

Operator Manual

Color Tester



ORIGINAL INSTRUCTION

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0. FOREWORD

0.1. HOW TO USE THE MANUAL

0.1.1. IMPORTANCE OF THE MANUAL

The manual contains instructions and advice for the commissioning and use of the Color Tester product. Before installing and commissioning the system, carefully read this manual in all its parts and in particular the chapters “GENERAL INFORMATION”, “INSTALLATION” and “HOW TO PRODUCE A COLOUR”, 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

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

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>Color Tester 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>

	<p>GROUND CONNECTION Ground wire connection point.</p> <p>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.</p> <p>In case of lead damage, switch machine off and immediately contact the technical service support.</p>
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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 routine maintenance operations, such as loading the colorant groups, the magazines, and the printer roll. Access on the part of these operators is protected by a first level password;
- **TECHNICIAN:** an expert operator authorised to access the machine's special diagnostic, initialisation, 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 (colour charts, display, payment system, label printing; sample output tray);
- **MAINTENANCE AREA:** the area inside the machine, which can be accessed with a key, where routine maintenance operations can be performed (tank and magazine filling, label printer roll change, unloading bin replacement, nozzle cleaning); ordinary maintenance operations on Color Testers are performed by the MAINTENANCE OPERATOR. Extraordinary maintenance operations require access to SERVICE AREA and are performed by the TECHNICIAN;
- **SERVICE AREA (FOR USE BY TECHNICIANS):** the internal areas of the machine that can not be accessed using a single key, but whose access also requires the use of other tools (electrical cabinets);

0.3.4. RESIDUAL RISKS AND DANGEROUS AREAS

USER: The machine does not present any risk for the operator.

MAINTENANCE OPERATOR: The doors allowing access to machine internal parts are protected by safety interlock micro-switches, which stop any movement if doors are opened during machine operation.


In case of door opening, potentially dangerous areas are as follows:

- electrical panel area: risk of electric shock.

TECHNICIAN: Authorised technicians can access special diagnostic functions and can work in “service” mode, i.e. with disabled protections. In this mode, the safety interlock micro-switches are disabled and it is possible to touch dangerous moving parts:

- Cartesian axes and autocap system: risk of snagging arms, hands, fingers, hair or clothes due to the movement of the drive axes.
- Capping area: risk of squeezing arms, hands or fingers due to can pusher and drive organs.
- paint tanks: risk of squeezing arms, hands or fingers due to the movement of stirring blade.

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

	<p>REMOTE SERVICE: The machine may also be remotely activated via Personal Computer or Smart device. Pay maximum attention during access to dangerous areas.</p>
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1. GENERAL INFORMATION

1.1. INTRODUCTION

Color Tester is an automatic dispenser of colour samples for use in points of sale of large distribution centres and is intended to be used directly by the end consumer.

It can produce on-site 100 ml samples of any colour, to fill empty cans, in less than 1 minute.

The machine includes 12 circuits for colorants, 1 circuit for the white base and 1 circuit for the transparent base, as well as an automated store of 100 ml empty cans with covers.



Color Test

The simple ordinary maintenance operations, such as refill of colorants, bases and magazines, are the only operations required from point-of-sale staff.

Thanks to the accuracy and high resolution of the cutting-edge dispensing systems designed and patented by Alfa, the machine can reproduce any colour chart.

The machine does not stir the dispensed sample.

The colour sample, released in the relevant unloading compartment, must hence be duly stirred by the end user before use until obtaining a complete mixing of the product and a homogeneous shade.

Several payment systems are available and can be integrated and customised to country and customer's requirements (token, coins, paper money, RFID key, business cards, etc...).

1.2. INTENDED AND UNINTENDED USE

The machine is designed to dispense water-based liquid paint in a predefined Alfa-approved can.

Any uses other than those expressly described in this manual are strictly prohibited.

DO NOT USE PAINTS OR COLORANTS NOT APPROVED BY THE MANUFACTURER

DO NOT USE FLAMMABLE LIQUIDS

DO NOT USE VESSELS OR COVERS NOT APPROVED BY THE MANUFACTURER

MAKE SURE THAT THE ELECTRICAL SPECIFICATIONS AND USAGE CONDITIONS FORESEEN BY THE MANUFACTURER ARE MET PRIOR TO INSTALLATION (PARA. 1.6).

The equipment is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instructions.

Children must be supervised to ensure they will not play with the equipment.

1.3. 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.

1.3.1. 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.

1.4. DESCRIPTION OF THE MACHINE

The paragraph describes the main external and internal components of the machine and their function.

1.4.1. EXTERNAL COMPONENTS

1.4.1.1. OVERVIEW OF MAIN ELEMENTS

1. Colour chart
2. 12" touch screen display
3. Colour sample label output
4. Token slot (optional)
5. Output drawer (sample output)
6. Corner door
7. Door with colour chart
8. Key lock
9. Mains socket with switch (at the back, see 1.4.1.2)

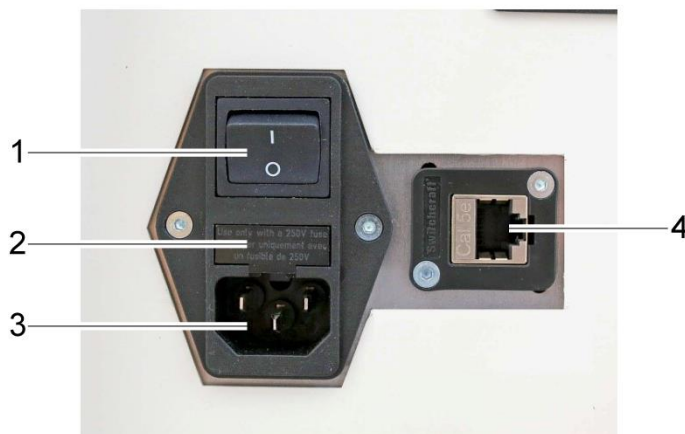


Color Tester (exterior)

1.4.1.2. 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. Ethernet Port RJ45



Electrical connections

1.4.1.3. TOUCH SCREEN INTERFACE

User-machine interface consists of a 12" LCD touch screen, on machine LH side.

Display functions:

1. Current stage displaying (1=selection; 2=production; 3=pick-up)
2. Status indicator (green=OK; red=alarm); and key to access diagnostics and maintenance functions
3. Key to access colour selection interface



Display

- Through the touch screen, user can access the various machine functions, such as colour selection, dispensing procedure start as well as diagnostics functions.
- Access to diagnostics, maintenance and alarm reset functions is password-restricted (see para. 5.2). A further access level allows for initialisation, calibration and access to statistics and supervision functions necessary to the service.

1.4.1.4. COLOUR SAMPLE

The machine produces 100 cc color samples, using cans having a net capacity of 160 ml.

The only approved cans, for which machine correct operation is ensured, are those directly supplied by Alfa.



1.4.2. INTERIOR COMPONENTS - OVERVIEW



Color Tester components

1.	Empty 100 ml cans storages	4.	Colorant groups
3.	100 ml can lids storages	5.	Can unloading chute
5.	Control electronic panel	6.	Label printer
6.	Negative unloading bag support	7.	Base tank pull-out tray
7.	Base tanks (white and transparent)	8.	Tank tray fastener
11.	Corner door retainer	9.	Coin slot (optional)
13.	Storage and colorants support base	10.	Grippers and Cartesian axes level

1.4.2.1.CANS STORAGEES

The machine contains 4 columns of empty cans, each having a maximum capacity of 75 pieces.

The software detects the minimum level of each magazine through suitable sensors and records any malfunction.

From time to time, upon production of a new sample, the software selects from which magazine to pick up the can based on availability.

The reserve sensors located on every magazine trigger a warning when 4 cans are left in the column.

A machine alarm informs the operator when one of the four columns is below reserve level. When the last magazine is empty, an alarm for machine out of service is triggered to request maintenance operator intervention.

In case of loading error, the software excludes the magazine and tries to pick-up again from a different magazine.



1.4.2.2.DYE UNITS

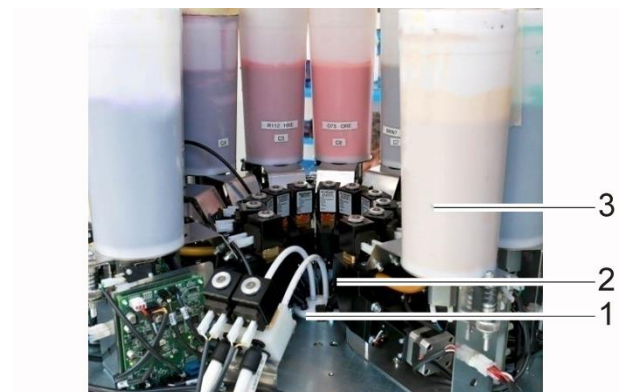
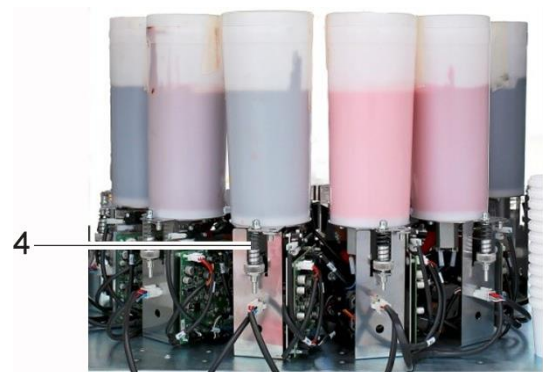
The machine can house up to 12 colorant groups that can be controlled simultaneously (max 6).

The circuits are all the same, fastened to dye level through one knob, bolted below the surface, and are facing toward a single dispensing point (nozzle unit (1)).

Each unit includes a pumping system (2) and a 1.5-litre tank (3), located on relevant supports and hinged one to the other.

Each dye unit features its own dye reserve alarm system (4).

Every unit features a software address that can be matched to a specific dye.



1.4.2.3. COVER MAGAZINES

The machine contains 2 columns of covers, each having a maximum capacity of 170+37 pieces. Some sensors detect when columns are nearly empty.

The software detects the minimum level of each magazine and records any malfunction.

From time to time, upon production of a new sample, the machine selects which capping unit to use based on availability.

The reserve sensors located on every magazine trigger a warning when approximately 37 covers are left in the column.

The machine warns the operator when one of the two columns is below reserve level. It triggers an alarm with machine stop when both magazines are empty (or with remaining storage below minimum level).



1.4.2.4. BASE TANKS

At the bottom of the machine there are two 22-litre stainless steel tanks (1) containing the white and transparent bases.

Each tank is fastened to a swivelling mount equipped with a warning level detection.

Under the tank, fixed onto it, there is a shut-off tap with built-in filter (2) and pumping unit (3), equipped with delivery tap.

Both tanks are secured to a pull-out tray (4), sliding on rails, allowing for easier refill.

Tank tray features a support wheel to increase its stability during pull-out and a side retaining hook (5), preventing any accidental movements.

Under the tanks user can put dripping trays with a low profile, that can be removed through the front bottom slit (6).



