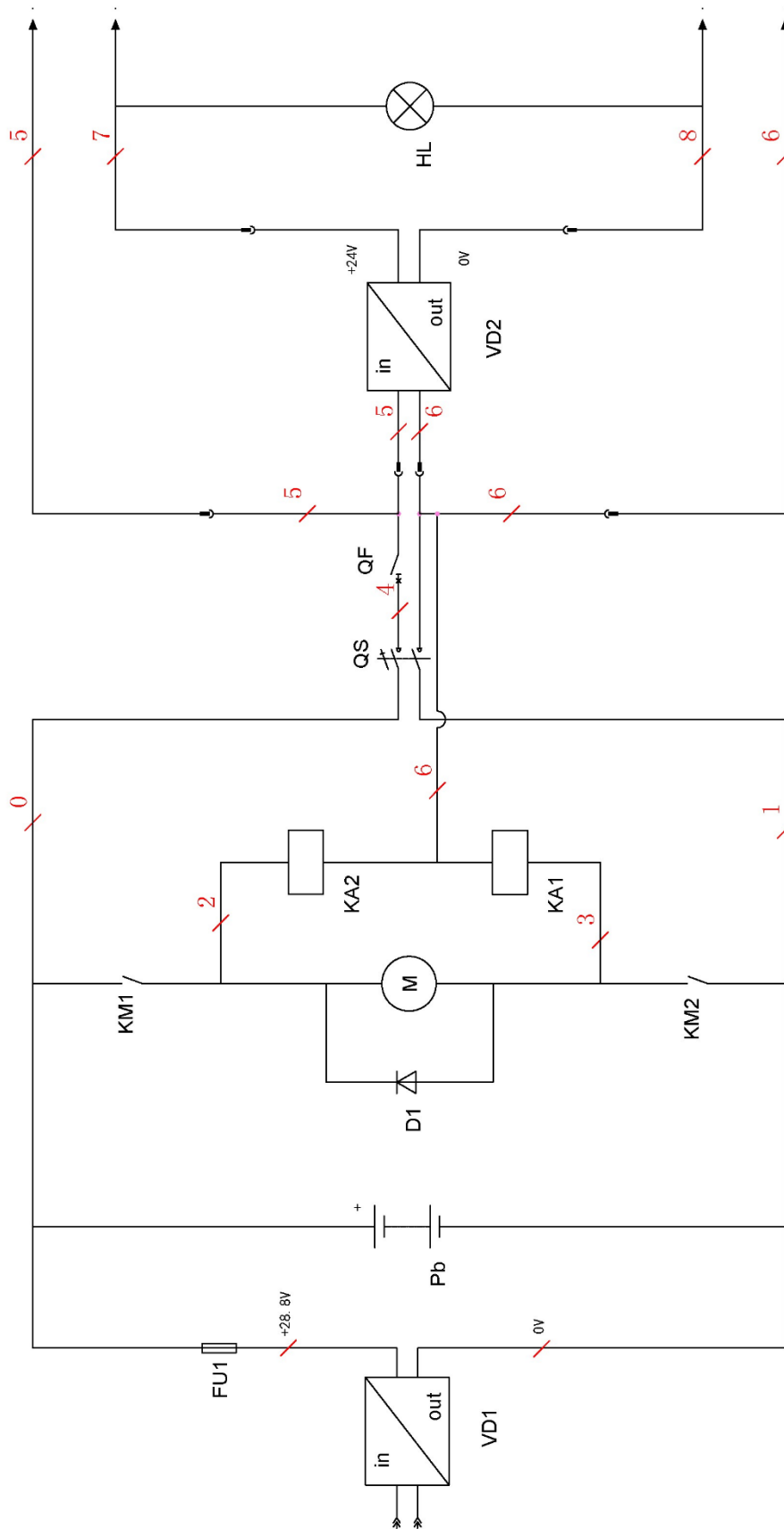
MAINTENANCE

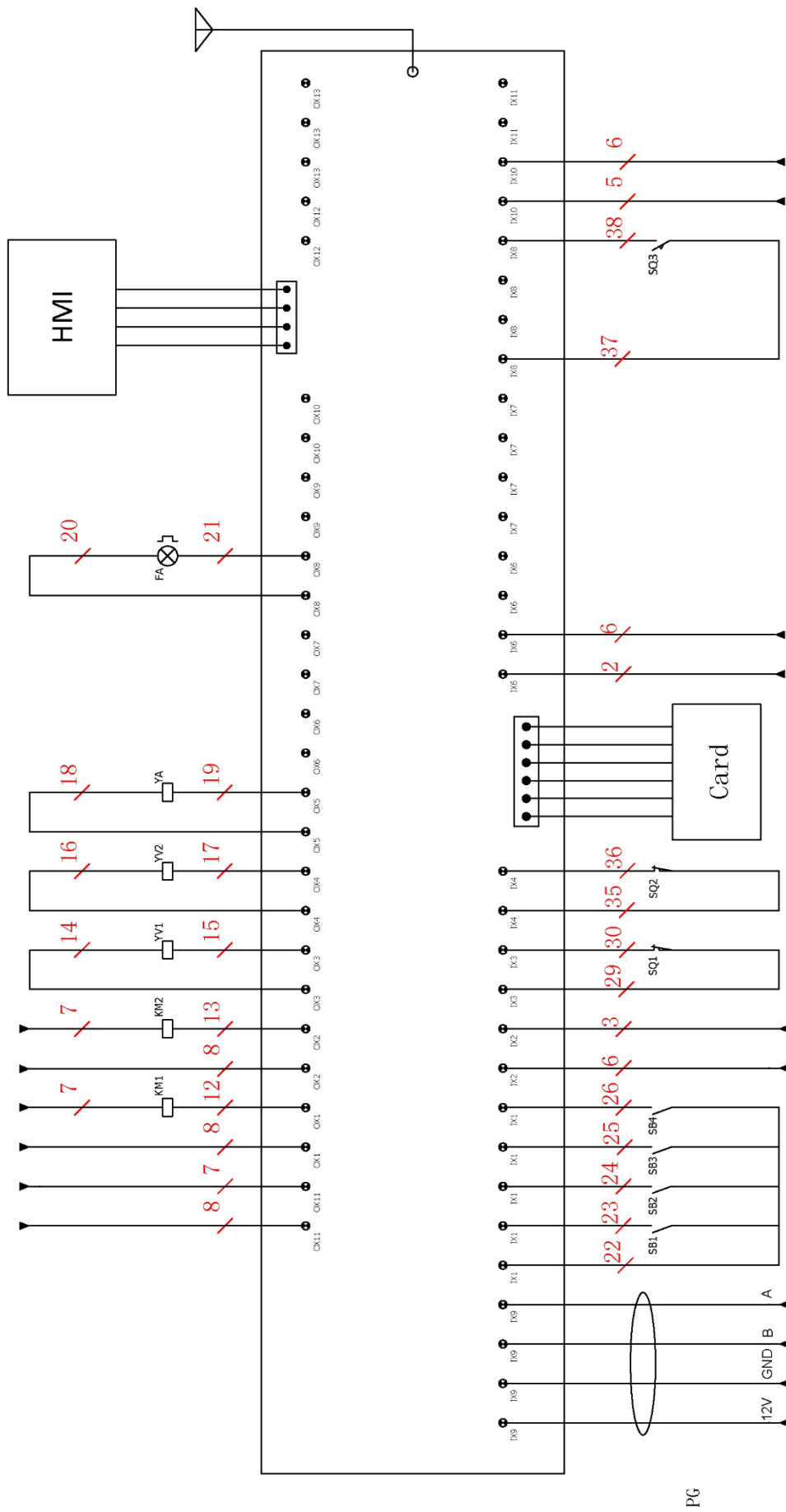


POS.	Components	Inspection method	Period	Picture
1	Guiding wheels at the top of the column	Push the UP button and inspect the guiding wheels. The wheels shall roll accordingly with the rise of carriage.	Every month	
2	Mechanical locking device	Open the door of the control cabinet, push the UP button and the LOCK button and inspect the movement of electromagnet. Push the lock button and the locking plate disengages.	Every month	
3	Sliding track of the carriage	Add grease onto the track evenly.	Every 3 months	

