

FLUID MANAGEMENT

Instructions manual
for the Dispenser

Type :
Automatic
small HA-s/medium HA-m
mediumII HA-mII/large HA-l



Illustrated model:
HA-24m
1860331-eng

We, **Fluid Management Europe B.V.**
A Unit of IDEX Corporation
Hub van Doorneweg 31
2171 KZ SASSENHEIM

herewith declare, on our own responsibility, that the products

HA-xs/s/m/ml/l

which this declaration refers to, are in conformity with the following standard(s) or other such specifications

NEN-EN 292-1, 1994
NEN-EN 292-2, 1996
NEN-EN 418
prNEN-EN 1050, 1993
NEN 2446, December 1976
NEN 3544, May 1984
EN 50081-1, 1992
EN 50082-1, 1992
EN 55024-2
EN 55024-4
NEN-EN 60204-1, 1995
EN 61000-3-2, 1995

according to the conditions of the Machinery-, Low Voltage- and the EMC-directive.



The Netherlands
Sassenheim, 5-5-1999

W. van Westerop
Vice President Manufacturing
Fluid Management Europe B.V.
A Unit of IDEX Corporation

1. General	page 3
2. Guarantee conditions	page 4
3. Safety instructions and warnings	page 5
4. Positioning / Installing the machine	page 6
4.1 Conditions for correct positioning	
4.2 Installing the machine	
4.2.1 Preparation	
4.2.2 Removing the pallet	page 7
4.3 Mounting the monitor stand and installing the computer system	
4.3.1 Mounting the monitor stand (HA-s/m/l)	
4.3.2 Mounting the monitor stand (HA-mll)	page 8
4.3.3 Installing the computer system	page 9
5. Operation	page 10
5.1 Brief overview and function of the operating elements	
5.2 Supplementary overview and function of the operating elements	page 11
5.3 Starting the machine	page 12
5.3.1 Preparing the machine for use for the first time	
5.3.2 Preparing the machine at the start of the day	
6. Maintenance	page 13
6.1 Maintenance instructions	
6.2 Maintenance to be carried out by the operator	
6.3 Troubleshooting	page 14
6.4 Service/Service department	page 16
7. Machine identification data	page 17
7.1 Machine plate data	
7.2 Pictures of the machine parts	page 18
7.2.1 Dispensing pump	
7.2.2 Mains connection	page 19
7.2.3 Power unit and sensor position	page 20
8. Specifications	page 22

By selecting a Fluid Management Color Dispenser you have opted for a product which is the result of intensive research in the field of high-tech color dispensing equipment. Top quality components, craftsmanship and modern ergonomic design all serve to guarantee a long service life and a high degree of user friendliness.

The equipment complies with Council Directives 89/392/EEC on machines, 89/336/EEC on electromagnetic compatibility and 73/32/EEC on electrical material intended for use within given voltage limits, as enacted by the Council of Ministers of the European Community. The equipment is furnished with a CE mark.

Keep this manual in a safe place.

In these guarantee conditions, 'FM' is understood to mean Fluid Management.

The guarantee conditions incorporated into FM's general conditions of sale are summarized as follows (for free general conditions you can apply to FM):

1. 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 FM, with the aim of establishing whether or not a breakdown is covered by the guarantee, will be reimbursed by the other party if it transpires that the breakdown is not covered by the guarantee. If it transpires that a breakdown is covered by the guarantee, then FM will supply identical or equivalent goods under the conditions referred to in point 6 of the general conditions of sale. The guarantee obligation described in this article only applies if the goods supplied by FM have been used in accordance with the manual. Time spent on guarantee-related activities, including travel time, travel costs and accommodation costs, are charged at current rates.
2. In contrast to the above, FM will not be held to any guarantee obligation if
 - a) repairs have been carried out, or attempted, by the other party or a third party, unless FM had previously declined to repair the goods for a fair price;
 - b) FM demonstrates that the defect did not emerge during testing;
 - c) the other party fails to inform 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 FM's instructions;
 - d) the other party has failed to use or treat the goods properly or in accordance with FM's instructions;
 - e) the damage has been caused by incidents, beyond FM's supervision, which have occurred either during transport or installation.
3. In the following text, the expression "Software" will be understood to mean the standard computer software supplied by 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.
4. 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.
5. The other party will neither amend, translate, decompile nor adapt the Software, nor convert it into source code, without express written permission from FM. If the other party so requests, FM will provide that party with the information required to render the Software interoperable with other software.
6. 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 FM of this within 5 days.
7. 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 FM, which will not withhold such permission on unreasonable grounds.

Before installing the equipment and setting it in operation, read the instructions for use carefully. This is safer for you and it prevents needless damage to the machine.

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

- If a machine has been damaged (during transport, for example), do not attempt to set it in operation. When in doubt, first contact either the Service department (see section 6.4) or your supplier.
- The equipment should be positioned and connected up in strict accordance with the installation instructions.
- All local safety regulations and ordinances should be observed.
- The machine may be connected to a 230 V/50 Hz or a 110 V / 50-60 Hz earthed wall socket installed in accordance with the regulations. See machine plate for correct voltage.
- Users should see to it that the machine is kept in good condition. Defective components should be replaced.
- In order to prevent physical injury, the doors should be closed and the panelling fitted during normal use.
- Keep the keys of the machine in a special, safe place.
- All service activities (other than routine 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.
- The standard equipment is only suitable for dispensing water-based color pastes into tins of basic paint. The use of other solvents may damage the sealing rings and cause the equipment to leak. The equipment can, however, be adapted for use with other solvents.
- Because of the design of the valve, a nozzle drill may **never** be used. Cleaning is done by running the cleaning program.

4.1 Conditions for correct positioning

Make sure that the following requirements are met when positioning the machine.

- Place the machine on a stable, flat surface, and make sure that it is level.
- Any dry, well ventilated place is suitable. The machine should preferably not be placed in the sun or near a radiator or other source of heat, since this can cause the pastes to dry out.
- Maintain a constant ambient temperature of approximately 18°C to prevent viscosity changes in the pastes.
- Make sure that the machine is connected only to a 230 V/50 Hz or 110 V / 50-60 Hz earthed wall socket. See the machine plate for correct voltage.

4.2 Installing the machine

4.2.1 Preparation

Note: Tools and fastenings are supplied with the machine. They include a triangular key, ordinary spanners, cable connectors, screws etc.

- Remove the triangular key from the installation kit (attached to the door) and remove the panel at the back of the machine.
- Remove all the loose components (including monitor stand or printer where applicable) from inside the machine and the plastic film around the canisters.
- Remove the fastening bolts attaching the machine to the pallet (see figure 1, number 1).

