luce cool
(type: FTS4)

INSTALLATION AND MAINTENANCE MANUAL
Original instructions

MAN4105303 rel. 00 dated 13.03.2012

REL.	DATE	DESCRIPTION
00	13.03.2012	First issue;

declaration of conformity

Rheavendors Industries S.p.A. / MPR S.p.A. declare that this vending machine has been designed and manufactured in compliance with the following directives and safety standards:

Directives:
2004/108/EC; 2006/95/EC; 2006/42EC;
2002/95/EC (RoHS); 2002/96/EC (RAEE); 1907/2006/EC (REACH); 1935/2004/EC;
Standards:
SAFETY part. 2-75: (particular requirements for commercial dispensing appliances and vending machines) +
CEI EN 60335-2-75/A12;
EN 60335-1: 2002 + A1: 2004 + A2: 2006 + A11: 2004 + A12:2006 + A13: 2008 + A14: 2010 +
60335-1/EC: 2010;
EN 60335-2-75: 2004 + A1: 2005 + A11: 2006 + A2: 2008 + A12: 2010;

EMC:
EN 55014-1: 2006 + A1: 2009;
EN 55014-2: 1997 + A1: 2001 + A2: 2008;
EN 61000-3-2: 2006 + A1: 2009 + A2: 2009;
EN 61000-3-3: 2008;
EMF:
EN 62233: 2008;

manufacturer of the machine

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(A. D. Majer)

ISO 9001 certification


DET NORSKE VERITAS
QUALITY MANAGEMENT SYSTEM CERTIFICATE
Certificato No. / Certificate No. CERT-08862-2001-AQ-MIL-SINCERT
Si attesta che / This certifies that
Il sistema di gestione per la qualità di / the quality management system of
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Via Garavaglia, 58 - 21042 Caronno Pertusella (VA) - Italy
Via Trieste 49 - 21042 Caronno Pertusella (VA) - Italy
È conforme ai requisiti della norma per i sistemi di gestione per la qualità
Conforms to the quality management systems standard
UNI EN ISO 9001:2008 (ISO 9001:2008)
Questa certificazione è valida per il seguente campo applicativo:
This certificate is valid for the following products or services:
Progettazione e produzione di distributori automatici di bevande calde e fredde
Design and manufacture of hot and cold drinks vending machines
Data Prima Emissione / First Issue Date 2001-07-18
Data di scadenza / Expiry Date 2012-12-12
Luogo e data / Place and date Agrate Brianza, (MB) 2011-05-24
Settore EA : 18
Edmea De Paoli
Lead Auditor
ACCREDIA
per l'Organismo di Certificazione / for the Accredited Unit
DET NORSKE VERITAS ITALIA S.R.L.
Zeno Beltrami
Management Representative


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È conforme ai requisiti della norma per i sistemi di gestione per la qualità
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DET NORSKE VERITAS ITALIA S.R.L.
Vittore Maranzon
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general guarantee conditions	these conditions regulate Rheavendors Industries S.p.A. / MPR S.p.A. 's obligations with reference to guarantee and repair; any other term or condition, either verbal or written, is not applicable, including those in the purchaser's purchase orders, if not explicitly accepted and signed by Rheavendors Industries S.p.A. / MPR S.p.A.; if the guarantee terms here below should be held not to be valid and/or lawful in the Country where the product is sold, they will not be effective whereas all the other clauses will remain valid and applicable;
1st	the mechanical and electronic components of the machine are guaranteed for twelve months, starting from the sales date certified by the fiscal receipt;
2nd	the guarantee shall be understood as the free replacement of any part of the machine that – at the manufacturer's unquestionable discretion – should prove to be originally defective due to manufacturing defects; the cost of sending the manufacturer machines, defective pieces and spare parts will be totally charged to the user's account; the manufacturer reserves the right to use new or reconditioned components for repair; if replaced, original components will be guaranteed for 12 months; the parts replaced under guarantee will become the property of Rheavendors Services S.p.A. (request for "Form PO 19.01/2b" Materials under guarantee – Authorisation to return);
3rd	in case of irreparable failure or if a failure of the same origin is repeated, the manufacturer may – at its unquestionable discretion – replace the machine with another one, the model of which is either the same or an equivalent one; the guarantee of the new machine will be extended up to the original term of guarantee of the replaced machine;
4th	all the parts that should prove to be defective due to negligence or carelessness (non-observance of the instructions for the operation of the machine), incorrect installation or maintenance by unauthorised personnel, transport damage or any circumstance – anyway – not due to the manufacturing defects of the machine are not covered by guarantee; the installation and connection with supply plants as well as the maintenance operations mentioned by the installation manual are also excluded from any performance under guarantee; the guarantee will not cover payment systems either; whether installed on the machine or supplied as an accessory, they are subject to their manufacturer's guarantee whereas Rheavendors Industries S.p.A. / MPR S.p.A. will just act as brokers; all changes made to the machine and not agreed with the manufacturer in writing will involve the immediate termination of the guarantee period and anyway fall under the Customer's total responsibility;
5th	the guarantee is excluded in all cases of improper use of the machine;
6th	Rheavendors Industries S.p.A. / MPR S.p.A. will disclaim all responsibility for any damage that may be directly or indirectly caused to people, animals or things as a result of: improper use of the vending machine; incorrect installation; improper energy or water supply; serious maintenance deficiency; actions or changes not explicitly authorised; use of non original spare parts;
7th	in case of failure, Rheavendors Industries S.p.A. / MPR S.p.A. are obliged neither to compensate any economic damage due a forced stop of the machine nor to extend the guarantee period; if the machine should be transferred to a centre designated by the manufacturer for overhaul or repair, the relative transportation risks and costs will be charged to the user's account; the freight charges of machines, defective pieces and spare parts are always understood as charged to the user's account;

copyright information

this manual is intended for the owner of the vending machine; it is an integral part of the machine and it shall be kept with it;

the information supplied by this manual are intended to achieve the best performances of the vending machine within the scope of application established by the Manufacturer; Rheavendors Industries S.p.A. / MPR S.p.A. reserve the right to improve future production without serving any prior notice and without assuming any obligation to update the products on the market; the manufacturer will disclaim all responsibility for any inaccuracy due to misprints;

rules

safety rules for using the vending machine

** ** pay special attention to the chapters and notes high lit by the symbols of alert; strictly observe the rules concerning, in particular, the operators' and users' safety;
** ** under no circumstance may the vending machine be used by children or by people with poorer physical, sensorial or mental capacities or who have not been properly informed on correct use; children shall be supervised to prevent them from playing with the vending machine;
** ** if you should find out a water leak or the presence of smoke, immediately detach the vending machine from the electric and hydraulic network, never try to restore its operation and apply to skilled technicians;
** ** the machine shall be installed according to national rules; pay special attention to the rules about the machines directly connected with the hydraulic network;
** ** the user is not allowed to access the maintaining and servicing area that shall be properly signalled;
** ** never remove protections, never override safety devices and never modify the machine or its components;

contacts

Rheavendors Services S.p.A. is at disposal for any kind of support and information on this vending machine;

