GETRÄNKE-TECHNOLOGIE SELBACH®

Operating manual

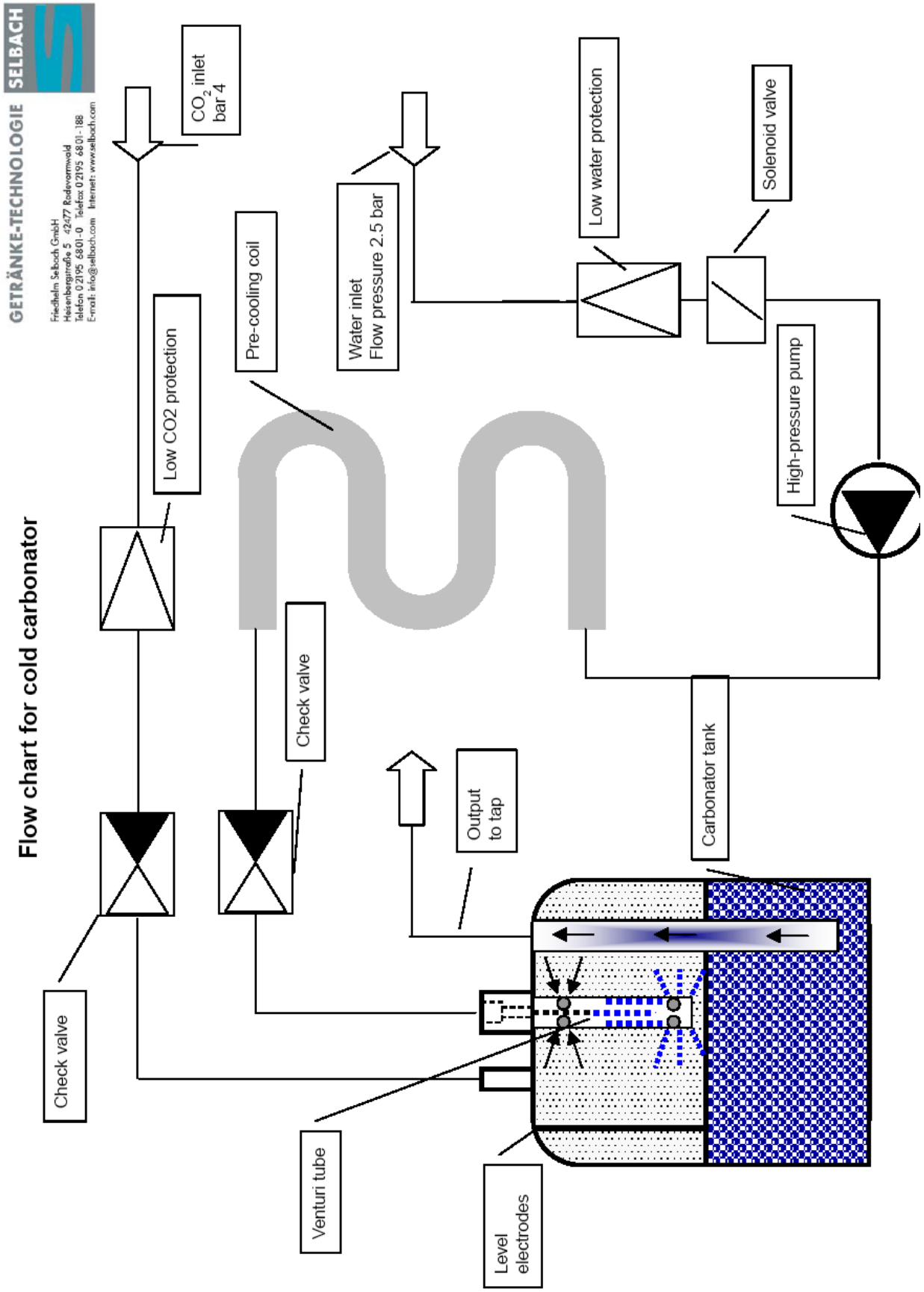
Dry carbonator
Wet carbonator
Warm carbonator

The appliance described in this manual may be put into operation only if the operators are sufficiently trained and operating and maintenance personnel have thoroughly studied the operating manual.

