

# INSTALLATION & OPERATION MANUAL



# Atlas 44,000 LB. Mobile Column Lift 220V Single Phase



**Atlas Automotive Equipment**  
[www.atlasautoequipment.com](http://www.atlasautoequipment.com)  
(866) 898-2604

**Read this entire manual before operation begins.**

Record below the following information which is located on the serial number data plate.

Serial No. \_\_\_\_\_

Model No. \_\_\_\_\_

Date of Installation \_\_\_\_\_

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# Printing Characters And Symbols

Throughout this manual, the following symbols and printing characters are used to facilitate reading:



Indicates the operations which need proper care

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Indicates prohibition

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Indicates a possibility of danger for the operators

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Indicates the direction of access for motor vehicles to the lift

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**BOLD  
TYPE**

Important information



**WARNING: before operating the lift and carrying out any adjustment, read carefully chapter 7 “installation” where all proper operations for a better functioning of the lift are shown.**

# General Information

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This chapter contains warning instructions to operate the lift properly and prevent injury to operators or objects.

This manual has been written to be used by shop technicians in charge of the lift (operator) and routine maintenance technician (maintenance operator).

The operating instructions are considered to be an integral part of the machine and must remain with it for its whole useful life.

Read every section of this manual carefully before operating the lift and unpacking it since it gives helpful information about:

- **safety of people**
- **safety of the lift**
- **safety of lifted vehicles**

The company is not liable for possible problems, damage, accidents, etc. resulting from failure to follow the instructions contained in this manual.

Only skilled technicians of AUTHORIZED DEALERS or SERVICE CENTERS AUTHORIZED by the manufacturer shall be allowed to carry out lifting, transport, assembling, installation, adjustment, calibration, settings, extraordinary maintenance, repairs, overhauling and dismantling of the lift.

**The manufacturer is not responsible for possible damage to people, vehicles or objects if said operations are carried out by unauthorized personnel or the lift is improperly used.**

Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

## 1.1 Manual Keeping

For a proper use of this manual, the following is recommended:

- keep the manual near the lift, in an easily accessible place.
- keep the manual in an area protected from the damp.

- use this manual properly without damaging it.
- Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

This manual is an integral part of the lift: it shall be given to the new owner if and when the lift is resold.

## 1.2 Obligation In Case Of Malfunction



**In case of machine malfunction, follow the instructions contained in the following chapters.**

## 1.3 Cautions For The Safety Of The Operator

Operators must not be under the influence of sedatives, drugs or alcohol when operating the machine.



**Before operating the lift, operators must be familiar with the position and function of all controls, as well as with the machine features shown in the chapter “Operation and use”**

## 1.4 Warnings



**Unauthorized changes and/or modifications to the machine relieve the manufacturer of any liability for possible damages to objects or people. Do not remove or make inoperative the safety devices, this would cause a violation of safety at work laws and regulations.**



**Any other use which differs from that provided for by the manufacturer of the machine is strictly forbidden.**



**The use of non genuine parts may cause damage to people or objects**

## **1.5 Scrapping**

When your machine's working life is over and it can no longer be used, it must be made inoperative by removing any connection to power sources.

These units are considered as special waste material, and should be broken down into uniform parts and disposed of in compliance with current laws and regulations.

If the packing are not polluting or non-biodegradable, deliver them to appropriate handling station.

### **DECLARATION OF WARRANTY AND LIMITATION OF LIABILITY**

The manufacturer has paid proper attention to the preparation of this manual. However, nothing contained herein modifies or alters, in any way, the terms and conditions of manufacturer agreement by which this lift was acquired, nor increase, in any way, manufacturer's liability to the customer.

### **TO THE READER**

Every effort has been made to ensure that the information contained in this manual is correct, complete and up-to date. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes due the development of the product, at any time.

# Product Identification

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The identification data of the machine are shown in the label placed on the control unit.

## LOGO

Type:	.....
Model:	.....
Serial Number:	.....
Year of manufacturing:	.....
Capacity:	.....
Voltage:	.....
Power:	.....



**Use the above data both to order spare parts and when getting in touch with the manufacturer (inquiry). The removal of this label is strictly forbidden.**

The lift may be updated or slightly modified from an aesthetic point of view and, as a consequence, they may present different features from these shown, this without prejudicing what has been described herein.

## 2.1 Warranty Certificate

The warranty is valid for a period of 12 months starting from the date of the purchase invoice.

The warranty will come immediately to an end when unauthorized modifications to the machine or parts of it are carried out.

The presence of defects in workmanship must be verified by the Manufacturer's personnel in charge.



## **2.2 Technical Servicing**

For all servicing and maintenance operations not specified or shown in these instructions, contact your Dealer where the machine has been bought or the Manufacturer's Commercial Department.

Only skilled personnel who are familiar with the lift and this manual shall be allowed to carry out packing, lifting, handling, transport and unpacking operations.

# Packing; Transport; Storage

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## 3.1 Packing (Ref. Fig. 1)

The column is delivered in following components:

- The basic unit fixed on the steel frame
- An accessory box with external components

If requested, optional accessories are available to satisfy each customer's requirements.

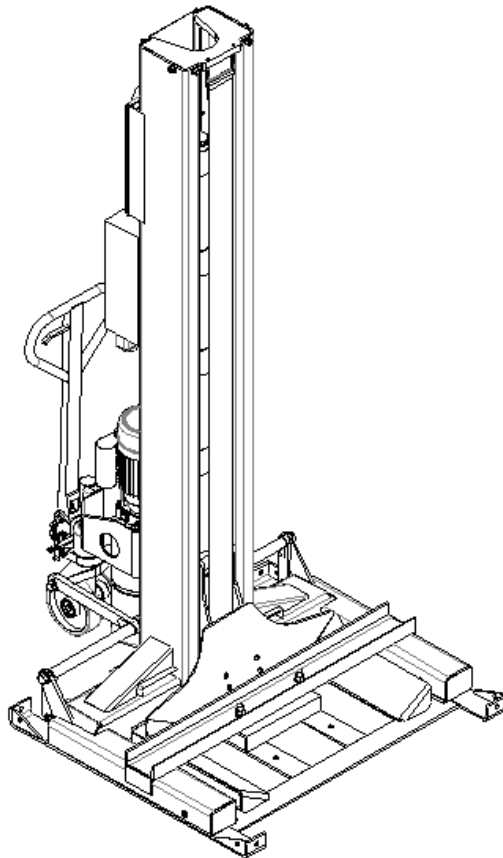
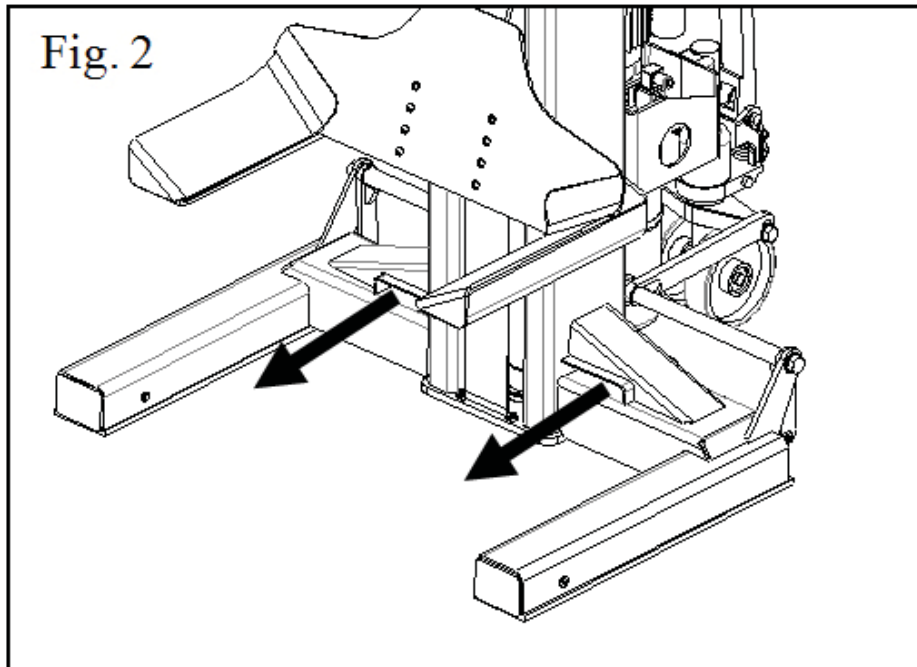


Figure 1 – 1,100 lbs. per column

## 3.2 Loading/Unloading And Transportation

When loading/unloading or transporting the equipment to the site, be sure to use a fork lift with the capacity no less than 1000kg and be sure to insert the forks into the fork holders under the post shown in the picture 2. Be sure also to load/unload the column securely so that it cannot fall down, taking into consideration its size, weight and center of gravity.



**Handle only one column at a time**

## 3.3 Storage And Stacking Of Packages

Packages must be stored in a covered place, out of direct sunlight and in low humidity, at a temperature between 0°C and +40°C. Stacking is not allowed.

## 3.4 Delivery And Check Of Packages

When the lift is delivered, check for possible damages due to transport and storage; verify that what is specified in the manufacturer's confirmation of order

is included. In case of damage in transit, the customer must immediately inform the carrier of the problem.

Packages must be opened paying attention not to cause damage to people (keep a safe distance when opening straps) and parts of the lift (be careful the objects do not drop from the package when opening).

# Product Description

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## 4.1 Intended Use

The lift is suitable for lifting heavy-duty vehicles, such as a truck and a bus, with maximum weight 5000kg for each column. The lift can be used in a group combined with 2, 4, 6 ... 12 columns. In order to lift any type of vehicle, each column is possible to be raised or lowered individually.

Wheels of the vehicle should be in compliance with the lifting fork dimensions.

## 4.2 Lift Description (Ref. Fig. 3)

This chapter describes the lift's principal elements, allowing the user to be familiar with the lift.

As shown in Fig. 3, one column set is composed mainly of a post (1) with the mechanical safety device (2) built-in, a carriage (3) with a pair of adjustable lifting forks, a hydraulic cylinder (4), a hydraulic power unit (5), the control panel: master (6) or slave (7), and the height sensor (8), can be moved by means of a mobile jack (9).

*All operations are carried out by "momentary controls" on the control panel as described in chapter 8.*

The working information is displayed on each relevant control panel so that the operator is able to check all working phases.

*A limit switch (10) is installed in the column for max height. A reset button (11) for resetting the height counter is located on the right side of the control panel on each column.*

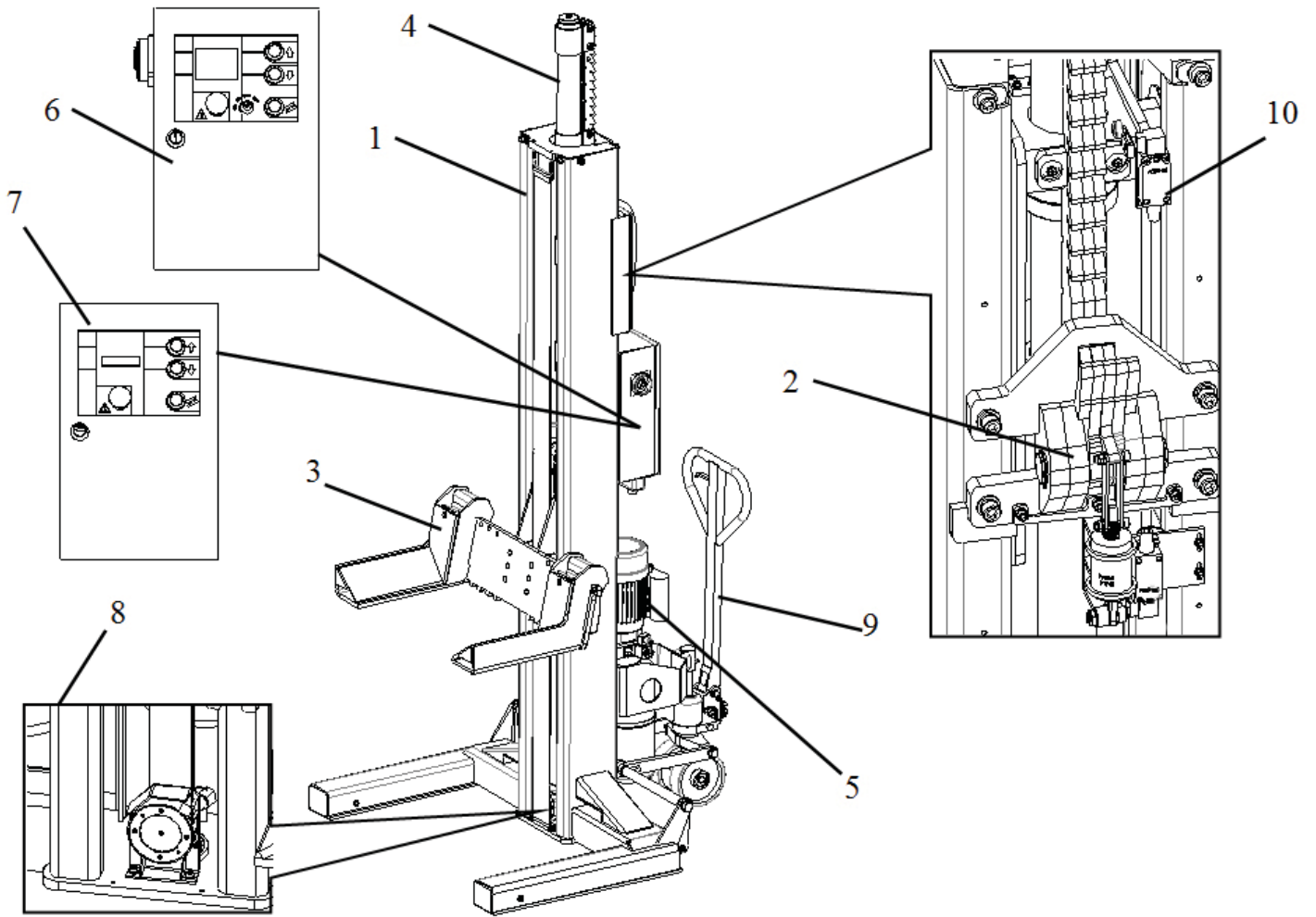
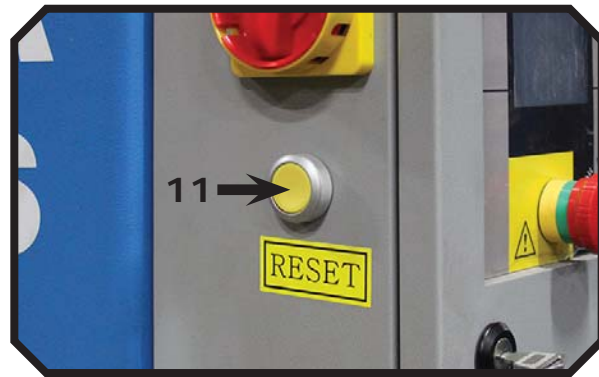


Figure 3



# Technical Specification

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## 5.1 Size And Main Features (Ref. Fig. 4)

<b>CAPACITY of each column</b>	<b>5000Kg (11000lbs)</b>
Max. Lifting Height	67" (5' 8")
Width between two lifting forks adjustable	6 1/2" – 21 1/2"
Max. synchronization of each carriage	1 1/2" (40mm)
Overall height	148 1/2" (12' 4 1/2")
Lifting time	85 s
Lowering time	95 s
Noise level	80 dB(A)/1m
Working temperature	32 °F ~ 104 °F
Package weight	1,100 lbs. per column

## 5.2 Electric Motor

<b>Type</b>	<b>MS90L4</b>
Voltage	220V/60Hz1Ph (209-231V operating range)
Power	1.8 KW
N° Poles	4
Speed	1400rpm
Motor enclosure type	B14
Insulation class	IP 54

Motor connection must be carried out referring to the attached wiring diagrams the Fig. 7.