telephone: 0039 02 966 551
fax: 0039 02 96 55 086
e mail: rheavendors@rheavendors.com

for any reference about our partners all over the world please visit site :

www.rheavendors.com

Content of Tables

1. Intended use

1.1 Description of characteristics

	o The characteristics of the machine are just conceived to dispense cooled filtered water with and without CO_2 as well as cooled filtered water with syrup.	
	o It is typically used to supply customers, guests and employees.	
	o Installation and cleaning occur according to the standards of this User's Manual through the specialised partner's personnel demonstrably trained by Rhea;	
	o At the start-up and change of CO_2–bottles the law rules must be necessarily observed	
	o The place of installation is arranged for dry rooms closed and not exposed to extreme whether influences (e.g. strong vibrations). Direct exposure to sun rays and frost must be necessarily avoided. Air humidity shall not exceed 80%.	
	o If untrained personnel should clean and service the machine, they shall be demonstrably and thoroughly instructed by the Rhea Vendors specialised partner.	
	o Wear parts, are parts subject to natural wear or having a naturally limited life-time. These parts may fail during the 24-month limitation period for claims for defects, but this does not mean that there is a defect in a legal sense. The following parts can be classified as such: valves, gaskets and pumps of any kind, all components conveying water.	
	o The use of water filters, such as EVERPURE in all places of installation is assumed for a perfect operation (For the capacities of every single filter see the respective User's Manual) (example Everpure 2 DC max. 2800 litres or 6 months)	
	o Regular maintenance operations such as the replacement of gaskets in case of use of CO_2 multi-way-systems, the elimination of dust from the condenser cooling fins, should be carried out after visual inspection or not later than every six months. The tap aerator as well as the dispensing area should be cleaned every day. The syrup line shall be cleaned every three months according to law rules. The sanitisation with Sanisat 1 and the replacement of the tap aerator should occur at these time intervals.	
	o When carrying out all cleaning operations please observe the User's Manual and sanitary rules.	

1. Intended use

Guarantee

1.2

Basic principles

The guarantee is based on the characteristics, the manual and the maintenance check list.

The observance of extraordinary and ordinary maintenance and cleaning implies essential quality advantages for you:

More hygiene and service means a more simple and rapid use, dispensing fresher and more appetising drinks as well as a high number of users well-satisfied with the total life time of your water dispenser.

Information

1.3

Additives

For the start-up add some additives, such as CO_2 = carbon dioxide, to the machine. To use carbon dioxide, please observe the corresponding instructions.

CO_2 bottles shall be vertically placed in the recess specifically arranged. The bottles shall be fastened to the place by means of a chain for more security. CO_2 bottles shall not be directly exposed to the sunlight. The bottles shall be arranged at least half a meter far from a source of heat.

Attention:
At the start-up with CO_2 please observe the law rules.

2. Technical Data

2.1 Technical data sheet

Dimensions	Height Width Depth	1830 mm 450 mm 670 mm
Weight	Empty Full	90 Kg ca. 160 Kg
Cup dispenser	Cup dispenser capacity	365 pieces (300ccm vending machine cups)
Electrical values	Voltage supply Max. power consumption	220/240 Volt 50 Hz 500 Watt
CO_2-volume		6 gr. per litre

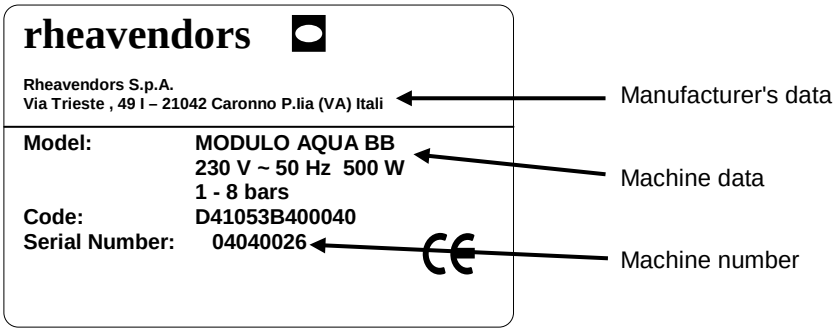
3. General machine information

Rating plate

3.1

The rating plate is an important information label. To order spare parts, please always specify the machine type and serial number.

The rating plate is arranged on the inner left side of the machine. The rating plate is defined as follows:



Introduction and recommendation

3.2

Before setting the machine at work, carefully read this User's Manual.

The correct use of the machine depends upon the user only.

The safe operation of the machine and the optimisation of the machine performance can be guaranteed with the original spare parts only.

The operator is liable for any change made to the machine.

The manufacturer is not liable for the following injuries or damages to the machine:

- non-observance of the directives described in the manual
- repairs carried out by non-authorised personnel
- non-calibration, modification and misuse (including connection with non-drinkable water lines).

3. General machine information

3.3 Safety instructions

This machine was manufactured in observance of all safety aspects. However, only authorised personnel may autonomously provide for the installation and operation of the vending machine. The personnel are qualified to do so only if they are technically educated and experienced in operating these machines or similar ones, well-acquainted with relevant safety and accident-prevention rules and, therefore, able to recognise and prevent dangers.

Before the start-up carefully read this User's Manual to guarantee a safe start-up and a perfect operation.

Attention: Before all maintenance operations remove the electrical plug!

The machine was developed according to the following European safety rule:

- EN 60 335 - 1
" Safety of electric home-appliances and similar machines".

3.4 Hazard warnings

- Please observe the law rules if the machine is started up with CO_2
  .
- Never start the machine if the feed line is faulty.

- Never plunge the machine into water.

- To clean the machine without the cleaning programme, always remove the electrical plug from the main socket

- Children may operate the machine under surveillance only.

4. Unpacking and mounting

Instructions for installation 4.1

The perfect operation of the vending machine is guaranteed in closed rooms not below the ground level at a room temperature of min. 5°C. The machines
shall not be used in rooms with spray water.

Since some filling products are sensitive to heat and humidity, the operation of the machine may be faulty,
if the room temperature is above 30°C or the
air humidity above 80%.

Selection of the place of installation 4.2

When selecting the place of installation, please make sure that easy access is guaranteed
to operate, service and fill the vending machine.

Installation 4.3

- After having carefully unpacked the machine, check whether the vending machines are in a perfect state.
  Check whether all parts of the machine are properly used. ✔
- The keys of the machine are firmly secured to the supply cable at the back of the machine. ✔
- When selecting the place of installation, make sure that the floor is flat and vibration-free and that there is enough space for operation. ✔
- The vending machines shall be installed vertically and horizontally so that the doors can perfectly close. ✔
- The vending machines shall be exposed neither to frost,humidity nor to direct sun rays. ✔
- A min. distance of 10 cm shall be basically observed between the wall and the rear side of the vending machine. ✔
- The vending machines are provided with a supply cable, complete with a Schuko plug. A 240Vac VDE Schuko socket is required with a 16A fuse. ✔

4. Unpacking and mounting

4.4 Connecting the vending machines

1.

After having carefully unpacked the machine, open the machine door.

