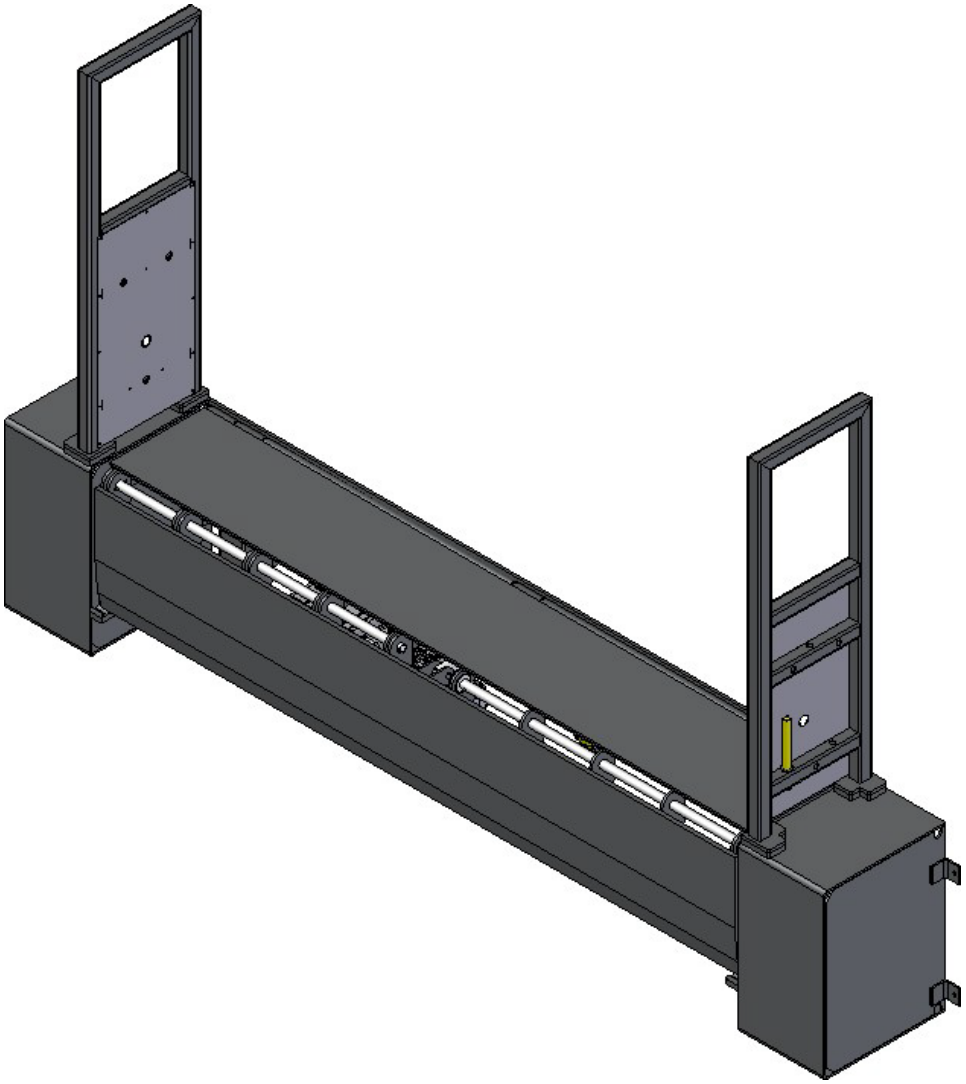

Inkema

User manual:

Hydraulic Mini Dock Leveller PA63

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01 – Introduction

This manual is a guide for the safe and correct installation, use and maintenance of the **Hydraulic Mini Dock Leveller PA63.**

The fulfilment of instructions herein ensure long life to the machine, and respect for the safety rules avoids most common accidents which can occur in its use and maintenance.

The instructions contained in this manual cannot make work safe in itself and do not relieve users of observing the safety code or any local or national law, rule or regulation.

The service standards set out in his manual only apply to mobile ramp tables for loading and unloading trucks.

If the instructions and maintenance manual should be lost, a copy specific to this machine should be requested. It is entirely necessary and mandatory that the manual should be with the machine for consultation at any time or if there should be any doubt in its use.

The manufacturer has no direct control over the operations, location for maintenance of the machine. It is the responsibility of the operator to make a good practice of safety and maintenance.

It is the responsibility of the operator to read and understand this manual before using the machine

Using the machine with caution and suitable training not only protects the operator, but also all people who depend on their work.

The information contained in the manual is valid at the time of its publication.

The photographs and drawings contained in this manual are general in nature and this information may therefore suffer some variation due to the constant development and research in **INKEMA SISTEMAS S.L.**

Consult the technical department in the event of discrepancy.

The manual is an integral part of the machine and must be attached to it in the case of sale.

02 – Technical Sheet

Hydraulic Mini Dock Leveller designed in accordance with **UNE-EN 1398**

Calculated for a maximum nominal load of: 6t. Calculated for a nominal maximum load of 6Tm (see nameplate).

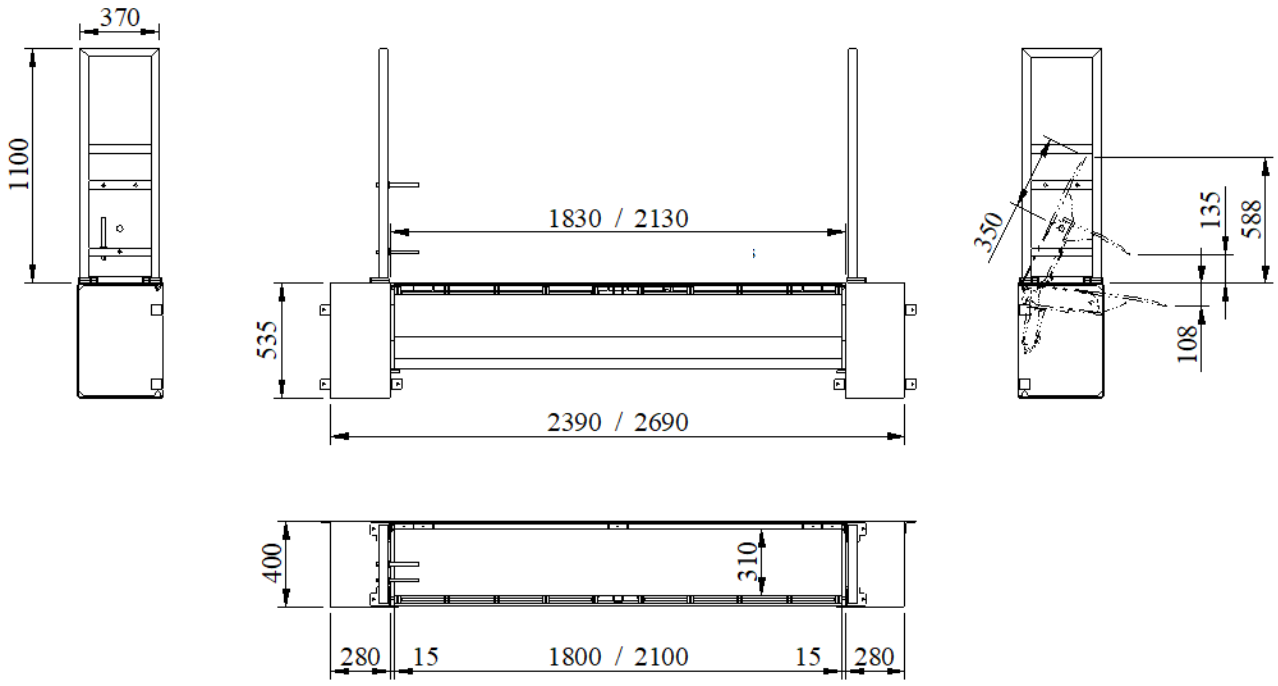
02.01 – Conditions and Limits of Use

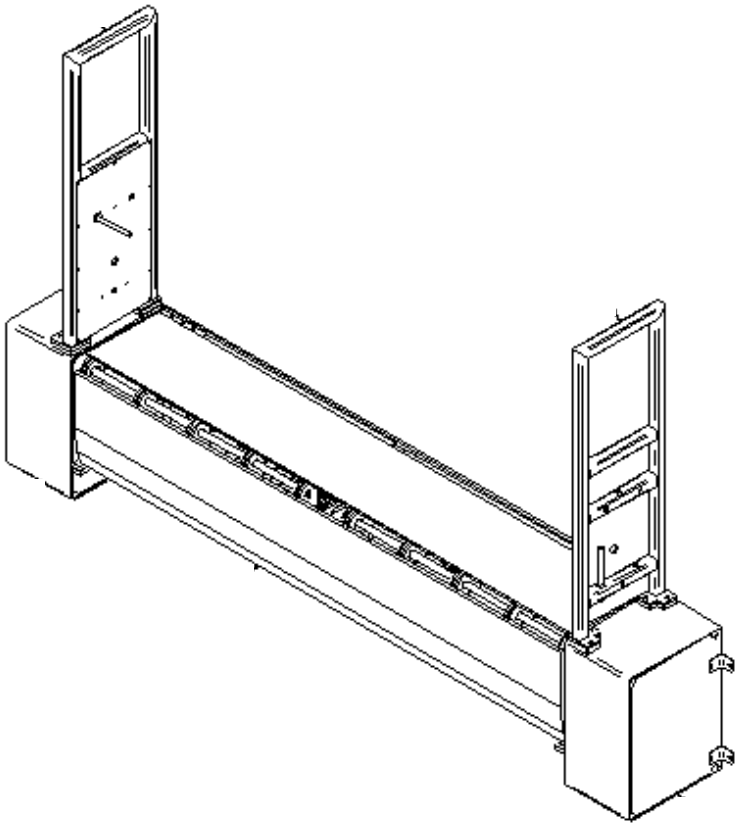
- Rated load capacity 6Tm
- Electrical motor voltage 230/400 volt. 3F 50Hz
- Electric motor power 1,1 kW (1,5Cv)
- Gear pump 2,4 L/min
- Electrical output voltage to emergency solenoid valves 24 volt. AC.
- Max. working pressure of the hydraulic circuit 140 kg/cm² (Bar)
- Working temperature range (-10ºC +40ºC)
- Noise level produced <70db
- Max. transit speed 10Km/h
- Max. working slope 12.5% (7º)
- Do not operate the machine while the emergency stop is activated or the power supply has been suspended.

