

FAST & FLUID MANAGEMENT

**HA200-400-600**

ENGLISH



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## Ha Manual (EN)

### **EU Declaration of conformity**

Fast & Fluid Management, Nederland  
A Unit of IDEX Corporation  
Hub van Doorneweg 31  
2171 KZ Sassenheim, Nederland

declare that:

Product: Automatic dispensers  
Model: Harbil  
Types: HA200, HA400 & HA600

are in compliance with the following directives:

Machinery Directive 98/37/EC  
Low Voltage Directive 2006/95/EEC  
Electromagnetic Compatibility Directive 89/336/EEC

according to the following harmonized standards:

EN 292-1, EN 292-2, EN 418 & EN 1050  
EN 60204-1  
EN 61000-6-2, EN 61000-6-3, EN 61000-3-2 & EN 61000-3-3

Sassenheim, 01-06-2005



ir. F. Puijman  
Vice President Manufacturing  
Fast & Fluid Management, the Netherlands  
A Unit of IDEX Corporation



## **Introduction & Warranty**

### Introduction

By selecting a Fast & Fluid Management Color Dispenser you have opted for a product which is the result of intensive research. Top-quality components, craftsmanship and a modern ergonomic design all serve to guarantee a long service life and a high degree of user friendliness. The machine complies with Council Directives 89/392/EEC on machines, 89/336/EEC on electromagnetic compatibility, and 73/32/EEC on electrical equipment intended for use within given voltage limits, as enacted by the Council of Ministers of the European Community. The machine is furnished with a CE mark.

### Warranty conditions

In these warranty conditions, 'F&FM' is understood to mean Fast & Fluid Management. The warranty conditions incorporated into F&FM's general conditions of sale are summarized as follows (for free general conditions you can contact F&FM):

F&FM guarantees the proper operation of any goods which it supplies, for a period of one year, except where a breakdown is the result of normal wear and tear. The cost of any inspection activities carried out by F&FM, with the aim of establishing whether or not a breakdown is covered by the warranty will be reimbursed by the other party if it transpires that the breakdown is not covered by the warranty. If it transpires that a breakdown is covered by the warranty then F&FM will supply identical or equivalent goods under the conditions referred to in point 6 of the general conditions of sale. The warranty obligation described in this article only applies if the goods supplied by F&FM have been used in accordance with the manual. Time spent on warranty-related activities, including travel time, travel costs and accommodation costs, are charged at current rates.

In contrast to the above, F&FM will not be held to any warranty obligation if:

1. Repairs have been carried out, or attempted, by the other party or a third party, unless F&FM had previously declined to repair the goods for a fair price;
2. F&FM demonstrates that the defect did not emerge during testing;
3. The other party fails to inform F&FM of the defect immediately, if possible either by letter and/or by fax, providing full, accurate details and/or has failed to comply fully with F&FM's instructions;
4. The other party has failed to use or treat the goods properly or in accordance with F&FM's instructions;
5. The damage has been caused by incidents, beyond F&FM's supervision, which have occurred either during transport or installation.

In the following text, the expression "Software" will be understood to mean the standard computer software supplied by F&FM to the other party, recorded on a computer-readable storage medium, plus the accompanying documentation (Software Manual) and including any improved and/or new versions supplied. The expression "processing unit" (PU) is understood to mean the machine for which and with which the Software is supplied, and which is the sole machine on which the Software may be used.

The other party is authorized to copy the Software either in its entirety, or in part, (up to a maximum of 2 copies) for purposes of internal security. These copies will be furnished with the same marks, designations relating to copyright and other registration numbers as the original version of the Software.

The other party will neither amend, translate, decompile nor adapt the Software, nor convert it into source code, without express written permission from F&FM. If the other party so requests, F&FM will provide that party with the information required to render the Software interoperable with other software.

