Please keep these operating instructions in a safe place.

Dear Customer:

Check this product for visible damage immediately upon receipt. Inform the shipper if there is any shipping damage. Note that damage resulting from improper handling or operation is not covered under the warranty.

Before putting the device into operation:
Read all the operating instructions carefully.
Familiarize yourself with all controls.
Ask the service company installing the device to write its address down here for any subsequent repairs, emergencies, etc.

Address of your technical service company:

Name: .....

City: .....

Street address: .....

Telephone: .....

Contact person: .....

Table of Contents

1. Introduction

Our foremost aim is to produce a quality product. If you should encounter any difficulty which these operating instructions do not help you with, call or write us. We will be glad to be of assistance. If you write, please include the model and serial number of the device.

Our address:

IMI Cornelius Deutschland GmbH
Carl-Leverkus-Strasse 15
D-40764 Langenfeld, Germany
Tel. 0(xx49) 2173 793-0
Fax: 0(2173) 2173 77438

2. Safety Regulations

2.1 General Safety Regulations

This device is of leading-edge design and manufacture. If used and maintained in accordance with these operating instructions, it will be safe to operate. Please comply with the following safety instructions to avoid hazards and damage.

The device must be in satisfactory condition whenever operated. Any modifications which detrimentally affect the safety of the device are therefore strictly prohibited. Please contact your service company if you wish to obtain more information about safety.

No safety equipment (such as safety valves, overload protection devices, etc.) is to be removed, modified or put out of commission (risk of injury or death!).

Take care that only authorized persons work on the device and that the operators are trained. Make certain that no unauthorized persons change the settings on the device or tamper with it.

You are obligated to check the device on a daily basis for externally discernible damage and defects. Immediately report modifications which affect safety and function to the service company nearest you.

Note that only original CORNELIUS replacement parts and accessories which have been checked and approved are to be used. IMI Cornelius Deutschland GmbH assumes no liability whatsoever for damage resulting from the use of non-original parts and accessories or from improper handling.

2.2 Safety Instructions Electricity

An electric shock may be fatal or result in serious injury. For this reason, any unauthorized tampering is strictly prohibited. Water and electricity are a fatal mixture.

Always pull out the mains plug before any cleaning work on or near the device. As delivered, it features a moulded earthing-pin plug and it must be connected to a socket outlet with an earthing contact. If no appropriate socket outlet with an earthing contact is available, the connection must be made by authorized persons only, with the regulations applicable at the installation site (VDE standards in Germany, for example) being observed.

2.3 Safety Instructions CO_2

Place the carbon dioxide cylinder in an upright position next to the workstation and secure it against falling over. Protect it against heat (e.g., against sunshine). Minimum distance from heater 0.5 m (TRSK).

Escaping carbon dioxide is heavier than air and may present danger of suffocation if large quantities collect in enclosed spaces. Remember that parts of the device are at operating pressure. Do not loosen or dismantle any components at operating pressure.

3. Installation Requirements

3.1 Installation Sites

Comply with the valid national regulations for installation sites and electrical connections. Ventilation of the installation sites must be appropriate for device output. Inadequate ventilation of the device will result in its overheating and being destroyed. Always make certain that no intake or discharge vents are covered.

	PC 5 SC	PC 7 SC	PC 9 SC
Heat output in watts	610	1120	1620
Air flow in m^3/hour	200	400	500

3.2 Electrical Connections

A socket outlet with an earthing contact featuring a maximum protection of 16 amps is required.

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

	PC 5 SC	PC 7 SC	PC 9 SC
Power consumption in watts	330	790	940

4. Installation

The device must be installed by a trained service technician
Please take care, that the socket for the unit is always accessible.
There is no user serviceable items inside the equipment.
If the power supply cable to the unit is damaged, it has to be replaced by the manufacturer, the service partner or an other qualified person to avoid maintenance.

4.1 Water Connection

Connecting only to drinkable water.
Connect the device to a feed line with an inner diameter of 10 mm. We recommend use of a water filter and a water pressure regulator for the water input. To permit flushing of the filter, a T-piece should be mounted downstream of the water pressure regulator. The water flow pressure should be 3 bar (mount control pressure gauge on water pressure regulator).

4.2 CO_2 Connection

You will require a single-wire pressure regulator 7 bar for the CR5 SC 2 POM or a two-wire pressure regulator, 7 bar for the others. Using tubing with an inner diameter of 4 mm, connect the pressure regulator to the unit. Set the CO_2 pressure to 3,5 to 4,5 bar.

4.3 Connecting Soda Water and Premix/Postmix Syrup

Connect one tube with an inner diameter of 6 mm to each device connection. Connect the tube end to the correct cooling coil inputs or the correct BIB pump of the soda circuit carbonator.