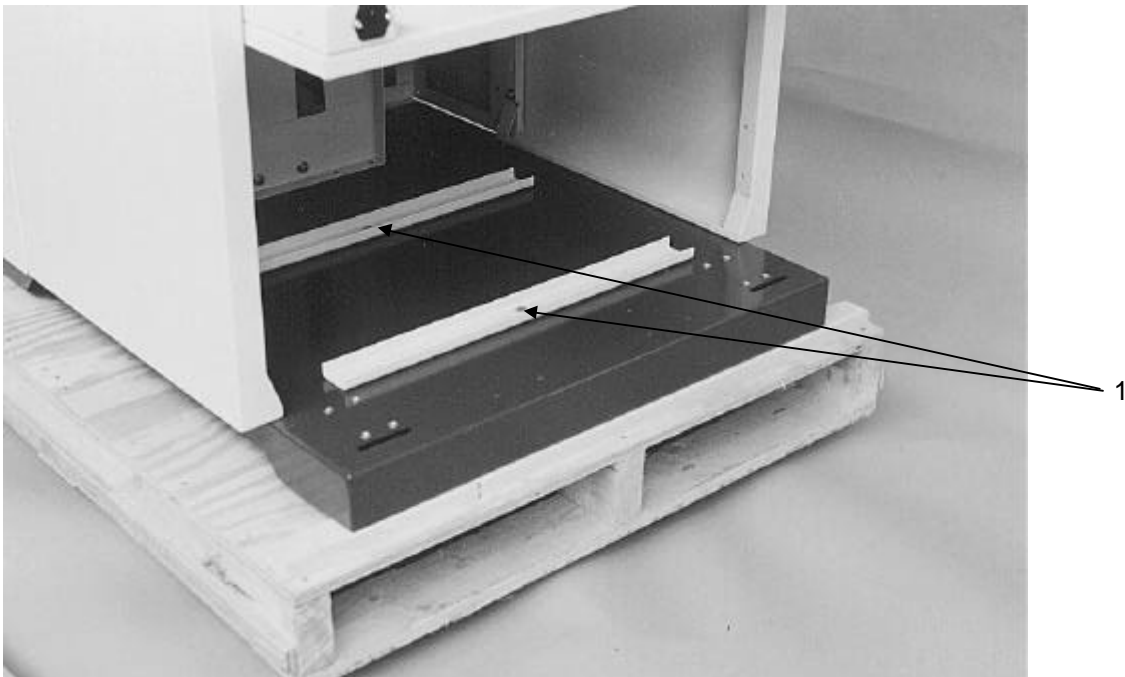


figure 1

4.2.2 Removing the pallet

Carefully manoeuvre the machine backwards, with 2 people behind and 1 person in front of the machine (see figure 2) and lower the machine gently on to its rear wheels, so that the situation in figure 3 is reached. Remaining in the same formation, tip the machine backwards until it is clear of the pallet, and the pallet can be pushed out of the way. Once the pallet has been removed, lower the machine carefully on to its wheels (see figure 4).

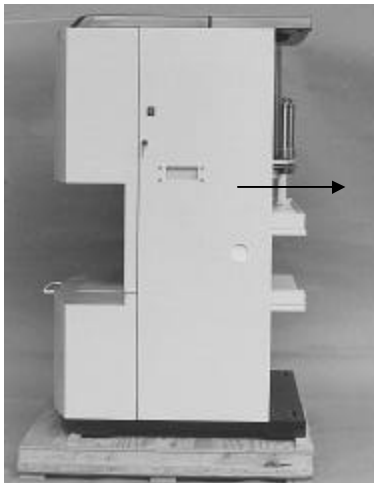


figure 2

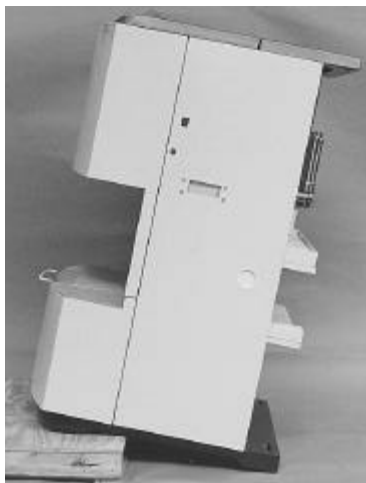


figure 3



figure 4

4.3 Mounting the monitor stand and installing the computer system

4.3.1 Mounting the monitor stand (HA-s/m/l)

- Remove the small plate attached to the inside of the machine level with the monitor stand, see figure 4, number 1. This plate will have to be replaced later so that the cables can be concealed behind it, to protect them from rotating parts in the machine.
- Remove the bottom plate of the monitor stand.
- Mount the stand on the right side of the machine using the four fixing bolts, see figure 5, number 1).

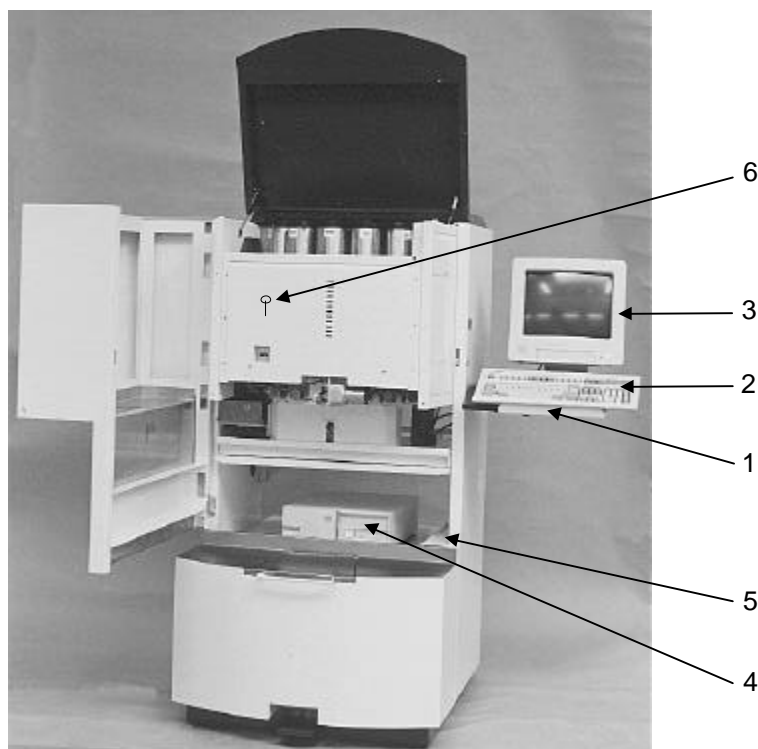


figure 5

4.3.2 Mounting of monitorstand (HA-mII)

The monitorstand can be mounted on either side of the machine. It is normally mounted on the right hand side. To mount it on the left hand side the screenbracket behind the side panel should be positioned on the righthand side.

Positioning of monitorbracket

1. Mount the hangingbrackets on the right (or left) side of the machine.
2. If a mouse-/printersupport is supplied, attach these to the monitorarm before attaching to the machine. The mouseplate attachment is simplified by turning the monitor/keyboard support upside down.
3. Finally mount the whole assembly onto the machine. The height can be selected to suit the individual (the lowest position is standard).

When using a flatscreen a mousetray can be attached (see figure 7).