POS.	Components	Inspection method	Period	Picture
4	Locking device of the fork	Inspect each latching position. No obvious deformation is allowed. Stop using the lift if any deformation is found.	Every day	See the above scheme
5	Control buttons	Check the function of the button under no load. The button shall function as "hold to run".	Every day	See the above scheme
6	Rope displacement sensor	Open the door of the control cabinet, push the rope of the sensor to check its tension. Replace a slacken sensor with a new one.	Every 6 months	
7	Antenna	Check connections. Tighten the bottom of the antenna with its holder. Tighten the wire connection with circuit board.	Every 3 months	
8	Max-rise limit switch	Push the movable lever of the switch and check if the lamp flashes correspondingly on the circuit board.	Every 3 months	
9	Wire terminal connections around the circuit board.	Inspect and push all fast-connecting terminals into position.	Every 3 months	
10	Lead-acid battery	Check the voltage of the battery. The voltage ranges from 12 to 12.9V for a completely new battery. The battery is useless if the voltage tested is less than 10.5V. It is advised to replace with a new battery on	Every 3 months	

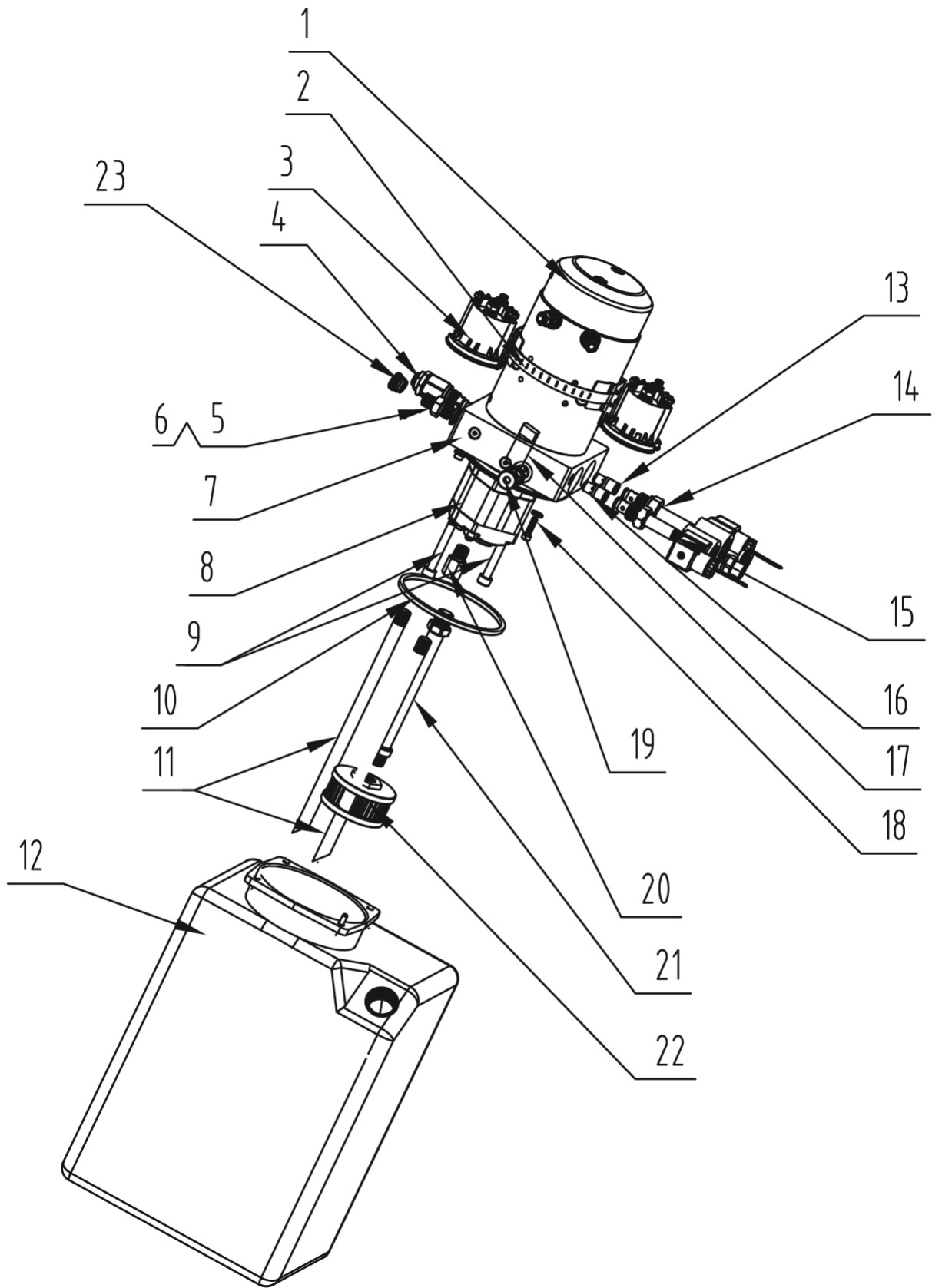
POS.	Components	Inspection method	Period	Picture
		condition that the full capability of lifting cycles is less than 5.		
11	Valves assembled on the power unit	Take the valves off and check if any solid substance attached. Tidy and clean the valves with clean hydraulic oil. This is necessary to be done after the first week of initial commissioning.	Every 12 months	
12	Hydraulic oil	Change the oil 6 months after initial use and once per year thereafter. Change the oil immediately if it becomes black or there is dirt or other solid substance in the tank.	Every 12 months	See the above scheme
13	Oil hose	Tighten the hose connection.	Every 3 months	See the above scheme