1.4.2.5.AUTOCAP

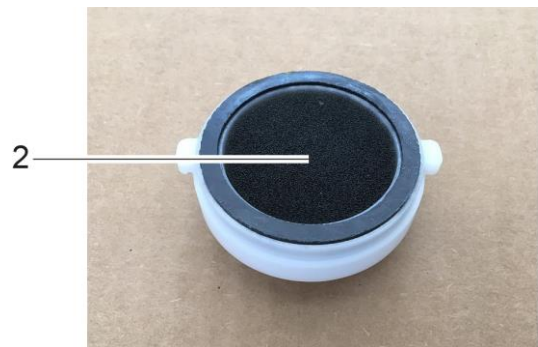
Autocap is found in the lower part of storage and colorants support base (see 1.4.2 (13)).

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

The moisturising sponge (2) is installed inside a cap (1). Remove the latter to easily service the system. A round seal ensures sealing of the moisturising area.

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

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



1.4.2.6.GRIPPERS AND CARTESIAN AXES LEVEL

A Cartesian axes system allows movement of passive grippers under the colorant support base.

Grippers represent the passive unit tasked with picking up the can to be filled and are equipped with a “presence” sensor used by the machine to trigger an alarm in case of failed can pick-up or wrong position during dispensing. Opening is made by interference with a fixed pin.

Grippers (1) are driven by means of the Cartesian axes system, in which axes are conventionally called Y (2) and X (3).

Axes drive program allows pick-up of empty vessel, its positioning under the dispensing unit (nozzle unit), its shifting under the capping station and unloading of the filled and capped can into the output skid.



Gripper features a motor-driven lever (4) used to lift can during dispensing. This system ensures that no product drops can be accidentally dispensed outside the can.



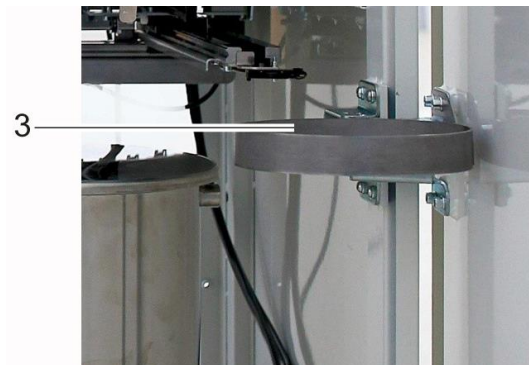
1.4.2.7. UNLOADING AND NEGATIVE UNLOADING

Unloading system includes an internal chute (1) leading colour samples out, in the output drawer (2).

In case of malfunction, the machine unloads any rejection into a “reject area”.

The reject area is also called “negative unloading”, and is simply made of a plastic bag fastened to the round support (3) available inside the right-hand door.

The operator must periodically check the negative unloading area and empty or replace the bag.



1.4.2.8. LABEL PRINTER

The printer prints the label bearing the code of the prepared colour.

The label is 42X35 mm and provides the following information:

- Date and time
- Colour code
- Sample volume
- Barcode

When the roll is over, the machine will trigger an alarm.

The operator must change the roll in a few simple operations.



1.4.2.9. PAYMENT SYSTEM

Color Tester can feature an optional payment system. The image at the side shows the inside (on the left) and outside (on the right) of a door with coin slot (1), with relevant coin holder drawer (2).



1.4.2.10. LTE ROUTER MODEM

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



1.5. MACHINE STATUSES AND WORK CYCLE

Following are the possible machine statuses:

- STANDBY: machine ready, waiting for controls
- DISPENSING: dispensing in progress
- RESET: reset in progress
- ALARM: machine error
- DIAGNOSTIC: machine waiting for direct controls

For further details, refer to the next part of this paragraph.

1.5.1. SWITCH-ON - RESET

Upon switch-on, system runs a reset routine and sets to stand-by, thereby allowing the operator to use the touch screen and set production of one or several new colour samples. During reset, system verifies correct operation of parts (drives and sensors) and rejects any cans being processed when machine was shut off.

1.5.2. ALARMS

The display shows in real time any critical machine alarms requiring immediate operator intervention (and preventing use of the machine) as well as non-critical alarms, reminding the operator of (not immediately) required service operation(s).

Critical alarms include:

- cover or can insufficient quantity*,
- printer roll out,
- base or colorant level below minimum level**

Non-critical alarms include:

- almost out of colorant, covers or cans,
- base tank level in reserve,
- colorant level in reserve,

* The machine generates a locking alarm when all magazines are empty, otherwise the empty column indication can be seen only by accessing the diagnostic mode (see para. 5.2).

**Product level indication and "reserve volume" and "minimum volume" thresholds can be viewed only by accessing the diagnostic mode (see para. 5.2).

Every time a dispensing control is sent, the software calculates if the volume of the components is sufficient to perform the formula so that their residual volume is not lower than the minimum set volume. In case even only one of the components of the formula is not sufficient, the system requires the operator to select another formula.

1.5.3. STAND-BY

When the machine is not in use, it performs some activities required for a trouble-free operation. These activities include:

- Colorant stirring;
- Master stirring;
- Master recirculation;
- Colorant recirculation;

1.5.4. PRODUCT STIRRING AND RECIRCULATION

The product stirring and recirculation functions are carried out cyclically on all circuits, at regular intervals that can be programmed via software.

The default values of the duration and pause variables of each function are indicated in the following table:

	Stirring	Recirculation
Colorants	30" every 30'	1' every 30'
Bases or Semi-finished products	30" every 30'	1' every 30'

The parameters can be set independently for each circuit of the machine by accessing the ADMIN interface (see chap. 4 - ACCESS TO THE CONFIGURATION ADVANCED FUNCTIONS and the "software manual").

Upon commissioning, the installing TECHNICIAN must adjust stirring and recirculation parameters depending on the recommended settings for every installed product. Access to programmable functions is described in the "Software manual".

Every single product is stirred after dispensing. This further stirring cycle resets the relevant timer for "stirring pause". Stirring speed is approx. 15 rpm and can not be modified.

1.5.5. WORKING CYCLE

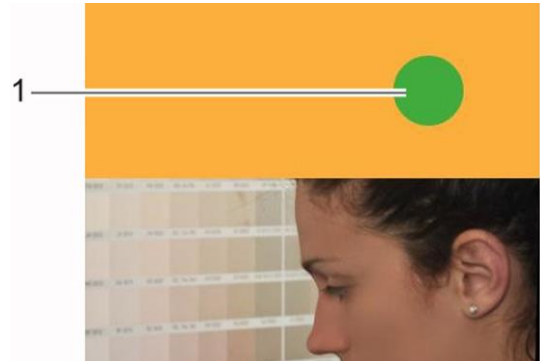
User selects the colour and presses production start, then the machine runs the following work stages:

1. **CAN LOADING**
2. **AUTOCAP OPENING**
3. **PAINT DISPENSING**
4. **AUTOCAP CLOSING**
5. **CAN CAPPING**
6. **CAN UNLOADING**
7. **MOVING BACK TO HOME POSITION**

1.5.6. ERRORS AND TROUBLESHOOTING

During use, some machine errors may be triggered, such as failed movement of a mechanical unit (Cartesian axis, autocap, capping system, etc.) or failed detection of can presence after loading.

These errors are promptly displayed (warning (1) becomes red) and cancel current work cycle, resulting in the sample being discharged in the negative unloading area.



Press indicator (1) to access, after authentication, the advanced diagnostic and maintenance functions.

This mode is reserved to skilled and duly trained personnel.

For further details, refer to paragraph 5 – ACCESS TO DIAGNOSTIC MODE.

1.6. TECHNICAL SPECIFICATIONS

1.6.1. ELECTRICAL SPECIFICATIONS

Power supply	100-240Vac 50-60Hz
Max current	2.5÷1.7A
Absorbed power	400W max
Fuses 5X20 mm	T2.5A-250V Q.ty 2 pcs
Working noise (*)	Lower than 70 dB (A)
Colour Display TFT-LCD	12.1" 1024x768 16.2M Colour capacitive Touch screen

(*) A-weighted sound pressure level determined in accordance with annex ZBB of 60335-2-75 standard during a normal working cycle to 1 m distance far from the surface of the machinery and to 1,60 m height from the floor.

1.6.2. EQUIPMENT CLASSIFICATION AND REFERENCE STANDARDS

Overvoltage category	II See note (1)
Protection classification	IP 20
Class of equipment	I
Reference standards	IEC EN 55022 IEC EN 55024 IEC EN 61000-3-2 IEC EN 61000-3-3 IEC EN 60335-1 IEC EN 60335-2-75 IEC EN 60204-1
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.

1.6.3. OPERATING CONDITIONS

Operating temperature (*)	+15 ÷ +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.

(**) Without product inside the circuits.

1.6.4. DIMENSIONS AND WEIGHT

Height	1985 mm (±15mm)
Width	1060 mm
Depth	800 mm
Weight (empty)	350 Kg

1.6.5. PRODUCTION CAPABILITY AND TECHNICAL SPECIFICATIONS

Gross can capacity	160ml
Net colour sample capacity	100 ml (0.4 fl oz)
Can dimensions	Ø 69 mm, 69 mm high
Dye tank capacity	1.5 litres
Base tank capacity	22 litres
Cans storage capacity	300 pcs (reserve 16 pcs)
Can cover capacity	414 pcs (reserve 74 pcs)
Label size (LxH)	42X35 mm
Label printing roll range	1400pcs
Number of dye circuits	11 (scalable up to 12)
Number of Base circuits	2
Types of colorants that can be used	Water-based
Colours that can be dispensed	infinite
Base flow rate	0.2 litres/min
Colorant flow rate	0.05 litres/min
Minimum quantity that can be dispensed	1/2304 fl oz (0.012 cc)
Master filter	1.2 mm
Colorant strainer	0.9mm
Overall range	280 samples
Dispensing mode	Simultaneous
Output (*)	Up to 80 samples/h

(*) Output depends on type of formula and software setup.

1.6.6. CONSUMABLE STORAGE

Cans and covers	Refer to manufacturer's datasheet
Label roll	+5 ÷ +55°C
Dyes and masters	Refer to manufacturer's instructions

1.7. RESIDUAL RISKS AND DANGEROUS AREAS

USER: The machine does not present any risk for the operator.

MAINTENANCE OPERATOR: The doors allowing access to machine internal parts are protected by safety interlock micro-switches, which stop any movement if doors are opened during machine operation.

In case of door opening, potentially dangerous areas are as follows:

- electrical panel area: risk of electric shock.

TECHNICIAN: Authorised technicians can access special diagnostic functions and can work in “service” mode, i.e. with disabled protections. In this mode, the safety interlock micro-switches are disabled and it is possible to touch dangerous moving parts:

- Cartesian axes and autocap system: risk of snagging arms, hands, fingers, hair or clothes due to the movement of the drive axes.
- Capping area: risk of squeezing arms, hands or fingers due to can pusher and drive organs.
- paint tanks: risk of squeezing arms, hands or fingers due to the movement of stirring blade.



