alfa
COLORPAINT DISPENSER

Operator Manual

Desk

ORIGINAL INSTRUCTION

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0. INTRODUCTION

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 Desk 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.**
	**WARNING! LASER RADIATION DANGER**
	**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.

	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.
	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.
	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.

0.3.2. GENERAL SAFETY WARNINGS

	Desk is compliant with all the safety requirements of the main European and extra-European Standards and Institutions. Despite that, it is suggested to read carefully the information contained in this chapter and in the next pages since they show the possible dangerous situations and the necessary precautions to take.
	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.
	**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.
	**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.
	**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.
	**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.
	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.

	**GROUND CONNECTION** Ground wire connection point. Always ensure that yellow-green ground leads are duly fastened to the ground point indicated by the symbol on the side. DO NOT REMOVE GROUND CONNECTIONS. In case of lead damage, switch machine off and immediately contact the technical service support.

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

0.3.3. USERS AND ACCESS LEVELS

The machine has three different user interfaces:

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

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

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

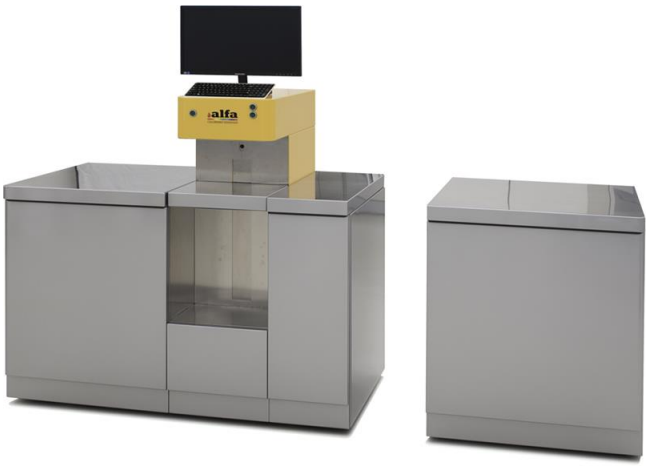
1. GENERAL INFORMATION

1.1. INTRODUCTION

Desk systems are machines with operator that can be used in points of sale or production to produce paint cans with a volume between 500 ml and 20 litres.
Depending on the configurations, the systems can be provided with a variable number of circuits for dispensing of colorants and semi-finished products.
Each system can be composed of several modules:

- Colorant module (with 8-12-16 circuits);
- “Master Module” (up to 4 circuits);
- Simultaneous dispensing head.

Circuits can be configured with pumps having different flow rate and tanks having different capacity, as described in more detail below.
The pre-filled can is loaded manually by the operator by placing the can on the suitable can lifter with adjustable height.
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 with exceptional precision and absolute repeatability.



Desk Tinting + Master Module (optional)

1.1.1. MODELS AND VERSIONS

The version provided with dispensing head and colorant circuits only is named Desk Tinting.

If a Master Module is added, a complete system named Desk Master is obtained.

It is possible to compose a Desk Master also starting from a Master Module, as described below.

Desk Tinting + Master Module

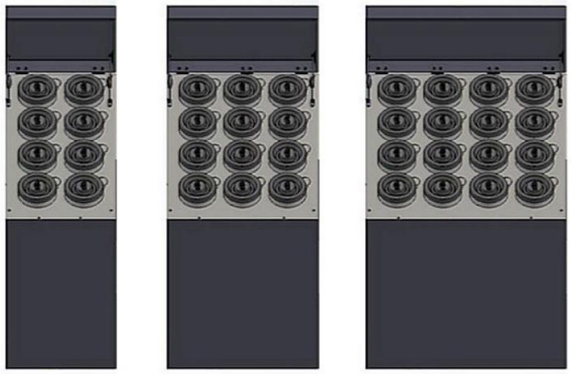
The version provided with dispensing head and Master Module circuits only is named Master Module Head.

A colorant module can be added to this configuration to obtain a system conceptually identical to a Desk Master.

Master Module Head + Colorant Module

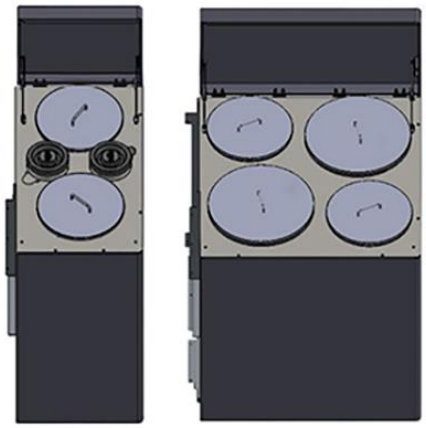
1.1.2. COLORANT MODULES

Where provided, the colorant module is available in configuration with 8, 12 or 16 circuits.
For further details, see chapter 1 – COLORANT GROUPS.



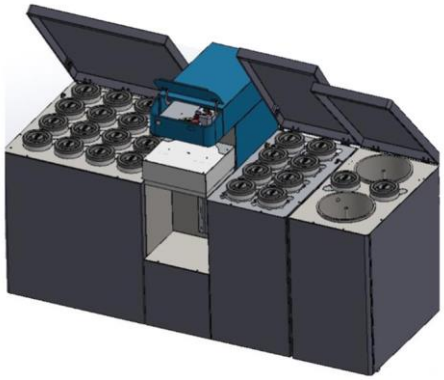
1.1.3. MASTER MODULES

The Master Module is available in LP (Low Production) configuration, with 6- and 30-litre tanks, or in HP (High Production) configuration, with 50- and 30-litre tanks (for further details, see chapter 1 – MASTER MODULE).



1.1.4. COMPLEX CONFIGURATIONS

Configurations with several circuits are available, obtained by placing an additional colorant module to the right of the head, according to the needs.
It is possible to have 16+8 colorant circuits and 4 master circuits (LP or HP) combined with the same dispensing head.



1.2. INTENDED AND UNINTENDED USE

The machine is designed to dispense water-based liquid paint into a vessel having a known capacity.
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 WITH CAPACITIES LESS THAN 500 ML OR GREATER THAN 20 LITRES

MAKE SURE THAT THE ELECTRICAL SPECIFICATIONS AND USAGE CONDITIONS FORESEEN BY THE MANUFACTURER ARE MET PRIOR TO INSTALLATION (Para. 1.5).

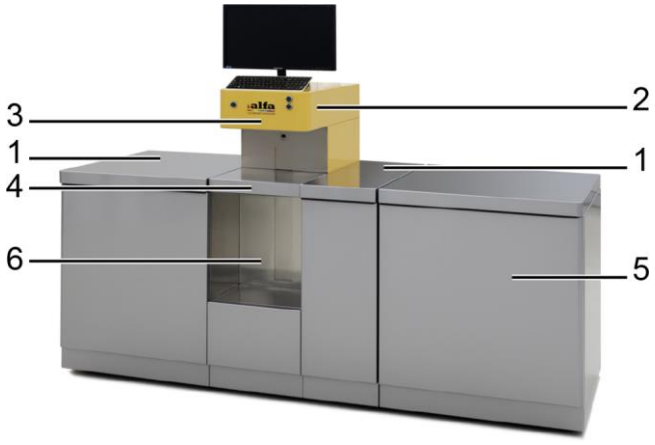
1.3. DESCRIPTION OF THE MACHINE

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

1.3.1. MAIN COMPONENTS

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

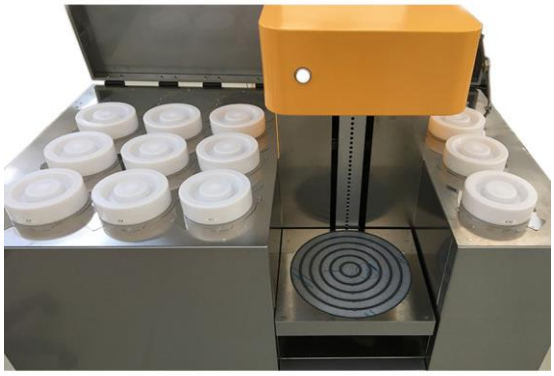
A machine control PC is typically housed inside the machine itself, by removing the rear panel that encloses the electrical panel.
Keyboard and monitor can be placed over the dispensing head.



Desk Master

1.3.2. DYE UNITS

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



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

1.3.3. DISPENSING HEAD WITH MOISTURISING SYSTEM

The dispensing head contains the dispensing circuit terminal parts.

The dispensing nozzle is positioned in the lower part, which is reached by all group and autocap delivery circuits (1). Inside the head, under the fixed metal cover, there are the circuit electrovalves (2).
The upper surface (2) can be used to house a PC monitor, whereas the inclined opening door (3) can be used to place a keyboard.
A switch-on/status button-warning light which is also used as stop control (4) is present in the front part, together with the optional humidifier level inspection window (5).

