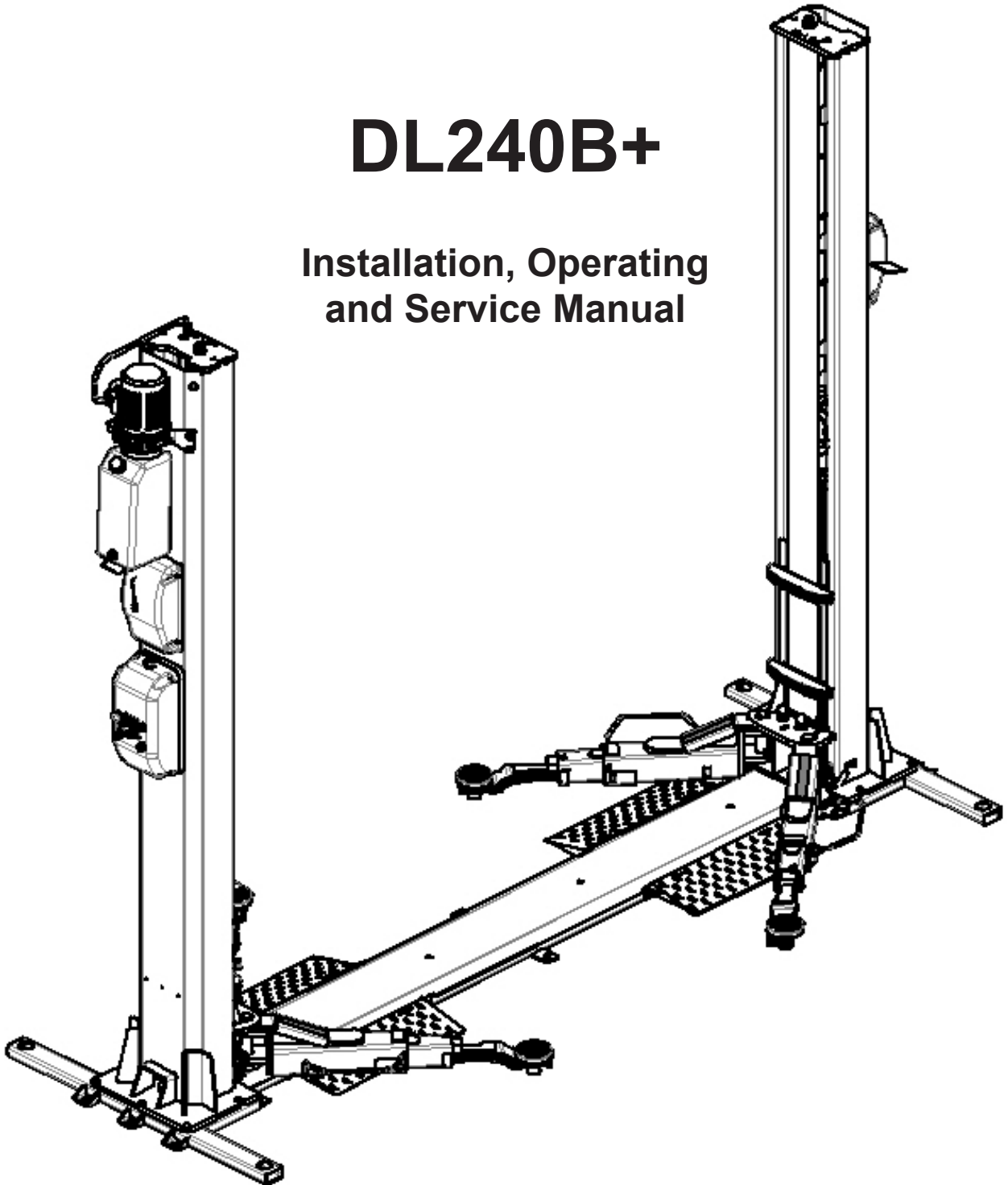


DL240B+

Installation, Operating and Service Manual







ALWAYS KEEP
operating instructions
ready to hand on the
unit

Read the operating
instructions before
working with the
unit

Date: 23/10/2022

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
GRASSETTO	Important information



WARNING: before operating the lift and carrying out any adjustment, read carefully chapter 4 "Installation" where all proper operations for a better functioning of the lift are described..

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BEFORE STARTING TO OPERATE WITH THE BRIDGE READ CAREFULLY THE INSTRUCTIONS CONTAINED IN THIS MANUAL

THIS USER'S MANUAL IS WRITTEN IN THE MANUFACTURER'S LANGUAGE, AND IN OTHER COMMUNITY LANGUAGES. IN CASE OF COMPLAINT, FOR LEGAL PURPOSES, THE VERSION IN ITALIAN LANGUAGE ONLY WILL APPLY. THE MANUFACTURER DISCLAIMS ANY LIABILITY FOR DIRECT AND/OR INDIRECT DAMAGES CAUSED BY POOR TRANSLATION OR WRONG TEXT INTERPRETATION.

WARRANTY

The manufacturer warrants lifts and the relevant accessories for 12 months after purchase date. This warranty consists in the repair or replacement - free of charge - of those parts that, after a careful analysis by the Manufacturer's Technical Service, turn out to be faulty from origin. All electrical parts are excluded. Warranty is limited to material defects, and becomes null and void if the returned parts are tampered with or disassembled by unauthorized staff. Any liability for direct and indirect injuries to people, animals or property due to machine failure or malfunction are excluded from warranty. The expenses deriving from lubricants replacement, transport charges, and any customs duty, VAT and any other expense not specified in the supply contract are at the purchaser's charge. The replacement and repair of parts under warranty, anyway, do not extend warranty terms. The purchaser will nevertheless be entitled to assert its rights on warranty, specified in the supply contract. Should the parties not be willing to submit any dispute arising from the supply contract to arbitration, or in any other case where the judgement of a body of the ordinary competent court is required, the Court of Reggio Emilia will be the only competent court on the territory.

DISCLAIMER

Upon delivery, please check that the product has not been damaged during transportation, and that the accessories coming with it are intact and complete. Any complaint shall be filed within 8 days after lift delivery date. Besides the cases envisaged by the supply contract, the warranty becomes null and void:

- In case of a maneuver error caused by the operator.
- If the damage is caused by poor maintenance.
- If the envisaged capacity is exceeded.
- If the machine has been somehow modified, and the damage has been caused by such a modification, due to repair operations by the user without the authorization of the manufacturer or after fitting non-original spare parts.
- If the instructions described in the user's manual are not complied with.

GENERAL INFORMATION

This chapter contains warning instructions to properly operate the lift and prevent injury to operators or property. This manual has been written to be used by workshop 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, 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 CENTRES 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 if 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.

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 damp.
- Use this manual properly without damaging it.
- Do not make any changes to this manual; any modifications and updates shall be made by the supplying company only.

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

OBLIGATIONS IN CASE OF MALFUNCTION



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

CAUTIONS FOR THE SAFETY OF THE OPERATORS

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 chapter “Operation and use”.

WARNINGS



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



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



The use of non-original 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 the manufacturer agreement by which this lift was purchased, nor increases, in any way, manufacturer's liability towards the customer.

TO THE READER

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

1 –TECHNICAL DATA

		BASIC MODEL	
Max. capacity	Kg	4000	
Lifting time when loaded	s	40	
Lowering time when loaded	s	40	
Minimum height	mm	100	
Lifting height	mm	2045	
Distance between the columns	mm	2800	
Lift max. height	mm	3415	
Three-phase electric motor	Volt-Hz-Amp	230V/400V/50/60Hz -8.2	
Three-phase motor power	kW/HP	3/4	
Single-phase electric motor	Volt-Hz-Amp	220V – 50Hz -19.5 220V – 60Hz -20.5	
Single-phase motor power	kW/HP	3/4	
Max. operating hydraulic pressure	Bar	280	
Controls circuit voltage	Volt	24	
Total weight of lift	Kg	751 / 821	
Package size (for shipment)	mm	2870x842x510	
Recommended hydraulic oil	Tipo	ISO VG32	
Hydraulic system oil quantity	Lt	9 (optional)	
Fixing to the floor with screw anchors	N°10	Fischer FBN II 16x100 (220) + WASHER Di 16.5 De 40 sp.5 (optional)	
Weight electric / electronic materials	Kg	8	
Motor weight	Kg	15	
Average weighed sound level LpAm	dB(A)	68,2	
Average sound level at the operator's workstation LpA	dB(A)	72	
Acoustic power LwA	dB(A)	88,6	

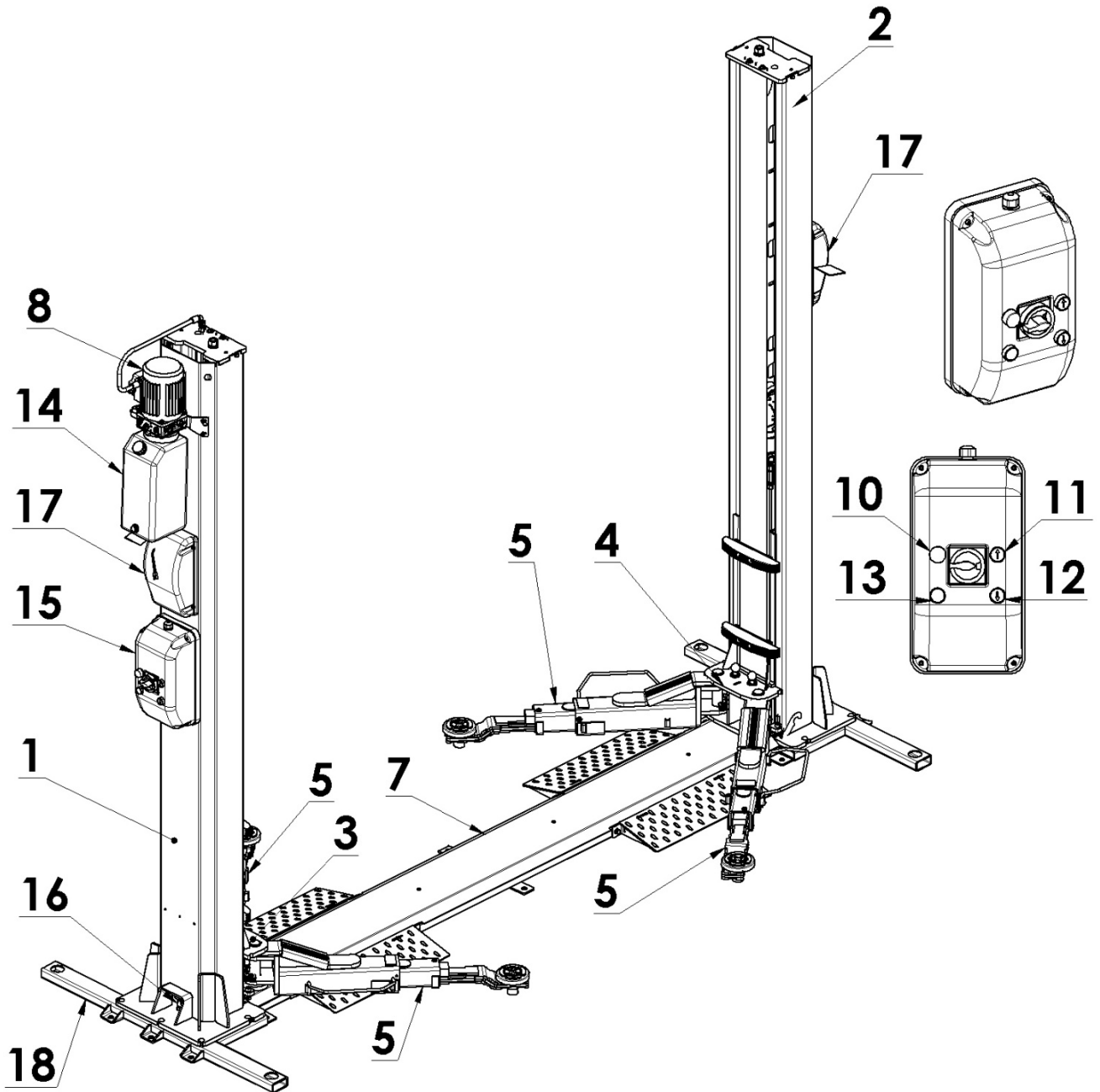


THE LIFTER IS SUPPLIED STANDARD WITH 380V-3PH-50HZ POWER SUPPLY. ONLY ON REQUEST, IT CAN BE SUPPLIED WITH DIFFERENT ELECTRIC POWER SUPPLY.