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

1.8. CHECKING THE OPERATION OF THE SAFETY DEVICES

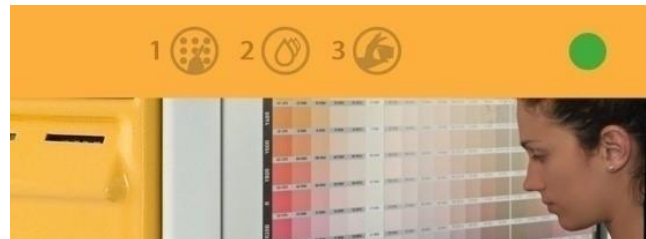
In order to ensure trouble-free operation in maximum safety conditions, it is necessary that door interlock switches operate properly.

Before starting ordinary maintenance, open the doors using the provided key and ensure that the relevant alarm is displayed.

If the machine does not show the alarm, the interlock switch may be faulty. In this case, switch off the machine and contact the technical service.

1.9. "SERVICE" MODE

- Only specialised and trained technicians are authorised to operate in “Service” mode.
- In “Service” mode, the safety devices are disabled. All movements are active only after login and after user presses the safety deadman button.
- The Service mode is password-protected, and the required password is released by Alfa after due technical training.
- Take all necessary precautions to ensure that the password remains confidential and is periodically updated by authorised staff.
- Alfa declines any liability for loss or damage to persons or properties due to the non-compliance with the above-described precautions and particularly to the use of the machine with disabled safety protections.




WARNING!
“SERVICE” MODE IS RESERVED ONLY TO EXPERT AND AUTHORIZED PERSONNEL.

1.10. CERTIFICATIONS


1.10.1. END OF LIFE TREATMENT - WEEE DIRECTIVE

This product complies with the Standard 2012/19/EU on the waste of electric and electronic equipment which abrogate Standard 2002/96/EC.

	<p>The symbol on the equipment or on the package indicates that the equipment must not be disposed of as general waste at the end of its operating life but must be disposed of in a collection point specific for electric and electronic equipment organised by the Public Administration.</p> <p>The user desiring to dispose of this equipment may also contact the manufacturer and receive further information for a correct separate collection of the equipment at the end of its operating life.</p> <p>A correct separate collection for subsequent recycling of decommissioned equipment, treatment and environmentally compatible disposal, helps avoiding possible negative effects on the environment and on human health and promotes recycling of the materials making up the product.</p> <p>Therefore, the commitment to do so is a moral and civil duty for every citizen.</p> <p>Illegal disposal of the product by the owner causes the imposition of administrative sanctions as indicated by the law in force.</p> <p>For safe machine packaging and handling it is recommended to use a pallet for Color Tester, equipped with the necessary fixing points (see para. 2).</p> <p>All handling procedures must be carried out using an industrial truck or a transpallet of right capacity.</p>
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1.10.2. FCC

The manufacturer Alfa Srl - Via Santa Chiara 2 - 40137 - Bologna – Italy, declares under its own responsibility that the Color Tester system is compliant with the main international standards and regulations and in particular that: For the equipment supplied with power at 100-120V, 60 Hz, Alfa declare that:

	<p>Color Tester complies with part 15 of the FCC regulations, Sub-chapters A and B - sections 15.107 (b) (e) and 15.109 (b) (g) - for Class A digital devices</p>
---	--

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1.10.3. ROHS CHINA DECLARATION

	<p>Color Tester is compliant with the Chinese RoHS standard concerning pollution caused by Electronic Information Products (SJ/T11363-2006, SJ/T11364-2006, SJ/T11365-2006).</p>
---	---

Part Name	Toxic or Harmful Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr VI)	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Color Tester	O	O	O	O	O	O

O: Indicates that this toxic or harmful substance contained in all the homogeneous materials for this part is below the limit required by the SJ/T11363-2006 regulation.
 X: Indicates that this toxic or harmful substance contained in at least one of the homogeneous materials used for this part is above the limit required by the SJ/T11363-2006 regulation.

1.10.4. EC DECLARATIONS

	<p>The equipment complies with the following European Directives: 2006/42/EC, 2014/35/EU, 2014/30/EU, 2011/65/EU.</p>
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DECLARATION OF 'CE' CONFORMITY

The manufacturer **Alfa Srl** - Via Caduti di Ustica, 28 - 40012 Calderara di Reno - Bologna - Italy,
DECLARES UNDER SOLE RESPONSABILITY THAT THE PRODUCTS

DISPENSER

MODEL

COLOR TESTER

**TO WHICH THIS DECLARATION REFERS, ARE IN CONFORMITY WITH
 THE FOLLOWING EUROPEAN UNION DIRECTIVES:**

N° 2006/42/EC	of 17 May 2006 on machinery, replacing Directive 98/37/EC
N° 2014/35/UE	of 26 February 2014 on the harmonisation of the laws of the Member States relating relating to electrical equipment designed for use within certain voltage limits
N° 2014/30/UE	of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility, replacing Directive 2004/108/EC
N° 2011/65/EU	of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (recast), replacing Dir. 2002/95/EC

AND WITH PARTICULAR REFERENCE TO THE FOLLOWING IEC STANDARDS:

EN ISO12100	Safety of machinery - General principles for design - Risk assessment
EN 60204-1	Electrical equipment of machines – safety of machinery
IEC EN 60335-1	Household and similar electrical appliances - Safety
IEC EN 60335-2-75	Particular requirements for commercial dispensing appliances and vending machines
EN 55014-1+A1+A2	Requirements for household appliances, electric tools and similar apparatus. Emission
EN 55014-2+A1+A2	Requirements for household appliances, electric tools and similar apparatus. Immunity
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations and flicker
EN 61000-4-2	Electrostatic discharge immunity
EN 61000-4-3	Immunity to Radio frequency electromagnetic fields
EN 61000-4-4	Immunity to Fast voltage transients on Power AC line and serial data line
EN 61000-4-5	Immunity to surge
EN 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-11	Immunity to voltage dips, short interruptions and voltage variations

PLACE AND DATE	Calderara di Reno, April 20, 2016	
NAME	Marco ROSSETTI	SIGNATURE
POSITION	President	

Person authorised to compile the technical file:

Mr Marco ROSSETTI

Via Caduti di Ustica 28 - Calderara di Reno (BO) - Italy

Last two digits of the year in which the CE marking was affixed: 15

Alfa S.r.l.
 Headquarters: Via Caduti di Ustica, 28 I-40012 - Calderara di Reno (BO), Italy
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 VAT: IT-03364471205 - REA BO: 513367 - Shared Capital € 500.000,00 f.p.
 Website: www.alfadisenser.com - E-mail: info@alfadisenser.com - Certified e-mail: alfa14srl@legalmail.it

2. UNPACKING




2.1. GENERAL RECOMMENDATIONS

The machine is delivered on a wooden pallet covered with corner protectors and triple wall cardboard in order to avoid any risk of damage during transport.

All the accessories supplied are contained in the same wooden case.

2.1.1. DIMENSIONS OF THE PACKAGE

Height on pallet	2110 mm (±15mm)
Pallet width	1150 mm
Depth pallet	900 mm
Weight (empty)	350 Kg

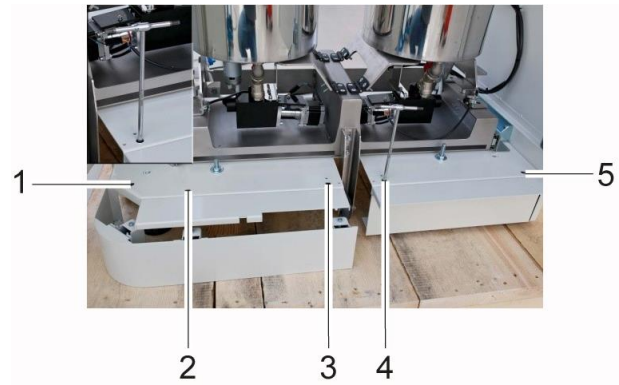
	WARNING: DO NOT PERFORM ANY OPERATION BEFORE CAREFULLY READING THE WHOLE OPERATOR'S MANUAL.
	WARNING: HANDLE WITH A DOUBLE FORK-LIFT TRUCK, TRANSPALLET OR SIMILAR DEVICE WITH A CAPACITY OF AT LEAST 500KG.
	NOTE: NEVER DISPOSE OF THE MACHINE PACKAGING IN THE ENVIRONMENT AFTER UNPACKING. TAKE IT TO THE SPECIFIC COLLECTION POINT.

2.2. UNPACKING

- Upon delivery, before carrying out any operation, check that overturning indicators do not show any fault or unbalance occurred during transport.
- In case of doubts, immediately contact the forwarder and start the claim procedures.
- Using a cutter, carefully remove the strappings, the cardboard and the internal protections (corners and pluriball).
- Take front door key from inside the output tray (1); that is together with the user's manual and other accessories (see para. 2.3).
- Unlock and open the right door, then open the left door by disengaging the lower and upper retainers (see 1.4.2 (11)).



- Remove the two lower protections on machine front side loosening the relevant screws with a 5 mm Allen wrench (screws 1, 2, 3, for LH protection; screws 4, 5 for RH protection).
- Remove the screws from their housing using a telescopic magnet.



- If necessary, remove the lower rear panel to facilitate the access to the rear screws securing the machine to pallet. Remove the 4 screws M10x200 (1) by loosening them with a 17mm wrench. Use a 17mm wrench to lock the relevant nut under the pallet (2).
- Once machine has been released from pallet, refit the lower rear panel you have previously removed, and close the doors using blocks and wrench.



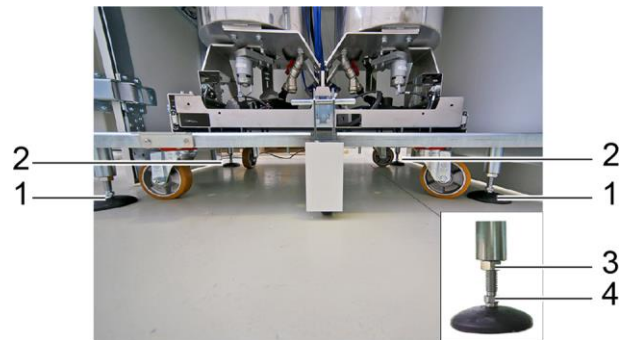
- Lift machine by 2-3 cm from pallet using a fork lift truck.
- Take the machine from the back, sliding the forks inside the supports (3), either from the back or from the front side.
- Handle the machine using the fork lift truck or a transpallet and position it in the required installation space.



- Machine can be handled also using the supplied wheels.
- Perform handling operations with the utmost care and only on flat and smooth surfaces.



- Adjust the front (1) and rear (2) feet to ensure the machine is stable, stopped and properly levelled.
- To lower feet, release check nut (3) with a 19mm wrench, and turn foot adjuster nut (4) with a 14mm wrench.
- Use a spirit-level to check levelling.
- Once the correct height has been reached, lock the check nuts of each foot.
- Check proper height of the supporting wheel of master pull-out tank (5).