02.02 – Overall Dimensions

PA63 Hydraulic Mini Dock Levellers are available in two lengths:

- 1800mm
- 2100mm



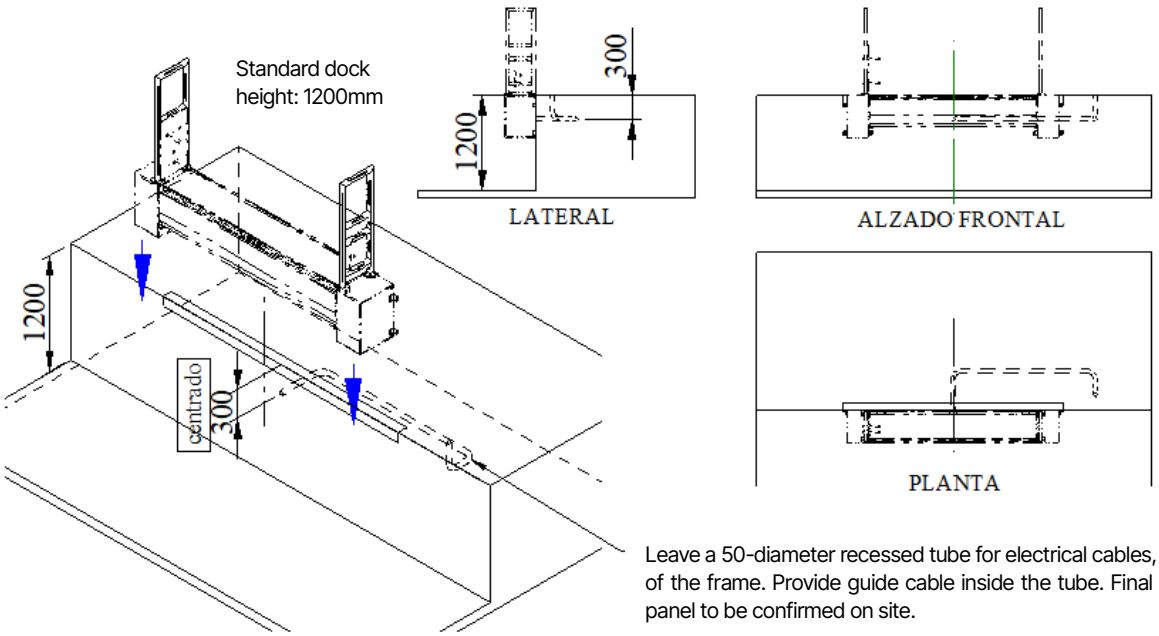


02.03 – External Placement ("Pit")

PA63 Hydraulic Mini Dock Leveller shall be mounted on a dock, without the need for a specific pit. At a recommended height of 1200mm.

02.03.01 – Civil works ("Pit")

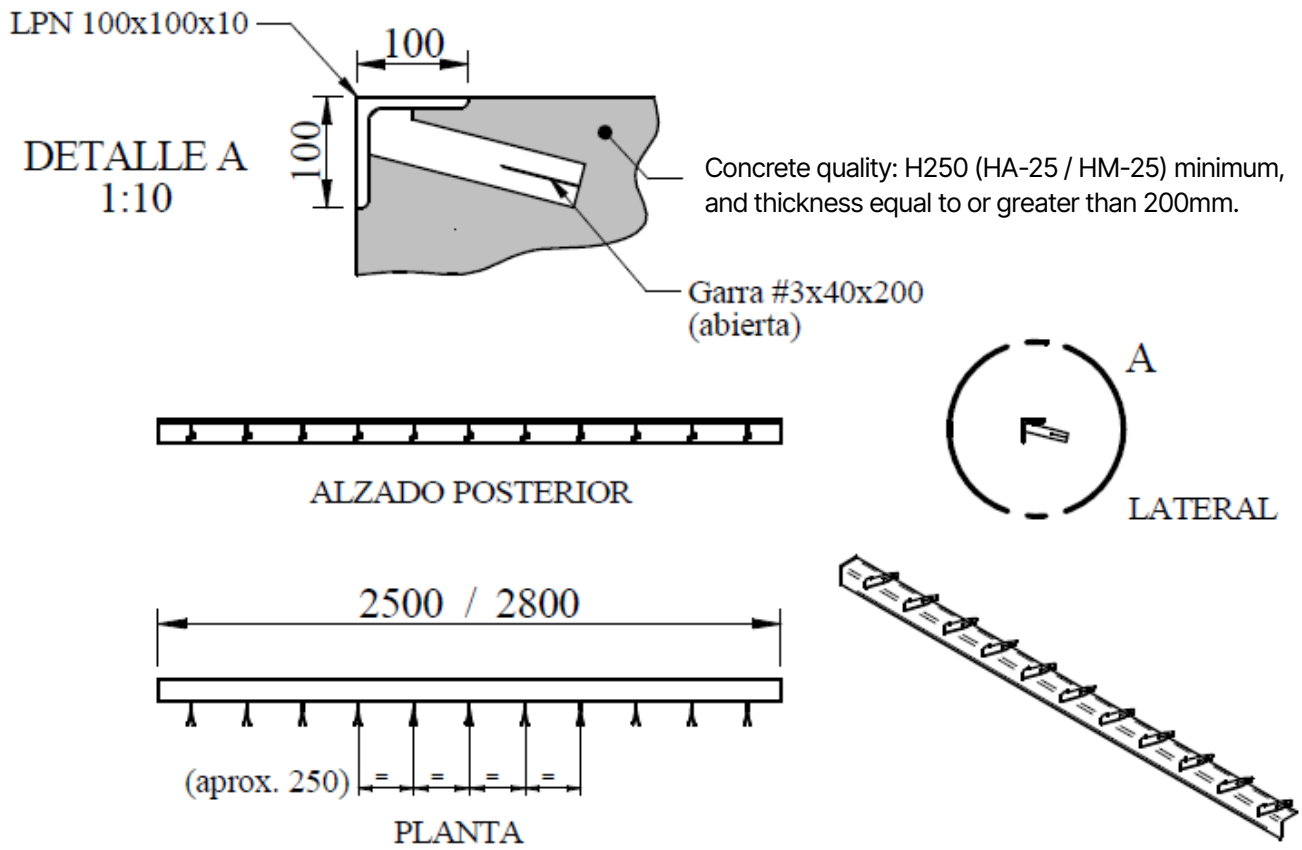
The minimum quality of the concrete must be HA-25 / H250 (resistance 250Kg/cm2).



Leave a 50-diameter recessed tube for electrical cables, up to the base of the frame. Provide guide cable inside the tube. Final location of the panel to be confirmed on site.

02.03.02 – Pit embedded metal structure ("Pre-frame")

A metal sub-frame, of RECOMMENDED angle LPN100 or similar, (although LPN-80 will also be accepted), to which the footbridge can be welded, will be provided on site (embedded, with claws).



Its length will depend on the size of the Mini Dock.
For 1800 PA63 MiniDocks → 2500 Preframe.
For 2100 PA63 MiniDocks → 2800 Preframe.

02.04 – Platform

- Top plate, ST-37 quality (thickness 6/8mm).
- 10 ribs/hinges (cold rolled profiles), thickness 8mm.
- Rear hinge assembly (Ø30 perforated bar) (platform joint).
- Brackets for lifting and lip cylinders (pistons).

02.05 – Lip

- Tear plate (Thickness 13/15mm.), quality ST-37.
- Folded from 5º to 150mm. from the end (for a perfect fit to the truck).
- Milled at the end (to smooth the passage of forklifts).
- 10 lower ribs/hinges, 8mm thick.
- Cylinder support (piston)

02.06 – Base- Fixed part

- 8 mm drilled straight beams to secure it firmly to the subframe.
- 3 hinges (Ø30 perforated bar), for the articulation of the platform.
- 2 legs (made of 80 square tube), for better handling during transport.
- Supports for hydraulic unit and lifting cylinder.

02.07 – Lateral Boxes

- 2 side drawers made of 6/8" sheet metal with chrome-plated steel
- With brackets for bolted fixing of handrails.
- With lip bracket, made of machined LPN-150

02.08 – Handrails

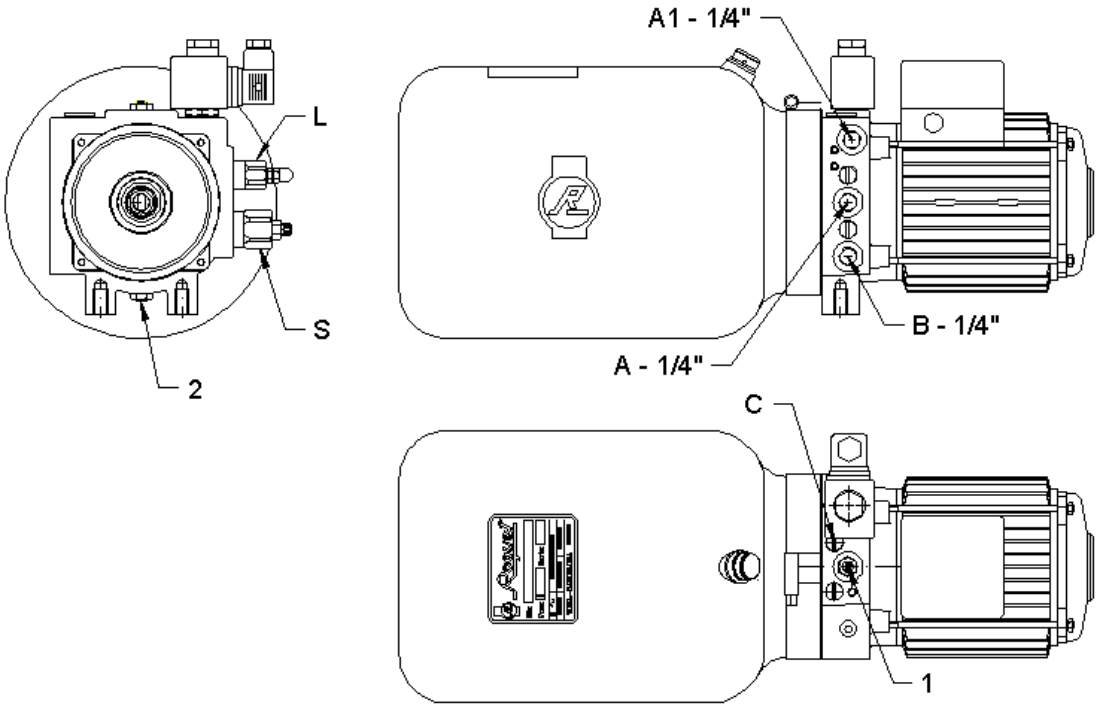
- 2 handrails made of 40x3mm square metal tube.
- With blind plate to prevent shearing.
- 2 safety bars for maintenance work.