The motor direction of rotation is shown in the label placed on the motor.

Before use of the lift, make sure to check if the motor specification shown in the nameplate of the motor conforms to the local electric supply.

If there is over 5% fluctuation in the electrical power supply, it is suggested to use a Voltage Stabilizer, or a Buck Boost Transformer to protect the electrical components and system from over/under load.

### 5.3 Pump

Type	Gear
Flow rate	2.7 cm <sup>3</sup> /g
Continuous working pressure	210 bar
Peak pressure	230 bar

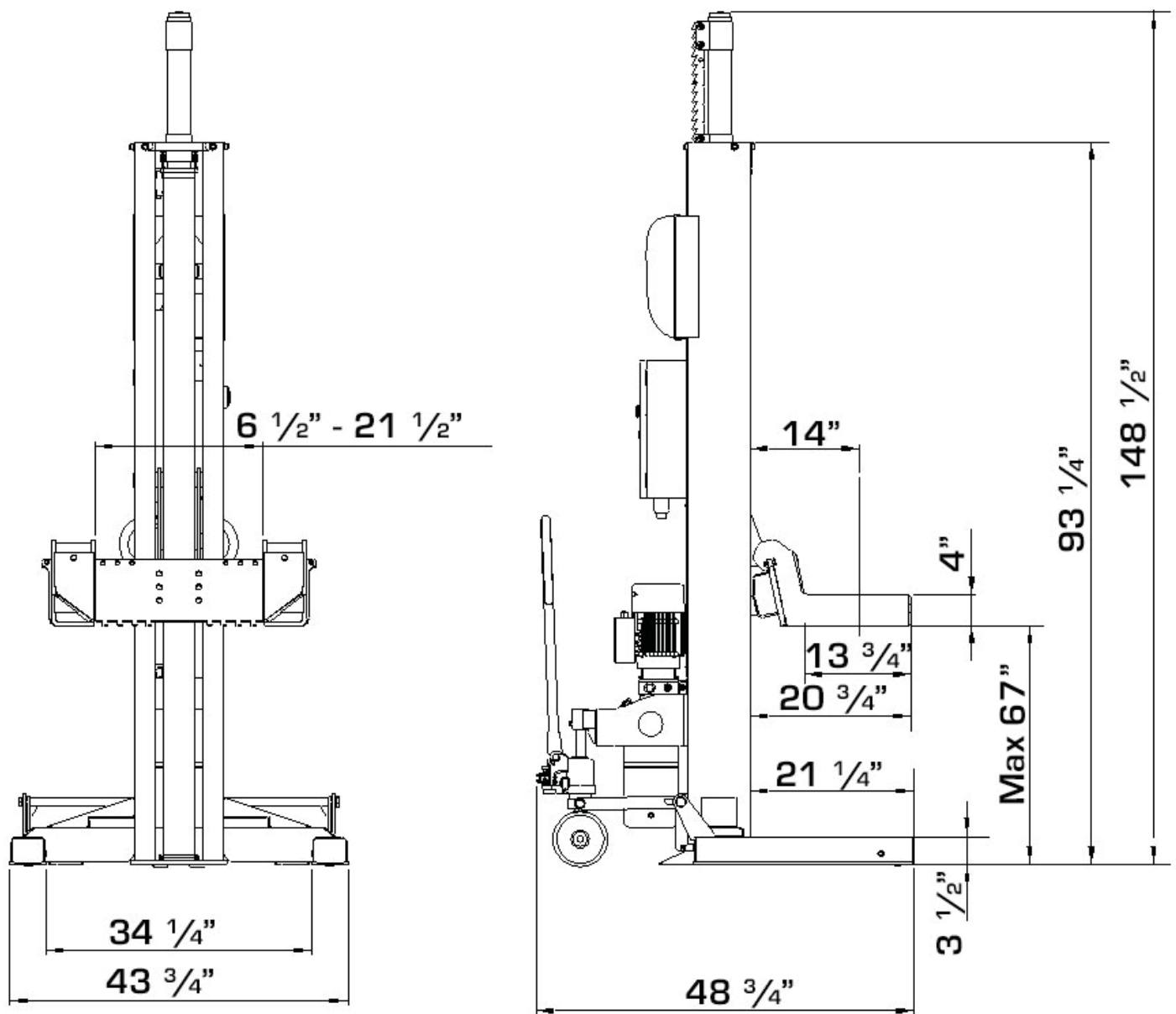


Figure 4 – Column Layout



## 5.4 Hydraulic Power Unit

The power unit is equipped with

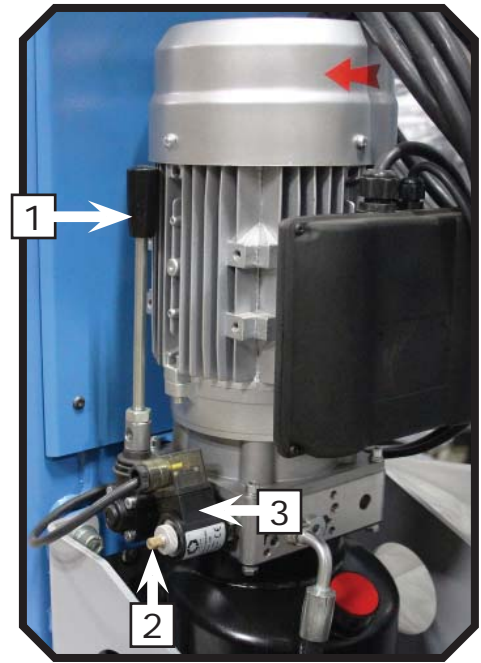
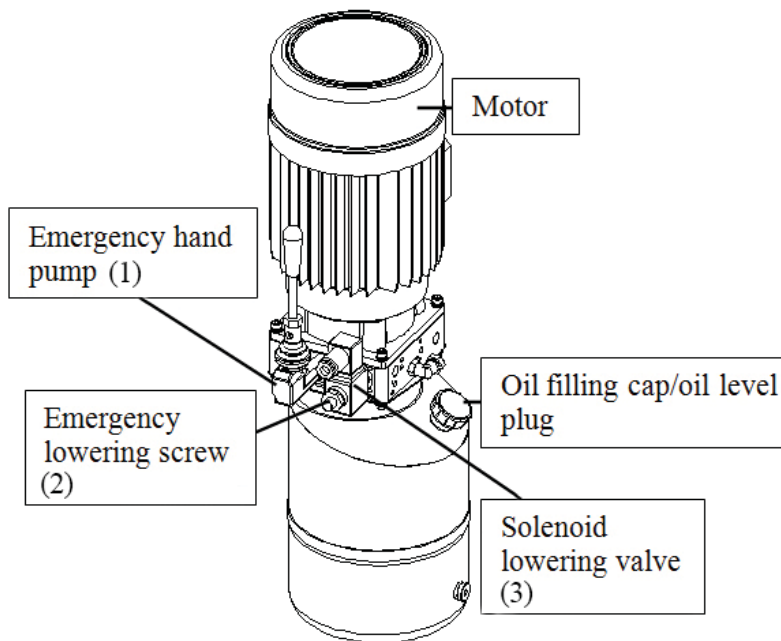


Figure 5 – Hydraulic Power Unit



**If the oil filling cap is lost or broken, order the replacement. The oil tank must be vented well.**

## 5.5 Oil

Use wear proof oil for hydraulic drive, in conformity with ISO 6743/4 rules (HM class). The oil with features similar to those shown in the table is recommended.

Test standards	Features	Value
ASTM D 1298	Density 20°C	0.8 kg/l
ASTM D 445	Viscosity 40°C	32 cSt
ASTM D 445	Viscosity 100°C	5.43 cSt
ASTM D 2270	Viscosity index	104 N°
ASTM D 97	Pour point	~ 30 °C
ASTM D 92	Flash point	215 °C
ASTM D 644	Neutralization number	0.5 mg KOH/g



**Change hydraulic oil at 1 year intervals**

## 5.6 Electric And Hydraulic Schemes

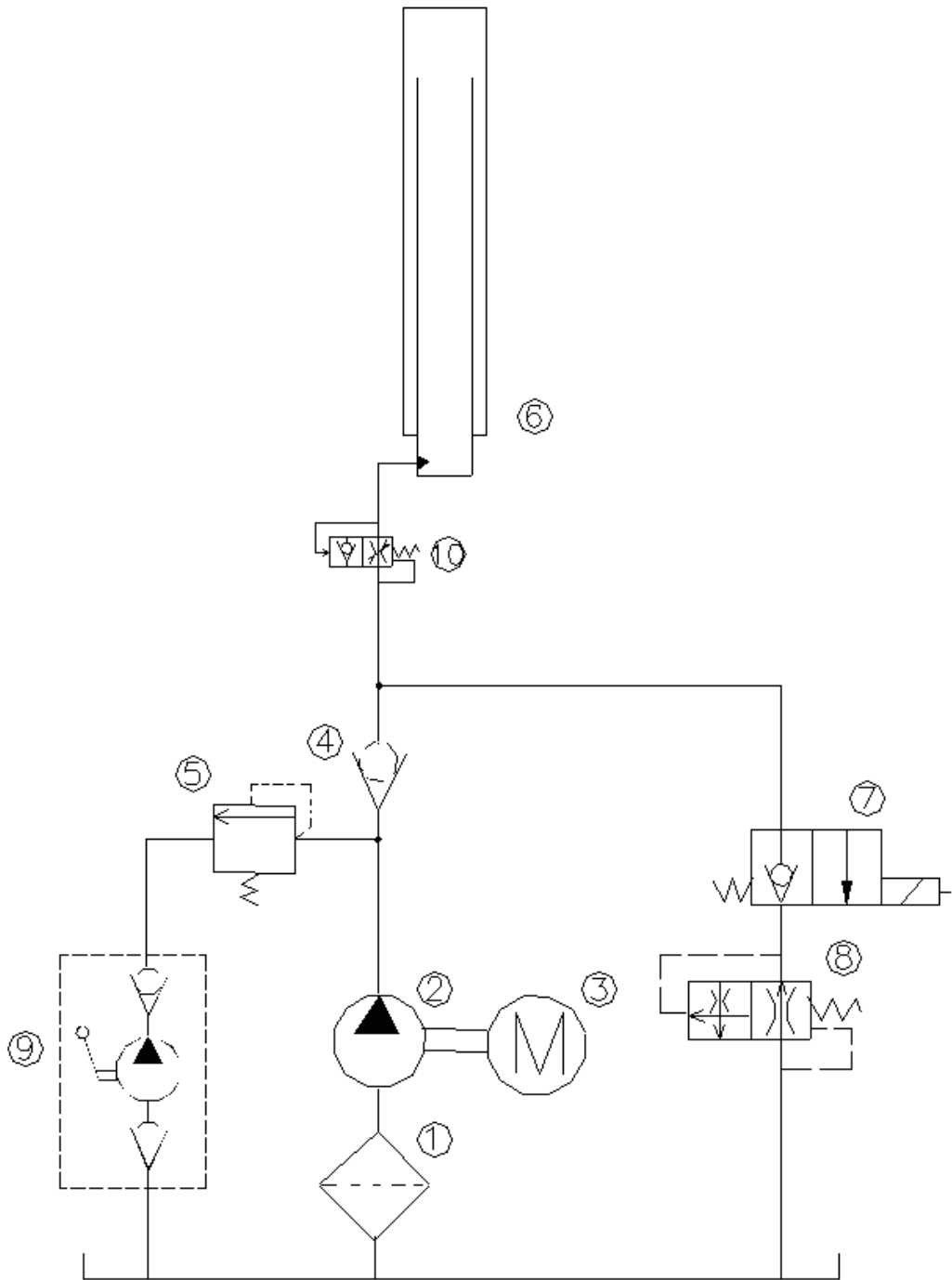


Figure 6 - Hydraulic Scheme

1	Oil filter	6	Hydraulic cylinder
2	Gear pump	7	Solenoid lowering valve
3	Motor	8	Lowering speed control
4	Non return valve	9	Emergency hand pump
5	Pressure overload valve	10	Parachute valve