5. Putting into and out of Service

5.1 Putting into Service

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: Gray = CO_2, black = beverage / syrup.
Open the cylinder globe valve on the CO_2 cylinder and the globe valve on the pressure regulator. Check the CO_2 pressure at the pressure regulator. It should be within the following standard values:

Syrup:	3.5 to 4.0 bar
CO_2 carbonization pressure:	3.5 to 4.5 bar
Light product:	0.5 to 1.0 bar
Drinking water:	4.0 to 4.5 bar

Set the CO_2 pressure by turning the control screw:
Clockwise to increase the pressure
Counter-clockwise to reduce the pressure
Afterwards check the CO_2 lines for leaks by closing the CO_2 globe valve. The admission pressure displayed at the pressure regulator should not drop. If it does, notify the service technician immediately. Do not forget to re-open the

CO_2 globe valve after the check.
Open the water feed line and check the flow pressure in it. Standard value: 2.0 to 3.0 bar. Set it at the control screw on the water pressure regulator:
Clockwise to increase the pressure
Counter-clockwise to reduce the pressure

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

Close the water feed line. The pressure displayed should not drop. If it does, notify the service technician immediately. Afterwards, re-open the water feed line.

5.2 Turning On the Device

The water bath must be filled to overflowing with tap water. Refer to the technical data for the amount required. 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.

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

Ice bank controlled units start working after the water bath fills with water and switch off automatically after the ice bank is built up. The control board of the unit has a time delay for switching on and off the cooling sytem, when it runs in ice bank mode. After the cooling system is switched on the running time is not less then 5 minutes. Switch off signals will be ignored during this time. After the cooling system is switched off the break time is not less then 3 minutes. Switch on signals will be ignored in this time. The break time of 3 to 5 minutes is valid for turning on the device and after a break down of the power supply.
This unit contains a 3-pin icebank probe. Take care that the probe is always correctly adjusted. Wrongly adjusted probes can be adjusted by using the adjusting device 22-0055-X99.

The agitator motor in the PC 7 SC and PC 9 SC is a closed version. Temperatures up to 80°C are normal.

The carbonator pump switches on automatically and fills the carbonator container. The carbonator pump switches off when the water has reached its highest level in the carbonator container but after no more than 20 minutes (5 minutes for PC 5 SC) . Long run periods are signs of leaks or insufficient water. It is then only possible to turn the pump back on by executing a network reset (pulling out the mains plug briefly).
The circulation pump has to be switch on manual by using the switch at the leval control board. (not PC 5 SC)
Release air from the carbonator container by pulling the safety valve for about 2 to 4 seconds.

5.3 End of Operation

It is imperative that the CO_2 cylinder and water line be turned off each time operation is ended.

5.4 Daily Inspection

Check whether carbon dioxide and water lines are open. Working with closed water feed lines results in draining of the python and the carbonator container. The air must then be carefully bled from the python by opening the soda water tap, as the circulation pump will not move the water otherwise.

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

Check the CO_2 lines for leaks by closing valve on the CO_2 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 CO_2 cylinder valve afterwards.

5.5 Putting out of Service

Perform the following steps in case of extended standstill periods:
Close the CO_2 cylinder, the CO_2 stopcocks on pressure regulators and the water feed line.
Pull the mains plug out of socket outlet with earthing contact.
Detach the couplings from beverage containers.
Have the device cleaned and emptied.
Only trained specialists are carry out this procedure.

6. Instructions for Cleaning

Comply with the national regulations for cleaning bar equipment which are valid 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, the mouth of the tap for example, on a daily basis.

The risk of serious etching exists when handling liquid cleaners. Always wear safety glasses and appropriate clothing during cleaning jobs. Follow the instructions of the cleaner manufacturer.

The liquefier louvres must be cleaned at regular intervals which vary according to the amount of contamination at the erection site (approximately every three months). This is best done with a brush and a vacuum cleaner.

The level of 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.

The device is to be cleaned and emptied by trained specialists only on the basis of the following recommendations:

To be cleaned by trained personnel	CO_2 lines	Beverage lines	Syrup lines	Soda water lines
Before commissioning		X	X	X
Before each change of type of beverage		X	X	
Before and after a pause		X	X	
Every 2 weeks		X		
Every 3 months			X	X
Every 12 months	X			

7. Problems and Troubleshooting

Before looking for problems with the dispensing equipment, first check:
Is the flow of electricity to the device interrupted?
Is the flow of water to the device interrupted?
Are the beverage containers empty?
Is the CO_2 cylinder empty?