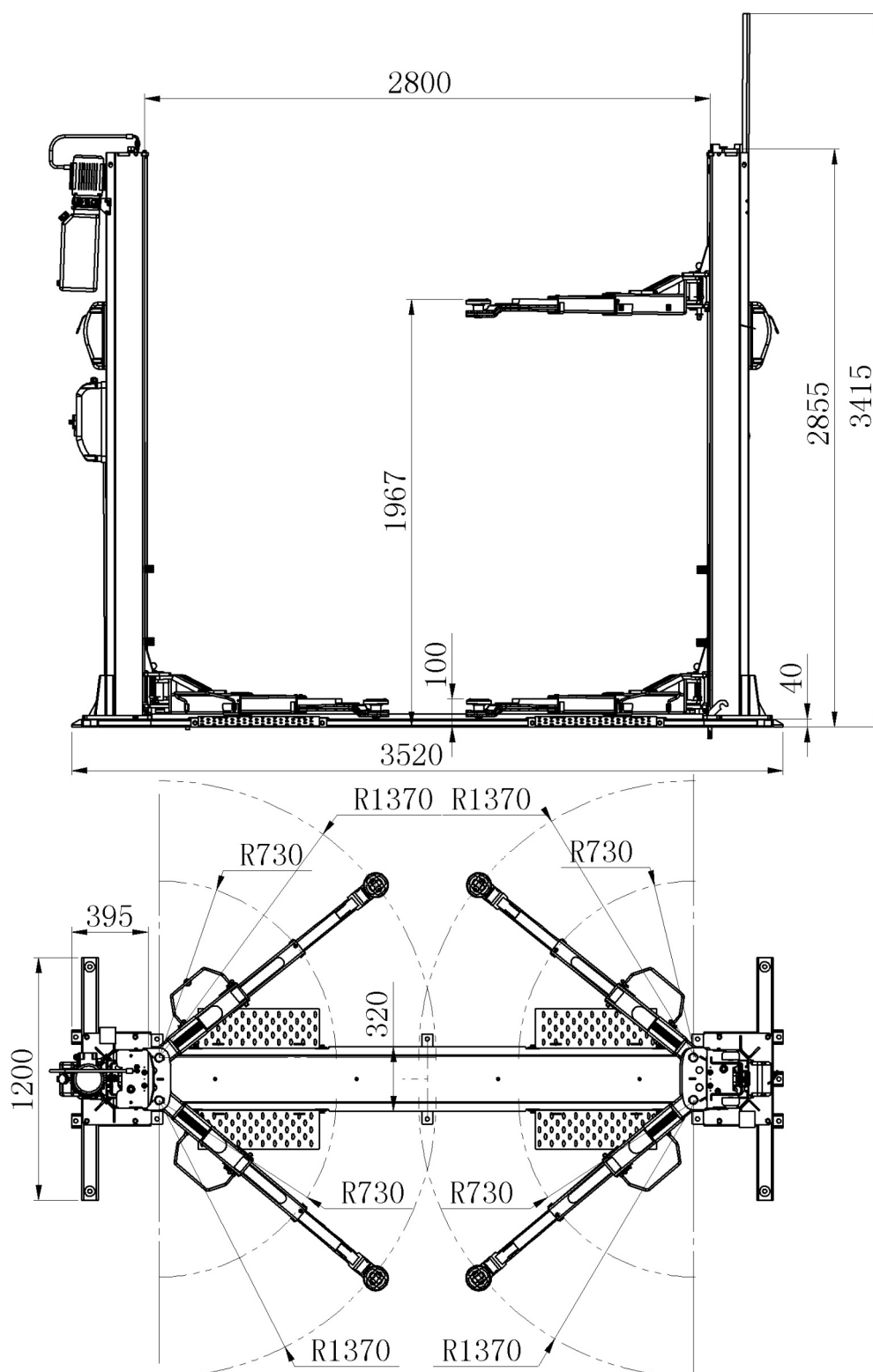
1.1 LIFT DESCRIPTION

DESCRIPTION OF THE LIFT

- 1. P1 Column
- 2. P2 Column
- 3. P1 Carriage
- 4. P2 Carriage
- 5. 3 Stage long lifting arm
- 7. Cable passage cover
- 8. Electric motor
- 9. Emergency switch
- 10. Power on light
- 11. Up push-button
- 12. Down push-button
- 13. Safety device push-button
- 14. Hydraulic power unit
- 15. Control panel
- 16. Chain breaking safety limit switch
- 17. Electromagnet for unlocking mechanical safety devices
- 18 Reinforce base mounting frame



1.2 LAYOUT



1.3 LOAD DISTRIBUTION

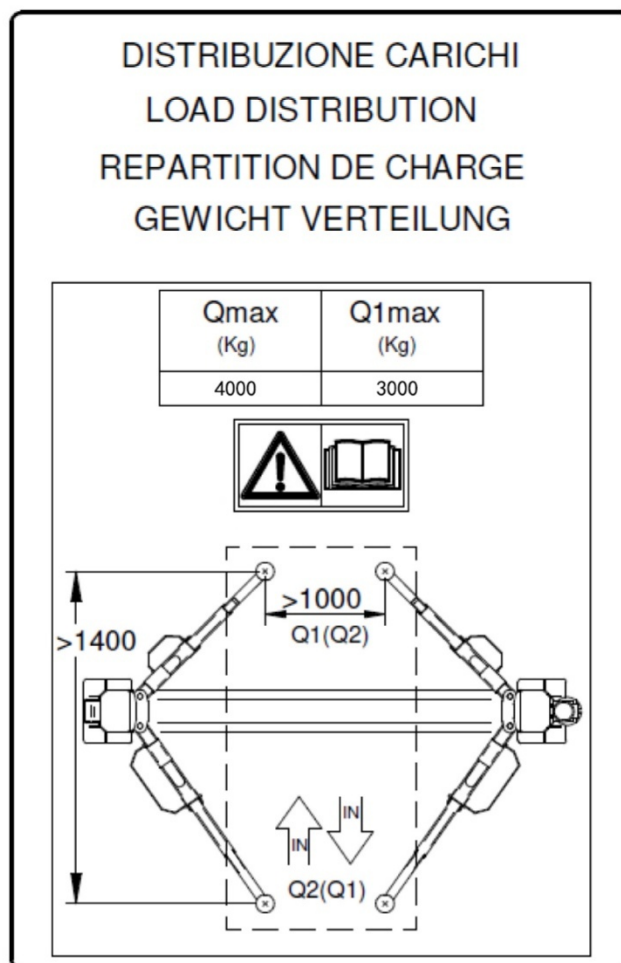


Fig. 4

1.4 PICTOGRAMS

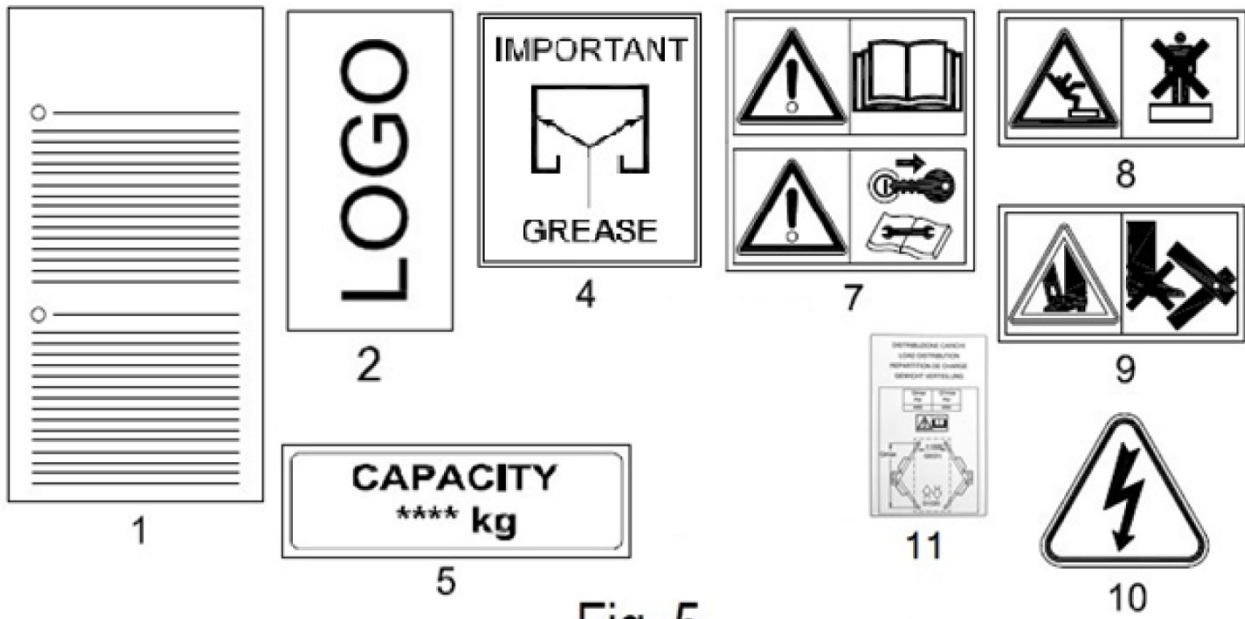


Fig. 5

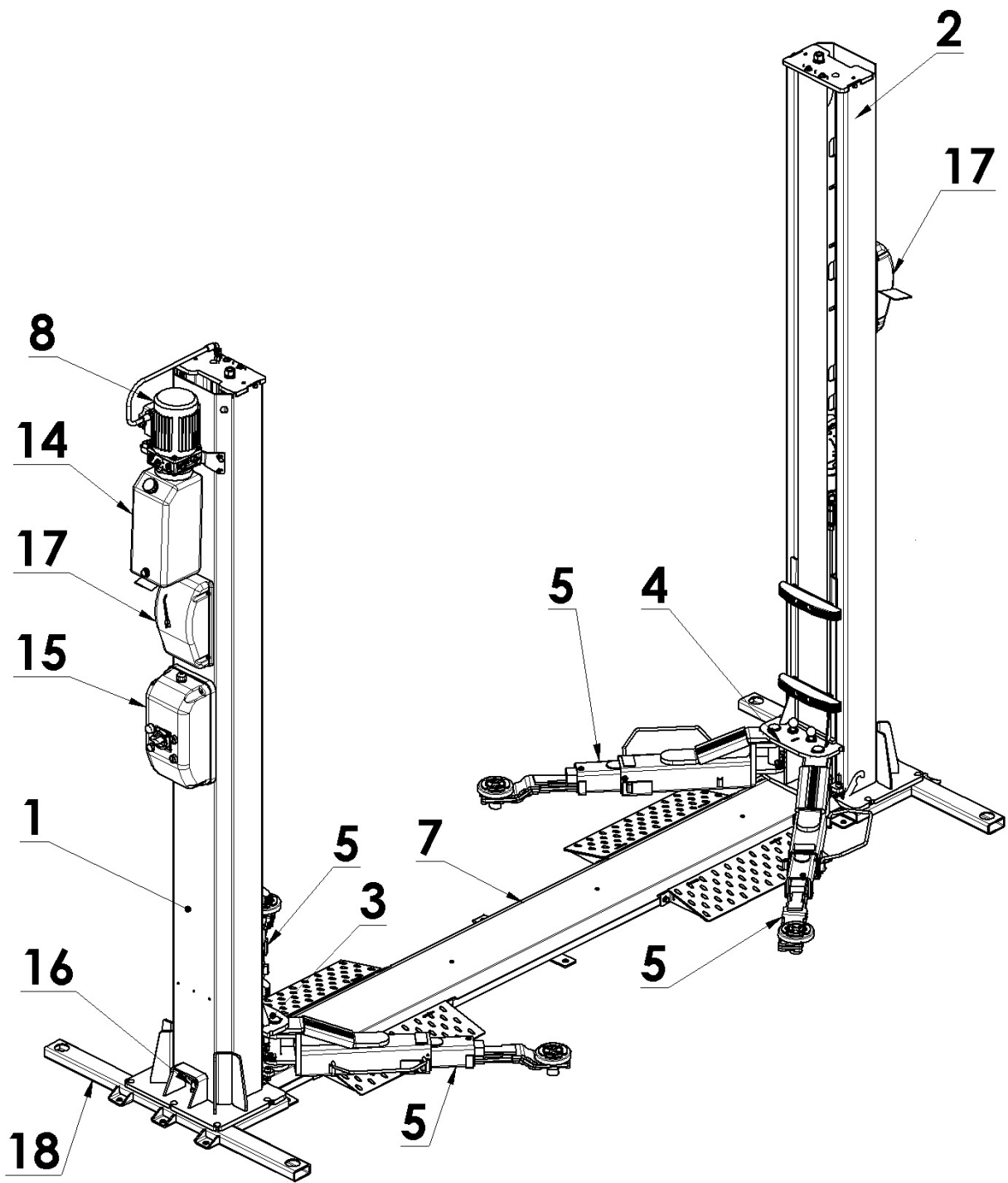
DUNLOP GARAGE EQUIPMENT

153 - 165 Bridge Street, Northampton, NN1 1QG, UK

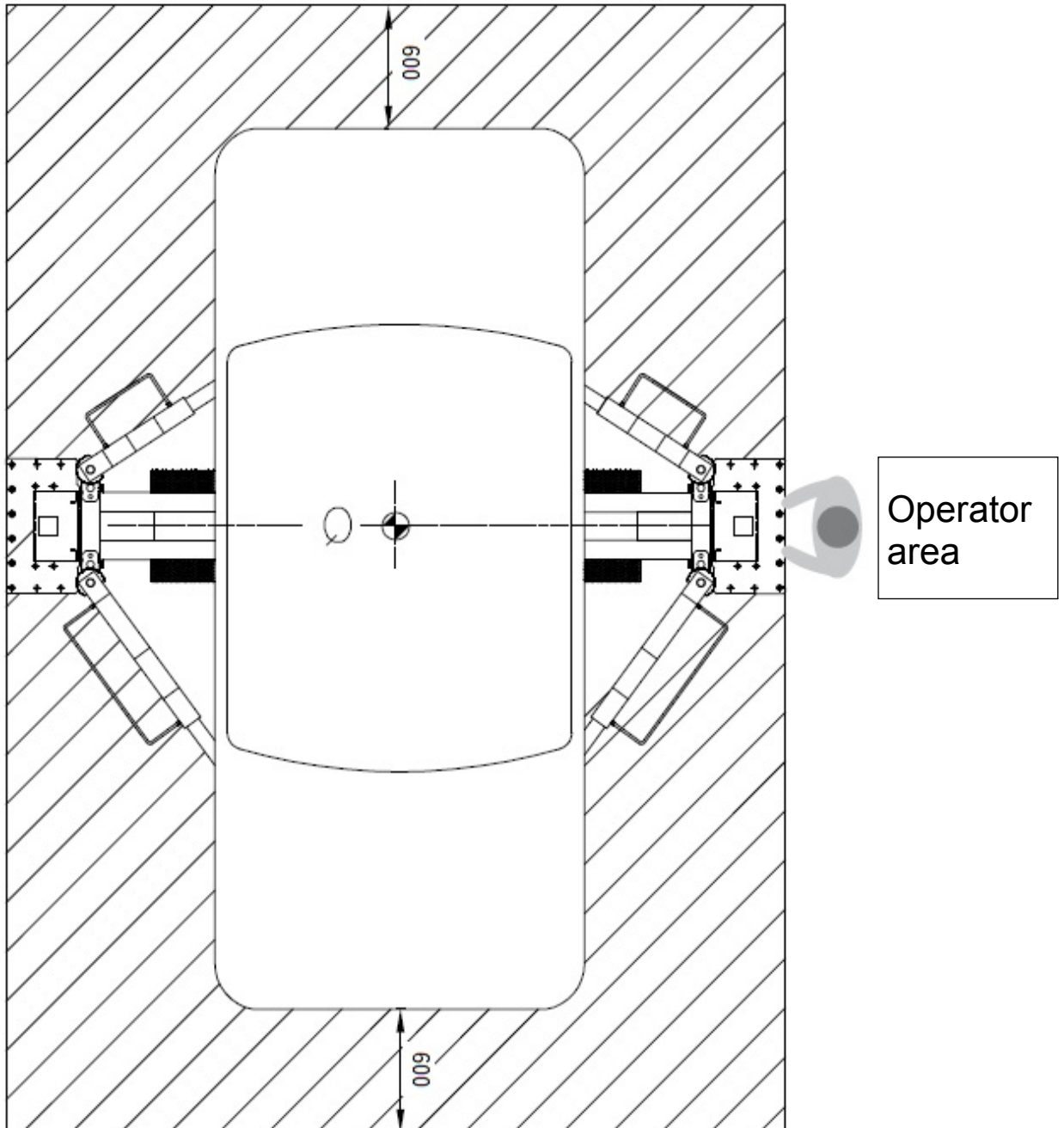
	MODEL
	SERIAL NO.
	BUILD DATE
	VOLTAGE V / POWER Kw / FREQUENCY Hz
	LIFT CAPACITY

CE Tel : +44(0)1604 828 600
 Web : www.gemco.co.uk/dunlop

MADE IN CHINA
CE APPROVED



1.5 HAZARDOUS AREAS



2 - FOREWORD

This manual includes the instructions relating to the installation, use and maintenance of the lift system called "Vehicle Lift". The vehicle lifts described in this manual are designed and constructed solely to lift vehicles for repair, maintenance and inspection purposes. Lift operation, economy and duration depend on the compliance with the instructions given in this manual. The parts that can be supplied also as spare parts are listed in the last section of the manual. To make instructions reading easier, vehicle lift will be hereinafter simply called "lift".