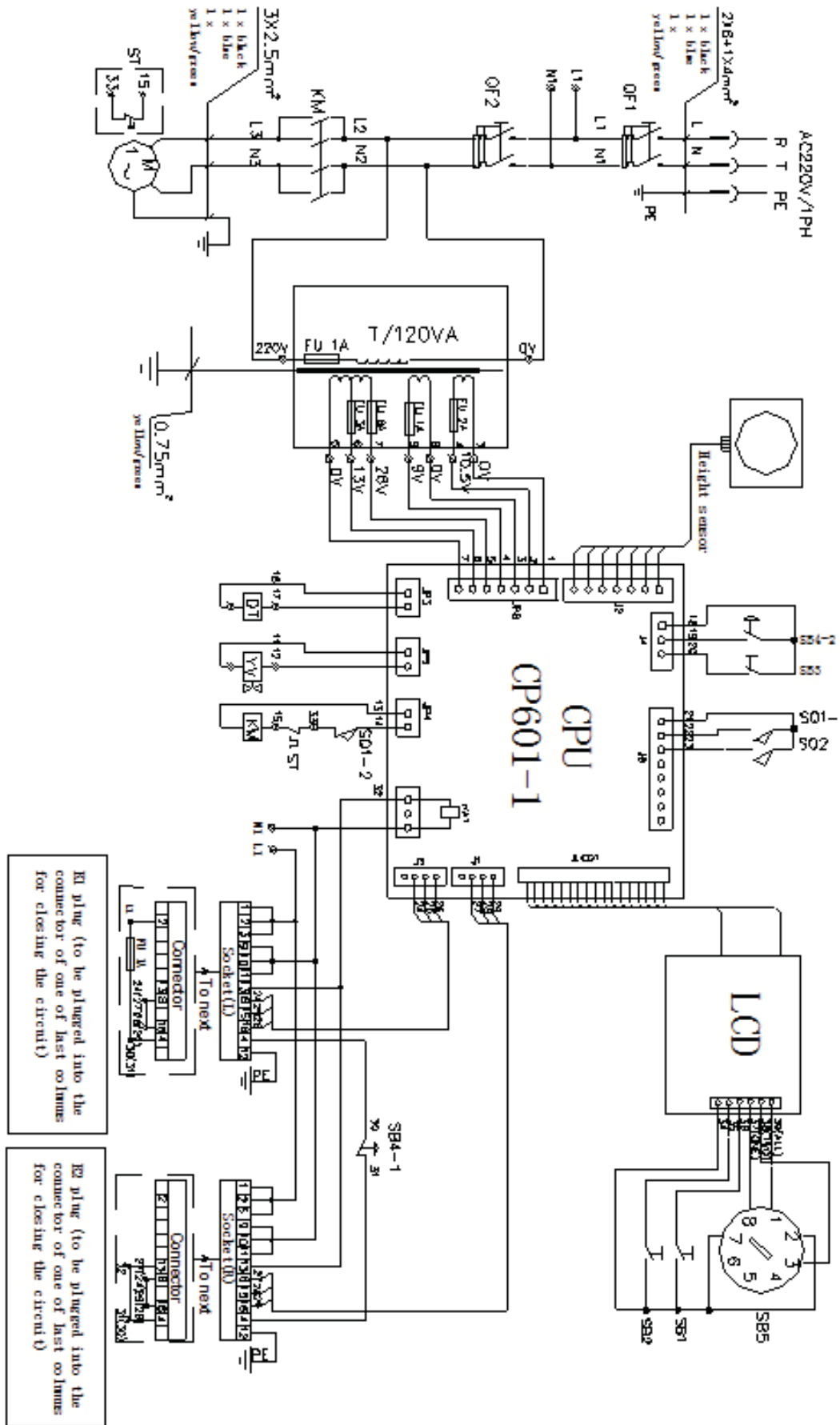


Figure 7 – Electrical Scheme - Master (220V/1Ph)



QF1	Main Power Switch
QF2	Circuit Breaker
M	Motor
ST1	Thermal Relay
KM	Contacto Dc
T	Transformer 120Va
SB1	Lifting Pushbutton
SB2	Lowering Pushbutton
SB3	Parking Button
SB4	Emergency Knob
SB5	Mode Selector
YV	Lowering Solenoid Valve
SQ1	Top Position Limit Switch
SQ2	Lowest Position/Reset Switch
DT	Safety Release Electromagnet

# Safety

Read this chapter carefully and completely because it contains important information for the safety of the operator and the person in charge of maintenance.



**The lift has been designed and built for lifting vehicles and making them stand above level in a closed area. Any other use is forbidden:**

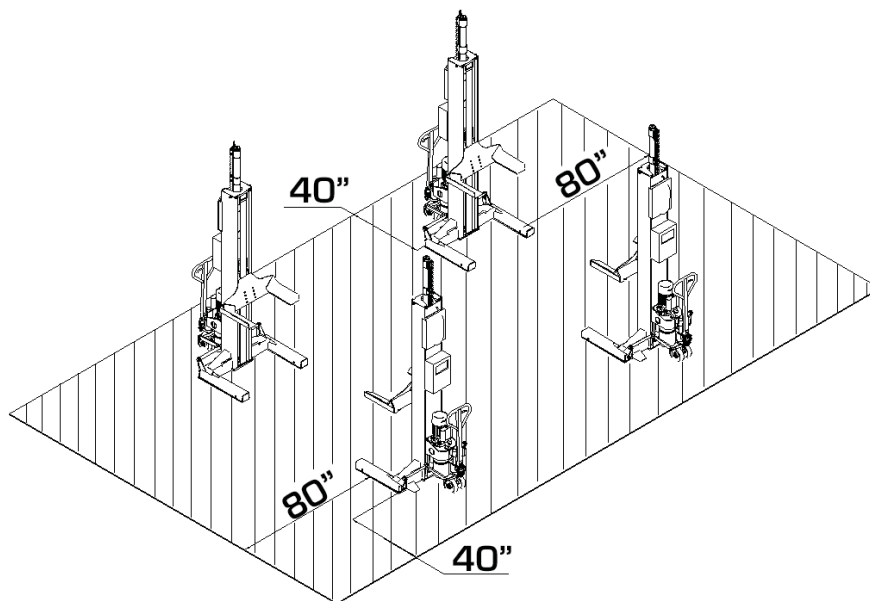
**The manufacturer is not liable for possible damages to people, vehicles or objects resulting from an improper or unauthorized use of the lift.**

For operator and people safety, the safety area shown in the Fig. 8 must be vacated during lifting and lowering.

Operator's presence under the vehicle, during working, is only admitted when the vehicle lifted is not running and securely properly with the safety system locked.



**Never use the lift when safety devices are off-line. People, the lift and the vehicles lifted can be seriously damaged if these instructions are not followed. (See 6.10)**



**Figure 8 - Safety Area (Min. 3 Feet)**

## 6.1 General Warnings

The operator and the person in charge of maintenance must follow accident-prevention laws and rules in force in the country where the lift is installed

They also must carry out the following:

- neither remove nor disconnect hydraulic, electric or other safety devices;
- carefully follow the safety indications applied on the machine and included in the manual;
- observe the safety area during lifting;
- be sure the motor of the vehicle is switched off, the gear engaged and the parking brake put on;
- be sure only authorized vehicles are lifted without exceeding the maximum lifting capacity;
- verify that no one is on the lift during lifting or standing.

## 6.2 Risks For People

All risks the personnel could run, due to an improper use of the lift, are described in this section.

## 6.3 Personnel Crushing Risks

During lowering of vehicles, personnel must not be within the safety area covered by the lowering trajectory. The operator must be sure no one is in danger before operating the lift.



## 6.4 Bumping Risk

When the lift is stopped at relatively low height for working, the risk of bumping against projecting parts occurs.



## 6.5 Electrocution Risks

Avoid use of water, steam, and solvent, varnish jets in the lift area where electric cables are placed and, in particular, next to the electric panel.



## 6.6 Risks For Unauthorized Uses



**Any use of the lift other than that herein specified can cause serious accidents to people or vehicle in close proximity of the machine.**

The presence of unauthorized persons next to the lift is strictly forbidden during lifting as well as when the vehicle has been already lifted.

## 6.7 Slipping Risks

The risk of slipping can be caused by oil or dirt on the floor near the lift.



**Keep the area under and around the lift clean. Remove all oil spills.**

## 6.8 Risks Resulting From Improper Lighting

Make sure all areas next to the lift are well and uniformly lit, according to local regulations.

## 6.9 Risks Of Breaking Component During Operation

Materials and procedures, suitable for the designed parameters of the lift, have been used by the manufacturer to build a safe and reliable product. Operate the lift only for the use it has been designed for and follow the maintenance schedule shown in the chapter "Maintenance".

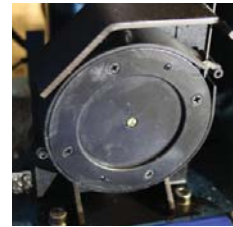
## 6.10 Safety Devices



**It is strictly forbidden to modify any safety device. Always ensure the safety device for proper operation during the service.**

Each column is equipped with the following safety devices:

- Momentary controls - Buttons are only active WHILE you press them so that every operation is immediately stopped when the control button is released;
- A key is equipped on each control panel to prevent unauthorized persons from using;
- Emergency stop button on each column so that all systems can be stopped immediately in case of emergency;
- Mechanical safety in each column so that any parking position can be secured.
- *Synchronization control device so that the height difference of each carriage in the group cannot exceed 40mm. If a carriage encounters an obstacle under to inhibit descent, the control device stops the system.*



- *Parachute valve in each cylinder to prevent the carriage from a sudden lowering in case of hose burst or line failure.*
- *Pressure overload valve in the hydraulic unit to prevent excessive weight.*



***The pressure overload valve has been preset by the manufacturer to a proper pressure. DO NOT try to adjust it to overrun the rated lifting capacity.***

# Installation

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**Only skilled technicians, appointed by the manufacturer, or by authorized dealers, must be allowed to carry out installation. Serious damage to people and to the lift can be caused if installations are made by unskilled personnel.**

## 7.1 Use Site Requirement



**Specifications of concrete must be adhered to. Failure to do so could cause lift failure resulting in personal injury or death.**

The lift is designed to be used in enclosed places with the shelter, free of overhead obstructions.

*The lift must be placed on a concrete floor at least Class M30 (C25/30 per British Standards) and in conformity with local regulations. The surface where the lift has to be installed must be even and leveled in all directions.*

*The place of installation must not be next to washing areas, painting workbenches, solvent or varnish deposits. The installation near to rooms, where a dangerous situation of explosion can occur, is strictly forbidden. The relevant standards of the local Health and Safety at Work regulations, for instance, with respect to minimum distance to wall or other equipment (ref. Fig. 8), must be observed.*

Lighting must be carried out according to the effective regulations of the place of installation. All areas next to the lift must be well and uniformly lighted.

## 7.2 Moving Columns To Site

- Check to be sure the packing frame is removed from the column;
- Check to be sure the mobile jack is connected to the column very well;
- Move each column to the site determined by means of mobile jack. Be careful to keep the column in the vertical position and not bump other objects during moving.

## 7.3 Main Electric Connection

The electric connection must be carried out by a qualified electrician in compliance with the local regulation.

*Make sure that the power supply is correct (209-231V).*



Make sure the connection of the phases is right. Improper electrical hook-up can damage motor and will not be covered under warranty.

The control unit must be kept dry. Damage to power unit caused by water or other liquids such as detergents, acid etc., is not covered under warranty.



Cord end from the master column

- Check to make sure if all connections are correct referring to the wiring diagram Fig. 7.
- Make sure the connection of the phases is right and the lift is grounded.
- Connect the power cable to the main power supply from the master control panel. The power cable plug must be set in compliance with the local regulation in force.
- Contact the manufacturer if there is any doubt.

## 7.4 Horse Shoe Connection

Only the master control panel can be connected to the main power supply. To make all columns work in group synchronously, each column must be connected with the heavy duty cables supplied as shown in the Fig. 9.



With the master control panel, two dummy plugs (K1 and K2 shown below) are supplied for closing the control circuit of the column group. Be sure to plug the sockets of the control panels on the last two columns. The lift will not work correctly if failure to do so.

Either plug can be put into any socket of the two slave control panels, at the open end of the horse shoe, without affecting the function of the lift.

