



CR HC Range

Manual Operation

Manual Operation CR HC Range

Legal Notice

Manual operation (Original)

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Undercounter cooler

Model range

CR 50 / CR50 Aqua

CR 70 / CR70 Aqua

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Table of content

1	Safety	3
1.1	Intended use	3
1.2	Improper use	3
1.3	Staff	4
1.3.1	Operator	4
1.3.2	User	4
1.3.3	Expert	4
1.4	Presentation of warning	4
1.5	Safety instructions	4
1.5.1	General safety information	4
1.5.2	Disclaimer of liability and warranties	5
1.5.3	Safety information to prevent personal injury and equipment damage	5
2	Transport and packaging	6
2.1	Storage	7
2.2	Disposal	7
3	Installation Requirements	8
3.1	Installation Sites	8
3.2	Electrical Connections	8
4	Installation	8
4.1	Connection of Soda water, Still water, Premix beverages and Postmix syrups	8
4.2	Connecting of recirculation tubes	8
5	Putting into and out of Operation	8
5.1	Turning on the Unit	9
5.2	End of Operation (End of dispense-time)	10
5.3	Daily Inspection	11
5.4	Taking out of operation (Vacation, end of season)	11
6	Cleaning and Disinfection Directions	11
6.1	Cleaning Directions	11
6.2	Cleaning and Disinfection Procedure before use	11
7	Problems and Troubleshooting	14
8	Technical Data	15
9	Flow Chart	16
9.1	Premix units	16
9.2	Postmix units	17
10	Circuit Diagram	18
11	CR50 Spares	18
12	CR70 Spares	20



1 Safety

1.1 Intended use

By using the unit as intended you will not only protect yourself, but also prevent damage occurring to the unit and its components!

The intended use of under counter coolers from the CR HC (referred to as “unit” in the following) is to refrigerate and convey non-alcoholic beverages and their basic ingredients. CO2 or electric pumps are used as conveying equipment for the brands.

The unit is only suitable for indoor use, within commercial (restaurant, café’s, office) or household premises, sited in a stationary installation.

Installation is to be carried out by an expert in compliance with all of the specifications given this manual. The inlet temperature of the liquid must not exceed 43°C otherwise the pressure in the refrigeration cycle will rise above specification.

Minimum ambient temperature 10°C, maximum ambient temperature 43°C.

The carbonation system is ready for use once the cooler has made ice.

The intended use means that you will carry out all activities on the unit to the specifications provided in this document.

This unit is only to be operated by those who meet the requirements set out in this document.

Work on the unit and its components not included in the activities described in this document may only be performed by experts, means authorized and skilled people.

User manual can also be downloaded at website: www.cornelius-emea.com

1.2 Improper use

Improper use of the unit and unauthorized modifications to the unit and its components may cause personal injury and equipment damage for which Cornelius Deutschland GmbH shall assume no liability. Improper use of the unit is prohibited.

The following in particular is regarded as improper use:

- Mobile operation of unit
- Operation of unit in areas without supervision by skilled personnel
- Operation of the unit in an area, where water jet is possible.
- Cleaning with a water jet
- Any handling as e.g. use or service by children under the age of 8 years
- Any cleaning or service by children without supervision by a skilled, authorized adult.
- Use by persons (including children) with physical, sensory or mental disabilities or those with insufficient experience and knowledge, unless they are supervised by a person responsible for their safety, or this person has instructed them in the use of the unit.
- Use by those under the influence of medication, alcohol, drugs or other substances which impair their physical, sensory or mental abilities.
- The refrigeration of non-specified liquids and those above the maximum supply temperatures as this may cause unacceptably high pressures to build up in the refrigeration circuit.
- Operating the unit below the minimum and above the maximum ambient temperatures (minimum and maximum temperatures see chapter 3.3, page 15).
- Operating the unit with conveying media other than those defined in this document.
- Operating the unit in locations and ambient conditions which do not fully meet the requirements of this manual
- Operation of the unit by untrained staff



1.3 Staff

1.3.1 Operator

The operator is the natural or legal person who uses the unit or on whose behalf the unit is used. The operator must ensure that the unit is only used as intended, in observance of the safety instructions set out in this document.

The operator must ensure that all users read and understand the safety information. The operator is responsible for the planning and proper implementation of regular safety inspections and maintenance work.

With regard to operating the unit, Cornelius Deutschland GmbH recommends observing the national regulations of the country of use which govern the operation of drink-dispensing systems.

1.3.2 User

The operator specifies who will operate this unit. Cornelius recommends the following:

- If this unit is only to be operated by employees, they are to be instructed in its use, demonstrate their abilities to use it to the operator or their authorized representative, and be expressly charged with its use. This document is to be available to staff at all times.
- If this unit is openly accessible and set up so that untrained staff can use it, the operator is to provide instructions for use directly at the unit; these must be clearly understood by this group of people, therefore ensuring that the unit will be handled safely.

1.3.3 Expert

An expert in terms of this document refers to someone who has the relevant training, experience and information and knowledge of relevant standards, laws, regulations, accident prevention regulations, generally accepted safety-related regulations and operating conditions to be able to perform the required activities as well as recognize potential risks and avert them.

For assignments requiring expert knowledge, e.g. in electrical engineering, mechanics or fluid technology, only skilled workers with the right qualifications are to carry these out.

An expert must also have received technical training in the unit-specific special features of Cornelius products. The assigned tasks are always to be carried out in compliance with this manual.

1.4 Presentation of warning

The documents supplied with the unit provide warnings regarding any hazards that might exist.

1.5 Safety instructions

1.5.1 General safety information

Any work on the unit and its components which goes beyond the operation and servicing and maintenance that the operator is authorised for, may only be performed by **experts**. Furthermore, it is crucial that when performing work on the unit all safety information is observed; this information is set out in the following sections. Some of the tasks may have additional safety information which highlights the specific hazards associated with such work.

Warning!



The flame symbol, shown below and on the unit, means the unit contains a flammable refrigerant, R290.



Warning! Only engineers who have been trained in the safe handling and use of hydrocarbon (HC) refrigerants should work on this system.



Warning! Do not locate multiple portable socket outlets or portable power supplies at the front/rear or below the appliance.

