

Technical Manual

Desk



ORIGINAL INSTRUCTION

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0. FOREWORD

0.1. HOW TO USE THE MANUAL

0.1.1. IMPORTANCE OF THE MANUAL

This manual provides instructions on the ordinary and extraordinary maintenance of Desk.

Further ordinary maintenance instructions are provided in the Operator Manual.

Before carrying out any repair or extraordinary maintenance operation, carefully read this manual in all its parts, paying more attention to the paragraphs related to precautions and safety alerts.

In case problems or difficulties should arise, the TECHNICAL SERVICE SUPPORT of Alfa Srl is always available to provide the right support, advice, explanation and assistance.

Alfa Srl reserves the right to make modifications for improving its own products without prior notification.

The incorrect use of the system can lead to loss of warranty in all its forms and terms.

0.1.2. HOW TO KEEP THE MANUAL

Do not remove, modify, rewrite contents of this manual for any reason.

Keep the manual in a safe place, protected from heat and humidity.

0.1.3. HOW TO CONSULT THE MANUAL

This manual comprises:

- COVER PAGE IDENTIFYING THE TYPE OF PRODUCT
- TABLE OF CONTENTS
- INSTRUCTIONS AND/OR NOTES ON THE PRODUCT

The COVER PAGE identifies the product described in this manual.

Use the CONTENTS to find the list of CHAPTERS and PARAGRAPHS contained in the manual and their subjects.

The INSTRUCTIONS AND/OR NOTES ON THE PRODUCT define the safe working practices and advice on the correct procedures and the skills required to correctly operate and maintain the system.





Some images of this manual having been enclosed for easier identification of the described parts may not be exactly the same as the ones in your System.

0.1.4. SYMBOLS USED IN THE MANUAL

The safety and advice symbols used in this manual are used to draw the reader's attention to warnings concerning safety or indicating good working practices.

The same symbols are also placed on the machine to indicate dangerous areas and refer to the relevant safety notes in the manual.

MEANING OF THE SYMBOLS

	<p>WARNING! GENERAL DANGER</p>
	<p>WARNING! HIGH VOLTAGE</p>
	<p>WARNING! RISK OF CRUSHING.</p>
	<p>GROUND CABLES THIS SYMBOL INDICATES GROUND REFERENCE POINT.</p>

0.1.5. PROCEDURE FOR UPDATING THE MANUAL IN CASE OF MODIFICATIONS TO MACHINE

If the MACHINE or MANUAL is MODIFIED in any way, an UPDATE could be sent for insertion into the printed Manual.

0.2. INSTRUCTIONS FOR ORIGINAL SPARE PART AND CONSUMABLE ORDER




To provide a fast and efficient service, always specify the following information when ordering replacement and consumable parts:

- **Machine type:** as indicated on nameplate.
- **Serial number:** as indicated on nameplate.
- **Quantity** of each item required.
- **Code** of required part.
- **Description** of required part.








0.3. SAFETY INFORMATION

0.3.1. PRECAUTIONS AND USAGE REGULATIONS

The machine must be positioned in an enclosed area that complies with the environmental requirements set out in the relevant paragraph.

	<p>Do not install the machine in a dusty environment. Do not expose the machine to sources of heat, excessive cold, water, electromagnetic energy, or sources of smoke. The machine must be positioned on perfectly level flooring.</p>
	<p>Always make sure that the power cable is intact and free of any cuts or cracks. In case of cable damage, renew the cable using genuine spare parts.</p>
	<p>The noise level generated by the machine is less than 70 DB (measured at a distance of 1 m and at a height of 1.60 m from the floor). This value can be exceeded in certain work environments. If the noise to which the operator is exposed on a daily basis is presumably greater than 85 DB, effective hearing protections must be used, as required by the 86/188/EEC regulations.</p>

0.3.2. GENERAL SAFETY WARNINGS

	<p>Desk is compliant with all the safety requirements of the main European and extra-European Standards and Institutions. Despite that, it is suggested to read carefully the information contained in this chapter and in the next pages since they show the possible dangerous situations and the necessary precautions to take.</p>
	<p>The machine is provided with doors and guards that prevent the operator from getting in contact with mechanical and electrical hazardous parts. A periodical check on the safety devices must be performed according to the instructions provided by this manual. If the safety protection systems are damaged, turn off the machine and call the technical service.</p>
	<p>High voltage parts - Risk of electric shock No high voltage part is accessible from the User area. All the high voltage circuits are contained into enclosed areas and protected by fixed guards. The high-voltage internal parts are accessible to the maintenance operator and are protected against direct contact with dangerous parts by means of IP 2X or higher class protection. Dangerous parts are marked by the symbol indicated on the side.</p>
	<p>Dangerous mechanical parts - Risk of crushing or trapping. Internal moving parts are accessible only to technical personnel. Do not put your hands into the machine working areas. Tie hair to avoid the risk that it can be trapped in the machine. For the same reason, keep away of the machine or avoid wearing any hanging objects such as ties, necklaces, pendants or other similar items.</p>
	<p>High-temperature parts - Risk of scalds The machine includes no components or areas that may reach so high temperature as to become dangerous for the user, the maintenance operator or the technician. The areas where this risk can occur, under faulty conditions, are marked by the symbol indicated on the side.</p>
	<p>Flammable parts - Risk of fire The machine is made from materials which do not propagate fire in order to minimise fire risk. Nevertheless, the machine must be installed in a duly ventilated room, complying with the manufacturer's installation requirements. Never leave materials, fluid or foreign objects that might increase the risk and spread of a fire inside the machine.</p>
	<p>It is forbidden to modify the machine's internal an external protections. Contact Alfa's Technical Support Service if necessary. Alfa Srl shall bear no responsibility for any damage that may arise due to the failure to comply with the above instructions. In the event of a malfunction, contact the manufacturer's technical support service.</p>



GROUND CONNECTION

Ground wire connection point.

Always ensure that yellow-green ground leads are duly fastened to the ground point indicated by the symbol on the side.

DO NOT REMOVE GROUND CONNECTIONS.

In case of lead damage, switch machine off and immediately contact the technical service support.

IF THE EQUIPMENT HAS BEEN USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED

0.3.3. USERS AND ACCESS LEVELS

The machine has three different user interfaces:

- USER: an operator who uses the machine for the purpose of producing a colour sample;
- MAINTENANCE OPERATOR: user in charge of performing ordinary maintenance operations, such as canister and tank filling, nozzle cleaning and autocap moisturising. Access to the dedicated software area is protected by a first level password;
- TECHNICIAN: an expert operator authorised to access the machine's special diagnostic, calibration, configuration, troubleshooting, and extraordinary maintenance functions. Access on the part of these operators is protected by a second level password.
- ADMINISTRATOR: a superuser who's authorised to access the machine's software in order to add or delete users, change user rights, reset passwords, etc.

In order to identify the various areas of intervention, the following definitions must be taken into account:

- USER AREA: the area outside the machine that the user accesses in order to produce a colour sample and to perform ordinary maintenance operations;
- MAINTENANCE AREA: the area inside the machine, which can be accessed with a key, where ordinary maintenance operations are usually performed (on Desk such operations are performed by the MAINTENANCE OPERATOR); extraordinary maintenance operations require the access to the SERVICE AREA and are performed by the TECHNICIAN (replacement of dispensing units, circuits, electric parts);
- SERVICE AREA (FOR USE BY TECHNICIANS): the internal areas of the machine that can not be accessed using a single key, but with other tools (circuits electrical cabinets);

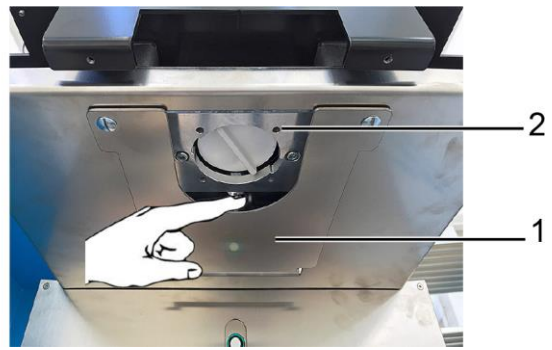
0.3.4. RESIDUAL RISKS AND DANGEROUS AREAS

USER AND MAINTAINER - The potentially dangerous areas associated with mechanical moving parts are described below:

- movement of the loading can lifter; its movement in manual configuration does not pose any risks that are not already obvious; its movement in the "automatic can lifter" configuration poses a risk of crushing close to the limit stops, between the can lifter and the fixed mechanical parts (see figure on the side).
- paint tanks: risk of squeezing arms, hands or fingers due to the movement of stirring blade. The stirring cycle activation is timed by the software and may occur unexpectedly. Do not insert your hands into the base or colorant tanks. Always shut off the machine prior to performing any necessary interventions.
- Opening doors: pay attention while closing the doors; possible risk of crushing for hands and fingers (see figure on the side).



- Autocap movement; pay attention to possible risks of crushing. Never insert your hands or fingers between fixed protection (1) and mobile autocap (2).



TECHNICIAN: The authorised technician can remove the machine fixed protections and access the internal parts containing live electrical components.

- Electrical panel area: risk of electric shock.

Any intervention that requires the operator to access zones where risks of electric shock are present must be performed with the machine off.



REMOTE ASSISTANCE: The machine may also be remotely activated via Personal Computer or Smart device. Pay maximum attention during access to dangerous areas.

0.3.5. CONTACT WITH COLORANTS OR BASES

Always beware of any product leaks from the machine or circuits during production, as well as during cleaning and maintenance operations.

Contact with the products (colorants or bases) can cause irritations or injuries if not properly treated.

In case of need always refer to the safety sheet of the concerned liquid, available at the colorant manufacturer.

0.3.5.1. GENERAL FIRST AID MEASURES

In the event of eye contact: remove contact lenses, if present. Immediately rinse the eyes with running water for at least 15 minutes, holding the eyelids open. Consult a physician immediately.

In the case of skin contact: remove the contaminated garments. Wash the skin thoroughly with soap and water.

Ingestion: immediately consult a physician and show them the can, label or material safety data sheet. Keep the person warm and relaxed. Do not induce vomiting.

0.4. TECHNICAL SPECIFICATIONS

0.4.1. ELECTRICAL SPECIFICATIONS

Power supply	100-240Vac 50-60Hz
Max current	3.0÷1.7A
Absorbed power	400W max
Fuses 5X20 mm	T3.15A-250V Q.ty 2pcs
Working noise (*)	Lower than 70 dB (A)

(*) A-weighted sound pressure level determined during normal use to 1 m distance far from the surface of the machinery and to 1.60 m height from the floor.

0.4.2. EQUIPMENT CLASSIFICATION AND REFERENCE STANDARDS

Overvoltage category	II See note (1)
Protection classification	IP 20
Class of equipment	I
Reference standards	IEC 61010-1 IEC EN 61326-1
Airborne noise (*)	Lower than 70 dB (A)

Note (1):

The equipment is protected for overvoltage up to 1500V. For power lines subjected to transients with peaks of voltage greater than 1500V, the use of external suitable protection devices is recommended.

0.4.3. OPERATING CONDITIONS

Operating temperature (*)	+5 ÷ +35°C
Relative humidity	30% ÷ 90% without condensate
Storage temperature	-25 ÷ +55°C
Altitude	2000 m

(*) The products (colorants and semi-finished products) lose their rheological characteristics outside the temperature range of 15÷ +35°C.

1. DESCRIPTION OF THE MACHINE

This paragraph shows the main external and internal components of the Desk and describes the replacement modes.

1.1. MAIN COMPONENTS

1. Colorant module or Master module
2. Dispensing head
3. Autocap
4. Can lifter (automatic or manual)
5. Mobile Master module (optional)
6. Electric panel (on the back side)

A machine control PC is typically housed inside the machine itself, by removing the rear panel that encloses the electrical panel.

Keyboard and monitor can be placed over the dispensing head.



Desk Master

1.1.1. DYE UNITS

The machine can house up to 16+8 colorant groups, each one equipped with its own 3 or 6 litre tank. In the configuration visible on the side, the canisters are positioned on the left (12 pcs) and on the right (4 pcs) of the dispensing head.

Each circuit is electrically connected to the machine by means of a single connector placed in the lower part of the pump support.



1.1.2. DISPENSING HEAD WITH MOISTURISING SYSTEM

The dispensing head contains the dispensing circuit terminal parts.

The dispensing nozzle is positioned in the lower part, which is reached by all group and autocap delivery circuits (1). Inside the head, under the fixed metal cover, there are the circuit electrovalves (2).

The upper surface (2) can be used to house a PC monitor, whereas the inclined opening door (3) can be used to place a keyboard.

A switch-on/status button-warning light which is also used as stop control (4) is present in the front part, together with the optional humidifier level inspection window (5).

The warning light can take three different statuses:

Steady light = machine ON (STANDBY/DISPENSING)

Flashing light 1s ON / 1s OFF = RESET in progress

Flashing light 0.5s ON / 0.5s OFF = ALARM

When the stop button is pressed, the machine switches to error status (ERR.10), and a RESET is required.

The components subject to maintenance and the humidifier are accessible inside the opening door.

1. Head Door
2. Distilled water tank
3. Cap for refilling
4. Level inspection window
5. Laser system for canister alignment



1.1.3. AUTOCAP

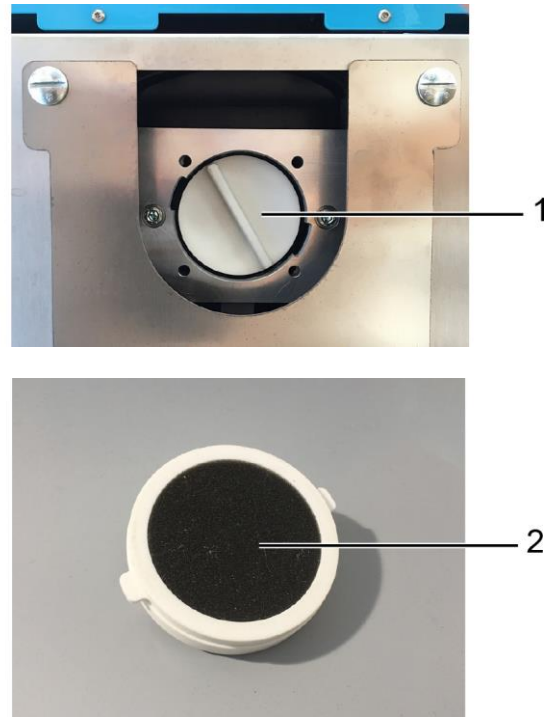
This unit normally keeps the area under the dispensing nozzles moist and sealed to reduce any drying issues.

An automatic moisturising system ensures a constant and optimal moisturising in the dispensing area sealed with a hermetic O-ring gasket (see also chapter 3 – HUMIDIFIER).

The unit is electronically controlled: it is opened a few seconds before dispensing, and immediately closed after dispensing is completed.

The Autocap can take two different statuses, corresponding to two different positions: CLOSED (moisturising) and OPEN (dispensing/maintenance).

A small sponge (2) placed inside the autocap cover (1) is used to accumulate moisture produced by the humidifier and collect any drops of product trickled from the nozzle.



1.1.4. CAN LIFTER

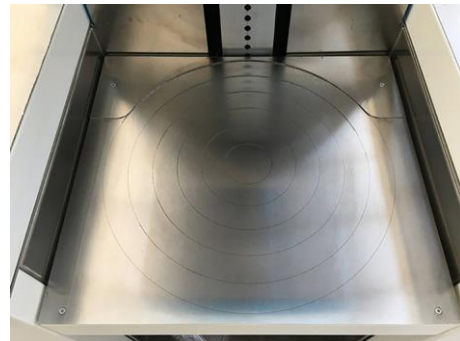
The machine produces colour samples in volumes ranging from 500cc to 20 litres.

The can lifter is the adjustable supporting surface on which to position the can to be filled. It can be positioned at different heights in order to accommodate cans of appropriate volumes, based on the quantity to be dispensed.

The bearing surface features concentric circles that indicate the exact position of the can according to its diameter.

The can lifter can be moved:

- Automatically: the machine changes height automatically
- Manually: the operator lifts or lowers the can lifter manually.



1.1.5. MASTER MODULE

The machine can be equipped with a "Master Module" available in two different formats.

The standard master module (named "LP") is equipped with four 30-litre or 6-litre tanks for load semi-finished products and titanium. High productivity version ("HP", see figure on the side), instead, is provided with 50-litre and 30-litre tanks.

Under each tank, fixed onto it, there is a shut-off tap with built-in strainer and the pumping unit.

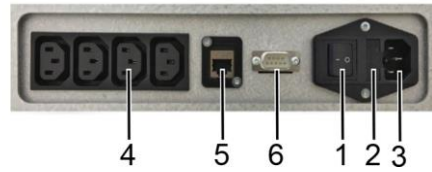
The pumps can feature different capacities according to the tank capacity.



1.1.6. ELECTRICAL CONTROL PANEL

It is located on the rear side of the machine and provides the main electrical connections of the system.

1. On/off Switch
2. Fuse holder 5x20mm T4A 250Vac
3. Standard CT-120 Power Socket 100-240Vac
4. 4 x standard C14 connector
5. Ethernet Port RJ45
6. Port RS-232 (for scale)



1.1.7. LTE ROUTER MODEM

The product can be provided with a LTE connection device for an easy remote monitoring and piloting, even if no wired Ethernet connection is present.



2. PARTS REMOVAL AND REPLACEMENT

2.0. SAFETY REGULATIONS ON MAINTENANCE

2.0.1. AUTHORISED PERSONNEL

The operations described in this chapter must be carried out in dangerous service areas **RESERVED TO TRAINED AND AUTHORISED TECHNICAL PERSONNEL.**

2.0.2. MACHINE SWITCHING OFF

In order to switch off the machine, turn the main switch to its “O” position and disconnect the power cable from the socket.

NOTE: in order to disconnect the machine, the operator must not rely exclusively upon the power switch, but must also unplug the machine power cable.

2.0.3. ACCESS TO THE REPAIR AND MAINTENANCE OPERATIONS



THE MACHINE POWER CABLE MUST BE UNPLUGGED FROM THE MAINS BEFORE ACCESSING THE SERVICE AREA AND BEFORE PERFORMING ANY REPLACEMENT/REPAIR OPERATIONS. IT IS ALSO RECOMMENDED TO POSITION THE CABLE SO THAT THE PLUG IS ALWAYS VISIBLE TO THE OPERATOR DURING THE COURSE OF THE MAINTENANCE INTERVENTION.

