

CONTROL BOX MOD. Q 01.001 DOCK LEVELLER WITH HINGED LIP

LOGISTIC
SOLUTIONS



NEW CONTROL BOX

STANDARD UNI EN 1398-2009



ASSEMBLY, USE AND MAINTENANCE MANUAL

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This manual has been made in two parts, Part I is dedicated to the assembly of the dock leveller, plus this part dedicated to the Control box.

The two parts must be considered together for declaration of conformity, applicable standards and for safety.

Kopron S.p.A.

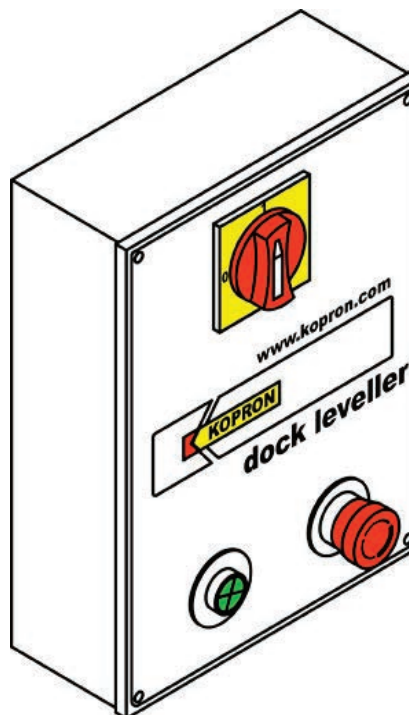
DESCRIPTION AND MAIN DATA

The control box consists of a main switch with a door with a lock and a mushroom-head, latching emergency stop button.

Both the control box and electric system have been made according to European standard N 60947-1

The equipment is according to European standard UNI EN 1398-2009 . Type C.

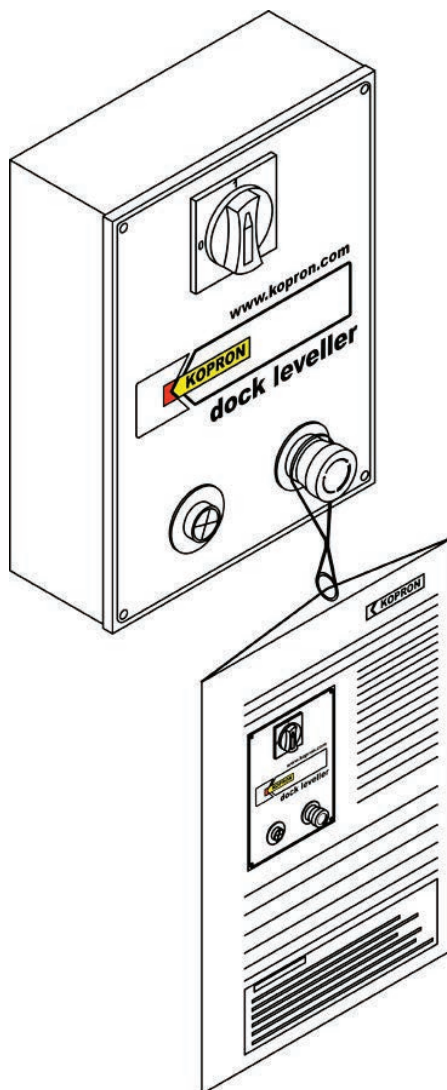
Three-phase supply	230/400V
Frequency	50/60 Hz
Auxiliary feed tension	24 V.a.c. / 24 V d.c.
Total power	1,5 Kw
Temperature	- 20° C / + 55° C
Protection level	IP 65
Accessories to connect	Proximity switch kit and interlocking card for sectional doors
Sizes	250 x 200 x 90 mm
Control box Part Number	mod. Q 01.001



A USEFUL ADVICE

When you start using the dock leveller we suggest to hang on the emergency button a note in a plastic cover as shown in the drawing, reminding operators of the main functions and indications on safety

The information is given at page 5, you only have to photocopy the page and slip it in a plastic cover.

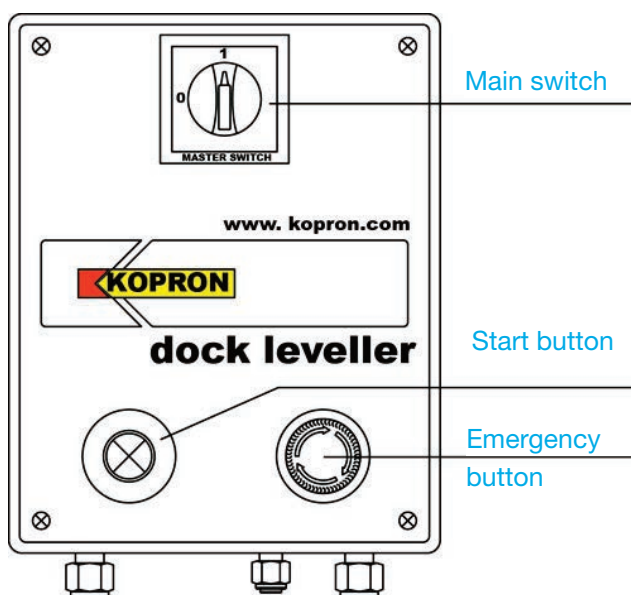


Controls functioning instructions
as shown at page 5 of this manual

The dock leveller in any case must be operated by skilled personnel specifically trained to use the product, and must be duly informed about any improper use, particular risks and safety measures.

The assembly, use and maintenance manual is a fundamental requirement for the use of the product according to the European Directives.

Make sure of the following before starting any operation: the width of the dock leveller must comply with the width of the platform of the lorry, the door above must be open, the lorry must be correctly positioned in the middle of the dock leveller and lean against the rubber bumpers with rear doors open. At this point you may operate as follows:



- Press main switch to switch on the control box.
- Press start button and keep it pressed until the upper plate reaches its highest position rotating the lip upwards to get aligned with the upper plate. In case of a dock leveller with lip with side flaps, these flaps will come automatically down as soon as they touch the truck's surface.
- Release the start button and upper plate with the rotated lip will come down and lay on the truck's platform.
- At this stage loading and unloading operations can start. After this you carry on as follows
- Press start button again and keep it pressed to lift upper plate and allow the lip to rotate and close completely.
- Release start button halting the upper plate which must never reach its highest position at this stage, it will start coming down to resting position.

