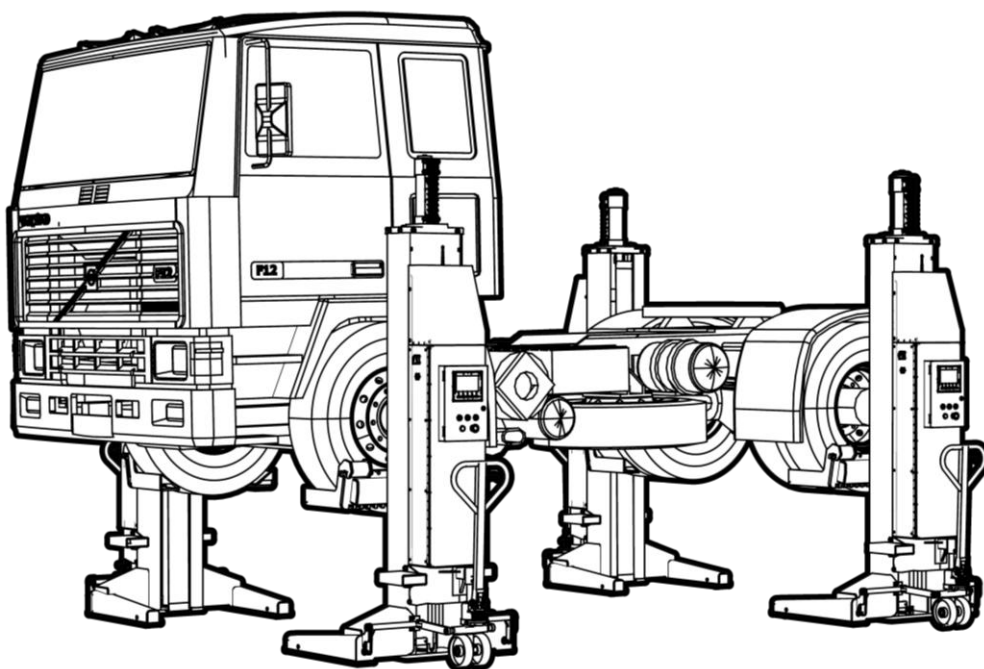


ORIGINAL
USE AND
MAINTENANCE
MANUAL





**MOBILE LIFTING COLUMNS FOR
HEAVY DUTY VEHICLE**


STD-9650YW
STD-9685YW



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
	Indicates prohibition
	Indicates a possibility of danger for the operators
	Indicates the direction of access for motor vehicles to the lift
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.
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CONTENTS

1	GENERAL INFORMATION	5
1.1	MANUAL KEEPING	5
1.2	OBLIGATION IN CASE OF MALFUNCTION	5
1.3	CAUTIONS FOR THE SAFETY OF THE OPERATOR	6
1.4	WARNINGS	6
2	PRODUCT IDENTIFICATION	7
2.1	WARRANTY CERTIFICATE	7
2.2	TECHNICAL SERVICING	7
3	PACKING, TRANSPORTATION AND STORAGE	8
3.1	PACKING	8
3.2	LOADING/UNLOADING AND TRANSPORTATION	8
3.3	STORAGE AND STACKING OF PACKAGES	9
3.4	DELIVERY AND CHECK FOR PACKAGES	9
3.5	SCRAPPING	9
4	PRODUCTION DESCRIPTION	10
4.1	INTENDED USE	10
4.1	LIFT DESCRIPTION	10
5	TECHNICAL SPECIFICATION	11
5.1	SIZES AND MAIN FEATURES	11
5.2	ELECTRIC MOTOR	11
5.3	BATTERY	11
5.4	PUMP	11
5.5	HYDRAULIC POWER UNIT	14
5.6	OIL	14
5.7	ELECTRIC AND HYDRAULIC SCHEMES	15
6	SAFETY	18
6.1	GENERAL WARNINGS	18
6.2	RISKS FOR PEOPLE	19
6.3	PERSONAL CRUSHING RISKS	19
6.4	BUMPING RISK	19
6.5	ELECTROCUTION RISKS	19
6.6	RISKS FOR UNAUTHORIZED USES	19
6.7	SLIPPING RISKS	19
6.8	RISKS RESULTING FROM IMPROPER LIGHTING	19
6.9	RISKS OF BREAKING COMPONENT DURING OPERATION	19
6.10	SAFETY DEVICES	20
7	INSTALLATION	21
7.1	WORK SITE REQUIREMENT	21
7.2	MOVING COLUMNS TO SITE	21
7.3	ELECTRIC CONNECTION	21
7.4	OIL FILLING AND BLEEDING	22
7.5	CHECKS BEFORE USE	22
8	OPERATION AND USE	23
8.1.	CONTROLS	23
8.2	ONLINE GROUPING	25
8.3	CHECK BEFORE WORKING	25
8.4	POSITIONING FOR VEHICLE LIFTING	26
8.5	LIFTING AND PARKING	27
8.6	LOWERING	27

8.7	MANUAL LOWERING IN EMERGENCY	27
8.8	LOWERING	27
8.9	COMMUNICATION CABLE CONNECTION	28
9	SETUP	29
9.1	LANGUAGE SELECTION	29
9.2	COLUMN CLASSIFICATION	29
9.3	WIRELESS COMMUNICATION PARAMETER	30
10	OPTIONAL ACCESSORIES	31
11	MAINTENANCE	32
9.1	ORDINARY MAINTENANCE	32
9.2	PERIODIC MAINTENANCE	32
12	TROUBLE-SHOOTING	33

CHAPTER 1 – GENERAL INFORMATION

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 AUTHORISED DEALERS or SERVICE CENTRES AUTHORISED 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.
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	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
--	---

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.

CHAPTER 2 – PRODUCT IDENTIFICATION

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

	
Model Number: STD-9685YW	
Serial Number:	Power:
Max Lifting Capacity:	Max Lifting Height:
Manufacture Date:	Min Working Height:



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.

CHAPTER 3 - PACKING, TRANSPORT AND STORAGE

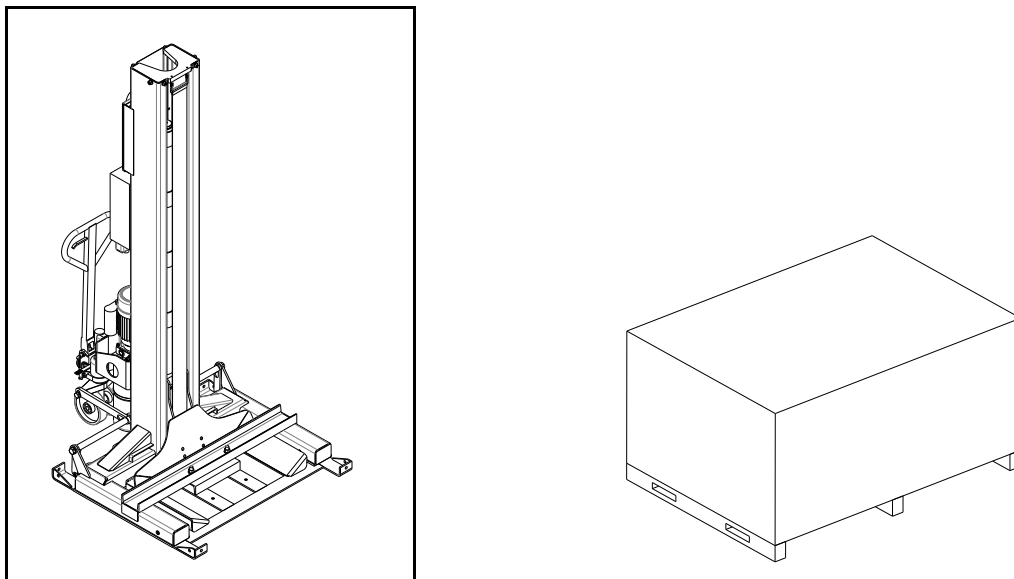
3.1 PACKING (ref. fig.1)

The column is delivered in following components:

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

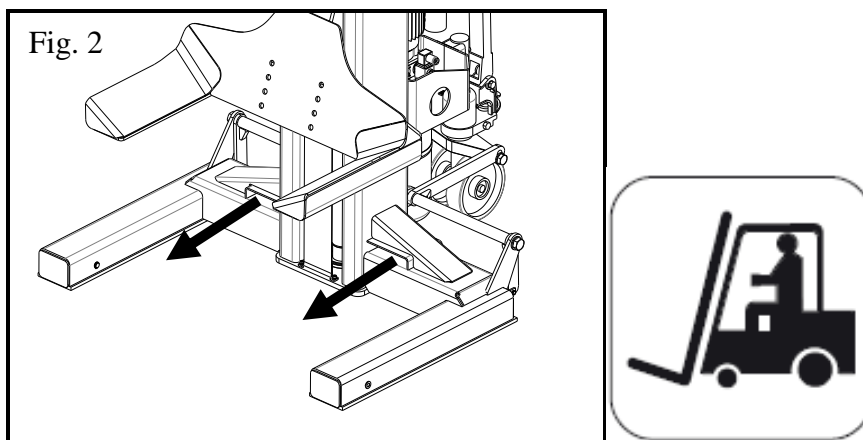
If requested, optional accessories are available to satisfy each customer's requirements.