The following is arranged inside the **Luce cool** machine:
1 x cup dispenser
1 x foot orifice
1 x intermediate floor for syrup container
1 x connection tube for syrup container
1 x trough for CO_2 – bottle
1 x pressure reducer 7 bars
1 x floater
1 x additional board for **Luce I/E**
4 x holding clip for additional board
1 x holding plate for plug connections
2 x screws for holding plate
1 x Sub-D-cable
1 x flat cable 16 poles
1 x flat cable 10 poles
1 x adapter cable power supply
1 x adapter cable additional board - powerboard (4 poles)

Do not power on the machine yet.

2.

Join the machine and water connections as described here below. Insert the machine plug into the socket only after having made all connections and connected the machine with the water mains.

3.

Before powering on, put the cups in the cup dispenser of the **Luce cool** machine.
Otherwise, the machine will display the following failure:

4. Unpacking and mounting

Connecting the vending machines

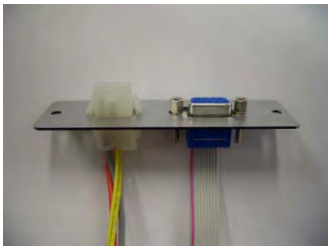
4.5

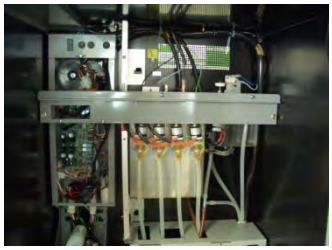
After having taken the connection material out of the inside of the machine, act as follows:

1. Take the holding plate, the 10-pole flat cable and the adapter cable for the power supply**.**

2. Detach the screws from the bush of the 10-pole flat cable**.**

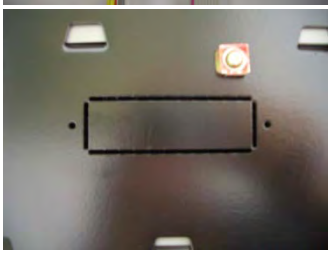
3. Secure both cables in the recesses specifically arranged in the fastening plate.





4. Take all product containers out of the Luce I /E and remove the covering plate at the back

5. Break out the pre-punched plate for cable entry at the back of the Luce I / E.

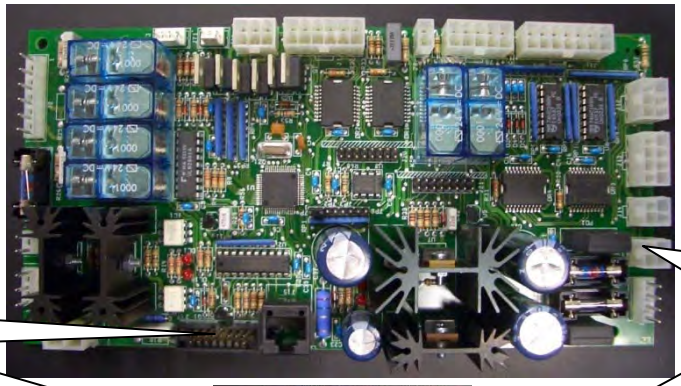


6. Mount the additional board with the holding clips in the Luce I / E down, on the left, close to the power board**.**

7. Insert the cables with the fastening plate in the Luce I/ E recess.

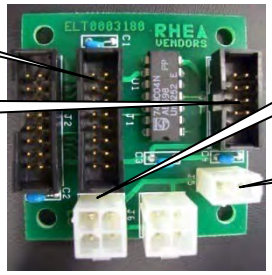
8. Secure the holding plate with both screws supplied with the machine.

9. Connect the cables with the Luce I / E, as it is shown by the following figures.



Connections for 16-pole flat cable

Connections for 4-pole power supply cable



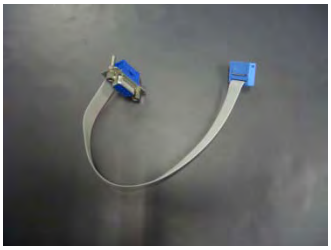
Connections for 10-pole flat cable

Connection for 2-pole power supply cable

4. Unpacking and mounting

4.5 Connecting the vending machines

10-pole flat cable

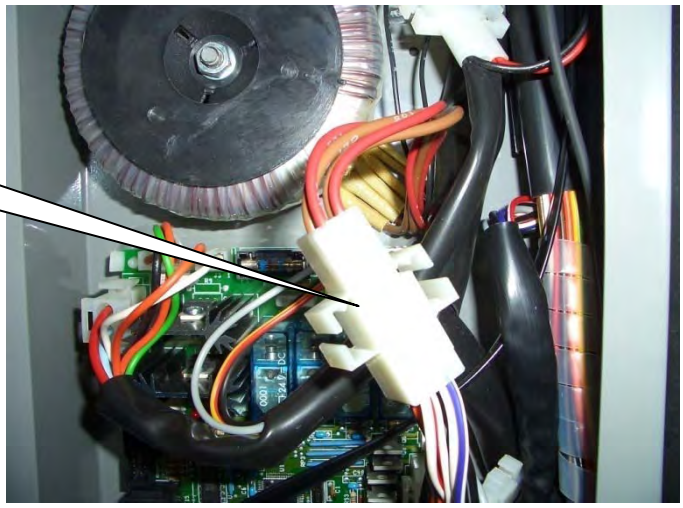


16-pole flat cable

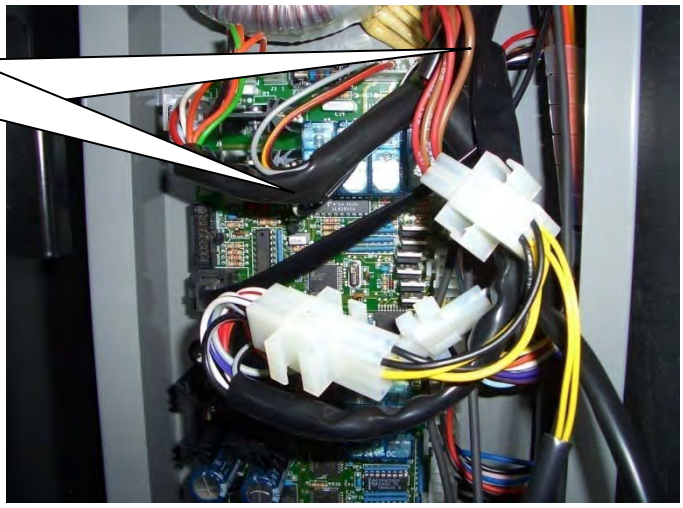
4-pole adapter cable for power supply

Power supply adapter cable

Detach the plug connection from the transformer outlet.



Insert the power supply adapter cable into the plug connection you have detached from the transformer outlet.



Do not power on the machine yet.

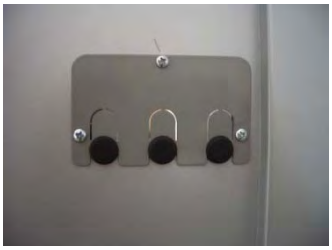
After having made all plug connections in the Luce I / E, as described above, re-mount the covers and the product containers.