The warning light can take three different statuses:

Steady light = machine ON (STANDBY/DISPENSING)
Flashing light 1s ON / 1s OFF = RESET in progress
Flashing light 0.5s ON / 0.5s OFF = ALARM

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

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

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

1.3.4. AUTOCAP

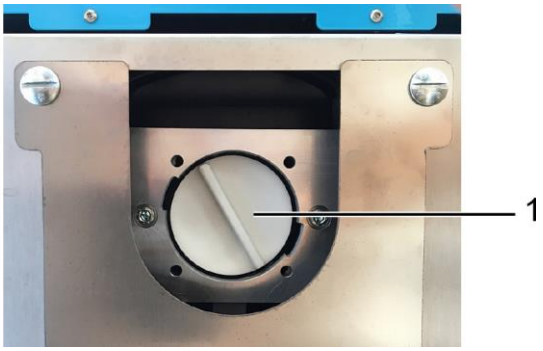
This unit normally keeps the area under the dispensing nozzles moist and sealed to reduce any drying issues.

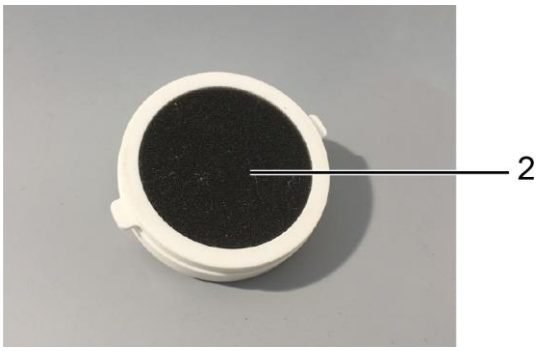
An automatic moisturising system ensures a constant and optimal moisturising in the dispensing area sealed with a hermetic O-ring gasket (see also chapter 3 – HUMIDIFIER).

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

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

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

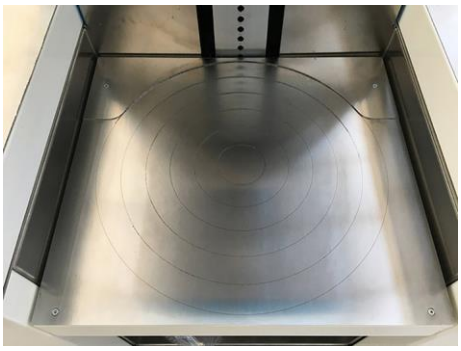




1.3.5. STOOL

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

The can lifter is the adjustable supporting surface on which to position the can to be filled. It can be positioned at different heights in order to accommodate cans of appropriate volumes, based on the quantity to be dispensed.
The bearing surface features concentric circles that indicate the exact position of the can according to its diameter.



The can lifter can be moved:

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

1.3.6. MASTER MODULE

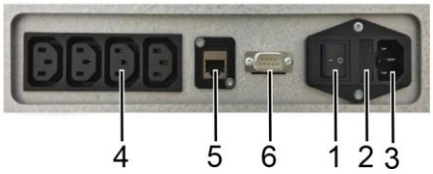
The machine can be equipped with a "Master Module" available in two different formats.
The standard master module (named “LP”) is equipped with four 30-litre or 6-litre tanks for load semi-finished products and titanium. High productivity version (“HP”, see figure on the side), instead, is provided with 50-litre and 30-litre tanks.
Under each tank, fixed onto it, there is a shut-off tap with built-in strainer and the pumping unit.

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

1.3.7. ELECTRICAL CONTROL PANEL

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

1. On/off Switch
2. Fuse holder 5x20mm T4A 250Vac
3. Standard CT-120 Power Socket 100-240Vac
4. 4 x standard C14 connector (200W MAX*)
5. Ethernet Port RJ45
6. Port RS-232 (for scale)



* total power that can be drawn by the 4 sockets outside + 1 socket inside the electrical control panel.

1.3.8. LTE ROUTER MODEM

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

1.4. 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
POSITIONING: stool positioning (only for versions with automatic stool)

For further details, refer to the next part of this paragraph and to chapter 4.

1.4.1. SWITCH-ON - RESET

Upon switch-on, system runs a reset routine and sets to stand-by, thereby allowing the operator to use the Software control interface and set production of one or several colour samples.

1.4.2. OPERATOR INTERFACE AND MAINTENANCE INTERFACE

The machine use and maintenance are managed by means of web interfaces. Refer to chapter 3 – INSTALLATION – for the machine initialisation operations and to chapter 4 – HOW TO PRODUCE A COLOUR - for a description of the basic functions. For a description of the low level functions, refer to the "software manual".

1.4.3. ALARMS

The interface installed on the machine, which can be viewed using a Web Browser (e.g. Google Chrome), shows in real time any critical machine alarms requiring immediate operator intervention and preventing the use of the machine, as well as non-critical alarms, reminding the operator of (even not immediately) required service operation(s).

Critical alarms include:
- Failed autocap opening or closing
- Communication errors
- Motor movement errors (e.g. loss of steps)
- Error on can detection

Non-critical alarms include:
- Colorant quantity below the warning level
- Colorant quantity below the minimum level*

*: this alarm does not prevent the use of the machine unless a formula is set that requires a colorant volume higher than the available one (see paragraph 5 for further details).

1.4.4. STAND-BY

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

- Colorant stirring;
- Semi-finished product stirring;
- Semi-finished product recirculation;
- Colorant recirculation;

1.4.5. 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.

1.4.6. WORKING CYCLE

When the colour production input is sent, the machine performs the following work phases:

1. **CHECKING THE CAN PRESENCE (AUTOMATIC VERSION)**
2. **POSITIONING THE STOOL (AUTOMATIC VERSION)**
3. **CHECKING THE PRESENCE OF THE CAN UNDER THE DISPENSING NOZZLE**
4. **AUTOCAP OPENING**
5. **PAINT DISPENSING**
6. **AUTOCAP CLOSING**
7. **RETURN TO STANDBY.**

In the manual and semi-automatic versions, the stool must be positioned by the operator (see chapter 4 – STOOL HEIGHT ADJUSTMENT).
NOTE: the machine, in the automatic version, checks the stool position by means of an encoder and checks that the capacity of the can positioned on the surface is compatible with the selected volume. On the contrary, in the manual and semi-automatic versions, the system does not check that the can capacity is suitable to the quantity to be dispensed!

1.5. TECHNICAL SPECIFICATIONS

1.5.1. ELECTRICAL SPECIFICATIONS

Power supply	100-240Vac ±10% 50/60Hz
Max current	5.0÷2.5A
Absorbed power	400W max (+200W AUX)
Fuses 5X20 mm	T6.0A-250V Q.ty 2pcs
Working noise (*)	Lower than 70 dB (A)

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

1.5.2. EQUIPMENT CLASSIFICATION AND REFERENCE STANDARDS

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

Note (1):
The equipment is protected for overvoltage up to 1500V. For power lines subjected to transients with peaks of voltage greater than 1500V, the use of external suitable protection devices is recommended.

1.5.3. OPERATING CONDITIONS

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

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

1.5.4. DIMENSIONS AND WEIGHT

COLORANT MODULES	C8	C12	C16	
Height (mm)	950	950	950	
Width (mm)	500	640	840	
Depth (mm)	870	870	870	
Unladen weight (kg)	97	125	152	
MASTER MODULE	MM LP	MM HP		
Height (mm)	950	950		
Width (mm)	500	840		
Depth (mm)	870	870		
Unladen weight (kg)	96	168		
DESK TINTING	DT12	DT16	DT20	DT24
Height (mm)	1340	1340	1340	1340
Width (mm)	1040	1240	1540	1740
Depth (mm)	870	870	870	870
Unladen weight (kg)	230	257	327	343
MASTER MODULE HEAD	MMH HP			
Height (mm)	1340			
Width (mm)	1240			
Depth (mm)	870			
Unladen weight (kg)	245			
DESK MASTER	DM 12+4LP	DM 16+4LP	DM 12+4HP	DM 16+4HP
Height (mm)	1340	1340	1340	1340
Width (mm)	1540	1740	1880	2080
Depth (mm)	870	870	870	870
Unladen weight (kg)	305	332	377	404

1.5.5. PRODUCTION CAPABILITY AND TECHNICAL SPECIFICATIONS

Net colour sample capacity	From 500 ml (1/4 gallon) to 20 l (5 gallons)
Colorant canister capacity	3, 6 litres
Semi-finished product tank capacity	50, 30 litres (HP) / 30, 6 litres (LP)
Max. number of colorant circuits	16+8
Max number of semi-finished circuits	4
Types of colorants that can be used	Universal, water based (solvent-based available as optional)
Semi-finished product flow rate	0.4 or 2 litres/min
Colorant flow rate	0.2 or 0.4 litres/min
Minimum quantity that can be dispensed	1/768 fl oz (0.038 cc)
Semi-finished product strainer	1.2 mm
Colorant strainer	0.9 mm
Dispensing mode	Simultaneous