Annex 1, Electrical schemes and parts list


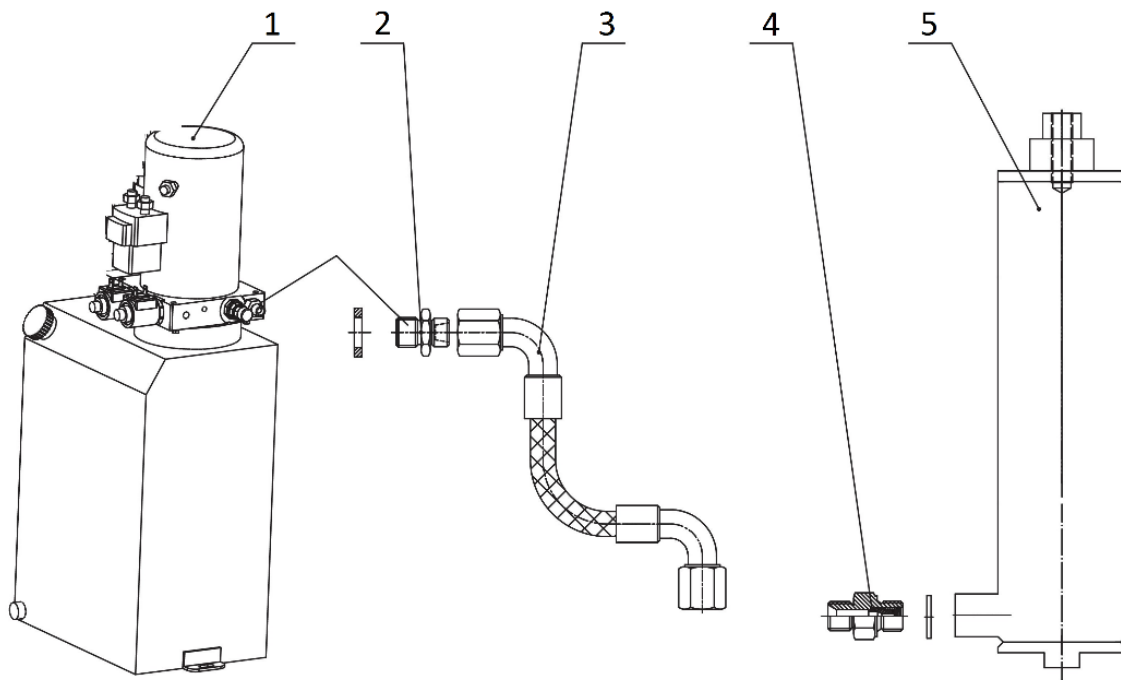


S/N	D-Code	P-code	Component Name	Specification	Qty
1	PCB	321301027	Circuit board	433	1
2	PG	321004136	Rope displacement sensor	WF60-2500-0015F24-00203	1
3	Pb	321203171	Battery	329*172*215mm 12V100AH	2
4	QS	320304001	Power switch	LW26GS-20-04	1
5	WT	320505029	Wire terminals	MBKKB2.5	5
6	SB1,SB2,SB3	320401042	Push button	NP2-EA11 (CDLA6H-EA11)	3
7	SQ1,SQ2	320301011	Limit switch	TZ8108	2
8	HL	321201001	Indicating lamp	ND16-22DS-2	1