02.09 – Hydraulic power pack / hydraulic cylinders

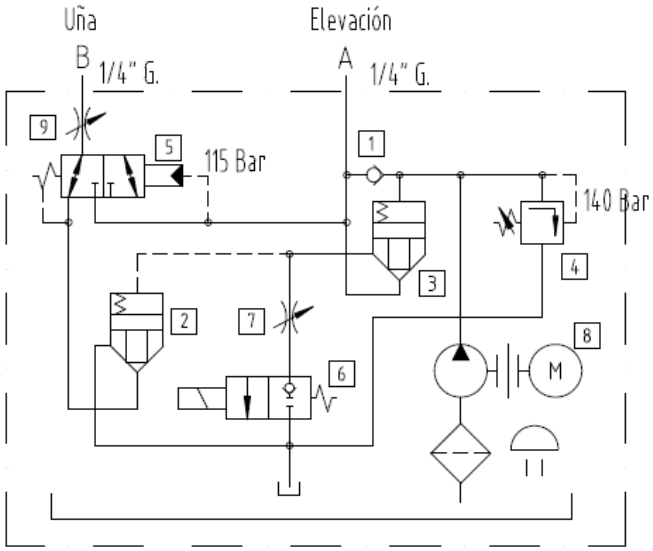
- The movements of the platform and the lip are carried out by means of an electro-hydraulic unit.
- Electric motor 1'5CV. / 1'1kw 230/400Volt 3F 50Hz. 1500rpm - IP-55
- Hydraulic pump with flow rate 1'6 cd/v (2'4 litres/minute).
- 5 litre tank with oil level indicator.
- Block where all the elements are incorporated (including electrovalve 24V AC).
- 1 cylinder of Ø40mm. rod for platform elevation, with parachute safety valve.
- 1 cylinder with Ø30mm. rod for lifting the lip.
- Hoses, fittings, etc. ....

The machine can be supplied with different brands of hydraulic control unit.
For specific queries, the manual corresponding to that brand can be provided.

02.09.01 – Standard Example of a Hydraulic Unit



02.09.02 – Hydraulic Diagram:



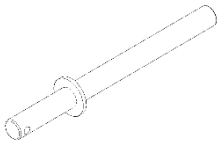
02.10 – Electrical Panel

(See electrical panel connections, page 27)

- Transformer for control circuit at 24Volt. AC.
- Green start-up light.
- Emergency stop/disconnector.
- Thermal.
- Fuses.
- Connection strip.
- Enclosure 190X*240Y*105Z (IP-55)

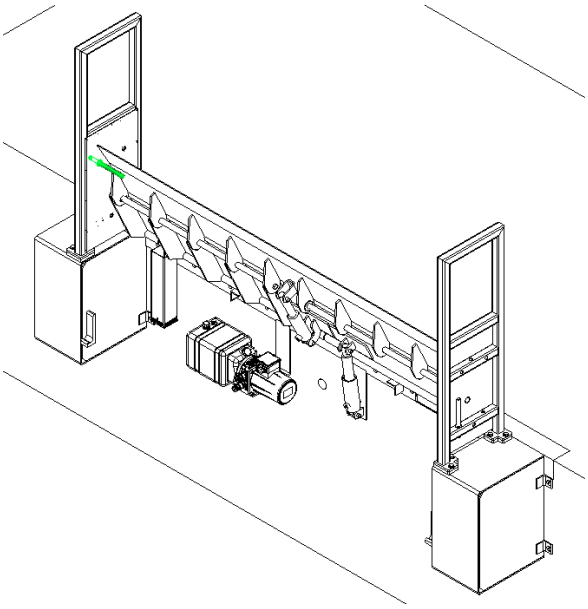
02.11 – Safety Systems

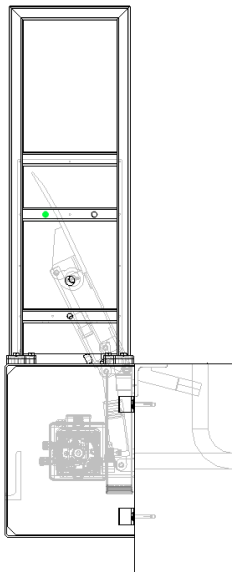
- Emergency solenoid valve and/or power failure.
- Emergency stop/disconnector.
- Safety valve on lifting cylinder.
- Anti-slip surface.
- Blind side rails that act as foot-saving side skirts. In addition to helping to locking of the mobile part for the dismantling of the axles.
- Two maintenance bars, which can be inserted into various holes provided for this purpose. Either to lock the ENTIRE moving part (for maintenance) or just to lock the platform and remove the axle from the lip.



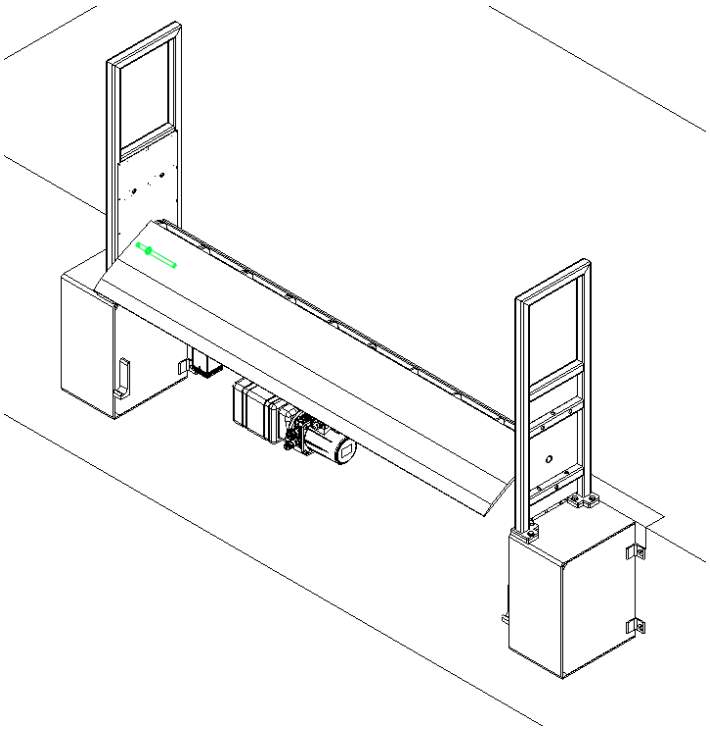
(x 2)

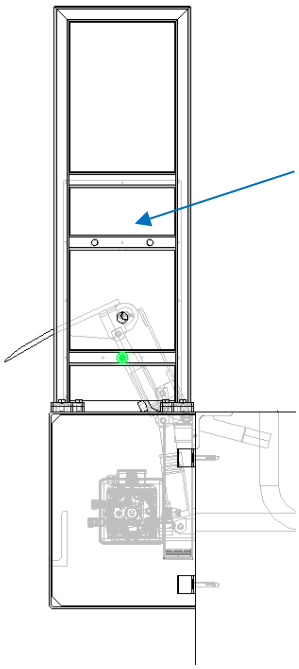
Top locking of the entire movable part:





Middle (platform) lock for lip shaft removal:





02.12 – Maintenance

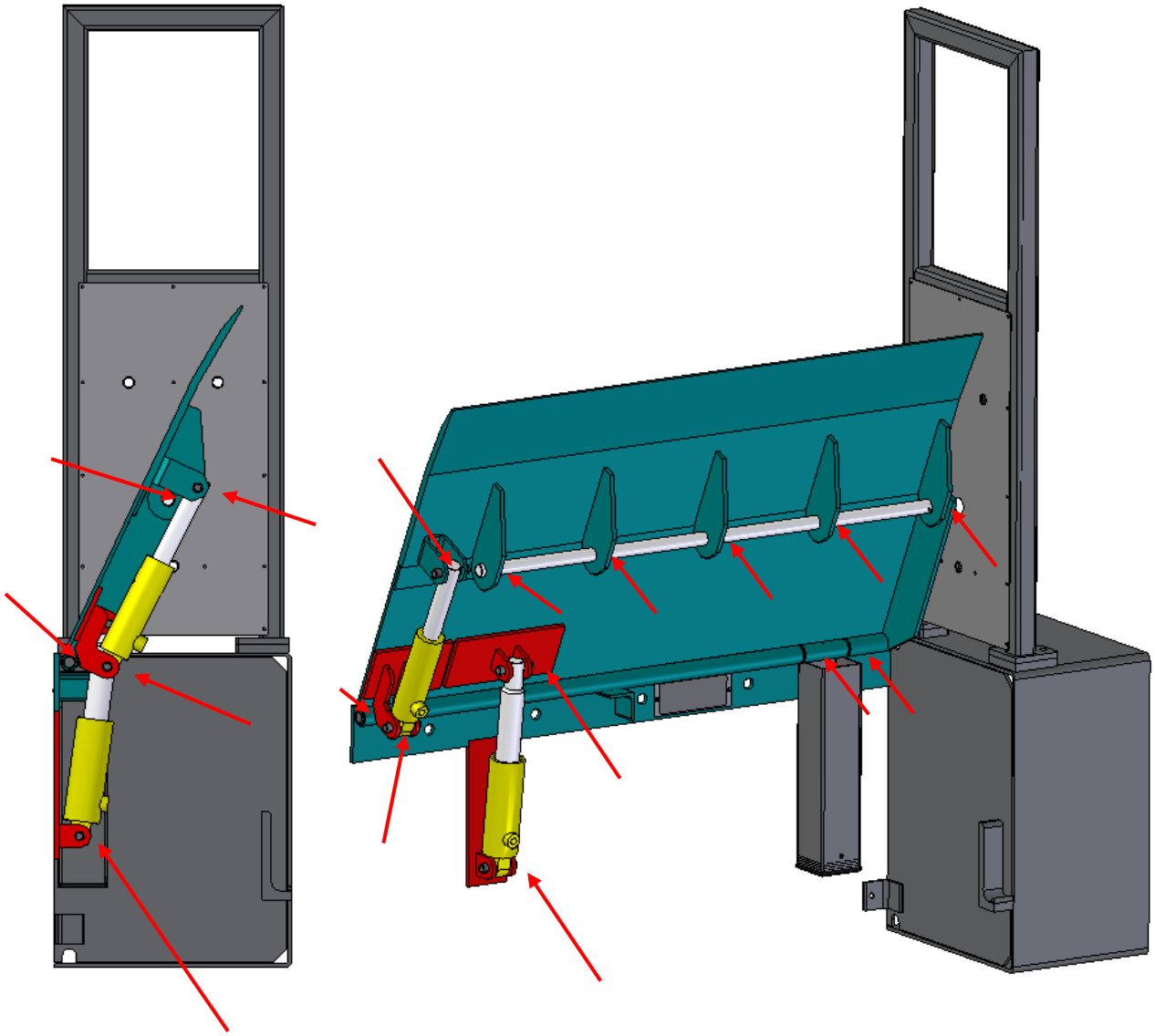
- The correct functioning and long life of the gateway depends largely on the preventive maintenance that is carried out.
- Advanced maintenance can only be carried out by INKEMA's Technical Service or personnel approved by INKEMA.
- This maintenance is carried out so that the product retains the safety and usage characteristics that it has at the time of installation.
- Any change, repair or manipulation of the product that does not comply with these guidelines will lead to the cancellation of the two-year guarantee period and INKEMA's responsibility for the product will be automatically cancelled.
- Lubrication, painting, and continuous monitoring are the best guarantee of good performance for many years.