2.0.4. MACHINE RESTORATION AND START AFTER THE INTERVENTION

Once the repair intervention has been completed:

- **RESTORE ALL THE ELECTRICAL CONNECTIONS**
- **RESTORE ALL THE GROUNDING CONNECTIONS**
- **REINSTALL ALL THE REMOVED PROTECTION DEVICES**
- **PLUG THE MACHINE TO THE MAINS**
- **PERFORM A FUNCTIONAL CHECK (SEE PARAGRAPH 3.4 AND CHAPTER 4 OF THE OPERATOR MANUAL)**

ALFA SHALL BEAR NO RESPONSIBILITY FOR ANY MACHINE MALFUNCTIONS OR PROBLEMS THAT MAY ARISE DUE TO THE OMISSION OR INCORRECT EXECUTION OF THE MAINTENANCE OPERATIONS.

2.0.5. PRODUCT DISPOSAL

During the maintenance or repair interventions it may be necessary to empty canisters and tanks from the paints contained in the circuits.

Colorants and base must be disposed of in suitable collector tanks to be treated and disposed of in a suitable way.

It is forbidden to release the products in the environment or in the public sewers.

2.1. EXTERNAL COVER REMOVAL

The machines may have different panels, depending on the configuration, but the method here below virtually applies to all models.

To reach the colorant groups, the nozzle and the electrovalves of the circuits it is necessary to remove the covers of the machine as described in this paragraph.

Before starting the removal procedure, switch off the machine (see para. 2.0.3)

2.1.1. SIDE AND FRONT PANELS

Remove the side panels as follows:

- Loosen the two M4x10 screws with countersunk head (1) with a 2.5mm Allen wrench.
- Remove the panel by overturning it in the direction indicated by the arrow and releasing it from the retainers in the lower side of the structure.

Repeat the operations described above to remove the panel on the opposite side of the machine.



To remove the front panels, proceed as described above, and loosen the relevant retaining screws (2).



2.1.2. REAR PANELS

Remove the rear panels as follows:

- Loosen the corresponding M4x10 screws with button head (3) with a 2.5mm Allen wrench.
- Disengage the panel and turn it as shown by the arrow in the figure, then lift it up to release it from the retainers in the lower side of the structure.

Remove the central panel (4) to reach the machine switchboard.

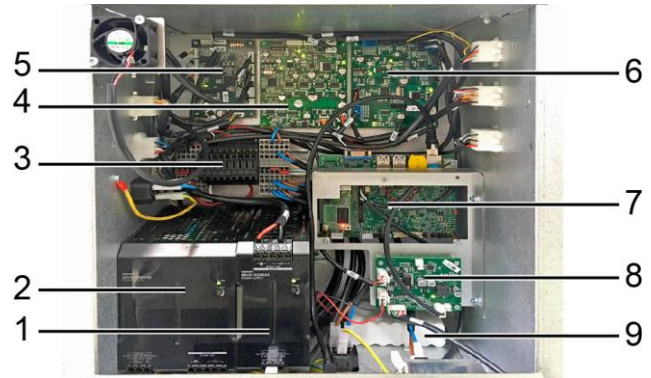


WARNING: Collect the any toothed washer under the screws! When reassembling the panels, fit said washers to their original position.

2.2.. ACCESS TO THE ELECTRICAL PARTS

Behind the rear removable panel of the machine there is an electric compartment at mains voltage with:

1. power supply unit, 100-240Vac, 24Vdc
2. power supply unit, 100-240Vac, 48Vdc
3. circuit protection fuses
4. Autocap circuit SCCB board
5. HUTBRD board (for humidifier)
6. MAB board
7. PC Linux board
8. SPB board
9. battery

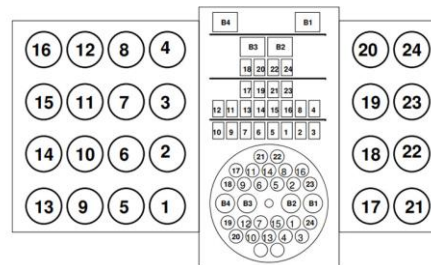


2.3. COLORANT CIRCUIT REMOVAL

To replace the colorant group proceed as follows:

- make sure the machine is disconnected from the power supply as described in para. 2.0.3.

Note: the electric connection and disconnection of the colorant groups must be performed with machine off. Performing such operations with machine on could seriously damage the electronic components.



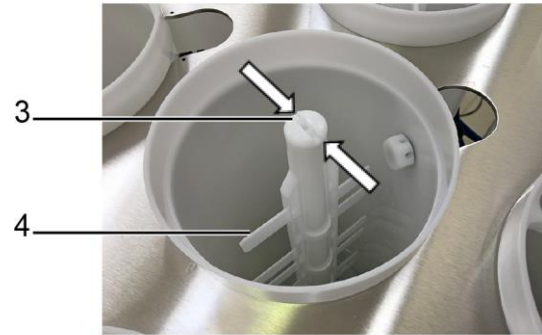
- Identify the colorant group to be replaced.
- Disconnect the electric connector of the colorant group to be replaced (1).
- Disconnect the delivery hose and the recirculation hose, paying attention to any dripping.
- Remove the metal sheet on colorant support base by loosening 2 M3x10 retaining button head screws (2) with an Allen wrench of 2 mm.
- Carefully lift the colorant group to be changed until detaching it from its housing.
- Insert the new colorant group paying attention not to damage the group nozzle.
- Tighten back the recirculation metal sheet cover to the bearing surface.
- Reconnect wiring and delivery and recirculation hoses, making sure not to reverse connections (delivery hoses are white, recirculation hoses are blue).



2.3.1. STRAINER CLEANING

Clean the colorant filters as described below:

- Remove the lid of the colorant group with the filter to be cleaned.
- Lift the cross element located inside the colorant tank and release the filter by pressing the tabs (3) indicated in the figure.
- Lift the stirring blade (4), with the filter fixed on its bottom.
- Remove the filter and rinse it with running water paying attention not to damage it.
- Engage the filter back to the end part of the stirring blade and reinsert the components inside the tank by pressing on the central rod to engage the tabs.



Reposition the cross element and the colorant tank lid.

2.4. REMOVING MASTER MODULE GROUPS

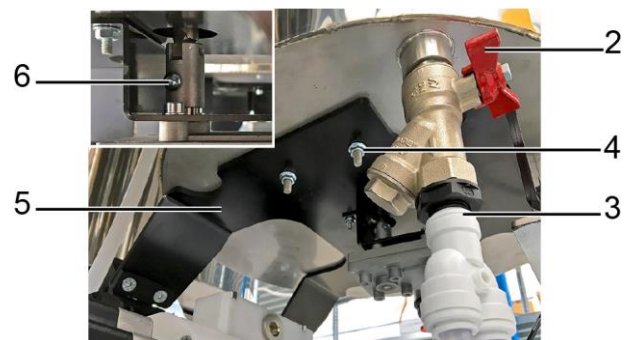
2.4.1. REMOVING THE 30 OR 50-LITRE TANK

The master module is available in LP version, with 6 and 30-litre tanks, or HP version, with 30 and 50-litre tanks.

The 6-litre tank groups can be removed following the same procedure described for colorant modules.

To remove and change a 30 or 50-litre stainless steel tank, proceed as follows:

- make sure the machine is disconnected from the power supply as described in para. 2.0.3.
- Loosen the M4x10 screws with countersunk head on the upper plane of tanks (1) and remove the side panels near the tank to obtain easier access to the group.
- Close inlet tap of circuit (2) and disconnect the pump using the relevant quick-coupling (3). Some versions fit a straight D12-1/2" quick-coupling, in this case just disconnect the 8x12 line;
- Use a 10 mm wrench to loosen the 4 M6 nuts (4) on tank stud bolts, so as to release the support plate (5);
- Loosen the M4 screw retaining the coupling (6) with a 2.5 mm Allen wrench.
- Lastly, disconnect the stirring motor wiring and slide the tank up until complete removal.

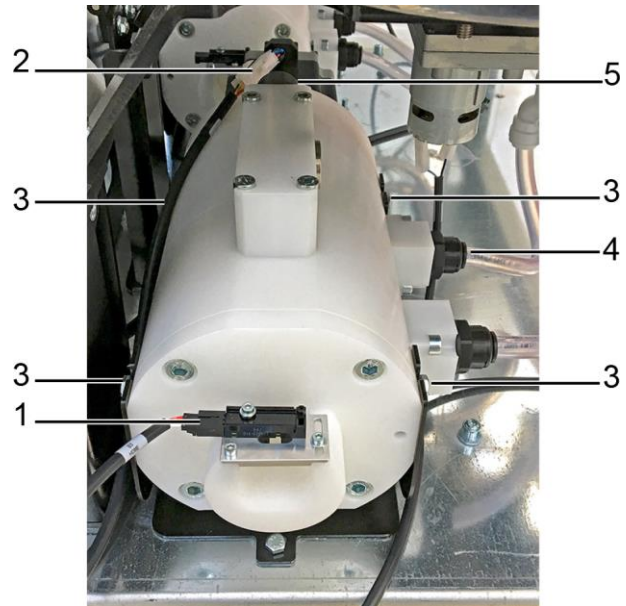


NB: the stainless steel tank could weigh some tens of Kg, especially if not completely empty. Take the suitable safety measures to carry out lifting and removal.

2.4.2. 3 LITRE PUMP REPLACEMENT

Remove the 3-litre pump as follows:

- Disconnect the electric connectors of photocell (1) and motor (2);
- Use a 10 mm wrench to loosen the 4 hex.head screws (3) retaining the pump to the support.
- Close inlet tap of circuit (see previous paragraph) and disconnect inlet circuits using the relevant quick-couplings (4);
- Disconnect the delivery hose (5);
- Remove the pump and replace it with the spare pump, then reconnect the electric and hydraulic circuits according to the original layout.



NOTE: To limit any leak, keep disconnected hose ends upwards and plug them using caps of suitable size or with adhesive tape.

2.4.3. 0.5 LITRE PUMP REPLACEMENT

To remove the 0.5-litre pump, with 6 or 9 litre canister, proceed as described above in para. 2.3.

2.4.4. REPLACEMENT OF MASTER MODULE TANK STIRRING MOTOR

To replace the stirring motor of the master circuits (1) proceed as follows:

- Loosen the M4 screw retaining the coupling (2) with a 2.5 mm Allen wrench.
- Remove the motor mount (3) together with motor, by loosening the 4 M4 retaining nuts (4) with a 7 mm wrench.
- Loosen the 4 M4 retaining screws with an Allen wrench of 3 mm to remove the motor from its mount.
- Change the motor and refit it to the support, making sure to refit any original washers.



2.5. HEAD REMOVAL AND REPLACEMENT OF ELECTROVALVES

To replace an electrovalve, proceed as follows:

make sure the machine is disconnected from the power supply as described in para. 2.0.3. and remove head cover as described below.

- Loosen and remove the two hexagon socket button head screws (1) present at the front side of the head, then slide the cover forward by approx. 2-3cm.
- We recommend that the following steps be carried out by at least two persons.
- Raise the front part of the cover by prizing the rear corner.
- Make sure that the locking tabs (2) pop out of their seats.
- Lift the cover and set it in a stable and safe place.

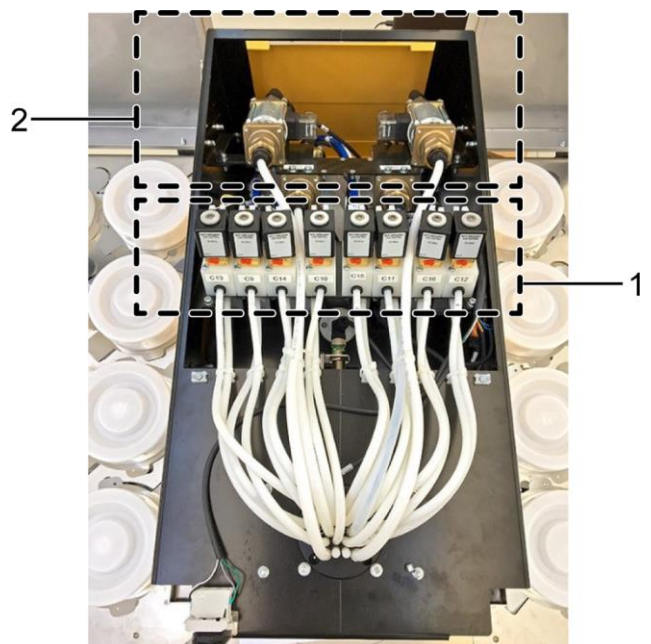


Identify the electrovalve in the circuit requiring replacement.

All electrovalves are identified by an adhesive indicating the number of the relevant circuit (C1..C16, ...).

At the front of the head are the electrovalves referred to the colorant circuits (1).

At the back are the larger valves for any present master circuits.

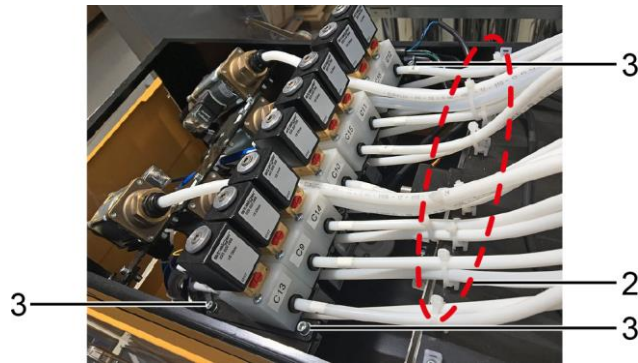


- To change the valves for the colorant circuits, you must loosen the two cross-slotted screws retaining the valve to the bearing surface (1), then disconnect the electric and hydraulic connections;
- To limit any leak, keep disconnected hose ends upwards and plug them using caps of suitable size or with adhesive tape.



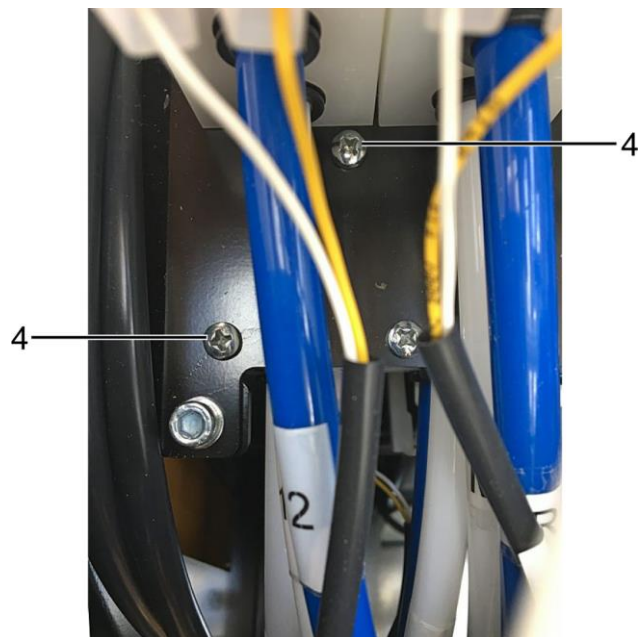
Should it be necessary to change one of the electrovalves placed in the lower valve level, we first recommend to:

- Cut the ties (2) retaining the dispensing tubes;
- Loosen the four M5x16 screws (3) using a 4mm Allen wrench and lift support plate of the upper valve level, in order to more easily access the valves below;



- Loosen the two cross-slotted screws (4) to release the valve and disconnect it from the corresponding circuits;

After removing the faulty electrovalve, fasten the new valve to the support and restore the electric and hydraulic connections. The two operations could be carried out in reverse order, if this is easier and more convenient.



2.6. CLEANING OF MASTER CIRCUIT FILTERS

Upstream of the master pump, at tank outlet, is a combined valve including a tap and a filter. It is recommended to periodically clean the filter, since during use it tends to hold all impurities of the paint.

To clean the base or semi-finished product circuit filter proceed as follows:

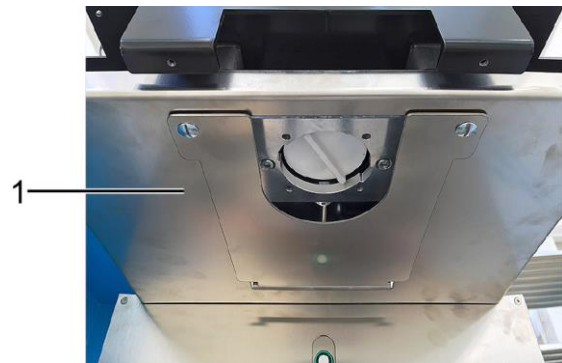
- Close tap upstream of filter (1).
- Set a can under the filter bottom end (2).
- Loosen the filter holder cap using a 22 mm wrench (3).
- Remove filter and flush with running water to clean it.
- Refit filter and its screw cap, then work on tap to open the circuit.
- At the end of the cleaning procedure, restart the machine by performing the necessary tank recirculation.



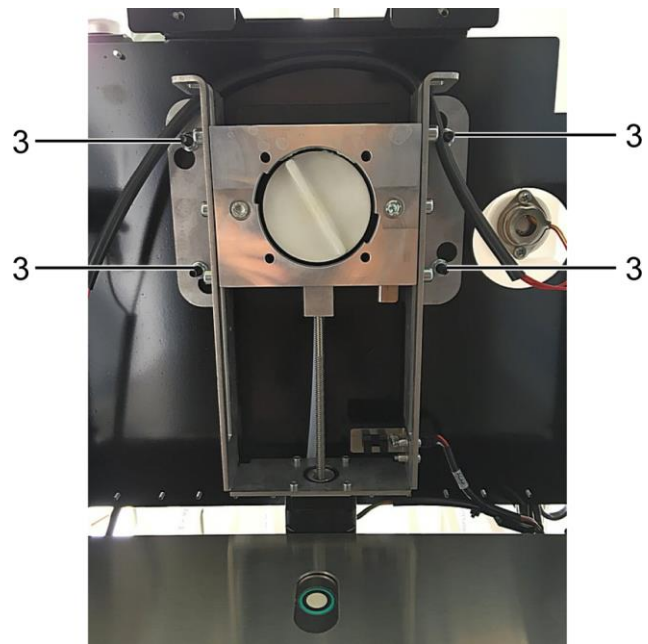
2.7. AUTOCAP GROUP REPLACEMENT

To replace the Autocap group proceed as follows:

- Remove the mobile safety protection (1) by loosening 4 M4x10 retaining countersunk head screws, two per side (2), with an Allen wrench of 2.5 mm.



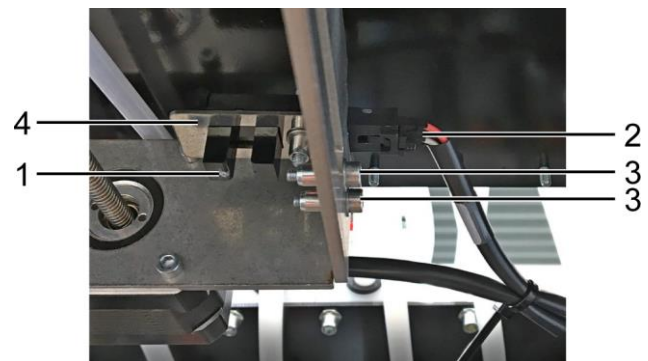
- Remove the ties that retain the Autocap group wirings.
- Disconnect the electric connectors that connect the group to the machine.
- Using an 8mm wrench, loosen 4 M5 nuts (3) retaining the Autocap group in place and fastening it to the support plate.
- Rotate the block clockwise and slide it out of the slots to remove it from the machine.
- Position a new Autocap group, engage slots on stud bolts and turn it counter clockwise for proper alignment, then tighten M5 nuts using an 8mm wrench.
- Reconnect the previously disconnected wirings and fasten them with plastic ties (2) where necessary.