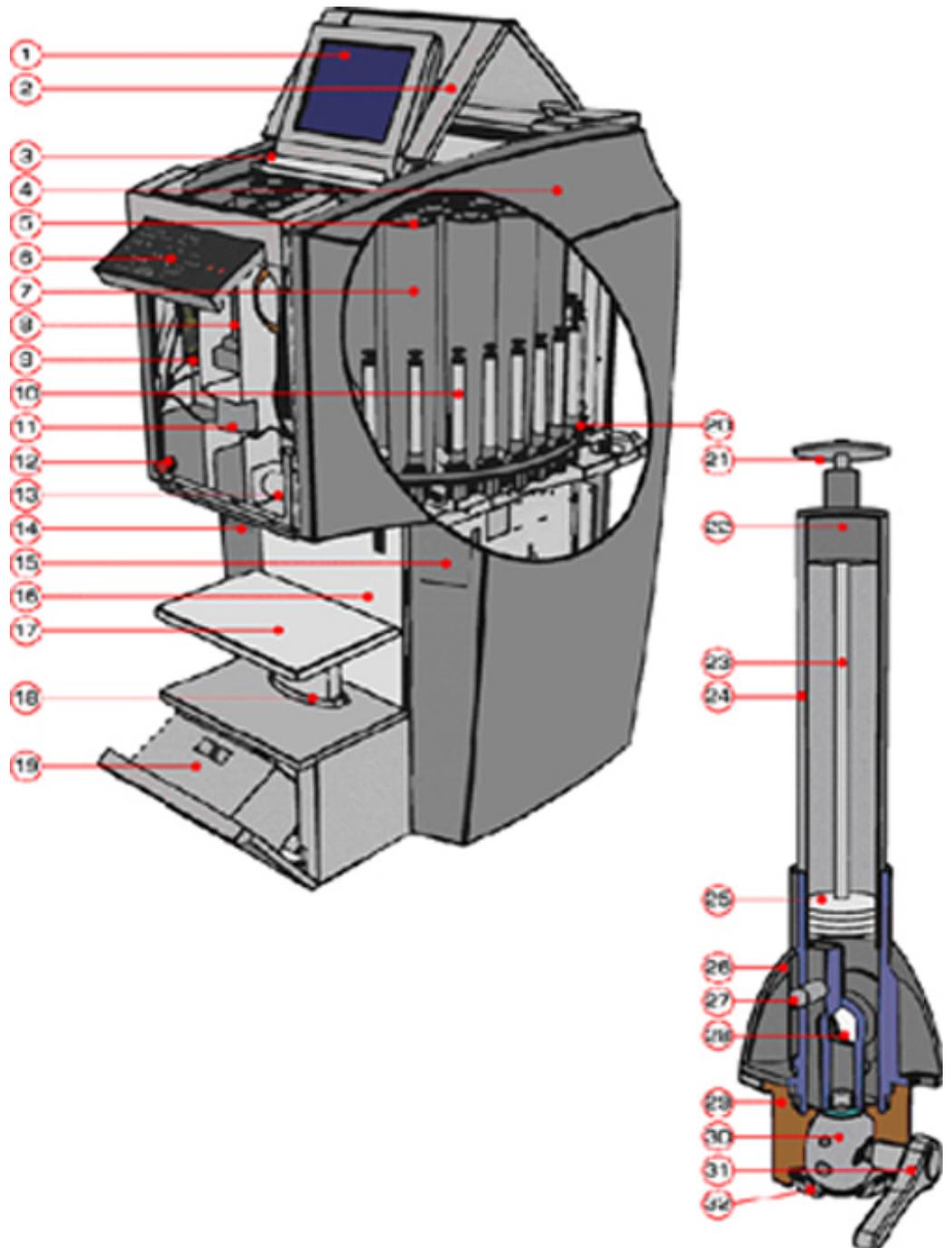
In the event that the PU experiences a breakdown, the other party may use the software on another processing unit until the PU is again operational. The other party will inform F&FM of this within 5 days.

If it is a requirement that the Software be definitively transferred from the PU to another processing unit then the other party shall request permission from F&FM, which will not withhold such permission on unreasonable grounds.

## Explanation of drawings

### Dispenser

1. TFT color display
2. Folding top lid
3. Top lid push bar
4. Side panel
5. Canister lid
6. Keyboard & touch pad, can table switch
7. Canister
8. Pump gripper spindle
9. Electronics power board
10. Pump assembly (details below)
11. Spindle stepper motor
12. Emergency stop
13. Valve gripper actuator
14. Brush tray access door
15. Optional access door
16. Lower Service panel & computer access
17. Can table
18. Can table actuator
19. Step (for easy canister access)
20. Canister turntable



### Pump assembly

21. Disc grip
22. Pump cap
23. Piston rod
24. Pump tube
25. Piston
26. Valve body
27. Pin sensor
28. Canister mount
29. Ball valve housing
30. Ball valve
31. Ball valve arm
32. Insert

## Safety Instructions

### General safety instructions



Attention! Before installing the equipment and setting it in operation, please read the instructions for use carefully. This is safer for yourself and prevents unnecessary damage to the machine.