02.12.01 – Hydraulic Oil

- The hydraulic oil must be replaced once every two years.
- The oil must contain agents that prevent foaming, oxidation, and water absorption.
- If winter temperatures are very low, the oil should be low-density and have a stable viscosity index at low temperatures.
- Never mix different oils, as the new oil may have a different oxidation resistance and affect the life of the original oil.
- It is important to check the oil level every 6 months. The oil tank should be filled until the oil almost overflows through the stopper in the lowest possible position.
- The machine is equipped with T-15 oil as standard.
- The hydraulic oil for gangways in cold stores must have specific properties for use in accordance with the temperature to which it is exposed. Therefore, if this is the case, the manufacturer must be informed of the conditions in which the machine will work so that it is equipped with the special oil.

02.12.02 – Lubrication Points

The lubrication points indicated in the diagram must be checked every half year.



02.12.03 – Adjustment of the gangway lowering speed

The speed will be regulated by means of the corresponding regulator. *(See the specific manual of the hydraulic unit).*

02.12.04 – Lip Opening Speed

The opening/closing speed of the lip is set at the factory, but can be adjusted by means of the corresponding regulator (see the specific manual for the hydraulic unit).

02.12.05 – Maintenance Plan

Maintenance intervention	Diary	Monthly	6 months	1 year	2 years
General condition of the machinery	♦	♦	♦	♦	♦
Lubrication			♦	♦	♦
Hydraulic Oi Level			♦	♦	♦
Oil Leak Inspection			♦	♦	♦
Inspection of Welds				♦	♦
Inspection of axles				♦	♦
Inspection Side Adhesive Strips				♦	♦
Paint Inspection				♦	♦
Flexibles and Fittings				♦	♦
Manoeuvring Speed				♦	♦
Check Parachute Valve					♦
Hydraulic Oil Change					♦

02.13 – User Instructions

02.13.01 – Before Use

Visually check that the PA63 Mini Dock is in perfect condition for use.

Centre the vehicle against the rubber buffers of the gangway. (These will have been fitted after the gangway. Different types can be fitted (welded), always with metal plate at the rear, to be welded to the side boxes).

Check that the vehicle is perfectly immobilized and blocked (stop the engine, set the handbrake, and chock the wheels).

To raise the PA63 to the level of the loading surface, connect the control circuit by turning the red isolator switch. At this point, the green pilot light will come on.

To raise the gangway and open the lip, press the lift button continuously.

If the lift button is released, the gangway will lower under its own weight at a controlled speed.

Raise the PA63 until the lip starts to open. Once the lip has opened completely, release the lift button.

Allow the PA63 to descend in a controlled manner and rest on the loading surface of the lorrie.

Check that the lip rests over its full width on the loading surface of the vehicle in a space NOT less than 100mm.

NOT less than 100mm (ideally 130 to 150mm).

02.13.02 – During Use

The PA63 Mini Dock will simply rest on the loading surface (truck). The hydraulic cylinders will NOT be blocked to allow the gangway to adapt to the height of the loading surface (which will vary according to the truck's suspension).

Release the button and wait for the PA63 to lower at a regulated speed and rest with the lip closed on the front of it bed.

02.13.03 – After Use

Raise the gangway and close the lip before the truck leaves its loading position. To do this, press the lift button, raising the gangway enough to clear the lorry.

Release the button and wait for the gangway to descend at a regulated speed and rest with the lip closed on the front of its bed.

02.13.04 – Precautions for Use

Make sure that the emergency stop is not activated.

Do not exceed the maximum rated load under any circumstances (see nameplate).

Before each manoeuvre, check that there are no people in the work area.

Check that the gangway is well supported on the loading surface of the truck, coupling the entire lip over an area of approximately 130-150 mm across the entire width of the gangway.

The only function of the hydraulic unit is to carry out the movements necessary to manipulate the levelling gangway only. **It must never be used to support and/or lift loads.**

Before lifting the gangway, make sure that its movement is not obstructed by other equipment (doors, etc. ....).

At the end of the operation, check that the lip is securely locked in its closed position.

03 – CE Declaration

CE

DECLARATION OF CONFORMITY

INKEMA SISTEMAS S.L. declares under its own responsibility that and the electro-hydraulic loading bridge:

Brand:	**INKEMA**
Model:	**PA63** of 6000 Kg (*) capacity
Year manufactured:	**2023**

Conforms to the essential requirements of the following directives:

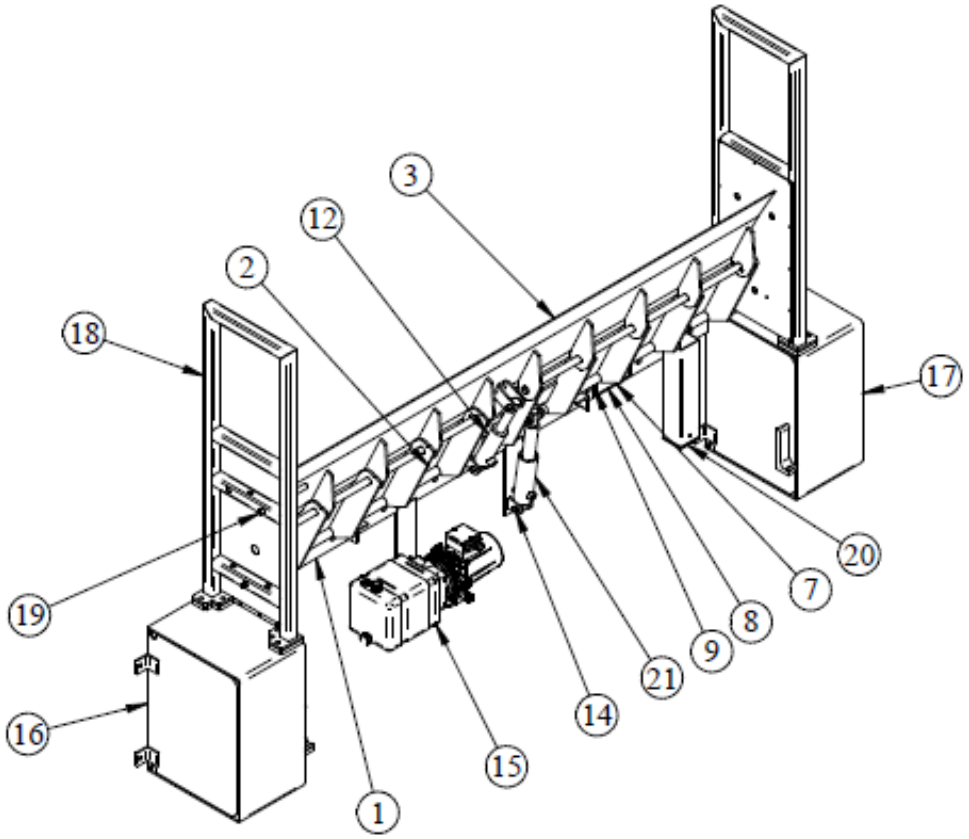
2006 / 42 / CE	Machine safety
2004 / 108 / CE	Electromagnetic compatibility
2006 / 95 / CE	Low voltage

And has been calculated and designed in accordance with the following European regulations:

UNE-EN 1398:2010	Dock Levellers
EN ISO 12100-1:2010	Machine safety. Basic concepts. General principles for design.
EN 61000-6-2:2006	Electromagnetic compatibility. Basic concepts of immunity for industrial environments.
EN 61000-6-4:2011	Electromagnetic compatibility. Basic concepts of emissions in industrial environments.
EN 60204-1:2010	Machine safety – Electrical equipment – General rules.

(*) In case the capacity is different from 6000kg, the corresponding CE certificate must be attached to this manual.

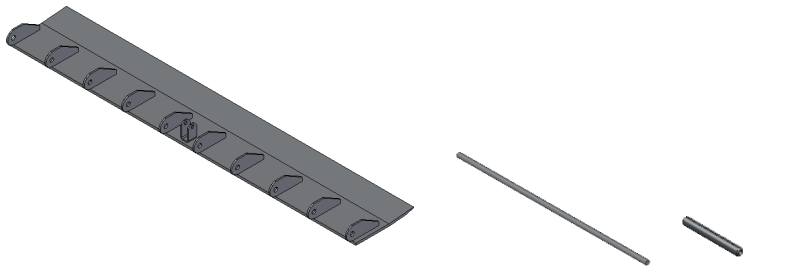
04 – Machine parts and assemblies



21	P-002438	002379	Cil.S.Ef.Ø40 E/C. 260 Car.105	1
20	P-001374	002366	PVC Plug For Pipe 80x80x2	2
19	C-003869	-	Pa63 Maintenance Bar	2
18	C-003870	004451	Conj. Bolted Handrail P/PA63	2
17	C-003871	000101	Stopper Box P/PA63 Right	1
16	C-003872	000100	Stopper Box P/PA63 Left	1
15	C-000113	000135	C.H. RH1 400v 1.50cv 2.4L/Min	1
14	P-000284	001357	Axle Ø16 X 70 Zinc-Plated	4
12	P-002436	001332	Cil.S. Ef Ø16 X 70 Cincado	1
11	P-000019	001094	Spring Pin Ø5x40 DIN-1481	4
10	P-000042	001 117	Spring Pin Ø5x40 DIN-1481	2
9	P-000083	001 158	Rivet Ø16 X 70 Zinc Coated	2
8	P-000082	001 157	Sticker 55x140 Polyester Silver Matt	1
7	P-000079	001 154	Adhesive Support Plate	1
6	P-000286	001 359	Washer Ø48-Ø24x3 Polyethylene	2
5	P-000474	001531 / 001510	Axle Ø22 X 960 P/PA6 W2100 / X 825p/W1800	2
4	P-000475	001532 / 001511	Rear Axle Ø22 X 960 P/PA6 W2100 / X 1826 P/W/1800	1
3	C-003873	000839	PA63 Lip 6t Conf.	1
2	C-003874	000838	PA63 Structure 6t Conf.	1
1	C-003875	000837	PA63 Fix Base 6t Conf.	1

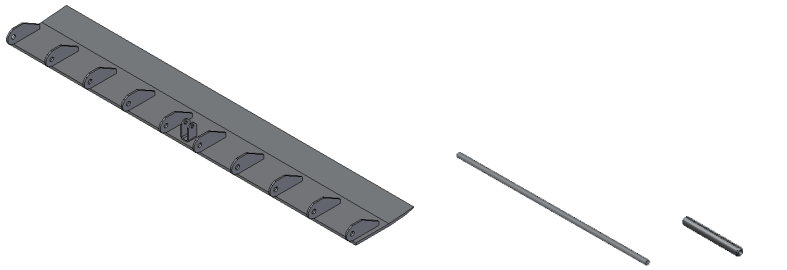
04.01 – List of accessories (after sales)