In case you press the emergency button, dock leveller movements stop immediately. You must never transit the dock leveller when emergency button is activated. During docking the truck must idle, with gear engaged, hand brakes on.

For safety reasons the dock leveller must be used only when truck is properly positioned for docking, leaning against the rubber bumpers and with the lip firmly positioned on the lorry platform.

You must never carry out loading/unloading operations with dock leveller in resting position.

INSTRUCTIONS FOR SAFETY

- Operations on the dock leveller must always be carried out by qualified and trained personnel.
- When emergency button is activated the dock leveller must never be transited.
- Operator must have full visibility over the dock leveller, and will make sure that nobody and nothing may interfere with the movements.
- The lip of the dock leveller during loading/unloading operations must necessarily be positioned on the platform of the truck.
- Transit speed of the carrying machines on the dock leveller must not exceed man's pace
- Never exceed the established capacity.

For assistance contact Kopron Service Dpt.

CHAPTER 1

ELECTRIC CONNECTION

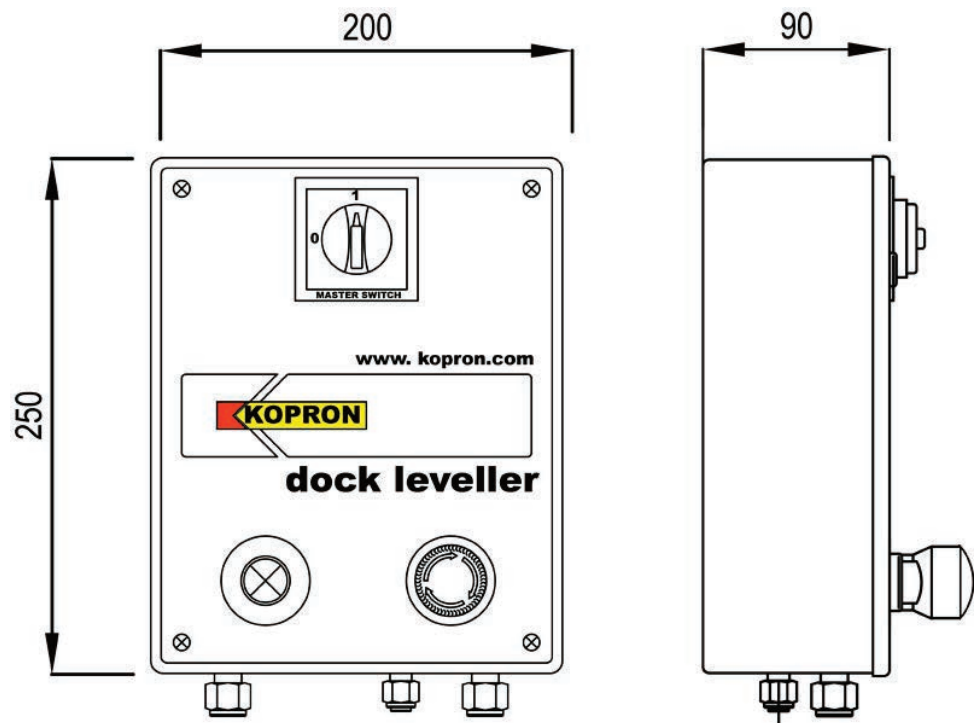
1.1 CONTROL BOX POSITIONING



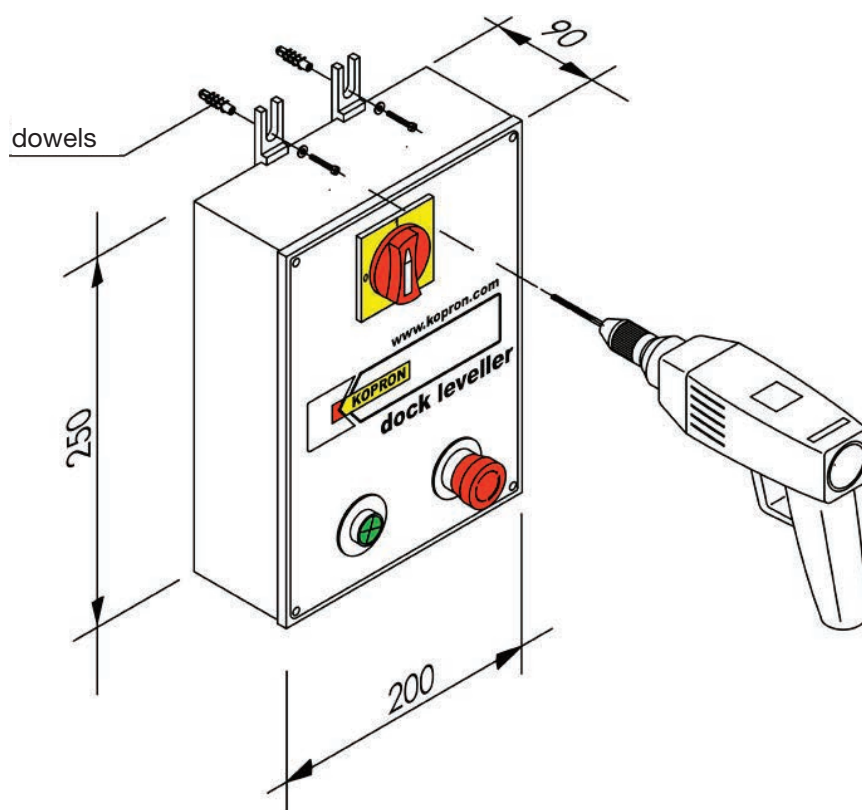
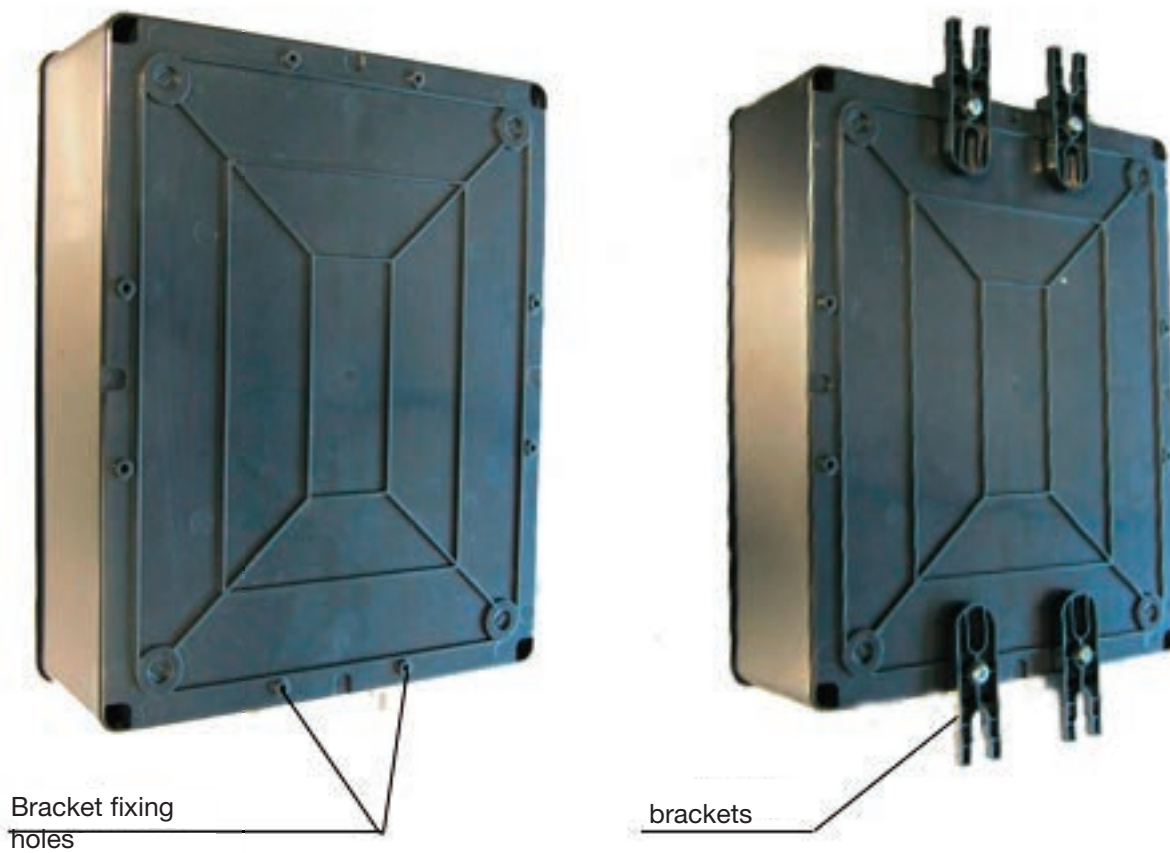
The control box must always be placed inside the room and positioned in order to allow operator to have full visibility over the dock leveller for safety reasons. When deciding the positioning of the control box you must remember that the length of connecting cables to the electric equipment of the dock leveller (motor control unit and electrovalves) is of 8 meters .