The manufacturer accepts no liability if the instructions below are not followed:

1. If a machine has been damaged (during transport, for example), do not attempt to set it in operation. When in doubt, first contact either your supplier or the F&FM service department.
2. The equipment should be positioned and connected up in strict accordance with the installation instructions.
3. All local safety regulations and ordinances should be observed.
4. The machine may be connected only to a 230V/16A/50Hz or 100-110V/25A/50-60HZ earthed wall socket installed in accordance with the regulations.
5. Users should see to it that the machine is kept in good condition. Defective components should be replaced.
6. In order to prevent physical injury, the doors should be closed and the paneling fitted during normal use.
7. All service activities (other than routine maintenance and adjustments) may only be carried out by qualified technicians. See to it that the mains lead is always kept unplugged while repairs are being carried out.
8. Because of the design of the valve, a nozzle drill may never be used. Cleaning is done by running the cleaning program.

### Specific warnings in this manual



Attention! Switching off the dispenser with the emergency stop will also stop colorant agitation.



Attention! The punch knife is very sharp! Do not hold can while punching.

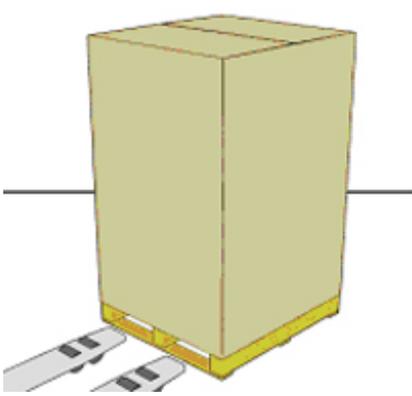


Attention! MOVING PARTS CAN CAUSE INJURY. Always turn off power (e. g. by pressing emergency stop) before accessing moving parts.

## Installation

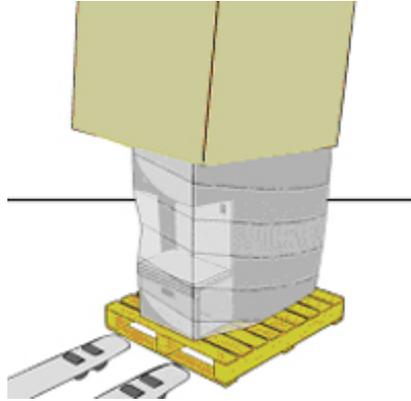
### A - Installing the dispenser

#### Step 1 - Unpack the machine



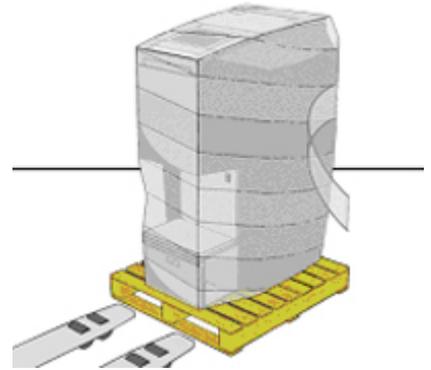
Place the skid near the place of installation.

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Remove the cardboard box.

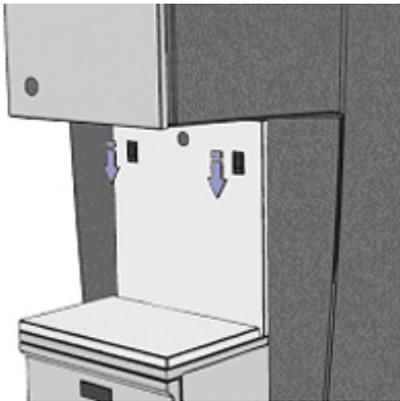
>



Remove the plastic foil around the machine.

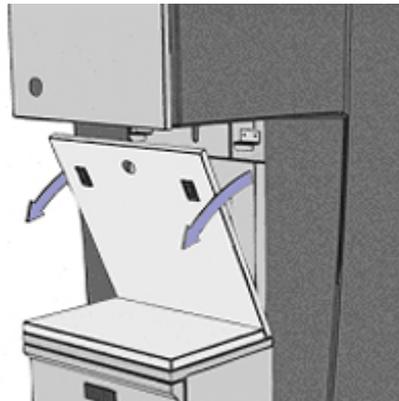
 Be careful not to damage the body and surfaces of your Harbil with any tools while unpacking it.