CODE: 10RECLABIO (for W 2100) Lip (claw) (galvanised or painted) + Axle Ø22 L:960mm anodised + spring pins Ø5x40 DIN-1481



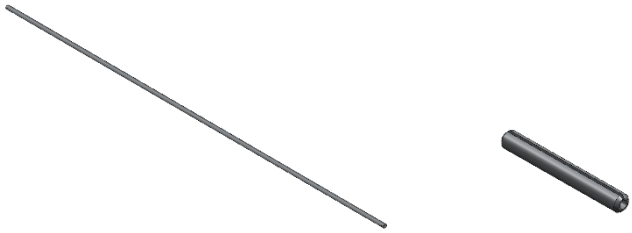
(1 unit) (2 units) (4 units)

CODE: 10RECLABIO (for W 1800) Lip (claw) (galvanised or painted) + Axle Ø22 L:825mm anodised + spring pins Ø5x40 DIN-1481



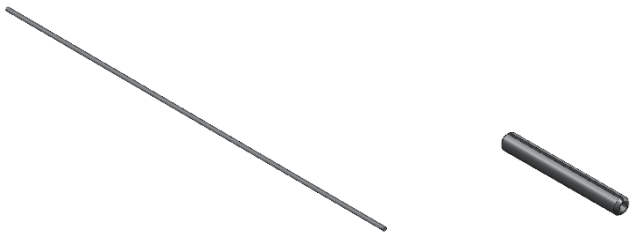
(1 unit) (2 units) (4 units)

CODE: 10FITTINGS (for W 2100) Axle (pin) front (for lip) (anodised) Ø22 L:960mm spring pin Ø5x40 DIN-1481

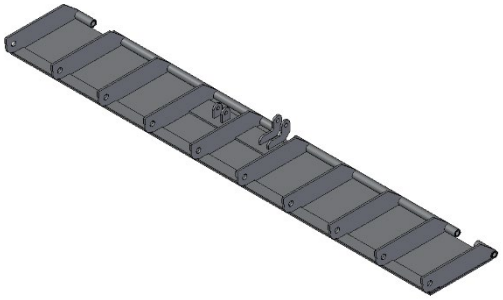


(2 units) (4 units)

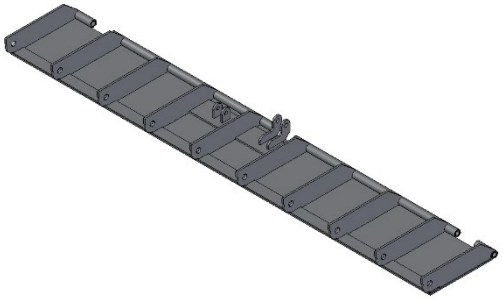
CODE: 10FITTINGS (for W 1800) Axle (pin) front (for lip) (anodised) Ø22 L:825mm spring pin Ø5x40 DIN-1481



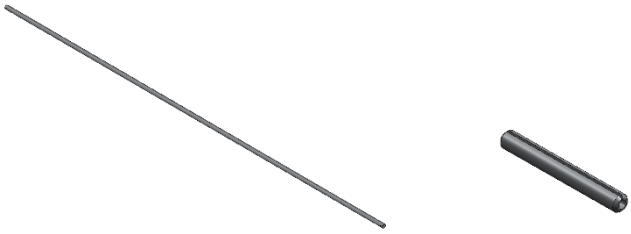
CODE: 8766 (galvanised) - 8768 (RAL 7016) (for W 2100) Mobile frame assembly (platform)



CODE: 8765 (galvanised) - 8767 (RAL 7016) (for W 1800) Mobile frame assembly (platform)

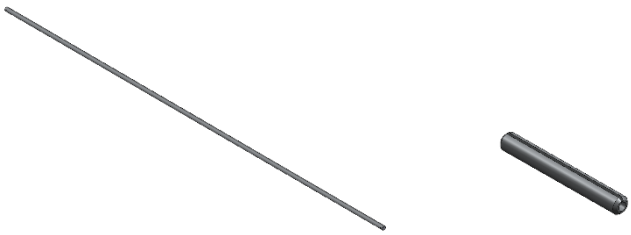


CODE: 10FITTINGS (for W 2100) Rear axle (for hinge) (anodised) Ø18 L:2126mm spring pin Ø5x40 DIN-1481



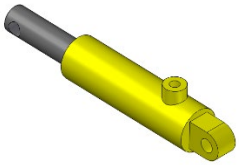
(1 unit) (2 units)

CODE: 10FITTINGS (for W 1800) Axle (pin) rear (for hinge) (anodised) Ø18 L:1826mm spring pin Ø5x40 DIN-1481



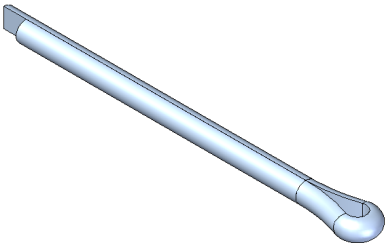
(1 unit) (2 units)

CODE: 2379 S.E. cylinder, elevation

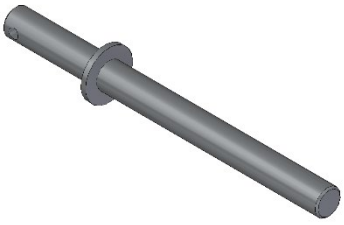


CODE: 1357 Pin Ø16x70 zinc plated (for lip cylinder)

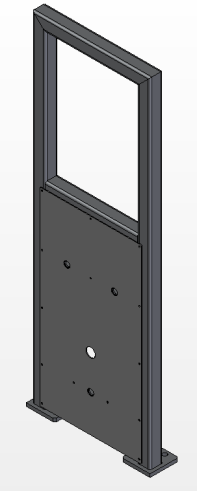
CODE: 1361 Flange pin Ø4x50 DIN 94



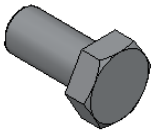
CODE: 8775 Safety bar, for maintenance



CODE: 8769 (galvanised) - 8770 (RAL 7016) Side railing set to be bolted on

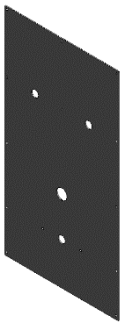


CODE: 5005 Screw M12x25 DIN 933 zinc plated



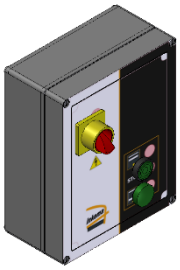
CODE: 4339 Washer p/M12 DIN 125 zinc plated

CODE: 004457 Footplate for handrail



CODE: 2219 Rivet Ø4,8x12 ISO 16582

CODE: 0094 Electrical control panel assembly



CODE: 3684 Green push button open contact Telemecanique XB7-EA1P (unit.)

CODE: 3688 Telemecanique XB7-EV0.MP green led pilot light (unit.)

CÓDIGO: 3751 Telemecanique VN12 3-phase section switch

CODE: 3751 Telemecanique VN12 three-phase disconnector (pieces.)

CODE: 3431 Ramp electronic board (piece)

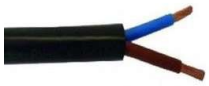
CODE: 3435 Electronic board transformer

CODE: 3432 Telemecanique GV2ME08 2.5-4A magneto-thermal circuit breaker (unit.)

CODE: 3234 Glass fuse Ø5x20 of 1Amp 230v (pieces.)

CODE: 10REC001345 Electric hose 4x1.5 Black/Brown/Grey class 5 and 6 (Ml.)

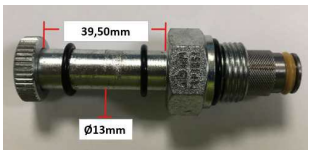
CODE: 10REC001346 Black electric cable 2x1 Asele AG (Ml.)



CODE: 30.0015.0004 Wired terminal VA105 (pieces.)

CODE: 6997 Bob. 24v AC 20W p/Cent.Hydr. RH

CODE: 3410 Safety solenoid valve slider for control unit p/RH1 (pieces.)

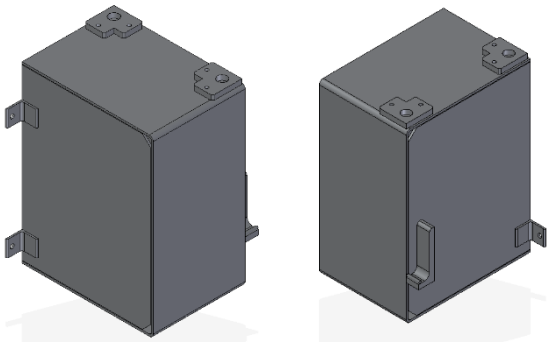


CODE: 2370 Hydraulic hose R1 - Straight / 90° 1/4G - L=900mm

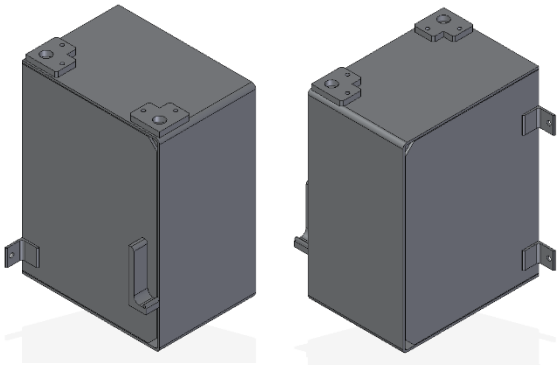
CODE : 1336 M/M threaded fitting 1/4 "G zinc plated

CODE : 1337 Reducing nipple M/M thread 3/8" - 1/4" zinc plated

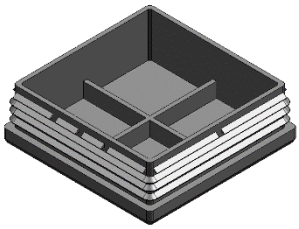
CODE : 8830 (galvanised) - 8828 (RAL 7016) Left-hand side drawer assembly