2.7.1. REPLACEMENT OF THE AUTOCAP HOME PHOTOCELL

To replace the home photocell (1) only, proceed as follows:

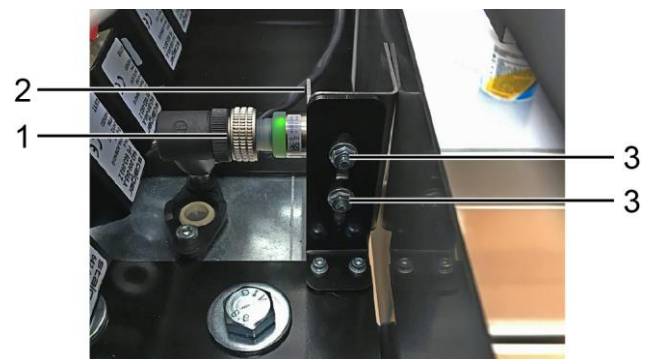
- Disconnect the photocell by means of its connector (2).
- Loosen the two M3 screws (3) with a 2.5mm Allen wrench and remove the photocell support (4).
- Loosen the M3 retaining screw with an Allen wrench of 2.5 mm to remove the photocell from its support.
- Install the new photocell to the support and the support to the autocap, then restore the electric connections.



2.8. CAN LIFTER SENSORS REPLACEMENT

2.8.1. CAN PRESENCE MOTOR REPLACEMENT

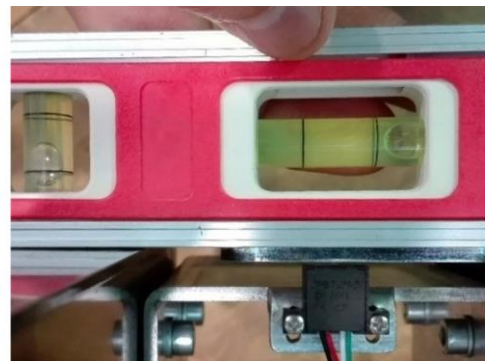
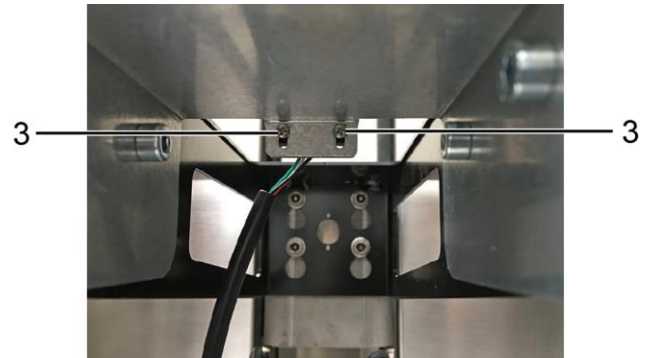
- To change the CanPresence sensor (1), you must remove the head covers as described in para. 2.5.
- The sensor is fastened onto a U-shaped bracket (2) that can be removed by loosening the two M4 nuts (3) using a 7mm wrench.
- Disconnect the sensor by loosening the ring nut on wiring (1) and tighten the new sensor.
- Refit the U-shaped support and the head covers using the screws and nuts previously removed.



2.8.2. CAN ON PLATE SENSOR REPLACEMENT

To change the canister presence sensor on Can lifter loading surface (CanOnPlate):

- Undo the 4 M3x10 countersunk head screws (1) using a 2mm Allen wrench and lift the metal sheet of the can lifter (2);
- Loosen the two M2x10 cross-slotted cheese head screws (3), fastened with the corresponding nuts, and disconnect the connector;
- When refitting the new sensor, make sure that the photocell is mounted flush with the metal sheet.

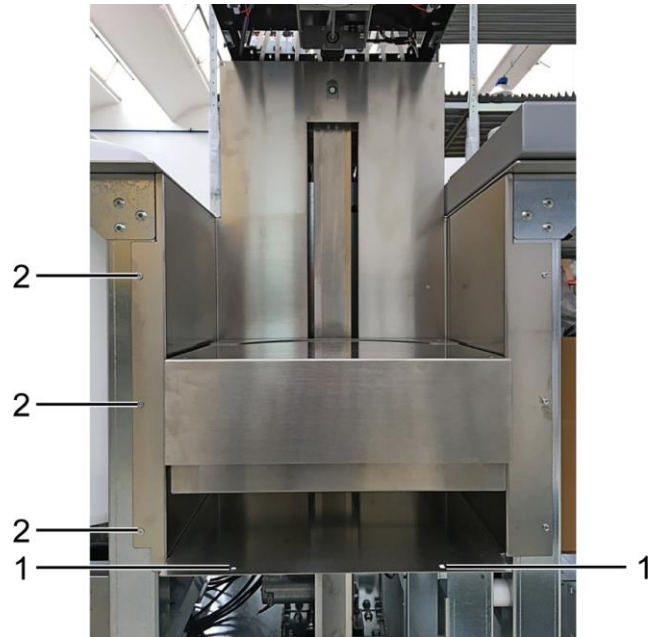


2.9. CAN LIFTER SCREW AND MOTOR REPLACEMENT

2.9.1. EXTRACTING THE CAN LIFTER

To change the can lifter drive parts, it is necessary to remove the can lifter from the machine, as follows:

- Remove the front panels as described in 2.1.1 and remove the head covers as described in para. 2.5.
- Also remove the anti-crushing safety protection present in head lower side, as described in 2.7.
- Remove the front protection located under the can lifter, by loosening the two M4x10 retaining countersunk head screws (1) with an Allen wrench of 2.5 mm.
- Loosen the 3 M4x10 screws with countersunk head (2) with a 2.5mm Allen wrench.



Then remove the can lifter mobile surface:

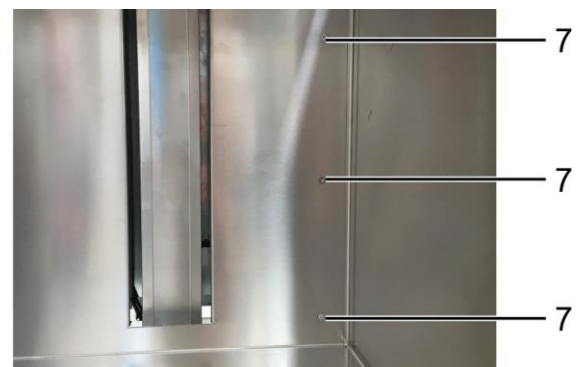
- Undo the 4 M3x10 countersunk head screws (3) using a 2mm Allen wrench and lift the metal sheet of the can lifter (4);



- Disconnect the wirings by means of the relevant connectors (5);
- Loosen the 4 hexagon socket head cap screws (6) fastening the mobile surface of the can lifter to its support;
- Remove the mobile part of the can lifter.



- Undo the 3 M3x10 countersunk head screws (7) using a 2mm Allen wrench.



The can lifter assembly is fastened at the bottom to machine base and at the top to a structure fixed to valve surface.

To release the can lifter assembly:

- Loosen the 4 hex.head screws retaining the can lifter column to valve surface structure (8). In order to reach the screws more easily, it might be necessary to remove the front protection or the valve surface;
- Loosen the 4 hex.head screws retaining the can lifter column to machine base (9);
- Disconnect the connector from board box, then slide the can lifter forward to remove it.



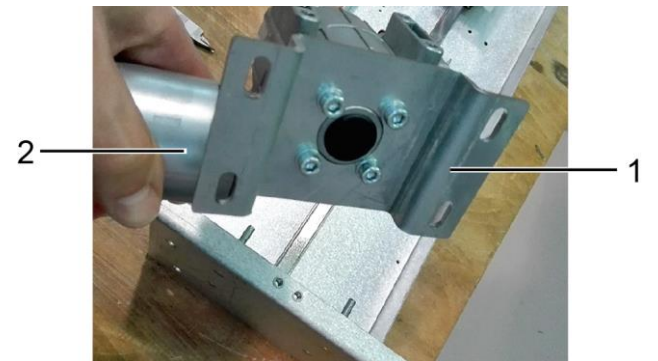
2.9.2. MOTOR-SCREW KIT ASSEMBLY

Here below are the instructions for proper installation of the parts susceptible to replacement, such as the lifting motor and the screw.

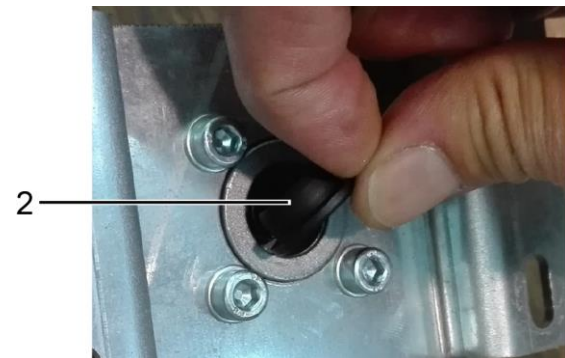
To remove the parts to be replaced, perform the installation sequence in the reverse order:

Place the load-bearing structure onto a work bench and follow the installation stages shown.

- Fasten the motor support omega-shaped bar (1) to SP motor (2) by means of 4 M5x12 hexagon socket head cap screws with washer 5.3x10x1.



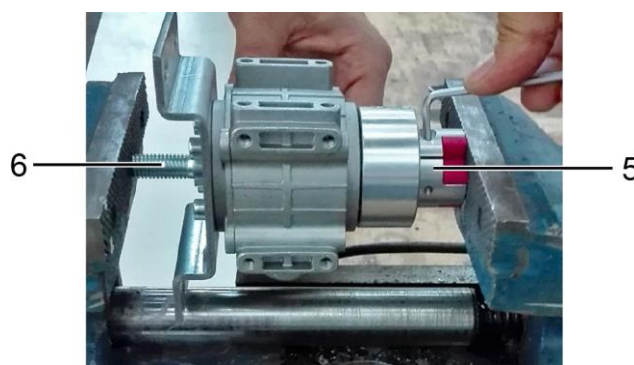
- Remove the plug behind the motor and grease the shaft of the motor (2);



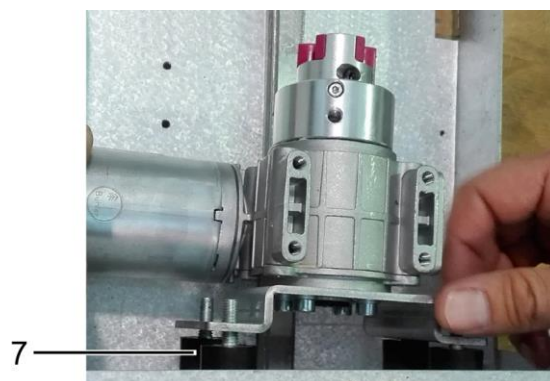
- Grease the axial bearing balls and refit the bearing shell onto bearing cap (2), making sure it is fully home;
- Fit the cap with bearing on drive shaft (3) and insert an M3x20 hexagon socket head cap screw (4) in the upper hole, engaging it in the drive shaft milled area, without tightening it. Use strong threadlocker.



- Apply the flexible coupling 10/8 (5) onto the cap and a pin under the motor (6), in the shaft direction, then vice the assembly making sure all parts are fully home. Tighten the screw on cap and the screw inside the flexible coupling.
- Then refit plug (2) onto motor;



- Install motor support on vibration dampers (7) and use four M6 flanged nuts but do not tighten them.



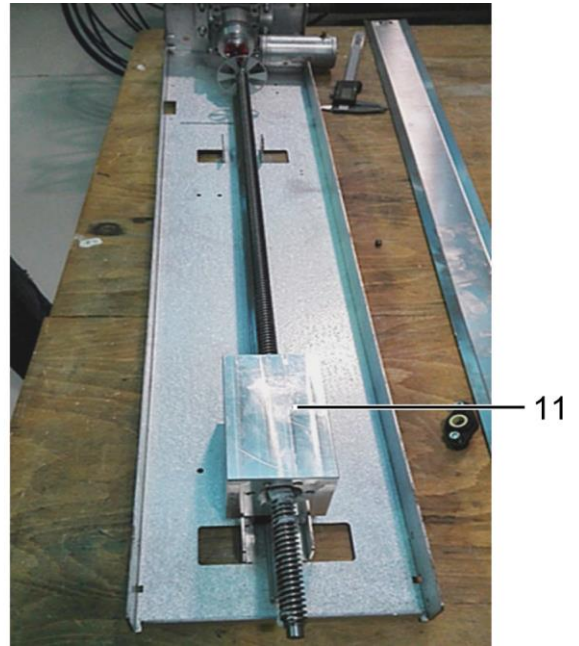
- Install the phonic wheel (8) at the machined end of the trapezoidal screw and lock it by tightening the M12 narrow nut (9).



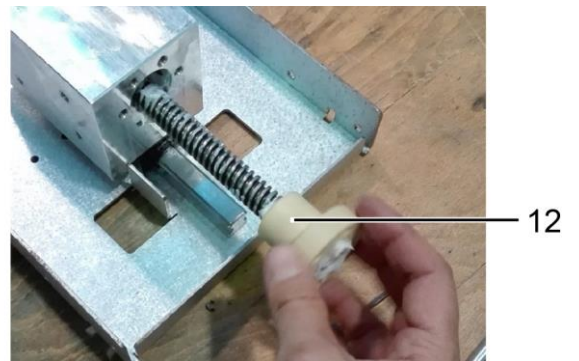
- Then fit the other side of the flexible coupling (10) under the narrow nut.



- Insert the trapezoidal screw in the central body (11), then engage the two parts of the flexible coupling.



- Fit the self-lubed, flanged 16x8 nut screw (12) at the free end of the trapezoidal screw and take nut screw up to the central body.
- Fasten the female thread to the central body using 6 M6x20 hexagon socket head cap screws



- Fit phonic wheel sensor support (13) to the motor using two M5x12 hexagon socket head cap screws.

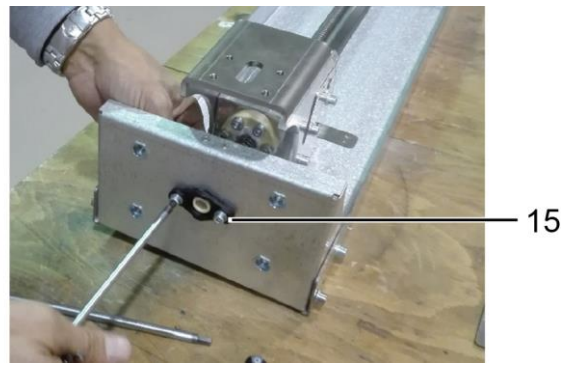


- Fasten the closing cap (14) using 4 M6x20 hexagon socket head cap screws with washer.



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- Fit the flanged swivel support (15) to the cap using two M5x16 hexagon socket head cap screws.



Reposition any removed sensors and restore the wiring.

3. ELECTRIC REPAIRING OPERATIONS

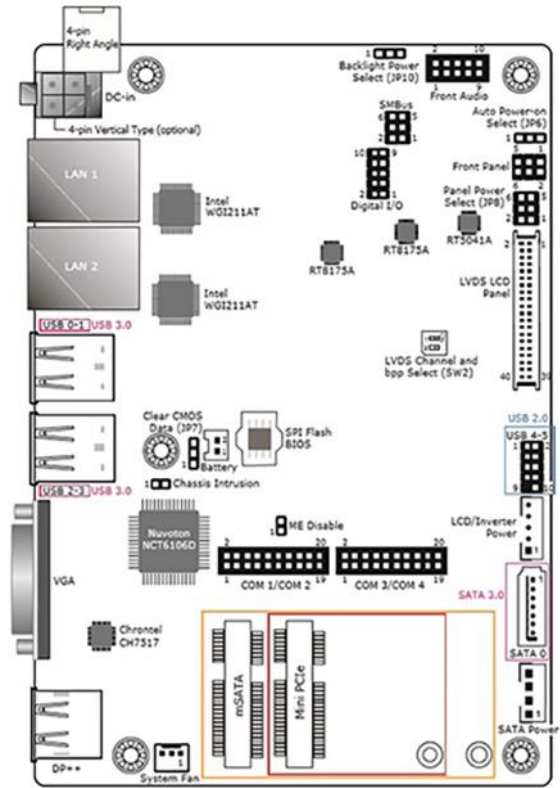
3.1. DIAGNOSIS AND ELECTRONIC PART DESCRIPTION

3.1.1. PC LINUX BOARD

The machine is provided with a Linux PC board on which the high-level machine software is memorised.

The Linux PC board receives the Ethernet connection from the LAN1 port and is internally connected to the MAB board via RS-232. The Linux board has RS-232 and USB ports necessary to connect some accessories like the scale.

The Linux PC board is powered with 12V.



3.1.2. MAIN AUTOMATION BOARD (MAB)

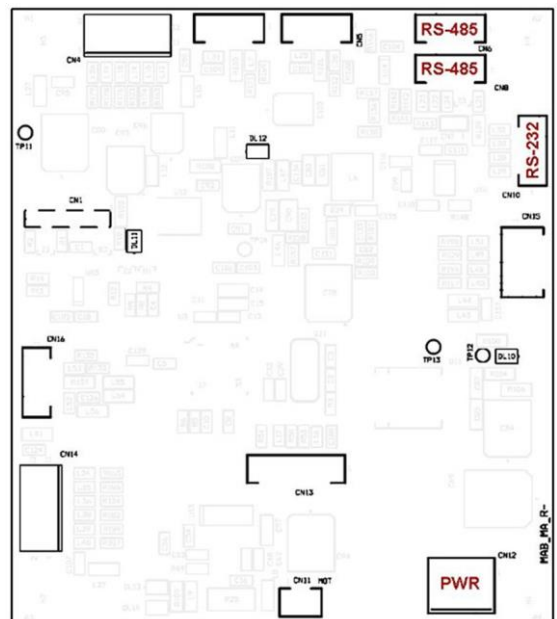
The machine management firmware MAB board is saved on the MAB board. The orders sent by the high-level software are managed at MAB level. This board organises the machine cycle by interrogating and sending orders via RS-485 to the slave boards of the single circuits.

The MAB board is supplied with 24Vdc.

The MAB board controls directly:

- the status lamp and the stop button
- hole beam locator lasers
- the can presence photocell

CN13 is used for programming the firmware via bootloader (see chapter 4 – PROGRAMMING THE ELECTRONIC BOARDS).