Figure 6

Attachment bolts

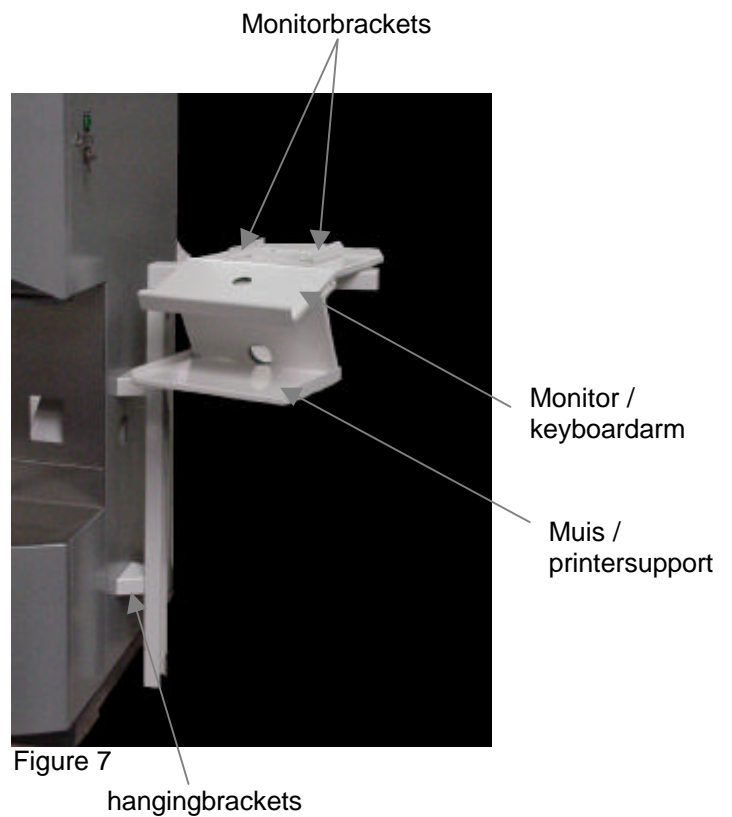


Figure 7

hangingbrackets

Before proceeding any further:

Take the installation manual out of the computer packaging and look up the connection information. This provides a clear description of all computer cables and plugs and the correct way to connect them.

4.3.3 Installing the computer system (see figure 5)

1. Position the keyboard (number 2), the monitor (number 3) and the computer (number 4) as shown in figure 5.
2. Feed the keyboard and monitor cables through the base of the machine stand. Make sure they are running the right way!
3. Connect the 9-pin connector lying in the computer cavity to the computer.
4. Mount the cover plate (figure 4, number 1) such that all cables run behind it.
5. Bundle any loose pieces of cable with the cable ties supplied.
6. Plug the computer and monitor plugs into the internal socket (see figure 5, number 5) and press in their on/off switches.
7. Attach the bottom plate of the stand using the steel screws supplied.
8. Mount the panel on the back of the machine and fix it in place using the triangular key.
9. Place the triangular key in the special clamp on the inside of the machine (see figure 5, number 6).
10. Attach the power cord to the back of the machine (see 7.2.2).

5.1 Brief overview and function of the operating elements (HA-s/m/l)

See figure 6 (elements shown with a dotted outline are located inside the machine).

- | | |
|---|---|
| 1. Main switch (red) | ⇒ Switching the whole machine on and off |
| 2. Monitor | ⇒ Monitoring and coordinating the process |
| 3. Keyboard (various versions) | ⇒ Controlling the process |
| 4. Computer | ⇒ Input and output control unit |
| 5. Lift table unlocking pedal | ⇒ Unlocking the lift table |
| 6. Narrow lift table (wide available as option) | ⇒ Positioning cans at correct filling height |
| 7. Cleaning brush/Brush tray | ⇒ Cleaning the nozzles |
| 8. Punch☆ | ⇒ Punching filling openings in cans |
| 9. Wing door with gas springs | ⇒ Closing the access opening to the canisters |
| 10. Thermostat☆ | ⇒ Adjusting temperature of heating element |
| 11. Drip tray | ⇒ Catching any spilled paste |
| 12. Computer switch (green) | ⇒ Switching the computer on and off |
| 13. Reset lift table / punch☆ | ⇒ Resetting the lift table / punch |
| 14. Lift table switch (black) | ⇒ Moves the lift table up and down |
- ☆ = Optional