Figure 1 –PACKING



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).

3.5 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.

CHAPTER 4 - PRODUCT DESCRIPTION

4.1 INTENDED USE

The lift is suitable for lifting heavy-duty vehicles, such as a truck and a bus, with maximum weight 5500kg or 8500kg for each column of the different type.

The lift can be used in a group combined with 2, 4, 6.....16 columns.

Wheels of the vehicle should be in compliance with the lifting fork dimensions. For any special vehicles, the manufacturer can supply the special adaptors for option described in the chapter 8.4.

4.2 LIFT DESCRIPTION (ref. fig.3)

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

Any column can be set as master or slave. All operation is carried out by "dead-man" controls on the control panel as described in the chapter 8.

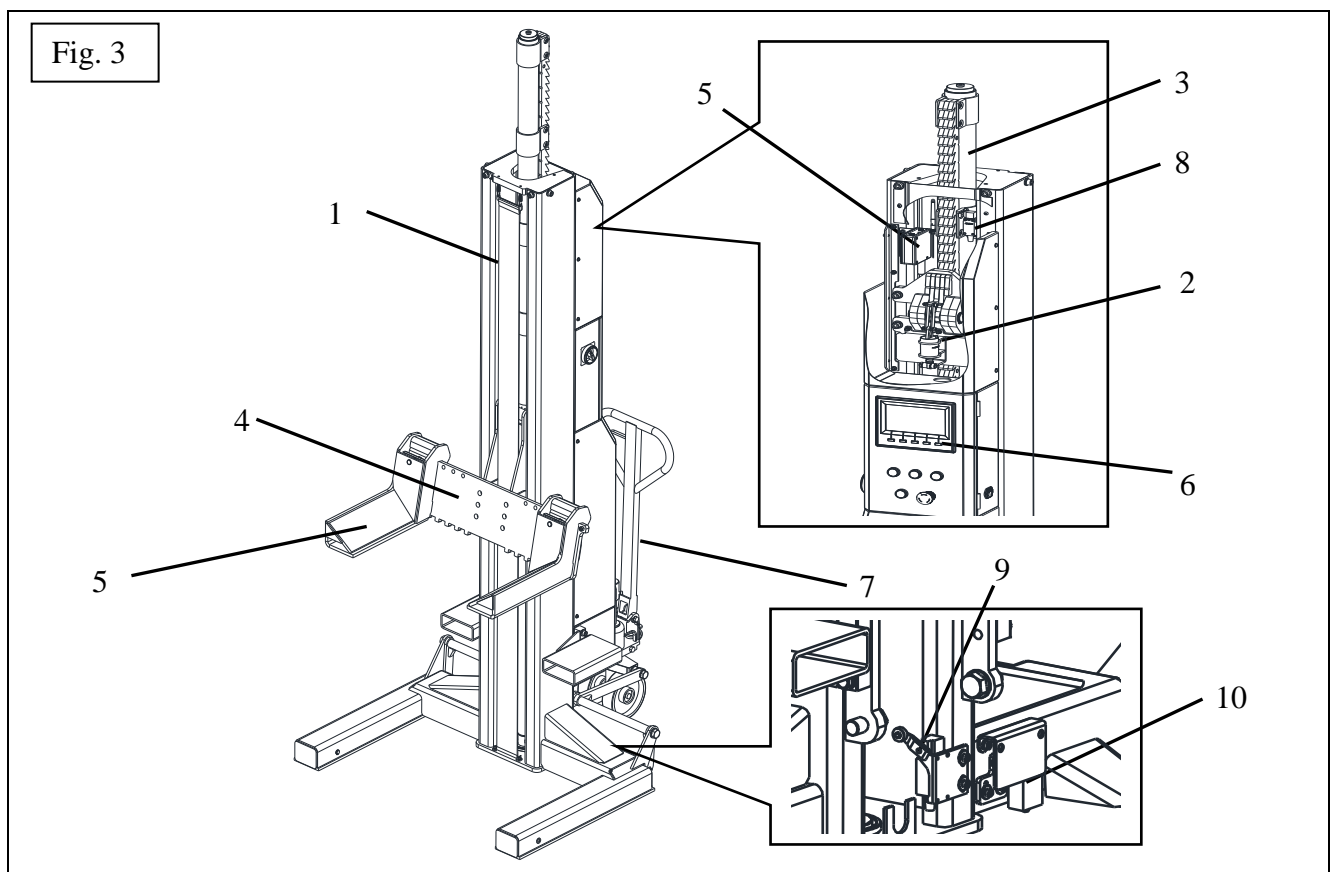
As shown in figure 3, each column is composed mainly of a post (1) with the mechanical safety device (2) and a hydraulic cylinder (3) built-in and carriage (4) with a pair of adjustable lifting forks (5).

Lifting is carried out by means of the control panel (6) composed of the touch screen and soft-keys acting on the power unit to deliver the fluid to the cylinder.

Synchronization of system is detected by means of the sensor (6) which gives the signal to PCB for controlling each carriage at the same lifting/lowering speed

The column can be moved by means of a mobile jack (7).

Three safety switches are installed in each column: one (8) is for stopping the carriage from being over-stroke, one (9) is for resetting the system when the carriage is lowered to the lowest position, one (10) is for making sure the column is put stably on floor before attempting to work.




CHAPTER 5 - TECHNICAL SPECIFICATION

5.1 SIZE AND MAIN FEATURES (ref. Fig. 4)

CAPACITY of each column	5500Kg	8500Kg
Lifting stroke	0~1750mm	0~1700mm
Width between two lifting forks adjustable	166 – 550mm	240 – 624mm
Max. synchronization error between columns	50mm	
Overall height	3770mm	3730mm
Lifting time	80 s	120 s
Lowering time	70 s	
Noise level	80 dB(A)/1m	
Working temperature	0 °C ~ 40 °C	
Package weight	510Kg	810Kg

5.2 ELECTRIC MOTOR

Voltage	DC 24V
Motor power	2.2KW
Speed	2000 - 4000rpm

	<p>Motor connection must be carried out referring to the attached wiring diagram attached in this manual.</p> <p>It is extremely forbidden to connect DC power unit to AC power supply. Improper electrical hook-up can damage motor and will not be covered under warranty.</p>
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5.3 BATTERY

Voltage	DC 12V
Volume	280AH
Cold start current	650A
Average consumption cycle per charging	15
Sizes	253 (L) x 168 (W) x 200 (H) mm

	<p>Make sure all batteries keep in same volumes. It is suggested to replace the batteries every three yeas.</p>
---	--

5.4 PUMP

Type	Gear	
Flow rate	1.6 cm ³ /g	1.6 cm ³ /g
Continuous working pressure	240 bar	260 bar