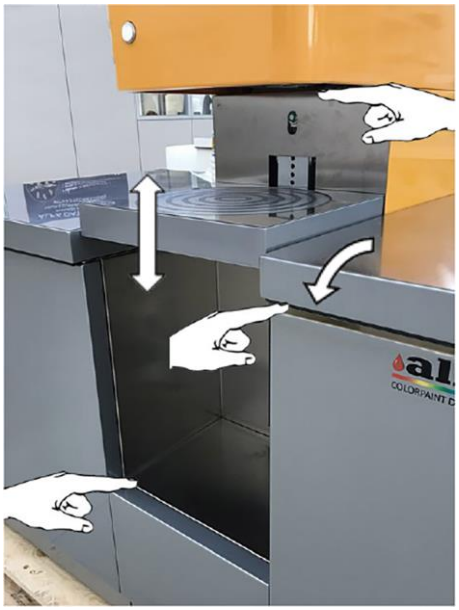
1.5.6. CONSUMABLE STORAGE

Colorants and semi-finished products	Refer to manufacturer's instructions

1.6. RESIDUAL RISKS AND DANGEROUS AREAS

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

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



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

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

- Electrical panel area: risk of electric shock.

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

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

1.6.1. 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.

1.6.2. 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.

1.7. CERTIFICATIONS

1.7.1. 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.

	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. 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. 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. Therefore, the commitment to do so is a moral and civil duty for every citizen. Illegal disposal of the product by the owner causes the imposition of administrative sanctions as indicated by the law in force. For safe machine packaging and handling it is recommended to use a pallet for Desk, equipped with the necessary fixing points (see para. 2). All handling procedures must be carried out using an industrial truck or a transpallet of right capacity.

1.7.2. FCC

The manufacturer Alfa Srl - Via Santa Chiara 2 - 40137 - Bologna – Italy, declares under its own responsibility that the Desk 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:

	**Desk 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**

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.

1.7.3. ROHS CHINA DECLARATION

	**Desk is compliant with the Chinese RoHS standard concerning pollution caused by Electronic Information Products (SJ/T11363-2006, SJ/T11364-2006, SJ/T11365-2006).**

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)
Desk	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.						

1.7.4. EC DECLARATIONS

CE	The equipment complies with the following European Directives: 2006/42/EC, 2014/35/EU, 2014/30/EU, 2011/65/EU.

alfa
COLORPAINT DISPENSER

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 DESK PRODUCTS

SERIES

DESK TINTING

DESK MASTER

MASTER MODULE HEAD

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 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use
EN 61326-1	EMC requirements - Electrical equipment for measurement, control and laboratory use
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 61000-4-8	Immunity to power frequency magnetic fields
EN 61000-4-11	Immunity to voltage dips, short interruptions and voltage variations

PLACE AND DATE	Calderara di Reno, March 20, 2018	
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: 16

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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

The dimensions of the package depend on the machine configuration. In Desk Master versions, a module is normally packed separately and added to the Tinting part during installation.

	DT12/16	DT24	DM12/16+4LP	DM12/16+4HP	MMH	MM HP
Pallet width (W)	1520 mm	1980 mm	1980 mm	1980 mm	2200 mm	900 mm
Pallet depth (D)	980 mm	980 mm	980 mm	980 mm	980 mm	980 mm
Height on pallet (H)	1530 mm	1530 mm	1530 mm	1530 mm	1530 mm	1150 mm
Weight (empty)	260/290 Kg	390 Kg	350/380 Kg	430/460 Kg	270 Kg	190 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

The unpacking procedure described in this paragraph is conceptually valid for all the individual packages, regardless of the configuration.

- Using a cutter, carefully remove the straps.
- Lift the wooden cover (1), remove it and place it on the ground close to the machine.
- Slide the cardboard box upwards and remove the internal Pluriball protections of the machine.

- Cover (1) can be used as a saddle to unload the machine from the pallet.

- Remove the 4 brackets (2) that fix the machine to the pallet by loosening the M8 retaining nuts (3) with a 13mm wrench.

- Use a hammer to slide out the strips that support the machine (4) while checking that the latter remains on the wheels.

- Slowly push the machine on the pallet by letting it slide on the wheels.

This operation must be performed by at least two operators, keeping the machine from both sides to avoid unbalances, overturning or loss of control during the descent. Check that the footboard does not move when the machine passes from the pallet to it.

- Place the machine in its installation place, on a surface suitable for sustaining its weight or on perfectly smooth and level flooring.

Refer to chapter 3 – INSTALLATION to lower the supporting feet and complete the installation.

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.

The supplied accessories are housed in a well-visible position.

Make sure all these accessories are provided:

- Power cable;
- Ethernet cable;
- User's manual;
- Spare fuse kit;
- Autocap sponge kit.

2.4. MOVING THE MACHINE

Desk must only be moved under conditions of maximum safety.

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

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

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

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

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

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

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

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

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

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

3. INSTALLATION

3.1. CHOOSING THE ROOM

The machine must be installed in a manned room, complying with the requirements in chapter 1.

DO NOT INSTALL THE MACHINE OUTDOORS OR ANYWHERE EXPOSED TO WEATHER.

THE EQUIPMENT IS NOT SUITABLE FOR INSTALLATION IN AREAS WHERE WATER SPRAY COULD BE USED.

ONLY INSTALL ON SMOOTH, FLAT AND STEADY FLOOR, ABLE TO SUSTAIN THE MACHINE FULL-LOAD WEIGHT.
THE MACHINE MUST BE POSITIONED ON A HORIZONTAL SURFACE (FLOORING WITH A GRADE BELOW 2%)

INSTALLATION ON INTERMEDIATE FLOOR IS ALLOWED ONLY IF THE REQUIRED LOAD BEARING CAPACITY IS VERIFIED (>1000KG/SQ.M).

INSTALL THE MACHINE AT 5-10 CM FROM THE WALLS, AND ENSURE THAT THE ROOM EASILY ALLOWS YOU TO EASILY OPEN THE SERVICE COMPARTMENTS AND THAT THE CIRCUIT BREAKER CAN BE EASILY ACCESSED.

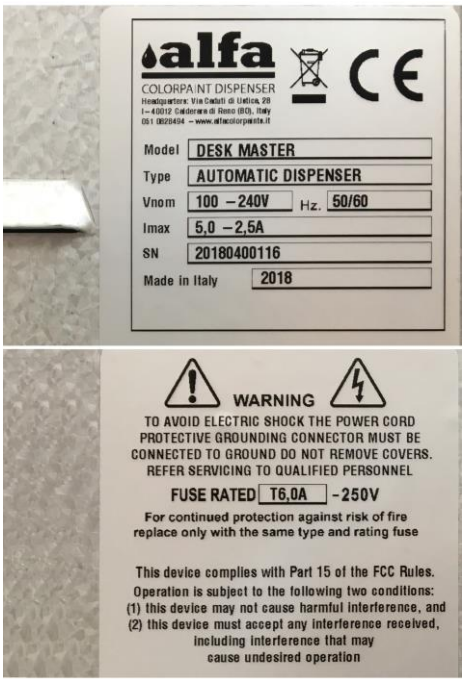
3.2. PRODUCT LABEL AND ELECTRICAL CONNECTION

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
- Imax: 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.

* maximum absorbed current in case of use of Desk at full load and of AUX sockets (see chap. 1 – ELECTRICAL CONTROL PANEL) with load of 200W.



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

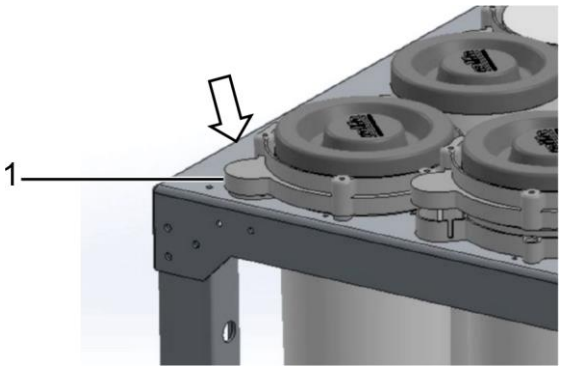
To ensure the correct machine operation and the highest safety level, it is essential that the machine is connected to ground. Make sure that the system is connected to a power supply with an efficient ground.