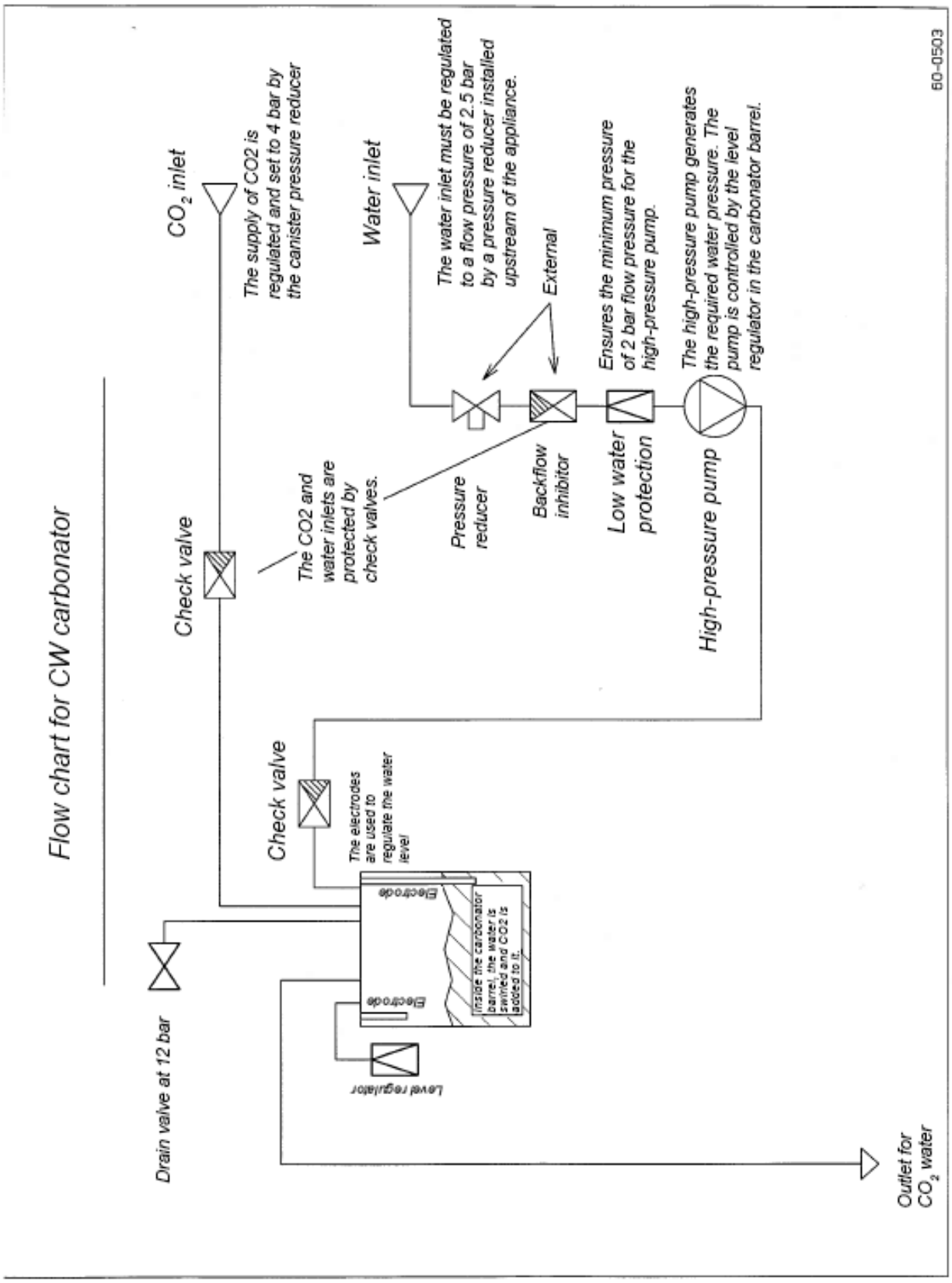
Contents

Page

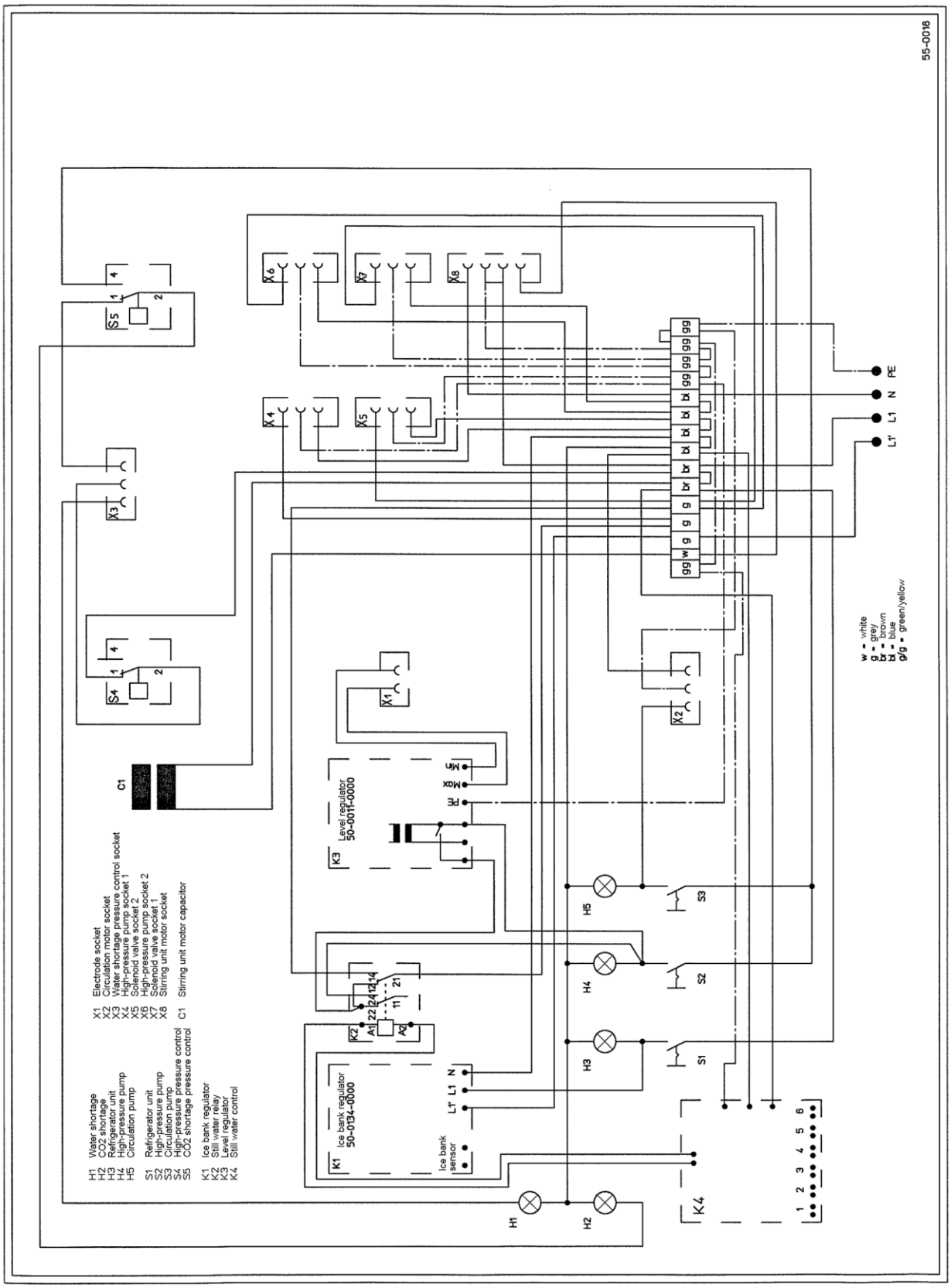
1.00 Device details



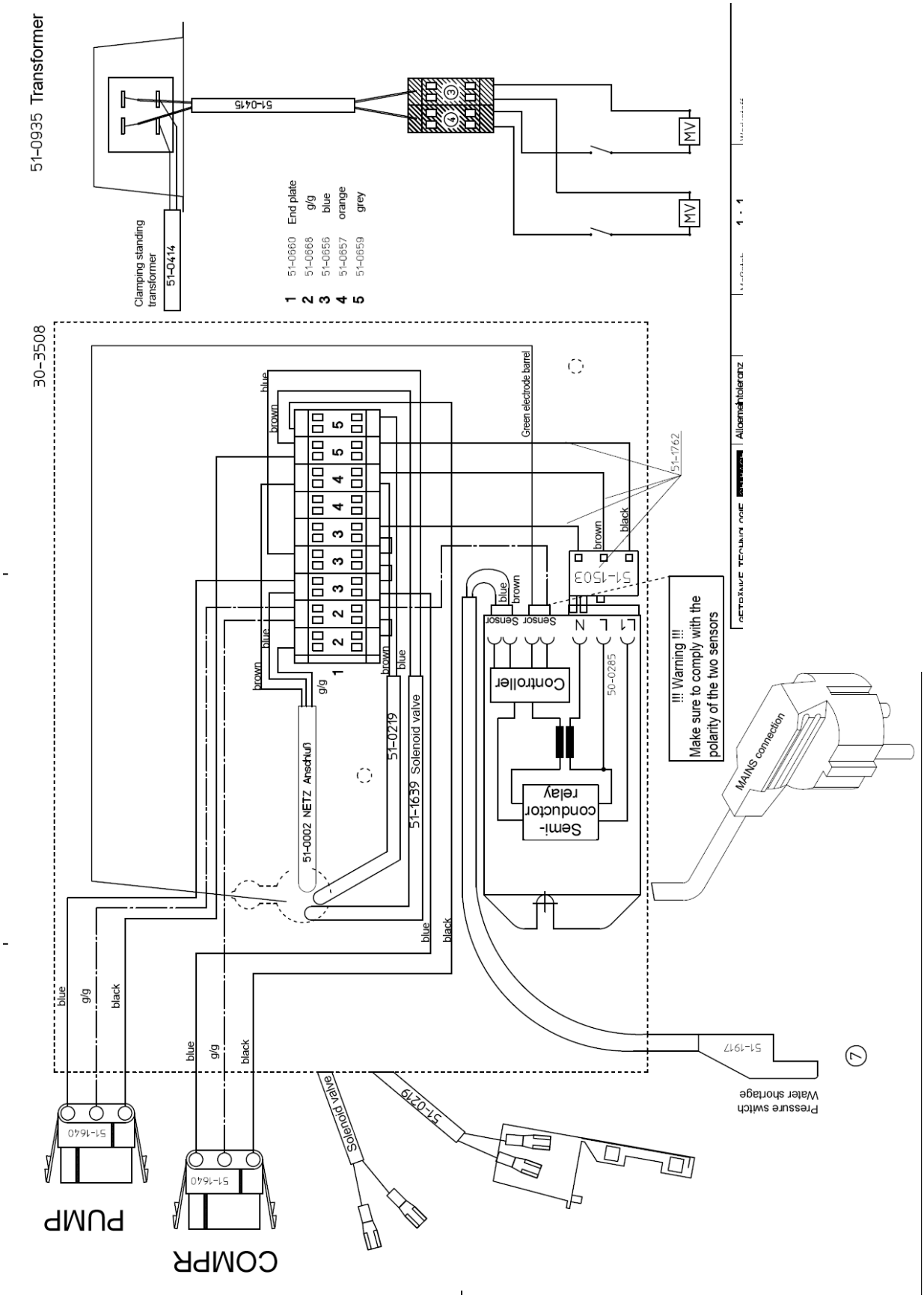
1.10 Flow chart for warm carbonator



1.20 Circuit diagram for circuit carbonator

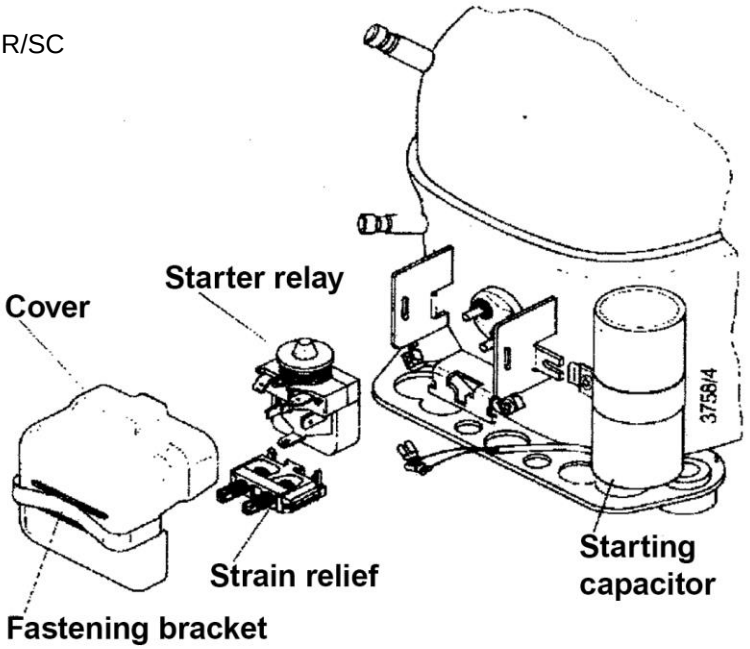


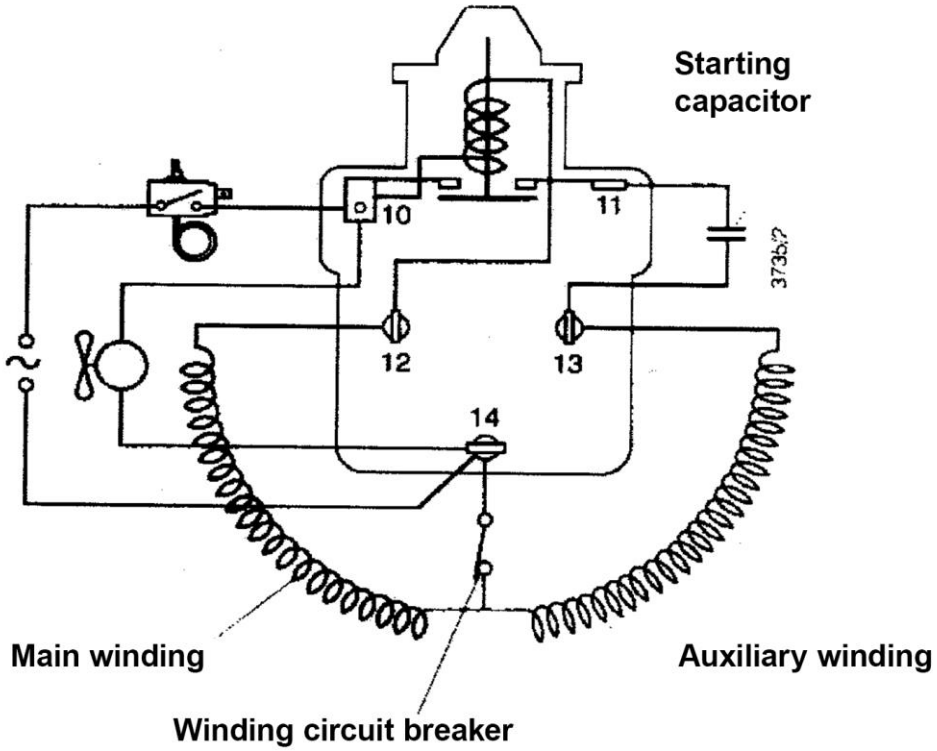
1.30 Circuit diagram for CT 30/60



1.40 Connection diagram for compressor

TL/FR/SC


Starter relay
Cover
3758/4
Strain relief
Starting
capacitor
Fastening bracket


Starting
capacitor
10
11
373b/2
12
13
14
Main winding
Auxiliary winding
Winding circuit breaker

2.00 Safety information

2.10 Setup / putting the appliance into operation

Place the appliance on a level, dry and clean surface. Ensure that the power cord has a direct path to the electrical outlet. Never allow the power cord to become kinked or crushed.
Use only original hoses or approved beverage hoses for supplying the appliance.
Strictly ensure that the appliance is adequately ventilated! The exhaust opening on the rear of the appliance must not be blocked.
If installed in a counter or floor cupboard, make sure that the exhaust can be discharged directly. Insufficient ventilation of the appliances leads to overheating and destruction of the appliance.

Always comply with the following safety measures:

- Temperature in the work area +5 to +40 degrees Celsius