- Access to the service area is restricted to persons having knowledge and practical experience of the appliance, in particular the safety and hygiene.
- The A-weighted emission sound pressure level is below 70 dB(A).
- Keep safety signs in good condition and replace missing or damaged items.
- Keep the system in proper working condition and do not allow unauthorized modifications.

1.5.2 Disclaimer of liability and warranties

If work is undertaken on the unit which is not described in this document, Cornelius Deutschland GmbH shall not assume any liability for any resulting hazards and damages. The same applies to described work which is partly or not fully performed in compliance with the regulations set out in this document.



Warning!

Risk of personal injury and equipment damage due to improperly executed work

Improperly executed work at the unit will cause dangers to persons and damage to the unit.

- Have all work at the unit carried out by Cornelius Deutschland GmbH or by a service partner.



Warning!

Risk of personal injury and equipment damage due to the use of non- approved spare parts and accessories

Using spare parts and accessories that are not recommended by the manufacturer may lead to personal injury and equipment damage.

- For your own safety and to protect your warranty, only use original spare parts.

1.5.3 Safety information to prevent personal injury and equipment damage

Please always observe the following safety information in order to prevent personal injury occurring:



Danger!

Risk of death from electric shock

If the supply cord is damaged, do not carry out any repair work on this.

It must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.



Danger!

Risk of death from electric shock

Touching live electrical parts will result in a risk of electric shock!

- Do not carry out any work on the electrical system.



Warning!

Risk of burns when touching hot parts of the unit

Touching parts of the unit after it has been in continuous use over an extended period of time will result in a risk of burns.

- Take appropriate safeguard measures, such as by wearing heat- resistant protective gloves.



Danger!



Risk of poisoning and risk of explosion due to improper handling of CO₂ cylinders

Risk of death from CO₂!

- Observe all information on occupational safety for the safe operation of dispensing systems as applicable in the respective country of installation.

Danger!



Risk of personal injury and equipment damage due to improper operation

Risk of death from improper operation!

- Make sure that only users who are users as defined in the user section use the unit; *see chapter 1.3.2, page 5.*
- Children must be supervised to ensure that they do not play at/or with the unit.
- Ventilation areas in the housing of the unit must be kept free.
- Any part of the refrigerant circuit must not be damaged.

Danger!



Risk of personal injury and equipment damage due to leaking refrigerant

In accordance with DIN EN 378 standard, part 1, the refrigerant used with this unit, R290 (propane), is classified as safety group A3. It is not poisonous and not caustic or corrosive. However, it is combustible and highly flammable. As a result, a potentially explosive atmosphere may occur in the case of leaks.

The refrigerant is heavier than air and, consequently, accumulates at the bottom and may enter lower lying areas (e.g. sewage systems). At high concentrations, this may lead to a lack of oxygen, resulting in a risk of suffocation. Lower concentrations may have a narcotic effect. The refrigerant has a very slight, somewhat sweet smell.

- Avoid any damage to components that carry the refrigerant

Warning!

Do not damage the refrigeration circuit.

If you suspect any leaks, however small, shut down the unit, air the room well and inform your service partner.

- Do not allow direct contact with the skin of any leaking refrigerant.
- Fire, open flames and smoking are prohibited.
- If you begin to notice any smell, leave the room and alert the fire service

Notice!



In particular, safety standards are to be observed in their scope of validity (e.g. EN 60335-2 – 24).

2 Transport and packaging



Choose a suitable packaging when returning the unit itself or one of its components to Cornelius Deutschland GmbH, e.g. for repairs. In particular, make sure that the unit and any components are protected from shock/impact, moisture, dirt and electrostatic discharge (ESD). This will prevent transport damage to the unit and to the components, for which the manufacturer shall assume no liability.

Caution!

Component damage due to freezing liquids

Ambient temperatures that are below freezing will lead to the freezing of any water or cleaning agent residue remaining inside the unit. This will lead to damage to internal components.

- Before shipment, storage or relocation of the unit, the unit is to be cleaned and the cleaning solution is to be fully drained from the unit.

2.1 Storage

Avoid excessive temperature fluctuations as condensate may form, which in turn may cause damage to the unit or to the components.

The permissible storage temperature is -10 °C to +50 °C.

The acclimatization period is 6 hours.

Caution!

Damage due to improper storage

Dirt or moisture entering a unit, as well as certain weather conditions (e.g. condensate forming at the unit, sunlight) will cause damage to the unit and its components.

- Protect the unit and its components by storing the unit in a clean and dry place, and by ensuring stable ambient conditions.
- If possible, store the unit in its original packaging. Unpacked units must be covered with a dustproof cover. No condensate must form under the cover.

Caution!

Risk of electrostatic charge!

Improper handling or storage may result in electrostatic charges.

- If possible, store units and/or any electronic components in their original packaging.
- Keep units and/or electronic components away from charged objects, fields and insulators.
- Avoid electrostatic charges when removing packaging and/or handling electronic assemblies and components by working at an ESD protected workstation or work area.
- When working at the unit or its components, wear a grounding (antistatic) wrist strap at the very least and wear antistatic gloves if necessary.

Caution!

Component damage due to material ageing

Material can age due to long storage periods, thereby affecting the material's properties (e.g. plastics and seals may become brittle). The properties of lubricants may change due to long storage periods.

- Check the assemblies and components for damage before each use/before installing them. Do not install assemblies or components that show visible signs of ageing.

2.2 Disposal



Warning! Disposal of the units must be carried out in compliance with the applicable local and / or national and international regulations with the disposal company registered for safe disposal of hydrocarbon refrigerants. Units must not be disposed of with household waste.

If the unit contains fuels or lubricants in liquid, paste-like or gaseous form, such as oil, grease, cooling agents etc., such fuels or lubricants are to be collected using appropriate measures and disposed of in compliance with the applicable local and/or national and international regulations. Such fuels or lubricants must always be prevented from seeping into the ground, the sewage system and any bodies of water, and must always be prevented from entering the atmosphere.

3 Installation Requirements

(To be done only by « expert »)

3.1 Installation Sites

Comply with the valid national regulations for installation sites and electrical connections.

The unit is designed for indoor use only.

