

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

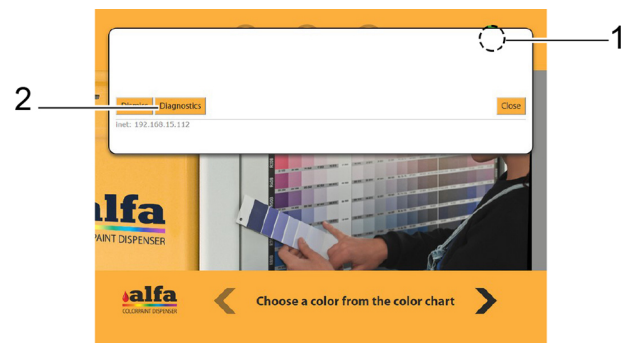
Please refer to Chapter 6 for lubrication and cleaning of the machine.

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

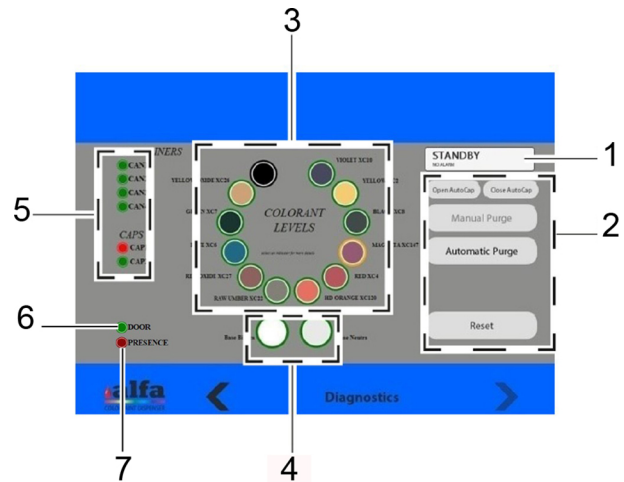
In case of error or alarm, STATUS indicator (1) (normally green) becomes red. When the machine triggers an alarm or error warning, the maintenance operator must reset it. In these cases, alarm type is highlighted by shortly pressing the status button. Enter the service mode as follows:

- 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.
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- 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

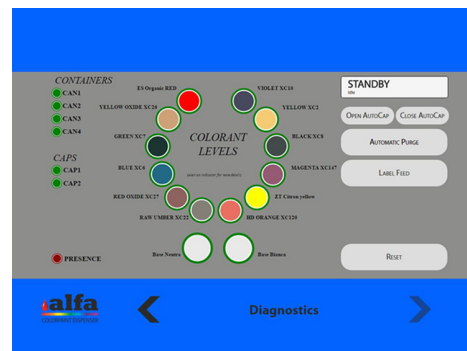


The orange colour indicates that circuit is under the warning level.

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:

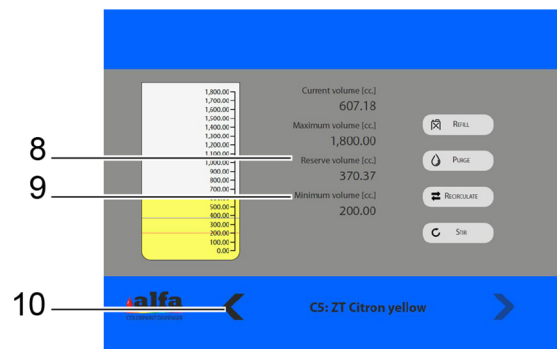
- start a machine reset;
- open the autocap;
- close the autocap;
- start an automatic purge cycle;
- start the movement of the label roll;



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:

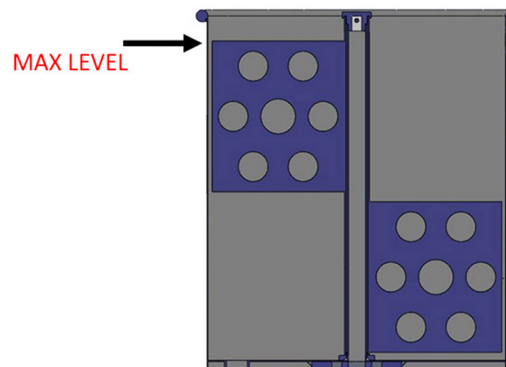
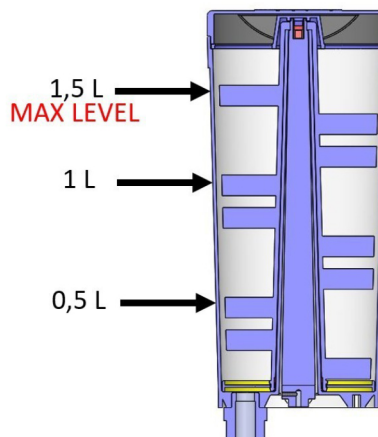
- Open the autocap;
- Position a can under the dispensing nozzle.