#### Step 2 - Remove loose components



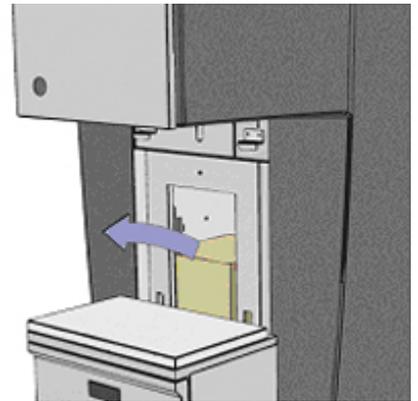
Unlock the service and back panel by pushing the two black handles down simultaneously.

>



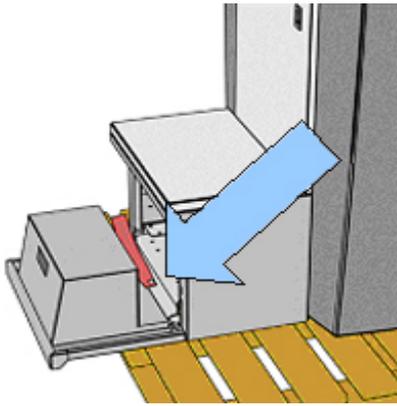
Remove the panel by pulling it towards you and subsequently lifting it.

>



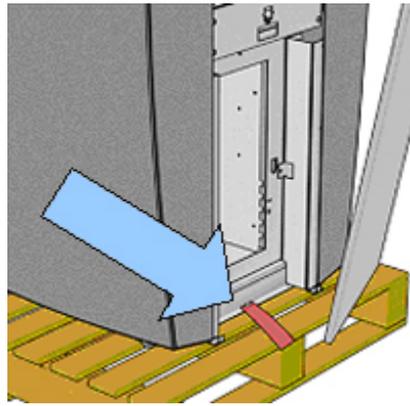
Remove all packages and loose components from within the machine.

### Step 3 - Detach the dispenser from its transport skid



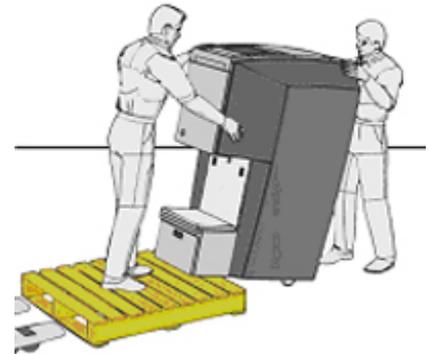
Unscrew the labeled bolt in the front of machine, under the can table.

>



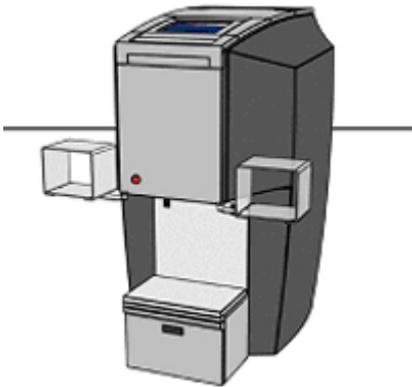
Unscrew labeled bolt in back of machine, in the computer cavity.

>



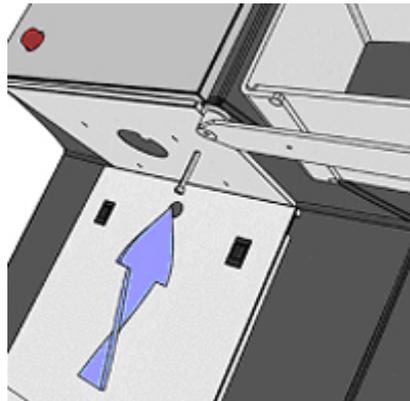
Carefully maneuver the machine off the skid onto its rear wheels and roll it to its final operational position.