Ventilation of the installation sites must be appropriate for unit output. Inadequate ventilation of the unit will result in overheating and damage.

Always make certain that no intake or discharge vents are covered or blocked.

The appliance to be located in an area protected from physical damage.

Warning! When positioning the appliance, ensure the supply cord is not trapped or damaged.

Minimum clearance distance of 20 cm at the rear of the unit to the wall and to each side and top.

The front must be open to an unimpeded supply of cool fresh air.

If the unit is enclosed at the front, ventilation holes must be produced in the front of the enclosure to equal the ventilation on the unit at the front, side and rear, to allow an unimpeded supply of cool fresh air.

Environment ambient temperature: CR 50 / 70 max 43°C

3.2 Electrical Connections

A socket outlet with an earthed contact featuring a maximum protection of 16 amperes is required.

The line voltage must always be within the following tolerances: 230 VAC +6%/-10% / 50 Hz

4 Installation

The unit must be installed by a trained service technician.

Please take care, that the socket for the unit is always accessible.

The appliance must be placed in a horizontal position, on a firm level surface. Max. angle of +/-2 ° is permitted.

Do not mount above electrical equipment or anything perishable by water, as water may drip from its overflow.

4.1 Connection of Soda water, Still water, Premix beverages and Postmix syrups

Connect one tube with an inner diameter of 6 mm to each device connection. Connect the tube end to the correct cooling coil inputs of the cooler. The cooling coils are fitted with 1/2" BSF thread on both sides.

4.2 Connecting of recirculation tubes

All recirculation tubes for python cooling should have an inside diameter of 10 mm. Connect the tube to the connecting fittings of the unit.

The position of the back flow of python into the water bath must not change under any circumstances.

5 Putting into and out of Operation

(To be done only by « operator »)



Comply with the cleaning regulations defined by law before beginning each operation.

Clean the couplings on the container for beverage/syrup every time before you attach them. Connect coupling to container for beverage/syrup. Note: Grey = CO₂, black = beverage/syrup.

Open the cylinder valve on the CO₂-cylinder and the valve on the pressure regulator. Check the CO₂-pressure at the pressure regulator. It should be within the following standard values:

Syrup:	0.35 to 0.4 MPa (3.5 to 4.0 bar)
Light product:	0.05 to 0.1 MPa (0.5 to 1.0 bar)
CO ₂ -carbonation pressure (CR50HC Aqua):	0.35 to 0.45 MPa (3.5 to 4.5 bar)
CO ₂ -carbonation pressure (CR70HC Aqua):	0.52 to 0.62 MPa (5.2 to 6.2 bar)
Drinking water:	0.20 to 0.30 MPa (2.0 to 0.3 bar)

On the Aqua models always make sure the CO₂ pressure is 0.5 bar greater than the water in pressure. To assist with this, use a water inlet pressure regulator.

Set the CO₂-pressure by turning the control screw at the regulator valve.

Clockwise to increase the pressure and counter-clockwise to reduce the pressure.

Afterwards check the CO₂-lines for leaks by closing the valve of bottle. The set pressure displayed at the pressure regulator should not drop. If it does, notify the service technician immediately. Do not forget to re-open the CO₂-valve after the check.

Open the water feed line and check the water inlet flow pressure in it (minimum value: 0.2 to maximum value 0.3 MPa (2.0 to 3.0 bar)). If the pressure exceeds 3 Bar, fit a water pressure regulator (not supplied) and set within the range 2.0 to 3.0 bar.

Check the beverage/syrup lines for leaks. Only a visual inspection is possible. If liquid is leaking, call a service technician.

Follow section 6 - Cleaning and Disinfection Procedure before use

5.1 Turning on the Unit

(To be done only by « expert »)

CR50HC / CR50HC Aqua / CR70HC / CR70HC Aqua

The water bath must be filled up to the mid position of the window of the water level guide tube sited on the corner of the unit, with tap water at a temperature of <24°C.

Refer to the technical data for the amount required.

Take care, that no water runs into the agitator motor. Reference: Use for this a suitable funnel and filler tube.

Do not leave a hose pipe filling the unit unattended.

To prevent algae from forming in the water, add the disinfectant Molco (PN 14-9670-150). The 150 ml container of disinfectant is sufficient for 30 liters of water.

CR50HC / CR50HC Aqua / CR70HC Set ice bank probe controller to designated function.

CR70HC Aqua Put the lower controller switch (refrigeration system) to the up position.

Once the water bath is filled with water, wait one minute before switching the unit on.

Insert the mains plug for the cooler into the socket outlet with an earthed contact.

When the unit is turned ON, the controller has a time delay till the refrigeration system operates of approximately 5 minutes.

The water recirculation pump runs continuously with the power connected to the unit.

CR70HC Aqua Put the upper switch (carbonation system) to the up position.

CR50HC Aqua / CR70HC Aqua



CR HC Range

The carbonator pump switches on automatically and fills the carbonator. The carbonator pump switches off when the water has reached its highest level in the carbonator container but after no more than 20 minutes. Long run periods are signs of leaks or too large extraction. It is then only possible to turn the pump back on by a power network reset (pulling out the mains plug briefly).

The water bath needs to be at a temperature below 5°C for the carbonator system to function as intended.

If the unit is fitted with a water inlet pressure switch, the pump will not operate till water pressure is present.

Release air from the carbonator container by pulling the safety valve for about 2 to 4 seconds.

Brief Description controller (CR50HC / CR50HC Aqua / CR70HC):

Combined Ice bank-/Temperature Controller. The input information for compressor switching comes alternatively from a temperature probe or electrodes, which are located in the fluid detecting the difference between water and ice.

For displaying the actual value, an optional remote display (TAA141647567) can be connected.