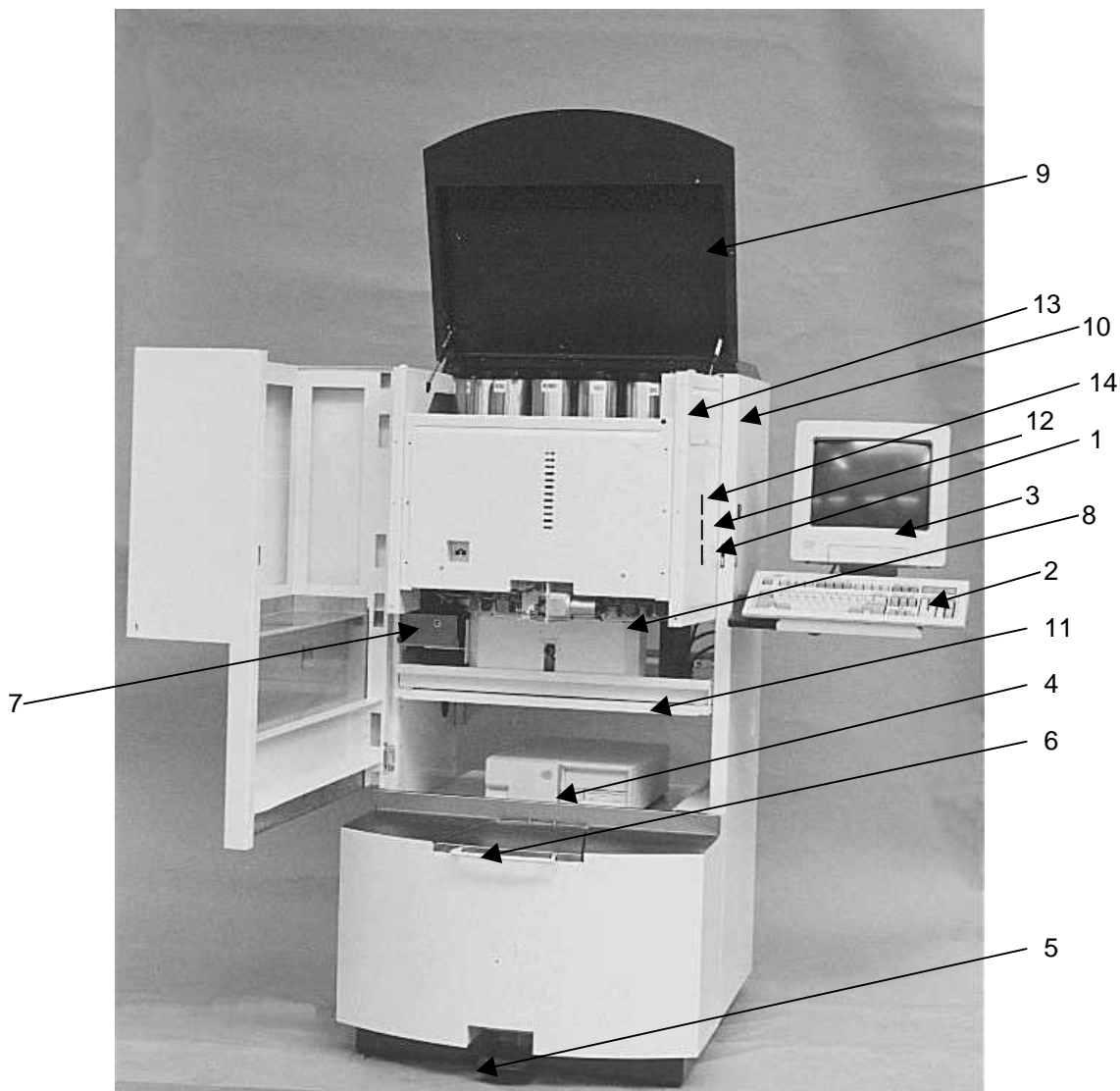


figure 6

5.2 Supplementary overview and function of the operating elements (HA-ml)

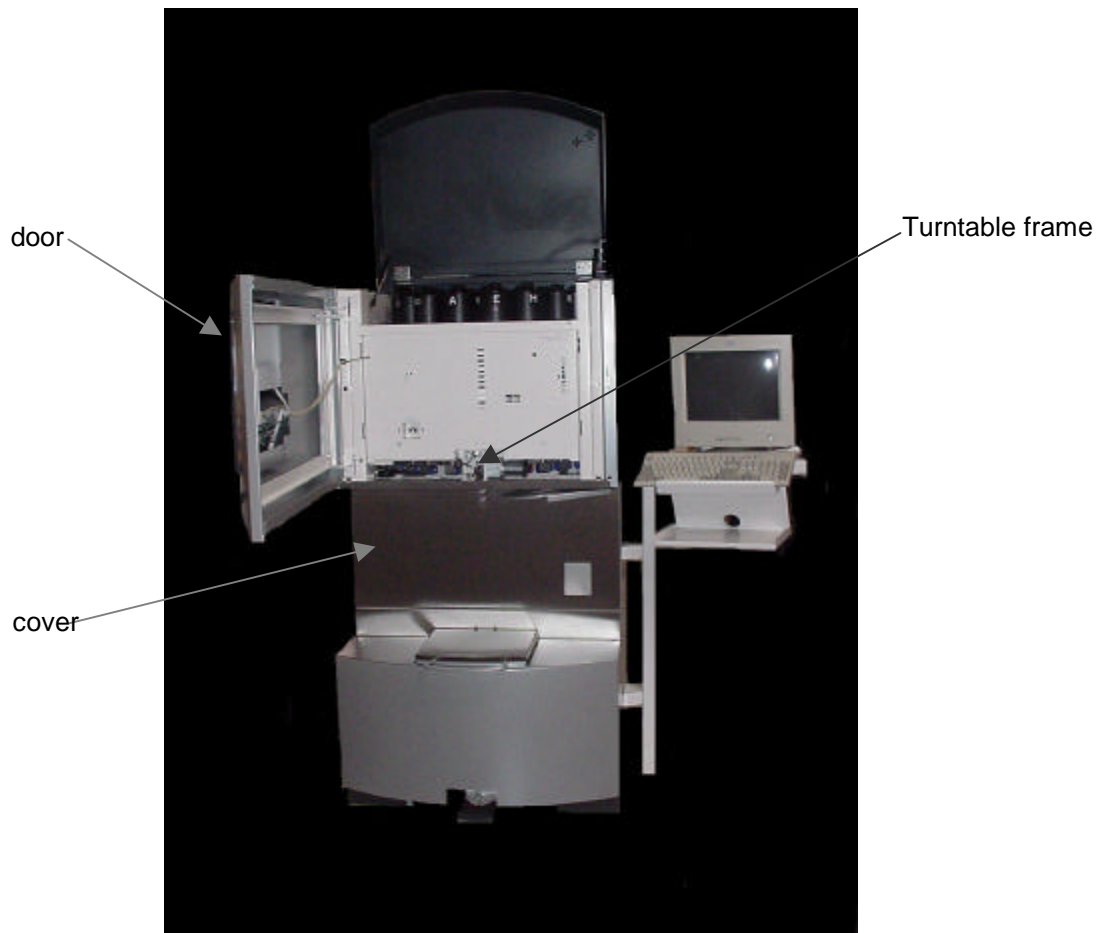


figure 9



figure 10

5.3 Starting the machine

5.3.1 Preparing the machine for use for the first time

1. Turn the **red** main switch (see figure 6, number 1) to position <I>
You are advised to leave this switch turned on at all times. This is necessary for the automatic stirring system. It also reduces wear on the machine and the computer system.
Then turn also the **green** switch (see figure 6, number 12) to position <I>. Now the computer is turned on. Switch the computer off at the end of the day.
2. **HA-s/m/I**
Open the door of the machine and remove the brush tray. Fill the brush tray with water or a diluted detergent (under no circumstances use a solvent!) up to the level mark. Replace the tray in the correct position and close the door.
HA-MII
Open the cover. Allow the brushtray to drop by pulling the brushtray handle forwards. Fill the brushtray with water or a diluted detergent (under no circumstances use a solvent!).
3. Use the software * to set the stirring interval.
4. Adjust the thermostat if installed (see the instructions for use supplied with the thermostat).
5. Fill the canisters with paste up to the indicated maximum level* by opening the flap (figure 6, number 9) and removing the lid of the canister. The canister can now be filled to the top of the upper stirrer. Make sure that the piston rod remains at the same height.
6. Ask your paste supplier for the stirring data for the pastes. It may be necessary to stir the pastes. Stirring can be started with the aid of the software*.

ATTENTION: Do not leave the flap (figure 6, number 9) or front door open. The stirring system does only work by closed doors.

7. HA-MII

The computerplate can be fixed to the frame using two small bolts. The driptray can be hung from the turntable frame.

Now you can start the morning program*.

5.3.2 Preparing the machine at the start of the day

1. Open the door of the machine and remove the brush tray. Fill the brush tray with water or a diluted detergent (under no circumstances use a solvent!) up to the level mark. Replace the tray in the correct position and close the door.
2. If necessary, top up the canisters to the maximum level. When you do this it may be necessary to stir the pastes (ask your paste supplier).
3. Start the morning program*.

The machine is now ready for the day.

* see Software manual

6.1 Maintenance instructions

Always remove the power cord from the mains socket before commencing any maintenance work on the machine.

1. Servicing and repairs may only be carried out by qualified personnel.
2. Use good quality, appropriate tools only.
3. Use original Fluid Management parts only.
4. Before the machine is made available for use after a service, all settings must be checked to ensure that they are correct and the operating and safety systems must be checked to ensure that they are functioning properly.

6.2 Maintenance to be carried out by the operator

Daily:

1. Clean the cleaning brush and replace the cleaning fluid in the brush tray (see 5.2.1, point 2).
2. Check nozzles for blockage by means of the morning program*. If there is a blockage, contact the Service Department (see 6.4).

Weekly:

1. Remove spilt paste from the turntable and lift table.
2. Check the content of the canisters and top up to the indicated level. Update the content data stored in the computer*.


Monthly:

1. Clean the computer cavity, the computer can be affected by dust.
2. Check the valves, valve housings and pumps for leaks.
3. Check that the valve handle is still in the correct position.
4. Check the drip tray and clean if necessary.










* See Software manual

6.3 Troubleshooting

Before calling in the Service Department, check whether you can solve the problem yourself. If you cannot, call the Service Department for advice (see 6.4). Have the model number and serial number to hand. They can be found on the nameplate on the machine (see 7.1).

Use the chart of Problem, Cause and Action below to judge whether you can solve a problem yourself or whether you will need to call in the Service Department. The  symbol means that the Service Department must be called.

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.