- Refit the previously-removed lower protections (1).

If machine is to be handled with a fork lift truck or a transpallet, remove the lower protections by following the above procedure.



2.3. OPENING PACKAGE AND CHECKING THE CONTENT

After unpacking, make sure all parts are in place and that the machine does not show any internal or external damage or evident fault.

Inside the output drawer are the outfit accessories.

Make sure all these accessories are provided:

- Key for opening RH door;
- Power cable;
- Ethernet cable;
- User's manual;
- Spare fuse kit;
- Autocap sponge kit.



3. INSTALLATION

3.1. CHOOSING THE ROOM

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.

3.2. PRODUCT LABEL AND ELECTRICAL CONNECTION




Make sure that the system meets the electrical requirements specified on the machine nameplate, then connect the power cable to the socket.

- Model: machine model
- Type: machine type
- Vnom: power supply voltage
- Hz: mains frequency
- I_{max}: absorbed current
- SN: serial number
- Made in Italy: year of manufacture
- Fuse Rate: fuse value

The machine is equipped with a detachable power cable for connection to the mains.

Connect the machine to the mains using exclusively the cable supplied.

Always make sure that the voltage output from the mains is compatible with the nameplate specifications.

  	
COLORPAINT DISPENSER <small>Headquarters: Via Caduti di Ustica 28 I-40012 Calderara di Reno (BO) Italy 051 0828494 - www.alfacolorpaints.it</small>	
Model	COLOR TESTER
Type	AUTOMATIC DISPENSER
V _{nom} ~	100-240V Hz. 50/60
I _{max} ~	2.5-1.7A
SN	20150100000
Made in Italy	2015
 WARNING 	
<small>TO AVOID ELECTRIC SHOCK THE POWER CORD PROTECTIVE GROUNDING CONNECTOR MUST BE CONNECTED TO GROUND DO NOT REMOVE COVERS. REFER SERVICING TO QUALIFIED PERSONNEL</small>	
FUSE RATED T2.5 A - 250V	
<small>For continued protection against risk of fire replace only with the same type and rating fuse</small>	



USE ONLY LISTED DETACHABLE POWER SUPPLY CABLES NOT EXCEEDING 4.6 M. LENGTH, TYPE SVT OR SJT, 3X18 AWG 10 A, WITH GROUND CABLE.

To ensure the correct machine operation and the highest safety level, it is essential that the machine is connected to ground. Make sure that the system is connected to a power supply with an efficient ground.



WARNING: ONLY CONNECT THE MACHINE TO ELECTRIC SYSTEMS PROVIDED WITH GROUND CIRCUIT CONNECTION COMPLIANT WITH THE NATIONAL STANDARDS.

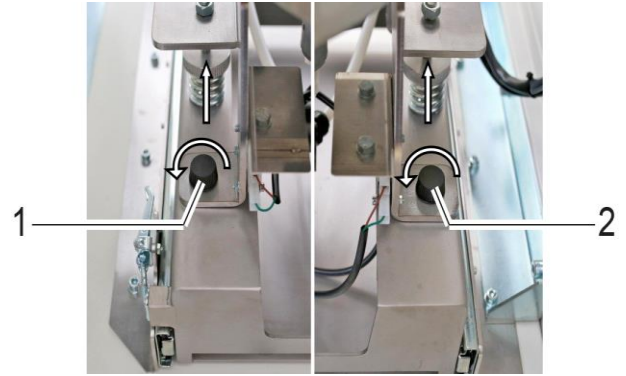
3.3. REMOVING THE MECHANICAL RETAINERS

Some mechanical retainers prevent movement of machine components to avoid damage during transport. After unpacking and before commissioning, remove all mechanical retainers as follows:

3.3.1. MASTER TANK RETAINER REMOVAL

Tanks are fastened to the lower pull-out tank by means of screwed knobs.

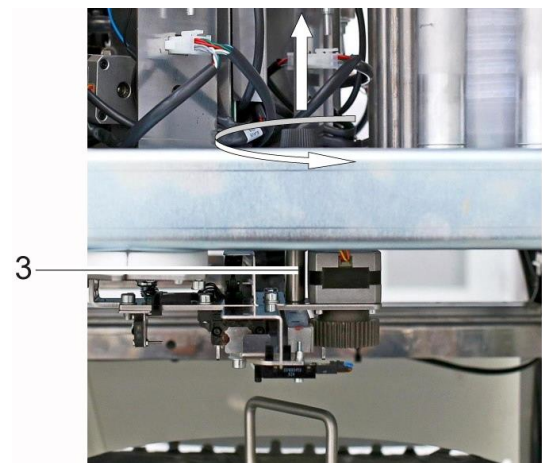
- Remove the knob retaining the left tank (1) and right tank (2), so as to enable master reserve detection system.



3.3.2. CARTESIAN SYSTEM-GRIPPERS RETAINER REMOVAL

A stud bolt fastens grippers and the Cartesian system.

- Remove pin (3) visible on dye level and screwed onto Y axis.
- In some models the Cartesian axis may be locked in LH stop position with ties. In this case, cut the ties with cut-off scissors or scissors to free the gripper.



3.3.3. DYE TANK RETAINER REMOVAL

During transport, canister supports are fastened to the pump unit underneath.

- Each colorant group is fastened by means of the screw (4).
- Remove all retaining screws (4) from colorant groups, using a 4 mm Allen wrench.
- Remove also the polyurethane protection between the canisters.

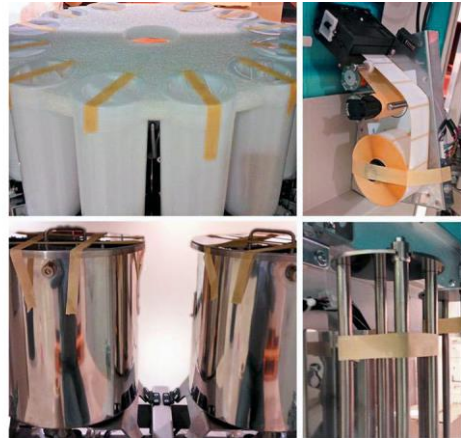
To make access to units easier, it is recommended to remove the upper panel located on machine back side, and refit it once the operation has been completed.



3.3.4. MASTER COVER AND OTHER GROUPS RETAINER REMOVAL

Remove the securing tape:

- The colorant canister lids;
- The printer reel.
- The stainless steel covers on tanks;
- The removable rods of lids storages;



Collect all knobs and retaining accessories in a bag and store the bag in the accessory compartment above the left corner door.

3.4. SWITCH-ON

- Set the On/Off switch to “I” and check that display turns on.
- If, after a few minutes, the machine shows the starting page, the Color Tester is ready for commissioning and use.



WARNING If the display illuminates but does not quit the boot page or does not show the user interface after a few minutes, switch off the machine and contact the technical service.

3.5. SWITCH-OFF

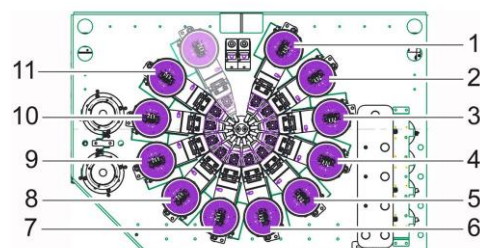
In order to switch off the machine, turn the main switch to its “O” position and disconnect the power cable from the socket.

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.

3.6. COMMISSIONING AND LOADING

3.6.1. DYE TANK LOADING

Each colorant group is matched to a hardware address. By convention, colorant order is as shown in figure below. The canisters are always marked with labels from C1 to Cn, according to the actual number of present circuits.



The position-colorant association can be viewed by accessing the special software section.

Such associations can be modified by qualified TECHNICAL personnel. For further information, refer to the Software manual.

Upon first installation, the technician must set the proper tinting system and fill the tanks according to the proper sequence.

Then, trigger the circuits and leave them in recirculation mode for the time needed (see chapter 3 - RECIRCULATION).

WARNING: Do not overfill the tanks (see chapter 5 - COLORANT AND PAINT TANKS TOP-UP).

The tinting system loaded on the machine can be changed, as well as the colorant software indexing. These operations are reserved to authorised technical staff.

To see or change the positions associated with each colorant, please refer to machine configuration (ref. "Software manual").

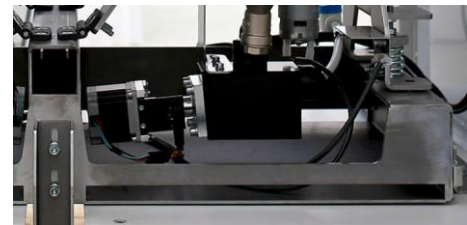


3.6.2. LOADING MASTERS

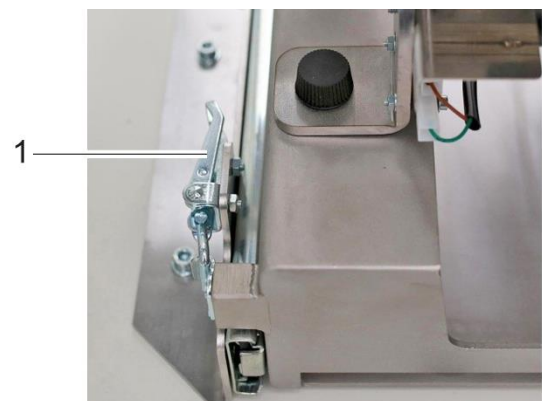
White and transparent masters must be loaded on 23-litre stainless steel tanks present in the lower part of the machine.

Fill as follows:

- Position any vessel or sheet inside the master tray, underneath the tanks, inserting them through the front slit.



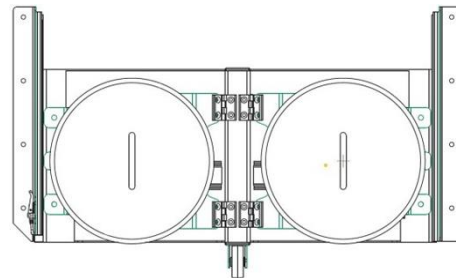
- Open hook (1) retaining the master pull-out tray



- Pull out base tray (2) and fill the tanks with neutral and transparent master , according to the sequence required by the software.
- **WARNING:** Tank capacity is 23 litres each. Do not overfill the tanks
- If you accidentally spill some product outside of the tank, remove and clean the relevant removable collector tanks.



- The standard configuration requires the use of neutral paint in the left tank and white paint in the right tank.
- Acknowledge loading of colorants and masters through the software



3.6.3. CANS STORAGE LOADING

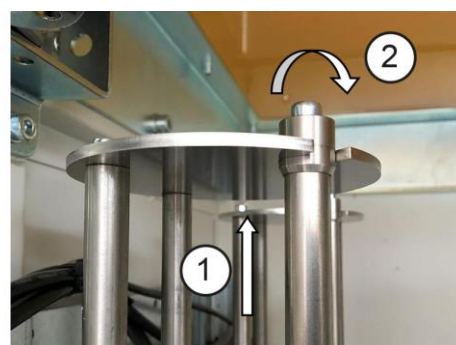
Insert 100 cc cans (approved 160 ml version) in the magazines, to fill the four columns available to maximum capacity. It is recommended to only use the cans approved for the Color Tester (see para. 1.4.1.4).