4. Unpacking and mounting

Connecting the vending machines

4.5

10. Open the cable entry at the back of Luce cool.



11. Insert the cable with a 6-pole plug from the inside of Luce cool to the outside through the open cable entry.

12. Insert the sub-D-cable at the back into the cable entry of Luce cool and put it into the bush, specifically arranged for the purpose.

13. After having connected all cables, firmly screw the cable entry cover again.

14. Connect the two cables of Luce cool with both bushes at the back of the Luce I / E an**.**

Do not power on the machine yet.

5. Setting at work

5.1 Instructions for installation

- Read the manual carefully before using Luce cool
- The water from the main lines shall be drinkable. Use drinkable water connections only.
- Luce cool should always be connected with the mains.
- Never touch the water outlet for sanitary reasons.
- Please use original spare parts only.

5.2 Recommendation for the first start-up

Connect CO_2, water and electricity

The machine may be installed by a specialised partner trained by rhea only.

The start-up sequence is established by a rule: gas, water, electricity (GWE).

5.3 CO_2 connection

Connect the CO_2 system as described in chapter CO2. Open the CO2 supply and check the connections for tightness, according to system.

See chapter 6.1

5.4 Water connection

Now, connect the water filter and the water clock with the water supply. Connect the water supply at the water filter outlet with the machine. (First, flush the water filter for 2 minutes). Now, open the water supply on the angle valve and filter head. (if the shut-off lever is available)

See chapter 7.3

5.5 Filling the refrigeration

Now, fill in the ice bank refrigeration with water, as it is described by chapter 8.1.

See chapter 8.1

5.6 Electricity connection

Take the electric connection cable and insert it first into the electrical bush on the machine and then into the electrical socket. First make sure that the door contact switch on the machine has not been activated yet. Set the machine thermostat to scale 5. Power on the main switch. Now, the machine automatically fills water and CO2 into the water tank.

6. CO_2

CO_2connection

6.1

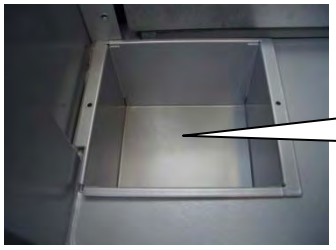
Multi-way pressure reducer:

You can connect off-the-shelf CO2 bottles with Luce cool . You can access large CO2 capacities, i.e. 3 kg, 6 kg, 10 kg (up to 18cm Ø).... bottles you can arrange in Luce cool with the pressure reducer. Please observe the height since bottles are differently shaped.
(See the figure on the right).
Connect the pressure reducer with your bottle. Insert the 8 mm tube into the lower connection on the pressure reducer and screw it firmly. Open the CO_2 supply on the bottle. Set the operating pressure to **5 bars** . Check the tightness.

Secure the bottles against tilting!

Example with a 6 kg bottle:

If larger CO_2 bottles are in use, you can insert the trough supplied with the machine into the pre-punched recess on the machine floor.



Pre-punched recess for the trough

Trough for CO_2 – bottles up to 18cm Ø

Floater switch

Connection tube for CO_2 - bottles

Overflow tube for cooling

6. CO_2

6.2

CO_2

What is CO_2 (carbonic acid)?

CO_2 (carbon dioxide, carbonic anhydride)

CO_2

Carbonic acid is actually an unstable and weak acid. The general common trade name for CO_2 is carbonic acid. It is also referred to as carbonic anhydride (acid residue without water) and carbon dioxide. It is a taste-, colour- and odourless gas produced by carbon combustion.

How is CO_2 (carbonic acid) produced?

There are several possibilities of producing CO_2 raw gas industrially

1. Marble (lime) decomposition with salt acid (the oldest known production)

This procedure is no longer applied in industrial countries for economic, quality and ecological reasons.

2. Extraction from smoke gas

At present, this procedure is no longer applied in industrial countries as a result of qualitative and economic evaluations.

3. Lime burning

This production procedure is no longer widespread in industrial countries.

4. Extraction from fermentation processes

This process occurs in breweries and distilleries. Special attention shall be paid to biological purity. Yeast spores can be found in gas! It is therefore not recommended to use it for sweet drinks.

5. Decomposition of natural deposits in pre-volcanic areas

The CO_2 raw gas from the so-called natural deposits is often not always steady in terms of purity. Above all sulphur components may have a noxious effect. It is absolutely necessary to clean carefully and to supervise quality constantly.

6. Extraction from chemical processes

At present, this is the most popular way of producing CO_2.

CO_2 is produced by chemical processes (such as ammonia synthesis, methanol and ethylene dioxide production, hydrogen production, syngas production). Natural gas or mineral oil is mostly used as starting products. Since these catalytic procedures are generally controlled, raw gas has a high purity degree (over 99.0 Vol.%).

7. Water and filter

Water quality

7.1

Drinkable water is subject to extremely strict controls. Our mains water is absolutely the best supervised foodstuff. Luce cool changes fresh water
into a pure noble drink by using the premium water filter of the worldwide leading filter manufacturers, such as BRITA and EVERPURE.

The water filter

7.2

EVERPURE water filter 2DC:
This filter was specifically developed for cold drink machines. EVERPURE 2DC works according to the pre-coat filter principle. The growth of bacteria inside the cartridge is inhibited. It filters all turbidity and dirtiness up to 0.5 microns (1/2000 mm) from water and removes all foreign taste and odour (e.g. chlorine). This extremely fine filtration also eliminates asbestos, unicellular organisms and other extremely small organisms. The special treatment of active carbons with silver is intended to inhibit the proliferation of germs.

The capacity depends upon water quality, flow rate, water pressure and flow rate continuity.

Technical data EVERPURE 2DC:

Water pressure:	0.7 – 8.6 bars
Water temperature:	+2°C up to +38°C
Max. flow rate:	1.9 litre / minute
Capacity:	ca. 2800 litres

Assembly of filter and water connections

7.3

Assembly example:

Connect the black PE-tube with the angle valve and the filter head inlet. Use a water clock. You can install it upstream from the water filter. (See the assembly example). Now, screw the filter cartridge into the filter head.

Before setting the machine at work, flush the water filter. Close the water supply on the filter head by means of the water shut-off lever. Loosen the white tube on the water inlet valve (quick release fastener) and hold it in a bucket. Now, open the water supply on the angle valve and, then, the water shut-off lever on the filter head. Flush the filter for 2 minutes under tap water pressure to let air come out of the filter. Re-close the lever on the filter head and insert the tube into the inlet valve again.

Water clock:

7. Water and filter

7.3 Assembly of filter and water connections

Set water pressure in such a way that flow pressure is at least 2 bars.

<u>Attention:</u>
The water pressure shall always be at least 0.5 bars lower than the CO^2 pressure!

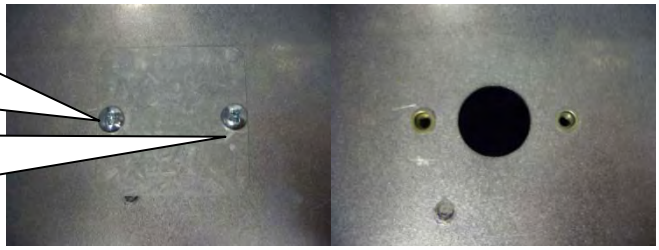
The Procon pump stops after 160 seconds.
Reset: restart the Luce I/E.