2.1 EC CERTIFICATION

2010/42/EC Directive, commonly known as the "Machines Directive" specifies the conditions to be respected before a machine can be put into the market. This Directive provides that all machines can be marketed and commissioned only if they do not jeopardize people, pets or property safety and health. To certify lift compliance with Directive provisions, before marketing, the manufacturer subjected a machine specimen to the audit of a notified body.

Lift, manufactured in compliance with 2010/42/EC Directive provisions, and can thus be marketed without jeopardizing user's safety.

Lift is thus delivered to the customer with:

- EC Declaration of Conformity
- Instructions for use
- Inspection records

2.2 TESTING

The lift has undergone static and dynamic tests based on the procedures included in the EN 1493:2010. Concerning lift testing, please refer to the relevant section in the Inspection records.



The instructions given in this manual shall be compulsorily respected: the Manufacturer will not be held responsible under any circumstances arising from negligence, from non-compliance with the instructions and from an improper or inconsiderate use of the lift. Failure to comply with the instructions given in the manual makes the warranty directly become null and void.

The Company also disclaims any liability for damages caused by lift improper use and/or due to changes made without the manufacturer's authorization.

3 - GENERAL SAFETY AND ACCIDENT-PREVENTION RULES

FOR A SAFE USE OF THE VEHICLE LIFT DESCRIBED IN THIS MANUAL

THE FOLLOWING IS ALLOWED:

Using lift only to lift vehicles for inspection, maintenance and/or repair operations.

Using lift only to lift vehicles respecting capacity limits and loads distribution indicated in this manual.

Only authorized personnel, in good health conditions, responsible and duly trained on the allowed uses and risks originated by lift use may operate the lift.

The operator is allowed to use the vehicle lift only after he has thoroughly read, understood and assimilated the contents of this manual.

Using lift only inside closed premises, protected against atmospheric agents such as: rain, snow, wind, etc.

Only one operator at a time may use the lift in the safety position in the indicated area, close to the control panel

IS REQUIRED:

- Lift installation and maintenance operations shall be compulsorily carried out by qualified personnel only, and in full compliance with the instructions given in this manual.
- Before installing lift, you shall compulsorily check that the premises where you wish to position it are well aerated and lit. (avoid blinding light sources).
- You shall compulsorily check that the floor where you wish to install lift is solid, flat, and perfectly levelled in all directions.
- You shall compulsorily check that the floor has been constructed to withstand the max. allowed loads, including the lift, on lift resting areas.
- Lift shall be compulsorily positioned far from heat sources or devices that could generate electromagnetic radiation.
- Lift shall be compulsorily positioned so that, during standard operation, with the vehicle loaded on it, it does not interfere with or squash any nearby fixed or moving part. Take special care to power, water and gas systems.
- The lifting or handling operations of lift or of any lift parts shall be compulsorily carried out under full safety conditions with suitable lifting equipment, as envisaged by the National prevailing regulations.
- Lift shall be compulsorily secured to the floor only using anchors and screws of the type recommended by the manufacturer (for lifts, where envisaged).
- Before using the lift, the wholeness of lifting elements shall be compulsorily checked.
- Before using the lift, you shall compulsorily check that safety devices are perfectly installed and in good operating conditions.
- Vehicle shall be compulsorily positioned as shown in the table of the manual and/or the table stuck to lift.
- Vehicle shall be compulsorily lifted from the resting points specified by the vehicle manufacturer.
- When moving vehicle up, after the first 200 mm and before continuing the raising, load stability shall be compulsorily checked in all directions.
- During the whole raising movement, load stability and lift correct and linear movement shall be compulsorily checked.
- Before accessing the working area, lift shall be compulsorily put in mechanical safety position with the special command (where applicable).
- Before accessing the working area, lift shall be compulsorily disconnected from power sources by turning to 0 (zero) the lockable rotating disconnecter positioned onto control panel.
- You shall compulsorily check that the disassembling of some of the parts of the vehicle positioned onto lift does not originate any load unbalance.
- Before starting lift lowering, you shall compulsorily check that no people, animals or things that could interfere with the moving parts are under and around the working area.
- During lowering, you shall compulsorily and constantly check lift and lift load movement. In case of failure, immediately turn emergency disconnecter.
- In case of irregular noise or operating failures, you shall compulsorily stop lift operation, and check the cause of such irregularity. In case of doubt, contact the manufacturer's service department.
- Power supply shall be compulsorily sectioned whenever adjustment, repair or maintenance operations have to be carried out on the equipment.
- All danger signaling decals present onto the lift shall be compulsorily cleaned or changed.
- Lift shall be compulsorily cleaned and all oil spots on the floor cleaned out, as they are very dangerous.
- All ordinary and extraordinary maintenance operations shall be compulsorily and thoroughly carried out, as indicated in this manual; also periodical checks to be recorded on the special "inspection records" coming with the lift shall be compulsorily carried out.
- You shall always compulsorily use the manufacturer's original spare parts.

IT IS FORBIDDEN:

- It is forbidden to misuse lift as well as to use in any other manner not specified in the "INTENDED USE" section of this manual.
- It is forbidden to lift loads with just some of lift parts (one runway only, or two arms only).
- It is forbidden to install lift in hazardous premises containing inflammable and/or explosive substances, or where inflammable gases or vapors can be created.
- It is forbidden to install lift inside premises exposed to atmospheric agents.
- It is forbidden to install lift in premises where washing or sandblasting operations are carried out, or in very dusty premises.
- It is forbidden to install lift on vehicles or watercrafts.
- It is forbidden to use lift in presence of strong magnetic fields.
- It is forbidden to use lift to lift objects other than the specified ones (cases, containers or pallets) or to use it as a hoist.
- It is forbidden to use lift to lift people or animals.
- It is forbidden to lift vehicles with people or animals onboard.
- It is forbidden to use the lift if the room temperature is below 5°C or above 40°C.
- It is forbidden to voluntarily cause load oscillations during raising or lowering maneuvers, or while load is lifted.
- It is forbidden to access work area under the lift without having enabled safety mechanical devices, and turned disconnecter to 0.
- It is forbidden to leave the lift unattended without having positioned it at the min. height or in mechanical safety position. Then section power supply, and lock disconnecter using a padlock.
- It is forbidden to remove or change lift protections or safety devices.
- It is forbidden to change lift or lift parts, any tampering with or change will immediately invalidate warranty, and will relieve manufacturer of any direct or indirect liability for damages due to such tampering or changing operations.
- It is forbidden to use parts or accessories not supplied by the manufacturer.

3.1 SET-UP AND CLOTHING

Set up a space suitable for the machine, and the working environment, by carefully evaluating the following aspects:

- The position shall be safe, free from any hinder, and protected against atmospheric agents. From the control position, the operator shall be able to see the whole system and the working area, and to immediately detect the presence of unauthorized persons and objects that could originate any danger.
- The min. distance of the hazardous area from the walls of the premises where the vehicle lift is installed shall be at least 70 cm. Lighting shall be good, but without blinding or intense lights, and there shall be no sources or processes that could develop gases or flammable vapors.
- Avoid wearing unsuitable clothing. They could get entangled in lift moving parts. As disposed by the National prevailing rule, besides wearing clothes suitable to the work site, the operator will have to compulsorily wear complementary protective accessories to prevent any injury, such as: helmet, goggles, gloves, suitable shoes, etc.

3.2 ENVIRONMENT AND POLLUTION

- Lift shall not be used for vehicle washing, degreasing, sandblasting and grinding.
- Comply with the National prevailing standards relating to the use and disposal of the products used for lift cleaning and maintenance, respecting the manufacturer's recommendations.
- Traps and drainage ditches shall discharge fluids, where and as indicated by the National prevailing standards.

3.3 LIFT SCRAPPING

As for products disposal upon lift scrapping, DO NOT disperse parts in the environment, but contact a company specialized in waste storage. To avoid any environmental pollution risks, take the following precautions:


- The oil contained inside hydraulic control unit, relative circuit and cylinders shall be fully collected. (if available).
- Disassemble lift parts by dividing them into groups of the same material in order to proceed to their separate disposal.
- Exhausted hydraulic oil, rubber parts, and iron scraps are special waste. Dispose of or temporarily store them in compliance with the National prevailing anti-pollution standards.


3.3 DANGER LEVELS


The removal or tampering with the safety devices involves a violation of the European Safety Standards.


- The use of the machine is allowed only in places without risk of explosion or fire;
- The use of original accessories is recommended. Our machines are designed to accept only the original accessories;
- Installation must be carried out by qualified personnel in full compliance with the instructions below;


Check that during the maneuvers there are no dangerous conditions: stop the machine immediately if any functional irregularities are found, and contact the authorized dealer's assistance service


 Pay special attention to the following danger sign when you find it in this manual, and follow the safety recommendations. Danger signals have three levels:


 **DANGER:** this signal warns that, if the described operations are not carried out correctly, they cause severe injury, death or health long-term risks.

 **WARNING:** this signal warns that, if the described operations are not carried out correctly, they may cause severe injury, death or health long-term risks.

 **CAUTION:** this signal warns that, if the described operations are not carried out correctly, they may cause machine damage and/or personal injuries.

 **WARNING:** carefully read the following rules; whoever does not put into practice the recommendations described hereinafter may be subject to irreparable damages or cause them to people, animals or property. The Company disclaims any and whatever liability arising from the failure to comply with the safety and accident-prevention rules described hereinafter. The Company also disclaims any liability for damages caused by lift improper use and/or due to changes made without the manufacturer's authorization.

 **WARNING**
The equipment is intended to be used by only one operator at a time.

 **WARNING**
Electrical system interventions, even minor ones, require the intervention of professionally qualified personnel (see specific legislation on the subject).

3.5 HAZARDOUS AREAS

Before using the lift, make sure that no unauthorized persons nor animals are present within the hazardous area delimited by the yellow stripe. Persons or animals shall by no means stop or pass within the hazardous area delimited by the yellow stripe, when using lift even for small movements, and whenever the Emergency Switch/OFF is not depressed.

Each lift is supplied with the identification plates relating to the different versions.

3.6 IDENTIFICAZIONE DEL SOLLEVATORE E DESCRIZIONE PITTOGRAMMI

The safety signals described in this manual are applied onto the lift (Fig. 6), and warn about unsafe and hazardous situations. Decals shall be kept clean and, if detached or damaged, they shall be immediately changed.

Carefully read the meaning of the safety signals, and memorise it:

Leggere attentamente il significato dei segnali di sicurezza e memorizzarlo bene.

Ogni ponte viene fornito con le targhette di identificazione (5 Fig. 6) relative alle diverse versioni. I dati (A) e (B) vanno sempre citati per ogni necessità di assistenza e ricambi.

3.7 INTENDED USE

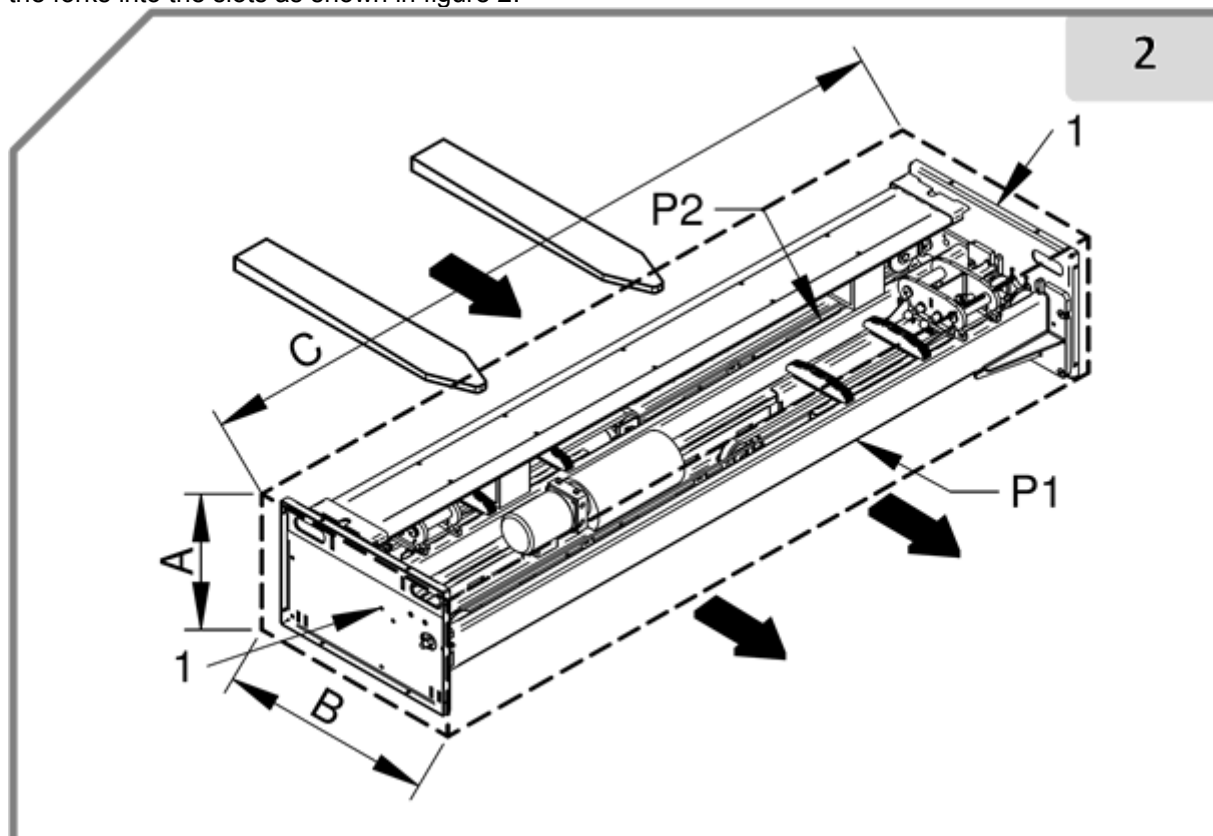
The vehicle lifts described in this manual are designed and manufactured for lifting vehicles for inspection, maintenance and/or repair purposes only.