CODE : 8831 (galvanised) - 8829 (RAL 7016) Right-hand side drawer assembly



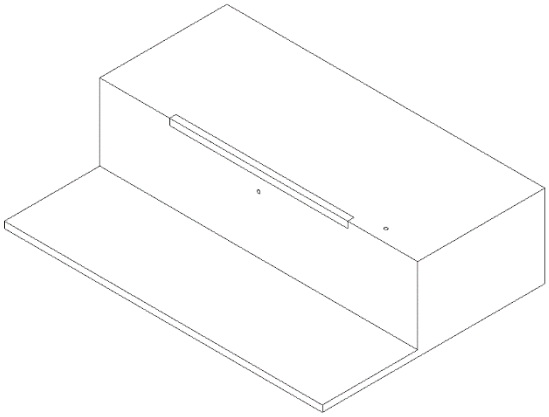
CODE :2366 PVC plug for 80x80 pipe leg

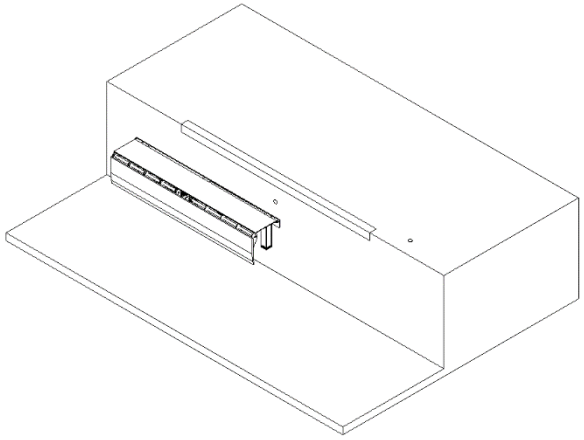


05 – Installation

05.01 – Placement in the final location

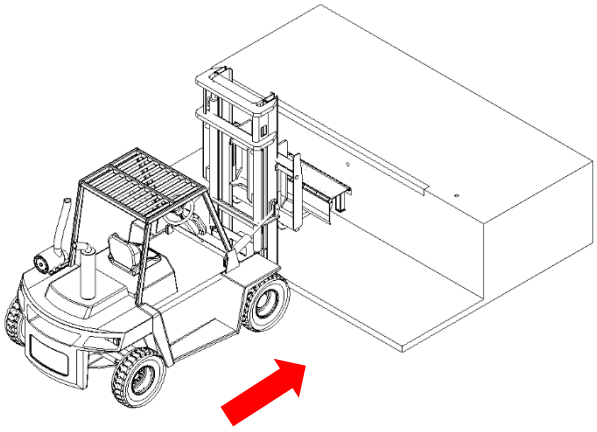
VERY IMPORTANT: When handling the PA63, the law on the prevention of occupational hazards and the regulations on health, safety and hygiene at work must be always observed.



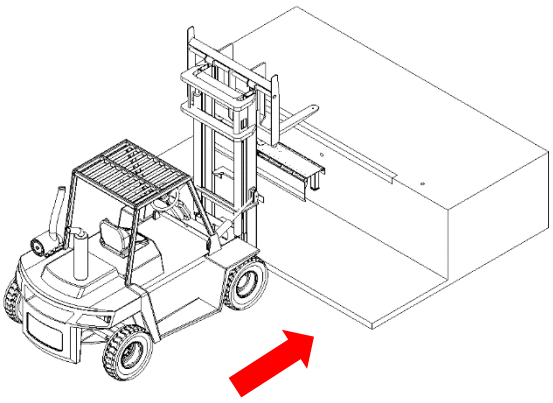


It is very important that the final location of the Hydraulic MiniDock Leveller has a metal pre-frame (type LPN 100 or similar) fixed to the site by means of metal clamps. It is on this profile that the gangway must be welded, hence the importance of its good fixing (see pages 5 and 6 for details).

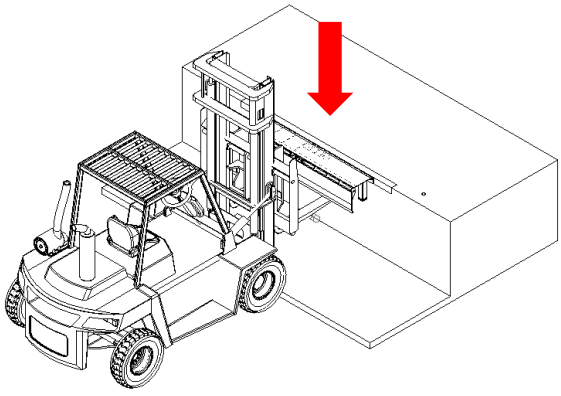
The PA63 must be placed on site with the aid of a crane, forklift or similar, using chains or slings for lifting, with a load capacity equal to or greater than the weight of the PA63.

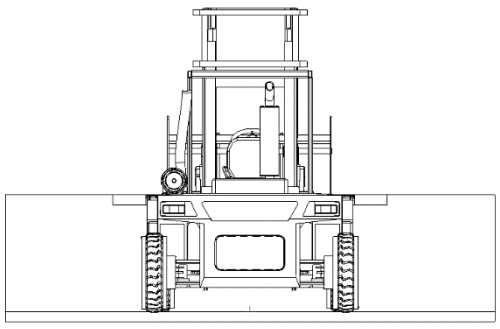


A Option



B Option



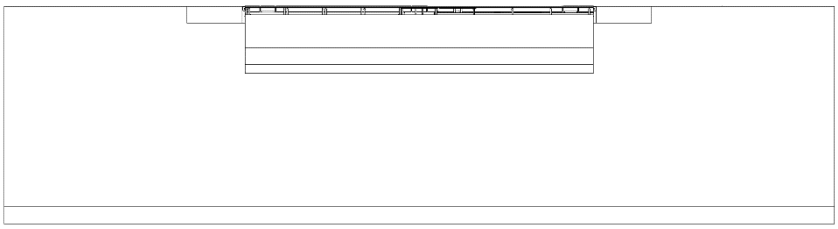


05.02 – Fixing walkway at the location

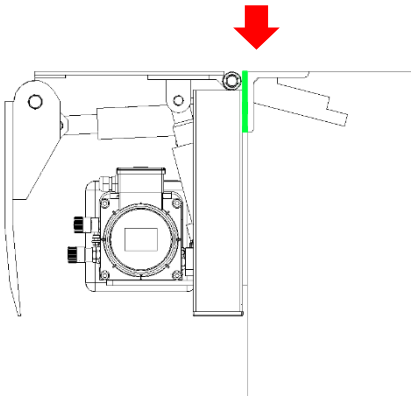
Once the Hydraulic MiniDock Leveller has been placed in its definitive location, check the following points:

Pier height. The PA63 has a height of 1200mm, which can be adjusted by means of the 4 adjustable feet in +50mm and -35mm (approximately). If the dock height is higher than 1250mm, additional thicknesses (extra option) will be required.

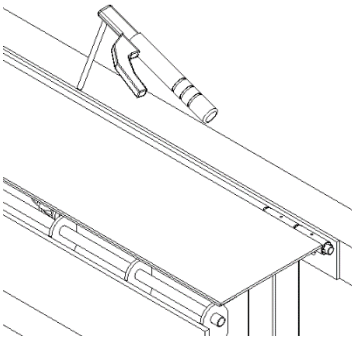
Before welding the Hydraulic Mini Dock Leveller to the subframe, we must make sure that the Hydraulic Mini Dock Leveller is in the right position for its correct working, centred with the subframe, and perfectly level, therefore we leave the same distance on the right side as on the left side.



Once the straight beam (fixed part of the machine) has been aligned with the sub-frame installed at the floor level of the building, we will take the opportunity to weld the machine to this sub-frame:

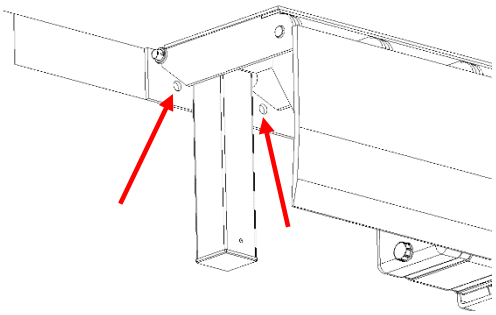


- Several welding points must first be made, starting at the ends will ensure that the Hydraulic Mini Dock Leveller is perfectly aligned with the subframe.

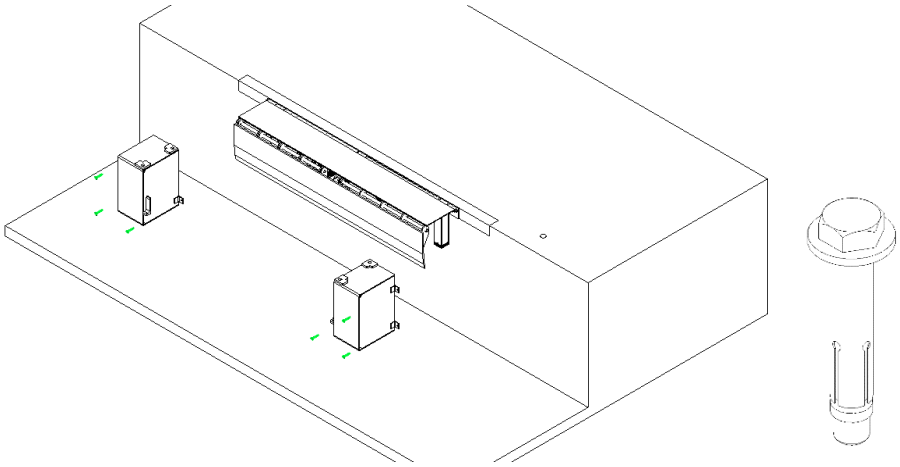


- If this is not the case, a radial saw will be used to break the weld spot(s) and start again.

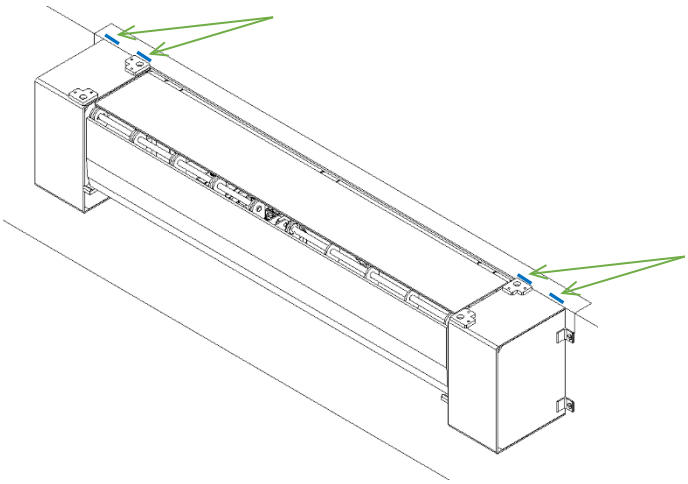
- Once the Hydraulic Mini Dock Leveller is aligned and centred in the desired position, the weld beads can be welded. Inkema recommends 5 welding beads of 6mm. throat and 100mm. length, evenly distributed.