Type of problem	Cause	Remedy
Beverage too warm, compressor running	Condenser dirty or covered. Too much beverage being removed	Use brush to clean condenser between louvres. Note out-put capacity
Beverage too warm, compressor not running	Compressor not turned on.	Turn compressor on, otherwise call service technician
Beverage foams at a tap	Syrup stored too long and enriched with CO_2	Connect container with fresh basic material (not BIB)
Beverage foams at all taps	CO_2 pressure too high All syrups enriched with CO_2 All beverages too warm	Set pressure (not BIB) Connect container with fresh basic materials.(not BIB) Check storage temperature See “Beverage too warm ...”
Tap just outputs concentrate	Carbonator pump is not running	Check if water feed line is open Check water flow pressure of 3bar 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 Globe valve on CO_2 cylinder closed Stopcock on pressure regulator closed CO_2 pressure too low Water temperature too high	Bleed air Watch output capacity Change CO_2 cyl. Open globe valve Open stopcock Adjust pressure Adjust to lower temperature
Too much or not enough syrup in the beverage	Regulator in tap is clamping Delivery pressure for syrup too low or too high	Call service technician Adjust CO_2 pressure

8. Technical Datas

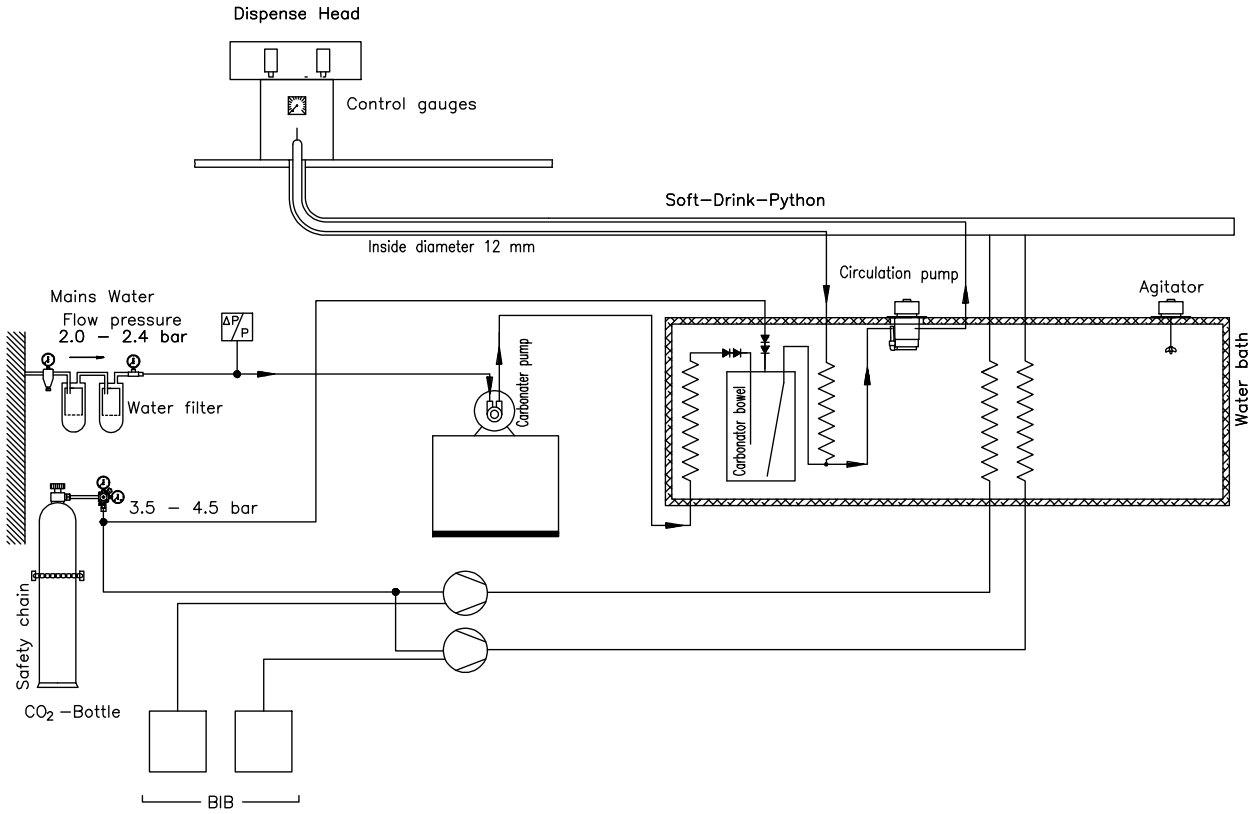
	PC 5 SC	PC 7 SC	PC 9 SC
Output capacity at a tap rate of 2 drinks of 0.3 L each per minute	105	320	-
tap rate of 4 drinks of 0.3 L each per minute	-	216	600
Weight of ice bank in kg	5	9	18
Ice bank performance in kcal	400	720	1440
Ice build up in minutes without python	97	157	145
Refrigerant R134 a in kg	0,200	0,240	0,330
Supply voltage		230 V / 50 Hz	
Power consumption in watts	330	790	940
Compressor output in watts (hp)	261 (1/5)	395 (1/3)	684 (2/3)
Carbonator pump output in L / hour at 10 bar	120 (at 6 bar)	280	280
Circulation pump	SR1	SR4	SR4
Pythen lenght in m	max.5	max. 25	max. 50
Cooling / ice bank performance in watts	281	329	678
in Kcal	242	283	583
Number of cooling coils	2 POM / 5 POM		
Syrup	2 / 5	5	5
Dimensions in mm			
Height	450	580	595
Width	340	585	780
Depth	540	385	435
Shipping weight in kg	35	48	85