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

3.3. COMMISSIONING - INSTALLATION

3.3.1. REMOVING THE MECHANICAL RETAINERS

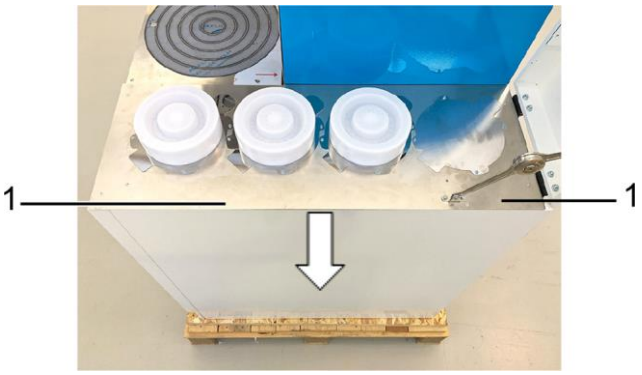
- Some versions can feature mechanical retainers on the canisters (1) that must be removed before the use.



3.3.2. MACHINE STABILIZATION

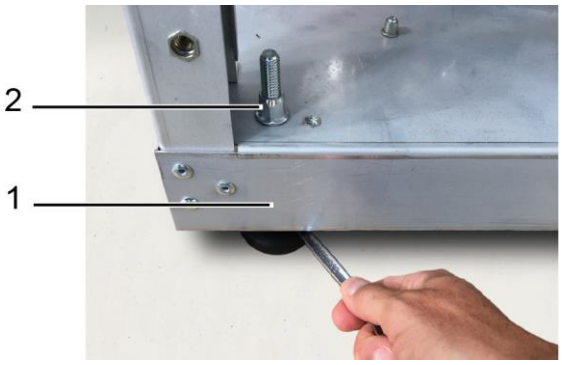
Once the machine is in the correct position, it must be stabilized on the adjustable supporting feet as follows:

- Loosen the two screws (1) with a 2.5mm Allen wrench.
- Remove the panel by overturning it in the direction indicated by the arrow and releasing it from the retainers in the lower side of the structure.
- Repeat the operations described above to remove the panel on the opposite side of the machine and reach the 4 adjustable feet.



For each of the 4 feet:

- Work on the recess located at the base of the screw (1) with a 10mm wrench to lower the foot until the underlying wheel is completely lifted. As an alternative, tighten an M12 nut fully home on the insert (2) and work on it to lift or lower the foot using a 19mm wrench.
- Use a spirit level to correct the height of the 4 feet until obtaining a good alignment.
- Use an M12 nut to lock the foot;



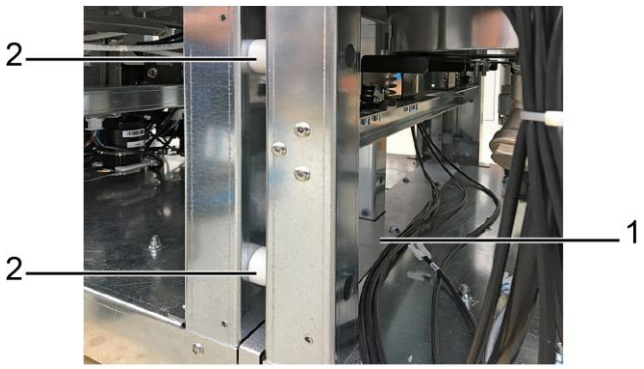
If there is a Master Module to be coupled with a Desk Tinting, or a colorant module to be added to a Master Module Head, proceed as follows.

3.3.3. MECHANICAL CONNECTION OF MASTER (OR COLORANT) MODULE OPTIONAL MODULE

Connect the optional module structure to the Desk module structure as follows:

- Join the bases using the junction plate (1) with FLANGED TE screws M8x20;

- Join the columns with 4 spacers (2 per cylinder (2) tightening 4 TCEI screws M10x60, 8 WASHERS ø10 ø20, into the relevant M10 inserts.

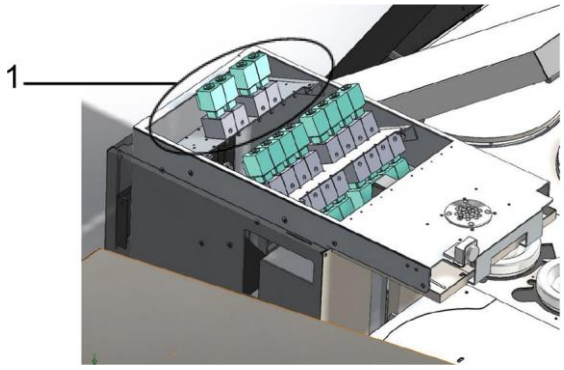


3.3.4. OPTIONAL MODULE CIRCUIT CONNECTION

Each circuit of the optional module is provided with a delivery pipe (identified by an "M") and a recirculation pipe (identified by an "R").

- Remove the sheet cover from the head.
- Find the electrovalves of the free circuits.

Master circuit valves are positioned in second line on the head (1) or on the lower fixing plate.

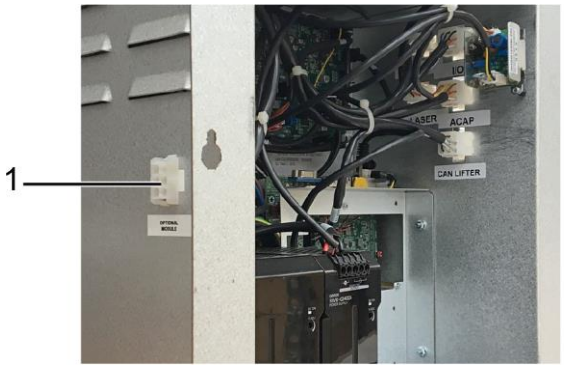


- Route the delivery and recirculation pipes inside the machine and connect them to the relevant electrovalves.

For further details, refer to the technical manual.

3.3.5. ELECTRICAL CONNECTIONS

The RS485 wiring of the circuits of the optional module ends with a free connector (“MACHINE CONNECTION” label) that must be connected to the relevant connector on the electric box (1) (“OPTIONAL MODULE” label).



For operator safety, it is recommended to refit all the panels previously removed before accessing the machine.

3.3.6. CONTROL PC INSTALLATION

Remove the rear panel of the dispensing head to access the electrical part and a compartment where a control PC can be housed, to be left on board the machine (note: the PC is not supplied with the machine).

As an alternative, it is advisable to position the PC over the dispensing head. Connect the PC to an electrical outlet with voltage suitable to the electrical characteristics.

Then connect the PC Ethernet plug to the machine Ethernet socket (or to LTE modem, if any) using the cable supplied with the machine. For the first setup of the machine or to retrieve the DHCP IP address assigned by the network to a machine connected to the LAN, it is necessary to connect to the “0.100” port of the machine.

If an LTE modem router is used, refer to the next paragraph.

Connect the accessories required, such as monitor, mouse, keyboard, and printer if necessary.

DISCLAIMER

Alfa machines are set for local network communication with third party devices and for access to services via internet (alfa-cloud, alfa-service in VPN, etc.) using Ethernet or wireless interfaces.

These systems are NOT designed to be directly used online, as they do not ensure the necessary cyber security protection.

Direct exposure of network interfaces to the internet network without a firewall or similar protection system poses a cyber security risk, that must be avoided with a suitable configuration at the time of installation and for which Alfa srl is not responsible.

3.3.7. LTE ROUTER MODEM INSTALLATION (OPTIONAL)

LTE modems supplied by Alfa are always configured to provide router-machine communication at the address 192.168.0.100.

In case the router is used, it will be necessary to start VPN connection by using the specially provided certificate and to connect to the router IP by setting the last digits of the IP address to 100 (see technical manual for more detailed information).

Different LTE Routers may be supplied, depending of the destination market of the machine.
With reference to the figure on the side, the upper model (1) is suitable for North American markets (Mexico, USA, Canada), whereas the lower model (2) can be used elsewhere in the world. Further models can be used in specific areas where special type-approval requirements are necessary (e.g. Australia).

- Connect the machine Ethernet 0.100 plug to one of the two Router Ethernet sockets and the PC Ethernet plug to the other Router Ethernet socket;
- Connect the power cable present inside the router box between modem PWR connector and 24Vdc socket available in the internal power supply unit. As an alternative, it is possible to use the power supply unit included in the package, to be directly connected to an external mains socket.
- Screw the antenna supplied (3) to ANT threaded connector;
- Insert a data SIM into SIM1 slot, taking care to previously check that no PIN is enabled (before inserting the SIM into the router, insert the SIM into a telephone and disable the PIN if necessary).
  NOTE: In some types of modem, SIM1 slot can be located in the rear part of the modem.

Check that the accessory kit includes:

- Modem
- Network cable
- No. 2 antennae

If necessary the antenna equipped with cable and magnet can be used.

3.4. SWITCH-ON AND INITIALISATION

Connect a PC to the machine Ethernet “0.100” socket using the supplied Ethernet cable, then proceed as described.

- Update the PC network configuration so that the IP address is within the same subnet as that of the machine (see the adjacent example).
- The machine default IP address is 192.168.0.100.
- For more information on how to modify your PC's IP address, contact your IT administrator.
- Turn on the machine by turning the on switch to its “I” position.