The vehicle lift should be used only for lifting vehicles within the load capacity limits given in the IDENTIFICATION PLATE and in the paragraph 1.3 "LOAD DISTRIBUTION"

CAREFULLY READ THE INSTRUCTIONS GIVEN IN THIS MANUAL BEFORE USING THE LIFT

4 – TRANSPORT AND INSTALLATION

Since the lift is packed in a special wooden crate, it can only be handled using a pallet truck or fork-lift truck, fitting the forks into the slots as shown in figure 2.



	Packing dimensions
A	510 mm
B	842 mm
C	2870 mm

4.1 UNPACKING

After removing the packing materials, carefully inspect the various components of the equipment, checking for any visibly damaged parts (control unit, lift frame). Don't leave the packing materials to the place children can get access to. In case of damage do not use the equipment (the lift) and call in a qualified technician (your local dealer).



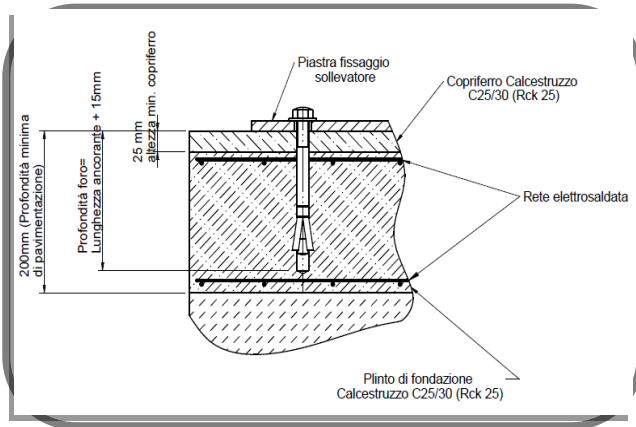
The box containing the accessories is packed inside the crate: DO NOT THROW IT AWAY WITH THE PACKAGING

The packing materials (plastic bags, expanded polystyrene, nails, screws, wood blocks etc.) must never be left within the reach of children as they constitute a potential hazard. Dispose of these materials in the designated collection centers if they are polluting or non-biodegradable.

4.2 INSTALLATION AREA

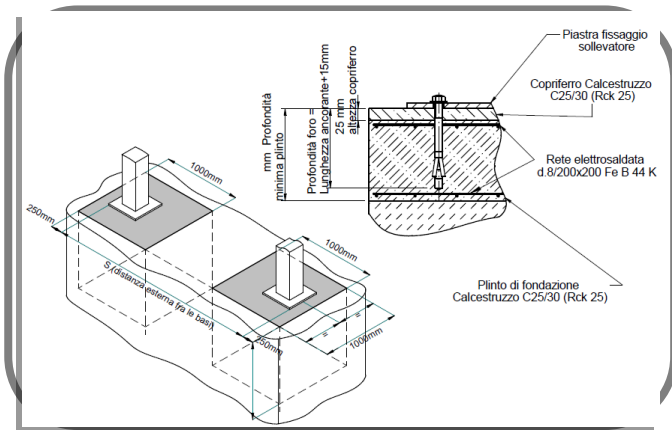
An area of at least 4330 x 4000 mm, with a ceiling height of at least 3404 mm, is required for installation of the lift. From the operator position, the operator is able to monitor the entire lift and its surrounding area. He must ensure that there are no unauthorized persons, or objects which may cause hazards, in this area.

Before installing the lift, check the specifications of the supporting surface available, or prepare a surface with the minimum characteristics stated below



Concrete class 250 R'bk.
Reinforcement Fe B 44 K.

The lift must be fixed to this surface using heavy-duty anchor fixtures as described in the “Anchor Bolt Installation Procedure” section of the manual.
The said surface must be capable of supporting at least 25 Kg/cm² and have a strength rating of at least 250 R'bk. The layer of concrete must be sufficient to ensure effective installation of the anchor bolts, and have a good structure to a depth of at least 200 mm.
If a surface of this kind is not available, two separate foundation plinths can be constructed. The minimum characteristics required are:



Dimensions 1000x1000 (figure 3).
Depth 600 mm.
Concrete class 250 R'bk.
Reinforcement Fe B 44 K.



The floor must be able to withstand a load equal to the sum of the weight of the lift itself and the maximum payload, bearing in mind the lift support surface area and anchor fixtures used.



The installation procedure foresees the use of the accessory plugs kit (optional), for equivalent models refer to the table below and / or to the technical sheets of the product used.

Type	Ø Foro	Min depth for installation	Torque [Nm]	Extraction force [KN]	
Fischer FBN II 16/50	16	154 mm	100	17.2	
VoRpA VE.7CE16/ 100-220	16	110mm	100	16,6	

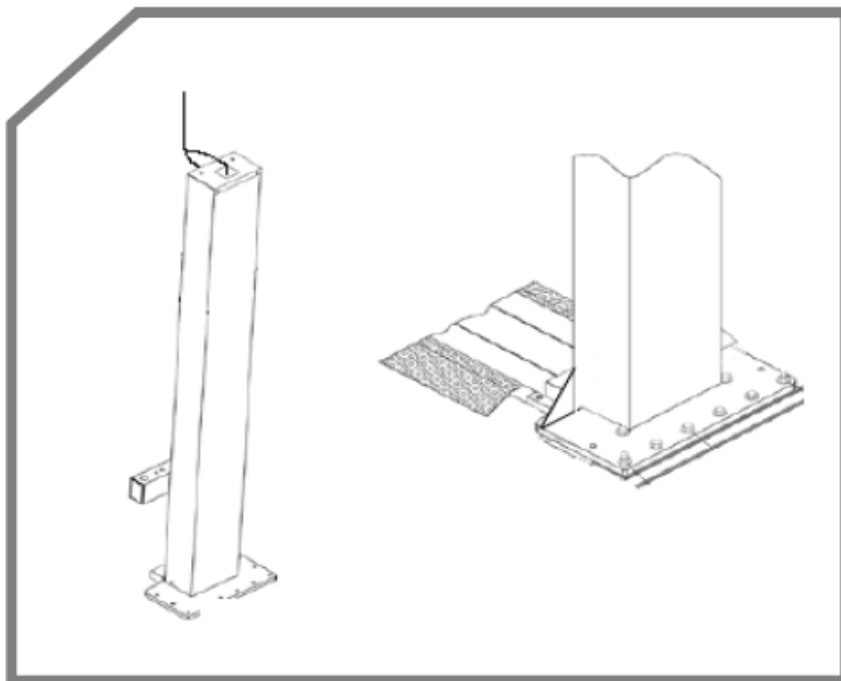
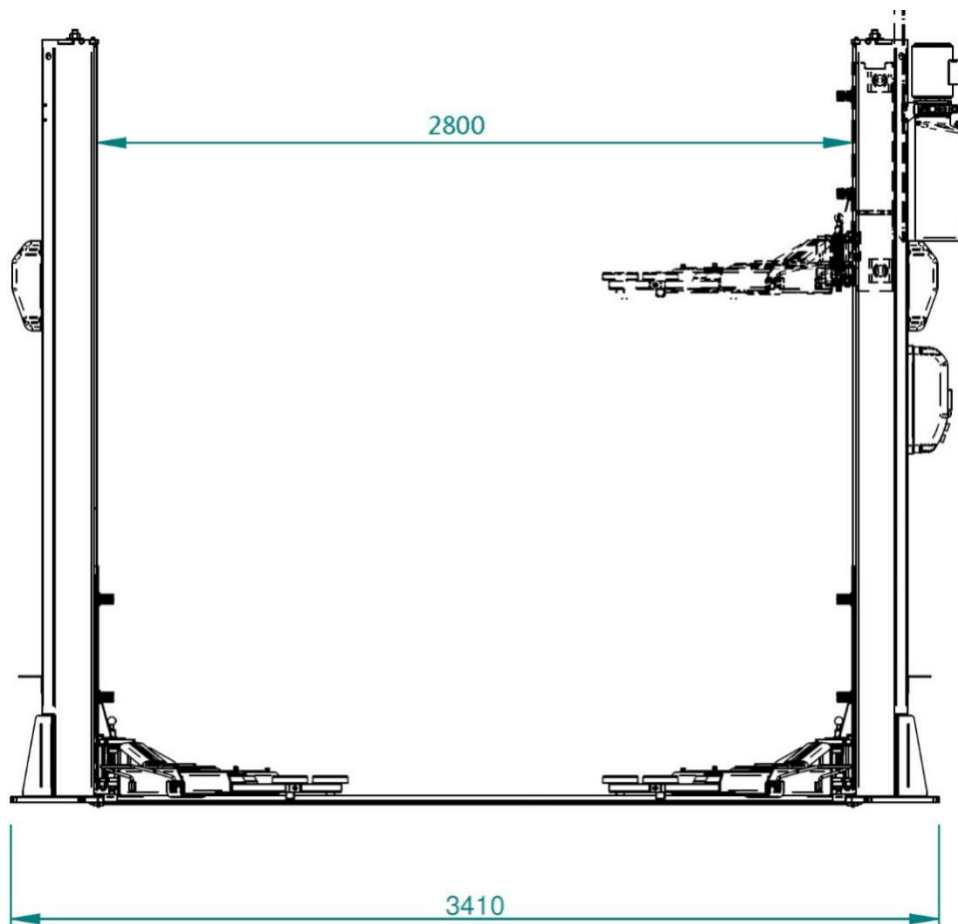
4.3 INSTALLATION

After unpacking, handle the pillars with the aid of suitable slings.

Anchor bolt installation procedure:

1. Place the two pillars in the installation zone.
2. Straighten the pillars to the vertical position and then position them so that they are properly aligned with the distance between them (fig. 3).
3. If necessary place shims underneath the bases of the pillars so that they are firmly supported and the pillars are perfectly vertical.
4. Use a drill bit $\varnothing 16$ to drill holes at least 100 mm deep, and clean the holes thoroughly.
5. Fit the M16 Fischer FBN II16x50 or equivalent anchor bolts in the holes and then tighten with a torque wrench set at 100 Nm: first place the thick washer provided with the fixing kit between the anchor bolt washer and the pillar base plate.

After a few cycles with full load, check that the anchor bolts are still firmly tightened. This check must be repeated every 3 months.



 **WARNING**

The manufacturer declines liability for any damages resulting from failure to follow the above instructions, which may invalidate the warranty.

4.4 CONNECTING TO THE ELECTRICITY MAINS

The lift must be connected to the mains electricity supply by the customer.
 To connect to the electricity supply, use a 3 core + earth cable with cross section of 2.5 mm² for the 380V version;
 To connect to the electricity supply, use a 2 core + earth cable with cross section of 2.5 mm² for the 220V version
 The cable must be completed with a main plug of the type in use in the country where the lift is installed.
 The lift is fitted for the mains connection cable to arrive from below, but it can also be received from above.

THREE-PHASE CONNECTION

Once the passage of the cable has been carried out, it must be suitably stripped, the ends of the unsheathed wires and provided with insulating bushings and the appropriate yarns R, S, T, and PE.
 It should be remembered that the presence of the PE marking machine is expressly provided for by the electrical regulation EN60204 and therefore it is absolutely necessary to provide for its application.
 The conductors must be connected as shown in the diagram figure 14:
 The phase conductors R, S, T to the terminals of the QF differential switch, while the PE ground conductor is connected to the special ground rod.(figure 15)
 The machine operates normally at 400 Volt 50 Hz (Star). The actual supply voltage is indicated on the identification plate.
 The electrical system and the connections are different according to the supply voltage / frequency and are set up in the factory.

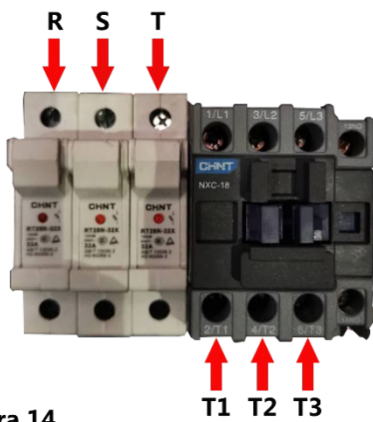


Figura 14

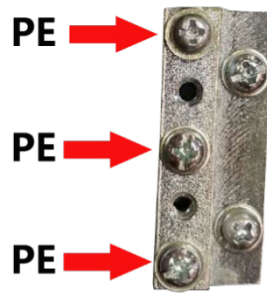


Figura 15

MONO-PHASE CONNECTION:

Once the passage of the cable has been carried out, it must be suitably stripped, the ends of the unsheathed wires and provided with insulating bushings and the appropriate yarns L, N, PE.
 It should be remembered that the presence of the PE marking machine is expressly provided for by the electrical regulation EN60204 and therefore it is absolutely necessary to provide for its application.
 The conductors must be connected as shown in the diagram figure 4a:
 The phase conductor L and the neutral N at the terminals of the differential switch QF, while the PE ground conductor is connected to the special ground rod.
 Connect the cables coming from the motor on the terminal board in position L1 and N1

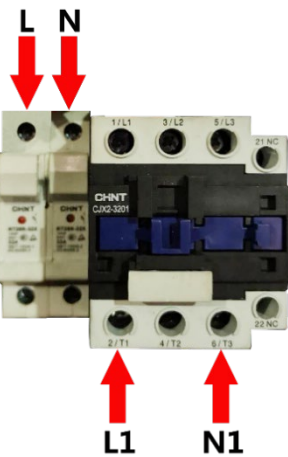


Figura 16

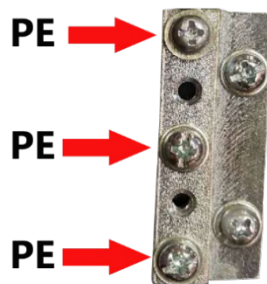


Figura 15

WARNING

The manufacturer declines liability for any damages resulting from failure to follow the above instructions, which may invalidate the warranty.