3.6.4. COVER MAGAZINE LOADING

To easily load the two cover magazines, first remove the removable side bar.

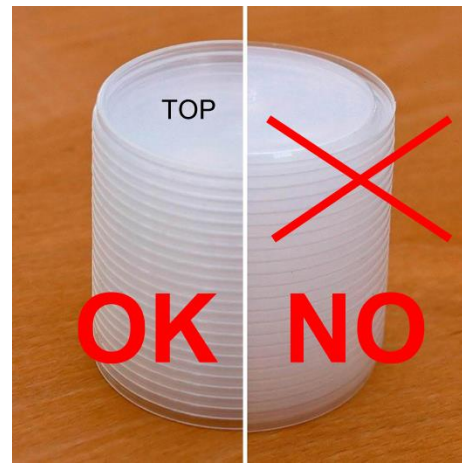
To remove the bar, slightly lift it (1) and slide it out of the top slot (2), then store it in a safe place.

Fill the column to maximum level considering the thickness of the counterweight that must be inserted at the top of the cover column when repositioning the previously removed bar.



PAY ATTENTION TO INSERT COVERS IN THE PROPER DIRECTION.

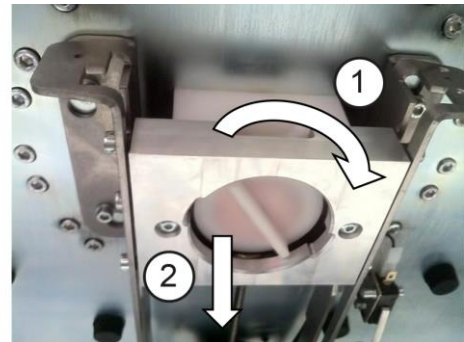
Once magazine is full, reposition the previously removed bar and make sure it is properly in place.



3.6.5. AUTOCAP MOISTURISING

It is recommended to periodically wet the dispensing nozzle sponge as described below:

- Loosen sponge holder cap in the lower part of the autocap system (1) and remove it from its seat (2);
- Wet the sponge (use water mixed with glycol);
- Refit the cap to its original position.



WARNING: Ensure that water will not exceed the sponge level to avoid contaminating the nozzles

3.6.6. MASTER CIRCUIT OPENING

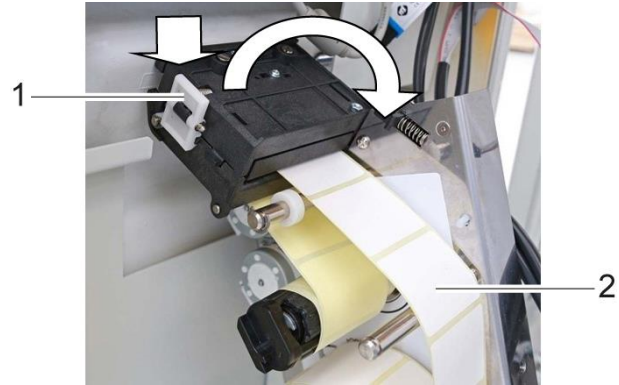
Under the tanks there are the relevant pumping units provided with shut-off valves (1). Upon commissioning and before testing the circuits, check that the valves are open.



3.6.7. PRINTER ROLL LOADING

Load printer roll as follows:

- Open roll outlet head by pressing the relevant lever (1);
- Insert the roll with labels (2) following the instructions found on printer on-board schematics.



WARNING: Only use manufacturer-approved rolls.

3.6.8. SWITCH-ON AND INSPECTION

After completing the above steps, the machine can be switched on using the main switch located on the back panel (see para. 1.4.1.2).

After the boot, after approx. one minute, the touch screen must display the screen shown on the side.

If the machine shows alarm or error warnings, check type of alarm and take the required steps to restore proper operation (see Chapter 8 – "Trouble Shooting").

If machine does not switch on, check that power voltage is correct and fuse is not blown.

For further details on malfunction issues, please refer to Chapter 8 "Trouble Shooting".



3.6.9. CIRCUIT TRIGGERING AND RECIRCULATION

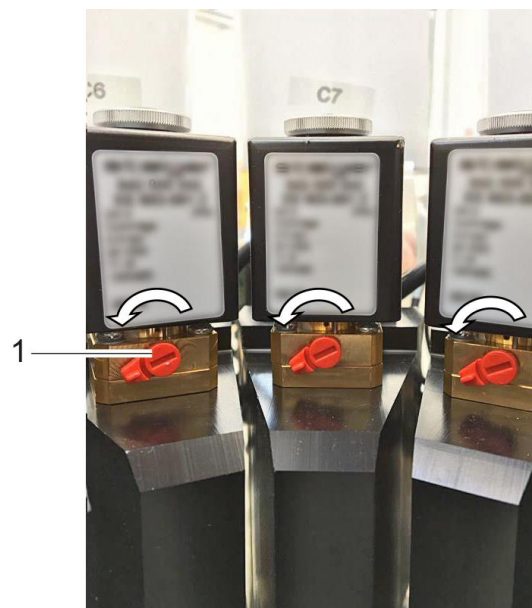
Before using the machine, trigger circuits and leave them in recirculation mode for at least 12 hours.

To remove air from the colorant circuit pump, it is recommended to manually drive the valve of each circuit and wait that the colorant, thanks to the head pressure, fills the pump until it spills out of the relevant nozzle.

Therefore it is recommended, in this order, to:

- Open the autocap;
- Position a container with proper capacity under the dispensing nozzle;
- Remove canister lids;
- Open valves (1) of the colorant circuit to be triggered;

At the end of the operation, close the valves, clean the nozzle with a dry and clean cloth taking care not to cross contaminate the nozzles, and close the autocap again.



Finally, it is recommended to leave the machine in stand by mode for at least 12 hours, a period of time usually sufficient to remove residual air from circuits.

3.6.10. SETUP OF CIRCUITS

The machine is now ready to be initialised or for producing the first sample.

Typically, the machines leave the factory with all circuits already characterised and ready to be used with the colorants of the tinting system specified in the order.

When using dyes that are not yet characterised on a software level, the circuits need to be set up first.

An incorrectly characterized machine can cause significant color production errors. Circuit setup is a procedure reserved for expert technicians so, if necessary, contact Alfa-authorized Technical Service. Circuit setup execution modes are described in the Software Manual.

Once the recirculation and setup stages are completed, the machine is ready for dispensing a test sample and commissioning.

Refer to "How to produce a sample" to perform a test production run.

3.6.11. CHECKING THE OPERATION OF THE SAFETY DEVICES

In order to ensure trouble-free operation in maximum safety conditions, it is necessary that door interlock switches operate properly.

Before attempting any maintenance operation, check that the machine indicates an alarm warning when front door is opened, also requesting operator to enter the password in order to enter service mode.

When door is closed, the machine will run a reset cycle and then go back to standard operation.

If the machine fails to work as described, it means that the safety devices are not operating properly. In this case, switch off the machine and contact the technical service.

3.6.12. SETTING THE PASSWORD FOR TECHNICIANS

Access to maintenance and diagnostics functions is only allowed to MAINTENANCE OPERATORS after entering the relevant password.

Factory settings are password= "ALFA". The password can be changed at any time by system administrator.

Access for TECHNICIANS requires a different password and allows higher level access. This password is released by system supervisor ADMINISTRATOR.

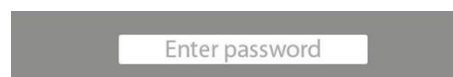
After access, the MAINTENANCE OPERATOR can carry out the first level diagnostics and reset the alarms.

As soon as maintenance is completed, it is recommended to remember to log out.

A time-out forces automatic logout after 6 minutes of inactivity (value can be edited through the administrator's interface – See Software Manual).

System administrator can create new users with different credentials and customised passwords. It is recommended to carefully store the password since it is not saved anywhere so it cannot be recovered if lost.

If you lose the password, contact system administrator and request a new temporary password.



ALFA

4. HOW TO PRODUCE A SAMPLE

4.1. PRODUCTION OF A COLOUR SAMPLE

After system installation (see Chapter 3), you can now start producing a colour sample as follows:

- Check required shade of colour on colour chart and take note of the code.



- On the display, press the black arrow on the right of “Choose a color from the color chart” message.



- Enter required colour code via the virtual keypad.
- Use the “up” and “down” arrows (1) in the left column to scroll the codes and select the colour.
- To correct any typing errors, use “DEL” or “X” (2) on the right-hand side of the entry field.



- As soon as the code is entered, the left-hand column will display the available choices and all similar codes (3). User can complete selection at any time by pressing the corresponding colour.

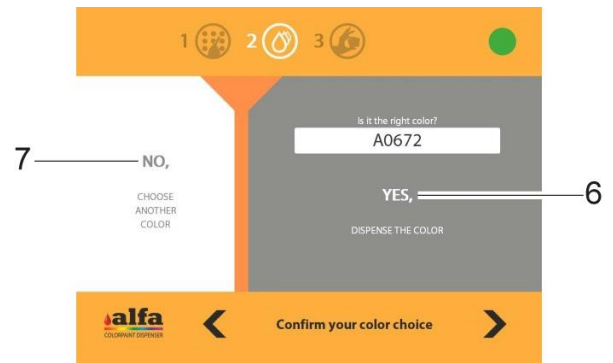


- Once code is entered, validate selection by pressing “CONFIRM” (4).
- Press the left arrow (5) to go back to initial screen at any time.



- On the following page, press “YES” (6) to proceed with colour dispensing, or “NO” (7) to change selection.

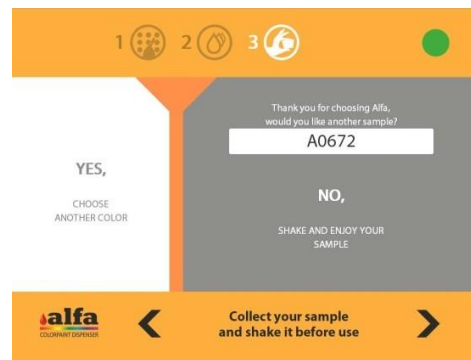
WARNING: Once you press “YES” it will no longer be possible to change selection or abort cycle.



- The following page graphically shows sample production progress.



- Once completed, the message on the side is displayed and user can pick sample from output drawer.
- Press “YES” in the left box to start a new colour selection and produce a new sample. Press “NO” to go back to initial screen



- Take sample from output drawer and label (8) bearing colour code and production details.
- Apply the label to the can to identify the details of the produced color.



4.2. COLOUR SAMPLE STIRRING

The colour sample must be properly stirred before use.

- Strongly shake the sample for a few minutes before use.

On the side is the sample just after production and not stirred (on the left) and then the same sample after proper stirring (on the right).