Operation Mode change-over

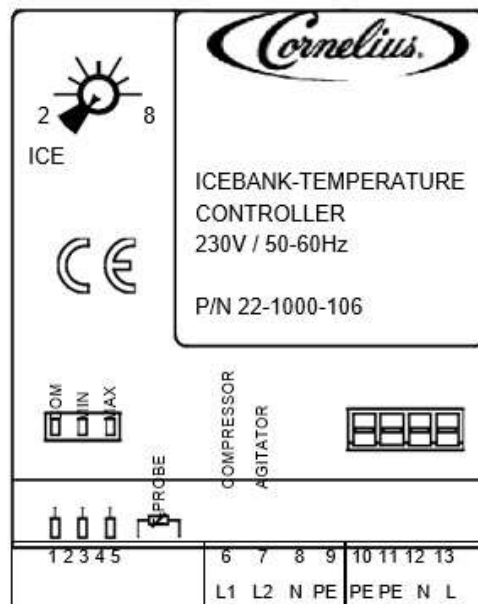
- Potentiometer left fastened – ICE position: The controller works with the electrodes only (ice-bank mode). With all other positions, the temperature probe is used (temperature control).
- Potentiometer left fastened + set coding link: Constant temperature control -3°C

Icebank Mode

2-level or 3-level electrodes can be used. Switching points:
 <45kOhm ($\pm 10\%$) = water, the refrigeration system is ON
 >110kOhm ($\pm 10\%$) = ice or air, the refrigeration system is OFF

Temperature Control Mode

The potentiometer allows set point settings in a range within 1,5...8,5°C.
 A hysteresis is located symmetrically around this set point.



5.2 End of Operation (End of dispense-time)



It is imperative that the CO₂-cylinder be turned off each time operation is ended. Be sure to open again before continuing at operation.

5.3 Daily Inspection (To be done only by « operator »)

- Check whether carbon dioxide is open.
- Check the beverage lines for leaks. Only a visual inspection is possible. If liquid escapes, call a service technician.
- Check the CO₂-lines for leaks by closing valve on the CO₂-cylinder. The inlet pressure indicated on the pressure regulator should not drop. If it does, call a service technician immediately.
- Do not forget to re-open the CO₂-cylinder valve afterwards.

5.4 Taking out of operation (Vacation, end of season) (To be done only by « operator »)

Warning! Do not use mechanical devices or other means to accelerate the defrosting process other than those recommended by the manufacturer.

Perform the following steps in case of protracted standstill periods:

- Close the CO₂-cylinder, the CO₂-stopcocks on pressure regulators.
- Pull the mains plug out of socket outlet with earthed contact.
- Detach the couplings from beverage containers.
- The system must be emptied and clean.

Only trained specialists are to carry out this procedure.

6 Cleaning and Disinfection Directions

6.1 Cleaning Directions (To be done only by « operator »)

Comply with the valid national regulations for cleaning bar equipment at the particular installation site.

Clean connection parts and tap fittings in advance whenever making connections or changing the type of beverage. Clean parts coming into contact with air and beverage (e.g. dispense nozzle), on a daily basis.

The condenser fins must be cleaned in regular intervals. These vary according to the amount of dirt in the air at the installation site (approximately every three months). This is best done with a brush and a vacuum cleaner.

The water level in the water bath must be checked regularly and the contents must be exchanged at least once annually. Algae formation can be reduced by adding disinfectant (order number 14-9670-150). For a 30 liters water-bath one disinfectant container is sufficient.

The unit is to be emptied and cleaned by trained person only based on the following recommendations:

To be cleaned by trained specialists	Beverage lines	Soda water lines	Syrup lines	CO ₂ -lines
Before commissioning	X	X	X	
Before each change of type of beverage	X		X	
Before and after a pause of more than 1 week	X	X	X	
Weekly				
Every 2 weeks	X			
Every 3 months		X	X	
Every 12 months				X

6.2 Cleaning and Disinfection Procedure before use



In order to achieve a proper hygienic performance of the dispense equipment, it is crucial to run the initial and recurring sanitization procedure (intervals according to DIN 6650-6) on all product lines of the system.

Attention !



Cleaning / sanitizing agents are harmful and may cause severe health injuries ! During the work with any agents make sure to always wear proper clothing (gloves, safety goggles, etc.). Special attention must be taken during the flushing of the agent at the dispense valves. It must be made sure, that no operator uses the dispense equipment during sanitation (e.g. use clear signs on the valves, etc.) !

Take care of an adequate behaviour towards hygiene while working on the equipment (e.g. disinfecting hands prior to work, etc.) in order to professionally deal with the matter.

Attention !



It must be ensured, that no cleaning / sanitizing agent remains in the dispense system after service (risk of health injuries) ! The prove that all agent residues have been removed must be tested with indicator or test papers (contact agent manufacturer) & must be documented

Dispense from each tap a few beverages to fully put the system back into operation again. The cleaning / sanitization procedure must be documented accordingly and the documentation must remain at the cooler (this may vary depending on local regulations).

A.) Flushing-in of sanitization agent (e.g. P3 Ansep CIP from Ecolab) (to be done by experts)

1.) Syrup Lines

1.1) The product lines filled with syrup must first be flushed with water. For this an external water distributor can be used to connect and flush several syrup lines simultaneously. The post-mix valves should be operated on the syrup side only for flushing.

Attention!



Gas driven syrup pumps must not see any positive pressures on the incoming side of the pump, as this may damage the pumps.

1.2) Connect the water distributor to the CO₂-supply in order to drive the water out of the syrup lines. This

Avoids, that the sanitizing agent is being diluted in the tubing. Afterwards close the CO₂-gas and depressurize the complete system again.

1.3) Fill your cleaning tank with the cleaning / sanitizing agent according to the mixing ratios given by the manufacturer of the agent. (e.g. when using P3 from ECOLAB -> 50ml for 1 litre water = 5% solution)

and In order to achieve a proper mixing in the cleaning tank, it is recommended to first fill in the agent and then top-off with clean water.

1.4) Connect the syrup lines to the cleaning tank and dispense cleaning / sanitization agent from every single dispense valve. Make sure that agent leaves from all installed taps.

2.) Water Lines



- 2.1) Close the water- + the CO₂-supply to the unit and depressurize the system with the taps
- 2.2) Disconnect the water supply to the unit and cut the power supply to the carbonator pump in order to avoid dry running of the pump (e.g. by pulling the plug of the pump).
- 2.3) Connect the water line feeding the dispenser to CO₂-gas pressure and drain all water from the tubing of the system. This ensures that the sanitizing agent that is afterwards flushed into the dispenser is not being diluted e.g. in the carbonator bowl. Afterwards close the gas supply again and depressurize the system.
- 2.4) Connect the cleaning tank to the water inlet of the dispenser and pressurize the tank with approx. 0.3 MPa (3 bars) pressure

Attention!