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

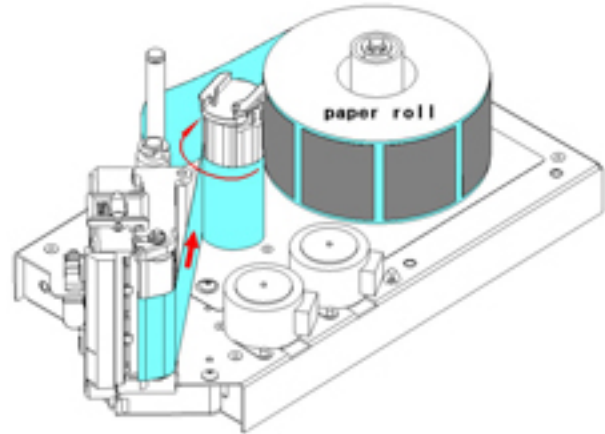
When display indicates “Paper End” alarm (error code 2000) operator must change the label roll.

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

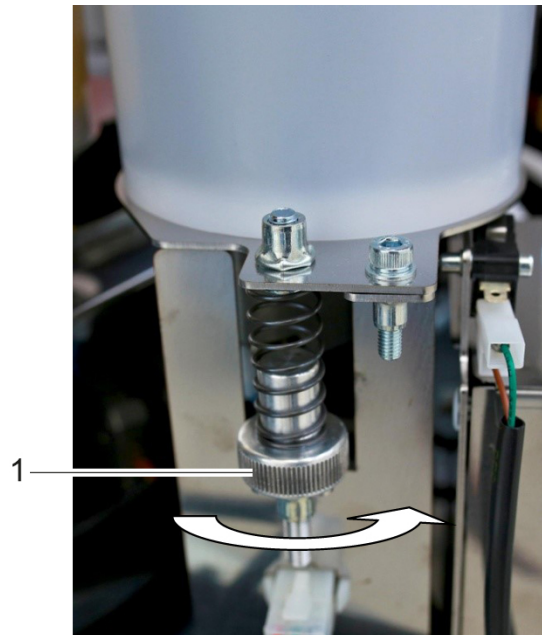
5.8.1. ADJUSTING COLORANT RESERVE

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:

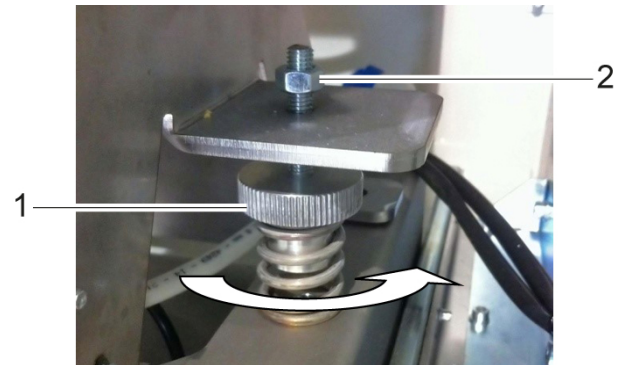
- Fill the canister with the colorant to the level considered to be the one at which alarm must trigger;
- Tighten spring preload pin (1) so that the system offers the least resistance possible to the spring (lower spring), so that the microswitch is pressed;
- Progressively loosen the preload pin (1) 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>
	<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>

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)	<i>Contact technical service every 12 months</i>

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 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

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

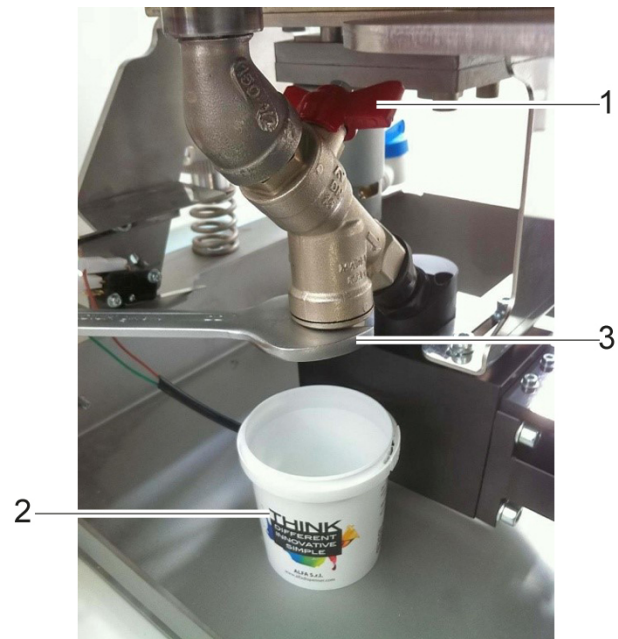
Upstream of the master pump, at tank outlet, is a combined valve including a tap and a filter.

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.