- Prevent grime (dust, fibers, etc.) from getting into the appliance
- Only connect the appliance to the specified supply voltage
- Protect the appliance from moisture, especially from penetrating liquids
- Comply with the warnings and safety notices on the electrical components and in this operating manual

2.20 Safety notices

The appliance described here must only be connected and operated by persons with the appropriate training. Settings, maintenance and repairs on an opened appliance or a live appliance may only be carried out by a specially trained technician.

As with all technical devices, correct functioning and safe operation of this appliance require compliance with general standard safety practices and the special safety information in this operating manual.

Severe injuries and material damage can result from:

- Improper use
- Incorrect installation or operation
- Unauthorized removal of the required safety covers or the housing
- Unauthorized opening of the appliance during operation

2.21 Impairment of safety

If for any reason it can be assumed that safety is impaired, take the appliance out of operation and affix a “Do not use” sign so that it is not inadvertently put into operation by others. Customer service must be notified as well.

Safety can be impaired, for example, if the appliance does not operate as specified or shows visible signs of damage.

2.22 Safety instructions

The appliance must only be operated with a correctly designed grounding conductor.

2.30 Spare parts

If assemblies or components are replaced, use only identical assemblies or components.

2.40 Transport/storage

Damage detected after delivery must be reported to the transport company immediately. Take measures to prevent the possibility of operating the appliance, if necessary. Only store the appliance in a dry, dust-free environment at temperatures between 0 and 60°C.

2.50 Electrical connection

Work may only be carried out if:

- The electrical system has been de-energized and is safeguarded against being switched on again unintentionally
- The de-energized status has been verified
- You have ensured that additional monitoring and protective devices provided for operation of this controller are correctly installed

When establishing connections, ensure compliance with the applicable standards and regulations.

2.60 Operation

If there are deviations from normal operation or if in doubt, take the device out of operation and affix a “Do not use” sign so that it is not inadvertently placed into operation by others. Customer service must be notified as well.

2.70 Service

All information in the operating manual concerning service tasks must be strictly complied with.

3.00 Intended use

Selbach beverage cooling and dispensing systems are suitable for serving cooled beverages.
These systems are used in restaurants and leisure facilities.
Selbach cooling appliances are approved only for the above application and therefore are not suitable for cooling hot liquids, chemicals etc.

4.00 Functionality

Carbonator with and without still water

The carbonator essentially consists of the circulation pump[2], the carbonator barrel with CO_2 and the water inlet, as well as the CO_2 water outlet. A level-controlled high-pressure pump with low water protection and high pressure protection provides the necessary water injection. The water inlet and the CO_2 inlet[2] are monitored by pressure controls. If the pressure drops below the set level, warning lamps light up[2] and the machine switches off.

The supply of CO_2 is controlled by the main pressure reducer and it should be set to the required pressure. Both inputs are secured by check valves.

The high-pressure pump that generates the necessary water presure of 12 bar is controlled by the level regulation in the carbonator barrel. There is a solenoid valve upstream of the carbonator barrel that is connected in parallel with the pump motor to prevent the carbonator chamber filling up when there is no CO_2. Inside the carbonator barrel, the water is swirled and CO_2 is added to it.