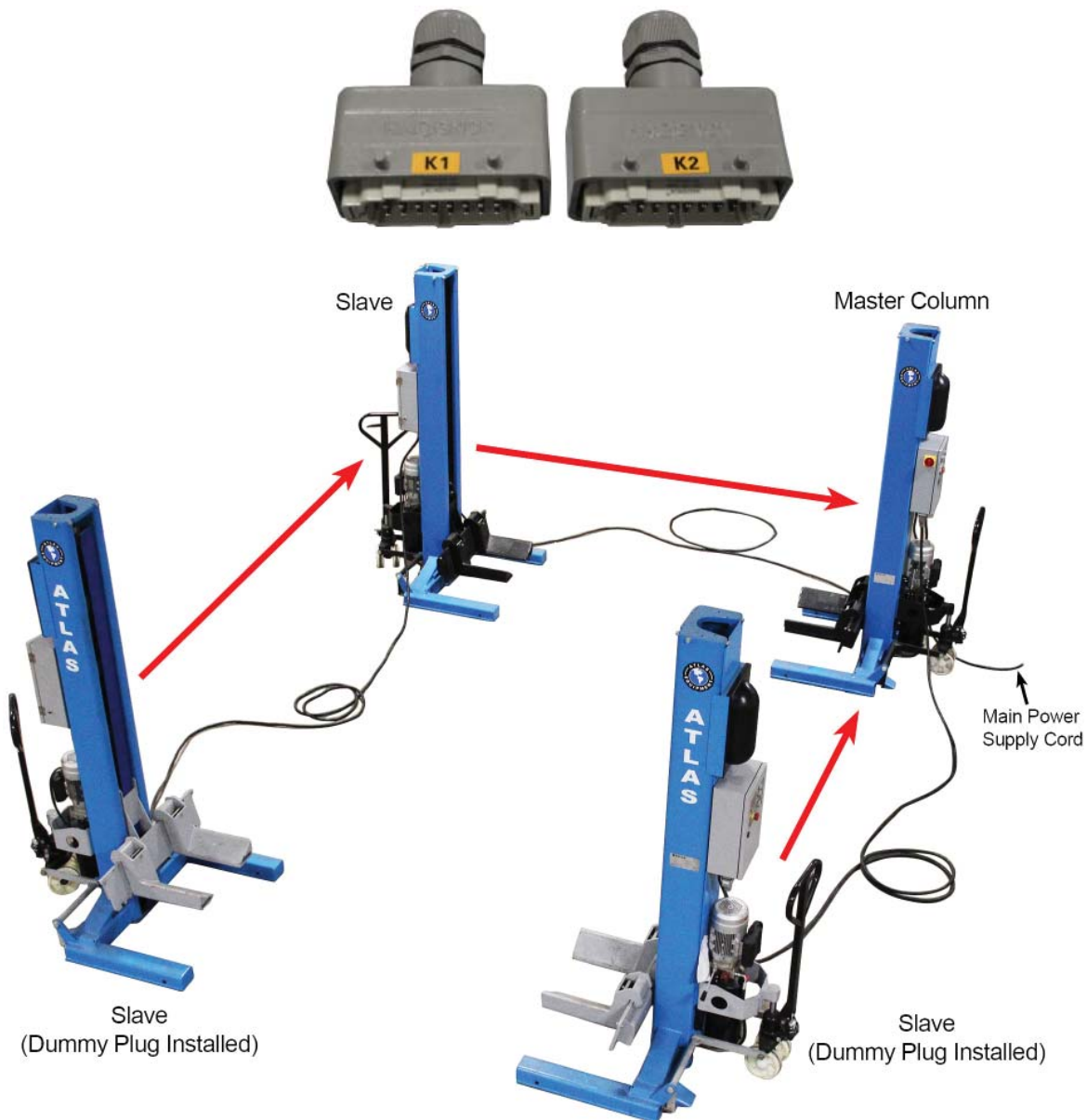


Figure 9 – Horse Shoe Connection

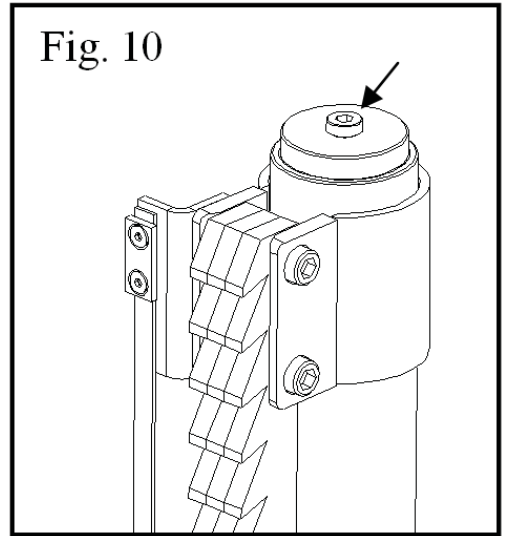
## 7.5 Oil Filling And Bleeding

**DO NOT** run power unit with no oil. Damage to pump can occur.

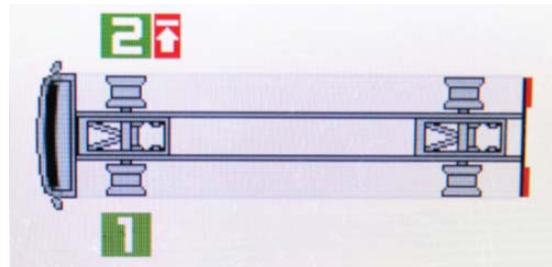


**If motor gets hot or sounds peculiar, stop immediately and recheck the electric connection.**

- Remove the oil level plug of the oil tank and pour the recommended hydraulic fluid (chapter 5.5) into the tank. Each column will use approximately 5 liters;
- Set the main power switch located on the master column;



- Set the mode selector to position **"ONE"** on the master control panel;
- Raise the carriage of the master column to the maximum height by pressing the UP button. Fill the fluid until the tank is full;



- Lower the carriage completely;
- Open the bleeder of the cylinder by turning it anticlockwise approximate two turns (ref. Fig. 10);
- Close the bleeder when the fluid streams;
- Repeat the above procedure 2-3 times to bleed the system completely;
- Follow above procedure to bleed the hydraulic system for other columns.



## 7.6 Check Before Use



During this procedure, observe all operating components and check for proper installation and adjustment.

**DO NOT** attempt to raise vehicle until a thorough operation check has been completed.

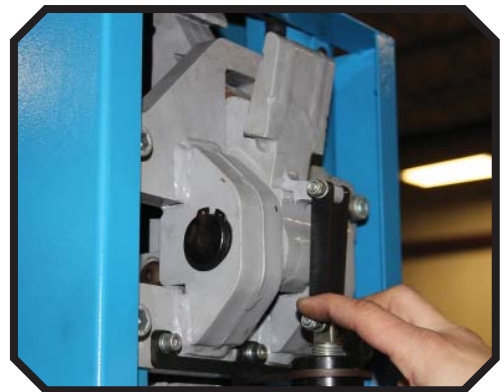
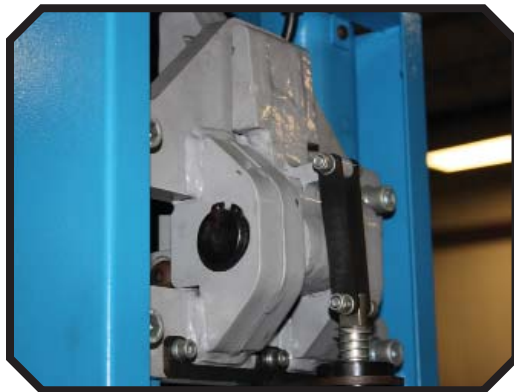
### 7.6.1 Electric Checks

- On the master column, ensure the electrical system feeding voltage is equal to that specified in the nameplate on the motor;
- Make sure the electric system connection in conformity of the electric scheme and for proper grounding;

### 7.6.2 Mechanical Safeties For Proper Installation



- *Ensure that mechanical safeties of each column can engage properly and be released completely;*



- When raising the carriages, listen to the safety hooks fall into the safety racks. If not, check the cause if necessary.

### 7.6.3 Hydraulic System For Proper Operation

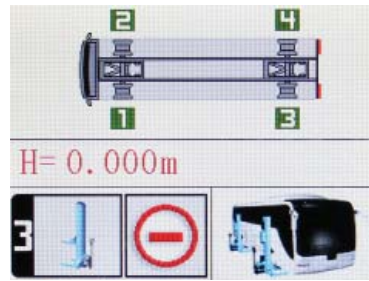
- Check the proper oil level in the tank, refill if needed;
- Raise the carriage to the full height and keep the motor running for 5 seconds;
- Check all hoses connections to make sure no leakage. Tighten the connections or reseal if necessary.

## 7.6.4 Synchronization Check

- Set all four column's height values to zero (Seen on the LCD display). Raise the set and stop at any point. Check all four column counters and make sure none are more than 40mm apart;



Reset Button  
(on each column)



Height Screen

- If not, stop the lift immediately and check the cause.

## 7.6.5 Limit Switch For Proper Operation

- Check to make sure the power unit stops working when the carriage is raised at the maximum height;
- If not, stop the lift immediately and check the cause.



# Operation And Use

Never operate the lift with any person or equipment below.

Never exceed the rated lifting capacity.

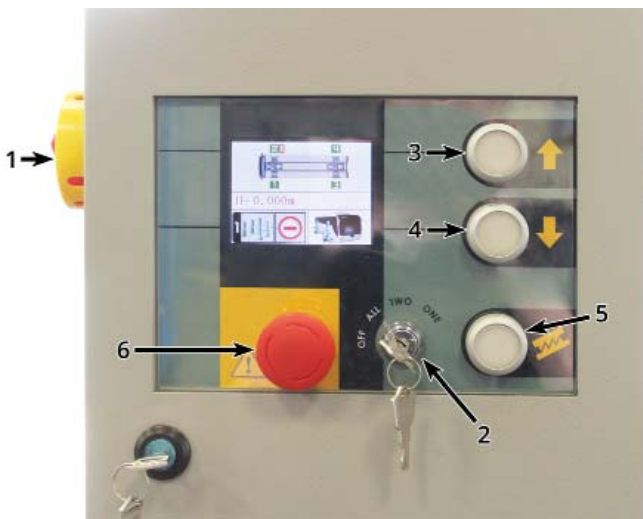


Always ensure that the safety locks are engaged before any attempt is made to work on or near the vehicle.

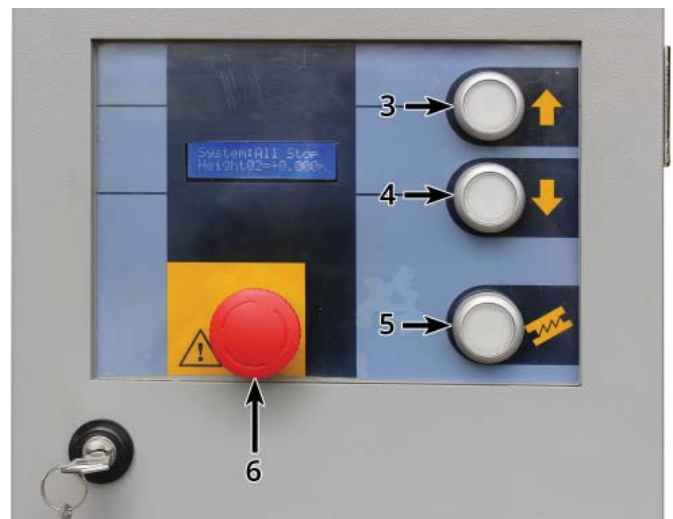
Never leave the lift in an elevated position unless the safeties are engaged.

Do not permit the electric control unit to get wet!

## 8.1 Controls



Master Control Panel



Slave Control Panel

Figure 11 – Control Panels

### MAIN POWER SWITCH (1)

The main power switch is located on the master control panel and can be set in two positions:

- **0**: the electric circuit is not powered; the switch can be padlocked to prevent the use of the lift.
- **1**: the electric circuit is powered.



In each control panel, a breaker is supplied for switching on/off the individual circuit.

## MODE SELECTOR WITH THE KEY (2)

The selector is only located on the master control panel and can be set in four positions:



The lowering operation of a single column (mode "ONE") can be used only for emergency purpose.

- **ONE:** each single column can be controlled individually on its own control panel.
- **TWO:** only two columns opposite can be controlled simultaneously on any control panel of these two columns.
- **ALL:** the whole system can be controlled on any control panel of the system.
- **OFF:** no column can be operated.

## LIFTING BUTTON (3)

- When pressed, the electric circuit operates the motor to raise the carriage.

## LOWERING BUTTON (4)

- When pressed, the lift *raises* several millimeters to release the mechanical safeties. The carriage will then automatically begin to descend under its load's weight.

## PARKING BUTTON (5)

- When pressed, the carriage descends to engage the nearest mechanical safeties.

## EMERGENCY KNOB (6)

- When pressed on any control panel, the whole system is switched off immediately.

## 8.2 Symbol List

To understand better about the working status of the lift, symbols are displayed on the master LCD.



The mode selector is set to "**ALL**".



The mode selector is set to "**TWO**".



The mode selector is set to "**ONE**".



The mode selector is set to "**OFF**".



The lifting button is pressed: the lift is rising.



The lowering button is pressed: the lift is lowering.



The parking button is pressed: the lift is parked at the desired height.



No button is operated.



The lift is reached to the top position.



The lift is reached to the lowest position.



The top position limit switch on the column with this symbol is activated.



The lowest limit switch on the column with this symbol is activated.



The column with this symbol is on operation.



The emergency button on the column with this symbol is pressed.

## 8.3 Lift Operation

Make sure all tires have the good conditions and are rested on the lifting forks very well or if the special adapters are needed.



Make sure all columns are in vertical position.

During this procedure, observe the lifting status carefully.

Push the emergency knob to stop the system immediately in case of any improper lifting status, and check the system.

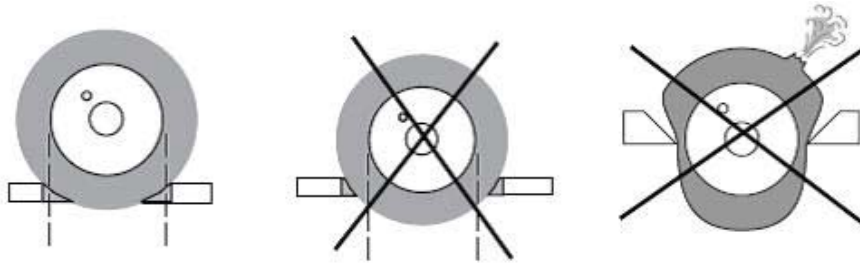
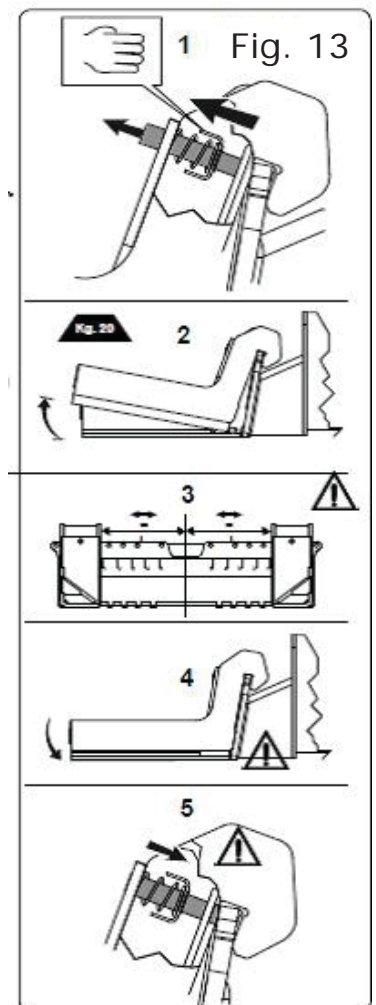
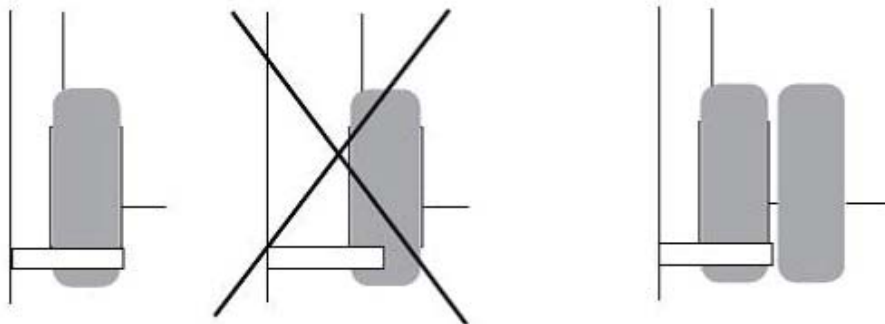


Fig. 12



### 8.3.1 Positioning For Vehicle Lifting

- Determine how many columns should be used according to the weight of the vehicle to be lifted;
- Check to make sure all tires of vehicle to be lifted are inflated well and have good conditions (ref. Fig. 12);
- Determine if the fork position is in compliance of the tire sizes or adjust the fork position if necessary (ref. Fig. 13), or if special adapters are needed;
- Determine which side the master column will be located on for convenient operation;
- Move each column by means of the mobile jack to the relevant position determined. Pay attention that the column must be in a vertical position and not bump the vehicle;

- Keep the carriages in the lowest position to make the fork insertion under the tires easier and keep forks symmetrically toward to the axis of tire. Make sure the tire resting area on the forks is never beyond the fork center line and tires are rested on forks fully (ref. Fig. 12);
- If the adapters are needed, make sure to support properly the vehicle lifting points recommended by the vehicle manufacturer.