3.1.3. SCCB BOARD

Each circuit (colorants, bases, storages, Cartesian axes and autocap) is managed by a dedicated SCCB board addressed according to the machine configuration set in the software.

Each board is powered with 24 V (two separate lines for logics and power) and 48V, controls the digital sensor inputs and integrates the control drivers of two DC 24V peripheral units (DC motor stirring and/or electrovalves) and of one stepper motor.

The board generates the necessary on-board service voltage. To facilitate the diagnosis, each power supply features a status LED (on = power connected):

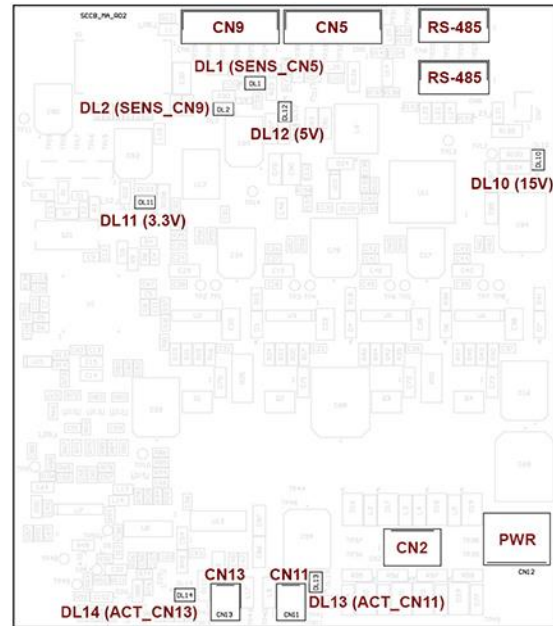
- DL11 = 3.3V
- DL12 = 5V
- DL10 = 15V

In case one or more power supply LEDs is OFF, check the fuse relevant status (see para. 3.2).

Likewise, the DC MOT (CN13) and EV (CN11) outputs have a status LED that indicates when they are powered.

Following is a list of the controls of each SCCB board:

CN1 connector is always used for programming and updating the firmware via PICKIT (see chapter 4 – PROGRAMMING THE ELECTRONIC BOARDS).



CIRCUIT	CN2	CN5	CN6	CN8	CN9	CN11	CN12	CN13
MASTER 1...4	STEPPER	HOME PHOT.	RS485	RS485	RESERVE	ELECTROVALVE	PWR	STIR MOT
COL 1...16	STEPPER	HOME PHOT.	RS485	RS485		ELECTROVALVE	PWR	STIR MOT
AUTOCAP	STEPPER	HOME PHOT.	RS485	RS485	HUM.LEV.SENS.	ATOMIZER BOARD	PWR	VACUUM PUMP

3.1.4. SPB BOARD

The SPB board is powered at 24Vdc and produces 12Vdc on board. These power supplies are also used to power the Linux board and any accessories.

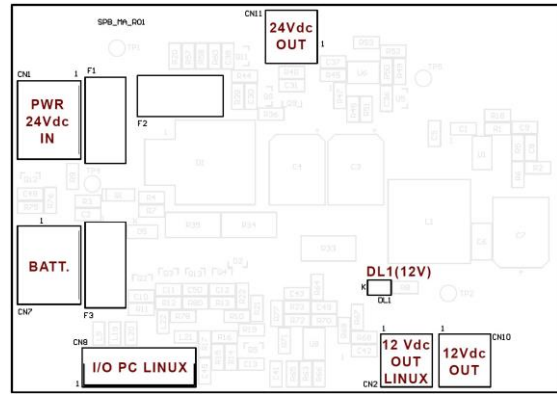
In case of machine switch-off or mains problems (blackout or voltage drop), the SPB board keeps the Linux board powered at 12V for the time required for operating system controlled shutdown.

A 16.8V - 1800mAh NI-MH battery is used to store the 12V power: it features a safety PTC inside and is connected to the board at CN7.

The board features two inner fuses:

- F2=0.5A on recharge branch (protection against a charging current higher than the maximum allowed by the battery);
- F3=2.5A on the battery (protection in case of excess power absorption).

DL1 LED indicates 12V power on.

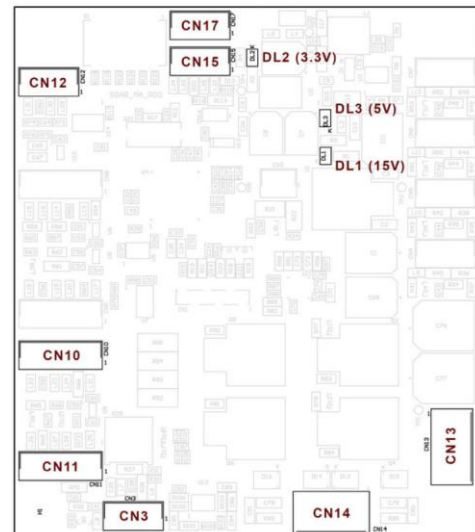


3.1.5. SGBRD BOARD

The SGB board is dedicated to the management of the automatic can lifter, actuators and relevant sensors.

LEDs DL1, DL2 and DL3 indicate the presence of 15V, 3.3V and 5V power supplies, respectively.

- CN3 = Photocell CAN ON LIFTER
- CN10 = Photocell LIFTER DOWN
- CN11 = Photocell LIFTERUP
- CN12 = Photocell ENCODER
- CN13 = BOARD BOX
- CN14 = CAN LIFTER MOTOR
- CN15 = BOARD BOX (RS-485)
- CN17 = BOARD BOX (RS-485)



3.1.6. HUTBRD BOARD

HUT board (HUmidity & Temperature) functions include:

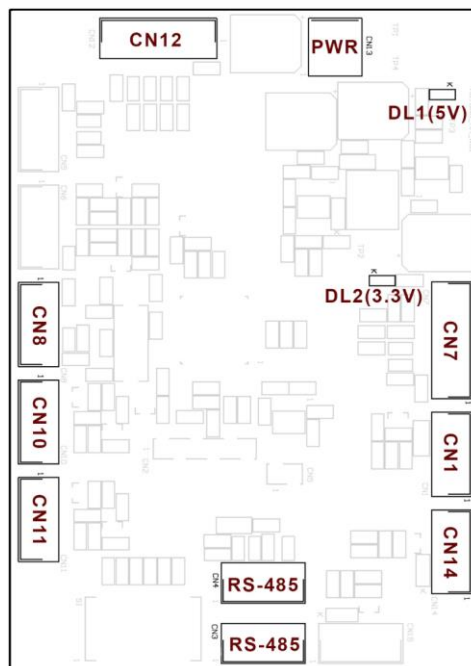
- acquisition of ambient humidity and temperature (through external sensors);
- enable a heater (option) to set the temperature inside the machine;
- control the air pump and atomizer in order to optimise humidifier effectiveness.

The purpose of this control system is:

- 1) avoiding that the products inside the canisters and tanks can be used at unsuitable temperatures (below 10°C);
- 2) the humidifier maintains a suitable degree of humidity at the nozzles, avoiding any condensate.

LEDs DL1 and DL2 indicate the presence of 5V and 3.3V power supplies, respectively.

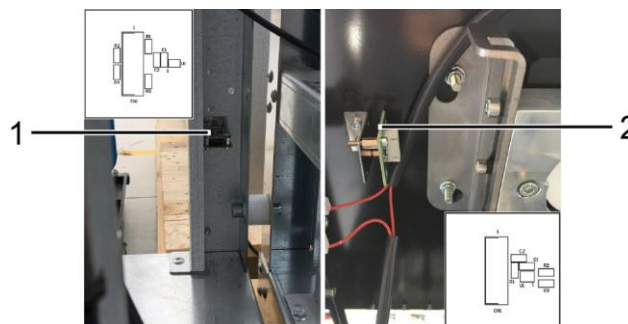
- CN1 = Humidifier tank level sensor
- CN3-CN4 = RS485
- CN7 = Autocap temperature and humidity sensor
- CN8 = LED (humidifier tank lighting)
- CN12 = Mobile internal temperature sensor
- CN10 = Atomizer
- CN11 = Air pump
- CN13 = PWR
- CN14 = Heater Relay 1



3.1.7. HUTTS and HUTSN BOARDS

The HUT_TS board (1) is the board supporting the temperature sensor TC72 used to monitor the temperature of the products (colorants and bases). The board is located inside the cabinet, fastened to one of the rear uprights of machine frame and is connected to connector CN12 of HUTBRD board.

The HUT_SN board (2) is the board supporting the temperature and humidity sensor SHT30 used to monitor the temperature and humidity in the autocap area. It is housed inside the head, next to the autocap and is connected to HUTBRD board on connector CN7.



3.2. CHECKING AND REPLACING THE NETWORK FUSES

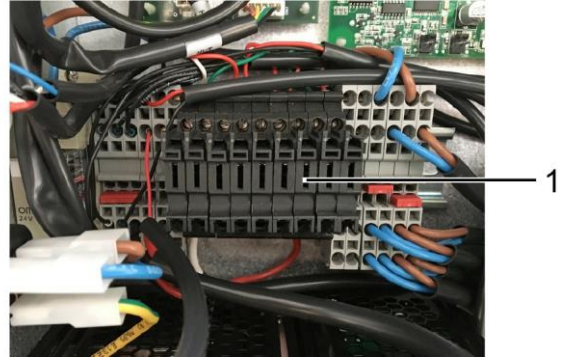
In case of mains malfunction or problems, the safety fuses could blow and cut power. Fuses are located in the fuse holder built in the plug with switch on the back panel. To replace the interrupted fuse open fuse holder using a flat screwdriver to prise it open. Remove the fuse and its holder and install a new fuse.

	<p>USE ONLY FUSES OF THE SAME TYPE AND THE NOMINAL RATING SHOWN IN THE PRODUCT LABEL.</p> <p>Fuse requirements: EU - IEC 60127 Approval US - UL248-1 and UL248-14 Approval</p>
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3.3. REPLACING THE SECONDARY CIRCUIT FUSES (INTERNAL TERMINAL BOARDS)

In case of malfunction or faults, the safety fuses could interrupt the output power supply of the terminal boards. The fuses are located on the terminal boards located inside the rear electric compartment (see chapter 2 - ACCESS TO THE ELECTRIC PARTS).

- In order to replace the fuses, proceed as follows:
- Remove the rear panel as described in chapter 2 - EXTERNAL COVER REMOVAL to reach the fuse carrier terminal boards (1).



- Find the circuit of the interrupted power supply line and take a fuse with a correct rating according to the diagram to the side.
- Lift the fuse holder until it is possible to manually remove the damaged fuse.
- Insert the new fuse in the fuse holder.
- Close the fuse holder by slightly pressing on it.
- Reposition and fix the machine rear panel using the previously removed screws.

	5x20mm F6,3A 250Vac	5x20mm F6,3A 250Vac	5x20mm F6,3A 250Vac	5x20mm F6,3A 250Vac	5x20mm F4A 250Vac	5x20mm F4A 250Vac	5x20mm F500mA 250Vac	5x20mm F500mA 250Vac	5x20mm F4A 250Vac	5x20mm F1A 250Vac
	PF1	PF2	PF3	PF4	PF5	PF6	PF7	PF8	PF9	PF10
	+	-	+	-	+	-	+	-	+	-
	5	6	7	8	9	10	11	12	13	14
	+48V OPTIONAL CONN.	+48V STANDARD CONN.	+24V OPTIONAL CONN.	+24V STANDARD CONN.	+24V HUTBRD	+24V SPB	+24V AUTOCAP	+24V MAB	+24V LIFTER	100-240VAC AUX

WARNING: use only fuse of the same type and with the same nominal rating specified by the manufacturer.

3.4. REPLACING THE POWER SUPPLY UNITS

In case of an electric fault in one or more power supply units of the machine, proceed as follows to replace them:

- To reach the power supply unit compartment, remove the rear panel as described in chapter 2 - EXTERNAL COVER REMOVAL.
- Disconnect the wiring between the power supply unit to be replaced and the rest of the machine.
- Remove the power supply unit by fitting a small flat screwdriver in the suitable retaining tab and remove the unit from the DIN bar.



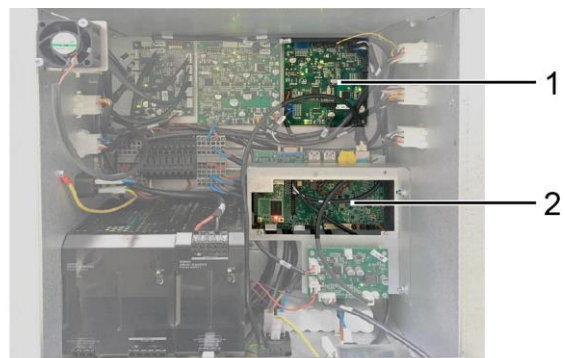
- Fit the new power supply unit manually on the DIN bar.
- Reconnect the power supply unit to the wiring according to the attached wiring diagram.
- Reposition the previously removed protection panel.

WARNING: use only genuine spare parts supplied by the manufacturer.

3.5. REPLACING THE LINUX/MAB BOARD

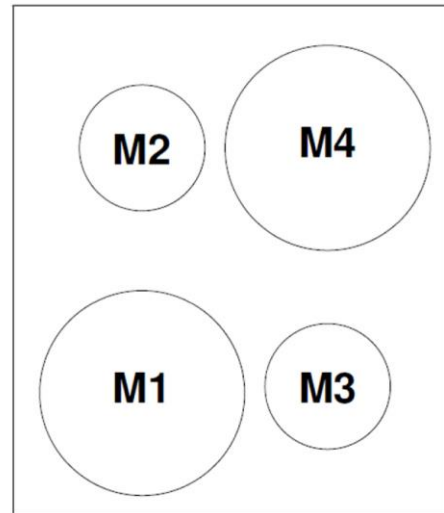
To replace the Linux PC or MAB boards, proceed as follows:

- Remove the rear power supply panel as described in chapter 2 - EXTERNAL COVER REMOVAL.
- Disconnect the power supply and signal cables from the board to be replaced.
- Removed the MAB (1) or Linux PC (2) board to be replaced from the supports on its corners (pressure-fit plastic supports for the MAB board and M3 retaining screws to the Linux board).
- Insert a new board on the supports having care not to damage its components.
- **WARNING:** Use an already programmed board or the suitable programmer to install the correct software/firmware. To reprogramme the boards refer to chapter 4.
- Restore the electric connections.

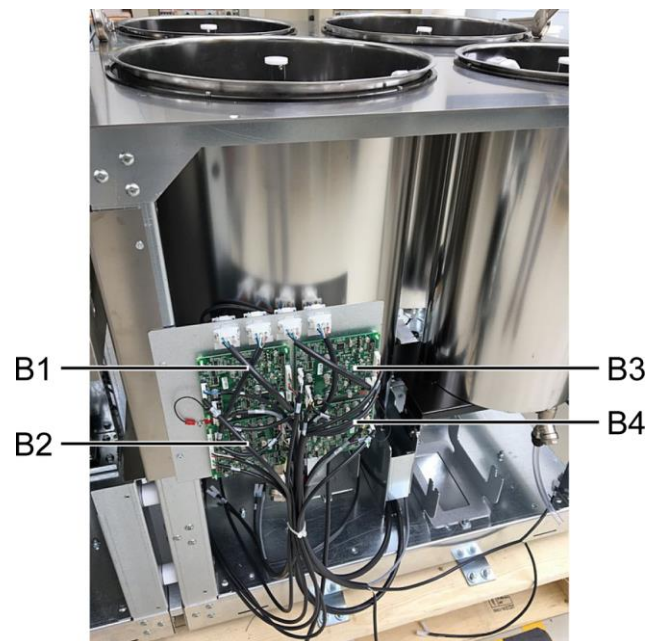


3.6. REPLACING THE SCCB BOARD BASE CIRCUIT

- To reach the SCCB boards of the master circuits (if any), remove the front panels as described in chapter 2 - EXTERNAL COVER REMOVAL, then proceed as described below.



- Identify the location of the board controlling the affected group (labels B1..B4 are placed next to every connector).
- Disconnect the power supply and signal cables from the board.
- Remove the board by releasing it from the supports on its corners.
- Insert a new board on the supports having care not to damage its components.
- WARNING:** Use a board already programmed with the function of the replaced board. To reprogramme the boards refer to chapter 4.
- Restore the previously disconnected connections according to the wiring diagram.



3.7. CAN LIFTER BOARD REPLACEMENT

Automatic can lifter group control board (SGBRD) is fastened to the rear side of the lifting column, at the bottom.

To change the board, remove the rear panel as described in chapter 2 - ACCESS TO THE ELECTRIC PARTS, then:

- Disconnect the power supply and signal cables from the board.
- Remove the board by releasing it from the supports on its corners.

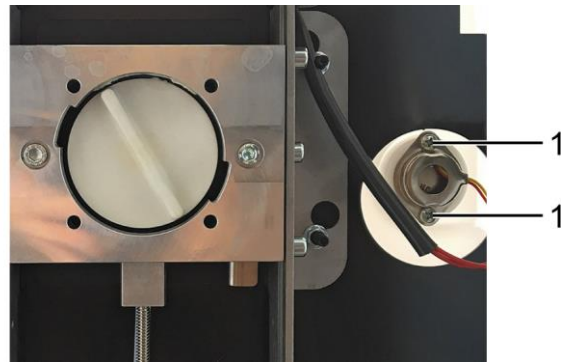


3.8. REPLACEMENT OF HUMIDIFIER PARTS (ULTRASONIC ATOMIZER KIT)

3.8.1. ATOMIZER

The humidifier uses an ultrasonic atomizer to spray the water from the tank. To change the transducer:

- Remove the mobile anti-crushing safety protection located under the dispensing head by loosening the 4 M4x10 retaining countersunk head screws, as described in para. 2.7;
- Disconnect the wiring connector;
- Loosen the two cross-slotted screws (1) and remove the transducer.



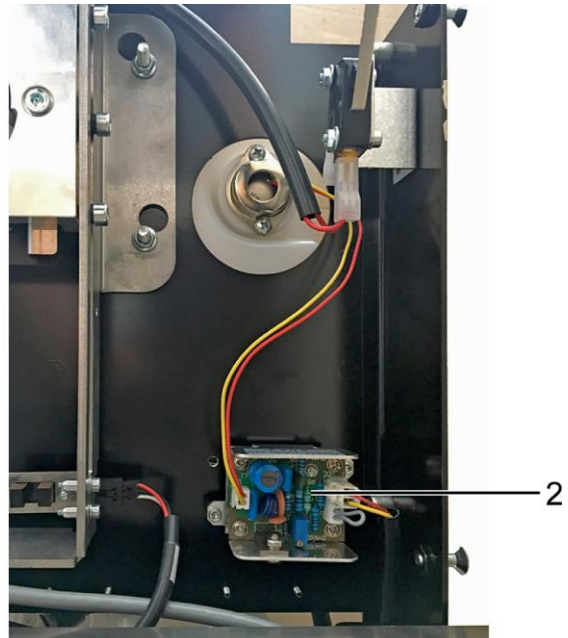
WARNING: THERE MUST BE WATER IN THE TANK WHEN YOU TURN THE ATOMIZER ON.