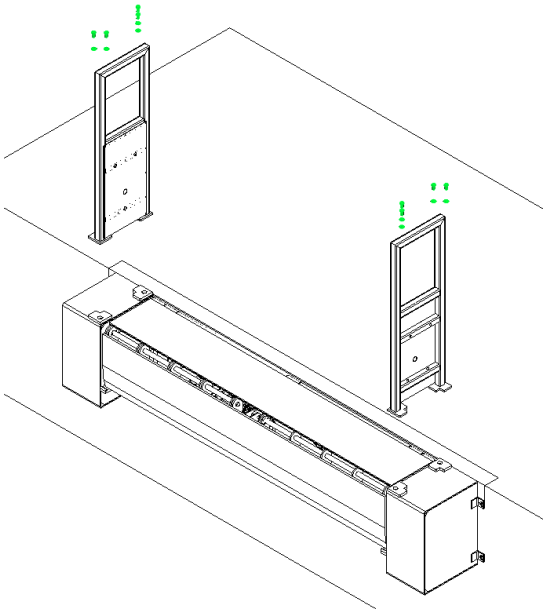
- The side drawers are then fitted. These are fitted with 3 angles with drill holes for fixing by means of a Ø12 metal dowel.

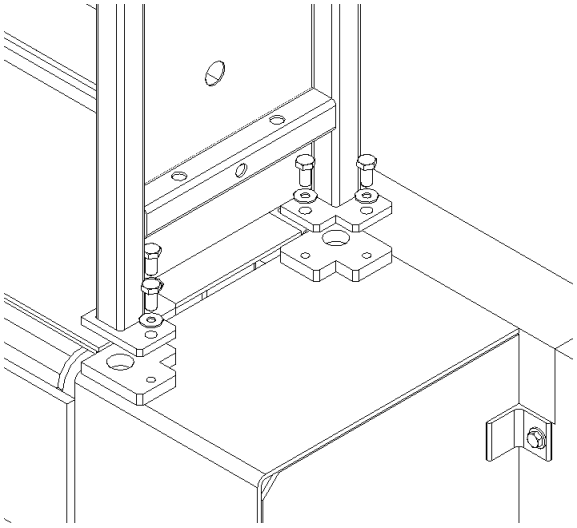


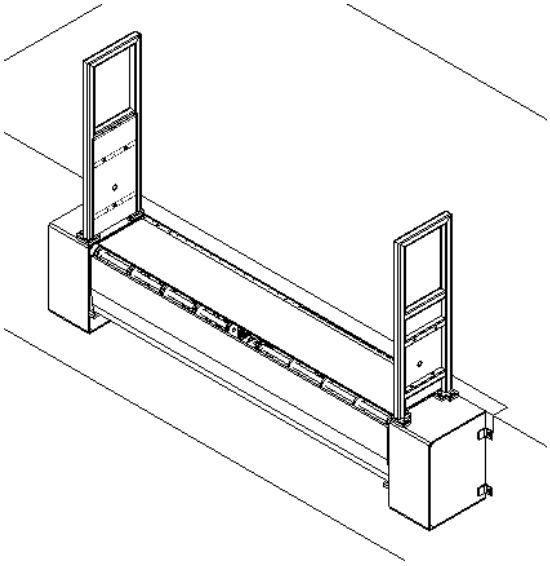
- In addition, they will also be welded at the top with 2 cords, like those of the Hydraulic Mini Dock Leveller, but about 60mm long. And their perfect alignment will be ensured (with a level).



- The handrails can then be fitted, each with 2 M-10x25 screws DIN-933 + 2 washers for M-10 DIN-125.







05.03 – Installation of electrical panel

The location of the electrical panel may vary depending on the construction site. Most commonly it is located next to the Hydraulic Mini Dock Leveller, but since this type of machine is usually placed in areas that do not necessarily have to be next to a door, it could be in another location or further away.

It should be in the viewing area on the driver's side of the truck to allow the Hydraulic Mini Dock Leveller operator to see and speak directly to the driver if necessary.

(See connections to the electrical panel page 27)

Fix the electrical panel box to the wall (if present), at the desired height and perfectly aligned with the cable outlet of the Hydraulic Mini Dock Leveller approximately 1300mm from the floor.

Adjust the conduit for the passage of the electrical cables to the distance between the electrical panel and the floor.

Fix the tube to the wall (with at least 3 clamps), it must be perpendicular to the floor of the loading dock and aligned with the cable outlet of the Hydraulic Mini Dock Leveller.

The plastic tube is delivered sealed to one side of the Hydraulic Mini Dock Leveller bed.

Once everything is securely fastened, run the cables, and connect according to the wiring diagram enclosed inside the electrical panel (see connections to the electrical panel page 27).

05.04 – Finished installation.

Remove the front strips that join the lip to the bedplate.

Finally, check that the Hydraulic Mini Dock Leveller paintwork is in good condition and repair any defects.

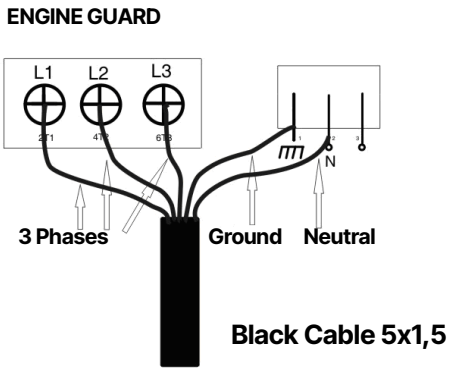
The installation can be considered finished when the installer authorised by INKEMA completes the corresponding assembly control form.

05.05 – Electrical panel connection

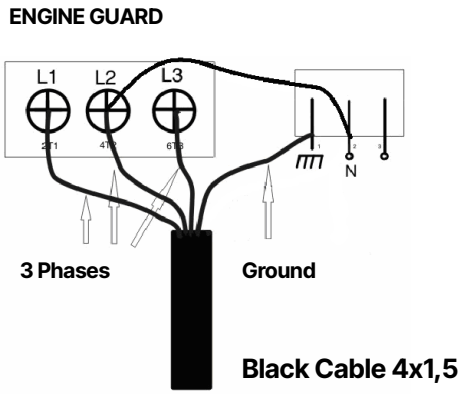
Before installing the operator, make sure that the supply voltage is disconnected.

05.05.01 – Power input connection

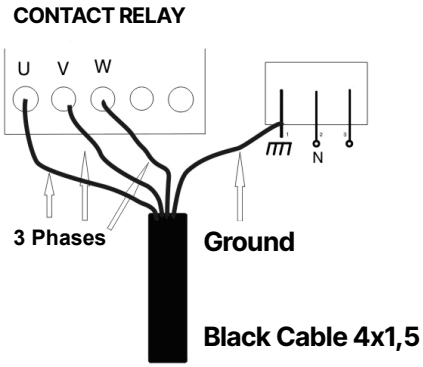
380 V, three-phase connection



220 V, 3-phase connection

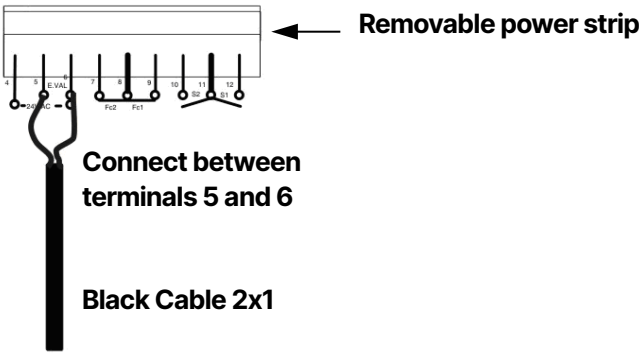


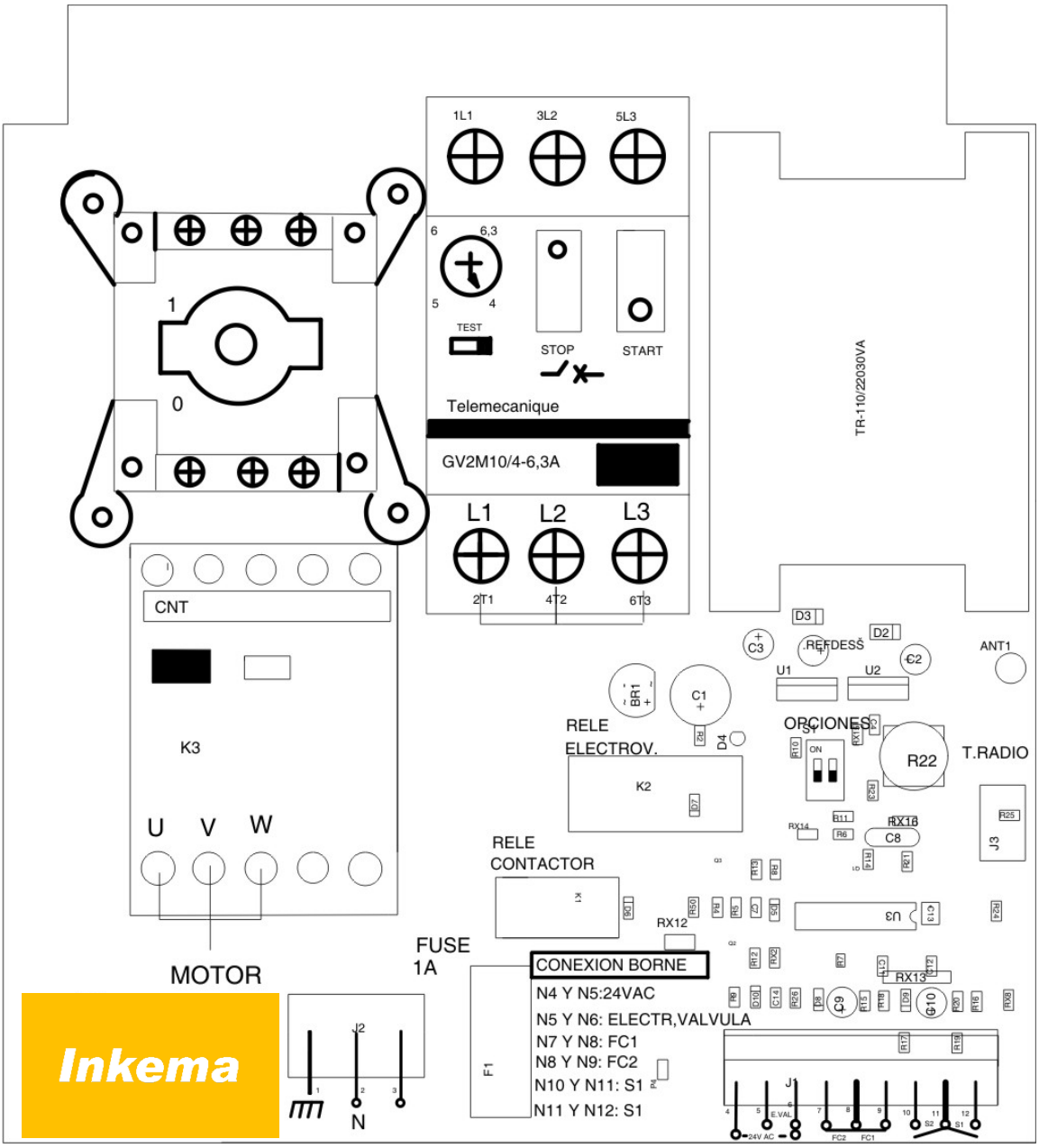
05.05.02 – Motor input connection



Note: Check the rotation direction and switch the motor output to U-V-W (if it's not correct).