8. Cooling

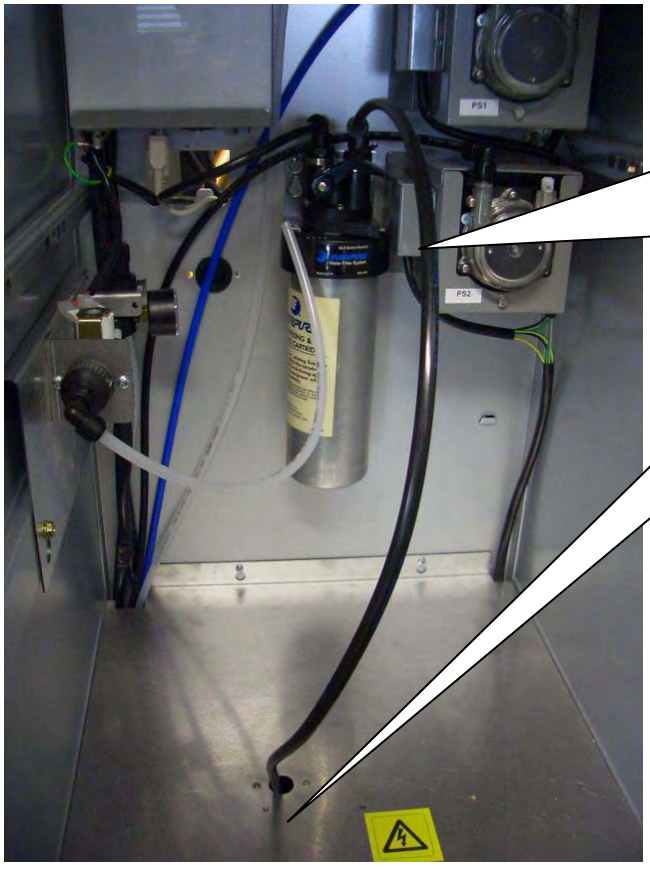
Filling the water bath with water

8.1

Open the cover (2 screws) on the horizontal surface



Close the water supply and detach the white tube from the water outlet on the filter head.



Insert a ca. 1m piece of a 8mm PE-tube (not included in the scope of supply) in the water outlet of the filter head. Insert the other end ca. 20cm in the opening on the horizontal surface.

8. Cooling

8.1 Filling the water bath with water

Make sure that the overflow tube for the water bath is hanging in the overflow bucket.

Now, open the water supply and fill in the refrigeration. Fill in as long as water comes out from the overflow tube. Close the water supply. Put the tubes back to their original position and close the cover on the horizontal surface.

8.2 Adjusting the temperature

The temperature regulator is arranged beneath a Plexiglas cover at the back of the overflow bucket.

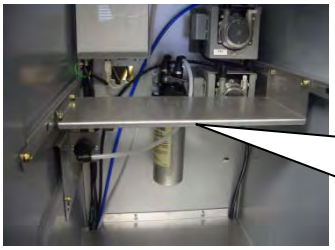
Attention: The water bath can freeze at level 7!

Set the cooling temperature regulator to level 5. Drinks are dispensed at a temperature of ca. 3-4°C.

9. Filling products

Intermediate floor for product containers 9.1

Loosen the screws on both side support rails in the vending machine. (2 screws per side)



Insert the intermediate floor into the vending machine and secure it onto both side rails.

Place the intermediate floor as back as possible!

Syrup pump 9.2

Suction manifold for syrup 3

Suction manifold for syrup 1

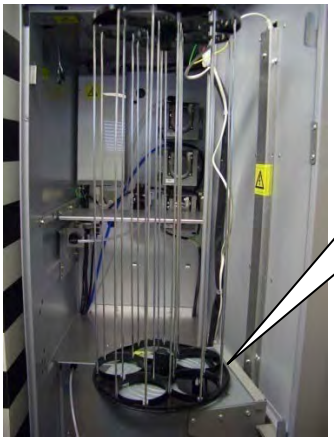
Suction manifold for syrup 2

After having assembled the intermediate floor for syrup containers, place the syrup containers in the vending machine. Then, connect the suction manifolds of the syrup pumps with the syrup containers by using the connection tubes supplied.

10. Cup dispenser

10.1 Assemble and fill in the cup dispenser

Take the cups turret.....

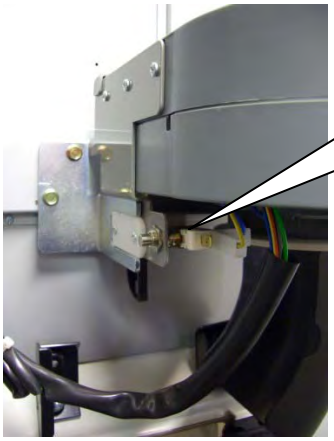


..... and assemble it on the cup dispenser.

Fill in the cups turret with cups.

After having filled the cup dispenser, pull the dust protection over the cup dispenser.

The cup dispenser can be folded aside for service operations.



A pressure switch is arranged on the cup dispenser, on the left, at the bottom, for the manual rotation of the

10.2 Explanation of the function Cup dispenser

Microswitches intended to recognise the cups are arranged in the cup dispenser. If no cup is made available in the cups turret, the cups turret is rotated. If no cup is reloaded within the span of a rotation, the machine displays: OFF 1C.

11. Extraordinary maintenance, cleaning and ordinary maintenance

General cleaning instructions 11.1

Please clean the machine in compliance with the following instructions. They consist of daily, three-month and yearly cleaning operations. Observe these cleaning instructions. You will have more hygiene and fewer troubles.

Daily cleaning 11.2

1. Check products

2. Empty and clean the overflow bucket.

3. Clean the product dispensing area and the doors.

Three-month cleaning 11.3

These cleaning operations are required according to the Law

1. Mix 2 litre water with
0.2 litre Sanisat 1 in a container.
2. Enable the flush programme by pressing the PL-key in the Luce I / E.
3. Extract the tubes from the syrup containers and insert them in the container with the cleaning liquid
4. Start the flush programme by pressing key 18**.** Repeat this process 3 times
5. Now, let the detergent act for 20 minutes.
6. Sanitise the chassis by using a sanitary spray.
7. Now, press key 16 and 17 once, each**.**
8. Insert the syrup tubes in a container with fresh mains water.
9. Press key 18 for the flush programme again**.** Repeat this process 8 times. (pH-value 7).
10. Now, insert the syrup tubes in the syrup containers again.
11. Press key 18 two-three times, until syrup comes out.
12. Quit the flush programme by pressing the PL-key**.**
13. Clean the dispensing area and the overflow bucket**.**
14. Dispense a drink (select 15 – 18) through Luce cool and carry out a drink / taste test.
15. Record cleaning operations in the Operation Manual**.**

11. Extraordinary maintenance, cleaning and ordinary maintenance

11.4 Syrup change

Clean the pumps and tubes at the time of changing syrup:

1. Mix 2 litre water with 0.2 litre Sanisat 1 in a container.
2. Enable the clean programme by pressing the PL flush key in Luce I / E.
3. Extract the tube from the syrup container and insert it in the container with the cleaning liquid.
4. Start the programme by pressing key 15. The syrup pump 16 – 17 – 18 appears on the display.
5. Press key 16, 17 or 18 according to the syrup change so many times, until the detergent comes out.
6. Now, let the detergent act for 20 min.
7. Insert the syrup tube in a container with fresh mains water.
8. Flush this line until the pH-value you reach is 7. (Use test strips)
9. Now, insert the syrup tube in the new syrup container.
10. Press key 16, 17 or 18 according to the syrup change so many times, until syrup comes out.
11. Quit the flush programme by pressing the PL-key.
12. Dispense a drink and enjoy it.