The size of the control box is the following:

CONTROL BOX MOD. Q 01.001



Fix the control box to the wall with 4 plastic brackets you find with the supply. The control box has 4 holes at the back, brackets must be fixed in with screws you find in the plastic bag along with the brackets. Make sure not to damage the equipment inside the box by accidentally perforating it, this would jeopardize protection level IP 65.

REAR VIEW OF THE CONTROL BOX

1.2 CONTROL BOX POWER SUPPLY

Before any electric connection, check the voltage of the line which must correspond to the voltage of the equipment. Voltage sudden changes must not exceed 10%.

The equipment can be supplied at 50/60 Hz

Connecting wires must have a nominal section according to their length, in order to bear the absorbed amperes.

See following details

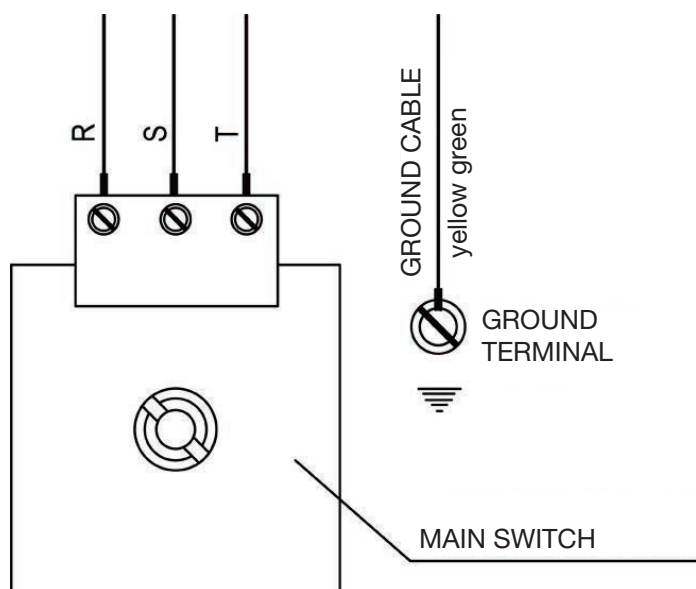
Hydraulic motor 1.1 kW	Three-phase supply	Three-phase supply
	230 V	400 v
Absorption	3.2 A	2.2 A
Supply cable FLOR 450/ 750V	4G of 2.5 mm ²	3+T of 1.5 mm ²

For connection of three-phase voltage connect the line directly to terminals of main switch.

Ground wire connection is carried out by connecting it to the right terminal and positioning it near the main switch.



Before carrying out any connection, power supply must be deactivated. Keep an eye on the power supply switch for all the time necessary for carrying out connection operations.

CONTROL BOX POWER SUPPLY

The control box must be connected to its own dedicated electric supply line provided with a circuit breaker with programmable in-rush current limiting (10% more than the nominal value of absorption)

The power supply line must also be provided with a residual current device set at 30Ma (milliamperes).