MACHINE:

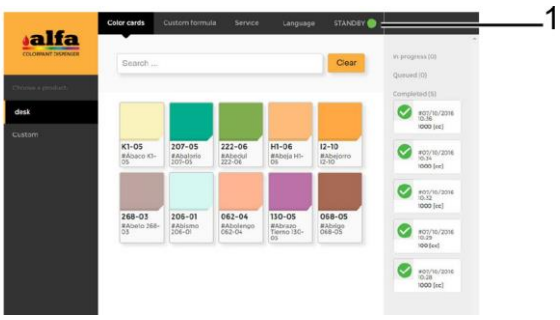
IP: 192.168.0.100
NETMASK: 255.255.255.0

PC:

IP: 192.168.0.XXX
NETMASK: 255.255.255.0

xxx = free subnet address

- Open the Alfa TINT control interface on the Internet browser (preferably Chrome or Mozilla Firefox) and enter the address indicated in the figure.
- When the interface displays the window shown in the figure, the machine is ready to be commissioned and used.
- If the window is not displayed, check the Ethernet connection.



On top right you can always see the machine (1) status.
Upon switch-on, the machine is in ALERT status (red status indicator).
To use the machine it is necessary to perform a RESET. When the operation is completed, check that the STAND-BY status is displayed.

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".

WARNING: if you are unable to communicate with the machine via the web browser, turn off the machine and contact the manufacturer's technical support 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.

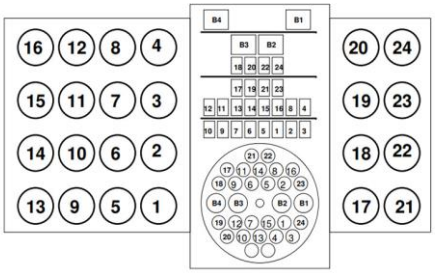
WARNING: in order to disconnect the machine, the operator must not rely exclusively upon the power switch, but must also unplug the machine power cable.

NOTE: The Desk is provided with an integrated board whose aim, among other things, is to maintain the internal 12V power supply for the time required to safely shut down the Linux board (approx. 60 seconds). Any voltage interruptions or dips with a shorter duration do not cause machine switching off by the PC.

3.6. COMMISSIONING - PREPARATION

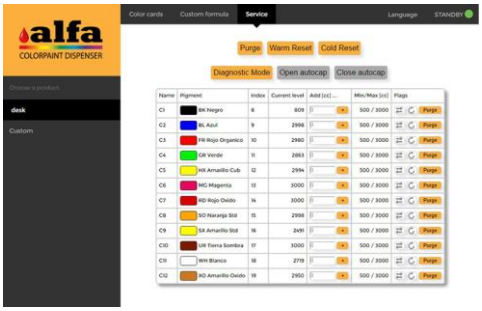
3.6.1. DYE CANISTER LOADING

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.
To load the products refer to chapter 5.
WARNING: Do not overfill the tanks.
Then, trigger the circuits and leave them in recirculation mode for the time needed (see chapter 3 - RECIRCULATION).
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. SEMI-FINISHED PRODUCT LOADING (DESK MASTER VERSION)

The semi-finished products must be loaded in the Master Module tanks. Fill as follows:

- Open the upper door of the Master Module (1).
- Remove the covers (2) and fill the tanks with the product indicated by the software.

The Master Module can have different configurations; the circuit numbers are indicated on the circuits.

WARNING: Do not overfill the tanks.
Refer to chapter 5 – COLORANT AND SEMI-FINISHED PRODUCT TANKS TOP-UP for the correct filling modes.

3.6.3. HUMIDIFIER

The humidifier unit, if any, is used to produce vapour inside the autocap in order to keep nozzles moistened. It works both with closed and open autocap, preventing or reducing product drying on nozzle terminal parts.

The system is composed of a distilled water tank that must be periodically filled, a pump and a vaporiser.

Safety function
A level sensor allows detecting when the tank is empty and allows the machine to disable moisturising function until the liquid level is restored. At software level no alarms or errors are shown.

Operation intervals
The machine periodically activates the humidifier according to factory preset and programmed timings, as shown in the table below.

Time in seconds	Closed autocap	Open autocap
Vapour dispensing	1	2
Repetition interval	1200	30

Intervals are parametrised and can be changed by authorised operators (see technical manual and/or software manual).

When switching on the machine, perform the autocap moisturising as described in chapter 6 – AUTOCAP CLEANING AND MOISTURISING.

3.6.4. SEMI-FINISHED PRODUCT 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.

3.6.5. CIRCUIT TRIGGERING AND RECIRCULATION

Before using the machine, trigger circuits and leave them in recirculation mode.

Once the circuits are full, it is recommended to perform some purge cycles and leave the machine in stand by mode for at least 12 hours, a period of time usually sufficient to remove the residual air from the circuits.

3.6.6. 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.

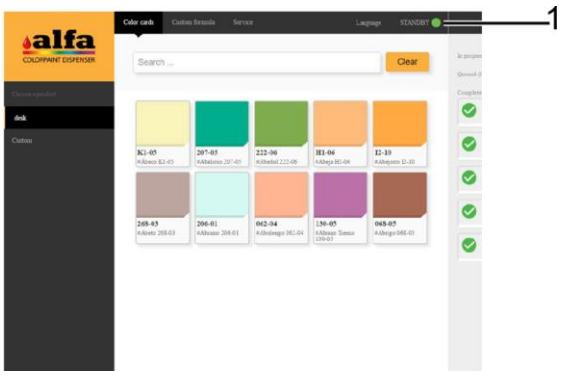
An incorrectly characterized machine can cause significant color production errors. Circuit setup is a procedure reserved for expert technicians so, if necessary, contact Alfa-authorised Technical Service. Circuit setup execution modes are described in the Software Manual.
Once the recirculation and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

4. HOW TO PRODUCE A COLOUR

4.1. MACHINE STATUSES

On top right of the Alfa TINT software interface you can always see the machine (1) status. 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
POSITIONING: can lifter positioning (only for versions with automatic can lifter)

The direct controls are described in the following paragraphs.

4.2. PRODUCTION OF A COLOUR

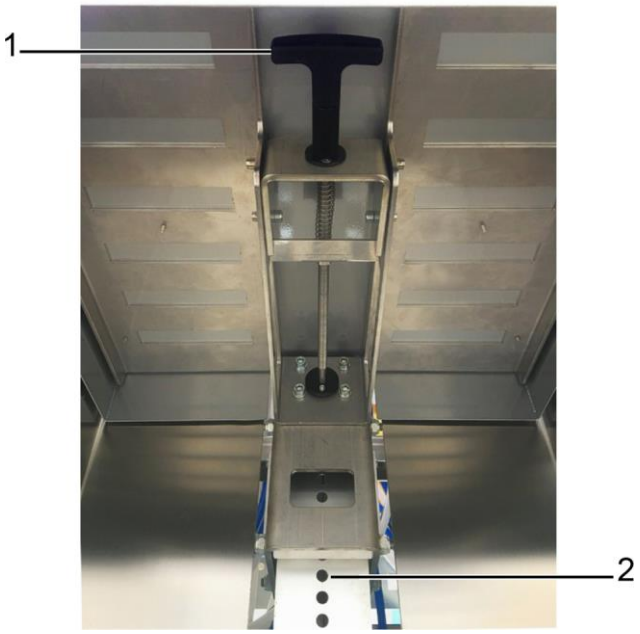
Once the system is installed, it is possible to start the production. To produce a colour, follow the instructions provided in this paragraph.

4.2.1. ADJUSTMENT OF THE STOOL HEIGHT

4.2.1.1. MANUAL STOOL

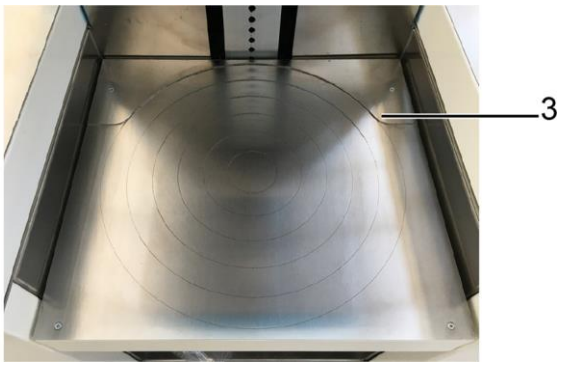
- Adjust the stool height so that the distance between the upper edge of the can to be used and the nozzle is of 2-3cm.

To modify the height, pull the handle under the stool (1). Once the desired height is reached, release the handle and make sure the retaining pin is correctly inserted in the holes (2).