9	FA	321202001	Alarm buzzer	AD118-22SM/R/AC/DC/24V	1
10	VD2	321004133	Voltage Stabilizer	XW-0936-24-240W	1
11	HMI	321500006	Screen	TJC1060X570_011	1
12	YA	410902384	Electromagnet	HDM84-A10	1
13	QF	320804024	Circuit breaker	DZ47SZ/6A	1
14	VD1	321203225	Charger	NPB-360-24TB	1
15	SB4	320402002	EMG stop	NP2-BS542(CDLA6H-BS542)	1
16	FU1	321004095	Fuse box	20A	1
17	Card	321004161	Card reader	M2940B-HA	1
18	SQ3	320301026	Micro switch	CMV101D	1
19	D1	321004166	Diode	6A10	1

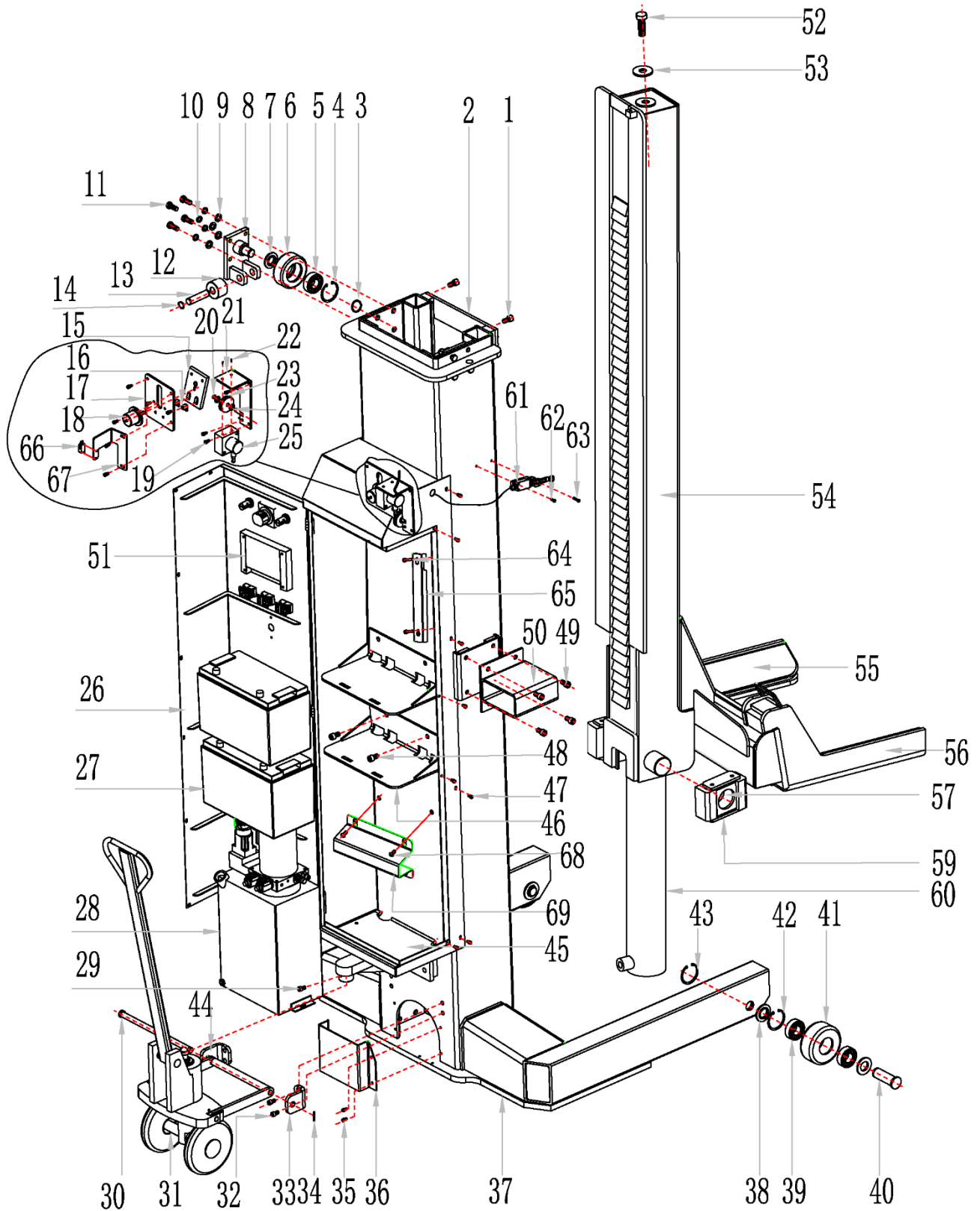
Annex 2, Hydraulic schemes and parts list