### 8.3.2 Lifting

- Set the main power switch on;
- Set the mode selector into the position "**ONE**";
- Press the height reset button to make  $H=0.00$
- Slowly raise each carriage on the relevant control panel until all tires are rested on forks very well.
- Check that the vehicle is balanced well;
- Set the selector into the position "**ALL**", then raise the vehicle to the desired height. Pay attention to check all carriages synchronize well during this procedure.



### 8.3.3 Standing



**Always ensure that the mechanical safeties are engaged properly before any attempt is made to work on or near the vehicle.**

- At the desired height, press the parking button on any control panel to engage the mechanical safeties of all columns.

### 8.3.3 Lowering

- Be sure the safety area is free of people and objects;
- Make sure the model selector is in the position "**ALL**";
- Press the down button to lower the carriages and check to make sure all carriages are lowered synchronously;
- Padlock the main power switch after all carriages are lowered completely during this procedure;
- Move the columns out of working space. Be careful not to bump the vehicle.

## 8.4 Optional Accessories

The manufacturer can supply optional accessories as follows.

### TRIPOD STAND:

- This stand can give more stability to the vehicle lifted, or to allow the people to work under the vehicle when the lift is used to lift another vehicle.
- Make sure to position the stands correctly under the vehicle lifting points recommended by the vehicle manufacturer (ref. Fig. 14).

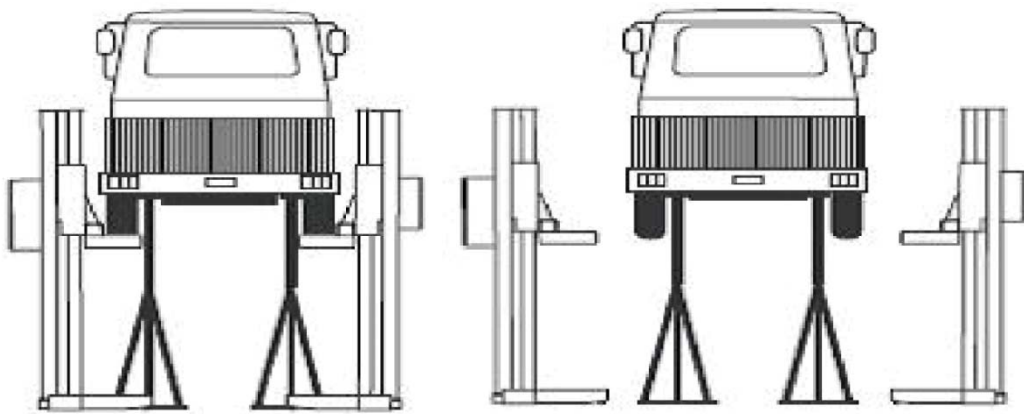
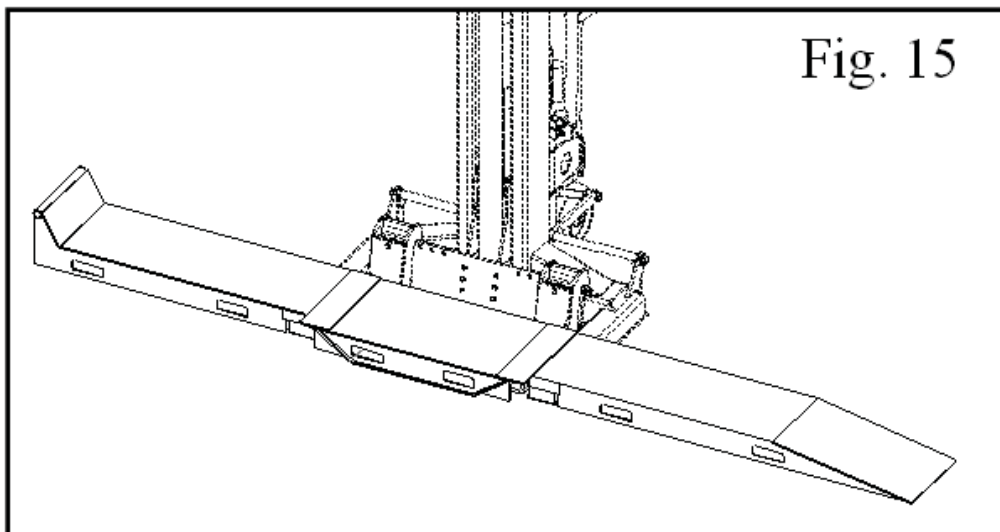


Fig. 14

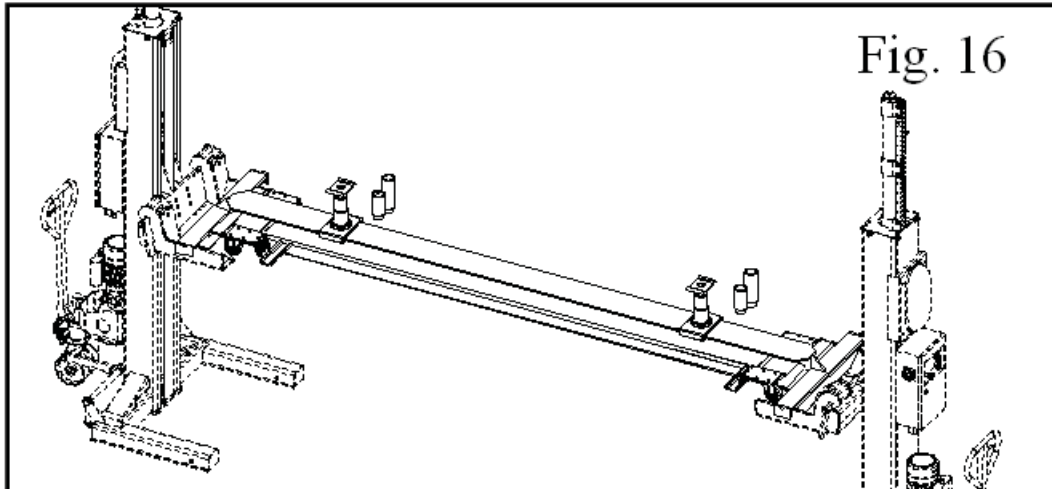
### FORK ADAPTER:

- This adapter (Fig. 15) is designed only for the forklifts that are not possible to be raised on wheels. It needs to be used as a pair.



## CROSSBEAM ADAPTER:

- This adapter (Fig. 16) is designed for the trucks such as trucks or trailers that are not possible to be raised on wheels. They need to be used as a pair (two beams).
- Make sure to position under the vehicle lifting points recommended by the vehicle manufacturer.



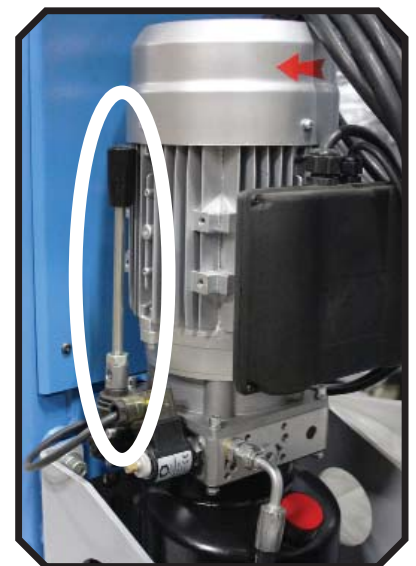
## 8.5 Manual Lowering In Emergency

In case of emergency or the electric power off, it is possible to lower a carriage manually to its initial position:



***Make sure to lower each column no later than 100mm at one time. Failure to do so can cause the vehicle unbalanced.***

- Turn off the power switch;
- If the mechanical safeties are engaged, operate the emergency hand pump to raise the carriage about 3 centimeters to clear the mechanical safeties;





- Remove the back cover of the column and pull the safety pawls from the locked position by pulling the connector rods as shown in Fig. 18. This is to avoid the locks reengaging;

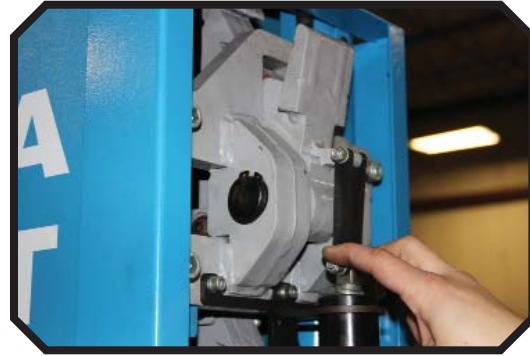


Fig. 18

- Unscrew the emergency lowering screw in the power unit by turning it count-clockwise to lower the carriage no more than 100mm for each time. Screwing or unscrewing will reduce or increase the lowering speed;
- Repeat the above procedure to lower all carriages no more than 100mm for each time until the carriages are lowered fully;
- Be sure to close the emergency lowering screw by turning it clockwise. The lift cannot be raised with the lowering valve is open;
- Reset the safety pawls into the original position.





# Maintenance

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**Only trained personnel who knows how the lift works, must be allowed to service the lift.**

To service properly the lift, the following has to be carried out:

- use only genuine spare parts as well as equipment suitable for the work required;
- follow the scheduled maintenance and check periods shown in the manual;
- discover the reason for possible failures such as too much noise, overheating, oil blow-by, etc.

Refer to documents supplied by the dealer to carry out maintenance:

- functional drawing of the electric and hydraulic equipment
- exploded views with all data necessary for spare parts ordering
- list of possible faults and relevant solutions.



**Before carrying out any maintenance or repair on the lift, disconnect the power supply, padlock the general switch and keep the key in a safe place to prevent unauthorized persons from switching on or operating the lift.**

## 9.1 Ordinary Maintenance

The lift has to be properly cleaned at least once a month using self-cleaning clothes. Lubricate all pivot pins at least once a week.



**The use of water or inflammable liquid is strictly forbidden.**

Be sure the rod of the hydraulic cylinders is always clean and not damaged since this may result in leakage from seals and, as a consequence, in possible malfunctions.

## 9.2 Periodic Maintenance

Every 3 months	Hydraulic circuit	<ul style="list-style-type: none"> <li>• check oil tank level; refill with oil, if needed;</li> <li>• check the circuit for oil leakage.</li> </ul>
		<ul style="list-style-type: none"> <li>• check seals for proper conditions and replace them, if necessary;</li> </ul>
	Hydraulic pump	<ul style="list-style-type: none"> <li>• verify that no noise changes take place in the pump when running and check fixing bolts for proper tightening</li> </ul>
	Safety system	<ul style="list-style-type: none"> <li>• check safety devices for proper operation</li> </ul>
Every 6 months	Oil	<ul style="list-style-type: none"> <li>• check oil for contamination or aging. Contaminated oil is the main reason for failure of valves and shorter life of gears pumps</li> </ul>
Every 12 months	General check	<ul style="list-style-type: none"> <li>• verify that all components and mechanisms are not damaged</li> </ul>
	Electrical system	<ul style="list-style-type: none"> <li>• a check of the electrical system to verify that motor, limit switch and control panel operate properly must be carried out by skilled electricians</li> </ul>
	Oil	<ul style="list-style-type: none"> <li>• empty the oil tank and change the hydraulic oil</li> </ul>

# Troubleshooting

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A list of possible troubles and solutions is given below:

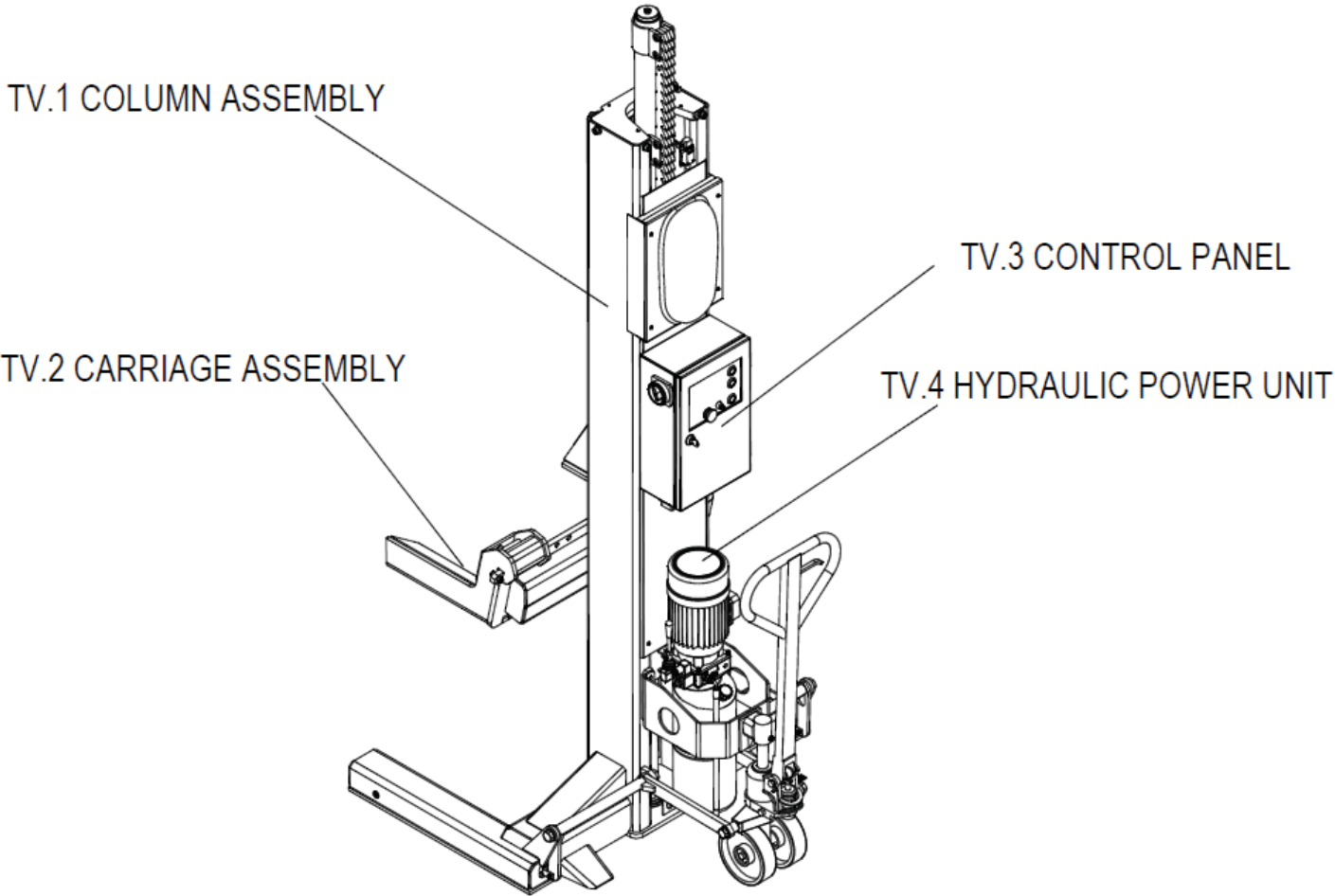
<b>Trouble:</b>	<b>Possible Cause:</b>	<b>Solution:</b>
The whole system does not work	The power switch is not turned on	Turn on the switch
	There is no power	Check power and restore if necessary
	The electrical wires are disconnected	Replace
	Fuses are blown	Replace
	The circuit breaker is not switched on	Switch on the breaker
Some columns can work but some cannot	The cables are not connected to each column	Check the connection for proper operation
	The connector socket is not plugged correctly	Check and plug the socket correctly
The carriage does not raise when the lifting button is pressed	The motor direction of rotation is not correct	Interchange the phases on the main switch
	The oil in the hydraulic unit is not sufficient	Fill more hydraulic oil
	The lifting button is faulty	Check the lifting button and connection for proper operation. Replace, if needed
	The lowering solenoid valve does not close	Check and clean, if dirty, or replace, if faulty
	The emergency screw of lowering valve does not close	Re-tighten the screw
	The suction pump filter is dirty	Check and clean if needed
	The wire to CPU board is disconnected.	Check the connection for proper operation.

<b>Trouble:</b>	<b>Possible Cause:</b>	<b>Solution:</b>
The carriage does not lower when the lowering button is pressed	The locks are not released	Check if the electrical wires to the electromagnet are loosened. Fix tightly if needed.
	The lowering solenoid valve is not operating	Verify if it is powered and check the magneto for damages (replace if disconnected or burnt)
	The lowering button is faulty	Check the lowering button and connection for proper operation. Replace, if needed
	The wire to CPU board is disconnected.	Check the connection for proper operation.
The height value does not reset when the carriage is lowered fully	The bottom reset switch is not adjusted correctly or it is faulty	Adjust or change the limit switch
	The wire to the height sensor is disconnected or unloosened.	Check the connection for proper operation.
	The wire to CPU board is disconnected.	Check the connection for proper operation.
The system is out of synchronization	The height sensor show unstable number	Check or replace the sensor
	The wire to the height sensor is disconnected or unloosened.	Check the connection for proper operation.
	The oil in the hydraulic unit is not sufficient	Add some hydraulic oil
	The lowering solenoid valve in one of power units does not close	Check and clean, if dirty, or replace, if faulty
	The emergency screw of lowering valve in one of power units does not close	Re-tighten the screw
	The suction pump filter in one of power units is dirty	Check and clean if needed

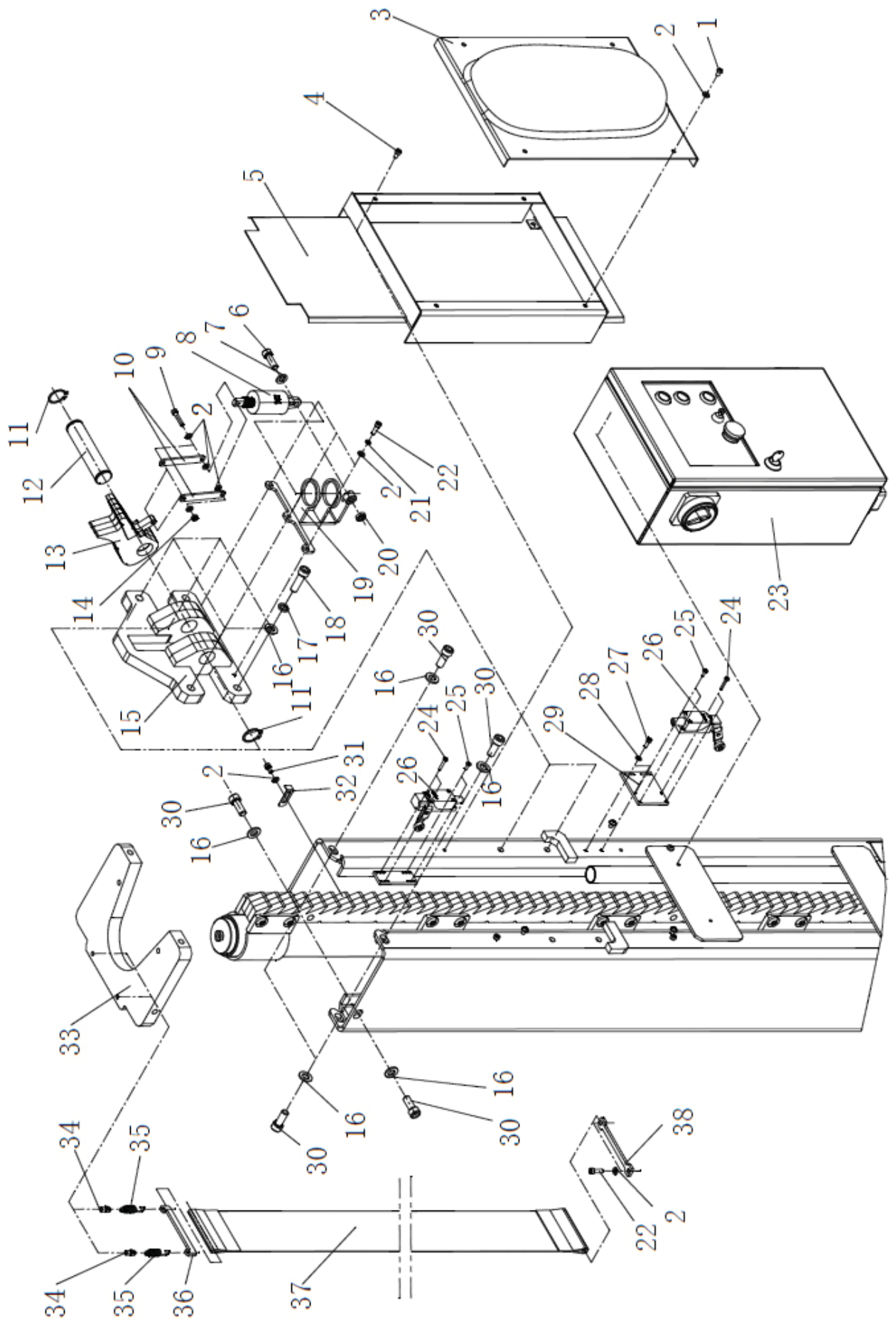
<b>Trouble:</b>	<b>Possible Cause:</b>	<b>Solution:</b>
The lifting capacity is not sufficient	The oil in the tank is not enough	Fill oil in the tank
	The pump is faulty	Check the pump and replace if necessary
	The pressure overload valve is not adjusted correctly	Adjust it correctly
The motor does not stop when reaching it the top height	The top limit switch does not work	Check the limit switch and replace if needed
The lift does not lift or lower smoothly	Leakages or presences of air into hydraulic circuit	Bleed the hydraulic system
	The pump filter is dirty.	Check and clean if needed.
	The pump suction is blown	Check the seal and replace if needed
Nothing is displayed on LCD	The power switch is not turned on	Turn the switch on
	There is no power	Check power and restore if necessary
One of the LCDs doesn't work, but others can	The circuit breaker is not switched on	Open the control box, switch the breaker on
	The electrical wires are disconnected	Replace
	Fuses are blown	Check the fuse in the transformer
The LCD work, but the system doesn't	The mode selector is not set in the correct position	Check the mode selector in the master control box
	The connector socket is not plugged to close the whole circuit	Connect it
	The emergency button is pressed	Check all the emergency buttons
	Fuses are blown	Check the fuses in the transform and in the plug "K1"

# Parts List

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# Column Assembly 1



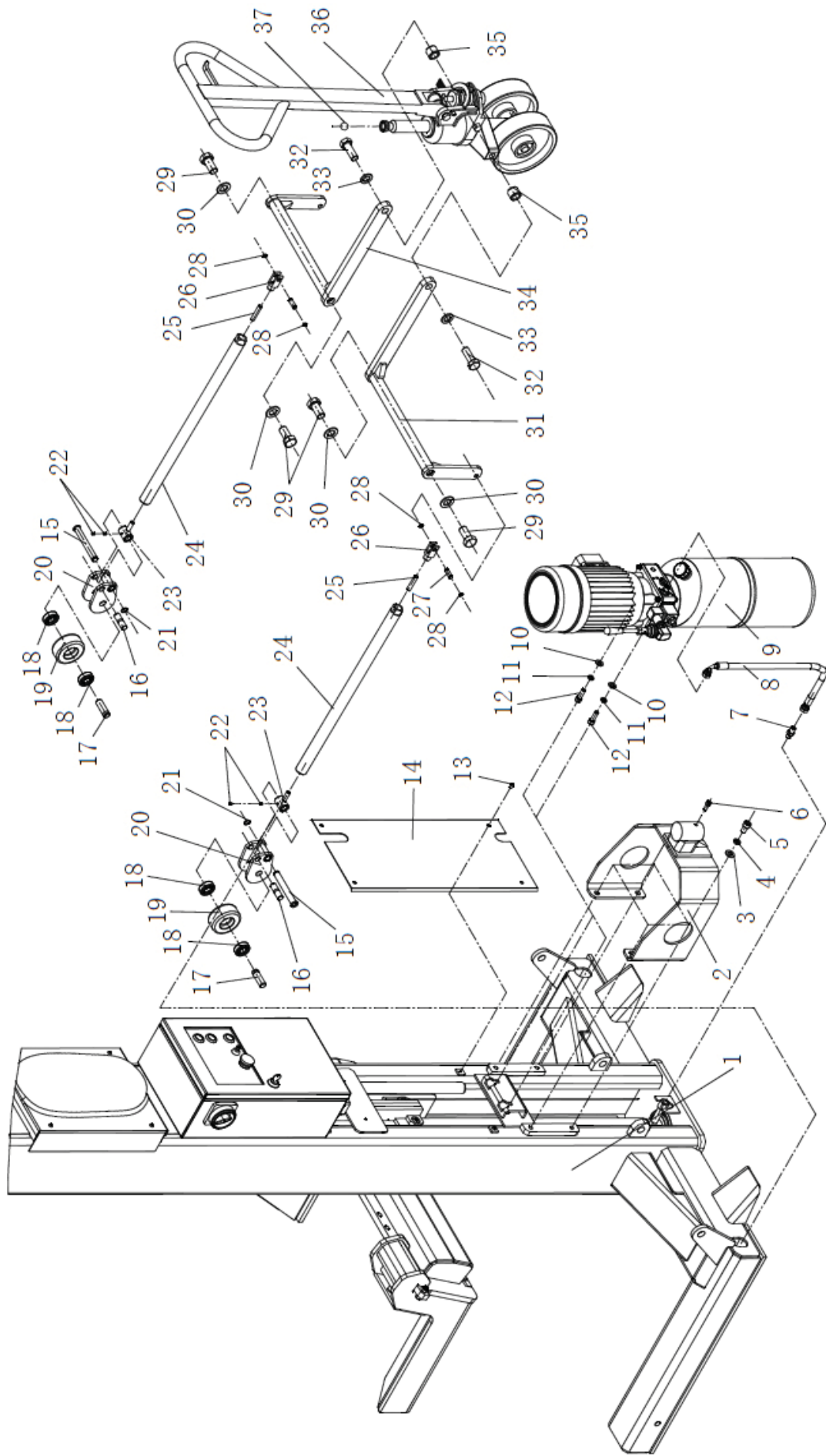
## Column Assembly 1

ITEM	PART NUMBER	DESCRIPTION	QTY
1	0206050	Screw M6X10-GB/T70.2	4
2	0205006	Washer GB/T97.1/6	16
3	Z54Y000002	ABS safety cover	1
4	0202030	Screw M6X10-GB/T70.1	4
5	Z54Y000100	Safety cover frame	1
6	0202062	Screw M10X30-GB/T70.1	1
7	0205011	Washer D.10-GB/T97.1	1
8	0505031	Safety release electromagnet 24VDC	1
9	0202026	Screw M6X30-GB/T70.1	2
10	Z54Y300002	Connection plate	2
11	0212021	Seeger D.30-GB/T894.1	2
12	Z54Y300001	Safety shaft	1
13	Z54Y320000	Safety hook	1
14	0204003	Self-locking nut M6	2
15	Z54Y310000	Safety support	1
16	0205013	Washer D.12-GB/T97.1/12	10
17	0208009	Locking washer D.12	4
18	0202076	Screw M12X40-GB/T70.1	4
19	Z54Y330000	Electromagnet support	1
20	0204012	Nut M10-GB/T6172.1	1
21	0208005	Locking washer D.6	3
22	0202033	Screw M6X20-GB/T70.1	5
23a	Z54YD21100	Master control panel	1
23b	Z54YD22100	Slave control panel	1
24	0206017	Screw M4X25-GB/T818	4
25	0206013	Screw M4X12-GB/T818	4
26	0505020	Limit switch 8104	2
27	0202038	Screw M5X14-GB/T70.1	2