Remove any water filters before doing this!

- 2.5) Pull the safety relief valve on the carbonator bowl and carefully let some sanitizing agent leave the valve. This ensures, that the carbonator bowl is flooded completely with sanitizing agent all the way to the top.

Attention!



Avoid that excessive amounts (= >50ml) of agent is being introduced into the water

bath, as this will carry the risk of corrosion of metal parts in the water bath. In case larger amounts were spilled, the water in the water bath needs to be replaced.

The cooler works with a membrane / diaphragm pump

Please make sure the pump is in operation when the sanitizing agent is being flushed into the unit. This will ensure that all parts of the pump will come into contact with the sanitizing agent.

- 2.6) Flood the complete dispense system with the cleaning / sanitizing agent by operating the post-mix valves. Ensure that on all valves clearly visible agent is being drawn.

Effect- / working time for the cleaning / sanitizing agent is min. 20 minutes!!

In the meantime remove the dispense nozzles from the valves and sanitize them manually by putting them for 20 minutes into sanitizing agent. In case it is seen that the nozzles are heavily dirty, clean the nozzles mechanically by using a clean brush and sanitization agent.

B.) Flushing-out of sanitization agent (to be done by experts)

1.) Syrup Lines

- 1.1) Disconnect the cleaning tank and bring out any remaining sanitizing agent from the syrup lines by using CO₂-gas. Afterwards close the CO₂-supply and depressurize the system via the dispense valves.
- 1.2) Connect the water distributor and sufficiently flush clean water through the syrup lines (for this please open only the syrup side of the dispense valves). In case a hygiene water filter is being used with the dispenser, it is recommended to use for this flushing the water coming from the hygiene filter.

Attention!



It must be ensured, that no cleaning / sanitizing agent remains in the dispense



system after service (risk of health injuries)!
 The prove that all agent residues have been removed must be tested with
 indicator
 or test papers (contact agent manufacturer) & must be documented

- 1.3) Connect the syrup containers again to the syrup lines and dispense syrup on the post-mix valves until a consistent flow of syrup occurs again.

2.) Water lines

- 2.1) Pressurize the water line to the cooler with CO₂-pressure and dispense all sanitizing agent from the valves. This makes it easier to flush out any remaining agent from the system.
- 2.2) Close the gas again and depressurize the unit via the dispense valves.
- 2.3) Install a new water filter cartridge and reconnect the unit via the filter to the mains water line again (refer to filter manufacturer guidelines in case the filter needs priming prior to use).

In case a hygiene filter is being used on the dispenser, it must be ensured that the new filter cartridge is inserted prior to flushing the system with water. This ensures that a just sanitized system is not being contaminated again by using poor quality mains water to flush out any remaining sanitizing agent.
 Spray the filter head and the connecting position of the filter cartridge with an adequate sanitizing spray to avoid any introduction of bacteria again.

- 2.4) Open the mains water supply. Pull the safety relieve valve on the carbonator bowl until only clean water leaves the valve, to ensure that there are no residues of sanitizing agent left in the head area of the carbonator bowl.
- 2.5) Open the CO₂-gas supply to the carbonator and reconnect the carbonator pump to the power supply.

- 2.6) Dispense sufficiently water from the post-mix valves to ensure that no sanitizing agent is left in the system

Depending on the unit type (Over counter dispenser / large soda circuit installation with long python runs, etc.) the amount of water that needs to be dispensed may vary.

Attention!



indicator

It must be ensured, that no cleaning / sanitizing agent remains in the dispense system after service (risk of health injuries)!
 The prove that all agent residues have been removed must be tested with
 or test papers (contact agent manufacturer) & must be documented

Dispense from each tap a few beverages to fully put the system back into operation again. The cleaning / sanitization procedure must be documented accordingly and the documentation must remain at the cooler (this may vary depending on local regulations).

7 Problems and Troubleshooting

Before troubleshooting the dispense equipment, first check:



CR HC Range

- Is the electricity to the unit interrupted?
- Are the beverage containers empty?
- Is the CO₂-cylinder empty?
- Are all valves on CO₂-cylinder open?

Type of problem	Cause	Remedy
Beverage too warm, compressor running	Condenser dirty or covered. Temperature set to high Too much beverage being removed	Use brush to clean con- denser between louvres. Adjust the temperature Examine out-put capacity
Beverage too warm, compressor not running	Compressor not turned on.	put main plug in, otherwise call service technician
Beverage foams at a tap	Syrup stored too long and enriched with CO ₂	Connect container with fresh basic material
Beverage foams at all taps	CO ₂ pressure too high All syrups enriched with CO ₂ All beverages too warm	Set pressure Connect container with fresh basic materials. Check storage temp See "Beverage too warm ..."
Tap just outputs concentrate (only postmix)	Carbonator is not running	Check if water feed line is open Check water flow pressure of 2bar Check whether the carbonator motor is running; if not, call service technician
CO ₂ volume in the beverage is too low	Air in carbonator Too much beverage being removed CO ₂ cylinder empty Valve on CO ₂ cylinder closed Stopcock on pressure regulator closed CO ₂ pressure too low Water temperature too high	Bleed air (only postmix) Examine output capacity Change CO ₂ cylinder. Open valve Open stopcock Adjust pressure Adjust to lower temperature
Too much or not enough syrup in the beverage (only postmix)	Regulator in tap is clamping Delivery pressure for syrup too low or too high	Call service technician Adjust CO ₂ pressure

8 Technical Data

Attention: For exact voltage version please first confirm on unit's type plate.