### Step 4 - Mount external hardware bracket (optional)



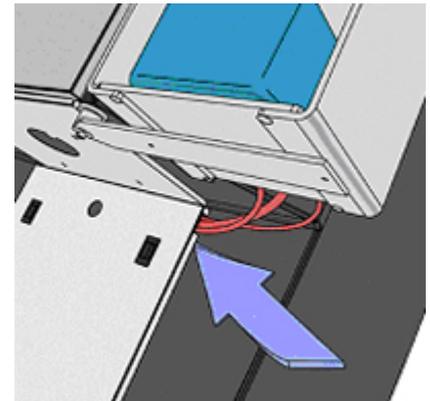
The bracket can be mounted on either side of the dispenser.

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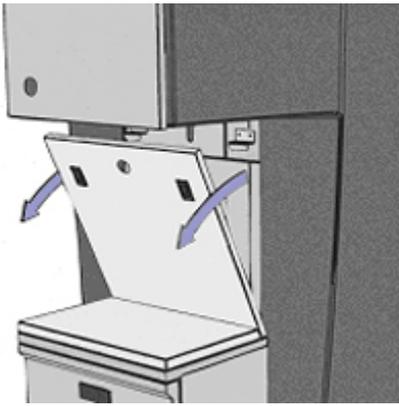
Mount bracket with supplied M6 bolt at desired angle.

>



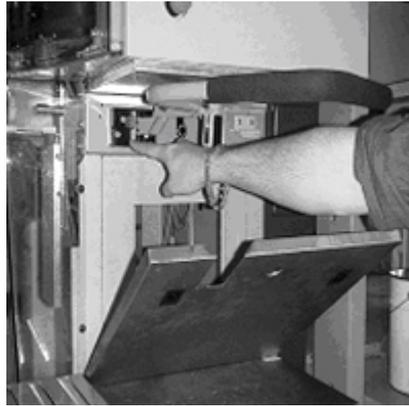
Guide cables through slot in bottom service panel and connect to computer inside.

## Step 5 - Mount manual punch (optional)



Remove bottom service panel. Four mounting nuts are now visible.

>



Mount manual punch with four supplied bolts.

>



Adjust M4 screws to center punch position under nozzle. Place new (slotted) bottom service panel.

 Please ensure punching position of the manual punch is directly under dispensing nozzle. Adjust M4 screws if necessary.

## Step 6 - Mount electric punch (optional)



Three nuts for mounting the electric punch are located around the dispense nozzle.

>



Mount electric punch with three supplied M6 bolts. Take care in positioning the trigger bolt.

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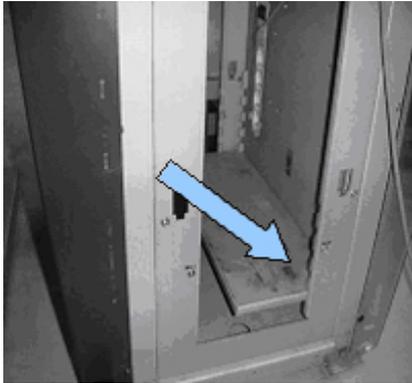


Carefully replace can detection plate and ensure trigger bolt is correctly positioned.

 Please ensure the trigger bolt on the electric punch correctly triggers the can detection plate.

## B - Installing the computer and software

### Step 1 - Place and connect computer to dispenser



Remove the back panel adjust tray height to suit computer model (for optimal accessibility of CD-ROM).

>



Place computer in cavity and fixate with supplied fastener.

>



Connect dispenser connector to COM1 (default) and mouse, keyboard and other appliances to designated computer ports.

### Step 2 - Install dispenser software on computer



Install all necessary software provided by software supplier. Check software manual for details.

>



Use software to test basic functions of dispenser before filling. Check software manual for testing procedure.

## Operation

### A - First time operation

#### Step 1 - Switching ON the dispenser & computer



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Unlock the emergency stop button on the front of the machine by turning clockwise. The machine is automatically switched on when the power connector at the back of the dispenser is plugged into a 220V or 100V-110V wall socket. Please be aware that the Harbil series dispensers are fitted with sleeping timers as standard. This means that after approximately 30 minutes the dispenser will enter a power saving modus in which all secondary units (e.g. sensors) are switched off automatically. Stirring is not affected by this modus.

To awake the dispenser from its sleeping modus, perform any command from the dispensing software or press either of the c an table buttons.