Before supplying power to the lift, make the following checks:

- Check that the power supply voltage and frequency correspond to the values stated on the rating plate.
- Check the condition of the conductors and ensure that the earth conductor is present.
- Ensure that there is an overcurrent protection device installed upstream of the lift, with a differential safety breaker.
- Connect the appliance's cable to the mains socket, wiring the three phases R,S,T and the earth conductor with all due care, and in compliance with the regulations in force.

WARNING

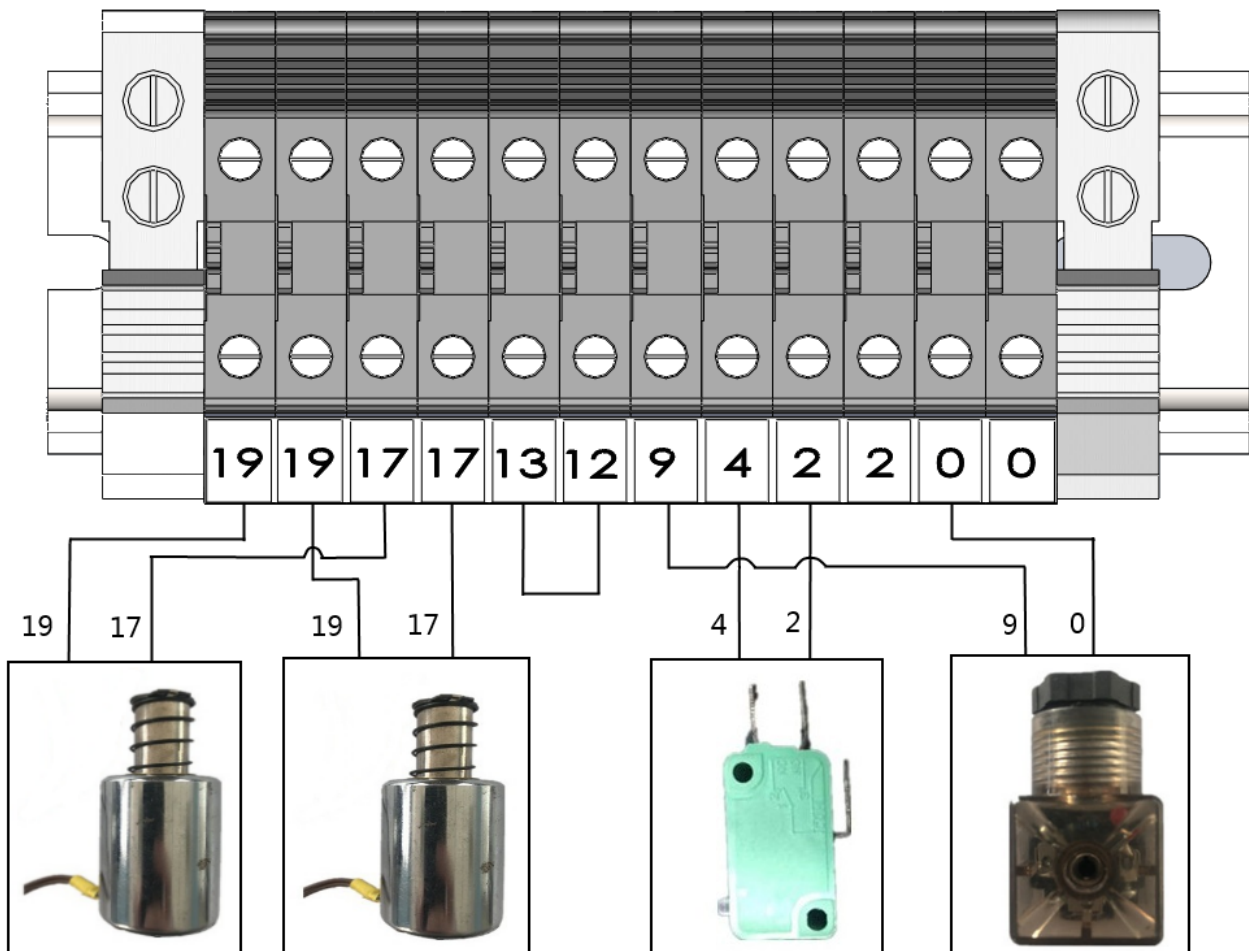
The manufacturer declines liability for any damages resulting from failure to follow the above instructions, which may invalidate the warranty.

WARNING

Any connections to the workshop electrical panel are the customer's responsibility, and must be made by staff qualified in accordance with the relevant legal requirements.

4.5 ELECTRICALHOOK UP ON THE CONTROL PANEL

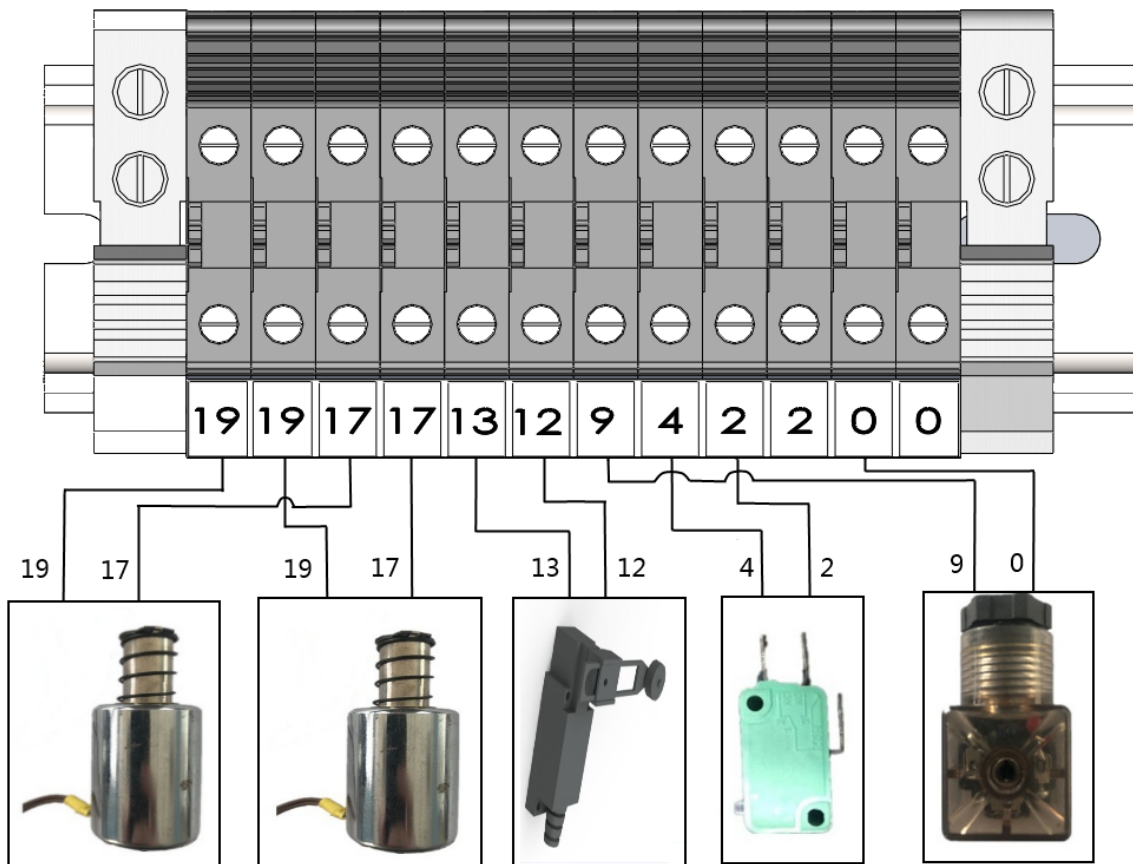
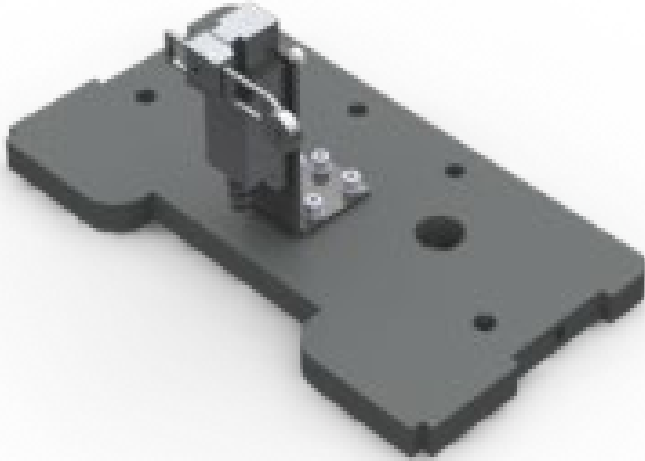
4.51 Electrical Terminal



For more information, see paragraph 8.1 Wiring Diagram of the Control Pan

4.5.2 Upper Limit Device

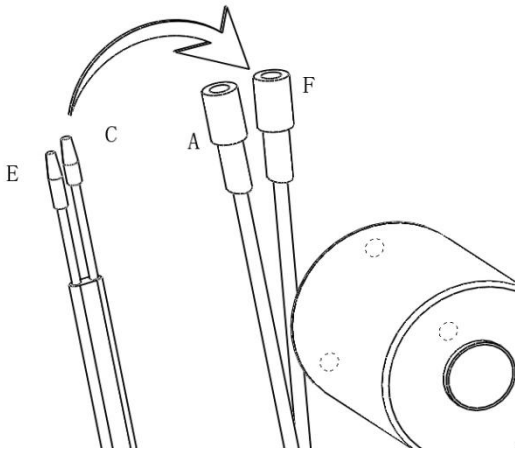
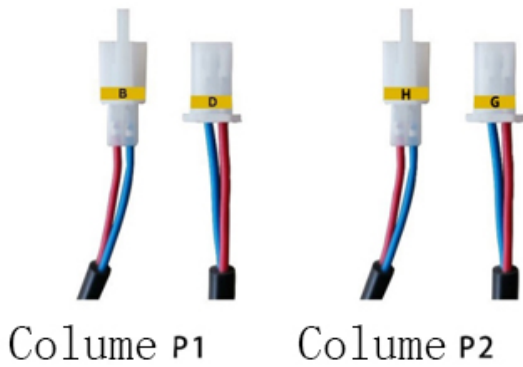
ATTENTION: If you need to connect the upper limit switch, remove the wires on 12 # and 13 # and connect the upper limit switch to the 12 # and 13 # terminals.



4.6 ELECTRICAL HOOK UP BETWEEN THE TWO PILLARS

To make the connection between the two pillars, proceed as follows:

- Place the right-hand pillar in its definitive position and fix it to the floor;
- Place the left-hand pillar in its definitive position and fix it to the floor;
- Place the column chain break limit switch cable P2 (H and G) on the left column on the cable duct and connect it to the P1 chain breaker limit switch cable (B and D) in the right-hand column. (Cables have male/female connectors cannot go wrong connection.)
- Connect the cable E and cable C from the electromagnetic valve safety lock of both two columns to the electromagnetic valve connection terminals A and F.