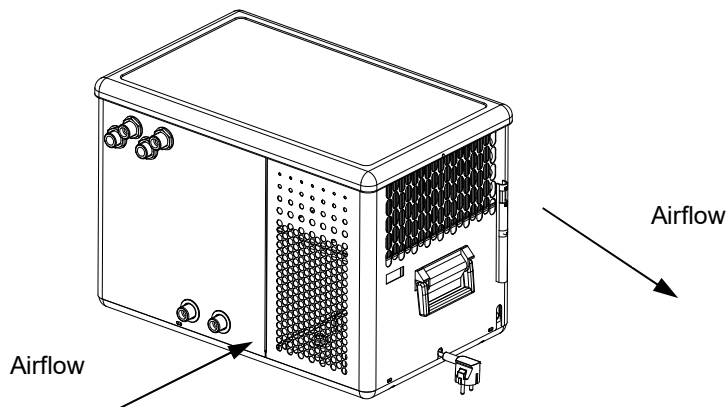
CR HC Range

	CR 50	CR 70
Output capacity continuously at a ΔT 10°C	30 l/h	52l/h
Temperature class	T(43°C)	T (43°C)
Supply voltage	230 V / 50 Hz	230 V / 50 Hz
Power consumption (max)	410 W (Aqua model)	464 W
Nom. Current	1.9 A	2,2 A
Heat emission	655 W	859 W
Air flow	160 m3/h	300 m3/h
Compressor output	245 W	395 W
Weight of ice bank	4,1 kg	9,0 kg
Ice bank capacity	328 kcal	720 kcal
Water bath capacity	14,5 l	30 l
Dimensions		
Height	380 mm	480 mm
Width	565 mm	585mm
Depth	335 mm	385mm
Shipping weight	30 kg	36,5 kg

* at -10°C evaporation temperature

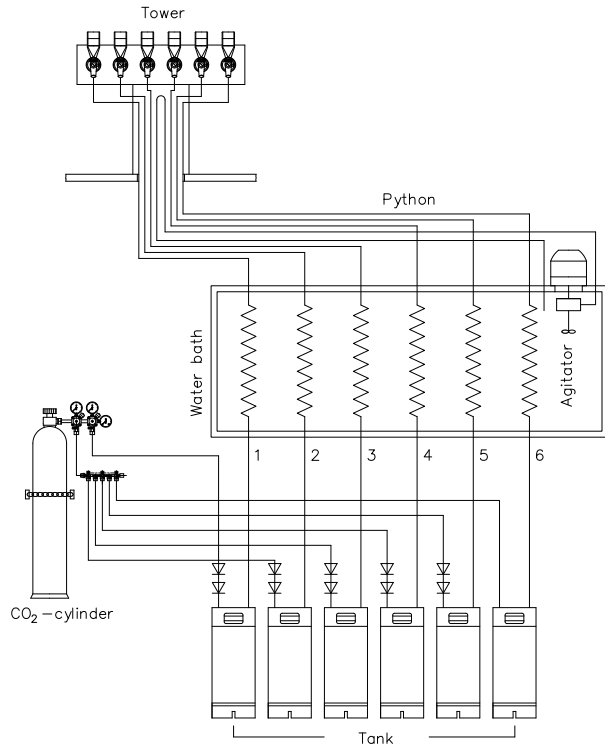
Cooling capacities and output capacity for beverage inlet temperature of 18°C and beverage outlet temperature of less than 8°C.

We reserve the right to make modifications.