- Once the stool is at the desired height, place a can of suitable capacity on the work bench having care to align the opening at the centre of the dispensing nozzle.

To this end it is possible to refer to the concentric circles engraved on the loading surface.
For the can with offset hole it is possible to place the can on the template on the stool (3) and rotate it.

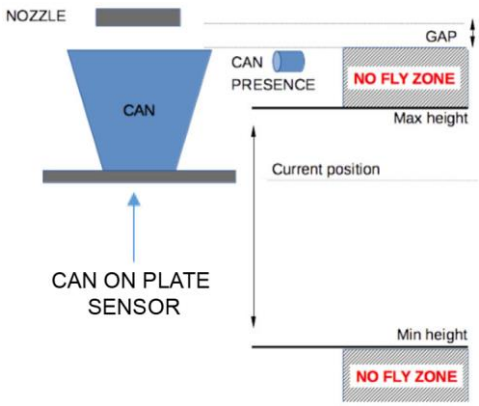


4.2.1.2. AUTOMATIC STOOL

The automatic can lifter option allows the positioning of the loading surface at the ideal height to fill in the can. The position is defined according to the can height stored in a database managed by the supervision software. Based on the volume selected by the operator, the software calculates the ideal position and controls motor of the can lifter up/down movements.

The automatic can lifter is provided with sensors and safety systems that ensure its correct operation:

- an incremental encoder coupled to the crankshaft allows the software to know at any time the exact position of the can lifter which, in rest position, is always moved to a position named "HomePos" that can be set via software;
- an ultrasound sensor (*CanPresence*) allows checking the presence of the can at the right height;
- another sensor (*CanOnPlate*) allows recognizing the presence of a can on the loading surface.



By accessing the administrator functions, it is possible to enable a preferential work surface (***PreferentialLevel***) that coincides by default with the surface aligned to the machine level (1), but can also be customised. In this case the can lifter moves to the preferential surface height and is no longer moved. Otherwise, positioning stops when the can presence sensor ***CanPresence*** (2) detects the can presence (however, it is possible to define tolerances and extra-travels, as explained in greater detail in the software manual). Such configurations can be associated and diversified for every type of package.

To facilitate the centring of the can with respect to the dispensing point, the machine can activate an optional laser pointing system called Bung Hole Locator, that projects 4 light spots on the loading surface (3).

The automatic can lifter can move at two different speeds, a higher one for movements longer than 5cm, and a slower one for short movements (for instance, close to the CanPresence sensor).

A mobile system (4) provided with two safety sensors allows disabling the motor in case of accidental squashing. This system is present both in the lower part of the dispensing head (protection with can lifter fully up) and in the can lifter lower part (protection with can lifter fully down).

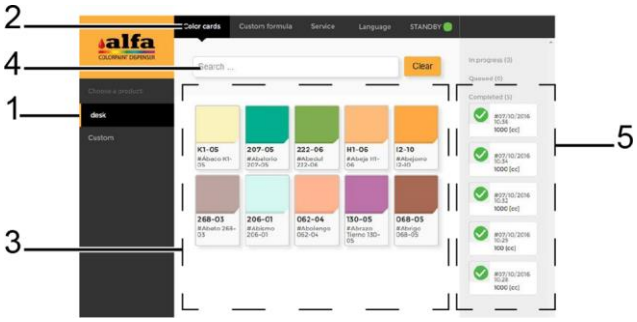
The automatic positioning is performed as follows:

- The operator positions the can on the loading surface.
- The luminous pointing system (optional) turns on to allow the operator to align the can correctly.
- The operator selects on the Software Alfa TINT the recipe and the package of the can to be filled;
- The operator clicks on DISPENSATE to start the dispensing process.
- The automatic can lifter positions itself at the correct height for dispensing (except when the PreferentialLevel function is not enabled); in this case the can lifter is stopped (unless an extra-travel can be set by the Admin) when the sensor detects the presence of the can in the required dispensing position (CanPresence == DARK);
- The machine start the dispensing.
- At the end of dispensing, the automatic can lifter is moved back to the lowest position to facilitate operations for unloading and following new loading (*HomePos*); this option, named “Bottom positioning”, can be selectively enabled or disabled for each package in Admin.
- When the full can is removed from the loading surface, the luminous pointing system is turned off.

RESET: For the can lifter reset, the surface moves down until engaging the Plow position sensor (minimum height). The reset can be performed only if there is no can on the loading surface.

4.2.2. FORMULA SELECTION AND DISPENSING

Formulas concerning different types of product (e.g.: washable paints for outdoor use / washable paints for indoor use / quartz /...) can be loaded onto the machine, each one of them characterised by its own set of original formulas. The types of products are listed in the column on the left (1).

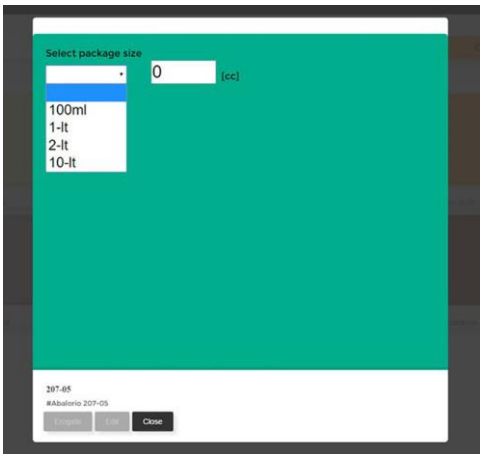


Start the control interface Alfa TINT on the browser web

- Select the desired product type (1).
- The Color cards tab (2) shows a preview of the available colours (3) and a search bar (4) where to enter the name or code of the desired colour.

The right column (5) shows the chronology of the last dispensing cycles.

- By selecting a colour, the display will show the dispensing window (see figure on the side).
- In the “Select package size” drop-down menu, select the desired volume ensuring that it is consistent with the volume of the can being used.
- Then press “Dispense” to start dispensing or “Edit” to change the formula.
- Before starting the dispensing, the machine will check, by means of a sensor, the actual presence of the can under the nozzle; if this is not the case, the display will show the message "Please Insert Can".
- To add a package with different volume, not present in the drop-down menu, refer to the software manual (Recipes >> Packages).
- During the dispensing, the machine is in DISPENSING status. When the dispensing is completed, if there are no errors, the machine will return in STANDBY mode.



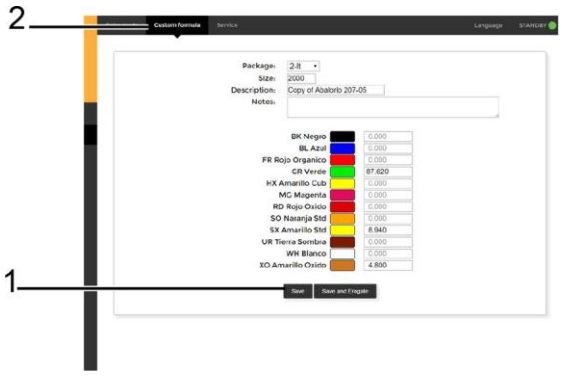
4.2.3. CREATION OF A NEW FORMULA AND CHANGE OF AN EXISTING ONE

If a formula is modified starting from a laboratory one or if a new formula is created from scratch, this formula is not saved among the laboratory ones but in dedicated and different space (e.g. Custom Formulas).

Once an existing formula has been selected, the Edit control allows accessing the “Custom formula” tab that contains the formula editing functions.
To edit the recipe starting from the selected formula, enter the values in cc of the relevant components.
The software offers the possibility to save the formula without activating it, by means of the “Save” control (1) or to save the formula and activate it (“Save and Erogate” control).
The name assigned by default to the modified formula is “Copy of oldformulaname”. The name can be edited together with a field for notes that will be saved with the new formula.

The display mentioned above can be accessed directly even from the initial page by selecting the “Custom formula” tab (2) and can be used to create a new formula. In this case, the default values of the components will be all to zero.

All formulas customized by the operator can be viewed even if they do not have a coloured label, in the “Custom formulas” product menu (3).



At the end of the dispensing, remove the can and close it carefully, then place it in a mixer unit to mix the paint.

4.3. SERVICE ADVANCED FUNCTIONS

The “Service” tab allows accessing useful functions for the diagnosis and maintenance operations. Inside this interface it is possible to send the following direct controls to the machine:

- Purge
- Warm Reset (without movements)
- Cold Reset
- Open Autocap
- Close Autocap
- Start/Stop Recirculate Circuit (2)
- Start/Stop Stirring Circuit (3)
- Purge Circuit (4)

The first three controls (1) are available also with machine in stand-by mode.

The other controls are available only after switching the machine to “Diagnostic” (5) by pressing “Diagnostic Mode”.