<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
28	0205004	Washer D.5-GB/T97.1	2
29	Z54Y000021	Switch support	1
30	0202090	Screw M12X30-GB/T70.1	6
31	0202024	Screw M6X12-GB/T70.1	7
32	Z54Y200014	Bottom limit switch actuator	1
33	Z54Y100001	Column top cover	1
34	6740-20005	Spring bolt	2
35	C104000003	Spring	2
36	Z54A000003	Screen holder	1
37	Z54A000005	Front screen	1
38	Z54A000004	Screen straining plate	1

# Column Assembly 2

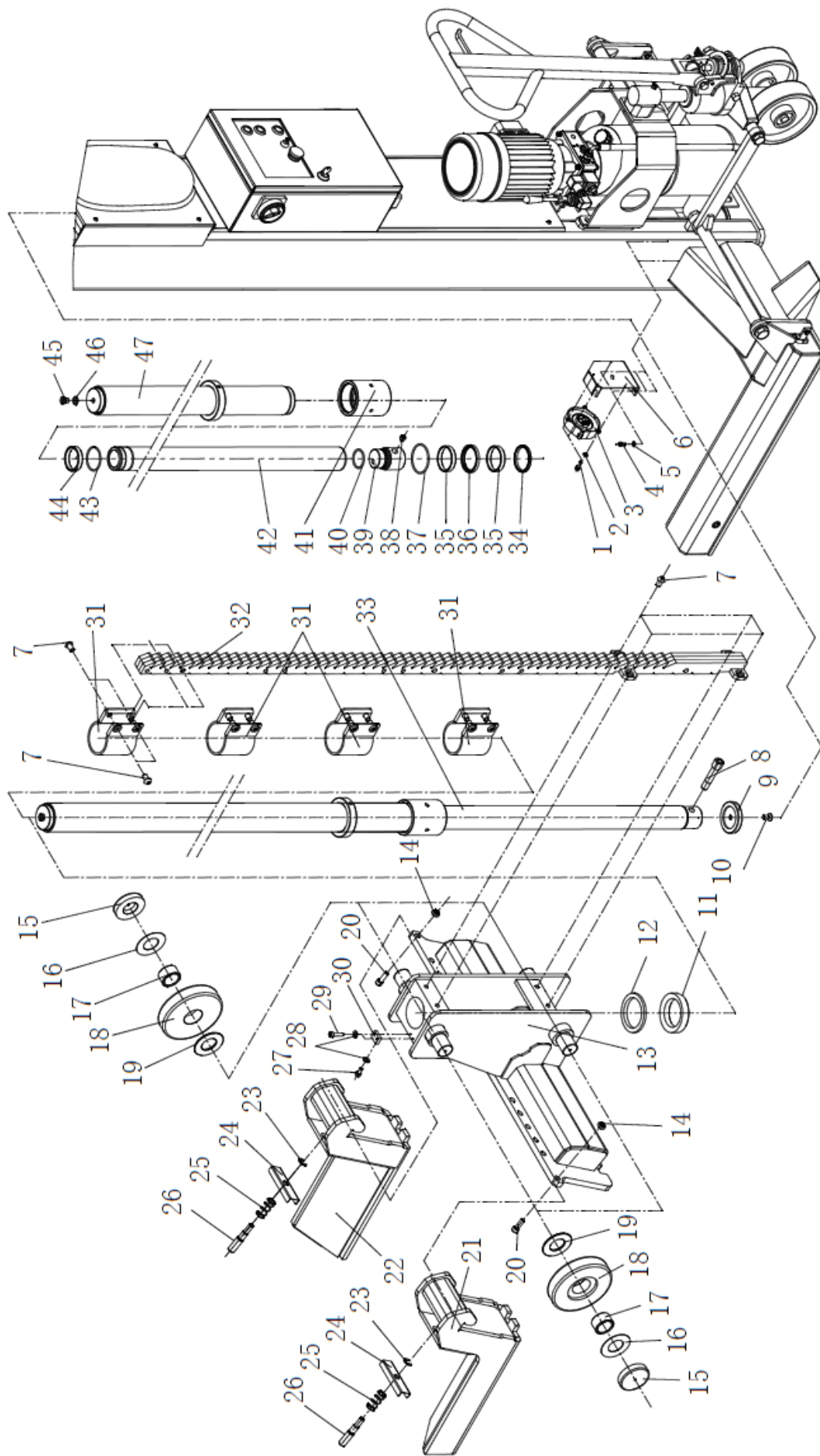


## Column Assembly 2

ITEM	PART NUMBER	DESCRIPTION	QTY
1	Z54Y110000	Column	1
2	Z54Y150000	Mobile jack support	1
3	0205013	Washer D.12-GB/T97.1	4
4	0208009	Locking washer D.12	4
5	0202070	Screw M12X20-GB/T70.1	4
6	0202045	Screw M8X20-GB/T70.1	1
7	0303063	Union 1/4	1
8	ZW680	Hydraulic hose 1/4L=680	1
9	BZ-Y1	Hydraulic power unit	1
10	0205011	Washer D.10-GB/T97.1	2
11	0208007	Locking washer D.10	2
12	0202062	Screw M10X30-GB/T70.1	2
13	0206050	Screw M6X10-GB/T70.2	4
14	Z54Y000001	Column back cover	1
15	Z54Y130000	Pivot	2
16	Z59A100009	Pin	2
17	Z59A100010	Wheel shaft	2
18	0214016	Bearing 6203	4
19	Z59A100013	Nylon wheel D.80	2
20	Z59A130000	Wheel support	2
21	0212015	Seeger D.15-GB/T894.1	2
22	0209030	Screw M6X8-GB/T78	4
23	Z54Y120000	Connection bush	2
24	Z54Y100002	Support arm	2
25	Z54Y100005	Thread pin M10	2
26	Z54Y100003	Connection joint	2
27	Z54Y100004	Pin	2
28	0212013	Seeger D.10-GB/T894.1	4

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
29	0201109	Screw M20X40-GB/T5781	4
30	0205022	Washer D.20-GB/T97.1	4
31	Z54Y140000	Left jack connection frame	1
32	0201108	Screw M18X50-GB/T5783	2
33	0205021	Washer D.18-GB/T97.1	2
34	Z54Y160000	Right jack connection frame	1
35	Z53A0A0040	Spacer	2
36	0313060	Hydraulic mobile jack TC-200	1
37	0215077	Steel ball D.20	1

# Carriage Assembly

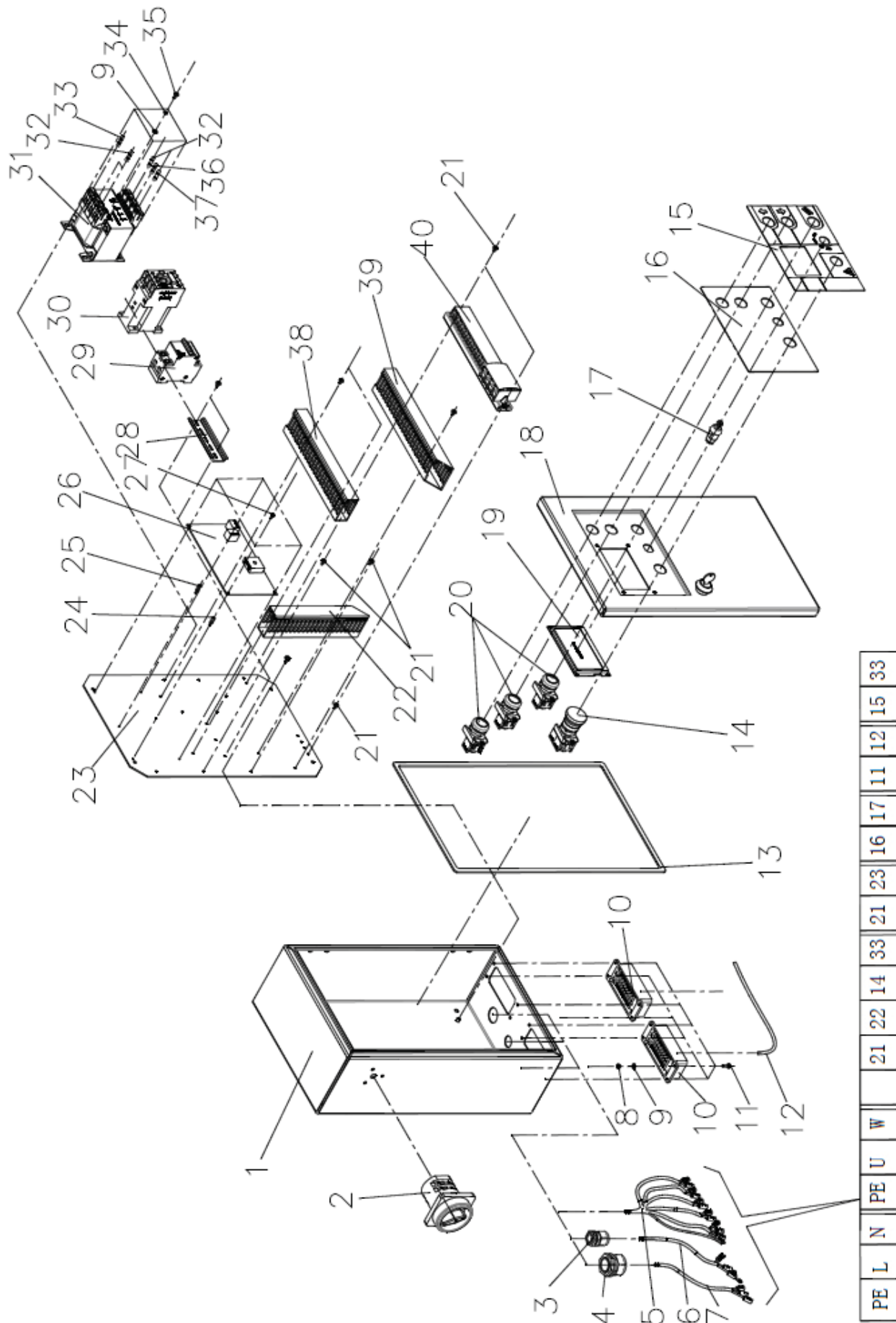


## Carriage Assembly

ITEM	PART NUMBER	DESCRIPTION	QTY
1	0202124	Screw M3X10-GB/T70.1	3
2	0205001	Washer D.3-GB/T97.1	3
3	0507225	Synchronization sensor unit	1
4	0202024	Screw M6X12-GB/T70.1	3
5	0205006	Washer D.6-GB/T97.1	5
6	Z54Y000200	Sensor protection	1
7	0206065	Screw M12X20-GB/T70.2	20
8	XSZ-7-8	Cylinder union	1
9	Z54Y200012	Cylinder head protection	1
10	0207023	Screw M10X20-GB/T70.3	1
11	Z54Y200011	Cylinder spacer 1	1
12	Z54Y200010	Cylinder spacer 2	1
13	Z54Y610000	Carriage	1
14	0204005	Self-locking nut M10	2
15	Z54Y200006	Nylon slider	4
16	Z59A200003	Spacer	4
17	Z54Y200003	Bush bearing	4
18	Z54Y200001	Carriage wheel	4
19	Z54Y200002	Washer	4
20	0202062	Screw M10X30-GB/T70.1	2
21	Z54Y620000	Right lifting arm	1
22	Z54Y630000	Left lifting arm	1
23	0211009	Seeger D.12-GB/T896	2
24	Z54Y600002	U plate	2
25	Z54Y600003	Spring	2
26	Z54Y600001	Positioning pin	2
27	0202008	Screw M4X8-GB/T70.1	1
28	0205002	Washer D.4-GB/T97.1	3

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
29	0202011	Screw M4X16-GB/T70.1	2
30	Z54Y000020	Fastening plate	1
31	Z54Y220000	Cylinder clamp	4
32	Z54Y240000	Safety rack	1
33	Z55YY10000	Hydraulic cylinder	1
34	0311012	Scraper 60X68X5/6.5	1
35	0305012	Guiding ring 60X12X2.5	2
36	0310021	Seal 60X70X7.3	1
37	0309098	O-ring 69X3.55	1
38	0307022	Parachute valve1/4	1
39	Z55YY11001	Cylinder shaft head	1
40	0309097	O-ring 42.5X3.55	1
41	Z55YY18001	Cylinder guiding cover	1
42	Z55YY11002	Cylinder shaft	1
43	0212039	Seeger D.60-GB/T895.2	1
44	0305044	Support ring 56X12X3.5	1
45	0305065	Plug 1/4	1
46	0313001	Washer BS/A13.70	1
47	Z55YY12000	Cylinder liner	1