11. Extraordinary maintenance, cleaning and ordinary maintenance

Yearly cleaning 11.5

See the maintenance check list.

General information on maintenance 11.6

Pay attention to the following:

- Power off the machine during cleaning and servicing operations.
- Never clean the machine by means of steam jets.
- The machine may be cleaned by trained personnel only.

Maintenance check list 11.7

The following operations shall be carried out in compliance with maintenance rules.

Which parts?	What shall be done?	Done?
Water connection	- Check inlet valve and connections - Replace the water filter cartridge	
Plug connections for water, CO^2, electricity	- Check all plug connections for water, CO_2 and electricity.	
Syrup pumps	- Check the syrup pumps for tightness, if necessary regenerate the tubes.	
Water outlet valves	- Disassemble, clean, if necessary, decalcify the water outlet valves.	
Procon pump	- Check the Procon pump for ease of access, if necessary replace.	
Cooling water	- Change cooling water and clean the containers, check recirculation pumps.	
Refrigerator	- Clean the condenser, check the fan, check the compressor.	
Carbonator tank	- Change CO_2 water, check the overpressure valve, clean CO_2 lines	
Syrup lines	- Sanitise the syrup lines (see three-month cleaning operations).	
Pressure reducer	- Check the CO_2 pressure reducer.	
Cleaning	- Clean the cups station and the vending machine inside and outside.	
Dosing, temperature and function	- Check the water and product dosage, check the CO_2 pressure and the temperature of drinks. Final check and test run. Record in the Operation Manual.	

12. Machine specification

12.1 Options

The product label sheet is suitable for several types of machines. Another three different designation sheets are attached to the product label sheet in the adhesive format. Designate the product label sheet as specified here below.

Milky Coffee	1
Long White Coffee	2
Long White Coffee extra	3
CreMoca	4
Espresso	5
Café au lait	6
MoccaCino	7
Black coffee	8
White coffee	9
Choco	10
Choco Creme	11
Choco Extra	12
Soup / Individual	13
Tea / Individual	14
Individual cold drink	15
Individual cold drink	16
Individual cold drink	17
Individual cold drink	18

The options for Luce I / E are determined. Cold drinks can be customised

13. Basic programming functions

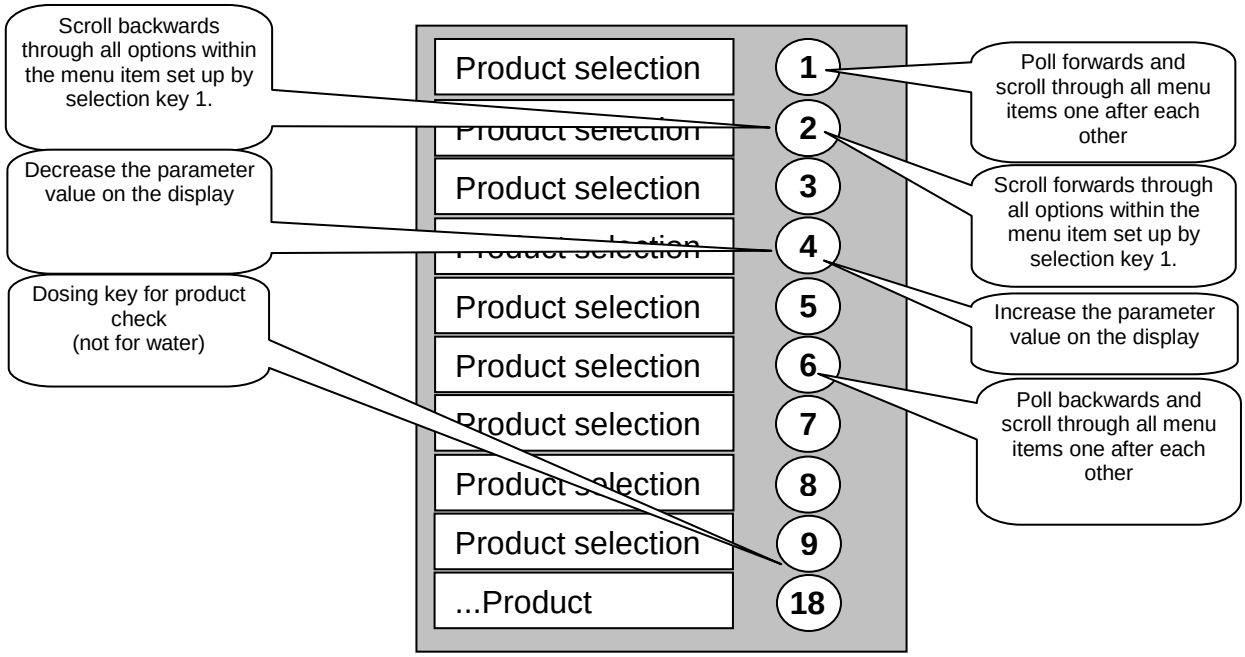
General functions 13.1

Press the programming keys on the coin box door inside the Luce E or Luce I door to programme the vending machine. See the picture:

Attention: The programming keyboard is arranged in the Luce E or Luce I.

PROG=PROGRAMMING	Press the PROG.-key to programme the vending machine. Press it again to quit the programming mode.
FREE=FREE SALE	Press the FREE-key to access the free sale mode. Press it again to quit the free sale mode.
PL=FLUSH	Press the PL-key to access the flush programme. Press key 15 –16 – 17 – 18 to start the flush programme purposefully. Press the PL-key again to quit the flush programme.
PCC=Cups turret	Press the PCC-key to rotate the cups turret to the position you wish for filling. (For the cups turret of the Luce E or Luce I only)

Selection keys in the programming mode 13.2



13. Basic programming functions

13.3 Tabular programme overview

Press the programming key in the Luce I / E to access the programming mode. Press selection keys – 1 - and – 2 – to select every single menu.