[1] Not for the warm carbonator, CT 60 and CT 30
[2] Only for the circuit carbonator

4.10 Safety functions

- This appliance has been designed and built in accordance with the present state of the technology. If the appliance is used in accordance with the instructions in this operating manual it is operationally reliable.
- Never remove or modify any safety devices, or render them inoperable.
- Ensure that only authorized persons operate the appliance and that operating personnel are trained.
- Ensure that only original spare parts are installed and used.
- Selbach carbonators are protected by multiple safety devices:

Water inlet

Backflow inhibitor:[3]	the backflow inhibitor only allows water to flow towards the pump.
Low water protection:[3]	monitors the minimum pressure of 2 bar flow pressure for the high-pressure pump.
Solenoid valve:	connected in parallel to the pump motor. Prevents the carbonator from filling up when there is no CO_2.
Check valve:	prevents CO_2 water flowing into the MS pump.

CO_2 inlet

Low CO_2 protection:[3]	monitors the minimum pressure of 4 bar.
Check valve:	prevents CO_2 water flowing back.

Carbonator

High pressure protection:	switches the carbonator off at 10 bar (e.g. if the level regulator fails).
Drain valve:	opens automatically at 12 bar.

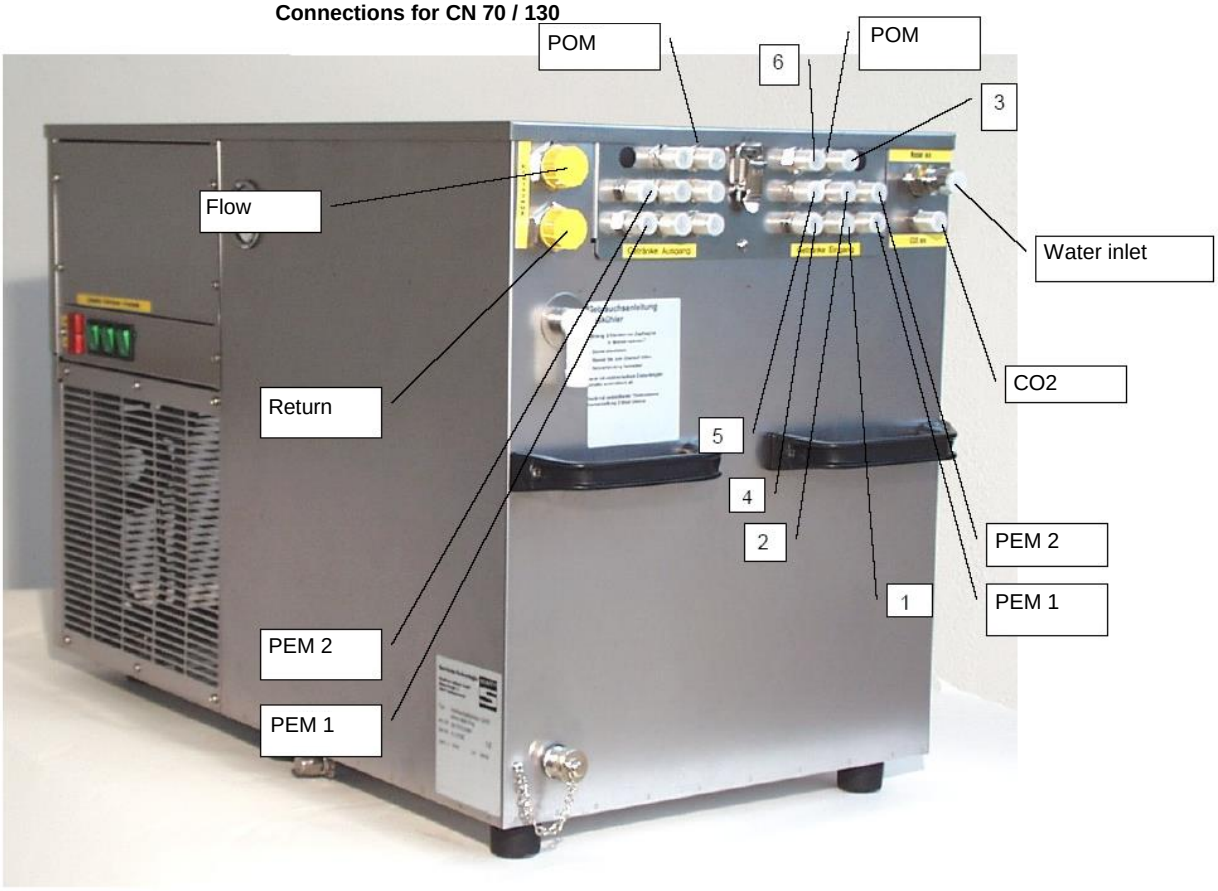
[3] Only for wet circuit carbonator

5.00 Setting up the appliances

To ensure trouble-free function, it is necessary to set up the Selbach appliances on a level substrate.
Make sure that there is sufficient space available to connect the beverage lines. The appliances must always be well ventilated to prevent heat accumulation. Strictly ensure that the appliance is adequately ventilated! The exhaust opening on the rear of the appliance must not be blocked.
If installed in a counter or floor cupboard, make sure that the exhaust can be discharged directly. Insufficient ventilation of the appliances leads to overheating and destruction of the appliance.