# Master Control Panel



PE	L	N	PE	U	W	21	22	14	33	21	23	16	17	11	12	15	33
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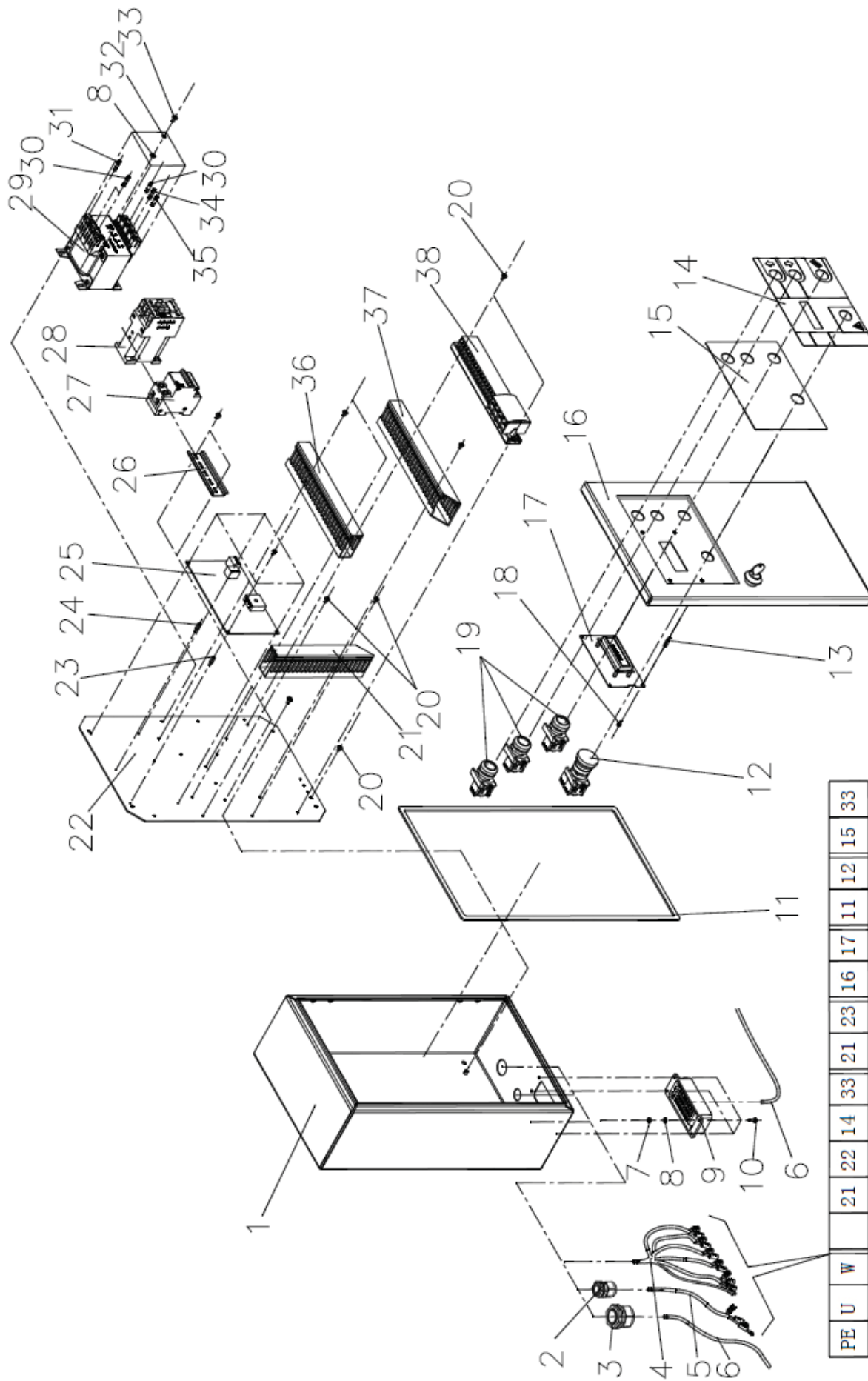


## Master Control Panel

ITEM	PART NUMBER	DESCRIPTION	QTY
1	Z04C011000	Panel casing	1
2	0505022	Power switch 20A	1
3	0508253	Cable relief M20	1
4	0508012	Cable relief M27	1
5.1	0506019	Cable to top limit switch	1
5.2	0506011	Cable to other components	4
6	0506014	Cable to motor	1
7	0506104	Main power cable L=4000	1
8	0203002	Nut M4-GB52	8
9	0205002	Washer D.4-GB/T97.1	12
10	0508343	Heavy-duty cable connector	2
11	0206013	Screw M4X12-GB/T818	8
12	0506022	Heavy-duty connection cable L=9000	1
13	Z04C010002	Gasket	1
14	0502067	Emergency stop knob	1
15	Z54YD21112	Panel decal 2	1
16	Z54YD21111	Panel decal 1	1
17	0505056	Mode selector	1
18	Z04C012000	Panel door	1
19	0507227	Display screen 601E-1	1
20	0502024	Push button LAY37T-10	3
21	0206019	Screw M4X6-GB/T818	14
22	0511078	Cable holder 25X50X200	1
23	Z04C010001	Component backup plate	1
24	0204075	Brass pin M3X12	4
25	0204077	Nylon pin M3X12	2
26	0507226	CPU board CP601-1	1
27	0201135	Screw M3X8-GB/T9074.4	4

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
28	0508330	Guide 35X100	1
29	0501076	Breaker 25A	1
30	0501044	Contactoer 1210Z24VDC	1
31	0503087	Transformer 120VA220V	1
32	0504016	Fuse 1A(5X20)	3
33	0504003	Fuse 2A(5X20)	1
34	0208002	Locking washer D.4	4
35	0206023	Screw M4X8-GB/T818	4
36	0504019	Fuse 6A(5X20)	1
37	0504018	Fuse 3A(5X20)	1
38	0511078	Cable holder 25X50X223	1
39	0511078	Cable holder 25X50X248	1
40	0507028	Wiring terminal 4 + 17	1

# Slave Control Panel



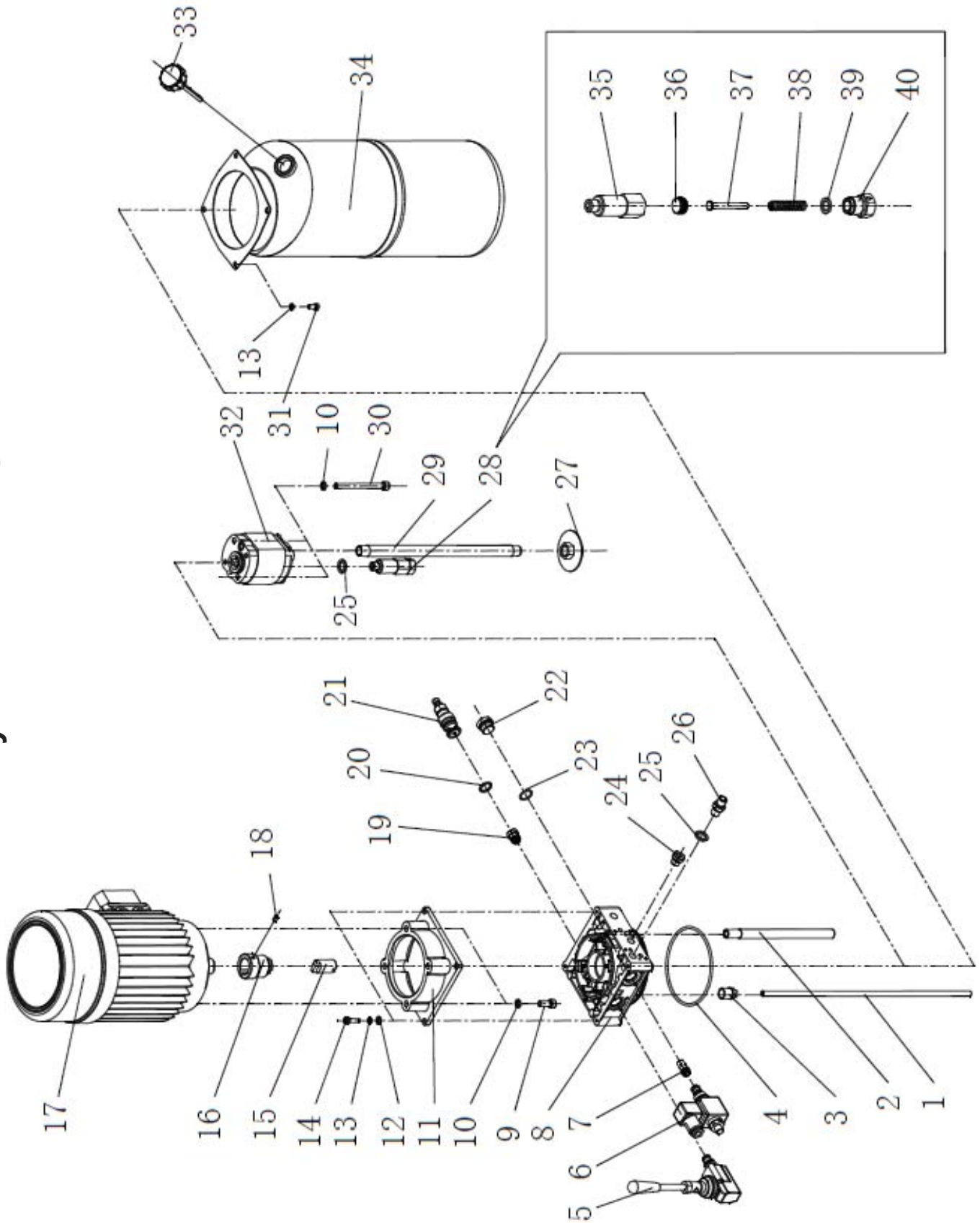
PE	U	W	21	22	14	33	21	23	16	17	11	12	15	33
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## Slave Control Panel

ITEM	PART NUMBER	DESCRIPTION	QTY
1	Z04C021000	Panel casing	1
2	0508253	Cable relief M20	1
3	0508012	Cable relief M27	1
4.1	0506019	Cable to top limit switch	1
4.2	0506011	Cable to other components	4
5	0506014	Cable to motor	1
6	0506022	Heavy-duty connection cable L=9000	2
7	0203002	Nut M4-GB52	4
8	0205002	Washer D.4-GB/T97.1	8
9	0508343	Heavy-duty cable connector	1
10	0206013	Screw M4X12-GB/T818	4
11	Z04C010002	Gasket	1
12	0502067	Emergency stop knob	1
13	0204076	Brass pin M3X15	4
14	Z54YD22112	Panel decal 2	1
15	Z54YD22111	Panel decal 1	1
16	Z04C022000	Panel door	1
17	0507228	Display screen 601D-3	1
18	0201135	Screw M3X8-GB/T9074.4	8
19	0502024	Push button	3
20	0206019	Screw M4X6-GB/T818	14
21	0511078	Cable holder 25X50X200	1
22	Z04C010001	Component backup plate	1
23	0204075	Brass pin M3X12	4
24	0204077	Nylon pin M3X12	2
25	0507226	CPU board CP601-1	1
26	0508330	Guide 35X100	1
27	0501076	Breaker 25A	1

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
28	0501044	Contactora 1210Z24VDC	1
29	0503087	Transformer 120VA220V	1
30	0504016	Fuse 1A/5X20	3
31	0504003	Fuse 2A/5X20	1
32	0208002	Locking washer D.4	4
33	0206023	Screw M4X8-GB/T818	4
34	0504019	Fuse 6A/5X20	1
35	0504018	Fuse 3A/5X20	1
36	0511078	Cable holder 25X50X223	1
37	0511078	Cable holder 25X50X248	1
38	0507029	Wiring terminal 4+20	1

# Hydraulic Power Unit



## Hydraulic Power Unit

ITEM	PART NUMBER	DESCRIPTION	QTY
1	0306097	Rilsan pipe 8X5X390	1
2	BZ-G14X200	Oil return pipe	1
3	0306070	Rotation union 8-3/8	1
4	0309013	O-ring 115X3.55	1
5	0301034	Emergency hand pump	1
6	0307048	Solenoid lowering valve 24VDC	1
7	0307001	Lowering speed control valve D.2.0	1
8	BZ-ZB-Y	Manifold	1
9	0202045	Screw M8X20-GB/T70.1	4
10	0208006	Locking washer D.8	6
11	BZ-DJ-1B	Motor flange	1
12	0205006	Washer D.6-GB/T97.1	8
13	0208005	Locking washer D.6	8
14	0202033	Screw M6X20-GB/T70.1	4
15	BZ-BJ36	Pump joint	1
16	BZ-ZT24	Motor joint	1
17	0509120	Motor 1.8KW220V/60Hz/1PH4P	1
18	0209042	Screw M6X8-GB/T80	1
19	0307067	Non return valve	1
20	0313057	Copper washer 16X20	1
21	0307010	Pressure overload valve	1
22	BZ-SD-01	Plug	1
23	0309054	O-ring 17X2	1
24	0305016	Plug 1/4	1
25	0313001	Washer BS/A13.70	2
26	0303065	Union 1/4	1
27	0305010	Oil filter 3/8	1
28	BZ-HC2-0	Startup valve	1

<b>ITEM</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>QTY</b>
29	BZ-G18X300	Suction pipe	1
30	0202053	Screw M8X90-GB/T70.1	2
31	0201010	Screw M6X12-GB/T5781	4
32	0301043	Gear pump 2.7cc	1
33	0305025	Oil level plug 3/4	1
34	0305033	Oil tank 10L	1
35	BZ-HC2-1	Start-up valve body	1
36	BZ-HC-2	Valve piston	1
37	BZ-HC2-3	Valve pin	1
38	BZ-HC2-4	Spring	1
39	BZ-HC-6	Seal 16X9X2.5	1
40	BZ-HC2-5	Valve cover	1



# Warranty

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**This item** is warranted for one (1) year on parts from date of invoice.

This LIMITED warranty policy does **not include a labor** warranty.

**NOTE: ALL WARRANTY CLAIMS MUST BE PRE-APPROVED BY THE MANUFACTURER TO BE VALID.**

The Manufacturer shall repair or replace at their option for this period those parts returned to the factory freight prepaid, which prove after inspection to be defective. This warranty will not apply unless the product is installed, used and maintained in accordance with the Manufacturers installation, operation and maintenance instructions.

This warranty applies to the ORIGINAL purchaser only, and is non-transferable. The warranty covers the products to be free of defects in material and workmanship but, does not cover normal maintenance or adjustments, damage or malfunction caused by: improper handling, installation, abuse, misuse, negligence, carelessness of operation or normal wear and tear. In addition, this warranty does not cover equipment when repairs or alterations have been made or attempted to the Manufacturer's products.

THIS WARRANTY IS EXCLUSIVE AND IS LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FROM A PARTICULAR PURPOSE, AND ALL SUCH IMPLIED WARRANTIES ARE EXPRESSLY EXCLUDED.

THE REMEDIES DESCRIBED ARE EXCLUSIVE AND IN NO EVENT SHALL THE MANUFACTURER, NOR ANY SALES AGENT OR OTHER COMPANY AFFILIATED WITH IT OR THEM, BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OF OR DELAY IN PERFORMANCE OF THIS WARRANTY. THIS INCLUDES, BUT IS NOT LIMITED TO, LOSS OF PROFIT, RENTAL OR SUBSTITUTE EQUIPMENT OR OTHER COMMERCIAL LOSS.

**PRICES:** Prices and specifications are subject to change without notice. All orders will be invoiced at prices prevailing at time of shipment. Prices do not include any local, state or federal taxes.

**RETURNS:** Products may not be returned without prior written approval from the Manufacturer.

DUE TO THE COMPETITIVENESS OF THE SELLING PRICE OF THESE LIFTS, THIS WARRANTY POLICY WILL BE STRICTLY ADMINISTERED AND ADHERED TO.