Pos.	Code	Component Name	Specification	Qty
1	320204275	DC motor	DM42-2AWU-3BA2R,24VDC,2.2KW	1
2	330503030	Stainless hoop	105-127*12/JB/T8870,1	1
3	320402019	Motor starter	684-24C1-212-17,24VDC	2
4	330304010	Relief valve	DANRV-08-50	1
5	310101010	Hex socket threaded fitting	G1/4---G1/4	1
6	207103025	Composite washer	13_7X20X1_5	1
7	330105043	Hydraulic block	LBZ-T202FK-3	1
8	330201910	Gear pump	CBKA-F2.5DF2	1
9	202109072	Hex socket cylinder head screw	M8x85-GB70_1	2
10	207101010	Type O seal ring	109*5.3	1
11	330402017	Oil-return pipe	YBZ-E2C4H1/1-01	2
12	330405031	Oil tank assembly	14L	1
13	330313002	Balance valve	BL-I1.5	1
14	330308027	Solenoid valve 2	LSV-08-2NCP-2H	1
15	791150005	Solenoid valve 1	DC24V	1
16	330308038	Balance valve	BL-I2.15	1
17	330404016	Coupling	FLZQ-5B-KQ/6.4A-43.5	1
18	201103001	Hex socket cylinder head screw	M5x25-GB5789	4
19	210101004	Hex socket flat head fitting	G1/4	1
20	330301003	Cushion valve	HCF-Z1/4	1
21	330401025	Oil sucking pipe	TJYG-Z3/8-M18x1.5-245	1
22	330403003	Filter	YBZ-E2D3I1/1-10	1
23	330302004	Non-return valve	ILCV2000-G1/4	1



POS.	Code	Component Name	Specification	Qty
1	622034392	Power unit assembly	DC24V-2.2KW-F2.5-DC24	1
2	310101008	Connector	M14*1.5-G1/4 inside cone	1
3	624008188	Rubber oil hose	Φ 8*2, L=890	1
4	310101010	Straight connector	G1/4---G1/4 inside cone	1
5	615068005	Cylinder	YG90108-60-1700	1