Make sure that the ground cable of the control box is correctly connected to electric ground system of the plant. This check must be carried out with the technicians of Buyer and **with the utmost care**.

Power supply cables must be put in casing with minimum protection level IP54.

Control box connections must be carried out by **specialized and skilled personnel** as according to standards EN 292.2 art. 5.5.1.



1.3 EQUIPMENT CONNECTION

The electric system of the dock leveller has connections to the motor control unit and to the electrovalve and is supplied with cables to be directly plugged into the sockets of the control box terminals.

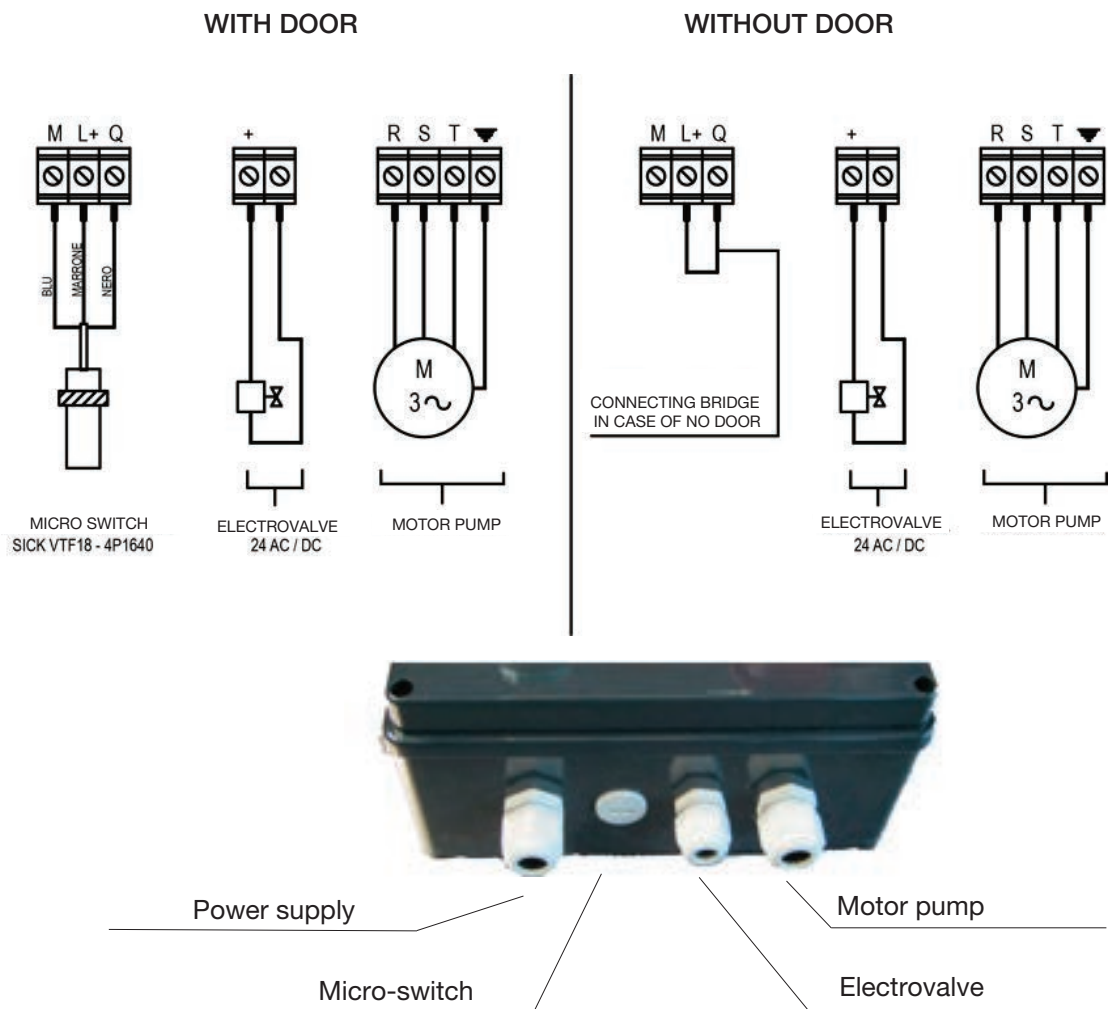
For control boxes used on special dock levellers which are part of complete loading bays with a door, there is an optional connection to a micro-switch which controls the opening of the door allowing the dock leveller to move only when the door is completely open.