- Remove the safety tear-off tab (9) and lift the cap to open the sample.
- If necessary, use a brush to further mix the product, carefully removing any residues of colour or white from vessel walls.
- Close can using the previously removed cap after use.
- After use, dispose of the can in suitable collection centres.



5. ORDINARY MAINTENANCE AND ADJUSTMENTS

5.1. INTRODUCTION

The following paragraphs describe the ordinary maintenance operations as well as instructions for simple adjustments that can be performed by the operator.

Namely:

- Colorant and master tanks top-up
- Can and cover storage refill
- “Purge” tank cleaning
- Purge
- Label printer roll change-over
- Unloading bag emptying
- Coin holder drawer emptying

Nearly all these operations are linked to periodical reminders via machine alarms. They also describe how to:

- Adjust minimum levels
- Changing a fuse

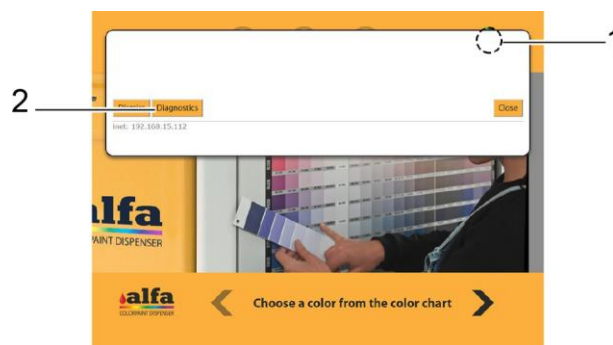
Please refer to Chapter 6 for lubrication and cleaning of the machine.

OPERATIONS DESCRIBED IN THIS CHAPTER REQUIRE ACCESS TO DANGEROUS SERVICE AREAS. ACCESS TO SERVICE AREA IS RESERVED TO TRAINED AND AUTHORISED STAFF (MAINTENANCE OPERATOR, SEE PARA. 0.3.3). CLEANING AND MAINTENANCE PROCEDURES CANNOT BE PERFORMED BY CHILDREN.

5.2. ACCESS TO DIAGNOSTIC MODE

In case of error or alarm, STATUS indicator (1) (normally green) becomes red. When the machine triggers an alarm or error warning, the maintenance operator must reset it. In these cases, alarm type is highlighted by shortly pressing the status button. Enter the service mode as follows:

- Press status indicator on the display (1) and hold it depressed for a few seconds, then release it;
- A box will be displayed containing buttons “Close”, “Dismiss” and “Diagnostics”.
- Press “Diagnostics” (2) to continue.

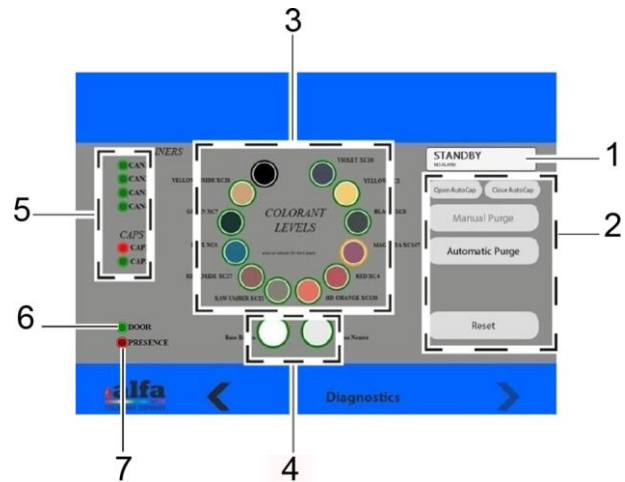


- Enter your own MAINTENANCE OPERATOR password, then press “CONFIRM”. The password can be modified by system administrator.



The diagnostics screen shows the following:

- 1) Machine “STATUS” box;
- 2) Control area;
- 3) Colorant level;
- 4) Master level;
- 5) Magazine level;
- 6) Door status (red = open)
- 7) Cup present inside gripper

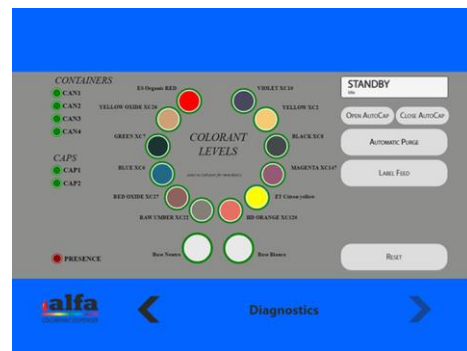


The orange colour indicates that circuit is under the warning level.

The red colour indicates that circuit is under the minimum level.

from the first window it is possible to monitor the circuit status. It is furthermore possible to:

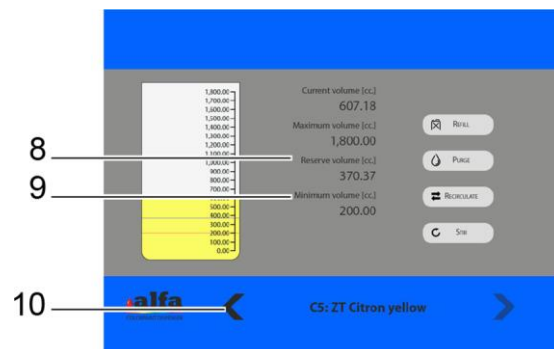
- start a machine reset;
- open the autocap;
- close the autocap;
- start an automatic purge cycle;
- start the movement of the label roll;



NOTE When you need to start some movements, remember to open the autocap from the current window before passing to the next one.

From the first window, by pressing on the identification of a canister or a base, you access the circuit management menu that allows to:

- Display product level*;
- enter the refill quantity;
- Start a circuit purge cycle;**
- start/stop the recirculation;
- start/stop the stirring.



NOTE:

*For each circuit it is possible to define a warning level (that can be detected by means of the hardware sensor) and a minimum level (that can be calculated via software). If the product volume is lower than the warning level (8) circuit sensor (3) will be surrounded by an orange circle. If the volume is lower than the minimum level (9) the indicator will be surrounded by a red circle. In the latter case, circuit will be disabled until next topping up.

**Before starting a Purge cycle it is necessary to:

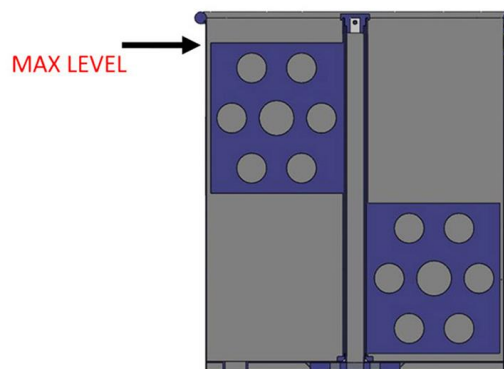
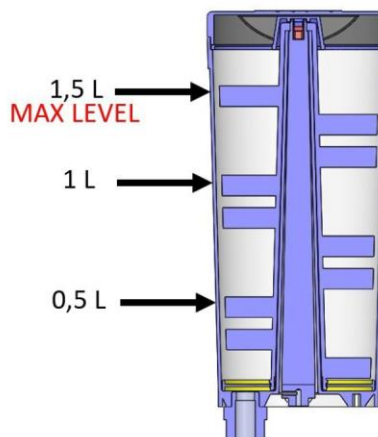
- Open the autocap;
- Position a can under the dispensing nozzle.

Once maintenance operations are completed, "logout" from the Diagnostic mode by repeatedly pressing the back arrow (10) until the reset starts.

5.3. DYE AND MASTER TANKS TOP-UP

When the machine indicates low colorant or base level, operator must refill colorant and base canisters. In this case, enter DIAGNOSTIC mode for maintenance using the required password (see para. 5.2). Then:

- Open the machine front doors using the key supplied to MAINTENANCE OPERATOR;
- Top up colorant(s) that are below minimum level. Fill canister with the suitable dye up to indicated maximum level (MAX LEVEL). The cross element can be used to support a container when you leave it to drain. Do not overfill beyond the level indicated by cross element rods.
- Top up the masters using white or neutral base. Do not overfill beyond the level indicated by the end of the stirring blade.
- Enter the topped-up products and the relevant topping-up volumes (see para 5.2);
- Close the left door using the lower and upper retainers (see para. 1.4.2.), then close and lock the right door using the key;
- Log out of service mode (see para. 5.2);
- Store the key in a safe place, away from unauthorised persons.



5.4. COVER AND CANS MAGAZINE LOADING

When the machine indicates low can or cover level, operator must refill the relevant magazines with new cans and/or covers. In this case, enter service mode using the required password (see para. 5.2), then open the doors using the supplied key. Then:

- Open the machine front doors using the key supplied to maintenance operator;
- Fill the magazines;
- Close the left door using the lower and upper retainers (see para. 1.4.2. (11)), then close and lock the right door using the key;
- Log out of service mode (see para. 5.2);
- Store the key in a safe place, away from unauthorised persons.

Please refer to paragraphs 3.5.3 and 3.5.4 respectively for instructions on how to fill the can magazines and the cover magazines.

5.5. PURGE

The system is able to start an automatic purge when necessary.

MAINTENANCE OPERATOR, via the diagnostics interface, can force a purge command if required.

To do this, enter diagnostics as explained in para. 5.2, then press "AUTOMATIC PURGE" to run a machine purge or press "PURGE" from the menu of a specific circuit.

5.6. LABEL ROLL CHANGE-OVER

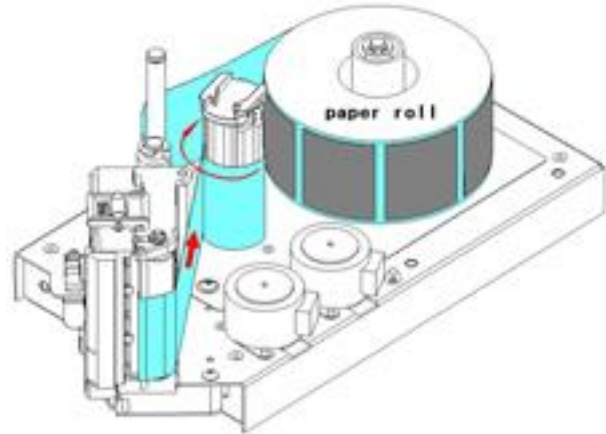
When display indicates “Paper End” alarm (error code 2000) operator must change the label roll.

Change label roll as described in para. 3.6.7.

It is recommended to pay attention and route roll along the path shown in the chart that is on-board the printer.

Once this operation is completed, press “Align label” on diagnostics screen.

Close the machine as specified in the previous paragraphs.



5.7. UNLOADING BAG EMPTYING

Rejected colour samples (e.g., when the machine detects a critical error during the production process or during purge) are capped and then rejected into the relevant collection bag.

In this case, visually check and remove the bag with its content, carefully close it and dispose of it in a suitable waste circuit (DO NOT RELEASE IN THE ENVIRONMENT).

Change the bag with a new and empty one, and anchor it to the support plate.