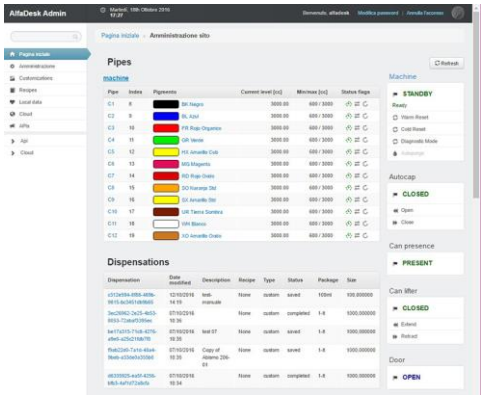
In diagnostic mode it is also possible to enter the product quantities added during the circuit refill (see chapter 5 – MAINTENANCE).

At the end of the service operations, quit the DIAGNOSTIC mode by starting a Reset.

- Cold Reset: performs a complete reset of the machine by starting all movements to search the photocells.
- Warm Reset: quits the Diagnostic mode by performing only the strictly necessary movements.

4.4. ACCESS TO THE CONFIGURATION ADVANCED FUNCTIONS

The access to the configuration and diagnostic functions is allowed only to authorised and qualified TECHNICIANS.



After the authentication, the specialised TECHNICIAN can access the “Admin” interface (figure on the side), from which it is possible to manage the configuration advanced functions, the alarms and the diagnosis.

System administrator can create new users with different credentials and assign 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.

For further details consult the Software manual.

5. ORDINARY MAINTENANCE AND ADJUSTMENTS

5.1. INTRODUCTION

The following paragraphs describe the circuit top-up operations as well as the instructions for simple adjustments that can be performed by the operator.
Namely:

- Colorant and master tanks top-up
- Adjust minimum levels;

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

THE OPERATIONS DESCRIBED IN THIS CHAPTER MAY 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).

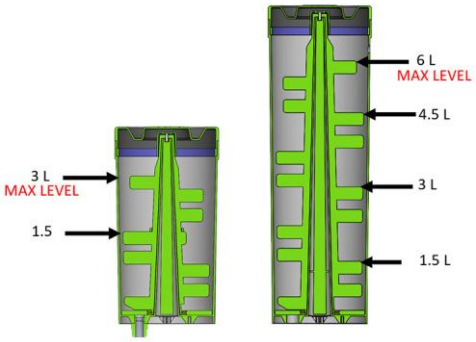
5.2. MASTER TANK AND COLORANT CANISTER TOP-UP

When the machine indicates that the product reserve level has been reached, it is necessary to top up the relevant canister or tank and then record the top-up operation. In order to perform this operation, proceed as follows:

Canisters:

- Remove the cover of the canister/canisters to be topped up.
- Fill the canister with the appropriate pigment up to the indicated maximum level (MAX LEVEL).

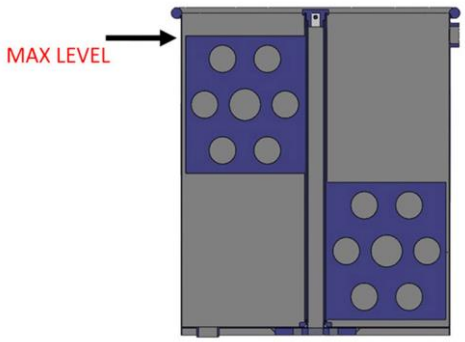
NOTE: The cross element can be used to support a container when you leave it to drain. Do not overfill beyond the recommended level.



Tanks:

- Remove the cover of the tank/tanks to be topped up.
- Top up the circuits using the suitable product. Do not overfill beyond the level indicated by the end of the stirring blade (MAX LEVEL).

At the end of the top-up operations, close the covers of the filled tanks and the machine doors, then record the just carried out operation in the software (see next paragraph).



5.3. RECORDING THE OPERATION

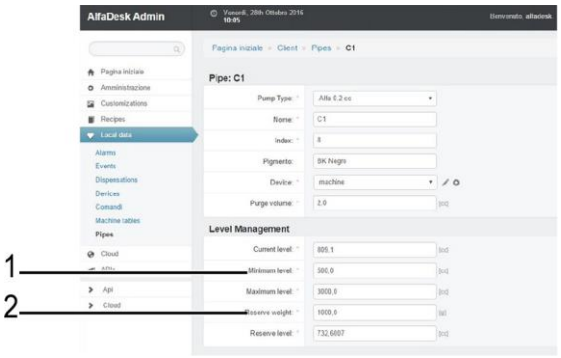
After each top-up operation it is necessary to record in the software the product added quantity:

- Access the “Service” section and then “Diagnostic Mode”;
- In the “Add [cc]” field enter the volume in cc of the product supplied in the circuit, then press “+”.
- Repeat this operation for each topped-up circuit.
- Perform a reset to quit the DIAGNOSTIC mode.

5.4. MINIMUM AND RESERVE LEVEL

For each circuit it is possible to define a reserve level (that can be checked by means of the hardware sensor) and a minimum level (that can be checked via software).
If the product volume is lower than the reserve level (1) detected by the sensor, the system shows an alarm.
If the volume is lower than the minimum level (2) calculated by the software, the system disables the circuit and does not supply that product until the circuit is topped-up.

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



5.5. ADJUSTING MINIMUM LEVELS (OPTIONAL)

The setting operations of the circuit reserve level are performed by the authorised technical personnel.
For further details, refer to the TECHNICAL MANUAL.

5.6. 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.

6. ORDINARY MAINTENANCE 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 + Purge	daily
Machine external cleaning	monthly
Machine internal cleaning	monthly
Strainer cleaning	every 12 months
Changing fuses	If needed

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

Funnel (for humidifier top-up)

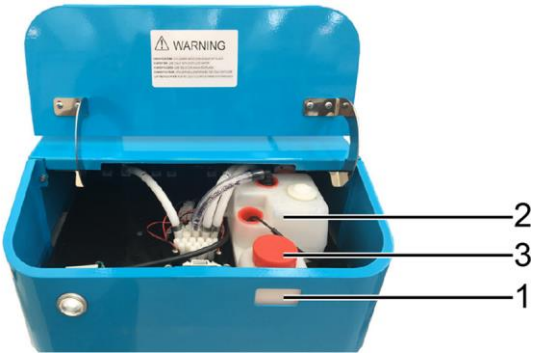
6.3. LUBRICATION

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

6.4. AUTOCAP CLEANING AND MOISTURISING

Humidifier level refilling (if any)

Regularly check, through the inspection window (1), the level of liquid present in the tank (2).
If the level is low, refill by loosening the red cap (3) and adding distilled water.
After refilling, remember to screw the cap again to prevent evaporation phenomena.



The minimum level is shown by the “MIN” line (1).

REFILL WITH DISTILLED WATER ONLY

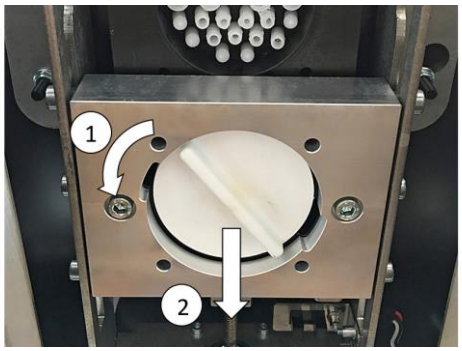
Never exceed “MAX” level (2).

During refilling, it is recommended to use a funnel to prevent the risk of water spilling outside the tank. In case of accidental water spillage during refilling, thoroughly dry the wet parts with blotting paper.

Autocap sponge cleaning

It is recommended to periodically clean the sponge present inside the autocap cover, as described below:

- Remove the autocap lower protection loosening the two screws by a quarter of a turn;
- Open the autocap;
- Loosen sponge holder cap in the lower part of the autocap system (1) and remove it from its seat (2);
- Remove the sponge and wash it using running water;
- Refit the sponge to its original position.
- Close the autocap and refit the protection previously removed.



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 autocap 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

This 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. During purge, products are unloaded into a can, which must be properly placed under the dispensing nozzle.

From the diagnostics interface, the MAINTENANCE OPERATOR can execute the command to purge the individual circuit, as well as an automatic purging operation, which dispenses a small amount of colorant from all the circuits present on the machine.

To force a machine purge command, proceed as follows:

- Access the Service interface (see Chapter 5 and access “Diagnostic Mode”);
- Place a can under the dispensing nozzle;
- Start the purge cycle by pressing the relevant control (“Purge”);
- Wait for the machine to complete the cycle, and check to make sure that no alarms have been generated;
- When the cycle is completed, remove the previously-positioned can.
- Reset the machine.

6.7. 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.

6.8. 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.

6.8.1. 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.

DO NOT USE SOLVENTS OR ABRASIVE PRODUCTS
Drain and wash the vessels in a suitable washing circuit for collecting colorant waste (DO NOT RELEASE IN THE ENVIRONMENT NOR IN THE CIVIL SEWER SYSTEM).