#### Step 2 - Switching OFF the dispenser & computer



>

Please note that with normal operation there should be no reason to take the power off the dispenser. In case the dispenser must be switched off, there are several ways of achieving this:

1. Shut down the computer and unplug the power connector at the back of the machine.
2. Shut down the computer and switch the internal power socket behind the bottom service panel at the front of the machine.
3. Shut down the computer and press the emergency stop button.



**Attention!** Switching off the dispenser with the emergency stop will also stop colorant agitation.

### Step 3 - Setting the stirring time



The stirring time and interval can be altered from its default settings\*. This can be done through the dispenser software, check your software manual for instructions. Please ask your paint supplier for optimal agitation settings for your specific colorant products.

>

\* Default value is 180 seconds of agitation every 3 hours.

### Step 4 - Fill the brush tray (nozzle cleaning system)



>



>



Remove the brush tray by opening the door and pulling down the lever supporting it.

Fill the container with water or an alternative liquid proposed by your paint supplier.

Replace the brush tray in its original position. Cleaning fluid must be refreshed daily!

 Use only cleaning fluids recommended by your paint supplier. Wrong materials can result in nozzle blockage and reduced accuracy.

## Step 5 - Fill the canisters with colourant



Unfold the step and open the top lid by sliding it all the way back.  
Remove the canister lids.



Check your software manual for filling sequence.



Run software purge program twice to remove air from system.

## B - Dispensing

### Step 1 - Bring can to correct position



Place the can at the center of the can table cross hair.



Move the can table upward by pressing the can table switch on the keyboard.



The upward movement will stop automatically. This is the optimal height for dispensing.

## Step 2 - Punch hole in can lid - ELECTRIC (only if fitted with optional electric punch)



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>



Attention! The punch knife is very sharp! Do not hold can while punching.



After punching the hole will be exactly under the dispensing nozzle. Please take care not to move the can before dispensing.

## Step 3 - Punch hole in can lid - MANUAL (only if fitted with optional manual punch)



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>



Attention! The punch knife is very sharp! Do not hold can while punching.

## Step 4 - Dispense colorant into base material



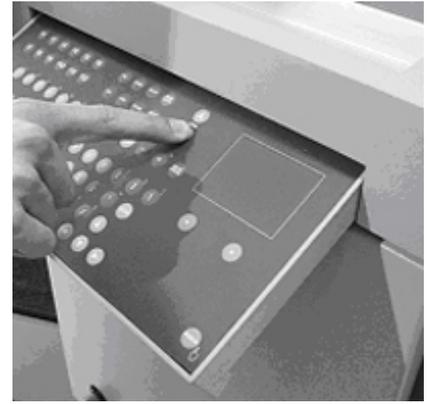
Ensure can opening is under the dispenser nozzle and at its optimal height (automatic stop).

>



Choose desired formula as shown in software manual. The turntable will subsequently rotate to correct positions.

>



Lower can by pressing can table button on keyboard and remove can. Congratulations!

 Dispensing is mainly a software issue. Please read your software manual thoroughly for all possible options.

## Maintenance

### A - Daily maintenance

Clean the brush tray, refill canisters and run morning program



Remove the brush tray and empty the container. Clean the brush with water and refill the container with correct fluid (e.g. water).

>



Fill canisters if level is low and update levels in software. Stir colorant beforehand.

>



Start software morning program to purge valves and clean nozzles. Check your software manual for details.

 Use only cleaning fluids recommended by your paint supplier. Wrong materials can result in nozzle blockage and reduced accuracy.

## B - Weekly maintenance

Remove spilt paint & colorant and refill canisters



Clean can table and outside parts with diluted detergent.

>



Check canister content and refill if necessary.

 Always close canister and machine lid after refilling.  
Be aware the machine will not agitate if the top lid is not closed!

## C - Monthly maintenance

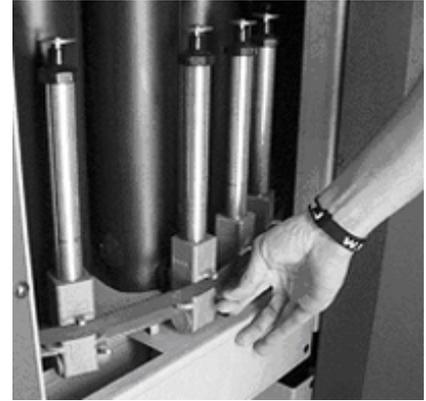
### Check most important components on dirt



Remove back panel.