Annex 3, Mechanical drawings and parts list


POS.	Code	Component Name	Specification	Qty
1	202109085	Hex socket cylinder head screw	M12X30-GB70_1	4
2	410901144	Connection plate	HDM84-A1-B7	1
3	204301009	Circlip	D25-GB894_2	2
4	410220630	Circlip	GB-T893_1-1986	2
5	205201010	Cylinder needle bearing	NUP2305E	2
6	420680057	UP rolling wheel	HDM84-A14-B2	2
7	410901148	Big washer	HDM84-A14-B3	2
8	614901011	Welded wheel shaft assembly	HDM84-A14-B1	2
9	204101007	Flat washer	D12-GB95	8
10	204201006	Spring washer	D12-GB93	8
11	202109085	Hex socket cylinder head screw	M12X30-GB70_1	8
12	420240020	Upside rolling wheel	6603GN-A3-B8	2
13	410321611	Shaft	64P-A7-B11	2
14	204301007	Circlip	D20-GB894_2	4
15	410901132	Locking plate	HDM84-A1-B4	1
16	410901156	Positioning block	HDM84-A7-B2	2
17	410901155	Installation plate	HDM84-A7-B1	1
18	410902384	Electromagnet	HDM84-A10	1
19	202109017	Hex socket cylinder head screw	M6X8-GB70_1	8
20	204301001	Circlip	D10-GB894_1	1
21	614901013	Welded holder for the guiding pulley I	HDM84-A13-B1	1
22	202103008	Cross socket flat head screw	M5X10-GB819-1	2
23	420080020	Pulley I	6214DS-A8	1
24	204101006	Flat washer	D10-GB95	2
25	321004136	Rope sensor	WF60-2500-0015F24-00203	1
26	615068629	Cover assembly	HDM84-A35-V1	1
27	321203171	Battery assembly	329*172*215mm 12V100AH	2
28		Power unit assembly		1
29	202110007	Hex socket cylinder head screw	M10X20-GB70_2	1
30	410901153	Shaft of pallet jack	HDM84-A36	1
31	615022001	Pallet jack	612E-A13	1
32	202110016	Hex socket cylinder head screw	M12X20-GB70_2	4
33	410911057	Connection plate A for the pallet jack	HDM84-A1-B3-1	1
34	206201001	Cotter pin	D2_5X30-GB91	1
35	202109017	Hex socket cylinder head screw	M6X8-GB70_1	4
36	410901152	Covering plate	HDM84-A20	1
37	614901005	Welded post	HDM84-A1-B1	1
38	410901131	Wheel spacer	HDM84-A1-B6	4

POS.	Code	Component Name	Specification	Qty
39	205201009	Roller bearing	NUP2206E	4
40	410901129	Front wheel shaft	HDM84-A1-B2	2
41	410901130	Front wheel	HDM84-A1-B3-C1	2
42	410220630	Circlip	GB-T893_1-1986	2
43	204301011	Shaft Circlip	D30-GB894_2	2
44	410911058	Connection plate B for the pallet jack	HDM84-A1-B8	1
45	614901010	Power unit holder	HDM84-A9	1
46	614901009	Battery holder	HDM84-A8	2
47	202109017	Hex socket cylinder head screw	M6X8-GB70_1	16
48	202110016	Hex socket cylinder head screw	M12X20-GB70_2	4
49	202110016	Hex socket cylinder head screw	M12X20-GB70_2	8
50	614901008	Square tube assembly	HDM84-A6	2
51		Control assembly		1
52	201103006	Hex full threaded bolt	M20X60-GB5783	1
53	410901134	Washer	HDM84-A3-B4	1
54	614901623	Welded carriage	HDM84-A3-B1-1	1
55	614901014	Left support arm	HDM84-A5	1
56	614901015	Right support arm	HDM84-A4	1
57	420680114	Sliding block	HDM84-A3-B8-1	4
59	612901621	Sliding block holder	HDM84-A3-B2-1	2
60	615068005	Hydraulic cylinder	YG90108-60-1700	1
61	320301011	Limit switch	TZ8108	1
62	202101009	Cross socket cap head screw	M4X14-GB818	1
63	202103007	Cross socket flat head screw	M4X25-GB819_1	1
64	202109022	Hex socket cylinder head screw	M6X25-GB70_1	2
65	410911539	Wire slot A	HDM84-A35-B5	1
66	320301026	Micro switch	CMV101D	1
67	410911782	Plate for installing Micro switch	HDM84-A7-B3	1
68	202110004	Hex socket button head screw	M8X12	4
69	410911549	Installation holder for power unit	HDM84-A1-B12	1