3.8.2. ATOMIZER CONTROL BOARD

The atomizer is controlled by a board located inside the electric box.

To change the board, remove the rear panel to reach the switchboard, as described in chapter 2 - ACCESS TO THE ELECTRIC PARTS, then:

- Disconnect the connectors from the board;
- Loosen the two M3x10 retaining screws with an Allen wrench of 2.5 mm to remove the board (2).



3.8.3. AIR PUMP

The air pump (3) is located near the humidifier tank. The pipes are interference-fit.

Disconnect the pipes and the electrical connector to disconnect the pump.



3.9. LTE ROUTER SETTINGS

When a hard-wired ethernet network is not available, it is still possible to obtain a remote connection to the machine via an LTE Router.

A VPN client - duly installed and set up - is necessary to connect to the machine.

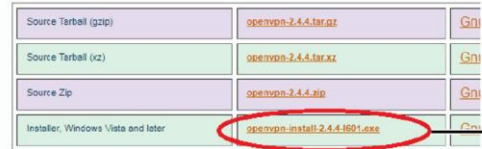
3.9.1. CONNECTION VIA VPN CLIENT ON WINDOWS 7 AND 10

To install the VPN Client, proceed as described below:

- Open an internet browser at <https://openvpn.net/index.php/open-source/downloads.html>
- Click “openvpn-install-2.4.4-I601.exe” (1) and download the file.
- Open the downloaded file, then press “Next” (2) on the following screen page.

Please note that OpenVPN 2.4 installers will not work on Windows XP.

If you find a bug in this release, please file a bug report to our [Trac bug tracker](#) first, either using the [openvpn-devel mailinglist](#) or the developer IRC channel (help take a look at our official [documentation](#), [wiki](#), [forums](#), [openvpn-users](#) mailing list, [irc](#), [freenode.net](#)).



1

NOTE: the GPG key used to sign the release files has been changed since OpenVPN 2.4.4. The old GPG signatures, as well as the new GPG public key are available [here](#).

We also provide static URLs pointing to latest releases to ease automation. For more information see [here](#).

- Check the boxes indicated in the figure on the side, then press “Next”.

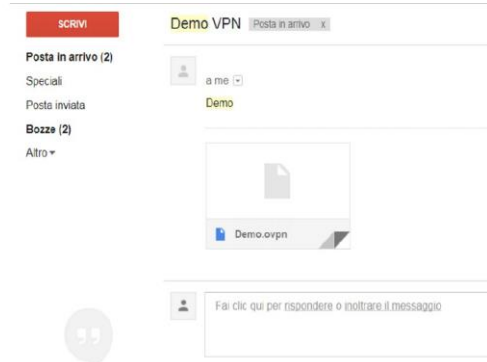


2

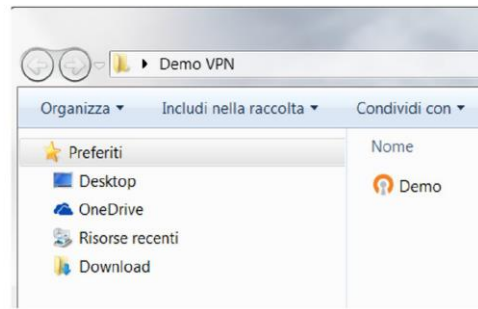


To connect to the machine via the VPN Client, proceed as described below:

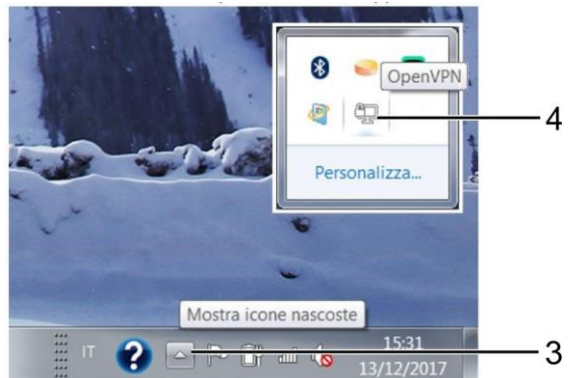
- Download the file containing the login credentials sent by Alfa via email.



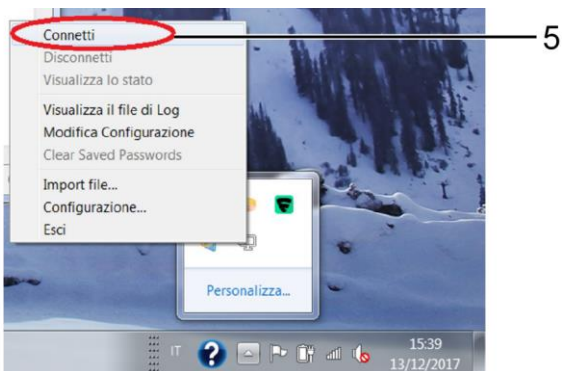
- Save the file containing the credentials in C:/programs/OpenVPN/Config
- Make sure you save it as an “.opvn” file.



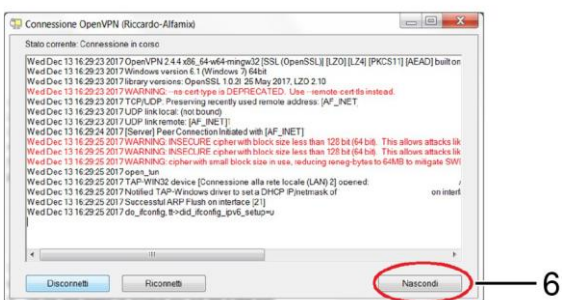
- On Windows Toolbar, click the arrow icon “show hidden icons” (3) then find the icon “OpenVPN” (4) in the pop-up.



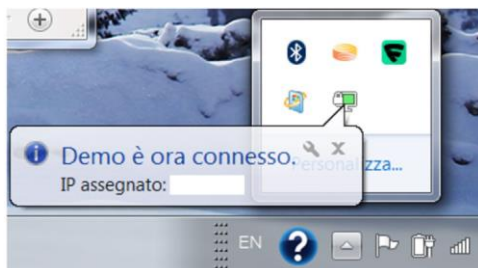
- Right click on the icon and select “Connect” (5);



- Press “Hide” (6) to close the following page;



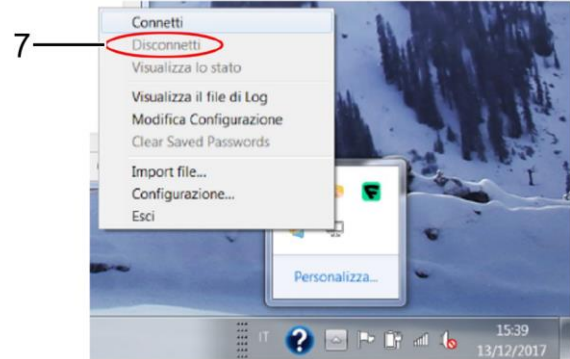
- After a few seconds a new pop-up will open on the toolbar, near the clock indicating that the PC is connected. This window could close automatically, while the OpenVPN icon will become green.



- To connect to the machine, open your internet browser.
- In the address bar, enter the IP address of the machine you wish to establish connection with, usually indicated on the LTE router.
- Enter the login credentials given by Alfa.



To disconnect from the machine, right click on OpenVPN icon and select “Disconnect” (7).



3.9.2. CONNECTION VIA VPN CLIENT FROM ANDROID DEVICES

To install the VPN Client, proceed as described below:

- From the Home screen of your device, open Play Store.
- In the search bar, type “openvpn for android”.
- Click the green button (1) to install the application.

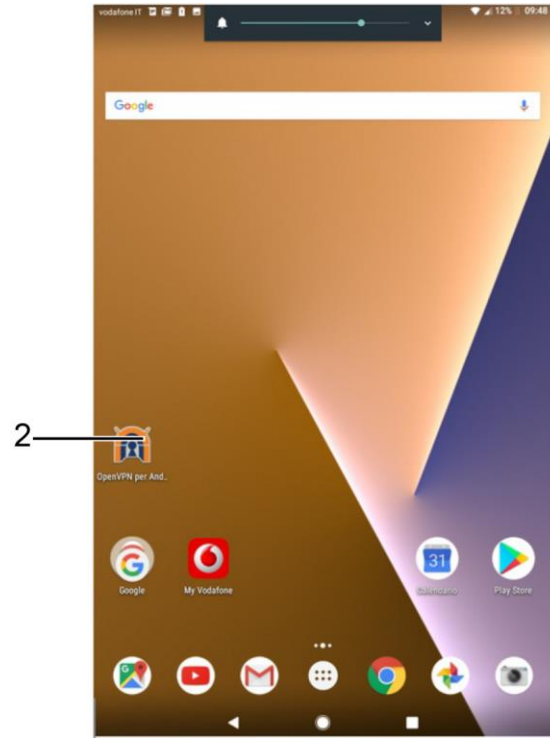


To connect to the machine via the VPN Client, proceed as described below:

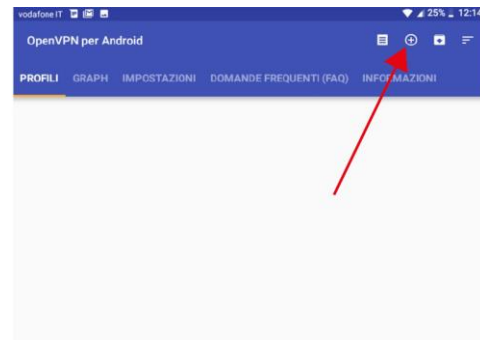
- Download the file containing the login credentials sent by Alfa via email.



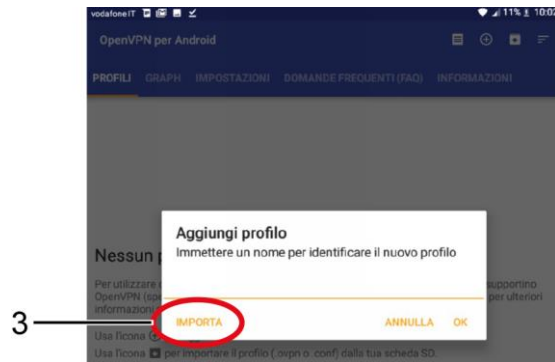
- Run the app OpenVPN (2) previously installed.



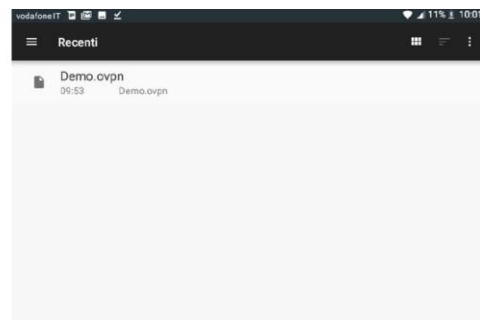
- Press symbol “+” present on the bar at top right of the app screen.



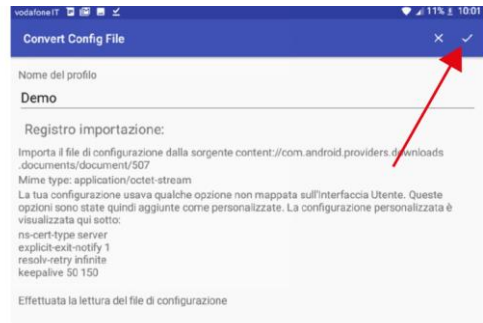
- Press “Import” (3).



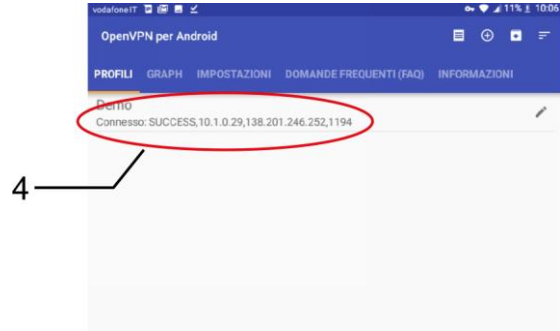
- Select the “.ovpn” file previously downloaded;



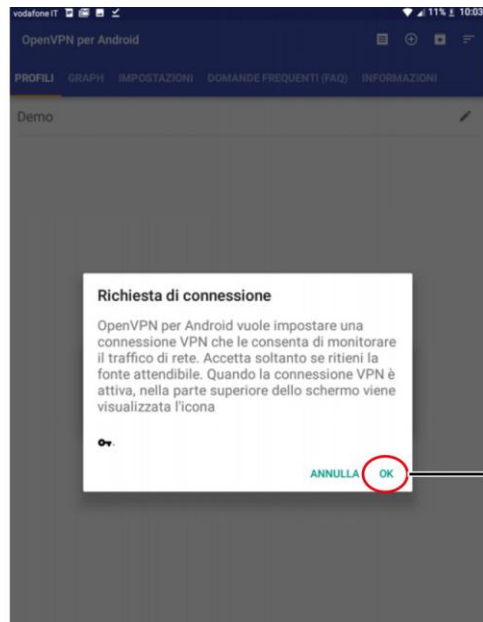
- Press on the check mark in the top right corner;



- Press on the just-added file (4).



- Press OK (5) on the next window.



- Now the VPN status must be “Connected” (6).

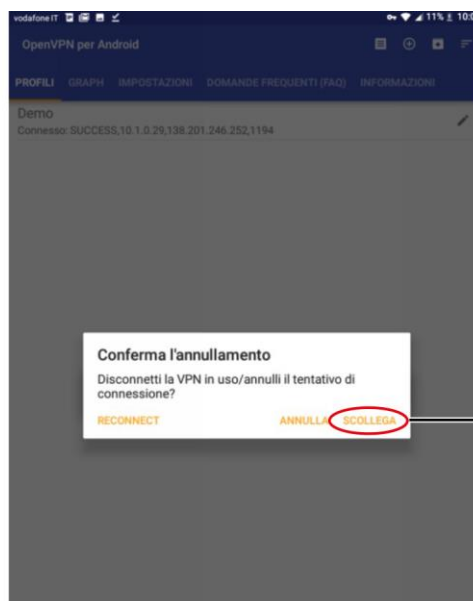


Technical Manual – Desk

- To connect to the machine, open your internet browser.
- In the address bar, enter the IP address of the machine you wish to establish connection with, usually indicated on the LTE router.

Enter the login credentials given by Alfa.

- To disconnect from the machine, open the app OpenVPN, then select the “Profiles” menu and press “Disconnect” (7).



4. PROGRAMMING THE ELECTRONIC BOARDS

Depending on board version, programming can be carried out in either of two different methods:

- Boards with no bootloader (programming via PICKkit): see paragraph 4.1
- Board with bootloader: see paragraph 4.2.

4.1. PROGRAMMING OF BOARDS WITH NO BOOTLOADER

4.1.1. PROGRAMMING DEVICES

Each SCCB board must have the dedicated firmware. For the SCCB boards, the firmware depends on the group to control.

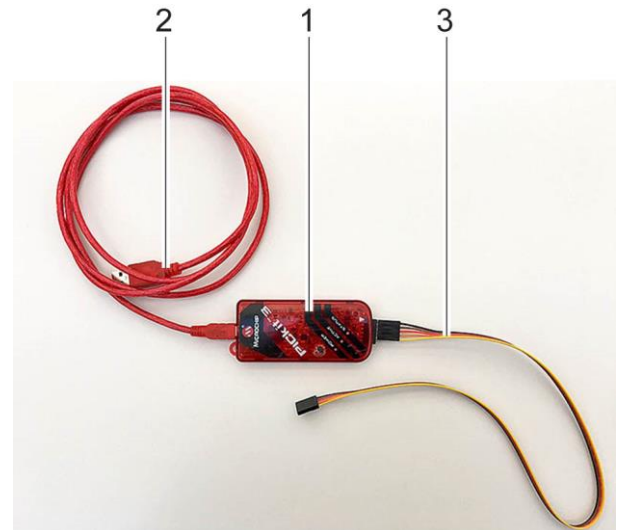
To programme the boards, use a suitable USB programmer (1) and the MPLAB IDE programming software.

If you do not have the suitable programmer, contact the Alfa technical service.

The programmer uses a USB cable (2) for the connection to the PC.

It could be useful to use an extension (3) to connect the programmer to the boards positioned in points that are hard to reach.

NOTE: The boards can be programmed both on the machine and on the bench. To programme the boards they must be powered by means of CN12 connector. If you use the previously programmed boards for other functions it is recommendable to disconnect the RS-485 serial connectors before powering the machine.





4.1.2. INSTALLING THE MPLAB IDE SOFTWARE

The MPLAB IDE programming software can be downloaded from the reserved area of the website www.alfadispenser.com or from the download area of the website <http://www.microchip.com>. The software can be installed on a Windows, Linux or Mac PC.

4.1.3. PROGRAMMING WORKSPACE

To write the firmware it is necessary have a programming workspace to upload in the MPLAB IDE software as better described below.

The programming workspaces are different for the SCCB (4) boards and the MAB (5) board.

	Actuators_release_PICKIT3.mcw	4
	MABrd_Release_PcKit3.mcw	5

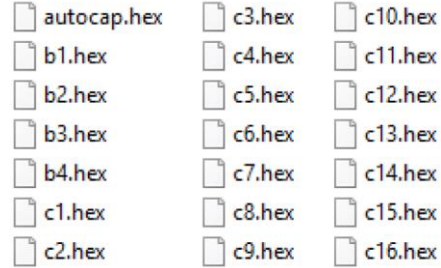
4.1.4. PROGRAMMING THE SCCBB, SGBRD AND MAB BOARDS

Download the workspace and the last available firmware version from the Alfa website reserved area, or contact the Alfa technical service to receive the firmware. If you do not have the credentials to access the reserved area, contact the Alfa technical service.

SCCB: according to the group to which the board must be connected, the following firmware is available:

- 24 firmware versions (from c1 to c24) that can be used on the colorant groups of the machine*;
- 8 firmware versions (from b1 to b8) that can be used on base groups or semi-finished products of the machine*;
- Autocap group firmware;

*: see the circuits enabled in the “Slave configuration” of the “Device-Machine” menu of the Admin interface. For further information consult the Software manual



MAB and SGBRD:

- MAB Desk board firmware
- SGBRD board firmware

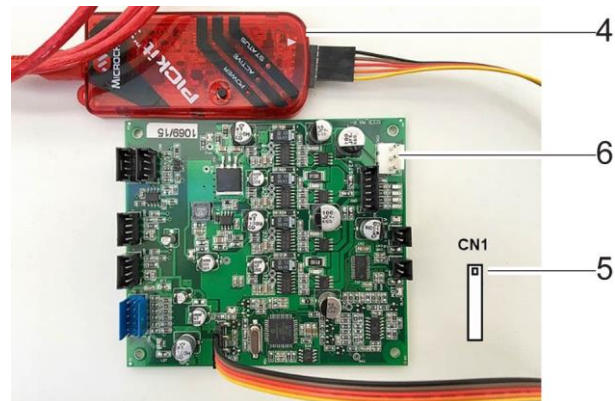
WARNING: CAREFULLY READ THE RELEASE NOTE TO CHECK THE FIRMWARE VERSION COMPATIBILITY

Connect the USB programmer, if necessary use an extension, to CN1 connector of the board to be programmed.