Figure 4a – 5.5T COLUMN LAYOUT

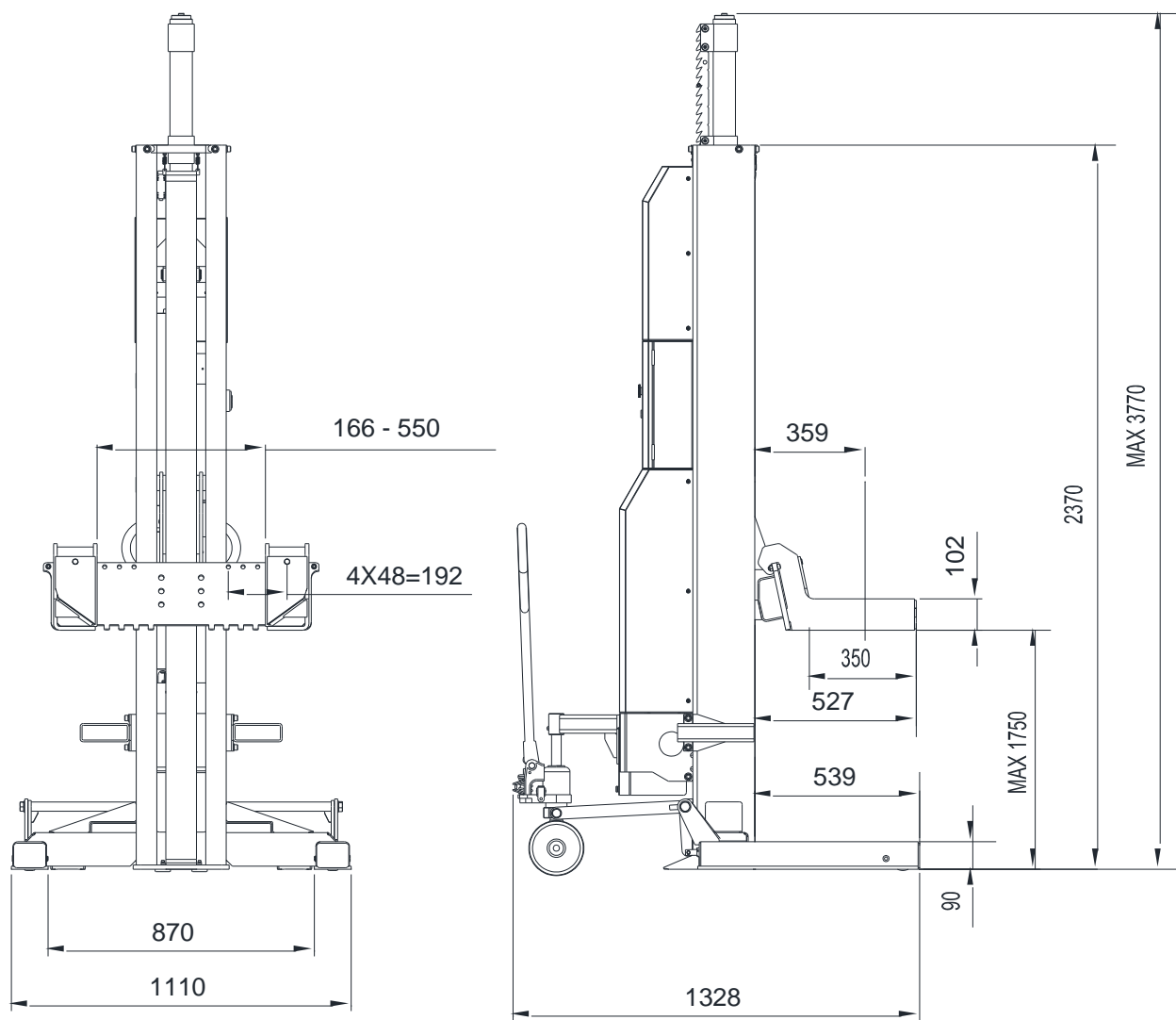
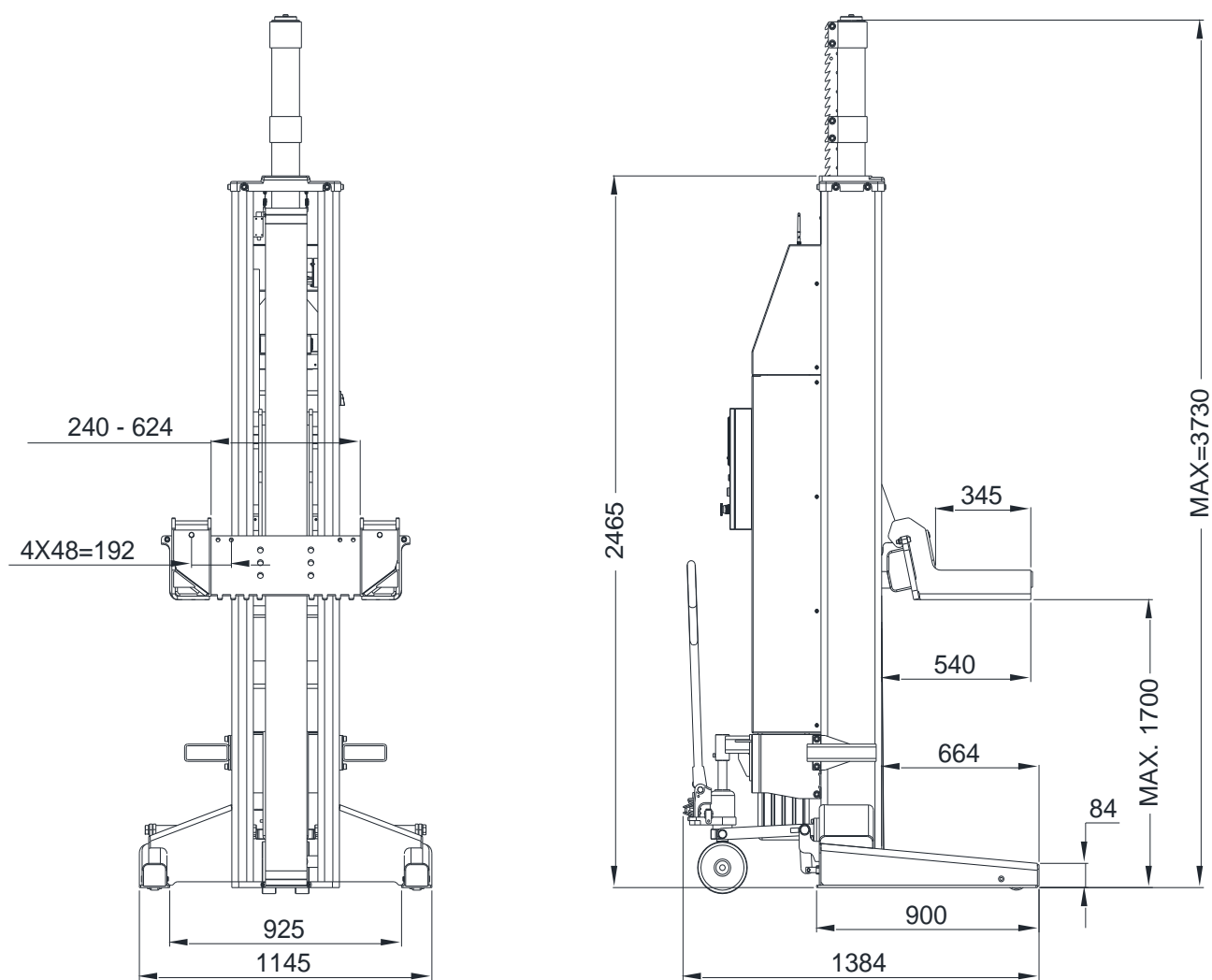