5.8. ADJUSTING MINIMUM LEVELS

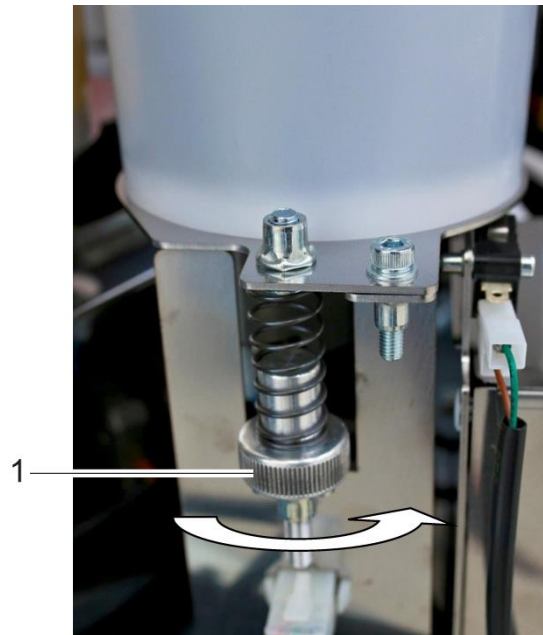
5.8.1. ADJUSTING COLORANT RESERVE

Colorant tanks feature a gravimetric level detection system.

Colorant under minimum level indication, highlighted through a colour in "diagnostic", is displayed when spring release causes microswitch switching. A spring preload adjustment system allows adjustment of the alarm trigger threshold.

To adjust the warning level, it is advised to proceed as follows:

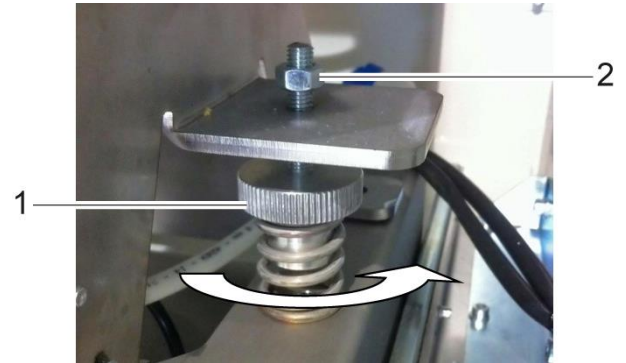
- Fill the canister with the colorant to the level considered to be the one at which alarm must trigger;
- Tighten spring preload pin (1) so that the system offers the least resistance possible to the spring (lower spring), so that the microswitch is pressed;
- Progressively loosen the preload pin (1) until you hear the mechanical switching of the microswitch, stopping the rotation upon switching.
- Lock preload pin screw with a lock nut to prevent accidental misplacing.



5.8.2. ADJUSTING BASE RESERVE

Master tanks, like colorant tanks, are equipped with a gravimetric level detection system. The alarm system and adjustment procedure are similar to those described for the colorant circuit. To adjust the warning level, it is advised to proceed as follows:

- Access tank by removing the relevant machine tray.
- Fill the tank with the paint to the level considered to be the one at which alarm must trigger;
- Tighten spring preload pin (1) so that the system offers the least resistance possible to the spring (lower spring), and the microswitch is pressed;
- Progressively loosen the preload pin until you hear the mechanical switching of the microswitch, stopping the rotation upon switching.
- Lock preload pin screw with lock nut (2) to prevent accidental misplacing.
- Refit tank inside the machine.



5.9. CHANGING A FUSE

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 (see chapter 1 - ELECTRICAL CONTROL PANEL). To change it, remove power plug and open fuse holder using a flat screwdriver to prise it open. Lift the fuse holder until it can be manually removed.

	<p>USE ONLY FUSES OF THE SAME TYPE AND THE NOMINAL RATING SHOWN IN THE PRODUCT LABEL (SEE PARA. 3.2).</p> <p>Fuse requirements: EU - IEC 60127 Approval US - UL248-1 and UL248-14 Approval</p>
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	<p>WARNING</p> <p>THE FUSE MUST BE REPLACED WHEN THE MACHINE IS SWITCHED OFF AND THE POWER CABLE IS UNPLUGGED FROM THE MAINS.</p>
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5.10. 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.

5.11.COIN HOLDER DRAWER EMPTYING

The machines featuring payment systems are provided with an internal drawer for coin collection, which must be emptied at regular intervals.

This drawer features a door with a key lock.

Make sure that key is kept and used only by authorized personnel.

Alfa shall not be held liable for any damage resulting from an improper management of the access keys.



6. LUBRICATION AND CLEANING





6.1. SCHEDULED MAINTENANCE

The following table indicates the scheduled maintenance recommended by Alfa.

SERVICE OPERATION	INTERVAL
Lubrication	none
Autocap cleaning and moisturising	weekly
Nozzle cleaning	daily
Capping suction cup cleaning	monthly
Machine external cleaning	monthly
Machine internal cleaning	monthly
Filter cleaning (only TECHNICAL personnel – see para. 0.3.3)	Contact technical service every 12 months

This chapter describes the service operations required at regular intervals to ensure machine trouble-free operation.

OPERATIONS DESCRIBED IN THIS CHAPTER REQUIRE ACCESS TO DANGEROUS SERVICE AREAS. ACCESS TO SERVICE AREA IS RESERVED TO TRAINED AND AUTHORISED STAFF (MAINTENANCE OPERATOR, SEE PARA. 0. – USERS AND ACCESS LEVELS).

	TO ENSURE CORRECT AND TROUBLE-FREE MACHINE OPERATION, IT IS NECESSARY TO PERIODICALLY CARRY OUT THE MAINTENANCE OPERATIONS BELOW AS PER THE MANUFACTURER'S INSTRUCTIONS.
	IF THE MAINTENANCE OPERATIONS ARE NOT CARRIED OUT IN ACCORDANCE WITH THE INSTRUCTIONS PROVIDED, ALFA SHALL NOT BE HELD LIABLE IN ANY WAY FOR ANY MACHINE PROBLEMS AND MALFUNCTIONS.
	ALWAYS TURN OFF THE MACHINE BEFORE PROCEEDING TO MAINTENANCE AND CLEANING.
	IT IS STRICTLY FORBIDDEN TO REMOVE COVERS AND SYSTEM PROTECTIONS.

6.2. SERVICE EQUIPMENT

Below is a list of the required equipment for the service operations.

Blotting paper, clean cloth/sponge



Plastic spatula



Thin metal wire or clip (to clean colorant nozzles)



Thin tip tool or 2.5 mm flat screwdriver (for cleaning master nozzles)



22 mm open wrench



6.3. LUBRICATION

In terms of ordinary maintenance, the machine requires no scheduled lubrication by the MAINTENANCE OPERATOR.

6.4. AUTOCAP CLEANING AND MOISTURISING

It is recommended to periodically wet the dispensing nozzle sponge.

Service autocap unit as described in chapter 3 - AUTOCAP MOISTURISING.

- Wet the sponge with water. Wash it, if necessary, and rinse it with fresh water;
- Check for wear and cleanliness of autocap seal and replace it, if necessary;
- Set sponge back in place, close the autocap unit by tightening it in its support.

6.5. NOZZLE CLEANING

It is recommended to periodically make sure nozzles are free of scale, deposits or colorants settled and dried up. **WARNING:** The problem might be made worse by insufficient moisturising of the autcap unit.

Visually inspect nozzles every day, before starting up the machine.

If needed, clean the dispensing nozzles using a tool with a thin metal tip to remove any dry residues from the outlet channel.

Pay attention so that any removed colorant residue will not enter into contact with the nearby nozzles during cleaning, since it could contaminate the dispensing nozzles of other colorant circuits.

After this procedure, always perform a purge cycle (see the following paragraph).

6.6. PURGE

The above recirculation functions allow the system to move the products only upstream of the relevant electrovalves. Downstream of the electrovalves a product that has not moved for a long time might settle and dry out inside the lines.

To minimize drying issues, the machine can periodically carry out a purge of all products.

The PURGE function consists in dispensing a small quantity of product from one or several circuits, so as to ensure proper cleaning of the dispensing circuits and prevent settling or drying out issues that could compromise machine operation.

This function can be carried out automatically every 8 hours, or manually through the command of the MAINTENANCE OPERATOR (see para. 5.5), based on function setting. To enable or disable the automatic purge function, refer to the software manual.

During the purge, colorants are drained in a can (picked up from the magazine) which will be capped and released in the negative unloading area.

6.7. CAPPING SUCTION CUP CLEANING

It is recommended to periodically clean the surface of the suction cups present in the capping units using a cloth wetted with some water.

Poor suction cup cleanliness might compromise operation and cause reliability problems of the capping unit.

Clean as follows: remove any type of dirt from the surface of the suction cup using a cloth or sponge wetted with some water.

When: at least once a month

The suction cup might be subject to wear; its preventive replacement is thus recommended.

Depending on machine use, the suction cup can be changed every two years or at a higher frequency.

6.8. EXTERNAL CLEANING

The machine requires no special precautions for cleaning.

Clean external surfaces using a cloth wetted with water, degreaser, or denatured alcohol at 90%.

Do not use solvents or abrasive products.

Do not use water jets to clean the machine.

6.9. INTERNAL CLEANING

- Use a spatula to remove any dry residues from the surfaces.
- Clean machine inside by vacuuming dust and dirt. If needed, use a brush.
- Clean any surfaces that could not be cleaned with the above-described methods using a cloth (or blotting paper) wetted with water.

Be careful not to damage the electric parts and in particular the optic forks of the machine.

6.9.1. SPILLING OF COLORANTS OR PAINTS

Colorant or paint may be spilled during normal use or topping-up.

The best way to clean residues is to remove the dry product with a spatula.

Should you need to clean parts from liquid colorant spilling, use blotting paper, sponges or dry cloths, trying to remove as much product as possible without using water.

It is recommended not to use water or other liquids to rinse.

6.9.2. COLLECTOR TANKS BENEATH THE MASTERS

Collector tanks or sheets may be added under the pull-out tray of the base tanks.

If required, change tanks or sheets with clean elements and throw away or clean up the removed elements, taking suitable precautions to dispose of the waste.

Using tanks is recommended during maintenance such as filter cleaning operations.

DO NOT USE SOLVENTS OR ABRASIVE PRODUCTS

Drain and wash the vessels in a suitable washing circuit for collecting dye waste (DO NOT RELEASE IN THE ENVIRONMENT NOR IN THE CIVIL SEWER SYSTEM).