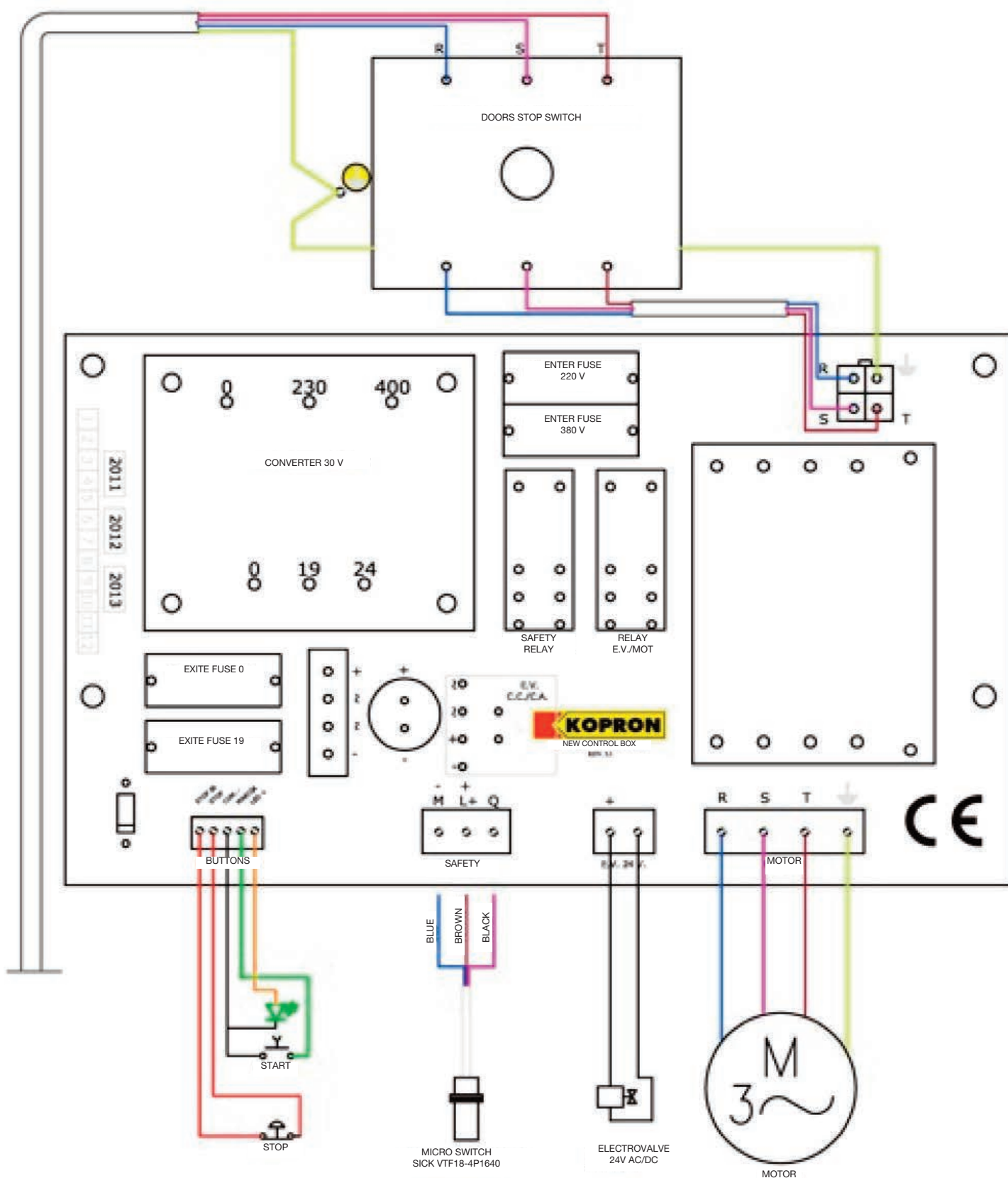
The connection to the micro-switch can be enlarged to add other blocking controls. The length of the connecting cables to the motor control unit and electro-valves is of 8 meters, while the cables of the micro-switch regulating the door opening must be a dedicated one.

The electric system must be placed in wiring raceways to avoid damages.

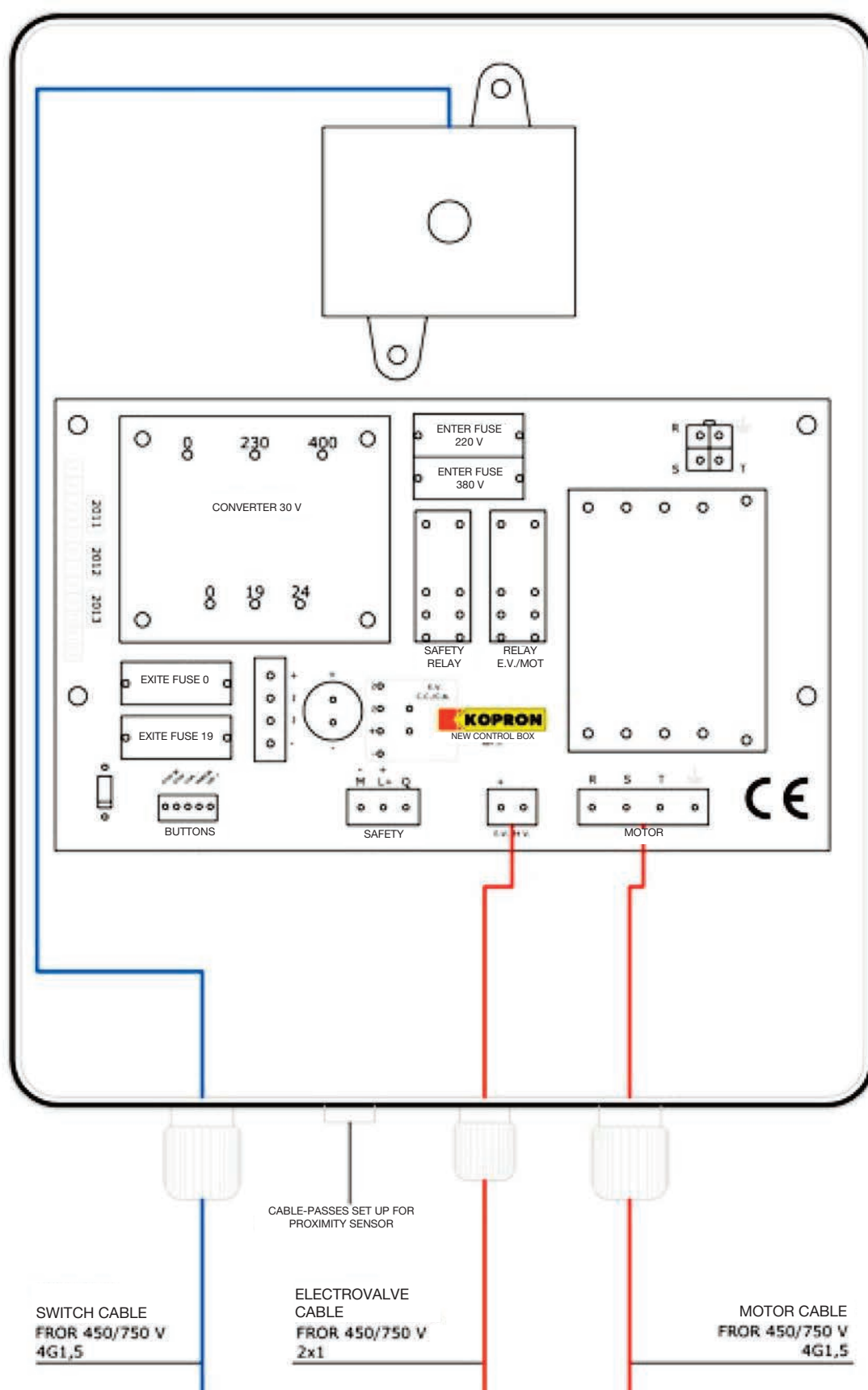
Hereunder is how the control box terminals must be connected either in case of door or no door.