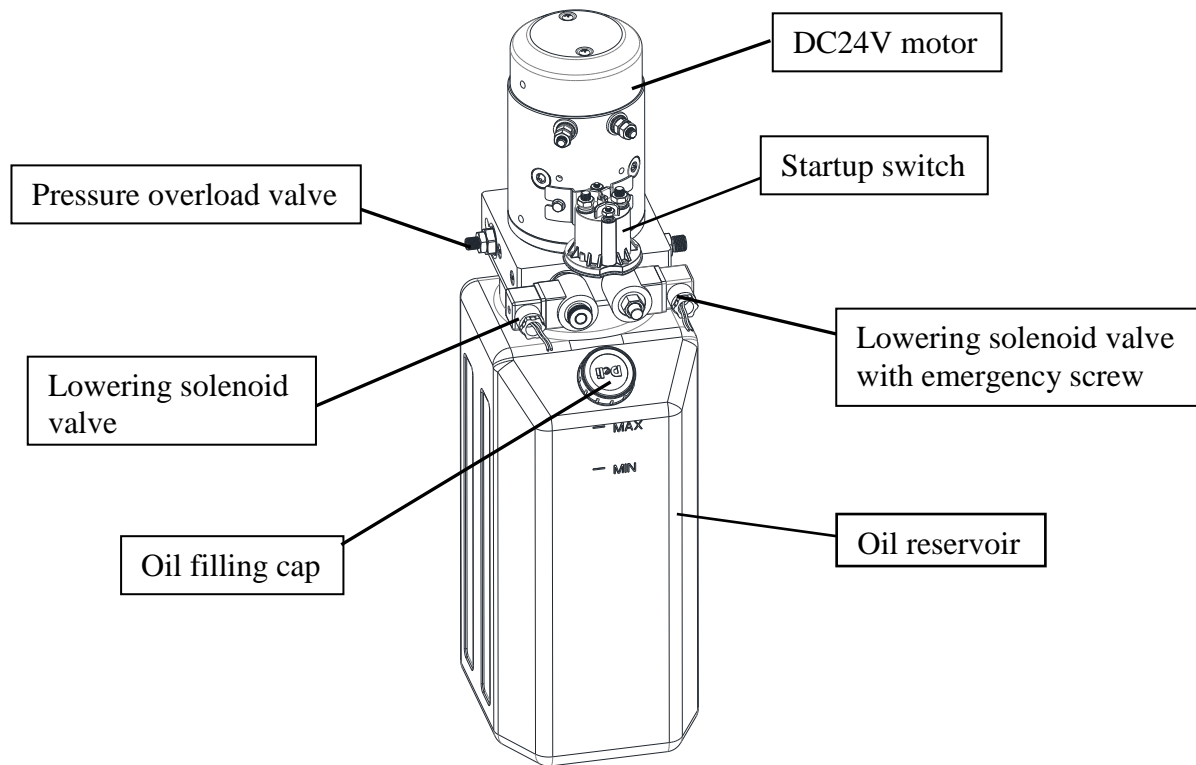
Figure 4b – 8.5T COLUMN LAYOUT



5.5 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.
---	---

5.6 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
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5.7 ELECTRIC AND HYDRAULIC SCHEMES

Figure 6 - HYDRAULIC SCHEME

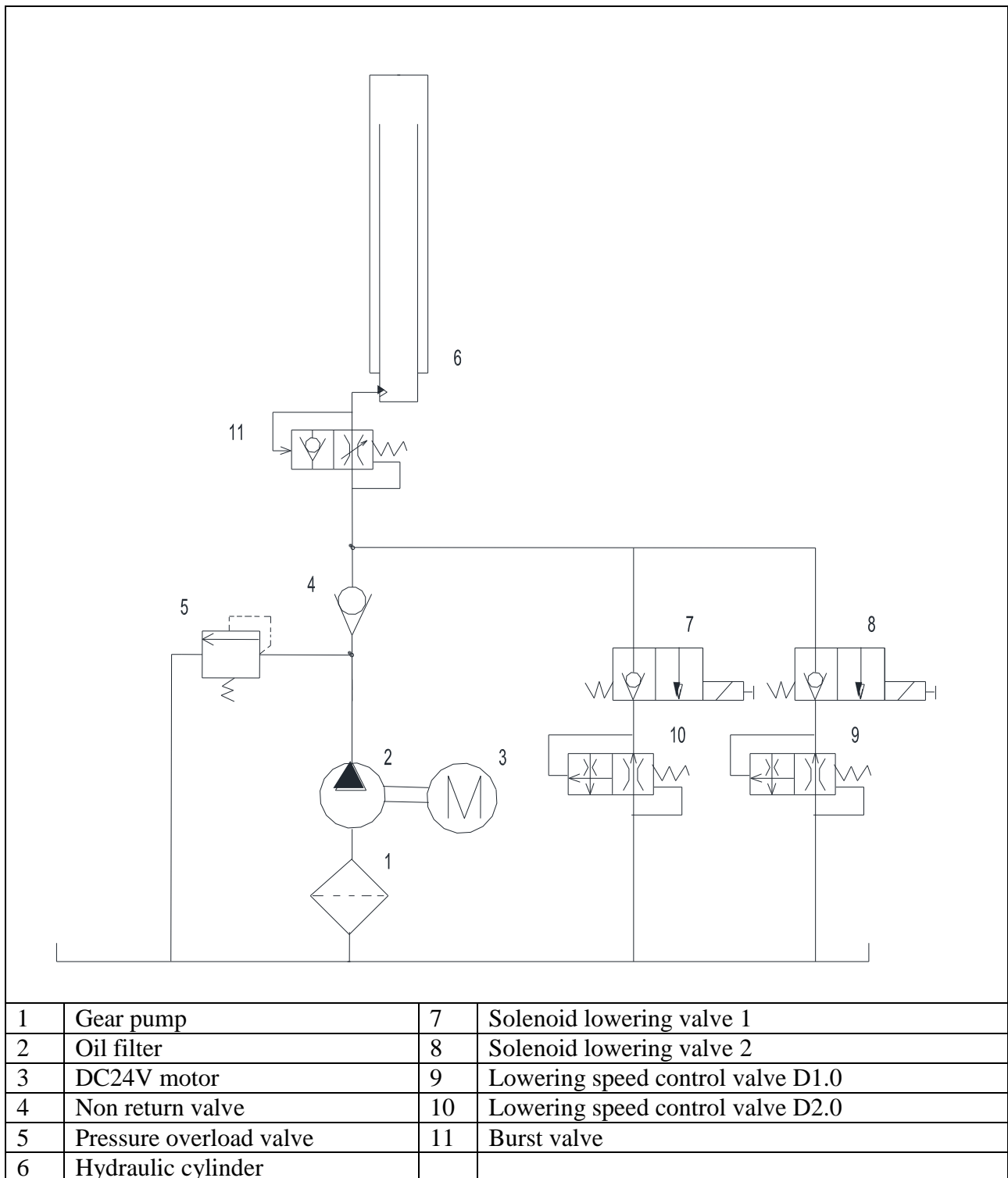
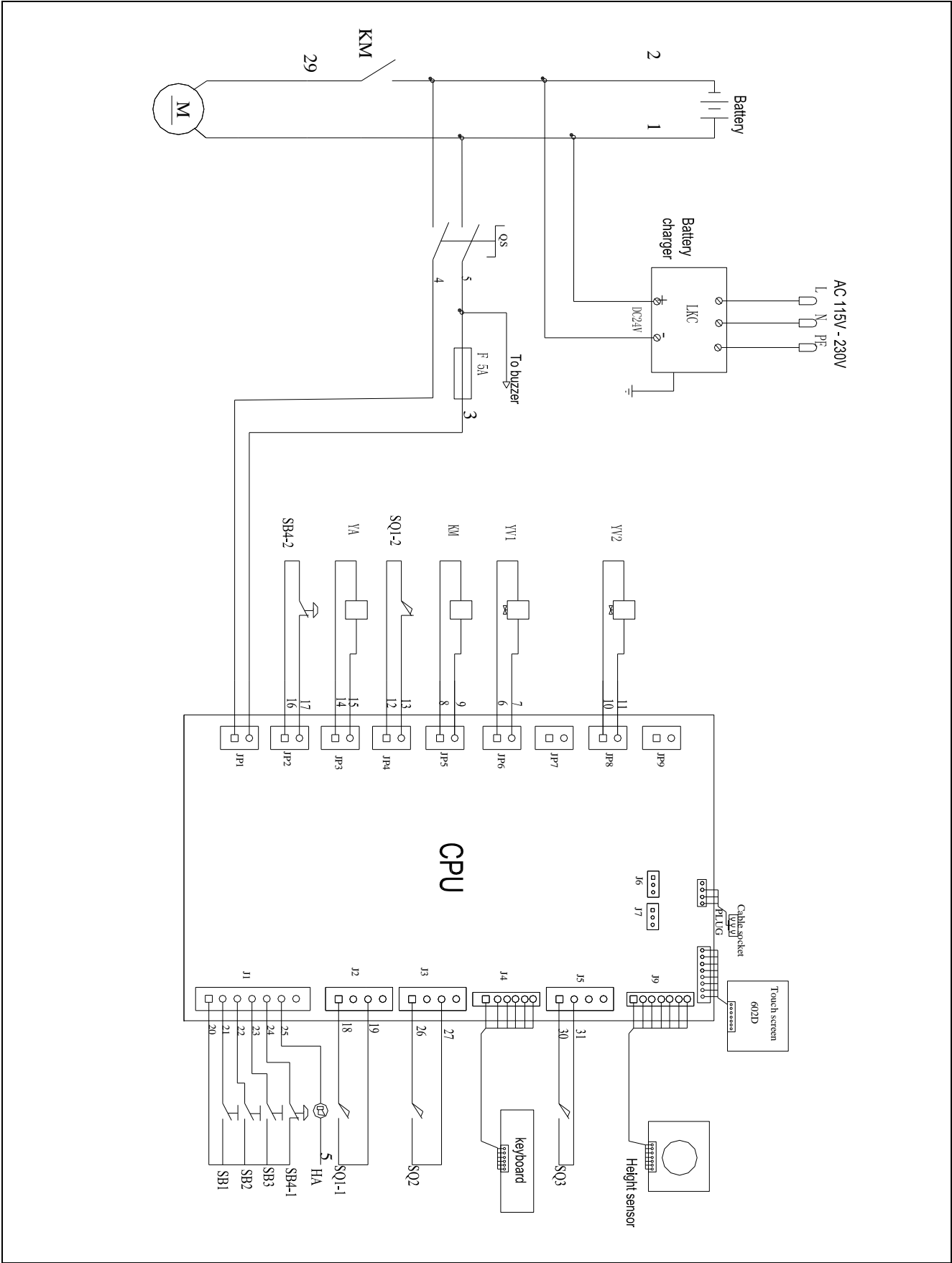