6.8.2. SEMI-FINISHED PRODUCT CIRCUIT FILTER

Upstream of the dispensing pumps, at the outlet of the tanks, there can be 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 can will prevent the product in the filtering compartment from falling and contaminating the surfaces below.

6.9. REPLACING THE FUSES

In case of mains malfunction or problems, the safety fuses could blow and cut power.
Fuses are located in the fuse holder built in the plug with switch on the back panel (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.

	**USE ONLY FUSES OF THE SAME TYPE AND THE NOMINAL RATING SHOWN IN THE PRODUCT LABEL (SEE PARA. 3.2).** **Fuse requirements:** **EU - IEC 60127 Approval** **US - UL248-1 and UL248-14 Approval**

	**WARNING** **THE FUSE MUST BE REPLACED WHEN THE MACHINE IS SWITCHED OFF AND THE POWER CABLE IS UNPLUGGED FROM THE MAINS.**

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

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

Error code	Error detected	Error description	Resolution of the problem
301-308	B”X”_BASE_RESET_ERROR, where “X” = 1..8	"X" BASE slave reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the ”X” BASE, then clean or reattach the sensor. Verify the integrity of the “flag”, the pusher, the motor, and the connectors, and replace the parts or the entire unit if any mechanical wear or damage is found. If the communication is present but an electronic type problem remains, replace the SCCB board.
309-324	C”X”_COLOR_RESET_ERROR, where “X”=1..16	"X" COLORANT slave reset procedure duration time-out	Verify the cleanliness and positioning of the photocell mounted on the ”X” COLORANT, then clean or reattach the sensor. Verify the integrity of the “flag”, the pusher, the motor, and the connectors, and replace the parts or the entire unit if any mechanical wear or damage is found. If the communication is present but an electronic type problem remains, replace the SCCB board.
342	AUTOCAP_HOMING_ERROR	Loss of steps: deviation upon the detection of slave AUTOCAP HOME position	Verify the cleanliness of the mechanical parts and sensors, and remove any residues if necessary. Verify the integrity of the motor and replace it if deterioration is encountered. If any mechanical parts are damaged or jammed, remove or change the mechanical parts in question. Verify the electrical connections and change them if damaged. Check the photocell sensors and reposition them or change them if damaged.
343	CANLIFTER_RESET_AUTH	Alarm generated by a Power on Reset	The Can lifter DOES NOT move, a COLD RESET command must be sent to Reset it
344	CANLIFTER_RESET_ERROR	Error in Can lifter Reset process	The canister presence sensor on Can lifter loading surface is engaged. Remove the canister, if any. If the problem persists, check the connection of this sensor.
351-358	B”X”_DATA_SUPPLY_FAILED, where “X” = 1..8	Invalid table parameters	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
359-374	C”X”_DATA_SUPPLY_FAILED, where “X” = 1..16	Invalid table parameters	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
401-408	B”X”_SUPPLY_CALC_ERROR, where “X” = 1..8	In CONTINUOUS dispensing the Number of steps of the "X" BASE to carry out is NOT a multiple of a whole stroke	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.

Error code	Error detected	Error description	Resolution of the problem
409-424	C”X”_SUPPLY_CALC_ERROR, where “X” = 1..16	In CONTINUOUS dispensing the Number of steps of the "X" COLORANT to carry out is NOT a multiple of a whole stroke	Check for consistency errors between the tables and the circuit installed on the machine. Verify the proper installation of the calibration tables in the Machine menu.
451-475	DISABLED_REQUIRED_CIRCUIT_”X” _ERROR, where “X” = 0..24	"X" Slave must dispense but is erroneously Disabled	Load the Slave configurations onto the new MAB board.
501-508	B”X”_COLOR_HOME_POS_ERROR, where “X”=1..8	Error in the HOMING procedure of the "X" BASE	Check the correct operation of the photocell and the correct movement of the "X" BASE stepper
509-524	C”X”_COLOR_HOME_POS_ERROR, where “X”=1..16	Error in the HOMING procedure of the "X" COLORANT	Check the correct operation of the photocell and the correct movement of the "X" COLORANT stepper
551-558	B”X”_COLOR_HOME_BACK_ERROR, where “X” = 1..8	Loss of steps error in "X" BASE Dispensing	Decrease the dispensing speed
559-574	C”X”_COLOR_HOME_BACK_ERROR, where “X” = 1..16	Loss of steps error in "X" COLORANT Dispensing	Decrease the dispensing speed
601-608	B”X”_COLOR_POS0_READ_LIGHT_E RROR, where “X” = 1..8	At the end of the movement from HOME position to POS0 the photocell is NOT engaged in the "X" BASE	Check photocell and stepper operation
609-624	C”X”_COLOR_POS0_READ_LIGHT_E RROR, where “X” = 1..16	At the end of the movement from HOME position to POS0 the photocell is NOT engaged in the "X" COLORANT	Check photocell and stepper operation
651-658	B”X”_COLOR_END_STROKE_READ_ DARK_ERROR, where “X” = 1..8	At the end of the dosing stroke the photocell is engaged in "X" BASE	Check photocell and stepper operation
659-674	C”X”_ COLOR_END_STROKE_READ_DARK _ERROR, where “X” = 1..16	At the end of the dosing stroke the photocell is engaged in "X" COLORANT	Check photocell and stepper operation
701-708	B_”X”_OVERCURRENT_ERROR, where “X” = 1..8	"X" BASE stepper motor overcurrent	Check wirings, stepper operation

Error code	Error detected	Error description	Resolution of the problem
709-724	C_”X”_OVERCURRENT_ERROR, where “X” = 1..16	"X" COLORANT stepper motor overcurrent	Check wirings, stepper operation
751-758	B”X”_SOFTWARE_ERROR, where “X” = 1..8	Logic error in the process statuses on "X" BASE	Replace electronic board, if the problem persists request a Firmware update
759-774	C”X”_SOFTWARE_ERROR, where “X” = 1..16	Logic error in the process statuses on "X" COLORANT	Replace electronic board, if the problem persists request a Firmware update
791	AUTOCAP_SOFTWARE_ERROR	Logic error in the process statuses on AUTOCAP	Replace electronic board, if the problem persists request a Firmware update
801-808	B”X_COLOR_DRV_OVER_CURR_TEMP_ERROR, where “X” = 1..8	"X" BASE Stepper motor overtemperature	Check wirings, stepper operation
809-824	C”X_COLOR_DRV_OVER_CURR_TEMP_ERROR, where “X” = 1..16	"X" COLORANT Stepper motor overtemperature	Check wirings, stepper operation
841	AUTOCAP_DRV_OVER_CURR_TEMP_ERR	AUTOCAP Stepper motor overtemperature	Check wirings, stepper operation
851-858	B”X_COLOR_OPEN_LOAD_ERROR, where “X” = 1..8	Load missing in "X" BASE Stepper	Check wirings, stepper operation
859-874	C”X_COLOR_OPEN_LOAD_ERROR, where “X” = 1..16	Load missing in "X" COLORANT Stepper	Check wirings, stepper operation
891	AUTOCAP_OPEN_LOAD_ERR	Load missing in AUTOCAP Stepper	Check wirings, stepper operation
892	CAN_LIFTER_HOMING_ERROR	Error while reaching the Can lifter Home position	Check fully down sensor connection
893	HUMIDIFIER_10_PARAM_ERROR	Error in Humidifier 1.0 parameters reception	Check the correctness of parameters sent. The duration of Pump and Heater activation must NEVER be greater than Period
894	CAN_LIFTER_MOVE_ERROR	Error in Can lifter movement	Check connection and power supply of Can lifter DC motor. If the problem persists, check Can lifter Encoder wiring and its operation

Error code	Error detected	Error description	Resolution of the problem
895	TOO_LOW_WATER_LEVEL	Insufficient Water level in Humidifier tank	Refill Water in the tank. If the problem persists, check connection of the level sensor to the board that manages it
896	HUMIDIFIER_20_PARAM_ERROR	Error in Humidifier 2.0 parameters reception	Check the correctness of parameters sent. The duration of Pump and Heater activation must NEVER be greater than Period
897	RH_ERROR	Error in Relative Humidity measurement	Check connection of T/H Sensor housing board with HUTBRD board. Check that T/H sensor is not wet. If the problem persists, replace the board and/or the connection cable.
898	TEMPERATURE_ERROR	Error in Temperature measurement	Check connection of T/H Sensor housing board with HUTBRD board. Check that T/H sensor is not wet. If the problem persists, replace the board and/or the connection cable
899	TEMPERATURE_TOO_LOW	Temperature on board the machine too Low	Check Heater operation
1000	SCALE NOT RESPONDING	The scale is not connected to the machine	Connect a scale to calibrate it, or disable the scale Device within machine configuration in Admin mode

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