For more information see paragraph 8.1 Column Wiring Diagram

4.7 HYDRAULIC CONNECTION

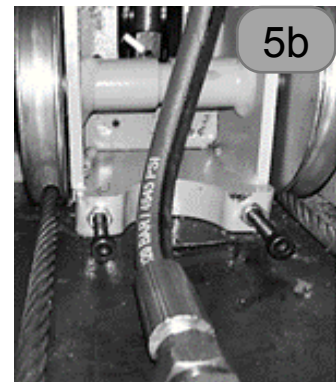
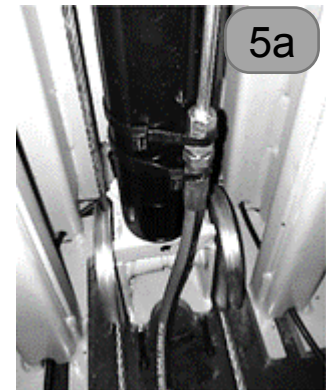
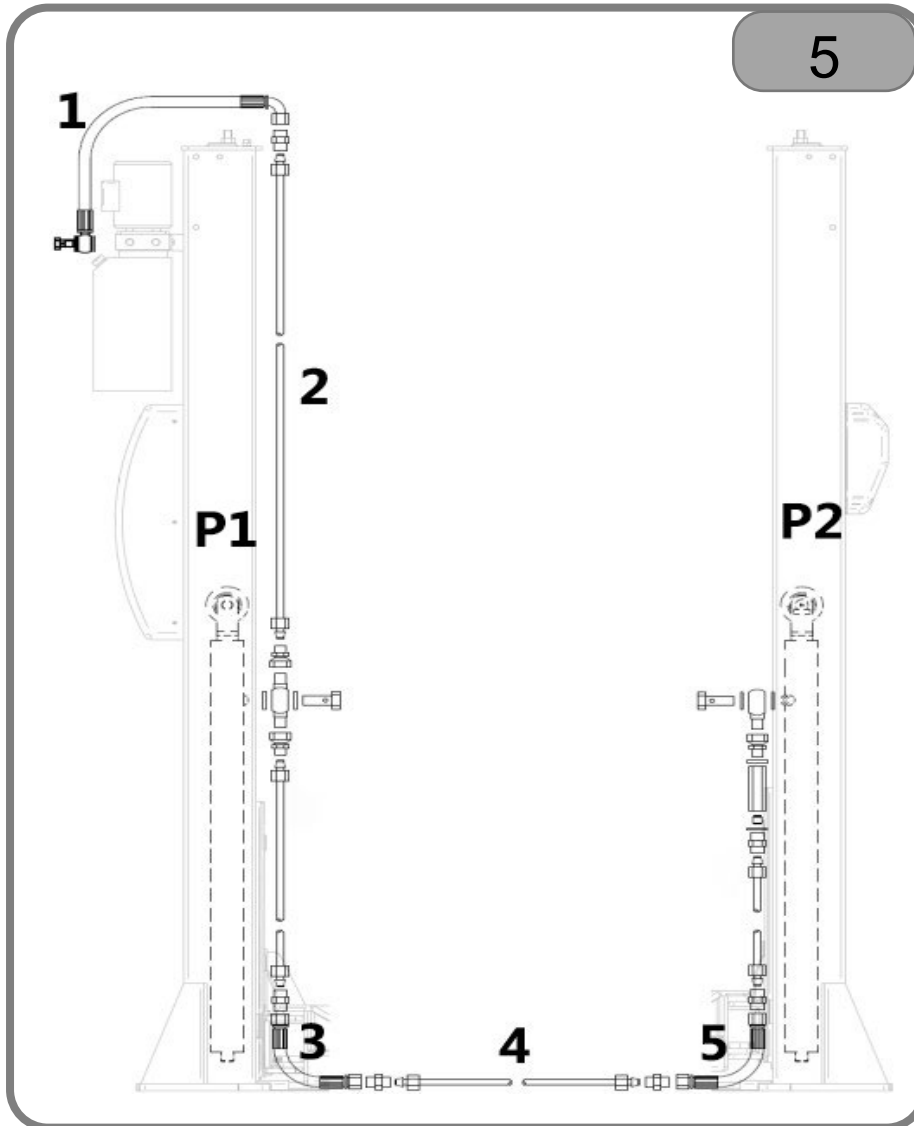
The lift is partially assembled in the hydraulic part.

To complete the hydraulic connection:

- First position the fixing pipe[4] and fix the pipe to the place between the two flexible oil pipes[3] and [5] from pillar 1 and pillar 2, as shown in FIG.5;
- And then position the fixing pipe[2] and fix it to the middle of fixing oil pipe[3], as shown in Figure 5;
- Finally position the hydraulic pump and connect it to the top of pillar 1, and connect one side of flexible oil pipe [1] to the joint of iron oil pipe[2] and fix the other side through fitting bolt to the valve plate of the pump;



ATTENTION: when connecting oil pipes, please use two wrenches to fix to avoid leakage caused by untightened fixing.



WARNING

Check that there are no oil leaks, if necessary, switch off the voltage and tighten the loose hydraulic connections.

The lift to work requires ISO VG32 viscosity hydraulic oil not supplied. (Optional).

Unscrew the oil filler cap and insert 9 liters of hydraulic oil into the tank.



ATTENTION

When connecting iron oil pipe [4], pay attention to the place of flexible pipe [3] and [5], for any offset, please refer to the position of oil pipes in figure 5a and 5b, to fix the pipes in case that, when the carriage goes down to the bottom, it will intervene the oil pipes.

4.8 CONNECTION CABLES OF SYNC

To connect the synchronism cables between the two columns:

- Lift the arm to the position at half height and stop them in safe position. The two carriage must be perfectly aligned and positioned in the same rack of the guide;
- Remove the cable pulley in the bottom of pillar 1 with external pliers, after installing cable a to the pulley, re-fix it with siegeers;
- Connect the bridge plate through the two columns to pillar 2, and dismantle cable pulley in the bottom of pillar 2. After installing cable a, re-fix it with siegeers;
- Pass cable a through the carriage, after dismantling cable pulley on the top of pillar 2, connect cable and pulley, and fix the pulley trestle and the top plate with a set of $\Phi 20$ plain cushion, $\Phi 20$ spring hooks and M20 nuts in both upper side and down side of the top plate;
- And then pass the cable a through the carriage and connect it to the carriage of pillar 2 (refer to figure 19B);
- Apply the same to connect cable b, from the carriage inside pillar 2, and connect it to the carriage inside pillar 1;
- Adjust the tension evenly by using the locking nut in carriage and keep the same tightness for cable a and b, until the safety locks in both pillar 1 and pillar 2 keep in sync.

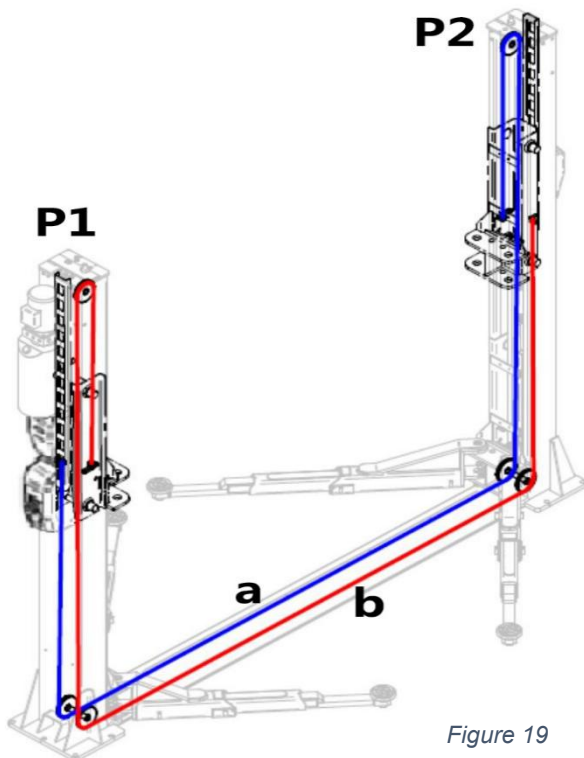


Figure 19

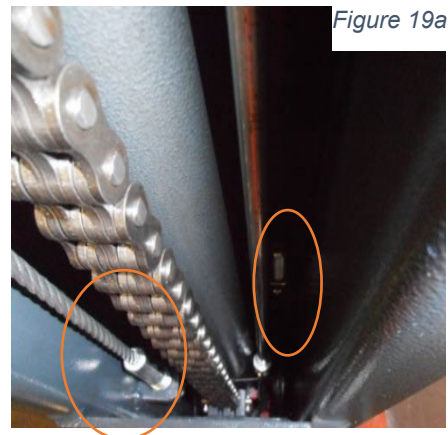


Figure 19a

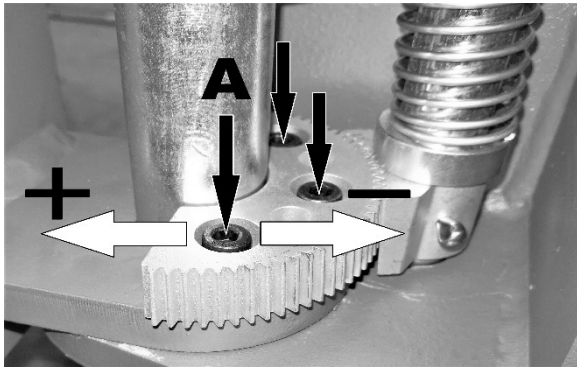


Figure 19b



Figure 20

⚠ ATTENTION: when the pulley trestle and top plate are fixed, move the pulley trestle to the direction of arrow 20 as shown in the figure to the largest extent and fix it, and make pulley trestle B parallel to pillar A, to avoid the intervention of pulley trestle and carriage cause by the improper position of pulley trestle during installation.



Adjustment of the arms looking

Unscrew the screws A (see picture).

near to the pin (marked-) or move away (marked +) until the gear engages properly.

After adjustment, tighten the screws A.

4.9 CHECK THE MOTOR ROTATION DIRECTION

Then lower the lift using the down button [12] switch on the control panel. The carriages must descend simultaneously. If the carriages run in the opposite direction to that set using the selector switch, swap two wires inside the power supply cable plug.



WARNING

The motor rotation direction must be checked whenever the lift's power source is changed.

4.10 EXHAUSTING OF HYDRAULIC SYSTEM OF LIFT

There will be air in hydraulic system in new installation, exhausting is necessary. When connecting pipes, the cylinder should be in lowest position with smallest air cavity, and then press 'up' button to lift to the maximum height, and stop for 10-15 seconds, the pressure for hydraulic system will reach the maximum now so the relief valve opens automatically and then the air passes through the hydraulic system and form the circuit. And then press 'down' button to lower the lift to minimum height. Repeat the up and down procedures above 2 or 3 times to complete the exhausting.

If the raising-of truss is not enough in the installation spot and the lift cannot reach to maximum height, lift the machine to a certain height and loosen the cylinder joint manually to exhaust. When the air is drained, re-tighten the cylinder joint.



ATTENTION:

exhausting for hydraulic system of lift is very important, otherwise it will affect the lift to work properly. Do apply the procedure after installation.

5 – INSTRUCTIONS FOR USE

5.1 START UP



WARNING

The lift must be put into service by specially trained personnel, in order to assure the correct functioning of the lift itself and all its mechanical and electrical safety systems.

The instructions to be followed are provided in the final section of this manual, for the use of the technicians who carry out the start-up procedure only.

No work on the part of the staff that does not belong to the after-sales service of the manufacturer must be permitted.



WARNING

The manufacturer declines liability for any damages resulting from failure to follow the above instructions, which may invalidate the warranty.

5.2 UTILIZATION

The machine must only be used by authorized personnel. Use by personnel who are not familiar with the procedures specified in this manual could be dangerous.

The operation of the machine is as follows:

Vehicle positioning

When positioning the vehicle over the pads, pay attention to the following recommendations:

- the total weight of the vehicle must not exceed 4000 kg
- place the vehicle on the pads, making sure that it is aligned and centered with respect to the longitudinal axis of the lift.
- the maximum load of 4000 kg must be distributed on the four vertices of a rectangle having a transverse dimension of 1000 mm and a longitudinal dimension of 1800 mm. For lower transverse distance values and / or longer longitudinal distance the lift capacity is reduced. In these cases or in other cases not covered by this manual it is advisable to contact the manufacturer.
- the use of accessories not authorized by the manufacturer to modify the support distances of the lifting pads is forbidden.
- The method of lifting the load must not present dangers and must observe the rule that requires stopping after a short lift to check that the vehicle is correctly positioned and in a safe condition.



The Manufacturer disclaims any and whatever liability for damages to persons, animals or property arising from non-compliance with the instructions given herewith and/or from an improper use of the lift or any use other than specified in this manual.

To lift vehicle, proceed as follows:

- Check that the arms are turned in a way that will not hamper the vehicle access between the lift columns.
- Turn the arms and pull out the extensions bringing the pads to the points designed for lifting the vehicle as indicated by the vehicle manufacturer.

WARNING:

Before lifting a vehicle, always check the load distribution with respect to the vehicle mass, strictly complying with the LOAD DISTRIBUTION table (Fig. 3). Do not lift the vehicle in case the values found are not within the limits given in the LOAD DISTRIBUTION table.

Lifting of the vehicle

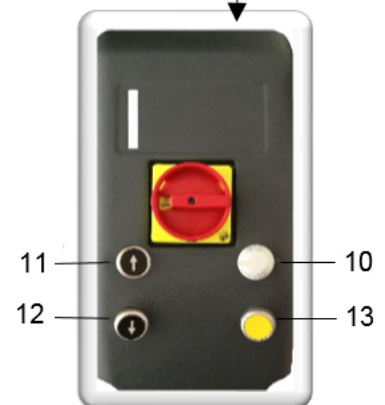
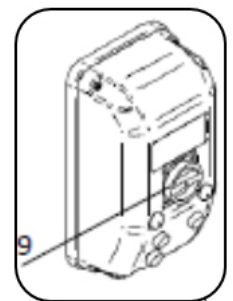
- Turn the emergency switch [9] clockwise and check that the power light [10] is on.
- Press the up button [11] and lift for about 30 cm, check that the support points have a correct grip; if correct, continue the climb until the desired working height is reached.
- Carefully check the stability of the load throughout the climb.
- In the event that there is a precarious stability of the vehicle or abnormal operation of the lift itself, immediately stop the maneuver to climb, wait for the stabilization of the load and proceed with small descents to the ground. Reposition the load correctly or proceed to stop the lift if the cause of the instability turns out to be of a technical nature.

Descent of the vehicle

- Turn the emergency switch [9] clockwise and check that the power light [10] is on.
- Press the down button [12], the lifter will automatically rise a short distance .then the lifter descent .
- Release button [12]once the desired working height has been reached.

During the entire descent, carefully check the stability of the load.

In the event that a precarious stability of the vehicle or abnormal operation of the lift is found, immediately stop the maneuver, wait for the stabilization of the load and proceed with small descents to the ground. Reposition the load correctly or proceed to stop the lift if the cause of the instability turns out to be of a technical nature.





WARNING

The vehicle must only be lifted to the lifting points prescribed by the vehicle manufacturer. For assistance, contact authorized centers and request the use of original parts.

5.3 EMERGENCY PROCEDURES

These modes are intended for handling emergency situations which may arise due to malfunction, incorrect loading, power failure, etc.



This maneuver can only be carried out in the presence of the manual pump (optional)

The purpose is to enable the operator to retract the runways of the lift in order to allow for removal of the vehicle. Emergency procedures may be executed by the user, but we recommend contacting our technical service department to clear up any uncertainties first.

Emergency procedures are potentially hazardous and must be executed with extreme caution: make sure that all persons are at a safe distance from the lift before proceeding.

Manual Emergency Maneuver

To carry out the descent of the lift when an interruption of the supply of electric current occurs, proceed as follows:

1. Switch off the power supply using the switch on the electrical panel;
2. Remove the protective guards of the mechanical safety devices;
3. Ascent using the hand pump (optional) until the mechanical safety devices are released (rotation of the hooking tooth outwards);
4. Lock the electromagnet in closed position with electric ties;
5. Open the pawl of the YV1 valve by letting the carriages descend gently up to the position on the ground;
6. At the end of this maneuver restore the conditions of use (close the valve YV1, remove the clamps from the electromagnets, reassemble the casings of the mechanical safety devices, restore the power supply by acting on the switchboard of the electrical panel)



WARNING

Never leave a manual emergency operation on hold as the lift could slowly misalign. Stop or cancel the manual emergency operation, if necessary.