Figure 7 – ELECTRICAL SCHEME



QS	Power switch
KM	Contactactor DC
M	Motor DC24V
SB1	Lifting pushbutton
SB2	Lowering pushbutton
SB3	Parking button
SB4	Emergency stop button
HA	Buzzer
SQ1	Top limit switch
SQ2	Resetting limit switch – lowest position
SQ3	Grounding safety limit switch
YA	Lock release electromagnet
YV1	Solenoid lowering valve 1
YV2	Solenoid lowering valve 2

CHAPTER 6 – 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.

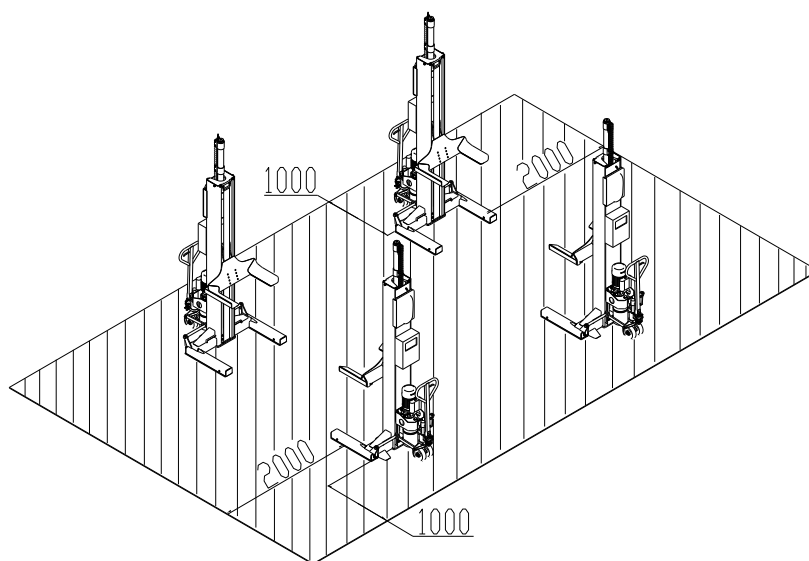
	<p>The lift has been designed and built for lifting vehicles and making them stand above level in a closed area. any other use is forbidden:</p> <p>The manufacturer is not liable for possible damages to people, vehicles or objects resulting from an improper or unauthorized use of the lift.</p>
---	--

For operator and people safety, the safety area shown in the figure 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.

	<p>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.</p>
---	--

Figure 8 - SAFETY AREA



SAFETY AREA (min. 1 meter)

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:

- Emergency knob is placed on each control panel for easy access to stop the column for working immediately once it is pressed in case of emergency;
- Passwords are needed to avoid the unauthorized operation or setting up;
- Mechanical safeties in each column so that any parking position can be secured;
- Advanced synchronization system makes sure that the height difference of each carriage cannot exceed 50mm. In case a carriage encounters an obstacle under to inhibit descent, the system stops immediately;
- All errors can be displayed on the screen and meanwhile the beeper is alarming;
- A safety switch to prevent the column from working before it is put on floor stably.
- Burst valve is fitted in the 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.
DO NOT temper any safety device.**

CHAPTER 7 – INSTALLATION



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 WORK 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 C25 at least 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 work site 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



Make sure that the site is free of obstruction.

- Make sure the mobile jack is connected to the column properly;
- 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 ELECTRIC CONNECTION



It is extremely forbidden to connect DC power unit to AC power supply. Improper electrical hook-up can damage motor and will not be covered under warranty.

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

The power 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.

If no special packing is requested, the electric hookup is pre-made in the manufacturer. In case, the electric hookup is to be done on the work site, follow the procedures as below:

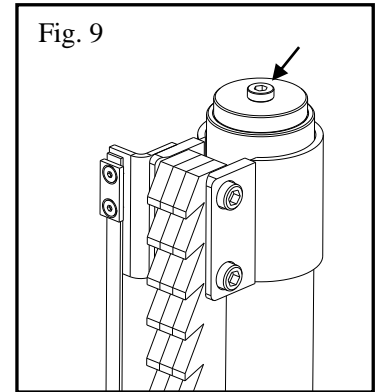
- Make the electric hookup referring to the wiring diagram figure 7;
- Make sure all connections are correct;
- Contact the manufacturer if there is any doubt.

7.4 OIL FILLING AND BLEEDING



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

- Remove the oil filling cap of the oil tank and pour the hydraulic fluid recommended in the chapter 5.5 in the tank about 5 liters;
- Set the main power switch on;
- Set the mode into the position “**SINGLE**” (ref. chapter 9);
- Raise the carriage to the maximum height. Fill the more fluid till the tank is full;
- Lower the carriage completely;
- Open the bleeder of each cylinder by turning it anticlockwise approximate two turns (ref. fig. 9);
- Close the bleeder when the fluid streams;
- Repeat the above procedure again to bleed the hydraulic system for other columns completely..



7.5 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.

7.5.1 MECHANICAL SAFETIES FOR PROPER INSTALLATION

- Check to make sure that mechanical safeties of each column can engage properly and be released completely.

7.5.2 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.


7.5.3 SYNCHRONIZATION CHECK

- Check on the screen and make sure the height value difference for all carriages not exceeding 40mm when raising and lowering all carriages fully.

7.5.4 LIMIT SWITCHES FOR PROPER OPERATION

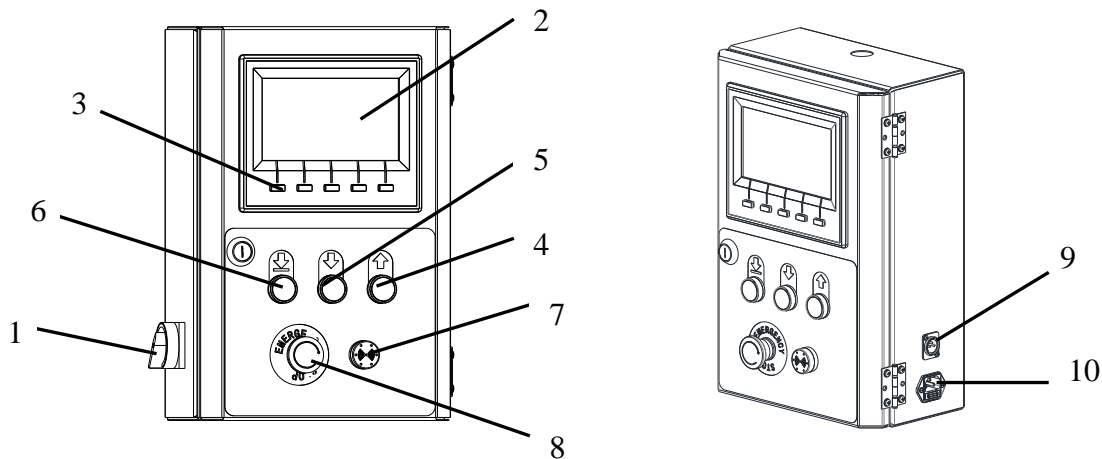
- Check to make sure the power unit stops working when the carriage is raised at the top height;
- Check to make sure the height value displayed on the screen are reset to “0” when the carriage is lowered fully;
- Check to make sure the power unit cannot work if the column is not put stable on floor.

CHAPTER 8 –OPERATION AND USE

	<p>Never operate the lift with any person or equipment under.</p> <p>Never exceed the rate lifting capacity.</p> <p>Do not permit the control unit to get wet!</p>
---	---

8.1 CONTROLS

Figure 10 – CONTROL PANELS



POWER SWITCH (1)

The power switch 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.