6.9.3. BASE CIRCUIT FILTER

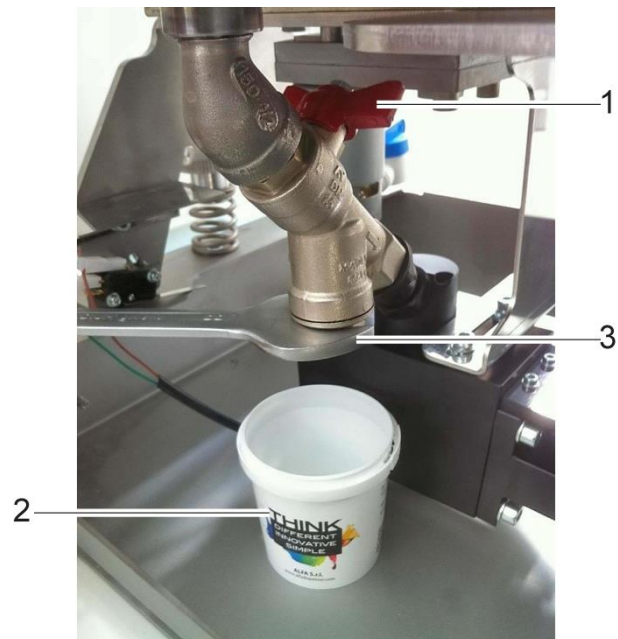
Upstream of the master pump, at tank outlet, is a combined valve including a tap and a filter.

It is recommended to periodically clean the filter, since during use it tends to hold all impurities of the products.

Have this operation performed by qualified TECHNICIANS. For filter cleaning, contact technical service every 12 months.

Clean filter as follows:

- Close tap upstream of filter (1);
- Set a vessel under the filter bottom end (2);
- Loosen the filter holder cap using a 22 mm wrench (3);
- Remove filter and flush with fresh water to clean it;
- Refit filter and its screw cap, then work tap to open the circuit;



NOTE: A properly positioned vessel will prevent the product in the filtering compartment from falling in the collection tanks or contaminating the master tank.

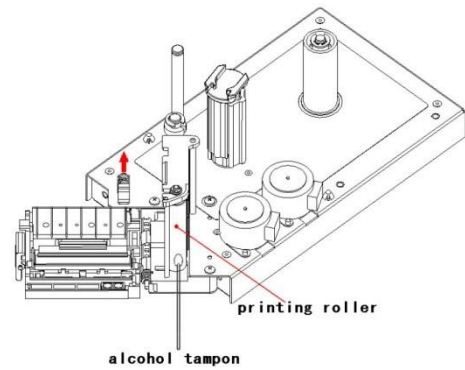
6.9.4. CLEANING OF LABEL PRINTING HEAD

When one or more of the following cases occurs, clean the label printing head.

- Printout is not clear.
- Page feeds with loud noise.

To clean platen, follow steps given below

- Turn off the power, open top cover of the head by working on the relevant block.
- With a cotton swab dipped with ethyl alcohol, wipe off stains and dust on the surface of platen.
- Wait for 5 ~ 10 minutes until alcohol volatilize completely, then close top cover of the printer.



7. EXTRAORDINARY MAINTENANCE

The extraordinary maintenance operations require access to the service areas and area reserved for specialised technicians.

ALWAYS ENTRUST THE SPECIAL MAINTENANCE INTERVENTIONS TO AN AUTHORISED SUPPORT CENTRE.

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.

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.

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 BY FOLLOWING THE PROCEDURE DESCRIBED IN PARAGRAPH 3.4 AND CHAPTER 4**

8. TROUBLE SHOOTING

Error code	Error detected	Error description	Resolution of the problem
1	EEPROM_COLOR_CIRC_PARAM_CRC_FAULT	Circuit parameter CRC fault	Check for the absence of parameters in the case of MAB replacement. Load the base/colorant circuit parameters onto the new MAB board.
2	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.
3	EEPROM_XY_OFFSET_PARAM_CRC_FAULT,	Failure of x and y coordinates, Cartesian positions, offset CRC	Check for the absence of parameters in the case of MAB replacement. Load x and y offset parameters onto the new MAB board.
4..5	TIMEOUT_COM_MAB_B"X" , where "X"=1..2	Slave B"X" 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 Slave B"X" board.
12..23	TIMEOUT_COM_MAB_C"X" , where "X"=1..8	Slave C"X" 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 Slave C"X" board.
36	TIMEOUT_COM_MAB_X_AXIS,	Slave X AXIS 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 Slave X board.
37	TIMEOUT_COM_MAB_Y_AXIS,	Slave Y AXIS 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 Slave Y board.
38..41	TIMEOUT_COM_MAB_CONTAINER_"X", where "X"=1..4	Slave "X" CAN SELECTION 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 Slave "X" CAN board.
42..43	TIMEOUT_COM_MAB_COVER_"X", where "X"=1..2	Slave "X" CAPPING STATION 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 Slave T "X" board.
44	TIMEOUT_COM_MAB_AUTOCAP	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 Slave AUTOCAP board.
53	COVERS_NOT_AVAILABLE	Lids not available	Insert lids. Verify integrity, cleaning and correct position of the micro-switch. Replace it if damaged.
54	CONTAINERS_NOT_AVAILABLE	Cans not available	Insert cans. Verify integrity, cleaning and correct position of the micro-switch. Replace it if damaged.
55	TIMERMG_TEST_FAILED,	Software timer management error	Unexpected error. Contact technical support

Error code	Error detected	Error description	Resolution of the problem
56	WITHDRAWAL_FAILED,	Can not available during pick-up after a number of attempts	Verify cleaning, integrity and correct position of sensors on can pick-up block. Replace the damaged sensor. Check and remove the cans stuck in the mechanics or with each other.
57	SUPPLY_FAILED,	Dispensing aborted due to the absence of a cup before dispensing or the presence of a cup after unloading	The reflective photocell on the passive gripper might be dirty, damaged, or positioned incorrectly. Clean the sensor and position it properly, or replace it if damaged.
58	DISCARD_FAILED,	Can still present after negative unloading due to cup presence at the end of reset or at the beginning of dispensing, before pick-up	The reflective photocell on the passive gripper might be dirty, damaged, or positioned incorrectly. Clean the sensor and position it properly, or replace it if damaged. Remove the cup if present and stuck in the mechanical parts.
59	DATA_SUPPLY_FAILED,	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.
60	TIMEOUT_SUPPLY_FAILED,	Dispensing duration time-out	Check for a mechanical jam in the dispenser and eliminate it if possible.
61	EEPROM_SLAVES_CONFIGURATION_CRC_FAULT	Slave configuration parameter CRC fault	Verify whether the Slaves are enabled and present in the Devices menu. If they are not present or have been disabled, check the corresponding Flags and save the changes.
63	TIMEOUT_CLAMP_POS_DETECTION	Timeout on gripper positioning wait for dispensing start	Check for the presence of a mechanical jamming of damaged or dirty mechanical parts of the Cartesian axis. Clean or replace the concerned mechanical parts. Verify integrity and position of the micro-switch and replace it or fix it again if necessary.
100..101	B"X" _COLOR_HOME_POS_ERROR, where "X"=1..2	Loss of steps: deviation upon the detection of slave B"X" zero position	Verify the cleanliness of the B"X" circuit parts (e.g. pusher, photocell, etc.), and check for any wear of the pusher and damage of the photocell. Clean or replace the parts as required.
108..119	C"X" _COLOR_HOME_POS_ERROR, where "X"=1..8	Loss of steps: deviation upon the detection of slave C"X" zero position	Verify the cleanliness of the C"X" circuit parts (e.g. pusher, photocell, etc.), and check for any wear of the pusher and damage of the photocell. Clean or replace the parts as required.
132	MOVE_X_AXIS_HOME_POS_ERROR,	Loss of steps: deviation upon the detection of slave X AXIS zero position	Verify the cleanliness of rack, splicing device 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 on rack teeth and splicing device, 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.

Error code	Error detected	Error description	Resolution of the problem
133	MOVE_Y_AXIS_HOME_POS_ERROR,	Loss of steps: deviation upon the detection of slave Y AXIS zero position	Verify the cleanliness of rack, splicing device 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 on rack teeth and splicing device, 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.
136..139	STORAGE_CONTAINER"X"_HOME_POS_ERROR, where "X"=1..4	Loss of steps: deviation upon the detection of slave "X" CAN SELECTION zero 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.
140	AUTOCAP_HOME_POS_ERROR,	Loss of steps: deviation upon the detection of slave AUTOCAP zero 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.
148..149	B"X"_BASE_TOUT_ERROR, where "X"=1..2	MAB communication time-out (detected on the SLAVE B"X" 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 Slave B"X" board
156..167	C"X"_COLOR_TOUT_ERROR, where "X"=1..8	MAB communication time-out (detected on the SLAVE C"X" 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 Slave C"X" board
180	MOVE_X_AXIS_TOUT_ERROR,	MAB communication time-out (detected on the SLAVE X AXIS side)	
181	MOVE_Y_AXIS_TOUT_ERROR,	MAB communication time-out (detected on the SLAVE Y AXIS side)	
182..185	STORAGE_CONTAINER"X"_TOUT_ERROR, where "X"=1..4	MAB communication time-out (detected on the "X" SLAVE CAN SELECTION side)	

Error code	Error detected	Error description	Resolution of the problem
186..187	PLUG_COVER_“X”_TOUT_ERROR, “X”=1..2	MAB communication time-out (detected on the “X” SLAVE CAPPING STATION side)	
188	AUTOCAP_TOUT_ERROR,	MAB communication time-out (detected on the AUTOCAP side)	
196..197	B“X”_BASE_RESET_ERROR, where “X”=1..2	Slave B“X” reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the B“X” unit, 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 a problem of an electronic type remains, replace the SCCB board.
204..215	C“X”_COLOR_RESET_ERROR, where “X”=1..8	Slave C“X” reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the C“X” unit, 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 a problem of an electronic type remains, replace the SCCB board.
228	MOVE_X_AXIS_RESET_ERROR,	Slave X AXIS reset procedure duration time-out	Verify the cleanliness and positioning of the photocells of X axis, then clean or refix the sensor. Verify the integrity of 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 a problem of an electronic type remains, replace the SCCB board.
229	MOVE_Y_AXIS_RESET_ERROR,	Slave Y AXIS reset procedure duration time-out	Verify the cleanliness and positioning of the photocells of Y axis, then clean or refix the sensor. Verify the integrity of 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 a problem of an electronic type remains, replace the SCCB board.
230..233	STORAGE_CONTAINER“X”_RESET_ERROR, where “X”=1..4	Slave “X” CAN SELECTION reset procedure duration time-out	Verify the cleanliness and positioning of the photocells of the “X” CAN unit, then clean or refix the sensor. Verify the integrity of the motors 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 a problem of an electronic type remains, replace the SCCB board.

Error code	Error detected	Error description	Resolution of the problem
234..235	PLUG_COVER_“X”_RESET_ERROR, where “X”=1..2	Slave “X” CAPPING STATION reset procedure duration time-out	Verify the cleanliness and positioning of the photocells of the “X” CAPPING unit, then clean or refix the sensor. Verify the integrity of the motors 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 a problem of an electronic type remains, replace the SCCB board.
236	AUTOCAP_RESET_ERROR,	Slave AUTOCAP reset procedure duration time-out	Verify the cleanliness and positioning of the photocells of the AUTOCAP unit, then clean or refix the sensor. Verify the integrity of the motors 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 a problem of an electronic type remains, replace the SCCB board.



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