The Luce cool is programmed by means of the following menu items:

Selection key 1	Selection key 2	see chapter no.
Programming key 15	For the setting values see the dosage sheet	14.1 to 14.3
..... to		
Programming key 18	For the setting values see the dosage sheet	14.1 to 14.3
Prices	Set the sales prices (from price 15 to price 18)	15.2
Sales data	Counter total	16.1
	Counter period	16.2
	Counter Euro	16.3
	Counter test	16.4
	Counter from price 1 to price 19	16.5
Error messages	From no. 1 to no. 20	17.1

14. Dosing

Programming the dosage

14.1

To change the dosage, act as follows:

Press the programming key.
The display shows:

Press key 1. The display shows:

Press key 1 so many times until the display shows:

Press key 2. The display shows:
Press key 4 and 5 to disable or
enable key 1.
Key enabled = Product 15 can be selected
Key disabled = Product 15 can not be selected

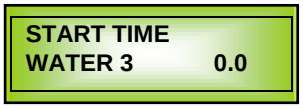
Press key 2 once again. The display shows:
Press key 4 and 5 to select between open
and reduced programming

Press key - 2 -. The display shows:

Set the dosage for product 1.
The display "Run Time Product 1" corresponds to the product
code
explained more in details on the dosing sheet. The
display "3.0" corresponds to the run time for this product in
time units (corresponding to about 3.0 seconds).

To change the product quantity, act as follows:
Key 4 - To change the time value up (more)
Key 5 - To change the time value down (less)
To check your set-up, press
key "18 " for a trial dose of the
product you have selected.

Press key - 2 -. The display shows:
Set the water quantity for water 3.



Press key - 2 -. The display shows:
Set the start time for water 3.

Then, press key – 2 – and
repeat this process for the other controlled
products.

After having programmed key 15, press
key 1. The display shows:

Now, repeat the process as described above
till key 18.

15. Dosing list

15.1 Explanation of the dosing list

You can modify the run time dosage of the product motor and valve required and controlled for the purpose, for each key.

Key enabled:
You can either disable or enable the key you have selected. The standard mode is always **Key enabled.**

Key disabled:
You can disable every single key. No drink is dispensed in the sales mode if this function is in use.

Modify this value by pressing key 4 and 5.

Programming reduced:
Programming reduced means: Only the parameters having a function are visible.

Programming open:
Programming open means: All available parameters are visible, even those having no function.

Modify this value by pressing key 4 and 5.

What can you do if programming is either reduced or open?:
If you set a parameter to "0" in the programming mode Reduced and then you quit, this parameter can no longer be seen at the time of the next selection in the programming mode Reduced. You can select this parameter once again if you select the programming mode Open for this key. Now, set a value for this parameter again. Then, set the programming mode Reduced again and check whether this value can be seen or not.
Run time product 1 is always visible, even if the parameter is set to „0“.

15.2 Product explanation

Components are referred to as follows in the programming mode:

Product 1 = syrup 1
Product 2 = syrup 2
Product 3 = syrup 3
Water 2 = plain water cooled
Water 3 = Water with CO_2 cooled

15. Dosing list

Dosing list Luce cool

15.3

	Standard data		Dosage proposal	
	Water quantity 300 ccm		Water quantity 300 ccm	
	Time	Gram / ml	Time	Gram / ml
KEY 15 Cold			**Ex. CO_2 water**	
KEY Enabled / Disabled	Enabled		Enabled	
Progr. Reduced / Open	Reduced		Reduced	
RUN TIME PRODUCT 1	0.0		0.0	
RUN TIME WATER 3	3.5		3.5	
START TIME WATER 3	0.0		0.0	
KEY 16 Cold			**Ex. Cola**	
KEY Enabled / Disabled	Enabled		Enabled	
Progr. Reduced / Open	Reduced		Reduced	
RUN TIME PRODUCT 1	7.5		7.5	
START TIME PRODUCT	0.0		0.0	
RUN TIME WATER 2	1.5		1.5	
START TIME WATER 2	0.0		0.0	
RUN TIME WATER 3	2.0		2.0	
START TIME WATER 3	7.0		7.0	
KEY 17 Cold			**Ex. Apple spritzer**	
KEY Enabled / Disabled	Enabled		Enabled	
Progr. Reduced / Open	Reduced		Reduced	
RUN TIME PRODUCT 1	0.0		0.0	
RUN TIME PRODUCT 2	7.5		8.2	
START TIME PRODUCT	0.0		0.0	
RUN TIME WATER 2	1.5		1.5	
START TIME WATER 2	0.0		4.0	
RUN TIME WATER 3	2.0		2.0	
START TIME WATER 3	7.0		1.5	
KEY 18 Cold			**Ex. Cherry**	
KEY Enabled / Disabled	Enabled		Enabled	
Progr. Reduced / Open	Reduced		Reduced	
RUN TIME PRODUCT 1	0.0		0.0	
RUN TIME PRODUCT 3	7.5		7.5	
START TIME PRODUCT	0.0		0.0	
RUN TIME WATER 2	1.5		5.7	
START TIME WATER 2	0.0		1.0	
RUN TIME WATER 3	2.0		0.0	
START TIME WATER 3	7.0		0.0	

IMPORTANT NOTE:
This dosing list includes all the menu items that can be modified.

The programming mode REDUCED also shows the parameters that can not be modified, even if having a function. These parameters are established for the product recipe.

The programming mode OPEN shows all parameters. Over 40 setpoints are at your disposal for each key programming. Considering that 18 selection keys are made available, this means that over 700 parameters should be taken into account to programme the machine. To arrange the programming mode more neatly for you, we have supplemented the programme item Programming REDUCED.

16. Setting sales prices

16.1 Price assignment

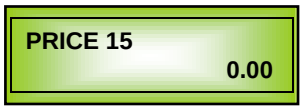
Luce I / E has got over 19 price lines that are firmly assigned to the 18 selection keys. You can sell at 18 different prices. The price lines from 15 to 19 are assigned to the selection keys for Luce cool.

Price 1	- Key 1	Price 11	- Key 11
Price 2	- Key 2	Price 12	- Key 12
Price 3	- Key 3	Price 13	- Key 13
Price 4	- Key 4	Price 14	- Key 14
Price 5	- Key 5	Price 15	- Key 15
Price 6	- Key 6	Price 16	- Key 16
Price 7	- Key 7	Price 17	- Key 17
Price 8	- Key 8	Price 18	- Key 18
Price 9	- Key 9	Price 19	- Cup discount
Price 10	- Key 10		

16.2 Setting sales prices

Press key 1 in the programming mode to select the list Programming prices. The display shows:

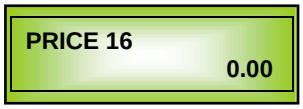
Now, press key – 2 – so many times until the display shows:



The sales price shall be adjusted to the lowest coin value of the coin checking device.

Press key – 4 – and key – 5 – to set the sales price you wish.

After having set Price 15, press key 2.
The display shows:



If the price is set to "0", this means that the sale is free. If a coin checking device is connected, no coin will be accepted either.

Repeat the process till Price 18, as described above.

17. Sales data

Counter total

17.1

Press key 1 in the programming mode to select the list "Sales data". The display shows:

Press key 2. The display shows:

This counter records all sales in the sales and free sales mode.
This counter status can not be reset.

Counter period

17.2

Press key 2. The display shows:

This intermediate counter records all sales in number of pieces in the sales mode. Press key 4 for a long time to reset this counter status.

Counter EURO

17.3

Press key 2. The display shows:

This counter records all sales in coin values in the sales mode. Press key 4 for a long time
to reset this counter status.