Problem	Cause	Action
Valve leaks through the outlet opening	Valve is defective	Replace valve 
Canister connection leaks around the suction point	Worn O-ring(s)	Replace O-ring(s) 
Air is being fed together with the paste	1. Air in the pump 2. Canister is empty 3. Piston is defective	1. Bleed the pump 2. Add paste 3. 
(New) software is not working	1. Diskette is damaged 2. Wrong data 3. Program not loaded correctly	1. Request new diskette 2.  3. Reload program
Sensors are not working	1. Main switch is off 2. Cables to power unit are loose 3. No mains power 4. Fuse has blown	1. Turn main switch to position < > 2. Remove plugs from socket, check cables 3. Check if there is mains power 4. Remove plug from socket, replace fuse
No power from power unit	1. Main switch is off 2. Cables to power unit are loose 3. Fuse has blown	1. Turn main switch to position < > 2. Remove plugs from socket, check cables 3. Remove plug from socket, replace fuse
There is no 230 V	1. Main switch is off 2. No power to (internal) socket 3. Fuse has blown	1. Turn main switch to position < > 2. Check electrical wiring 3. Remove plug from socket, replace fuse
Colours are difficult to reproduce	1. Mechanisms are dirty 2. Quality fluctuations in paste supplied 3. One or more pastes have thickened 4. Leaks around piston(s) 5. Turntable in wrong position	1. Clean and oil 2. Contact paste supplier 3. Replace paste(s) 4. Replace piston(s)  5. Press reset and test (see fig. 11)
Poor monitor picture, or no picture	1. Monitor is switched off 2. Loose cable(s) 3. Picture set too dark 4. Monitor malfunctioning	1. Switch monitor on 2. Check cables 3. Adjust picture correctly 4. 
Keyboard is not working	1. Loose cable(s) 2. Defective cable(s) 3. Keyboard is defective 4. Keyboard setting is incorrect	1. Check cables 2.  3.  4. 



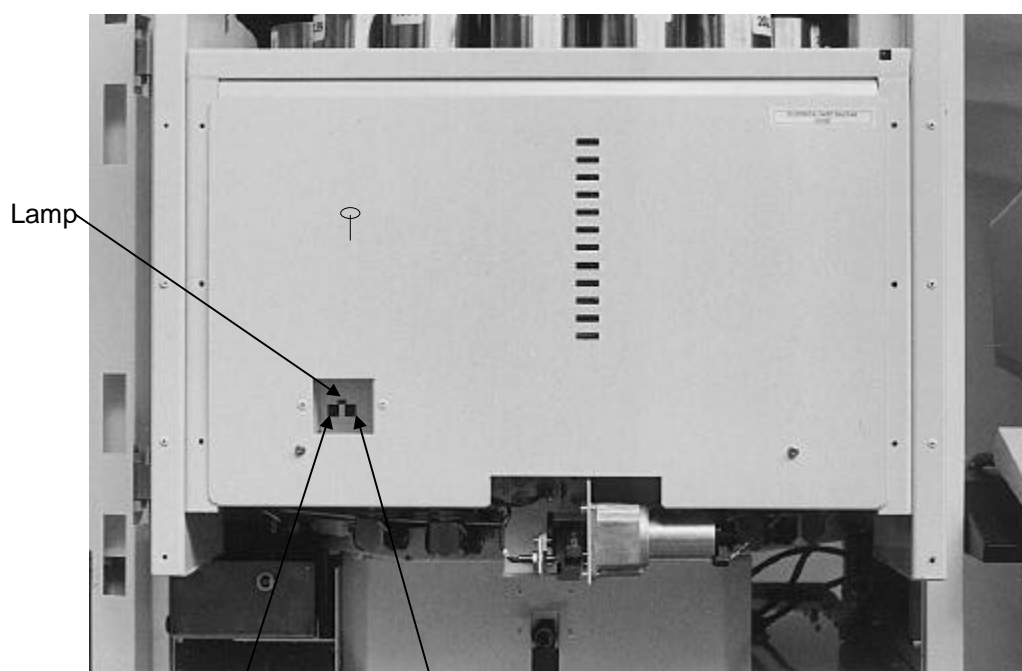
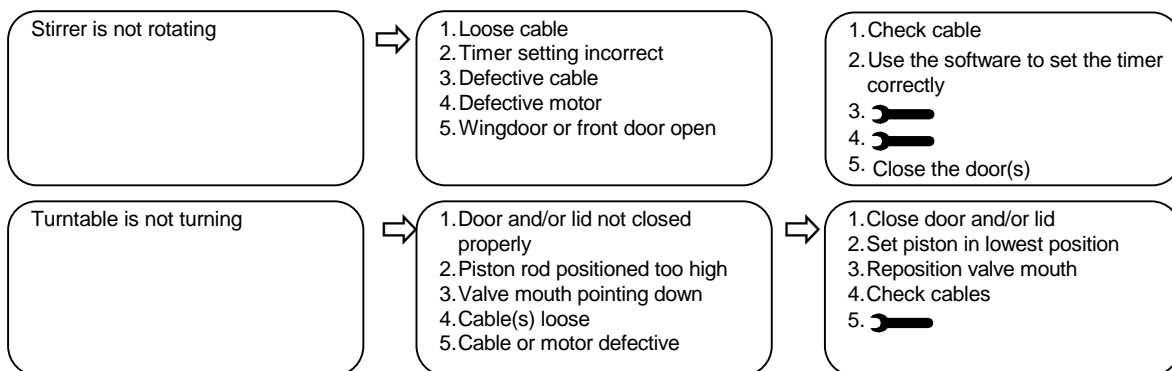


figure 7

Reset

Test (press in and hold for 3 seconds)

Press the reset button if your machine is not working properly and a red light comes on just above the reset button. A green lamp will then light up.

Now press the test button and hold it in for at least 3 seconds. The machine will test all components and can then be used again.

If your machine is equipped with an automatic lift table and/or punch (optional), and a malfunction occurs, as a result of which the lift table is not automatically lowered after dispensing, you can solve this problem by opening the flap and pressing the reset-button. You will find this reset-button on the inside of the frame, at the right. (figure 6, number 13).

Contact the manufacturer if this procedure does not give the desired result.

When a stirrer malfunction occurs, follow need to be replaced:

HA-s/m: **Pull the stirrer down, turn it anti-clockwise and lift it up.**
Put the stirrer in the canister, pull it down and turn it to the right till it sticks.

HA-l: **Pull the stirrer up.**
Put the new stirrer in the canister and pull it down to the bottom.

6.4 Service/Service Department

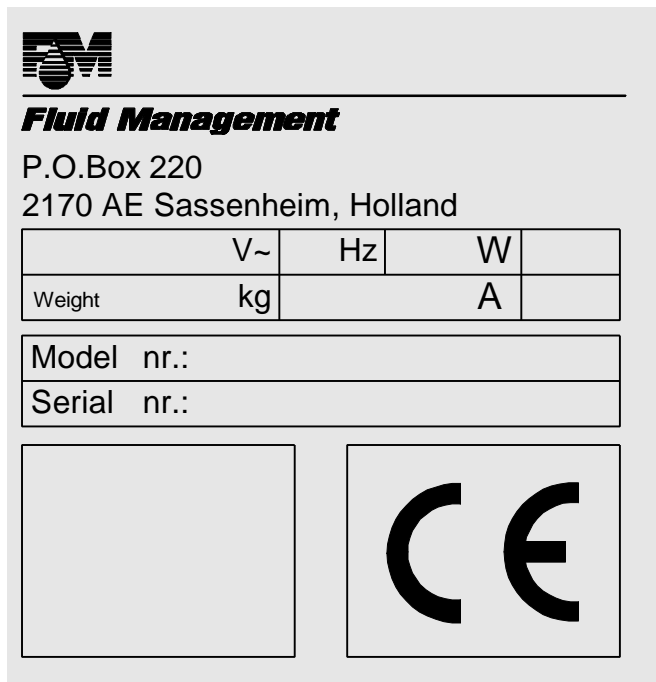
If necessary, you can get in touch with your supplier or the local service department, or contact the manufacturer directly. If you contact the manufacturer, make sure that you have the model number and serial number to hand. They can be found on the nameplate on the machine (see 7.1).