WARNING: Check that pin 1 of the programmer (4) is connected to pin 1 of CN1 connector (5)!

Power the board by connecting the CN12 connector (6) to the machine.

WARNING: do not connect the CN6 and CN8 connectors of the RS-485 communication to avoid problems linked with possible address conflicts.

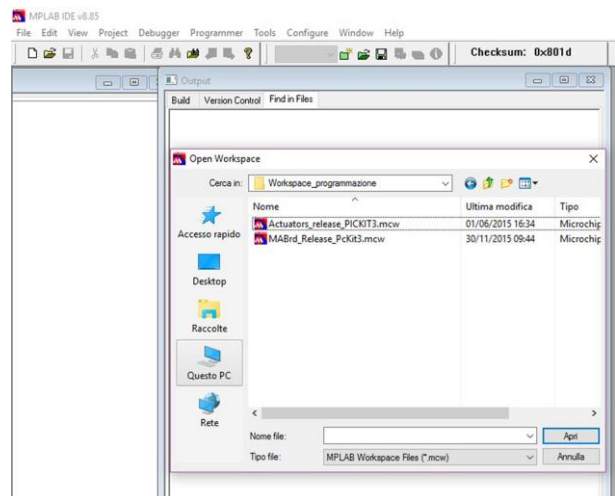


Launch the MPLAB IDE software

Access to “File – Open workspace...” and select the workspace of the board to programme (MAB or SCCB), then select Open. For the SGBRD board, use SCCB workspace.

WARNING: if you have connected a MAB board, upload the “MABrd” workspace, whereas if you have connected an SCCB board, upload the “Actuators” workspace (see para. 4.3).

If message “No PICkit 3 Connected” is displayed, it means that the programmer is not connected correctly.



When the programmer is correctly connected and detected, the software will show the message “PICkit 3 detected”.

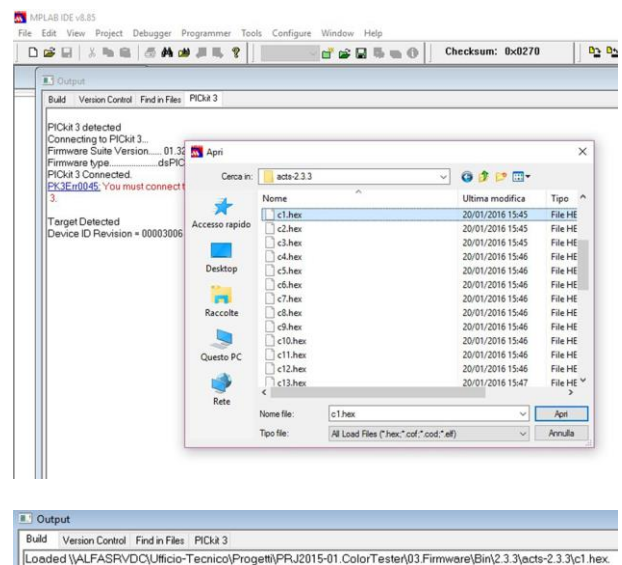
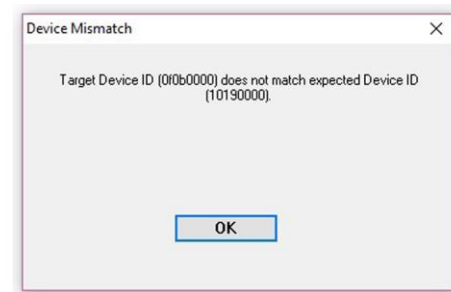
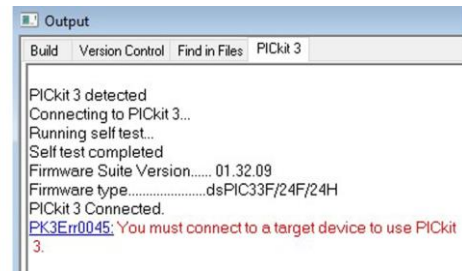
When connecting the board to the programmer and powering it, the software shows the message “Target Detected” besides the DEVICE ID of the connected board.

WARNING: If you upload a MAB Workspace and connect an SCCB board (or vice versa), the software will show the error “Target device ID does not match expected Device ID”.

When everything is ready, programme the board in “File – Import...” and select the suitable firmware version.

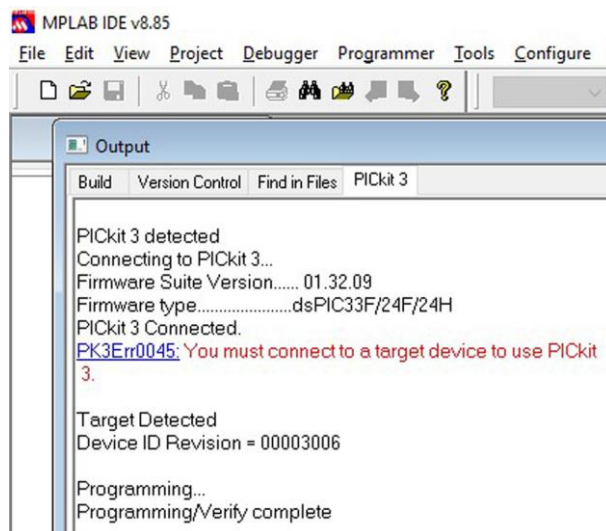
Select the suitable firmware version and select “Open”.

If the operation is completed successfully, the display will show the message “Loaded....”



Select “Program” in the “Programmer” menu to start the board programming.

At the end of the operation, the display will show the message “Programming/Verify complete”.



Now it is possible to disconnect the power supply and the programmer.

The board is ready to be used on the machine.

WARNING: Before programming a new board, make sure the loaded Workspace is the correct one. If this is not the case, go back to the “File – Open workspace...” menu and upload the new workspace.

4.2. PROGRAMMING OF BOARDS WITH BOOTLOADER

4.2.1. SOFTWARE “BOOTLOADERAPP”

The most recent boards are preloaded with BOOT firmware for the management of the BootLoader, i.e. the application that allows the updating of the machine control firmware.

NOTE: To program a board that does not feature preloaded BOOT, please contact Alfa technical service.

To program a hard-wired board via BootLoaderAPP, it is necessary to follow this procedure:


1. Shut off the machine;
2. connect the special cable Alfa USB BOOT LOADER (code 305001893) across CN13 connector of the MAB board and a USB port of the PC/LAPTOP on which the application BootloaderAPP.exe is installed;
3. run BootloaderAPP;
4. switch the machine on.

TO USE A MACHINE IN BOOT MODE, YOU MUST FIRST CONNECT THE USB CABLE FROM MAB TO PC / LAPTOP AND THEN SWITCH MACHINE ON.

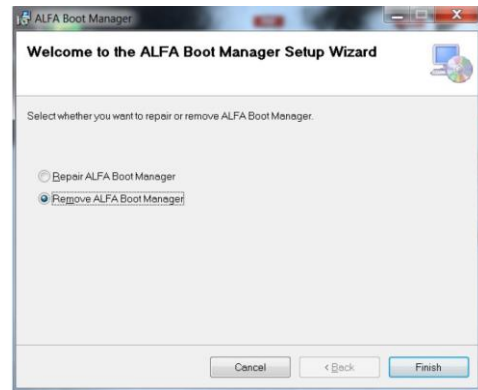
BootLoaderAPP installation procedure is described in the following paragraph. If the software is already installed on the PC, go directly to the following paragraph explaining software use for programming boards.

4.2.2. INSTALLATION OF “BOOTLOADERAPP”

If a version of the application is already present on the PC, you must first remove it before installing a new version.

In this case, run the installation software  ALFA Boot Manager and select option “Remove ALFA Boot Manager”, then press “Finish”.

Wait until uninstall is completed and press “Close”.



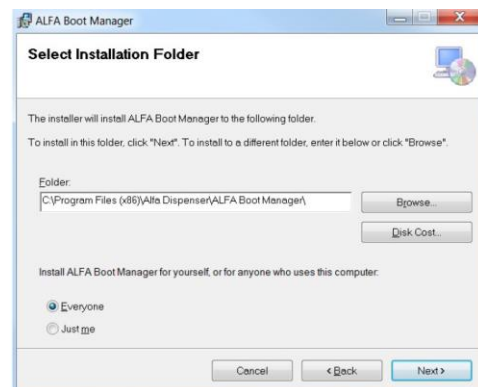
To install the application:

1. Run the installation file  ALFA Boot Manager .

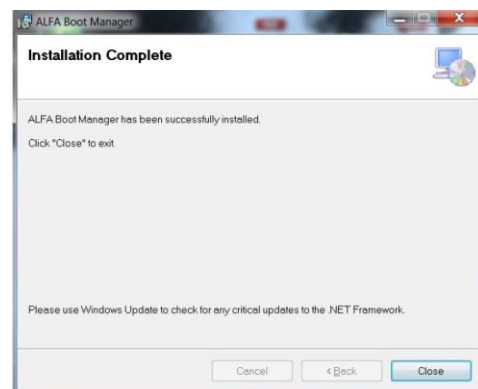
The page on the side will open.



2. In the following window, select the software installation path and select option “Everyone”, then press “Next >”.

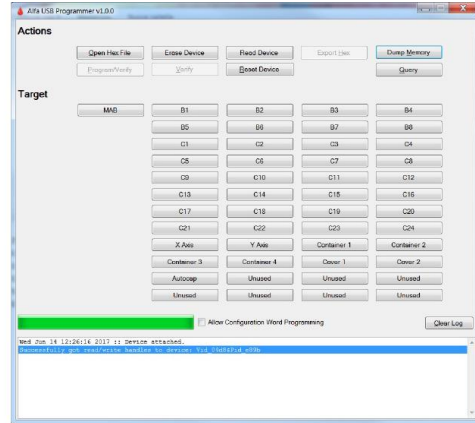


3. When prompted, press “Next >” until completing the installation procedure, then press “Close” to end the installation procedure.



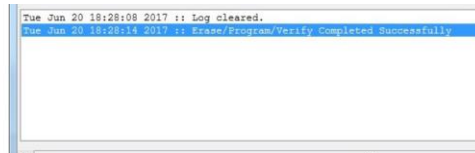
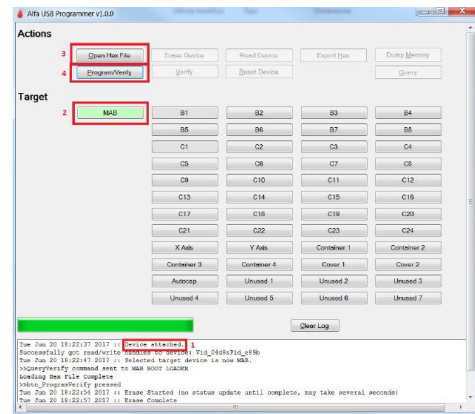
4.2.3. STARTING THE BOOTLOADER

Run BootloaderApp on the PC (the application is in the folder selected in step 2 of the installation procedure). The following window will open.



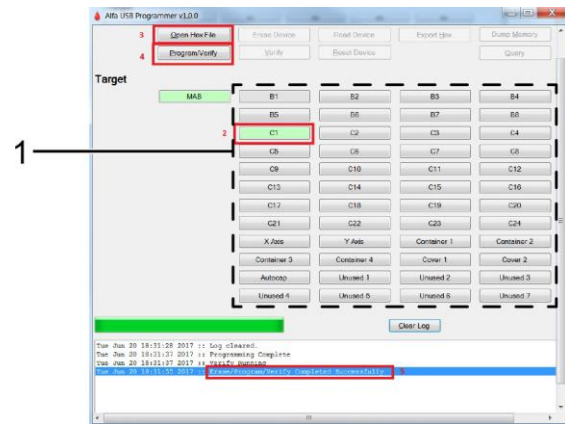
4.2.4. MAB FIRMWARE UPDATE

- Check that the software detected the presence of a MAB 'Device attached' (1)
- Select the MAB board to be used by pressing the MAB button (2) 'Selected target device is now MAB' + 'QueryVerify command sent to MAB BOOT LOADER'
- Select the Intel HEX file to be programmed, and press 'Open Hex File' (3) 'HEX File Complete'
- Proceed with Programming and Verification, by pressing 'Program/Verify' (4) ': wait for the final message 'Erase/Program/Verify Completed Successfully'
- If programming is successful, the 'MAB' button becomes GREEN.



4.2.5. ACTUATOR FIRMWARE UPDATE (SCCB BOARDS)

- Connect the special cable Alfa USB BOOT LOADER (code 305001893) across CN13 connector of the MAB board and a USB port of the PC for programming;
- Switch the machine on (or the board when programming it on a bench);
- Check that the software detected the presence of a MAB 'Device attached';
- Select actuator board (1) to be programmed by pressing the corresponding button (Fig. C1) (2) 'Selected target device is now C1' + 'QueryVerify command sent to MAB BOOT LOADER';
- Check that the address set in the actuator board to be programmed is consistent with the selected device (please refer to the following paragraph "SETTING ADDRESSES");
- Select the Intel HEX file to be programmed, and press 'Open Hex File' (3) 'HEX File Complete';
- Proceed with Programming and Verification, by pressing 'Program/Verify' (4), then wait for the final message 'Erase/Program/Verify Completed Successfully' (5);
- If programming is successful, the 'C1' button becomes GREEN.



4.2.6. SETTING ADDRESSES

For programming an SCCB actuator board, the address set via the dip-switches must be consistent with the Target selected via the programming software (see previous paragraph).

Before programming a board, set the corresponding dip-switches accordingly.

Dip-switch addressing is a binary code.

The least significant bit is the leftmost one. A dip-switch set to ON corresponds to a bit value of '1'.

SCCB must have a fixed addressing, as follows:

GROUP OR CIRCUIT	DIP-SWITCH
BASE or MASTER B1-B8 (or M1-M8): ADDRESS 1...8	
COLORANTS C1-C24: ADDRESS 9...32	
X-AXIS: ADDRESS 33	
Y-AXIS: ADDRESS 34	
CAN SELECTOR 1-4: ADDRESS 35...38	
CAPPING 1-2: ADDRESS 39...40	
AUTOCAP: ADDRESS 41	
CAN LIFTER: ADDRESS 42	
HUMIDIFIER: ADDRESS 43	

Each address must be unique in the machine.

After programming, board address can be changed but only into addresses belonging to the same group of circuits (colorants, bases, etc.).

4.3. BOOTLOADER 2.0

Boot Loader 2.0 generation will include the possibility to remotely update the Firmware of ALFA machines, only by means of ALFA Software, with no need of any USB cable and without physically switching the machine off and back on.

If newer Firmware versions are found, a message will warn the operator, specify the name and type of the Firmware versions available, and propose the update with a new Firmware version. The operator shall then select which versions to install.

5. HANDLING THE MACHINE

5.1. MOVING THE MACHINE

Desk must only be moved under conditions of maximum safety.

In order to move the machine with the cabinet, it is possible to raise the support feet and use the dedicated wheels.

IN ORDER TO AVOID THE RISK OF PAINTING SPILLS INSIDE THE MACHINE, NEVER MOVE THE MACHINE WITH THE COLORANT CIRCUITS FULL.

BEWARE OF ANY STEPS OR IRREGULARITIES IN THE FLOORING/TERRAIN THAT COULD RESULT IN SUDDEN STOPPAGES, AS THESE COULD CAUSE MACHINE TO BECOME UNBALANCED. ALWAYS PROCEED AT A LOW SPEED WITH TWO PEOPLE HANDLING THE MACHINE AT ALL TIMES.

For bigger movements, it is necessary to use a suitable lifting mean. In this case, proceed as follows:

- Switch the machine off and disconnect all electric connections (power supply, ethernet, etc.);
- remove PC, keyboard, monitor and any other device from the machine bearing surfaces;
- Push the machine on the forks of a forklift truck or a manual lift truck having a suitable capacity, after checking the weight of the configuration in section 1.5.4 of the operator's manual;

EMPTY ALL TANKS OR BRING THEM TO MINIMUM LEVEL BEFORE LIFTING AND/OR MOVING THE MACHINE.

LIFT THE MACHINE CAREFULLY, TAKING CARE TO MAKE SURE THAT IT IS GRIPPED PROPERLY AND IS NOT AT RISK OF TIPPING OVER

- Handle the machine using the forklift truck and position it in the required space.

Always place the machine on a surface suitable for sustaining its weight or on perfectly smooth and level flooring.

Once the movement has been completed, lower the support feet to stabilise the machine and reconnect the electrical circuits. Use a spirit-level to level the machine.

6. ACCESS TO THE DIAGNOSTIC FUNCTIONS

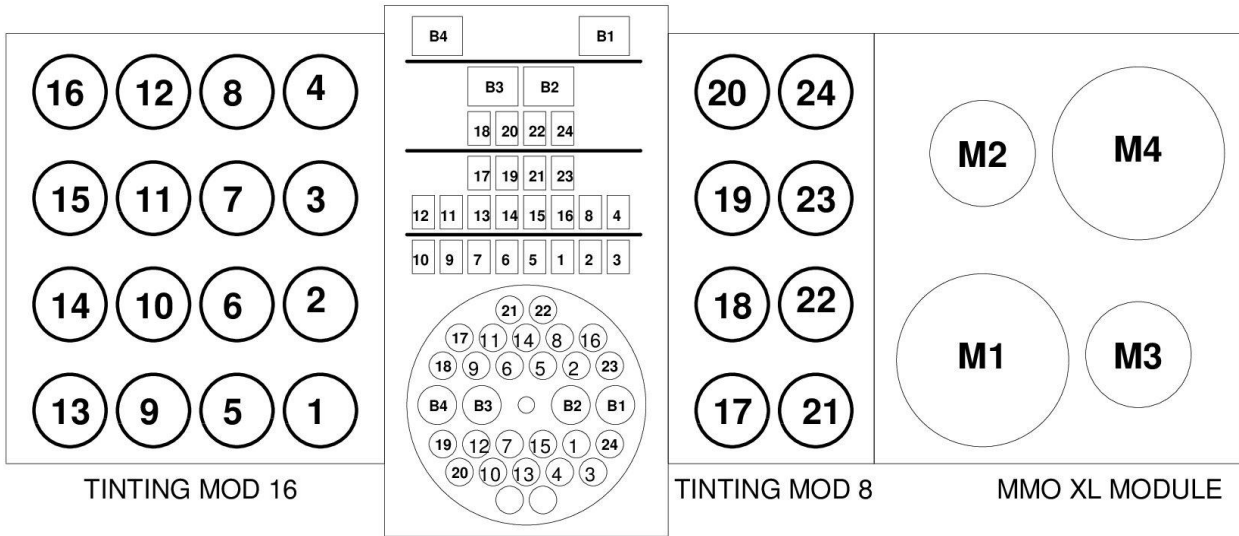
6.1. ADMIN CONTROL AND DIAGNOSTIC INTERFACE

The web control browser Admin interface has diagnostic functions that indicate the status of the machine and of the relevant circuits, as well as specific controls to activate and test each single circuit or the valve and motor functions.