TOUCH SCREEN (2)

- The respective operation can be carried out on it.
- Respective information is displayed on it during working.

FUNCTION BUTTONS (3)

- Each function shown on the touch screen can be performed by pressing the respective key.

LIFTING BUTTON (4)

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

LOWERING BUTTON (5)

- When pressed, the carriage of column takes a few seconds at first to release the mechanical safeties then the carriage begins to descend under its weight or load lifted.

PARKING BUTTON (6)

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

BEEPER (7)

- When it is alarmed, an error happens in the system.

EMERGENCY STOP BUTTON (8)

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

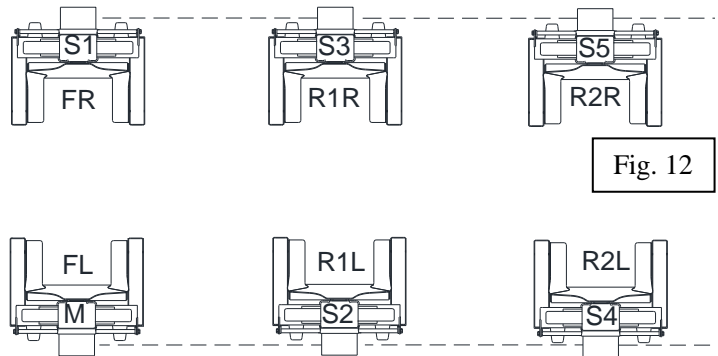
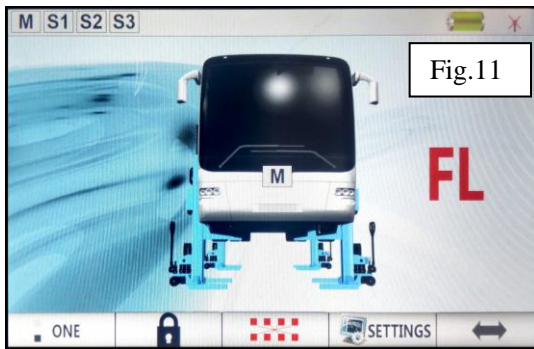
COMMUNICATION CABLE SOCKET (9)

- When the communication cable is connected, the system is possible to be switched to the wired communication.

BATTERY CHARGER SOCKET (10)

8.1.1 HOME PAGE OF MASTER TOUCH SCREEN



When the column is powered on, the home page of screen appears as shown in the picture 11;




COLUMN IDENTIFICATION:

- “M” represents the master column. In one group, only one master column can be set.
- “S1” or “S2”..... represents the corresponding number of the slave column in the group.
- “FL” or “FR”..... represents the position the column is located (ref, fig. 12), which can be identified automatically during grouping online according to its position in the group.

OPERATION LOCK :

- To unlock the operation, press the button under it for five seconds. When the operation is unlocked, the icon on the screen is change from  to  .
- If no operation is performed for five seconds, the screen is locked again.


WORKING MODE “ONE”, “TWO” OR “ALL”:

- If the columns are not grouped, only the mode “ONE” can be selected and operated.
- If the columns are grouped online, all modes can be selected and operated at any column.
- To select a mode, press both buttons under the mode icon and  for five seconds.



**The mode “ONE” or “TWO” is allowed only for resting the tire on lifting forks.
To raise the vehicle, the model “ALL” must be selected**

ONLINE GROUPING :

- This can be operated only on the master column.
- To perform the online grouping, press both buttons under it and  .

SETTINGS :

- It is used for setting up the column classification, wireless communication parameter, language.
- To make the setup, press it directly on the touch screen (ref. chapter 9).

QUICK ACCESS :

- If the previous grouping configuration is saved, the online operation can be accessed directly by pressing the button under it.

8.2 ON-LINE GROUPING



This operation can only be performed on the master column with the letter “M” displayed on the screen.

- Power on all columns to be grouped online;
- Check and make sure that the wireless statues for all columns is on;
- Referring to the chapter 8.1.1, unlock the operation and enter to the online grouping page as shown in the figure 13;
- Determine how many columns to be grouped online. “N” means for the columns quantity in the same axis. “N=2” means for a pair of columns, “N=4” means for two pairs of columns, etc.....;
- On the screen select the column quantity to be grouped online by pressing “N=n”. This step can be exited by pressing the icon “Exit” on the screen or the parking button (6, fig.1) if mis-operation happens.
- Select the column “Sn” by pressing it directly on the screen or the key under $S1 \leftrightarrow Sn$. Once it is selected, its box is highlighted in red (ref. fig.14);
- Check and confirm where the selected column is positioned, then press its tire icon. Once it is selected into the group, the respective tire icon is highlighted in green;
- Repeat the above procedures for selecting other determined columns into group and make sure all tire icons are highlighted in green as shown in the picture 15;
- Press the icon “Save” on the screen directly to save the setting.

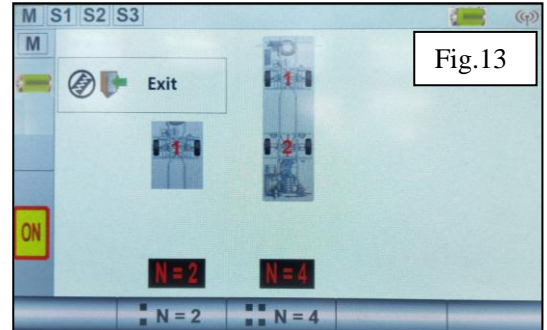


Fig.13

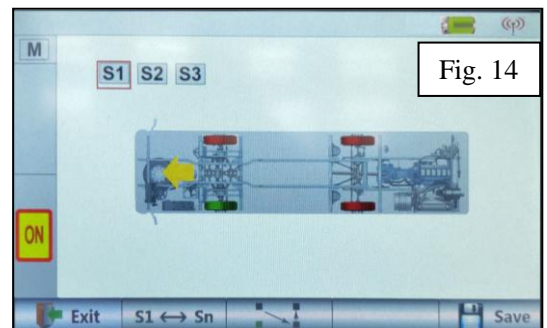


Fig. 14

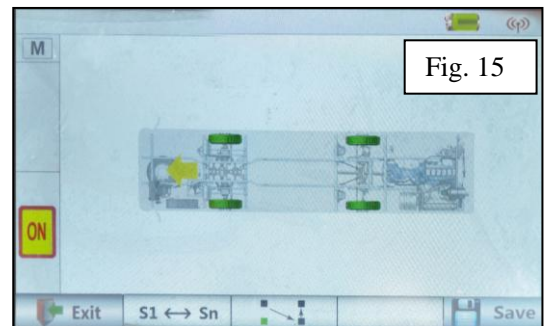



Fig. 15

8.3 CHECK BEFORE WORKING

Once the online grouping is saved, the screen changes to the page for online operation as shown in the figure 16.

Before working, lower each carriage at the lowest height and referring the picture 16 and check:

- If all tire icons are highlighted in green.
If not, check if all columns are powered on;
- If the screen on every column shows “ON”.
If not, check if the column is put on ground well and the safety switch (10, fig.3) is activated;
- If the red arrow icon  appears under all tire icon.
If not, lower the carriage to the lowest height until this icon appears.

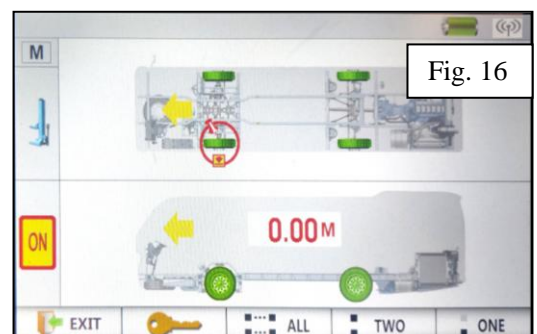

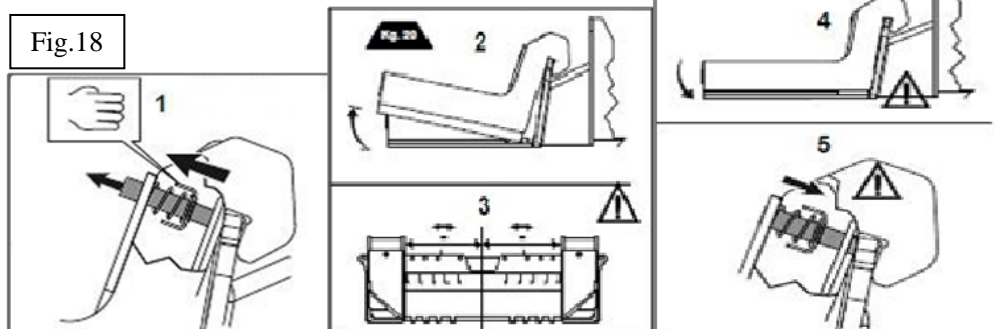
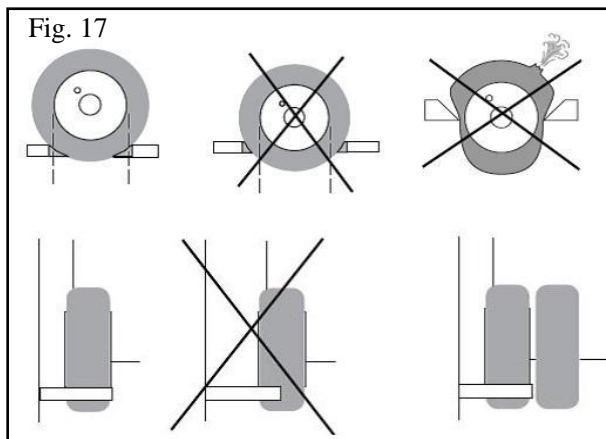