6 - MAINTENANCE

To guarantee the efficiency of the machine and its correct functioning it is essential to follow the following instructions:

- Once a month lubricate the chain, sprocket with VANGUARD EP 68 or equivalent oil;
- Check the efficiency of the ground fixing every 3 months by checking the tightening torque of the plugs: 100 Nm for M16 plugs;
- Take off the protection curtain, grease the cable with lithium base grease and check if there is any crushability or cut;
- Check the correct functioning of the pulleys.
- Check the level of OIL in the hydraulic power unit reservoir.
- Grease the sliding pad with lithium base grease and check if the pad can work properly.
- Clean the hoist paying particular attention to any foreign objects that may cause malfunctioning of both mechanical and electrical safety devices.



ATTENTION:

after installing the machine, grease and maintain the cable, sprocket, chain and pad with lithium base grease.

Cleaning

To clean the machine (columns and plastic covers) use only a soft cloth, if necessary soaked in non-aggressive detergent. Do not use solvents (petrol, turpentine, acetone and the like). Cleaning the space between the columns should be done simply by sweeping away the dirt.




WARNING

Never use pressurized water (eg water cleaners) to clean the machine.

STORAGE

If the lift is to be out of use for a long period of time, it must be disconnected from the electricity supply and any parts which might be damaged by dust must be protected.

ENVIRONMENTAL INFORMATION

The disposal procedure described below must only apply to machines with the symbol of the waste bin with a bar across it on their rating plates 

This product may contain substances which may cause damage to the environment and human health if not disposed of properly.

We are therefore providing you with the information below in order to prevent these substances from being released into the environment, and to improve the use of natural resources.

Electrical and electronic equipment must not be disposed of with ordinary municipal waste; it must be disposed of separately by authorized facilities.

The symbol of the waste bin with a bar across it, which appears on the product and on this page, reminds users that the product must be disposed of properly at the end of its working life.

This prevents the inappropriate disposal of the substances which this product contains, or the improper use of some of them, from having hazardous consequences for the environment and human health. It also helps to ensure the recovery, recycling and reuse of many of the materials these products contain.

To allow this, the producers and distributors of electrical and electronic equipment organize special systems for the collection and disposal of such equipment.

At the end of the product's working life, contact your dealer for information about disposal procedures.

When you purchase this product, your dealer will also inform you that you may return another worn-out appliance to him free of charge, provided it is of the same type and has provided the same functions as the product just purchased.

Anyone disposing of the product otherwise than as described above will be liable to prosecution under the legislation of the country where the product is scrapped.

We also urge you to adopt other environment-friendly practices: recycle the internal and external packaging which comes with the product and dispose of spent batteries (if the product has them) properly.

With your help, we can reduce the amount of natural resources used to produce electrical and electronic equipment, minimize the use of landfills to dispose of old products, and improve quality of life by preventing the discharge of potentially hazardous substances into the environment.

FIREFIGHTING EQUIPMENT TO BE USED

For guidance on the most suitable type of ex-tinguisher, refer to the table below:

	Dry materials	Inflammable liquids	Electrical equipment
Water	YES	NO	NO
Foam	YES	YES	NO
Powder	YES	YES	YES
CO ₂	YES	YES	YES

YES* Can be used if more suitable equipment is not available, or for small fires.



WARNING

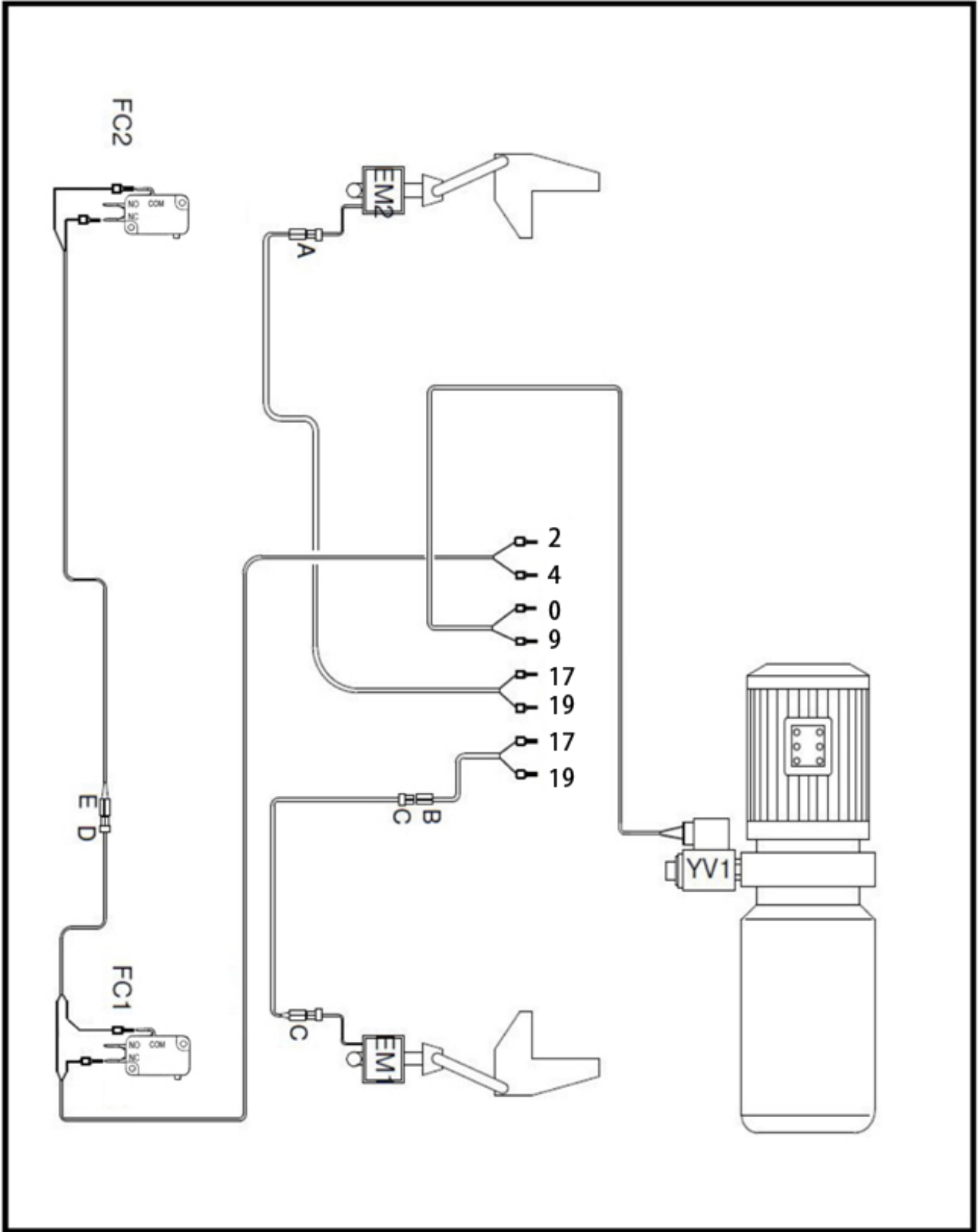
The information in this table is of a general nature and is intended to provide users with general guidance. Contact the manufacturer for details of the applications of each type of extinguisher.

7 – RISOLUZIONE PROBLEMI

Problema	Causa	Soluzione
The Lift is connected to the mains, but does not work and the power indicator [10] is off.	The transformer primary mains switch is in the OFF position.	Take it to the on position.
	The emergency switch QM located on the switchboard crankcase is in the OFF position.	Take it to the on position.
	The switch (QM) inside the electrical panel is in the OFF position	Rearming the Switch
	Power indicating lamp is off, can not do any control; three phase equipment's motor has abnormal noise but can not work properly (lack of phase power).	Check the voltage under the fuse base if it is normal? If it is abnormal, please replace the new fuse.
No operation	Electrical system failure	Contact Service
The lift does not complete the lifting stroke	Load exceeding the maximum flow rate	Check the maximum capacity of the lift
	Supply voltage too low	Check the supply voltage
	Low oil level	Fill the oil level
Noise during the ascent or descent movement	Mechanical parts (chain, pulleys, sliding pad) without lubrication	Provide for lubrication
Lift can not completely lower down.	10A fuse burned	Replace a new fuse
	Electromagnetic did not open completely	Adjust the installation position of electromagnetic valve.
	The stroke switch at the end of chain protection device did not work.	check the wiring of the stroke switch and wiring terminal if they are correct.
Poor synchronisation of the carriage	The levelling cables have a different adjustment	Adjust the nut on the ropes
The lifter struggles to up and to down	The down (YV1) valve is open or damaged	Disconnect the down valve and clean it. If it is damaged proceed with the replacement
Oil leakage from connections	Loose fittings.	Tighten fittings, replace if necessary
When the lift button is released, the lift will automatically descend	Explosion-proof valve clearance is too small or closed	Remove the explosion-proof valve and adjust the clearance to about 1mm
Other		If you cannot resolve the problem contact our service.

8 - SCHEMES

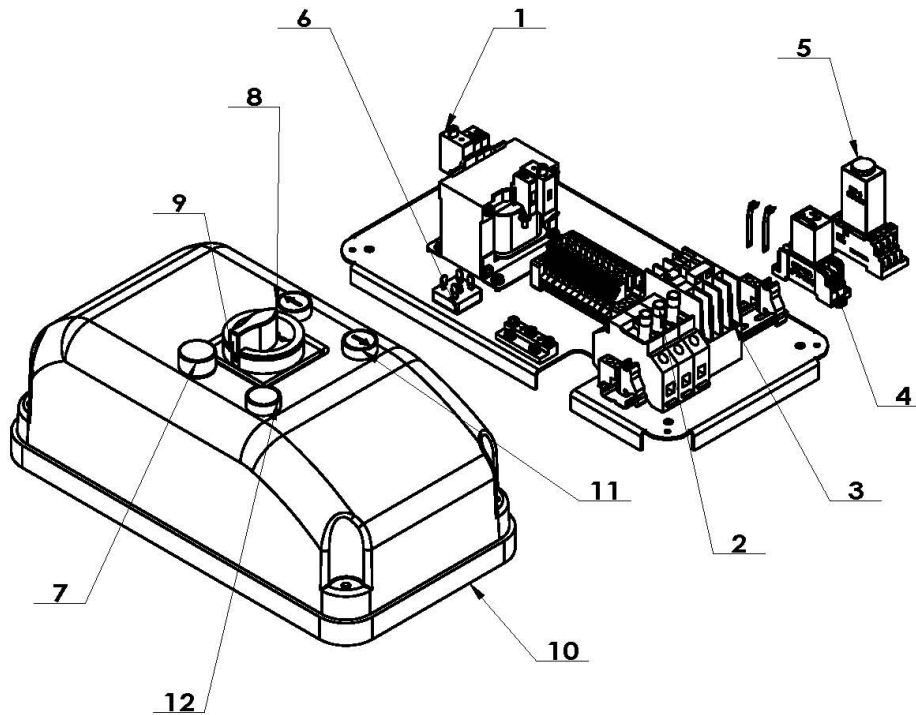
8.1 COLUMN WIRING DIAGRAM



8.2 ELECTRICAL CABINET DIAGRAM(380V)

REVISION A-01

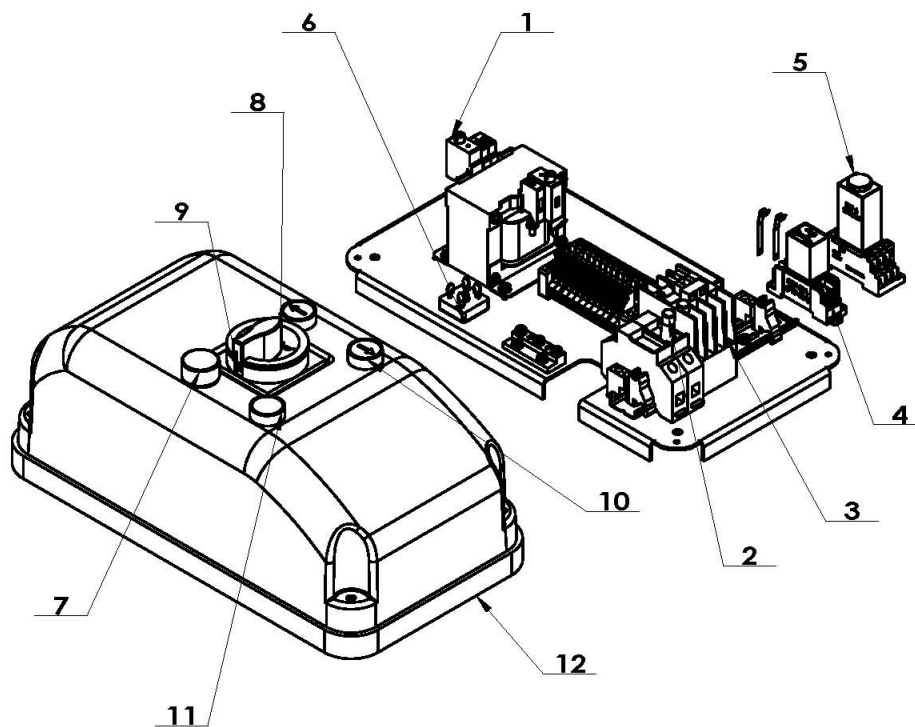
ITEM	PART NO.	Description	QT. Y
1	TC-E-3840232	Transformer	1
2	TC-E-7101512	Fuse	3
3	TC-E-4280124	AC contactor	1
4	TC-E-4400224	Intermediate relay	1
5	TC-E-43Z6324	Time Relay	1
6	TC-E-7103510	Bridge rectifier	1
7	TC-E-7202409	Power Indicator Lamp	1
8	TC-E-2702343	Button switch	1
9	TC-E-2401616	Power switch	1
10	J101-1122001	Plastic cover	1
11	J101-1122M00	Button switch	1
12	TC-E-270BA31	Button switch	1