For information about the interface access modes and the function description refer to the software manual.

7. CONNECTION DIAGRAMS

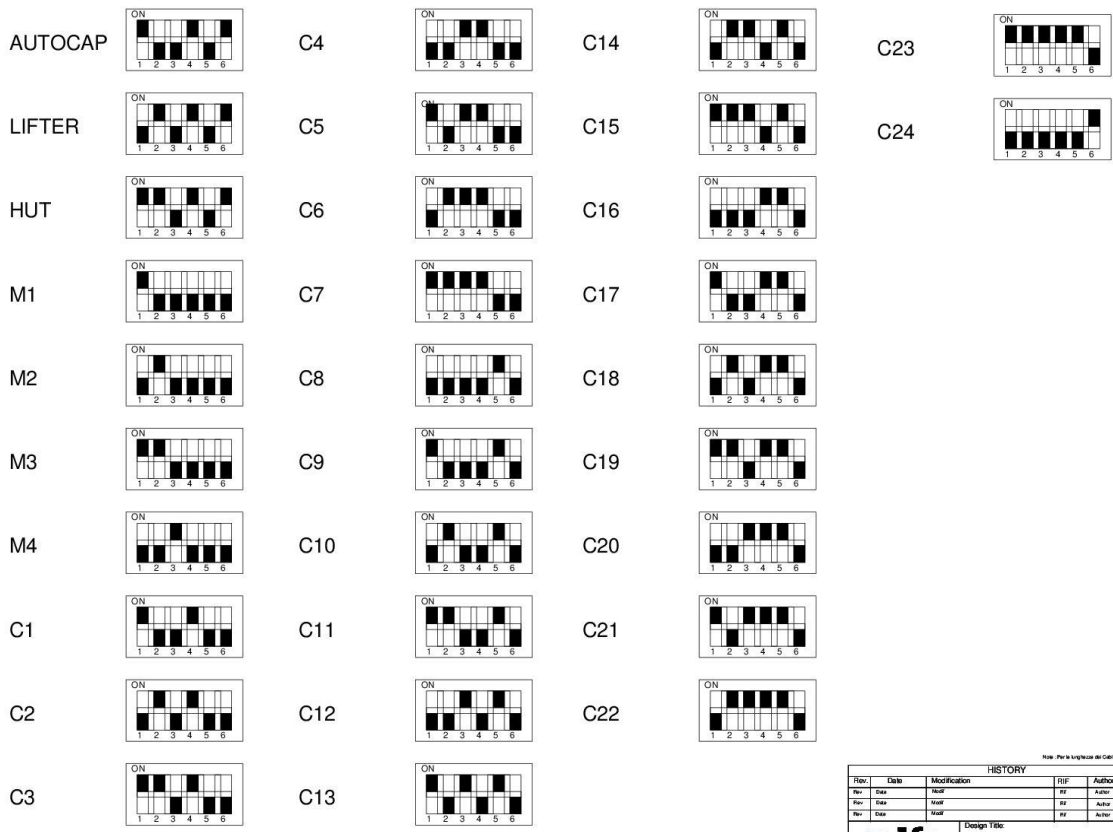
LAYOUT CIRCUITI



Nota: Per la lunghezza dei Collegamenti e anche una ulteriore di -20, -25.

HISTORY						
Rev.	Date	Modification	RF	Author	Approval	
Rev.	Date	Modif	RF	Autore	Approvato	
Rev.	Date	Modif	RF	Autore	Approvato	
Rev.	Date	Modif	RF	Autore	Approvato	

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	Page Title:	<Title>	REVISION
	Schematic Code:	SCHMATIC1	<RevCode>
	<Doc>		Sheet 1 of 1

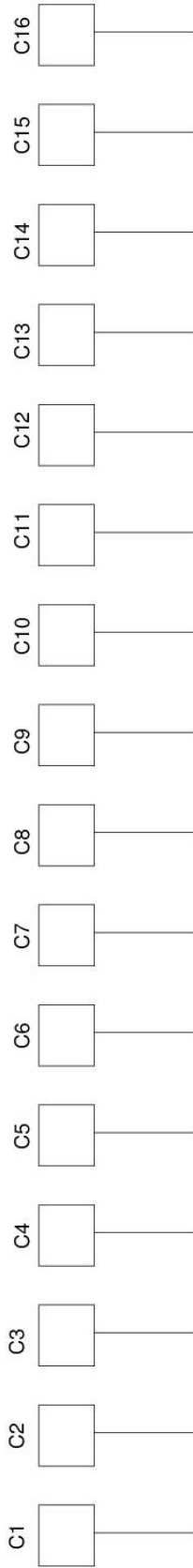


Nota: Per la lunghezza dei Collegamenti e anche una ulteriore di -20, -25.

HISTORY						
Rev.	Date	Modification	RF	Author	Approval	
Rev.	Date	Modif	RF	Autore	Approvato	
Rev.	Date	Modif	RF	Autore	Approvato	
Rev.	Date	Modif	RF	Autore	Approvato	

<p>alfa COLORPAINT DISPENSER SOLARTEC SOLARTEC</p>	Design Title:		
	Page Title:	<Title>	REVISION
	Schematic Code:	SCHMATIC1	<RevCode>
	<Doc>		Sheet 1 of 1

CABLAGGIO DT16 COD.305001877



RS 485

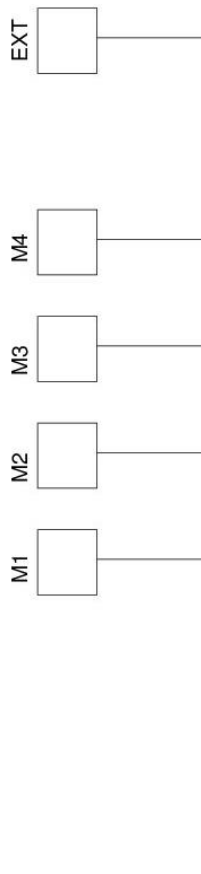
FILO VERDE 48V
 FILO ROSSO 24V
 FILO NERO 0V

A CONNETTORE BOX SCHEDE

New		Date	Modification	DESCRIPTION	APP. / REV.	APPROVAL
...

		Design Title: CABMULTICOLOR LAB DISPENSER (SISTEMA DI SPALMATO)	
PROJECT OFFICE Alfa Multi Color Spalmato.com		REVISION	

CABLAGGIO MMO XL 305002045

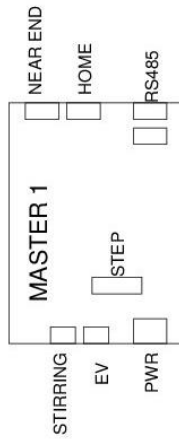
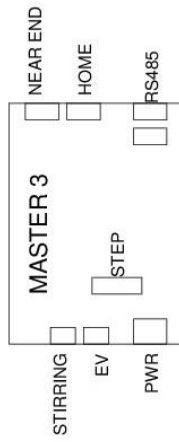
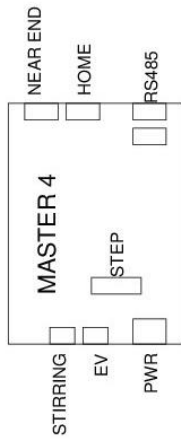


RS 485

FILO VERDE	48V
FILO ROSSO	24V
FILO NERO	0V

A CONNETTORE MOD8

STORIA		REVISIONI	
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13/03/2018	PROGETTO	01	PROGETTO
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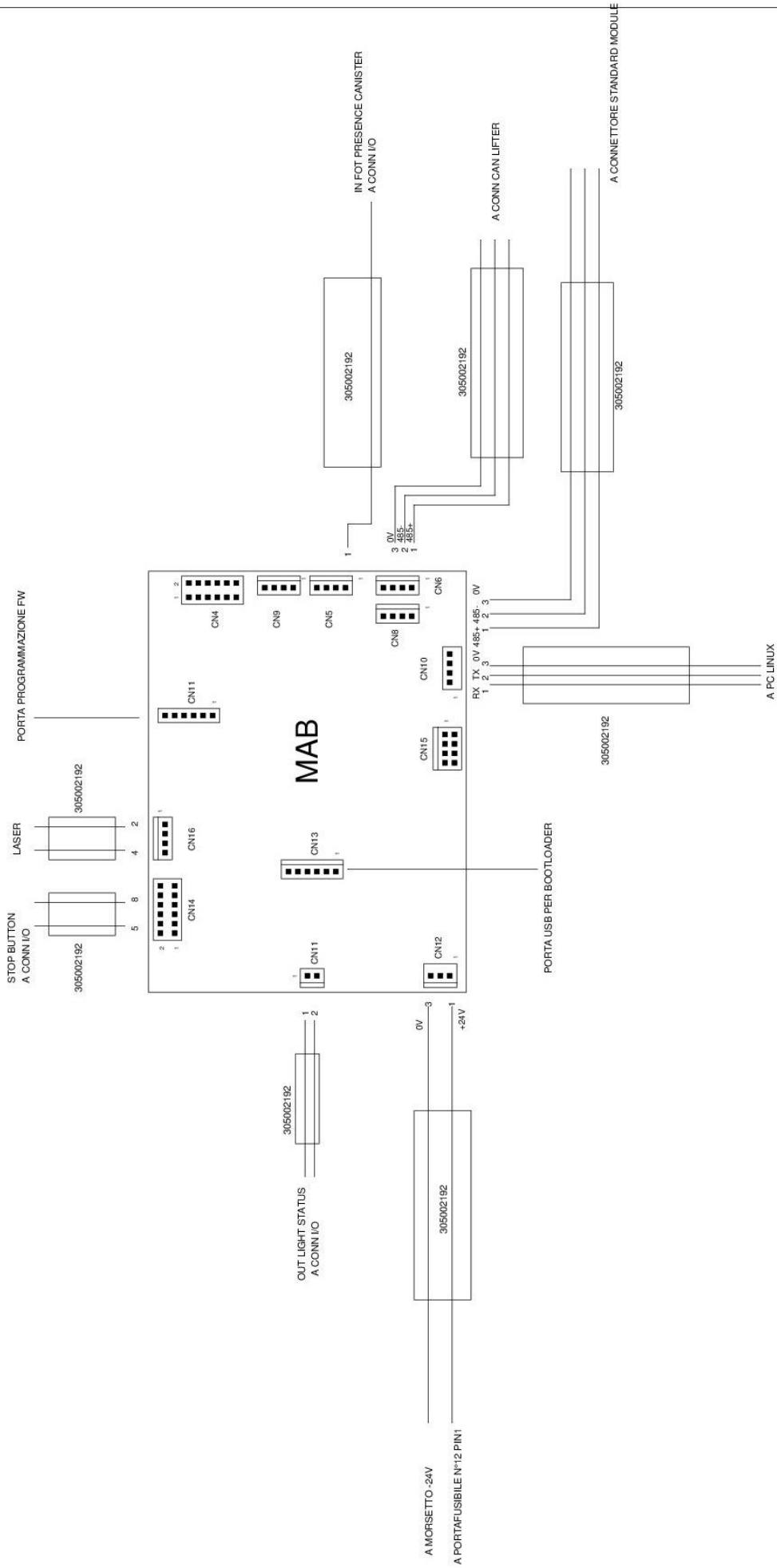


Nota: Per le istruzioni di Collegio di corrente, consultare il capitolo 06.05.

Rev.	Date	Modification	RIF	Author	Approval
Rev.	Date	Modif	RF	Author	Approval
Rev.	Date	Modif	RF	Author	Approval
Rev.	Date	Modif	RF	Author	Approval

alfa COLORPAINT DISPENSER <small>Color Paint Dispenser Color Paint Dispenser Color Paint Dispenser</small>		Design Title: <Title> Page Title: SCHEMATICI Schematic Code: <Doc>	REVISION <RevCode>
			Sheet 1 of 1

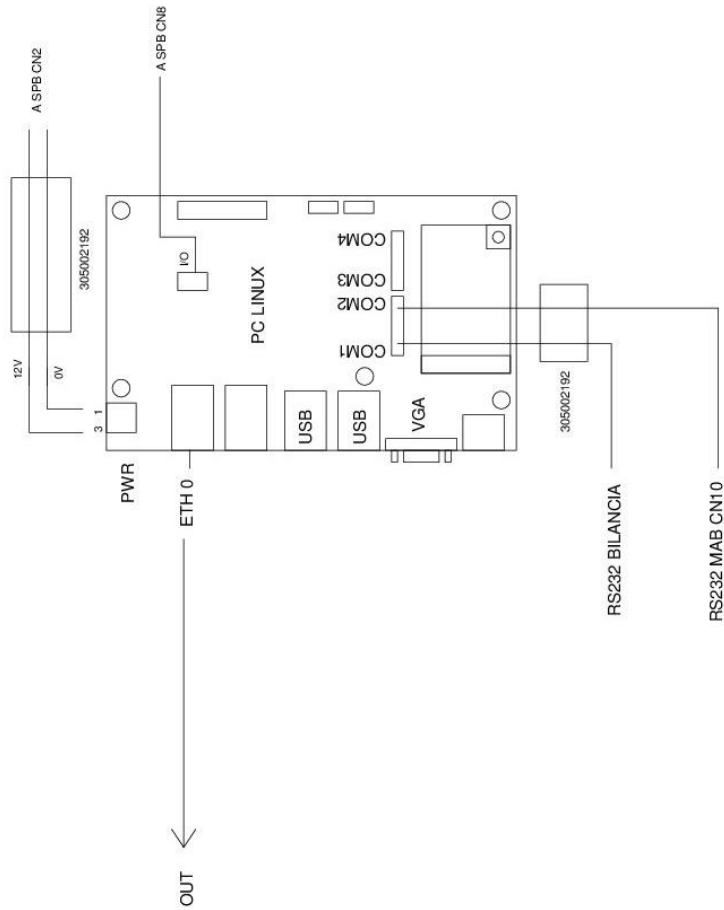
MAIN AUTOMATION BOARD



Rev.	Descr.	Modificato	Autore	Approvato
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04	04	04	04	04
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20	20	20	20	20

alfa
 COLORPAINT DISPENSER
 Design Title: MAIN AUTOMATION BOARD
 Rev. 13
 Schematic
 Date: 2013-10-13

PC LINUX



Nota: Per l'installazione e il collegamento al sistema di alimentazione di rete, vedere il capitolo 4 del manuale.

REVISIONI		REVISIONI		REVISIONI	
DATA	REVISIONE	REVISIONE	REVISIONE	REVISIONE	REVISIONE
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12/2018	02	02	02	02	02
12/2018	03	03	03	03	03
12/2018	04	04	04	04	04
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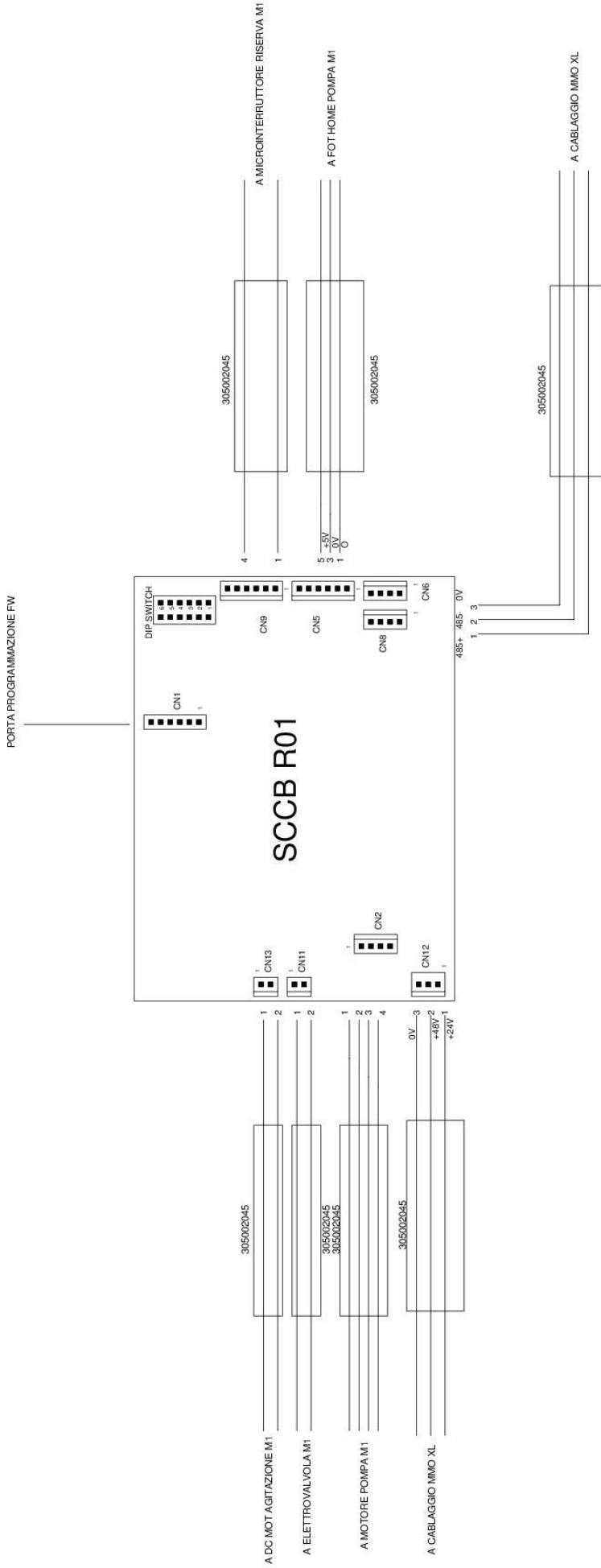
alfa
COLORPAINT DISPENSER
SISTEMI A RULLI
SISTEMI A RULLI
SISTEMI A RULLI

COMMISSION PC LINUX
Pagine: SCHEMATICI
SISTEMI A RULLI

REVISIONI: .
REVISIONI: .
REVISIONI: .

Stampa: 3 0 13

SLAVE MASTER 1



Nota: Per l'installazione e il cablaggio di questo apparecchio si veda il capitolo 4 del libretto.

HISTORY		REVISIONI	
DATA	DESCRIZIONE	REP.	CAUSA
11/12/98	1.00
...

REVISIONI	
REVISIONI	CAUSA
...	...