Fig. 16

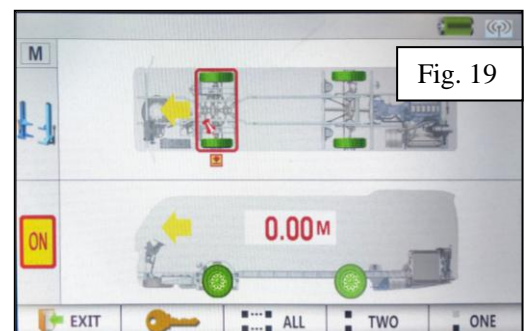
8.4 POSITIONING FOR VEHICLE LIFTING

	<p>Make sure all tires have the good conditions and are rested on the lifting forks very well or if the special adaptors are needed.</p> <p>The mode “ONE” or “TWO” must be used only for resting tires on lifting forks.</p>
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- Move each column to the relevant position determined (ref, fig. 12). Pay attention that the column must be in a vertical position and not bump the vehicle;
- Check to make sure all tires of vehicle are inflated well and have good conditions (ref. fig. 17);
- Determine if the fork position is in compliance of the tire sizes or adjust the fork position if necessary (ref. fig. 18), or if special adaptors are needed;




- Make sure all carriages are lowered at the lowest height when the red arrow icon  appears under all tire icon;
- Unlock the operation and select the working mode;
 - For the normal vehicle, select the mode “ONE”. Once it is selected, the screen appears as shown in the figure 16;
 - For the special vehicle such as the container trailer with the suspended wheels, it can be more convenient to select the mode “TWO”. Once it is selected, the screen appears as shown in the figure 19;
- Slowly raise each carriage until the tire is rested on forks very well 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 all tires are rested on forks fully (ref. fig. 17).
- Make sure the vehicle is balanced;
- Exit the operation by pressing “**EXIT**” button.





8.5 LIFTING AND PARKING

	<p>This operation MUST be performed online and after grouping is completed.</p> <p>The operation can be performed on any column.</p> <p>To raise the vehicle, only the mode “ALL” is allowed to be selected.</p> <p>During this procedure, observe the lifting status carefully and push the emergency button immediately in case of any improper lifting status.</p> <p>Always ensure that the mechanical safeties are engaged properly before any attempt is made to work on or near the vehicle.</p>
---	--

- Unlock the operation and select the mode “ALL”;
- Raise the vehicle. When a column is being operated, the icon  is appearing on the respective tire icon;
- During the lifting procedure, the lifting height is displayed on the screen. Pay attention to check all carriages are synchronized well during this procedure;
- Release the lifting button until the vehicle is raised to the desired height.
- At the desired height, press the parking button to engage the mechanical safety of each column.

8.6 LOWERING

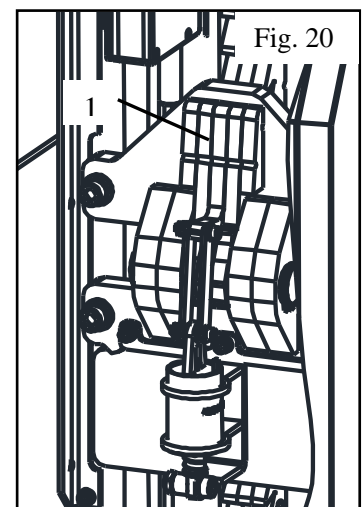
- Be sure the safety area is free of people and objects;
- Lower the vehicle and meanwhile check to make sure all carriages are lowered synchronously;
- Padlock the power switch the vehicle is lowered fully;
- Move the columns out of working space. Be careful not to bump the vehicle;
- Lower all carriages fully until the icons  appear under all tire icons.

	<p>Make sure to low all carriages fully when the red/yellow arrow icons appear under all tire icons. Failure to do so can cause the incorrect lifting height for the next operation.</p>
---	---

8.7 MANUAL LOWERING IN EMERGENCY

In case of emergency, it is possible to lower the vehicle manually:

- Padlock the power switch;
- Remove the back cover of the column;
- If the mechanical lock is engaged, disengage its hook (1/fig.20) by hand;
- Unscrew the emergency lowering screw (ref. fig.5) in the power unit by turning it anticlockwise to lower the carriage. Make sure each time never lower the carriage at more than 3 locking heights (each locking height is about 30mm);
- Make sure to re-engage the lock before attempting to lower another carriage;
- Repeat the above procedure to low all carriages fully;
- Be sure to retighten the emergency lowering screw by turning it clockwise. The lift cannot be lowered with the lowering valve is open.



8.8 COMMUNICATION CABLE CONNECTION (optional)



Make sure to switch off all columns before making the cable connection.

At requested, the columns can be supplied with the communication cables in case that wireless communication is malfunction.

To change the wireless communication to wired, do as follows:



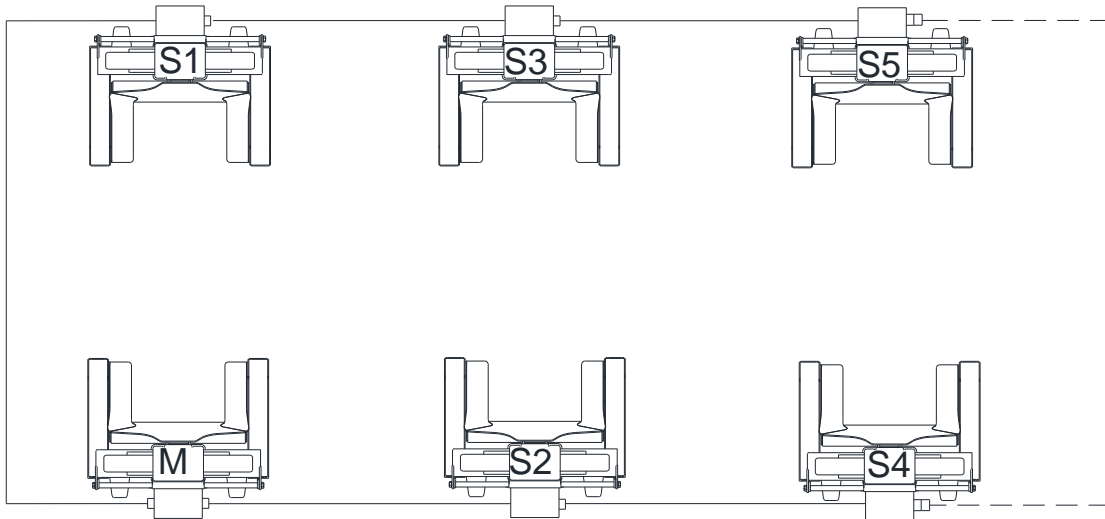


- Switch off the power for all columns;
- Plug the each cable into its socket (9, fig. 10);
- Connect the columns with cables as per the figure 21;
- Power on the columns. If the cables are connected successfully, the communication icons on the screen is changed from  to  ;
- Make the operation same as the procedures described above chapters.