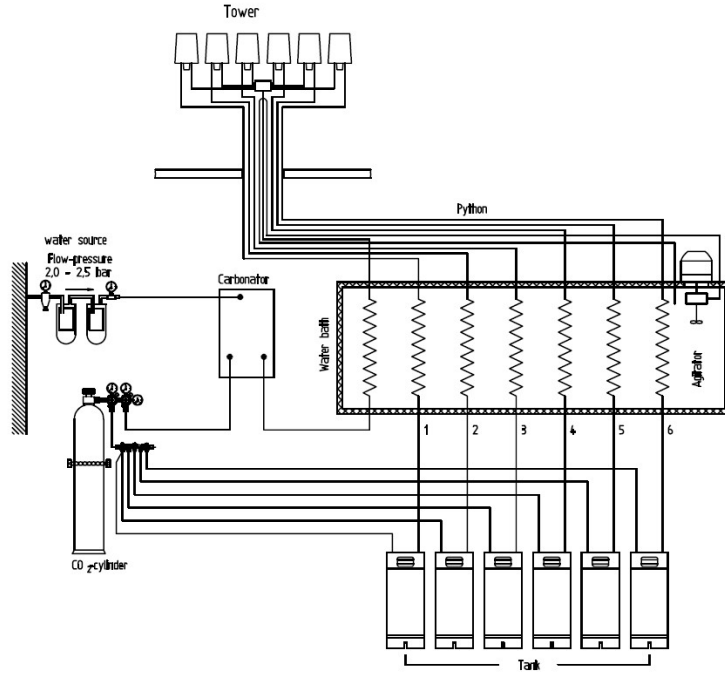


9 Flow Chart

9.1 Premix units

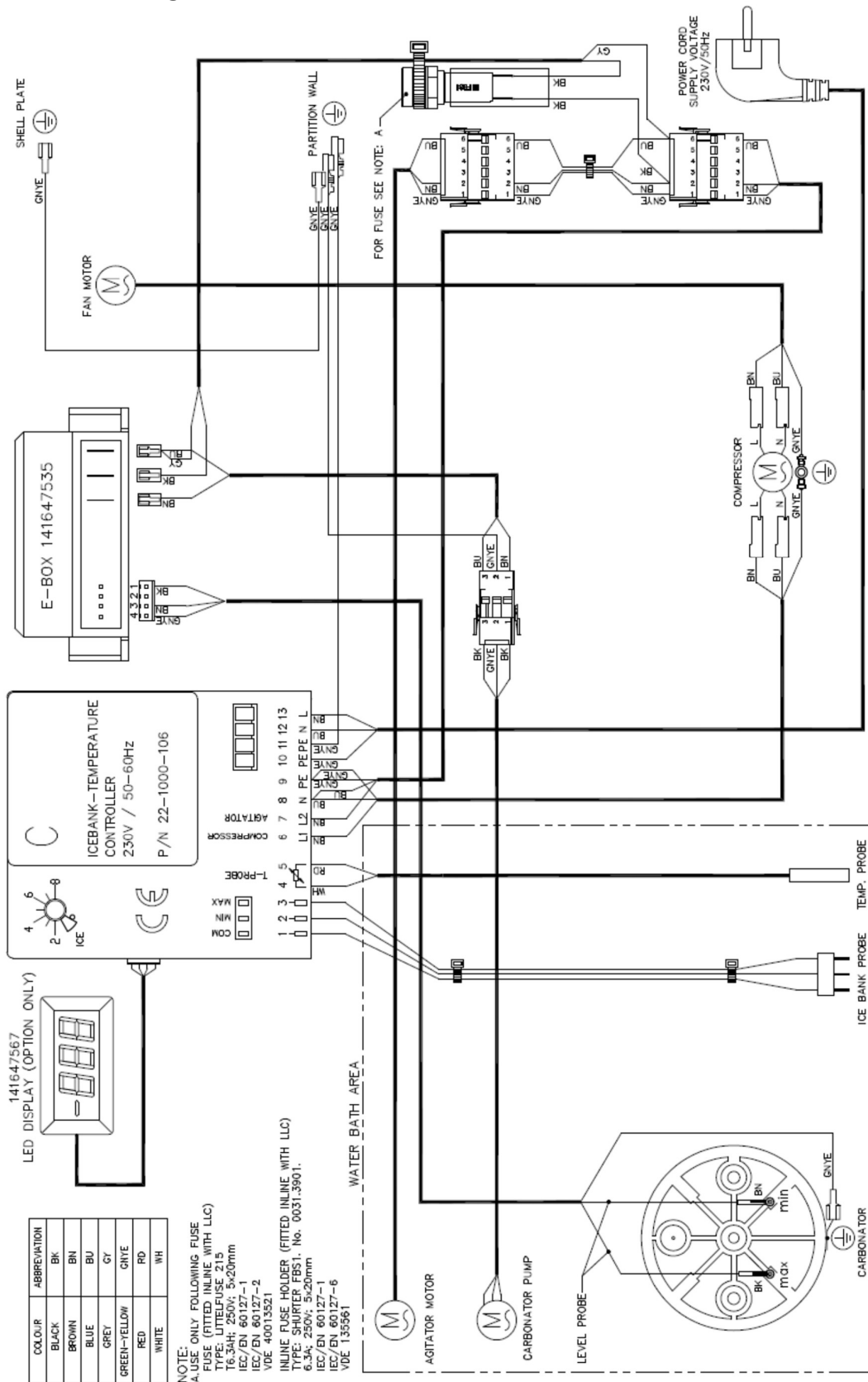


9.2 Postmix units



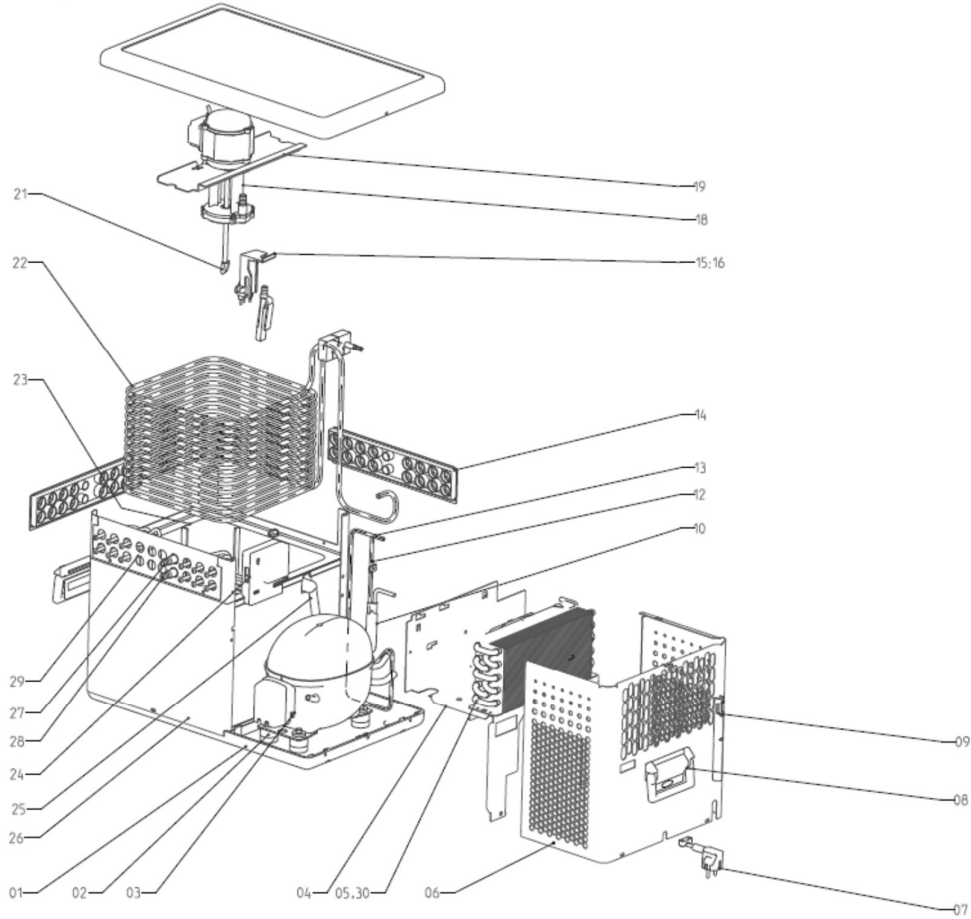


10 Circuit Diagram





11. CR50HC Spares



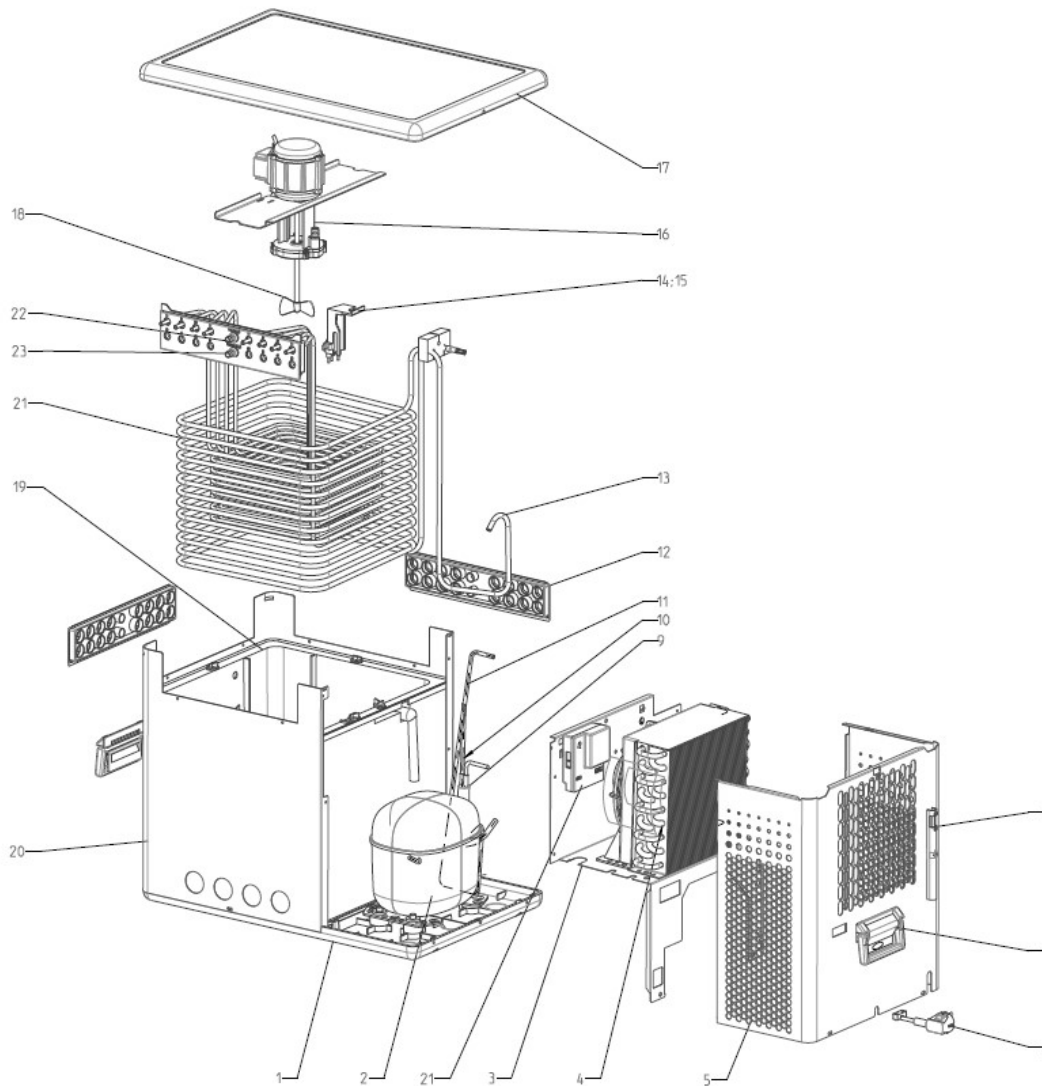
No	Partnumber	Description	Benennung	Recommend Spare Parts
1	220100958	Base plate	Boden	
2	131706000	Rubber grommet	Puffer Vibration	
3	580900994	COMP SET R290 DLE4CN	COMP SET R290 DLE4CN	YES
4	2201007075001	Partition wall	Zwischenwand	
5	136514000	Fan Motor	Lüftermotor	YES
6	220100804	Sheet Metal Housing	Mantelblech	
7	143793000	Power cord	Netzkabel	YES
8	220100950	Plastic handle	Griff Kunststoff	
9	220100951	Fastener, waterbath level	Wasserstandshalter	
10	149541000	Dryer	Trockner	YES
12	220117807	Filling tube	Füllstutze	
13	220117806	Hot gas tube	Heißgasrohr	
14	220100953	Blindplate	Blindplatte	
15	220111319	Holder ice bank probe	Eisbankfühlerhalter	YES
16	220111550	Ice bank probe	Eisbankfühler	YES
18	149550255	Agitator motor	Rührwerksmotor	YES
19	220096516	Mounting bracket	Traverse	
21	143350000	Propeller	Rührwerksflügel	YES
22	220117805	Evaporator	Verdampfer	
23	220055572	Waterbath	Wasserbad	
24	221000106	Control box	Reglerbox	YES
25	220055079	Overflow elbow	Überlaufwinkel	
26	220055595	Sheet Metal Waterbath	Mantelblech Wasserbad	
27	220050005	Nozzle forward	Anschlußfille Vorlauf	