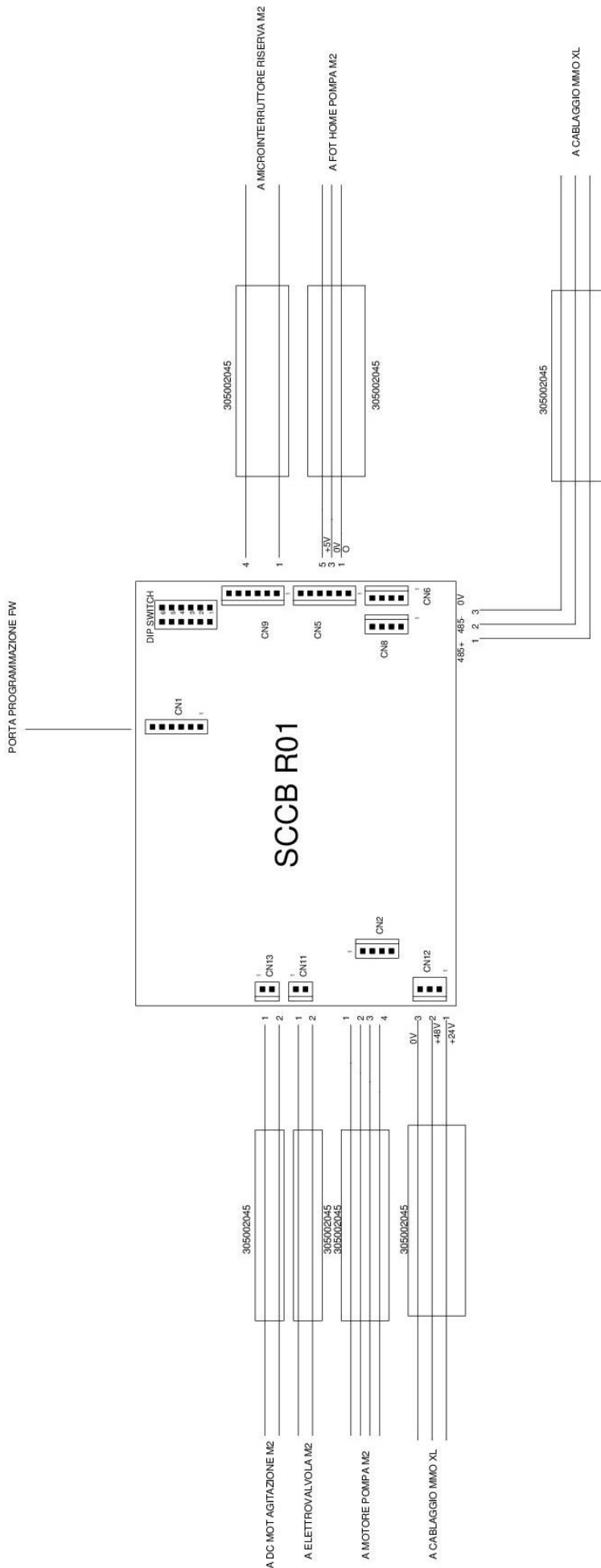
alfa
COLORPAINT DISPENSER
SISTEMI A INIEZIONE
S.p.A. - Via S. Maria 10 - 40018 BOLOGNA

COMMISSION SLAVE BASE 1
Pag. 100
SCHEMATICO
COMMISSION SLAVE BASE 1

REVISIONI: ...
REVISIONI: ...
REVISIONI: ...

Sheet 6 of 13

SLAVE MASTER 2



Nota: Per la segnalazione di un problema o per informazioni, visitate il sito www.alfa.com

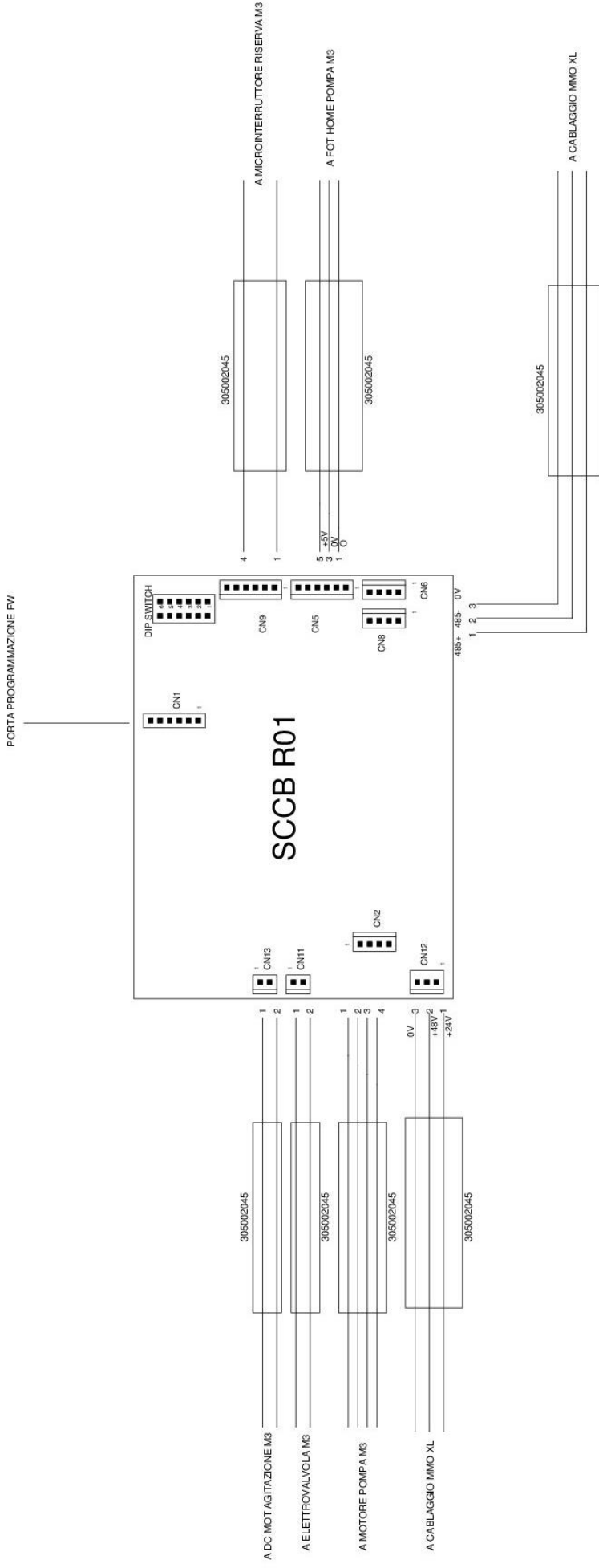
HISTORY		REV	Autore	Approvato
Rev	Data	Modificazione	Rev	Rev
1	11/2018	1	lit	lit
2	01/2019	2	lit	lit
3	01/2019	3	lit	lit
4	01/2019	4	lit	lit
5	01/2019	5	lit	lit

Design Title: **CONNESSION SLAVE MASTER 2**
 Design Code: **ALFA-SP-HEMATICI**
 Design Date: **2018/01/13**
 Revision: **5**

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Sheet 6 of 13

SLAVE MASTER 3



Nota: Per informazioni e consigli sui ricambi rivolgetevi al ditta.

HISTORY		REVISION	
DATA	OPERAZIONE	REP.	REVISIONE
11/12/99	PROVA	ALFA	001
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08/01/00	PROVA	ALFA	003
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08/01/00	PROVA	ALFA	007
08/01/00	PROVA	ALFA	008
08/01/00	PROVA	ALFA	009
08/01/00	PROVA	ALFA	010

alfa
COLORPAINT DISPENSER
SISTEMI A MEMORIA

COMMISSION SLAVE BASE 3
Pump Title: .
Schematic: .
Component Code: .
Revision: .

Stamp: 7 / # 13

8. TROUBLE SHOOTING

Error code	Error detected	Error description	Resolution of the problem
1	TIMERMG_TEST_FAILED	Timer operation test failure	Test failure means that the program on the MAB board has stopped working. Restart the program
2	EEPROM_COLOR_CIRC_PARAM_CRC_FAULT	Circuit parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load the master/colorant circuit parameters onto the new MAB board
3	EEPROM_CALIB_CURVES_PARAM_CRC_FAULT	Calibration curve parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load the calibration parameters onto the new MAB board
5	EEPROM_SLAVES_EN_PARAM_CRC_FAULT	Slave configuration CRC fault	Check for the absence of parameters in the case of MAB replacement. Load the SLAVE configurations onto the new MAB board
6	EEPROM_CANLIFTER_PARAM_CRC_FAULT	Can lifter parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load the Can lifter parameters onto the new MAB board
7	EEPROM_HUM_10_PARAM_CRC_FAULT	Humidifier 1.0 parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load Humidifier 1.0 parameters onto the new MAB board
8	EEPROM_HUM_20_PARAM_CRC_FAULT	Humidifier 2.0 parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load Humidifier 2.0 parameters onto the new MAB board
10	USER_INTERRUPT	Machine operation Software interruption	HALT has been pressed
11-18	TIMEOUT_COM_MAB_ACT "X", where "X" = 1..8	"X" BASE slave communication time-out (detected on the MAB side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the "X" BASE slave board
19-34	TIMEOUT_COM_MAB_ACT "Y", where "Y" = 1..16	Slave "Y" COLORANT communication time-out (detected on the MAB side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the "Y" COLORANT slave board
51	AUTOCAP_IDX	Slave AUTOCAP communication time-out (detected on the MAB side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the AUTOCAP slave board

Error code	Error detected	Error description	Resolution of the problem
52	CAN_LIFTER_IDX	Slave CAN LIFTER communication time-out (detected on the MAB side)	Check the SGBRD power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the CAN LIFTER slave board
53	HUMIDIFIER_IDX	Slave HUMIDIFIER communication time-out (detected on the MAB side)	Check the HUTBRD power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the HUMIDIFIER slave board
59	TIMEOUT_COM_MAB_MGB	MAB-MGB Communication time-out	Check MAB and MGB power supply wiring and replace it if damaged. Check the SERIAL communication connectors, and visually check the hardware of the 2 boards
61-68	B"X"_BASE_TOUT_ERROR, where "X" = 1..8	"X" BASE slave communication time-out (detected on the SLAVE side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the "X" BASE slave board
69-82	C"Y"_COLOR_TOUT_ERROR, where "Y" = 1..16	Slave "Y" COLORANT communication time-out (detected on the SLAVE side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the "Y" COLORANT slave board
101	AUTOCAP_TOUT_ERROR	AUTOCAP slave communication time-out (detected on the SLAVE side)	Check the SCCB power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the AUTOCAP slave board
102	HUMIDIFIER_20_TOUT_ERROR	HUMIDIFIER slave communication time-out (detected on the SLAVE side)	Check the HUTBRD power supply wiring and replace it if damaged. Check the RS485 communication connector, and visually check the board hardware. If damaged, replace the HUMIDIFIER slave board
201	RESET_TIMEOUT	RESET process time-out	The RESET process was NOT completed within the maximum set time. Check for a mechanical jam in the dispenser and eliminate it if possible
202	TIMEOUT_SUPPLY_START	Time-out at Dispensing start	Dispensing did NOT start within the maximum set time. Check for a mechanical jam in the dispenser and eliminate it if possible

Error code	Error detected	Error description	Resolution of the problem
203	TIMEOUT_SUPPLY_FAILED	Dispensing duration time-out	Dispensing did not end within the maximum set time. The formula is too long, or check for a mechanical jam in the dispenser and eliminate it if possible
301-308	B"X"_BASE_RESET_ERROR, where "X" = 1..8	"X" BASE slave reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the "X" BASE, then clean or reattach the sensor. Verify the integrity of the "flag", the pusher, the motor, and the connectors, and replace the parts or the entire unit if any mechanical wear or damage is found. If the communication is present but an electronic type problem remains, replace the SCCB board.
309-324	C"X"_COLOR_RESET_ERROR, where "X"=1..16	"X" COLORANT slave reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the "X" COLORANT, then clean or reattach the sensor. Verify the integrity of the "flag", the pusher, the motor, and the connectors, and replace the parts or the entire unit if any mechanical wear or damage is found. If the communication is present but an electronic type problem remains, replace the SCCB board.
342	AUTOCAP_HOMING_ERROR	Loss of steps: deviation upon the detection of slave AUTOCAP HOME position	Verify the cleanliness of the mechanical parts and sensors, and remove any residues if necessary. Verify the integrity of the motor and replace it if deterioration is encountered. If any mechanical parts are damaged or jammed, remove or change the mechanical parts in question. Verify the electrical connections and change them if damaged. Check the photocell sensors and reposition them or change them if damaged.
343	CANLIFTER_RESET_AUTH	Alarm generated by a Power on Reset	The Can lifter DOES NOT move, a COLD RESET command must be sent to Reset it
344	CANLIFTER_RESET_ERROR	Error in Can lifter Reset process	The canister presence sensor on Can lifter loading surface is engaged. Remove the canister, if any. If the problem persists, check the connection of this sensor.
351-358	B"X"_DATA_SUPPLY_FAILED, where "X" = 1..8	Invalid table parameters	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
359-374	C"X"_DATA_SUPPLY_FAILED, where "X" = 1..16	Invalid table parameters	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.

Error code	Error detected	Error description	Resolution of the problem
401-408	B"X"_SUPPLY_CALC_ERROR, where "X" = 1..8	In CONTINUOUS dispensing the Number of steps of the "X" BASE to carry out is NOT a multiple of a whole stroke	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
409-424	C"X"_SUPPLY_CALC_ERROR, where "X" = 1..16	In CONTINUOUS dispensing the Number of steps of the "X" COLORANT to carry out is NOT a multiple of a whole stroke	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
451-475	DISABLED_REQUIRED_CIRCUIT_"X"_ERROR, where "X" = 0..24	"X" Slave must dispense but is erroneously Disabled	Load the Slave configurations onto the new MAB board.
501-508	B"X"_COLOR_HOME_POS_ERROR, where "X"=1..8	Error in the HOMING procedure of the "X" BASE	Check the correct operation of the photocell and the correct movement of the "X" BASE stepper
509-524	C"X"_COLOR_HOME_POS_ERROR, where "X"=1..16	Error in the HOMING procedure of the "X" COLORANT	Check the correct operation of the photocell and the correct movement of the "X" COLORANT stepper
551-558	B"X"_COLOR_HOME_BACK_ERROR, where "X" = 1..8	Loss of steps error in "X" BASE Dispensing	Decrease the dispensing speed
559-574	C"X"_COLOR_HOME_BACK_ERROR, where "X" = 1..16	Loss of steps error in "X" COLORANT Dispensing	Decrease the dispensing speed
601-608	B"X"_COLOR_POS0_READ_LIGHT_ERROR, where "X" = 1..8	At the end of the movement from HOME position to POS0 the photocell is NOT engaged in the "X" BASE	Check photocell and stepper operation
609-624	C"X"_COLOR_POS0_READ_LIGHT_ERROR, where "X" = 1..16	At the end of the movement from HOME position to POS0 the photocell is NOT engaged in the "X" COLORANT	Check photocell and stepper operation
651-658	B"X"_COLOR_END_STROKE_READ_DARK_ERROR, where "X" = 1..8	At the end of the dosing stroke the photocell is engaged in "X" BASE	Check photocell and stepper operation
659-674	C"X"_COLOR_END_STROKE_READ_DARK_ERROR, where "X" = 1..16	At the end of the dosing stroke the photocell is engaged in "X" COLORANT	Check photocell and stepper operation

Error code	Error detected	Error description	Resolution of the problem
701-708	B"X"_OVERCURRENT_ERROR, where "X" = 1..8	"X" BASE stepper motor overcurrent	Check wirings, stepper operation
709-724	C"X"_OVERCURRENT_ERROR, where "X" = 1..16	"X" COLORANT stepper motor overcurrent	Check wirings, stepper operation
751-758	B"X"_SOFTWARE_ERROR, where "X" = 1..8	Logic error in the process statuses on "X" BASE	Replace electronic board, if the problem persists request a Firmware update
759-774	C"X"_SOFTWARE_ERROR, where "X" = 1..16	Logic error in the process statuses on "X" COLORANT	Replace electronic board, if the problem persists request a Firmware update
791	AUTOCAP_SOFTWARE_ERROR	Logic error in the process statuses on AUTOCAP	Replace electronic board, if the problem persists request a Firmware update
801-808	B"X" COLOR_DRV_OVER_CURR_TEMP_ERROR, where "X" = 1..8	"X" BASE Stepper motor overtemperature	Check wirings, stepper operation
809-824	C"X" COLOR_DRV_OVER_CURR_TEMP_ERROR, where "X" = 1..16	"X" COLORANT Stepper motor overtemperature	Check wirings, stepper operation
841	AUTOCAP_DRV_OVER_CURR_TEMP_ERR	AUTOCAP Stepper motor overtemperature	Check wirings, stepper operation
851-858	B"X" COLOR_OPEN_LOAD_ERROR, where "X" = 1..8	Load missing in "X" BASE Stepper	Check wirings, stepper operation
859-874	C"X" COLOR_OPEN_LOAD_ERROR, where "X" = 1..16	Load missing in "X" COLORANT Stepper	Check wirings, stepper operation
891	AUTOCAP_OPEN_LOAD_ERR	Load missing in AUTOCAP Stepper	Check wirings, stepper operation
892	CAN_LIFTER_HOMING_ERROR	Error while reaching the Can lifter Home position	Check fully down sensor connection
893	HUMIDIFIER_10_PARAM_ERROR	Error in Humidifier 1.0 parameters reception	Check the correctness of parameters sent. The duration of Pump and Heater activation must NEVER be greater than Period
894	CAN_LIFTER_MOVE_ERROR	Error in Can lifter movement	Check connection and power supply of Can lifter DC motor. If the problem persists, check Can lifter Encoder wiring and its operation
895	TOO_LOW_WATER_LEVEL	Insufficient Water level in Humidifier tank	Refill Water in the tank. If the problem persists, check connection of the level sensor to the board that manages it
896	HUMIDIFIER_20_PARAM_ERROR	Error in Humidifier 2.0 parameters reception	Check the correctness of parameters sent. The duration of Pump and Heater activation must NEVER be greater than Period
897	RH_ERROR	Error in Relative Humidity measurement	Check connection of T/H Sensor housing board with HUTBRD board. Check that T/H sensor is not wet. If the problem persists, replace the board and/or the connection cable.

Error code	Error detected	Error description	Resolution of the problem
898	TEMPERATURE_ERROR	Error in Temperature measurement	Check connection of T/H Sensor housing board with HUTBRD board. Check that T/H sensor is not wet. If the problem persists, replace the board and/or the connection cable
899	TEMPERATURE_TOO_LOW	Temperature on board the machine too Low	Check Heater operation
1000	SCALE NOT RESPONDING	The scale is not connected to the machine	Connect a scale to calibrate it, or disable the scale Device within machine configuration in Admin mode

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Timbro rivenditore

Sales Mark