Fluid Management Europe B.V.
P.O. Box 220
2170 AE Sassenheim, the Netherlands
Hub van Doorneweg 31
2171 KZ Sassenheim, the Netherlands

Tel.: 0031 252 240800
Fax: 0031 252 240882 (service)
0031 252 240880 (general)

7.1 Machine plate data

To reach the machine plate, first open the front door of the machine. The plate is situated on the right side in the computer space.



The image shows a machine identification plate for Fluid Management. It features the company logo at the top left, followed by the company name and address. Below this is a table with technical specifications for voltage, frequency, power, weight, and current. There are also fields for model and serial numbers, a blank space for a barcode or QR code, and a CE mark.

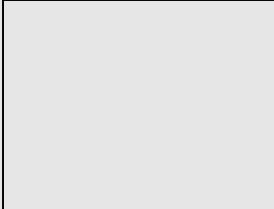
FM


Fluid Management

P.O.Box 220
2170 AE Sassenheim, Holland

	V~	Hz	W	
Weight	kg		A	

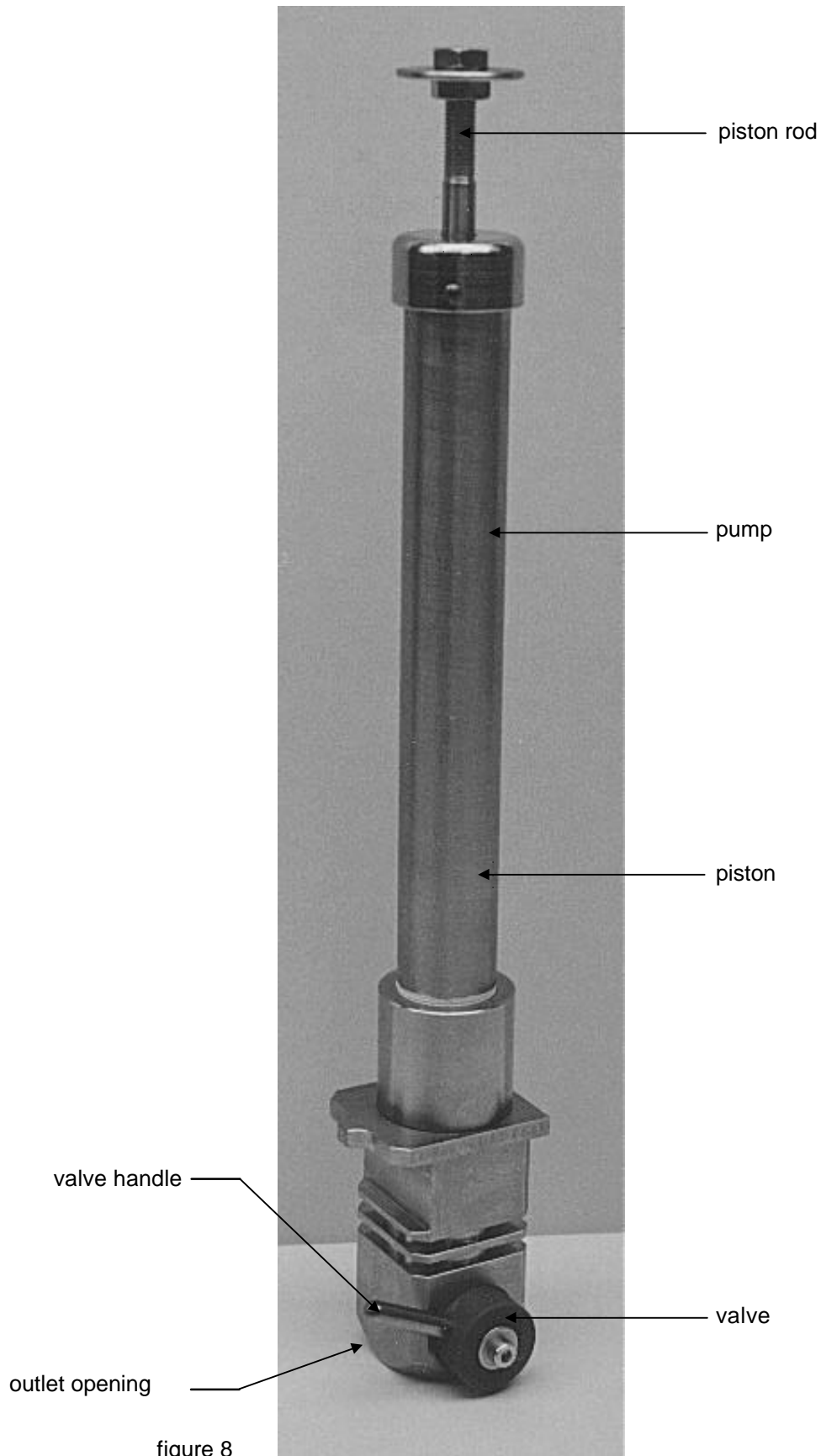
Model nr.:
Serial nr.:





7.2 Pictures of the machine parts

7.2.1 Dispensing pump



7.2.2 Mains connection

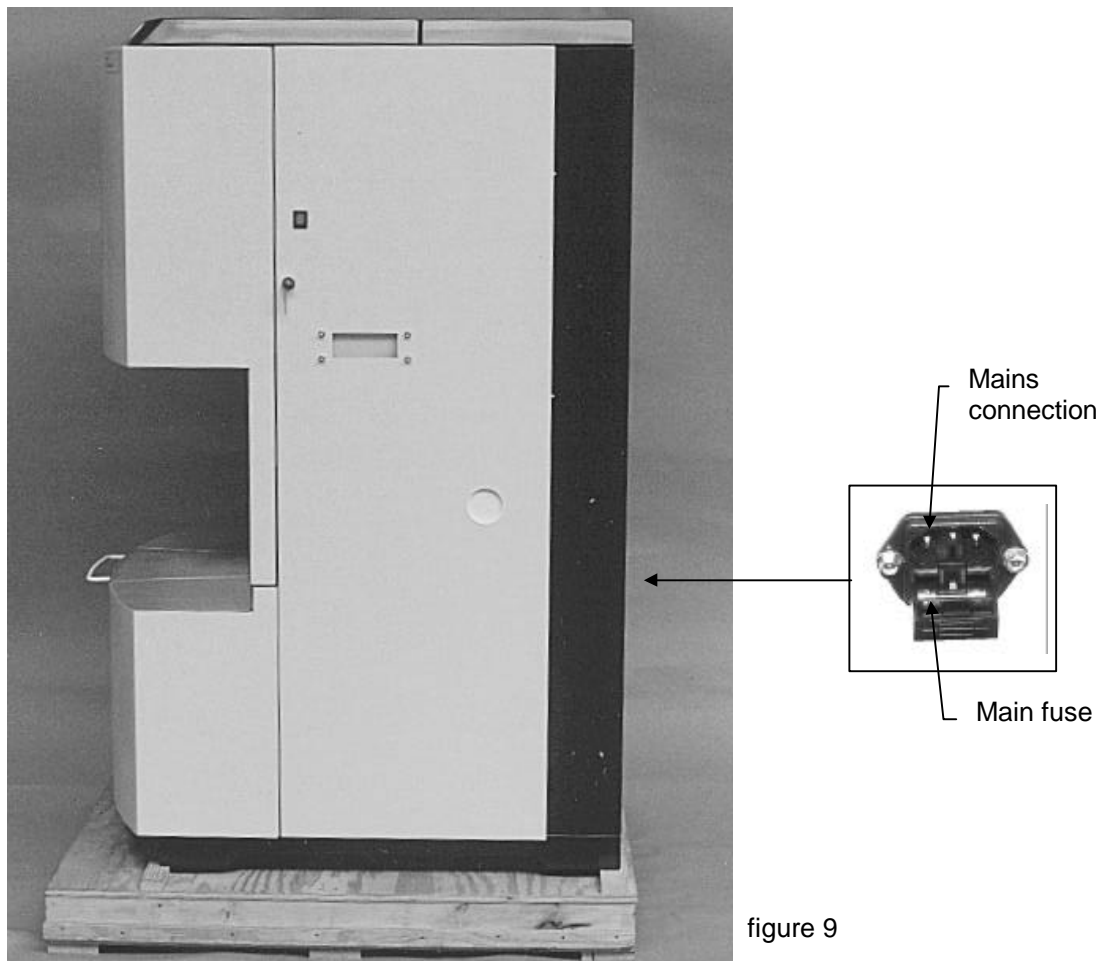
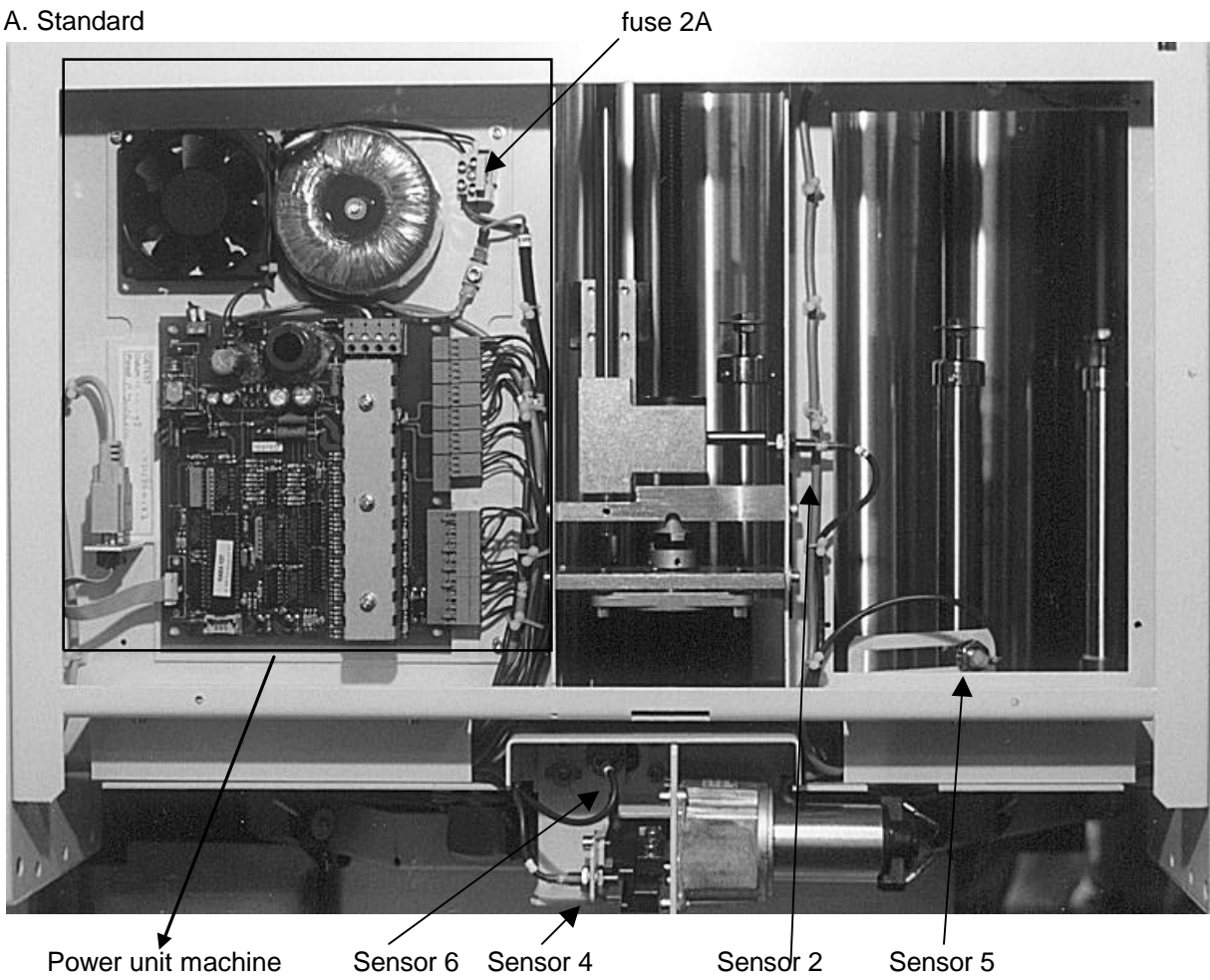