In case of no door you must provide a connecting bridge between terminals L+ e Q





CABLES AND CABLE-PASSES OF THE CONTROL BOX



CHAPTER 2

INSTRUCTIONS FOR USE

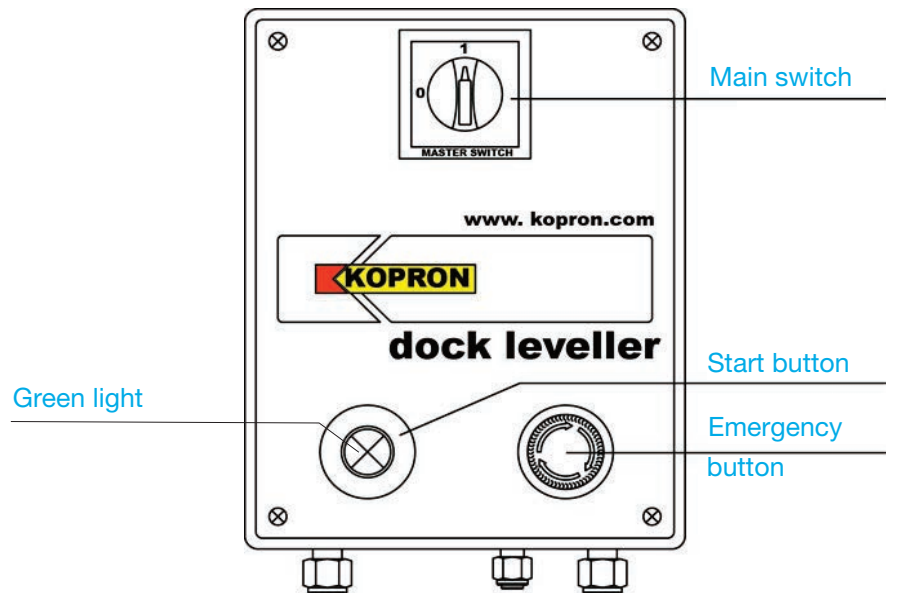
2.1 CONTROLS AND SIGNALING LIGHTS

The dock leveller controls are the following:

- Main switch which can be locked when off.
- Start button. It moves both dock leveller and lip.
- Latching emergency button immediately stops the dock leveller.
- Green light means control box on.

The functioning of the controls is detailed in Chapter. 2.2 How to operate.

The control box consists of the following:



Main switch
with a lock

Start button and
green light

Emergency button



2.2 HOW TO OPERATE

Make always sure that the length of the lip complies with the length of the platform of the lorry.



Once the upper plate of the dock leveller is cleared, the door (if any) is open, the lorry is correctly positioned in the middle of the dock leveller, against the rubber bumpers with back doors open, operate as follows:

- Switch the main switch on, you will see a green light.
- Press start button and keep it pressed until the upper plate reaches its highest position rotating the lip upwards to get aligned with the upper plate. In case of a dock leveller with lip with side flaps, these flaps will come automatically down as soon as they touch the truck's surface.
- Release the start button and upper plate with the rotated lip will come down and lay on the truck's platform.

At this stage loading and unloading operations can start. After this you carry on as follows:

- Press start button again and keep it pressed to lift upper plate and allow the lip to rotate and close completely.
- Release start button halting the upper plate which must never reach its highest position at this stage, it will start coming down to resting position.

Once the dock leveller is in resting position the truck can move away.

The emergency button, stops the dock leveller movements immediately. This is a latching type of button, it activates when you press it and it deactivates when you pull it.



Once you press the emergency button you must for no reason transit the dock leveller.

During loading/unloading operations for safety reasons the truck must be idle with gear engaged, hand brakes on and properly leaning against the rubber bumper. The lip must be firmly positioned on the truck platform



You must never carry out any loading/unloading operations when dock leveller is in resting position.

The dock leveller must be operated only by **trained and specialized personnel**.

2.3 HOW TO USE STOP BUTTONS

Dock leveller movements are stopped by pressing an emergency red button you find on the control box with yellow written label 'STOP' underneath.

Here the description of the emergency button:

- Emergency button which immediately stops the dock leveller.

This is a latching type of button, it activates when you press it and it deactivates when you pull it.

However when you pull the button to deactivate, the dock leveller remains still where you stopped it.



You must never transit the dock leveller when emergency button is pressed.

CHAPTER 3

ANOMALIES, MAINTENANCE AND REPAIRS

3.1 ANOMALIES, CAUSES AND REMEDIES

The following are anomalies which may occur with relevant causes and remedies
Bold type numbers within the parenthesis indicate the position of the equipment inside the control box (see drawing).

ANOMALY	CAUSE	REMEDY
Light off	No electric supply	Verify if there are any interruptions of supply
	Burned lamp	Replace
	Power line fuses (2)	Replace
	Auxiliary circuit fuses (6)	Replace
pump motor doesn't run	Transformer (1) damaged	Replace
	Emergency button pressed	Pull it
	Door blocked closed	Open the door and verify the sensor functioning Check if other blocking systems have been placed on the line of the sensor
	Contactor (4) damaged	Replace
Pump motor runs without moving the dock leveller	Electrovalve anomaly	Replace control solenoid valve
	Motor turns on the wrong side	Reverse a phase See Chap. 3.1 Dock leveller start-up (Part I)
	No oil in the control box tank	Fill the tank
	lifting cylinder flexible tube damage	Replace
Lip struggles to open or to close	YA2 solenoid valve with red button pressed	Pull the button see chap 2.12.2 Equipment functioning and adjustment (Part I) Contact Kopron Service Dpt
	Dirt or something interfering with movements.	Clean and remove obstacles
	No grease on the hinges.	Apply molykote grease
	Deformation caused by damages	Adjust
The upper plate struggles to either go up or come down	No oil in the control box tank	Fill the tank Contact Kopron Service Dpt
	Dirt or something interfering with movements.	Clean and remove obstacles
	No grease on the hinges	Apply molykote grease
	No oil in the control box tank	Fill the tank
Safety valve which controls the fast coming down of the upper plate doesn't function properly.	Deformation caused by damages	Adjust Contact Kopron Service Dpt
	Air in the hydraulic circuit	Remove air from the hydraulic circuit. See chap 2.12.3 Part I

According to standards EN 292.2 art. 5.5.1 interventions on anomalies must be carried out by specialized and skilled personnel.