Clean dust from computer cavity and spilt colorant inside machine.



Check pump valve for possible malfunctions (e.g. leakage or blockage).



Attention! MOVING PARTS CAN CAUSE INJURY. Always turn off power (e.g. by pressing emergency stop) before accessing moving parts.

## D - Flat screen maintenance



Do not use any wetted materials, detergents, solvents, thinners or other cleaning agents to clean the TFT flat-screen monitor. Its surface is very delicate!

How to keep your Flatscreen clean:

- Wipe off water droplets or oil immediately. If you leave the droplets for a long time, staining and discoloration may occur.
- If the surface of the polarizer is dirty, clean it using some absorbent cotton or soft cloth. The desirable cleaners are water, IPA (isopropyl alcohol) or Hexane. Do not use ketone type materials (ex. Acentone), ethyl alcohol, toluene, ethyl acid or methyl chloride. It might permanent damage to the polarizer due to chemical reaction.
- Gently wipe the screen with a clean camel hair lens brush, or a soft, clean, lint-free cloth. This removes dust and other particles that can scratch the screen.
- Do not apply pressure to the screen surface when wiping it clean.
- Do not pour or spray any liquid directly onto the screen or case of the LCD monitor. Chemical cleaners have been reported to damage the screen or case of the LCD monitor.

## Troubleshooting

### A - Introduction

Before calling your machine supplier or Service Department, please check whether you can solve the problem yourself. If you cannot, then call the Service Department for advice. Have the model number and serial number at hand (these can be found on the silver CE sticker at the behind the service panel at the front of the machine). Use the Problem Solving chart below to judge whether you can solve a problem yourself or not. The tool symbol (🔧) means you cannot solve the problem yourself and the Service Department must be called. On no occasion remove side panels yourself, this may only be done by trained service personnel. This chart does not include any of the malfunctions which are reported in an error message by the software. In the event of a malfunction, these messages and possible solutions are displayed on the monitor.



**Attention! MOVING PARTS CAN CAUSE INJURY.** Always turn off power (e. g. by pressing emergency stop) before accessing moving parts.

### B - Problem solving

<i>Symptom</i>	<i>Cause</i>	<i>Action</i>
Valve leaks through the outlet opening	Air bubble in pump	Prime the pump
	Valve is defective	Replace pump 🔧
Canister connection leaks around the suction point	Worn O-ring(s)	Replace O-ring(s) 🔧
Air is being fed together with the paste	Air bubble in the pump	Prime the pump
	Canister is empty	Refill canister
	Piston is defective	Replace pump 🔧
(New) software is not working	Program not correctly booted	Reboot computer & software
	Software incorrectly installed	Reinstall software
No power from power unit	Not connected to power grid	Check power cables
	Fuse blown	Remove plug from socket, replace fuse
Colours are difficult to reproduce	Mechanisms are dirty	Clean and oil
	Quality fluctuations in paste supplied	Contact paste supplier
	One or more pastes have thickened	Replace paste(s)
	Turntable in wrong position	Reset (press and unlock emergency stop button)
	Leaks around piston(s)	Replace piston(s) 🔧
Poor monitor picture, or no picture	Monitor is switched off	Switch monitor on
	Loose cable(s)	Check cables
	Picture set too dark	Adjust picture correctly
	Monitor malfunctioning	🔧
Keyboard is not working	Loose cable(s)	Check cables
	Windows Regional setting is incorrect	Check Windows software manual
	Defective cable(s)	🔧
	Keyboard is defective	🔧
Stirrer is not rotating	Top lid not closed properly	Close top lid
	Timer setting incorrect	Use the software to set the timer correctly
	Loose cable	Check cable

Turntable is not turning	Defective cable	
	Defective motor	
	Top lid not closed properly	Close top lid
	Piston rod positioned too high	Set piston in lower position
	Valve mouth pointing down	Reposition valve mouth
	Cable(s) loose	Check cables
	Cable or motor defective	

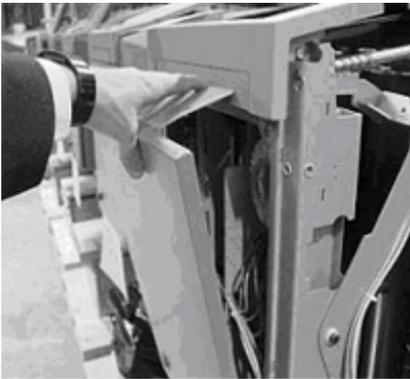
## C - Service Department

If necessary, you can get in touch with your supplier or the local service department, or contact the manufacturer directly. If you contact the manufacturer, make sure that you have the model number and serial number to hand. They can be found on the name plate on the machine.