Counter test

17.4

Press key 2. The display shows:

This counter records all sales in number of pieces in the free sales mode. Press key 4 for a long time
to reset this counter status.

Counter from price 1 to price 18

17.5

Press key 2. The display shows:

This counter records all sales in number of sold drinks of key 1. Press key 4 for a long time
to reset this counter status.

For all the other price lines (till Price 18) act as described above to read or reset the counter statuses.

Reading sales data

17.6

The sales data can be also read by means of a FlashCard. A FlashCard Editor is required for this purpose. The FlashCard Editor can change the turnover data into an excel file. Read the documentation for the FlashCard Editor.

18. Error memory

18.1 Error messages

The machine stores the last 20 error messages. Press key 4 to delete every single error message.

Press key 1 in the programming mode to select the list "Error messages". The display shows:

Now, press key - 2 -. The display shows:

Explanation of the error message:

The last failure is always displayed as no. 1.

no. 1 = Error message no. 1
OFF 3C = Failure cause (see chapter 19.1)
07:12 = Error message time
01-08-2004 = Error message date

Press key – 2 - once again. The display shows the next error message: no. 2 = Error message no. 2.

Press key – 2 – to recall all error messages till no. 20.
If the memory is fully occupied by 20 error messages and a new error message appears, error messages are shifted back by one number (no. xx)
and the error message (no 20) is deleted from the memory.

If the error memory includes less than 20 entries, the display shows:

If you wish to have reliable values in the error messages, make sure that the clock is properly set with time, day time, month and year.

17.2 Quitting the programming mode

You are in the programming mode and have set up all options as you wish. Now, press key 1, then the programming key to quit the programming mode and switch to the sales programme. Then, the display shows END PROGRAMMING.

19. First aid (error messages)

Failure messages

19.1

The machine checks a wide range of functions through the control electronics and it automatically stops vending if well-defined failures should appear. The display shows the following message: e.g.: OFF (code). To delete the failure message, power the machine on and off.

CODE display	Cause	Fault remedy	SUGGESTION
SERVICE OFF 1C	No cup	Reload cups	
SERVICE OFF 3C	Overflow bucket full	Empty the overflow bucket Check the floater microswitch	
SERVICE OFF 6C	No water	Water supply not open Water supply not enough (Inlet valve faulty)	Remove the overflow tube from the inlet valve. Let water come out of the tube.
SERVICE OFF 50C	No communication	Check the connection cable	

19. First aid (error messages)

19.2 Failure causes without failure message

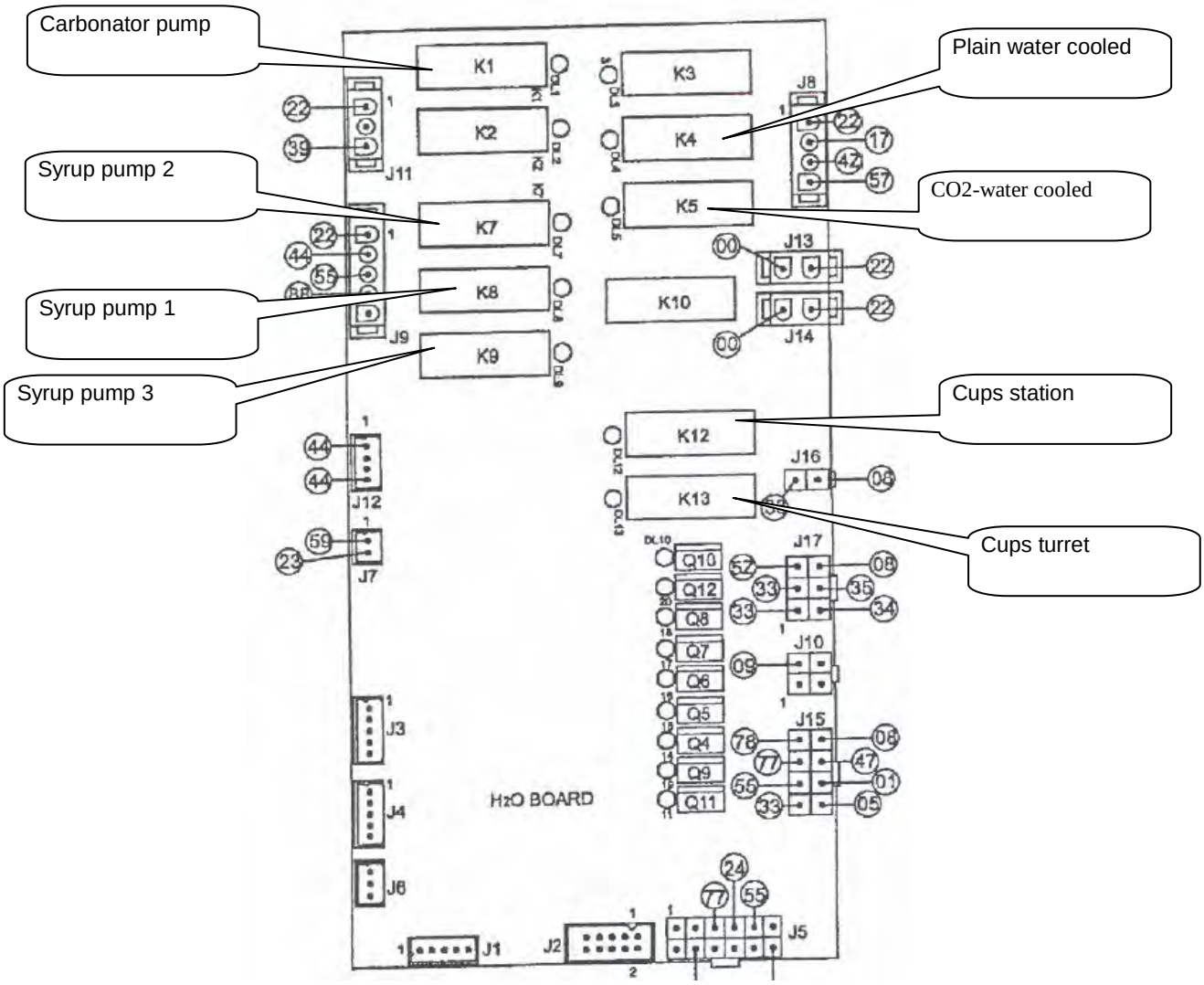
Failure	Possible cause	Solution
The vending machine is out of order. No part is electrically supplied	The mains is faulty	Check the input voltage and, if necessary, restore
	The supply cable is faulty	Replace the supply cable
The drink is not properly cold	Check the thermostat set-up	Set the thermostat to a higher value
	The thermostat can no longer switch.	Replace the thermostat
No water comes out	The water supply is closed	Open the water supply
	The inlet valve can no longer switch.	Check the inlet valve, if necessary, replace
	The probe control in the water tank is faulty	Replace the switch relay.

19. First aid (error messages)

Relay functions

19.3

The following relay board overview of the **Luce cool** enables you to recognise the operating state of the respective assembly on the basis of upstream LED's.



20. Flow chart

20.1

Syrup and water plan