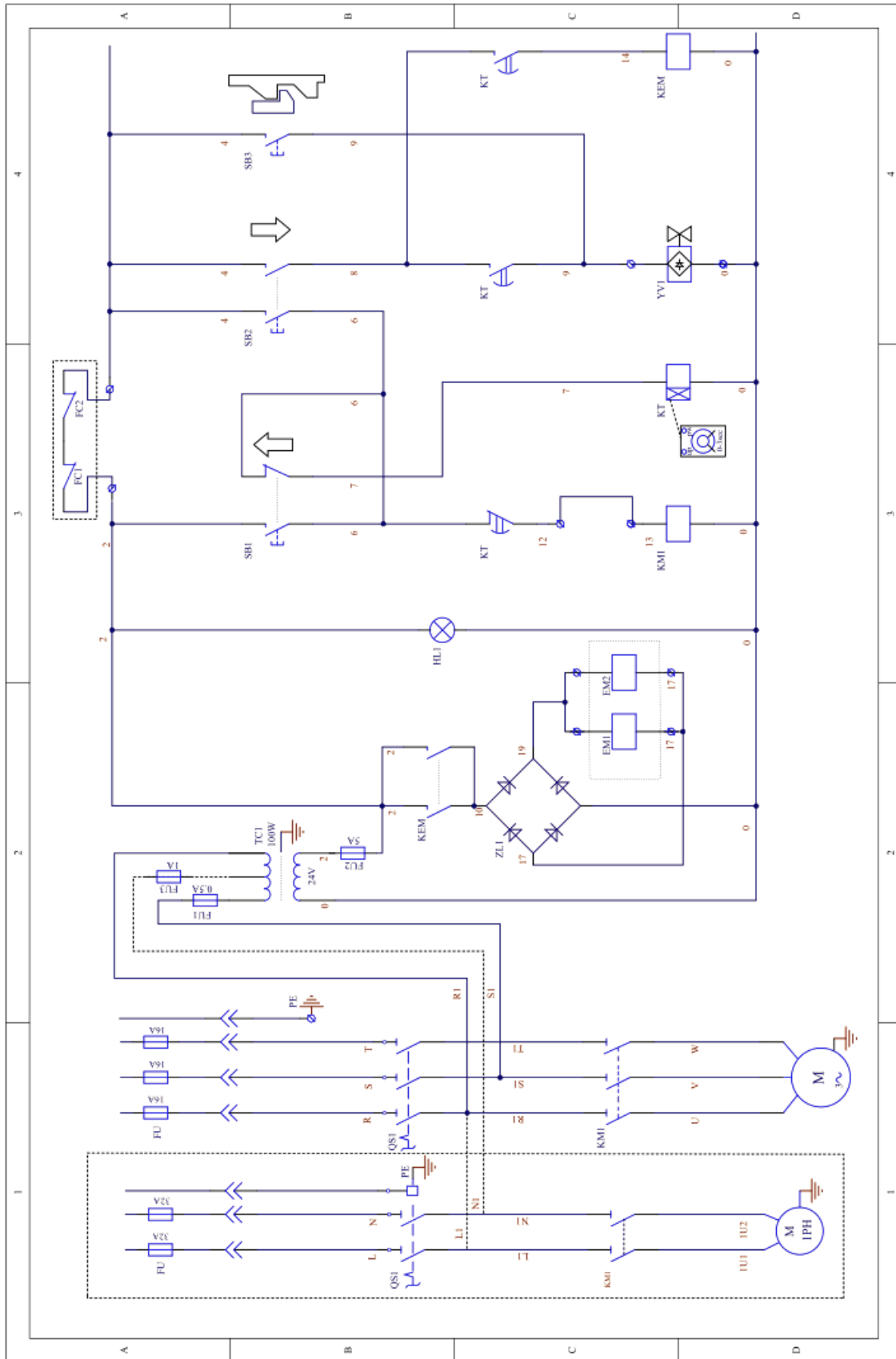
8.3 ELECTRICAL CABINET DIAGRAM(220V)

REVISION A-01

ITEM	PART NO.	Description	QT. Y
1	TC-E-3840232	Transformer	1
2	MF-01-8120003	Fuse	2
3	TC-E-4220124	AC contactor	1
4	TC-E-4400224	Intermediate relay	1
5	TC-E-43Z6324	Time Relay	1
6	TC-E-7103510	Bridge rectifier	1
7	TC-E-7202409	Power Indicator Lamp	1
8	TC-E-2702343	Button switch	1
9	J101-1512500	Power switch	1
10	J101-1122M00	Button switch	1
11	TC-E-270BA31	Button switch	1
12	J101-1122001	Plastic cover	1



8.4 ELECTRICAL DIAGRAM 380V - 3 PH

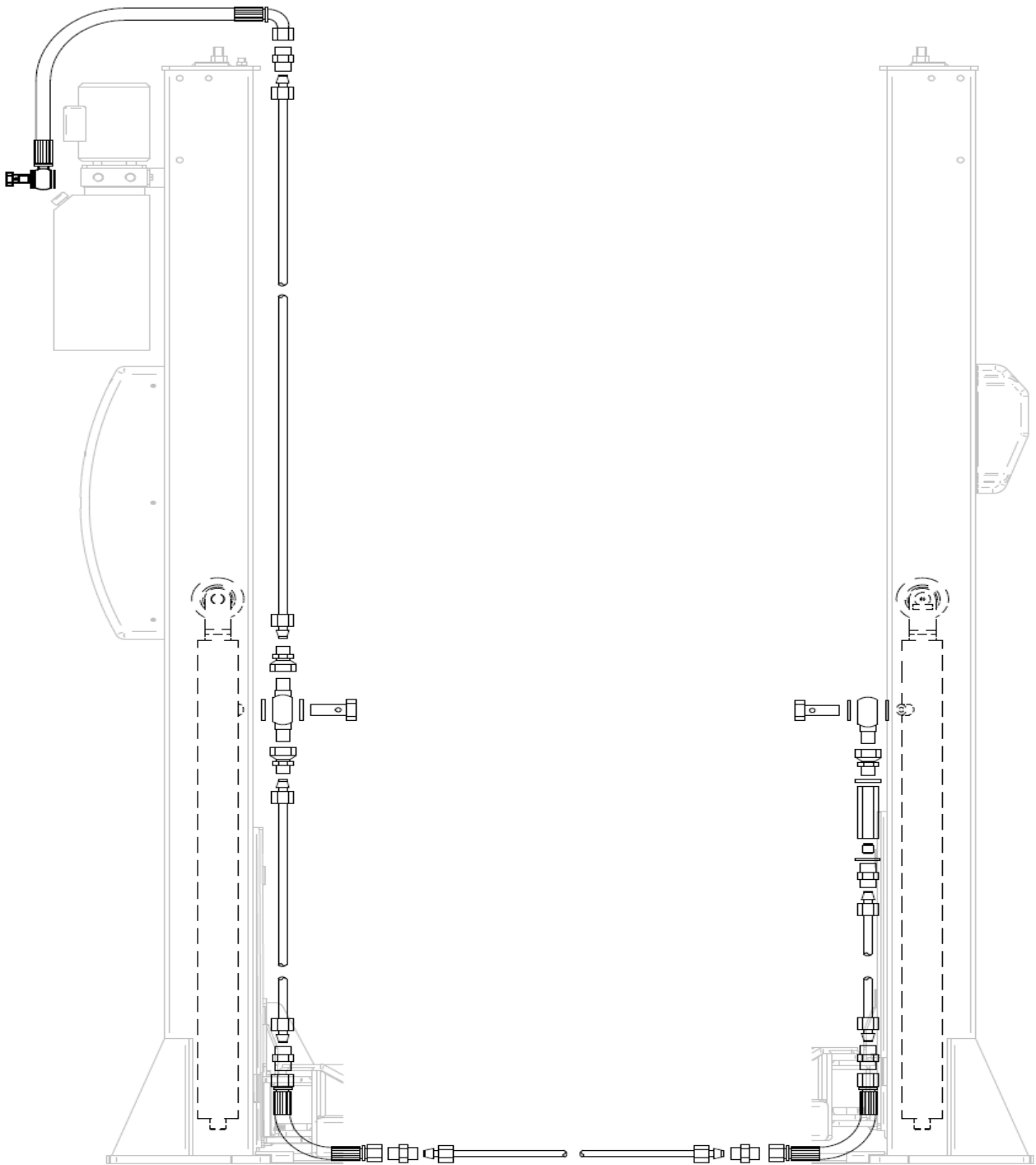


8.5 LEGENDA

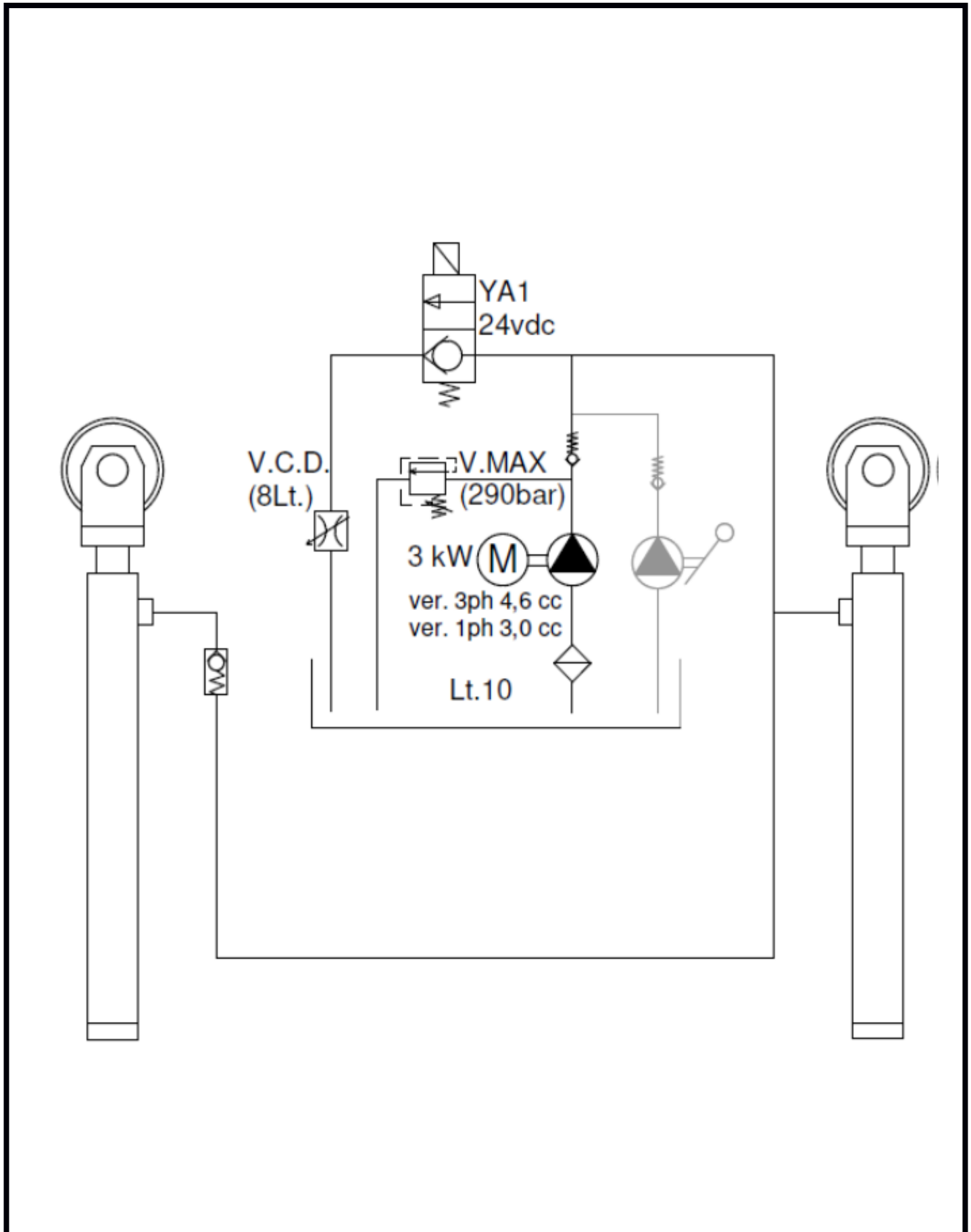
LEGENDA			
FU	FUSE	HL1	WHITE LIGHT
QS1	MAIN SWITCH	SB1	UP BUTTON
KM1	CONTACTOR	FC1/2	LIMIT CHAIN
M	MOTOR	SB2	DOWN BUTTON
TC1	TRANSFORMER	SB3	DOWN SAFETY
FU1	FUSE	KEM	ELECTROMAGNETIC
FU2	FUSE	YV1	DOWN E. V
FU3	FUSE	EM1/2	ELETROMAGNETIC
ZL1	RECTIFIER BRIDGE	KT	TIME RELAY

8.6 HYDRAULIC CONNECTION DIAGRAM

5



8.7 HYDRAULIC DIAGRAM



PROCEDURE FOR THE ADJUSTMENT AND TESTING OF THE LIFT

RESERVED FOR THE INSTALLER TECHNICIAN
(to be carried out scrupulously by the installer at every point)

- **ADJUSTMENT OF MECHANICAL ALIGNMENT OF TROLLEYS**

1. press the up button and check the correct direction of rotation of the motor (the carriages must rise) otherwise change two phases on the terminal board.
2. lift the carriages to about 50 cm and measure the height. If there is a difference, tension the synchronism cables.

- **TESTING OF THE LOADING BRIDGE FUNCTIONS**

- **CHECKING OF THE DEVICE AND SAFETY LIMIT SWITCH TENSIONING CHAIN (FC1 / FC2)**

- **CHECK THE CORRECT OPERATION OF EM1 / EM2 ELECTROMAGNETS, POSSIBLE TO ADJUST NEW**

- **VERIFY CORRECT LUBRICATION OF MOVING ORGANS**

- **VERIFY THAT THE VALVE OF MAXIMUM IN CENTRAL UNIT DOWNLOADS TO HIGH MECHANICAL FINECORSIA**

- **CHECK THAT THE ARM LOCKING SAFETY RACKS LAYS IN THE VARIOUS POSITIONS (ARM OPEN ALL OPEN AND ARM ALL CLOSED)**