In Part I – Chapter 6 you can find instructions on safety when carrying out maintenance operations.

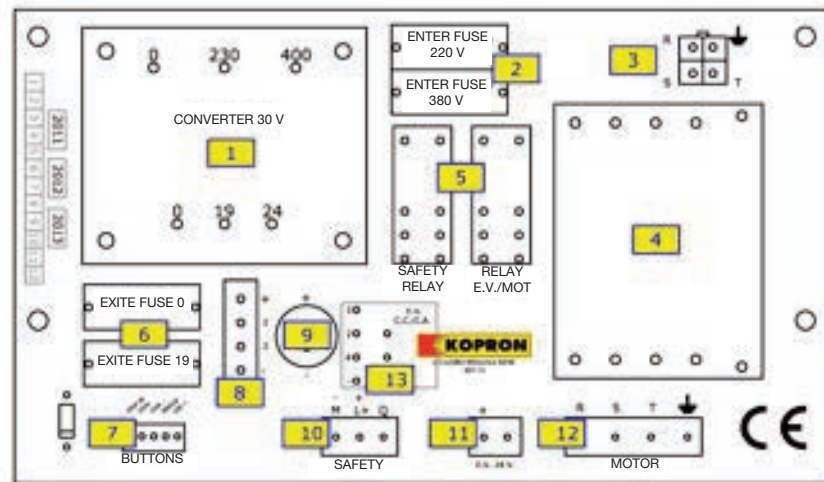
For any further information apply to our local Service Dpt.

KOPRON S.p.A.

via Primo Maggio s.n. - 20064 Gorgonzola – (MI)

☎ +39 - 02 - 921 52 751 📠 +39 - 02 - 921 52 923

EQUIPMENT POSITION WITHIN THE CONTROL BOX



LIST OF COMPONENTS

- 1 Converter 30 VA
- 2 Power line fuse type 5x20 mm, 400mA
- 3 Extractable 4 pin terminal block for power supply
- 4 Motor contactor, 9A AC3
- 5 Electrovalve auxiliary relay, 6A
- 6 Auxiliary fuse type 5x20 mm, 2A
- 7 Extractable 5 pin terminal box for button panel connection
- 8 Rectifier, 8A
- 9 Electrolytic capacitor, 1000µF
- 10 3 pin terminal box - safety connections
- 11 2 pin terminal box - electrovalve connections
- 12 4 pin terminal box - motor connections
- 13 Electrovalve voltage change 24 V - AC/DC

CHAPTER 4

SPARE PARTS

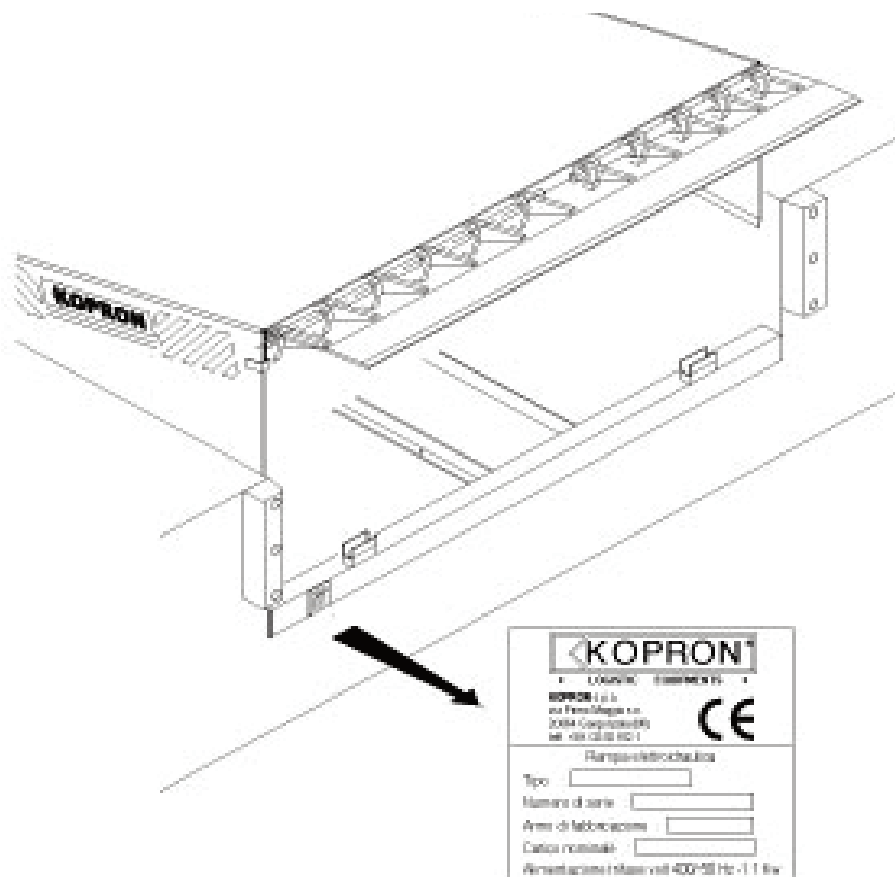
4.1 SPARE PARTS SUGGESTED

Please apply to your local Kopron Service dept. for any spare parts:

KOPRON S.p.A. via Primo Maggio s.n. - 20064 Gorgonzola – (MI)

☎ +39 - 02 - 921 52 751 📠 +39 - 02 - 921 52 923

When you contact us you must give the following information: serial number and year of construction. You may take these data from the label normally positioned on front part of the dock leveller frame.