Fast & Fluid Management  
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2171 KZ Sassenheim, the Netherlands  
Tel: + 31 (0)252 240 800  
Fax: + 31 (0)252 240 882 (service)  
+ 31 (0)252 240 880 (general)

## D - Fuses

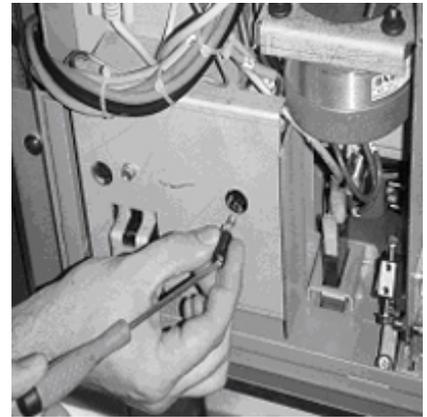
Replace fuses behind front panel.



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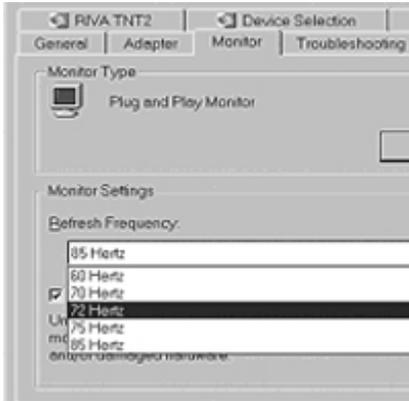


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## E - Flat screen – adjust settings

### Windows settings & use of buttons at rear of screen



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Ensure the (Windows) video refresh is between 60 and 85 Hz and 800x600 pixels.

Use button 2 (Menu Down) to enter the onscreen menu.

1. Power ON/OFF
2. Menu UP/DOWN
3. Value +
4. Value -
5. Automatic align

Run the 'Autotune' function and 'Position – Center'. Please save upon exiting.



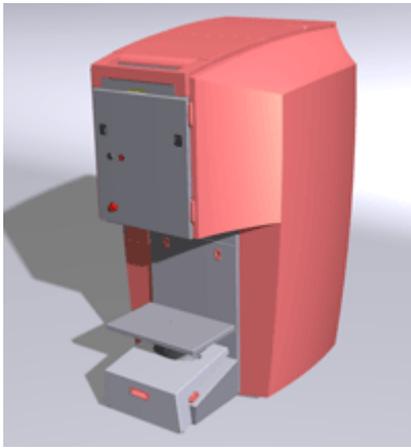
## Contributing to the Protection of the Environment

### Packaging Material

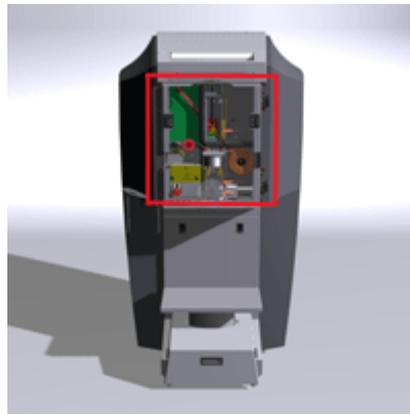
The packaging protects the machine against damage during transport. The packaging material was chosen based on its limited impact on the environment and its inherent possibilities for waste-disposal. The reuse of packaging material saves raw materials and produces less waste material. Generally speaking, your supplier will take the packaging off your hands.

### Discarding the Machine

Discarded equipment usually still consists of valuable materials. For this reason, do not simply throw your machine out with the oversized refuse, but ask your supplier whether he will take the machine back. If he will not, then enquire at your local government offices or ask a trader of raw materials what options there are for recycling the material (e.g. scrap processing, electrical components and plastic (see below for additional information)).



All red-coloured components are made of ABS. These components can be recycled.



Inside the red square pictured above (on the front of the dispenser) are electrical components that can be recycled.

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