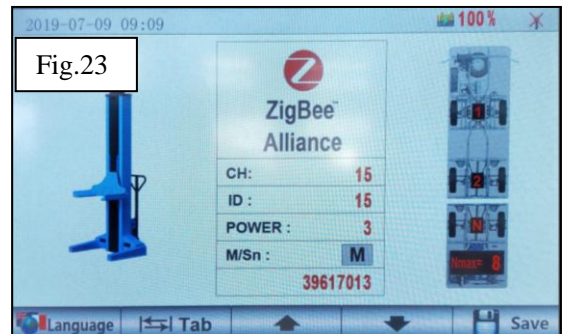
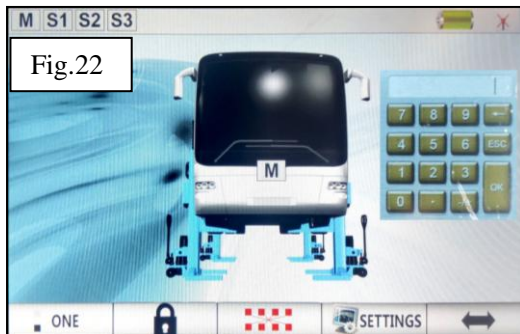
Figure 21 – CABLE CONNECTION



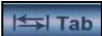

CHAPTER 9 – SETUP

	<p>Only authorized person must be allowed to carry out the setup.</p> <p>Setup can be performed on any column online or offline.</p> <p>Make sure to save the setup if anything needs to be changed.</p>
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- On the home page, press  directly on the screen;
- Enter the code “77777777” on the code box (ref, fig. 22) and press “OK” button;
- After 20 seconds loading, the setup page appears as shown in the picture 23.




9.1 LANGUAGE SELECTION

- Press “**Language**” directly on the screen. Once it is pressed, the multi-language icons appear as shown in the figure 24;
- Select a language by pressing the respective icon directly on the screen or  until the selected language icon is highlighted;
- Save the setup by pressing  or continue making other settings before saving.



9.2 COLUMN CLASSIFICATION

	<p>For the same group, only one column MUST be allowed to be set as master and others are set for slaves which MUST have its own identification number for each.</p>
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M/SN:

- It is used for setting up the column identification in the group.
- In the same group, only one master column is allowed to be set up as the master. Other columns must be set up as the slaves.
- Each slave must be set up on its own with its own identification number.




NMAX:

- This is used for setting up the column quantity to be grouped.
- For the same group, this setup can be performed only on the master column.
- The column quantity can be set from 1 pair to 8 pairs which is determined according to the vehicle axle quantity.


As default, the manufacture has preset up 2 pairs of column for a group. If necessary, reset up as follows:

- To set up the master column, press “**M/Sn**” on the screen of one of columns;
- Enter the value “**0**” on the code box (it can appear once an icon is pressed);
- Determine how many axles to be raised;
- On this screen, press “**Nmax**” and enter a value on the code box, which must be exactly same as the determined axle quantity;



- In one of other columns, press “**M/Sn**” on the screen and enter a value “**1**” to identify this column as “**S1**”;
- According to the column quantity preset above, on other columns repeat this procedure by entering a value from “**2**” till “**15**” maximum to identify each slave column as “**S2**” till “**Sn**” for each;
- Above setup can be also performed by pressing the buttons under  and ;
- Save the setup by pressing  or continue making other settings before saving.

9.3 WIRELESS COMMUNICATION PARAMETER

	<p>The manufacturer has preset up the communication parameter for each column delivered. It is not suggest to make the reset up unless the columns cannot work properly because of the external disturbance such as WiFi, cell phone.....</p> <p>For the same group, the communication parameter for each column MUST be same. Failure to do so can cause malfunction.</p>
---	--

CH:

- It is used for setting up the wireless communication channel.
- It can be selected any value between “**0**” and “**15**”.
- To avoid the external disturbance, it is suggested to select a value among “**4**” , “**9**”, “**14**” or “**15**”.

ID:

- It is used for setting up the wireless communication identification.
- It can be selected any value between “**0**” and “**15**”.

POWER:

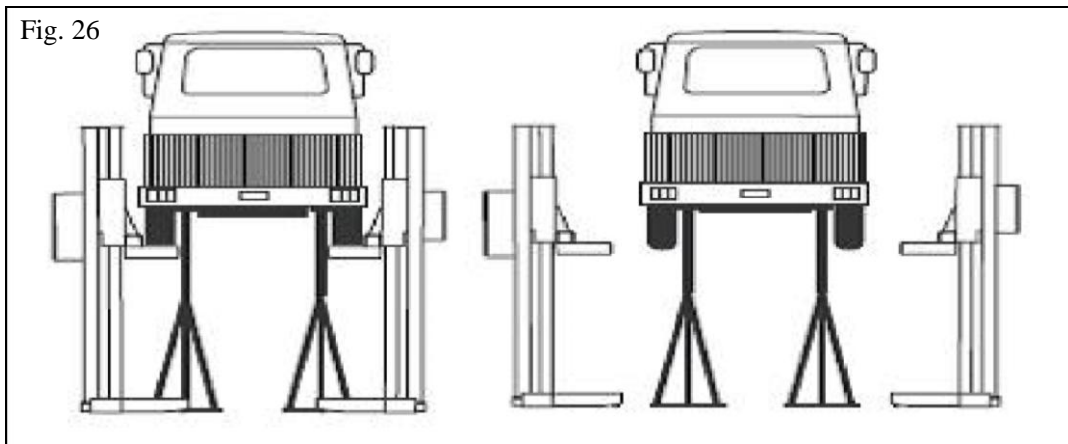
- It is used for setting up the wireless communication power.
- It can be selected any value between “**0**” and “**3**”.
- To have a better communication signal, it is suggested to keep the value “**3**”.

CHAPTER 10 – OPTIONAL ACCESSORIES

The manufacturer can supply optional accessories as follows.

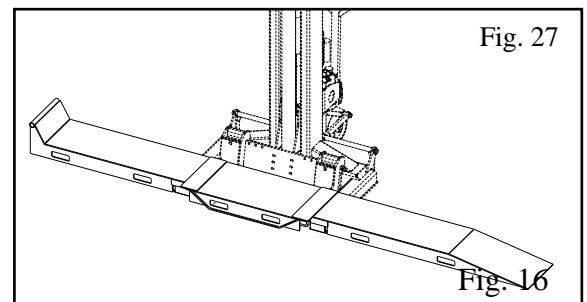
TRIPOD STAND:

- 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. 26).



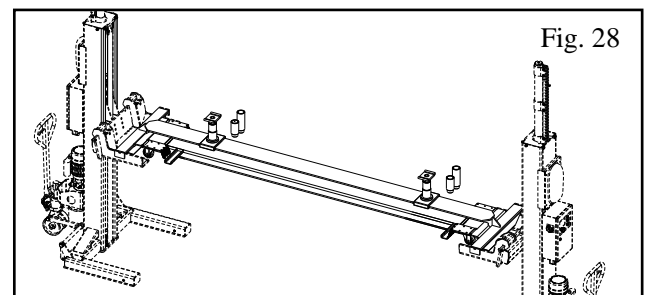
FORK ADAPTOR:

- This adaptor (ref, fig. 27) is designed only for the forklifts that are not possible to be raised on wheels. It needs to be used as a pair.



AXLE ADAPTOR:

- This adaptor (ref, fig. 28) is designed for the trucks such as the light trucks that are not possible to be raised on wheels. It needs to be used as a pair.
- Make sure to position under the vehicle lifting points recommended by the vehicle manufacturer.



CHAPTER 11 - MAINTENANCE



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

CHAPTER 12 – TROUBLESHOOTING

A list of possible troubles and solutions is given below:

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
The column does not work	Power switch is not switched on	Turn on the switch
	Emergency stop button is not released	Release the button
	The grounding safety switch is not activated.	Position the column on floor very well
	Battery is off power	Charge the battery
	The electrical wires are disconnected	Check and reconnect
Some columns can work but some cannot	Some columns are not grouped online	Check for proper grouping online
The carriage does not raise when the lifting button is pressed	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	Retighten the screw
	The suction pump filter is dirty	Check and clean if needed
	The electrical wires to this button are disconnected	Check and reconnect
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 electrical wires to this button are disconnected	Check and reconnect
The height value is not displayed properly during lifting phase	The carriage is raised from the lowest position	Make sure the carriage rises from the lowest position
	The 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 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	Add some hydraulic oil

	sufficient	
	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	Retighten the screw
	The suction pump filter in one of power units is dirty	Check and clean if needed
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 screen	The power switch is not turned on	Turn the switch on
	There is no power	Check power and restore if necessary
	The electrical wires are disconnected	Replace