CHAPTER 4

ASSISTANCE AND WARRANTY

4.2 HOW TO APPLY FOR ASSISTANCE

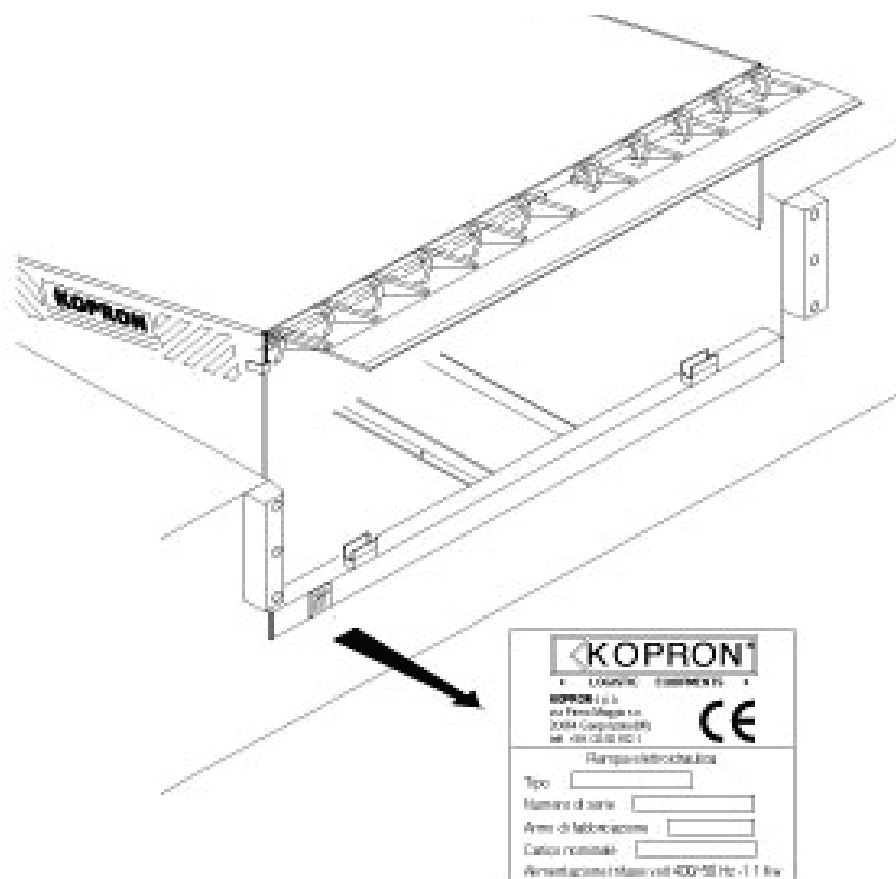
Please apply to your local Kopron Service dept. for any spare parts

KOPRON S.p.A. via Primo Maggio s.n. - 20064 Gorgonzola – (MI)

☎ +39 - 02 - 921 52 751 📠 +39 - 02 - 921 52 923

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(See Chapt.1.3 Part I)



4.3 WARRANTY

- 1 - Kopron S.p.A. grant a guarantee period of 12 months from delivery date except for electric and electronic parts for which there is no guarantee, these components used for production have their own guarantee, established by the relevant suppliers, which as well does not exceed 12 months from delivery.
- 2 - Kopron S.p.A. undertake to remove any defect due to error in design or material/production faults occurring within the terms mentioned at point 1.
- 3 - For each faulty part, Buyer must give Kopron written notice within eight days. Buyer will be charged with transport costs and risks plus eventual customs expenses for faulty parts as well as for the supply of parts repaired or sent for replacement.
- 4 - Upon request of Buyer service under guarantee can be carried out locally where the dock leveller has been assembled, in this case intervention plus expenses for travel, food and lodging will be charged to customer.
- 5 - Guarantee is valid only in case equipment has been correctly used according to instructions contained in the Use and Maintenance manual.
Guarantee will not cover faults caused by Buyer in case of maintenance or interventions not authorized by Kopron S.p.A. in writing, or due to wear and tear.
Guarantee will not cover any damages caused directly or indirectly by tools, or due to missing production.
- 6 - Material subject to normal wear and tear is not under guarantee.
- 7 - The duration of the guaranteed does not exclude the obligation on behalf of Customer to stock up with spare parts as suggested by Kopron S.p.A. in due time.
- 8 - The obligations implied in the guarantee have nothing to do with the economical conditions agreed upon and do not authorize interruptions or changes in payment modalities.
- 9 - Guarantee covers only the mechanical functioning of the equipment, therefore Kopron S.p.A. will not be responsible for personal Customer expectations regarding quality or quantity of the product.
Buyer must take care of the disposal of the hydraulic liquid, therefore Kopron will not be responsible in case Customer does not comply with local regulations.



LOOKING AHEAD



Quality Management System
UNI EN ISO 9001:2008 Certified
Factory Production Control
UNI EN ISO 1090
Applicable standard
UNI EN 13241-1
UNI EN 16005
UNI EN 1398
UNI EN 3834-2

CERTIFICAZIONI CERTIFICATIONS

Kopron attraverso le certificazioni di qualità offre un'ulteriore garanzia sull'efficacia e l'efficienza dei propri prodotti.

Through certifications Kopron offer a further guarantee on efficiency and quality of their products.



www.kopron.com

LOGISTIC SOLUTIONS

Kopron S.p.A. - Headquarters

Via I Maggio s.n.
20064 Gorgonzola (Mi) Italy
t +39 02 92 15 21
f +39 02 92 15 29 20
kopron@kopron.com

Export Sales

t +39 02 92 15 27 51
export@kopron.com

Kopron SERVICE

Assistenza e ricambi/ Spare parts
assistenza@kopron.com
www.kopronservice.com

Kopron do Brasil

Av. José Alves de Oliveira, 123
Parque Industrial III
Jundiaí - São Paulo - Brasil
t +55 11 31 09 67 00
comercial@kopron.com
www.kopron.com.br

Kopron China

江苏省 无锡市新城区南路207号 214028
207, Chengnan Road
214028 New district Wuxi Jiangsu China
电话 **t**+86 0510 85 36 30 50
sales@kopronchina.com
www.kopronchina.com

Kopron France

Parc de Chavanne
817, Route des Frênes
69400 Arnas - France
t+33 04 74 68 16 57
kopron@kopron.fr
www.kopron.fr