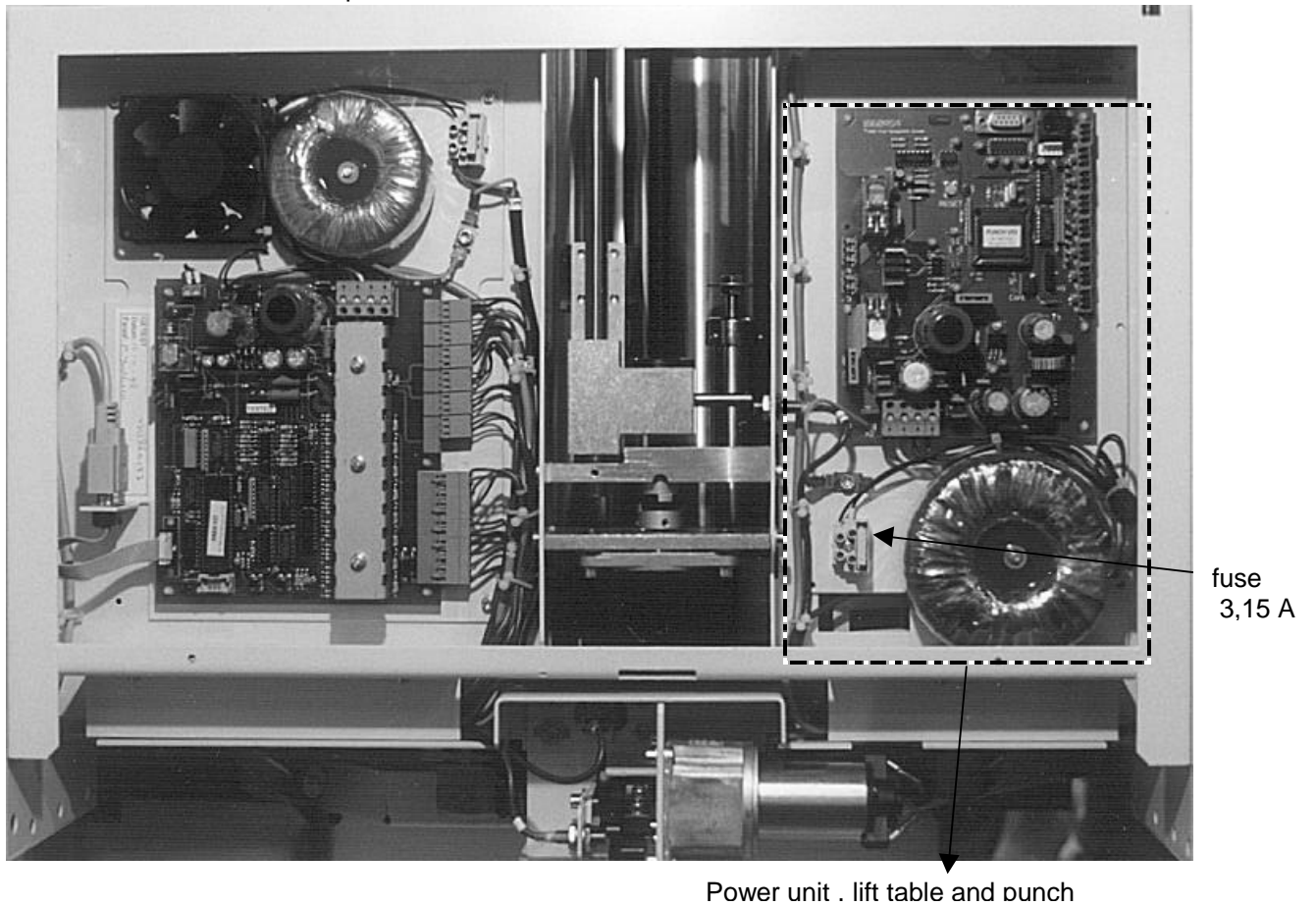
figure 9

7.2.3 Power unit and sensor position

A. Standard

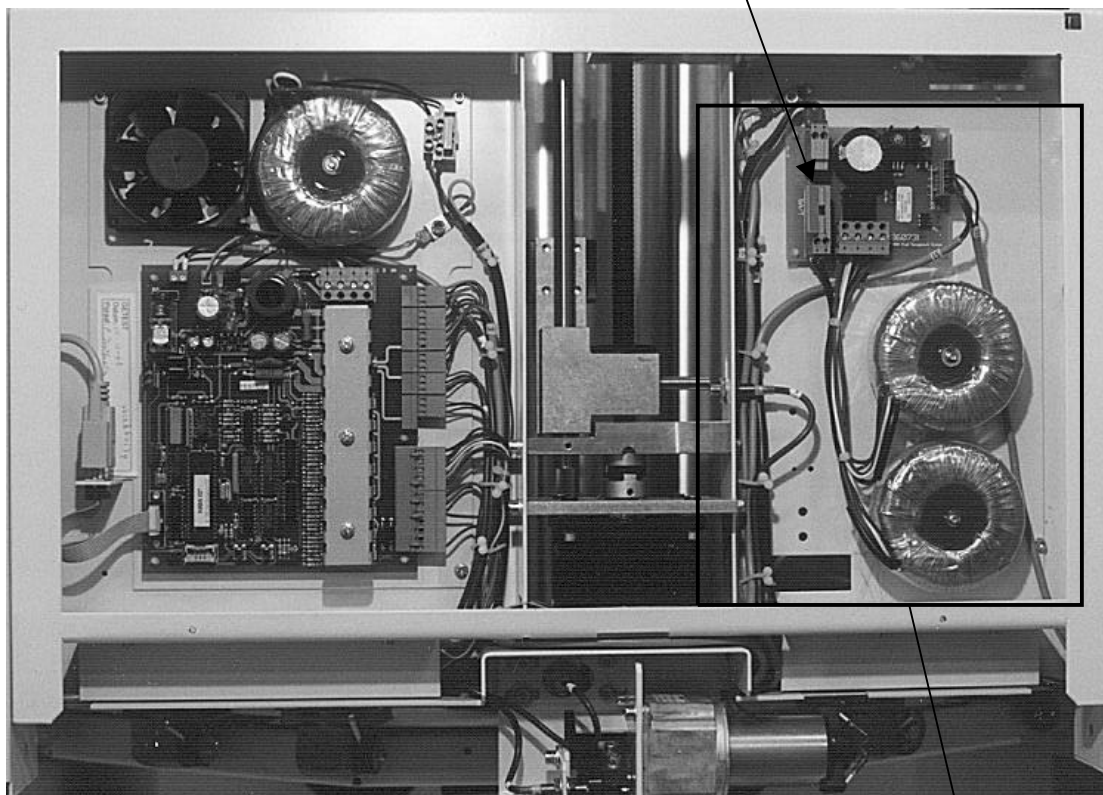


B. With electric lift table and punch



C. Ha-I

fuse 6.3 A



Power unit
stirring system

	<u>HA-s</u>	<u>HA-s 110V</u>	<u>HA-s option</u>
Stainless steel canisters with a capacity of:	2,5 / 5 liter	2,5 / 5 liter	2,5 / 5 liter
Teflon plungers	V	V	V
Stainless steel pumps	V	V	V
Number of canisters	12, 14, 16	12, 14, 16	12, 14, 16
	1520mm	1520mm	1520mm
* IBM keyboard	1230mm	1230mm	1230mm
* Without keyboard	700mm	700mm	700mm
Height	920mm	920mm	920mm
Width	± 286kg	± 286kg	± 302kg
Depth	110 V ~ 50-60 Hz	230 V ~ 50 Hz	230 V ~ 50 Hz
Weight (16 canisters)	6,3 Ampère	6,3 Ampère	6,3 Ampère
Mains voltage	V	V	V
Amperage	< 70dB (A)	< 70dB (A)	< 70dB (A)
Computer system			
A-weighted equivalent continuous sound pressure level.			

	<u>HA-m</u>	<u>HA-m 110V</u>	<u>HA-m + optie</u>
Stainless steel canisters with a	3 / 6 / 10 liter	3 / 6 / 10 liter	3 / 6 / 10 liter
Teflon plungers	V	V	V
Stainless steel pumps	V	V	V
Number of canisters	12, 14, 16, 18, 20, 22, 24, or 32	12, 14, 16, 18, 20, 22, 24, or 32	12, 14, 16, 18, 20, 22, 24, or 32
	* IBM keyboard	1630mm	1630mm
Height	* Without keyboard	1370mm	1370mm
Width		840mm	840mm
Depth		1040mm	1040mm
Weight (16 canisters)		± 379kg	± 395kg
Mains voltage		230 V ~ 50 Hz	230 V ~ 50 Hz
Amperage	12 – 16 canisters	6,3 Ampère	10 Ampère
Computer system		V	V
A-weighted equivalent continuous sound pressure level.		< 70 dB (A)	< 70 dB (A)

	<u>HA-I</u>	<u>HA-I 110V</u>	<u>HA-I + optie</u>
Stainless steel canisters with a	3 / 6 / 10 / 20 liter	3 / 6 / 10 / 20 liter	3 / 6 / 10 / 20 liter
Teflon plungers	V	V	V
Stainless steel pumps	V	V	V
Number of canisters	12, 14, 16, 18, 20 22, 24, 28, 32, 36	12, 14, 16, 18, 20 22, 24, 28, 32, 36	12, 14, 16, 18, 20 22, 24, 28, 32, 36
	* IBM keyboard	1660mm	1660mm
Height	* Without keyboard	1690mm	1690mm
Width		1160mm	1160mm
Depth		1410mm	1410mm
Weight (16 canisters)		± 565kg	± 581kg
Mains voltage	230 V ~ 50 Hz	110 V ~ 50-60 Hz	230 V ~ 50 Hz
Amperage	12 – 16 canisters	10 Ampère	10 Ampère
Computer system		V	V
A-weighted equivalent continuous sound pressure level.		< 70 dB (A)	< 70 dB (A)