28	220050008	Nozzle return	Anschlußfille Rücklauf	
29	220050021	Connection plate	Anschlußplatte	
30	220100941	Condensor	Verflüssiger	YES

CR50 Aqua Parts

	141647535	Liquid level controller	Niveauregler PM3	
	220107441	Water boost pump	Karbonatorpumpe	
	220096823	Level probe assy	Niveauelektrode Bgr.	



12. CR70HC Spares



No	Partnumber	Description	Benennung	Recommend Spare Parts
1	220100962	Bottom CR7-B	Boden CR7-B	
2	580900993	Compressor	Kompressor	YES
3	220111371	Partition wall	Zwischenwand	
4	220098287	Condenser with fan	Verflüssiger mit Lüfter	YES
5	220101162	Sheet Metal Housing	Mantelblech Kompressor	
6	143793000	Power cord	Netzkabel	YES
7	220100950	Plastic handle	Handgriff	
8	220100951	Fastener, waterbath level	Wasserstandhalter	
9	149539000	Dryer	Trockner	YES
10	131928000	Filling tube	Füllstutzen	
11	220117927	Hot gas tube	Heissgasleitung	
12	220100953	Blind plate	Blindplatte	
13	220117929	Evaporator	Verdampfer	
14	220110879	Holder ice bank probe	Eisbankfühlerhalter	YES
15	220111270	Ice bank probe	Eisbankfühler	YES
16	149550255	Agitator motor	Rührwerksmotor	YES
17	220100963	Cover	Deckel	YES
18	143350000	Propeller	Rührwerksflügel	YES
19	220055772	Waterbath	Wasserbad	
20	220104399	Sheet metal waterbath	Mantelblech Wasserbad	
21	221000106	Control box	Reglerbox	
22	220050005	Nozzle forward	Anschlussfülle Vorlauf	
23	220050008	Nozzle return	Anschlussfülle Rücklauf	