Select an installation site where the equipment is protected against wet conditions. Also make sure that the connection cable is not kinked or pinched and goes straight to the socket. The mains plug must be easily accessible at all times. The appliances must only be stored and operated where they are protected against freezing temperatures.

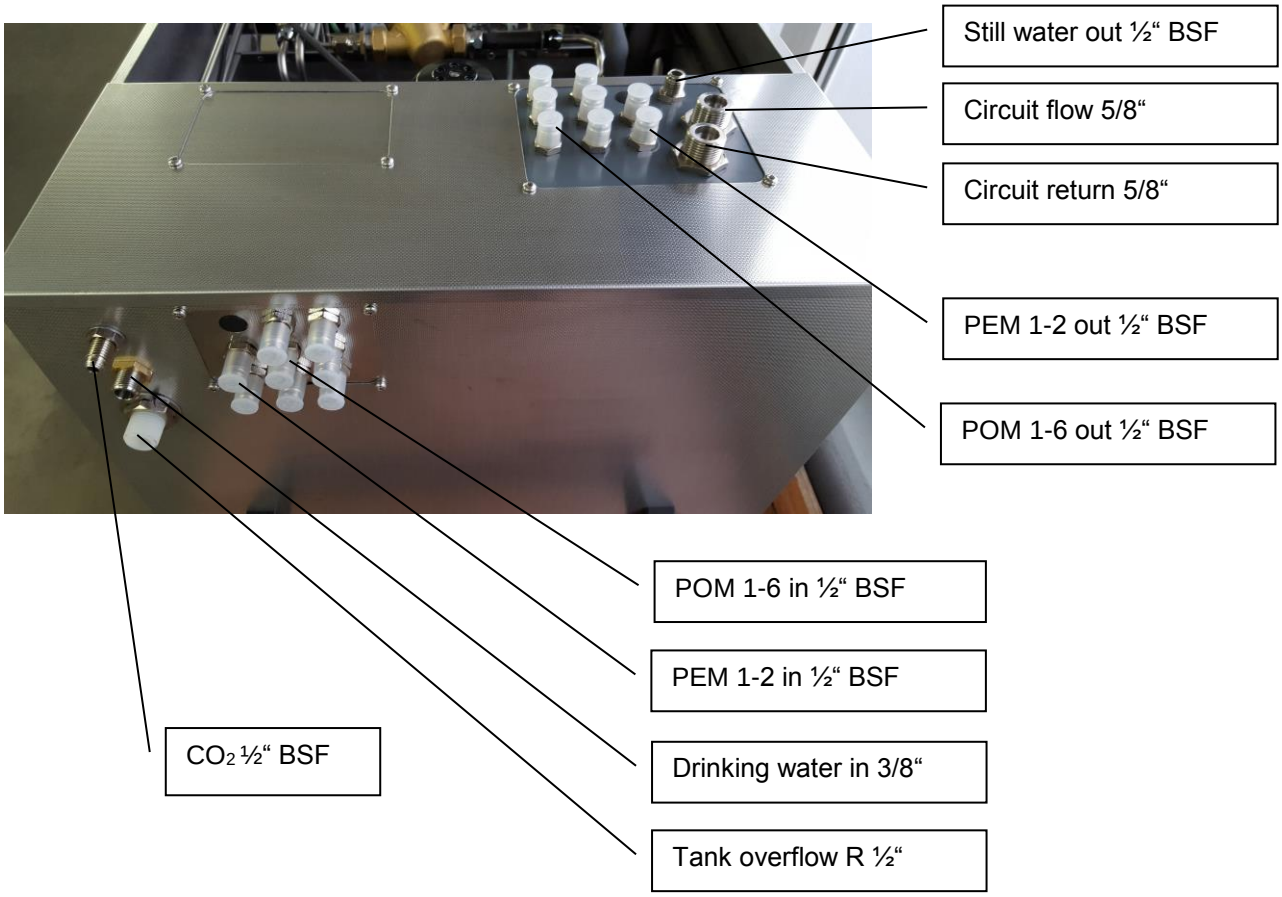
Connections for CN 70 / 130



Connections for CT

Connections for CN 50

Connections for CN 80/160



5.10 Connection conditions

Electrical connection: 220–240 V 50 Hz
Water connection: drinking water supply with 2.5 bar flow pressure. We recommend using a water filter and a water pressure regulator with an inspection gauge. A backflow inhibitor in the EB design that has been tested as per DIN EN 13959 must be provided in accordance with the DIN EN 1717 safeguard concept.

Only connect to drinking water! Note the applicable drinking water regulations.

Turn off the water when the appliance is not in operation!