05.05.03 – Solenoid valve connection





05.05.04 – Terminal descriptions

1	Ground
2	220V AC Power Input
3	220V AC Power Input
4	24V AC Power Supply
5	24V AC Output for Solenoid Valve
6	24V AC Output for Solenoid Valve (Power Supply)
7	Solenoid Valve End Limit Switch FC2 N.C.
8	Common for Limit Switches
9	Motor End Limit Switch FC1 N.C.
10	N.O. Pushbutton S2 (Solenoid Valve)
11	Common for Pushbuttons
12	N.O. Pushbutton S1 (Motor)

Note: N.O., Normally Open
N.C., Normally Closed

05.05.05 – Selection of Actions

Select the type of operation by means of the microswitches.

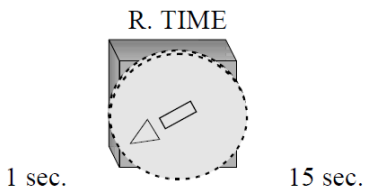
SCISSOR LIFT TABLE TYPE, Manual operation Man present

RH1 LEVELLER type Semi-automatic operation

LEVELLER WITH AUTOMATIC RETURN type, Semi-automatic operation

05.05.01 – Timers

Leveller raising time. Regulates the automatic raising time when FC2 is activated.



05.05.01 – Operation.

The automatism manoeuvres vary, depending on the type of operation selected.

a) TABLE type Man present manual operation

S1 *activates the motor while pressed; electro valve deactivated.*

S2 *activates the electro valve when pressed; motor stopped.*

FC1 *deactivates the motor.*

FC2 *deactivates the electro valve.*

b) RH1 LEVELLER type semi-automatic operation

S1 *activates the motor while pressed; electro valve deactivated.*

S2 *deactivates the motor and the electro valve.*

FC1 *deactivates the motor.*

FC2 *deactivates the electro valve.*

c) LEVELLER WITH TIMED L.S., type semi-automatic operation.

S1 activates the motor while pressed; electro valve deactivated.

S2 deactivates the motor and the electro valve.

FC1 deactivates the motor.

FC2 activates the motor and deactivates the electro valve, when **FC2** is deactivated, the motor continues operating during the time selected in **R. TIME** and the electro valve is activated, which will continue to be activated.

05.05.02 – Accessories.

Radio Card

Permits the use of a radio card for activating the automatism remotely. This action is equivalent to pressing buttons S1 and S2

RADIO C. connector

05.05.03 – Characteristics

Power supply	220V ac +- 20%
Fuse	1Amp.
Automatic Raising Time	1 sec. to 15 sec.
Radio Card	Optional
Operating Temperature	-20º C to +85º C

06 – Dismantling

06.01 – PA63 Dismantling.

VERY IMPORTANT: When handling the leveller, always respect the occupation risk prevention legislation and the regulations regarding safety, hygiene, and health at work.

To dismantle the PA63, the machine must be in the rest position.

Disconnect the power supply and the control panel, disassemble the control panel box and the power cable tube.

Strap the front of the Hydraulic Mini Dock Leveller to prevent it from opening during handling. To do this, place a minimum of two 30x1mm. steel straps.

Then unscrew the railings and remove them.

Unscrew the 3 drawer screws, wedge them so that they do not fall out, and cut the 2+2 welds so that they can be removed.

Next, wedge the Hydraulic Mini Dock Leveller to keep it stable and cut all the welds for fastening it to the site sub-frame.

Once this work has been completed, the Hydraulic Mini Dock Leveller can be removed.

This operation must be carried out with the help of a crane or similar, using chains, slings or similar. With a load capacity equal to or greater than the weight of the Hydraulic Mini Dock Leveller.

07 – Trubleshooting

Warning: All checks must be made taking the opportune safety measures:

- Do not perform checks when under voltage.
- Ensure which voltage is being measured with the multimeter.
- All cable connections and disconnections will be made when not under voltage.
- Put the safety bar in place whenever it is necessary to work underneath the machine.
- Do not test the machine when the operator is underneath it.

07.01 – The panel DOES NOT light up.

No power	• Check the input voltage of the panel **L1, L2, L3 and N** *There must be 400v between **L1 and L2*** *1. There must be 400v between **L1 and L3*** *There must be 400v between **L2 and L3*** *There should be 230v between **N** and **L1*** • Check that the motor guard has not fused. *The black button should be pushed in and the red one out.* • Check the voltage at the section switch input **L1, L2** and **L3** *There must be 400v between **L1 and L2*** *There must be 400v between **L1 and L3*** *There should be 400v between **L2** and **L3*** • Check the voltage at the section switch output **T1, T2** and **T3** *There should be 400v between **T1** and T**2*** *There should be 400v between **T1** and **T3*** • Check the voltage in the contactor 1**L1, 3L2 and 5L3** *There should be 400v between **1L1** and **3L2*** *- There should be 400v between **2T1** and **6T3*** *- There should be 400v between **1L1** and **5l3*** *- There should be 400v between **3L2** and **5L3***
The panel does not light up	• *Fuse Blown* • *Check the red cable between contactor 1L1 and the terminal block of connection 3* • *Check the voltage between N and F in the terminal block (terminal connections 2 and 3)* - *It must be 230v*
Fuse Blown	• Crossover or failure in the electro valve - *Disconnect the electro valve cables in terminal connections **5 and 6*** • *Transformer burnt (transformer swollen or smell of burning)* - *Replace the board.* • Fault in board or damaged tracks - *Replace the board*

07.02 – The leveller DOES NOT rise.

Voltage or phase failure	• Check the input voltage of the panel **L1, L2, L3 and L3** *There must be 400v between **L1 and L2*** *There must be 400v between **L1 and L3*** *There must be 400v between **L2 and L3*** • Check the voltage at the section switch input **L1, L2** and **L3** *- There must be 400v between **L1** and **L2*** *- There must be 400v between **L1** and **L3*** *- There must be400v between **L2and L3*** • Check the voltage at the section switch output **T1, T2** and **T3** *There must be 400v between **T1 and T2*** *There should be 400v between **T1** and **T3*** *There must be 400v between **T2** and **T3*** • Check the voltage in contactor **1L1, 3L2 and 5L3*** *- There must be 400v between **1L1** and **3L2*** *- There must be 400v between **1L1** and **5L3*** *- There must be 400v between **3L2** and **5L3*** • Check the voltage at the output of contactor **U, V and W*** *- There must be 400v between **U** and **V*** *- There must be 400v between **U** and **W*** *- There must be 400v between **V** and **W***
The motor guard jumps	• Motor guard amperage low - Turn the amp adjuster in a clockwise direction to raise the amps to the nominal motor consumption (220v3R – 3'5A / 380v3R – 2A) • Faulty cabling - Disconnect the cables of **U, V and W** of the contactor and **Motor** and check the continuities of the cables with the multimeter at each end of the cables - Check the cables are not crossed, there must be no continuity between them. Place the multimeter between: - The brown and the black cable - The brown and the grey cables - The black and the grey cable • Shunt to ground - Check that there is no continuity between the ground and brown, ground and grey and ground and black cables - There must be no continuity between the casing of the motor and the motor connections **U, V and W**
The motor does NOT operate	• Check the output voltage of **U, V and W** in the panel. *- There should be 400v between **U** and **V*** *- There should be 400v between **U** and **W*** *- There should be 400v between **V** and **W*** • Check the motor cables and motor connections. *- There should be 400v between **U** and **V*** *- There should be 400v between **U** and **W*** *- There should be 400v between **V** and **W*** • Check that the motor has not seized up - Dismantle the fan casing and try turning it manually • The contactor is not operating. - Check whether there is continuity in the button *- Check the terminal block connection (connection terminals **11** and **12**)* - Check the safety connection (connection terminals 8 and 9) • *If there is **no** safety connection installed there must be a bridge connection between connection terminals **8 and 9*** *- If a safety connection is connected check that it is on **NC** (contact closed)* *- When operating as a table there is a table limit switch for raising the table, check it is on **NC*** • Contactor relay damaged
The motor is operating	• The motor is turning in reverse *Change 2 motor phases **(U** for **V)*** • The limit valve of the power unit is not correctly adjusted 1. *Tighten the valve by quarter turns and check*
No hydraulic fluid	• Fill the hydraulic circuit • Hydraulic oil leak (piston or sleeve)

07.03 – The leveller DOES NOT descend.

No voltage in the electro valve	• Check that **PIN 1** is **ON** *(When operating as a table **PIN 1** must be **OFF**)* • Check the safety of **FC2** connection terminals **7** and **8** *If **no** safety element is installed there must be a bridge connection between terminals 7 and 8* *If there is a safety connection connected (when operating as a table the foot guard is presents) check that it is on **NC** (contact closed)* • Check the voltage output in terminals **4** and **6** *- There should be 24v between terminals **4** and **6*** • Check the voltage output in terminals **5** and **6** • *-There must be 24v between terminals **5 and 6** after pressing once (the clear relay is blocked)*
Electro valve	• Cable cut - *Disconnect the cable from terminals 5 and 6 of the electro valve Check the continuity of the cables.* • Check the input voltage of the cowl is 24v ~ - *Disconnect the cowl from the coil and check that the input voltage is 24v in alternating current and 24v ± in continuous current at the cowl output* • Electro valve coil - *Check that the coil is magnetising. Remove the coil from the valve and under voltage, insert a screwdriver for a short period of time, 2 or 3 seconds.* ***Very important:** If it is in for longer the coil will be burnt.* • Electro valve in sliding door - *Check that when the electro valve cowl is taken off and replaced, the sliding door can be heard activating and deactivating*
Power unit	• Lowering regulator too tight or too loose - *If the valve is too tight turn the screw in an anti-clockwise direction (loosen)* - *If the vale is too loose, the piston safety valve could be triggered (tighten)* • Piston safety valve - *Dismantle the piston sleeve and connection fitting and check that the safety valve is not blocked*

07.04 – The lip does NOT open or functions very slowly.

Power Unit	• Sequence valve closed. - *Turn the adjusting screw in an anticlockwise direction (loosen) in quarter turns*
Lip	• Lip too stiff - *Dismantle the piston and check that the lip moves freely.*

07.05 – The lip opens before the leveller raises

Power Unit	• Sleeves assembled in reverse Change the sleeves in the power unit • The sequence valve is too open.

08 – Contact

Contact us.

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