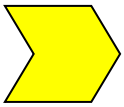
5.20 Disposal

For the most part, Selbach appliances are made of VA 1.4301 / 1.4016 / ST 12-ZE and consequently for the most part they can be recycled. Refrigeration components can be easily disposed of through well-known recycling companies. The appliances are insulated CFC-free.

[4] Not for warm carbonators

6.00 Maintenance

Maintenance must only be performed by specialized personnel!



Never operate the appliance with the housing open!

7.00 Initial start-up

1) Remove cover and fill tank with water to just under the overflow level.[5]
2) Connect the beverage lines, water line and gas line in accordance with the labeling and check for leaks.
3) Connect to the mains.
4) Set the CO_2 supply on the canister pressure reducer to the required flow pressure of 4 bar. Set the water inlet on the external pressure reducer to 2.5 bar flow pressure.
5) If you are using still water products, the still water module needs to be activated.

The level regulation automatically controls the CO_2 water treatment in the carbonator.

For cooling appliances:
Once the operating temperature (thermostat operation) is reached or once the ice bank is complete (ice bank regulator), the appliance is ready for use.

A filter system should be provided for the mains water.

7.10 Description of the activation devices

There are off-switches with indicator lamps on the side wall of the Selbach carbonators. These switches can be used to switch the high-pressure and circulation pumps and, in the case of CN appliances, the refrigeration circuit.

[5] Only for wet appliance
[6] Not for warm carbonator

8.0 Troubleshooting

Fault	Possible cause	Troubleshooting
The appliance does not start up	No mains connection	Connect to the mains
	Water pressure too low	Set pressure to at least 2.5 bar
	Pump stutters (water shortage)	Set water pressure to at least 2.5 bar
The appliance does not cool	No water in the tank (only for wet appliances)	Top up water
	Thermostat switched off[7]	Switch on thermostat
	Thermostat not switching on[7]	Replace thermostat[8]
	Soiling of the condenser[7]	Carefully clean the condenser
	Failure of the condenser fan[7]	Replace fan[8]
	Leaks in the refrigerant system[7]	Repair leak, evacuate the system and fill with refrigerant[9]
	Compressor fault[7]	Replace compressor[9]
Appliance does not switch off	Thermostat or ice bank regulator faulty[7]	Replace thermostat or ice bank regulator[8]
	Level regulator faulty	Replace level regulator
	Electrode connection interrupted	Repair connection, replace electrodes
Appliance freezing up	Thermostat or ice bank regulator faulty[7]	Replace thermostat or ice bank regulator[8]

[7] Not for warm carbonator
[8] Only have qualified electricians perform these tasks.
[9] Only have a refrigeration specialist perform these tasks.

9.00 Maintenance tasks

Clean the condenser vanes at regular intervals with a brush or compressed air and remove airborne dust.

For wet appliances:
Check the water level in the tank at regular intervals.

Replace the filter cartridges at regular intervals in accordance with the manufacturer's specifications.

10.00 Taking the appliance out of operation

1) Pull out mains plug

2) Shut off the CO_2 supply

3) For systems with plug-in connectors:
   Disconnect beverage connectors from the beverage tank

   For systems without plug-in connectors:
   Close the beverage shut-off valves

4) Open taps until pressure equalises

5) Remove the beverage lines

6) For wet appliances:
   Drain the water from the tank

11.00 Hygienic operation

Carbonators must be used on a regular basis. Bacteria can grow in stagnant water, especially at points that are not refrigerated, and impair the hygiene of the appliance. Make sure that all the products served from the appliance are dispensed several times a day. If the appliance is out of use for more than 24 hours (e.g. over a weekend), it must be rinsed by dispensing at least 2 litres of the products served. If the appliance is not used for more than a week, it must be chemically cleaned.
See items 11.00 and 11.10.

11.00 Cleaning

Housing:
Before cleaning the equipment, disconnect the mains plug!
Do not bring the appliance into direct contact with water, only clean it with a damp cloth and a little dishwashing detergent.

11.10 Cleaning the dispensing system

The minimum statutory requirements for cleaning of beverage systems are specified in DIN 6650. In this standard cleaning “as needed” is always prescribed. “Needed” is based on discharge, beverage type, dispensing pauses and the type of system.
Where parts of the dispensing system alternately come into contact with beverage and air, germs that are present everywhere in the ambient air can multiply. Therefore, it is necessary to keep these areas of the dispensing system clean by cleaning them daily (especially the tap and the drip tray). It is not possible to keep the dispensing system entirely free of germs during operation. However, regular and thorough cleaning can prevent germs from multiplying, which will have a negative effect on product quality (odor and flavor) of the product, and turbidity will occur. Of course, the area around the dispensing system must also be kept clean.

Getränke Technologie

Friedhelm Selbach GmbH
Heisenbergstraße 5
42477 Radevormwald, Germany

Phone 0 21 95 / 68 01-0
Fax 0 21 95 / 68 01-188
Email info@selbach.com
Internet http://www.selbach.com