* at -10°C evaporation temperature
** with 10 m SC python

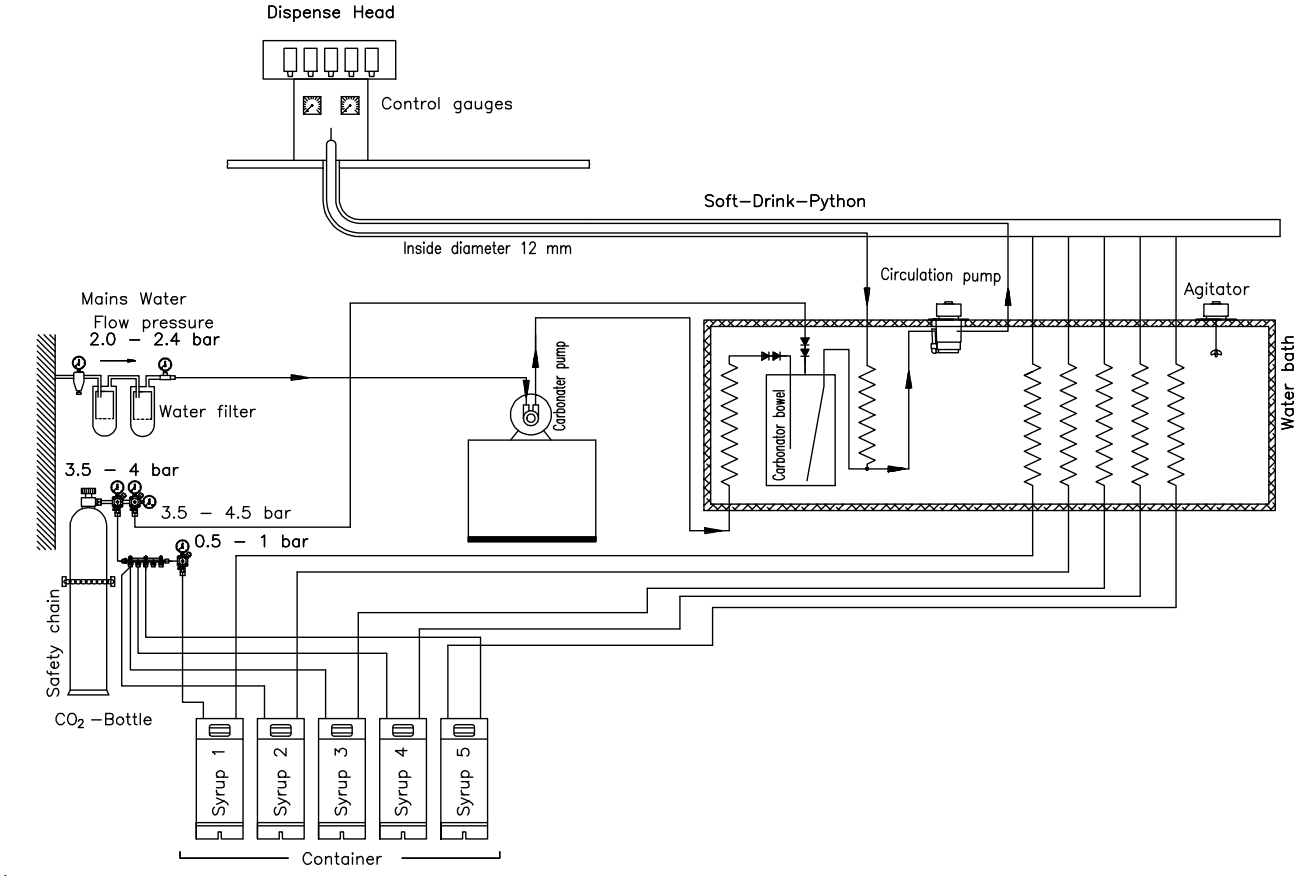
Cooling capacities and output capacity at 24°C ambient temperatures, and water or syrup inlet temperatures of 18°C and beverage outlet temperatures of less than 5°C.
If using Cornelius pythons, a energie loss of 13 kcal/hour per meter must be observed in calculations.
We reserve the right to make modifications.

9. Flow Chart

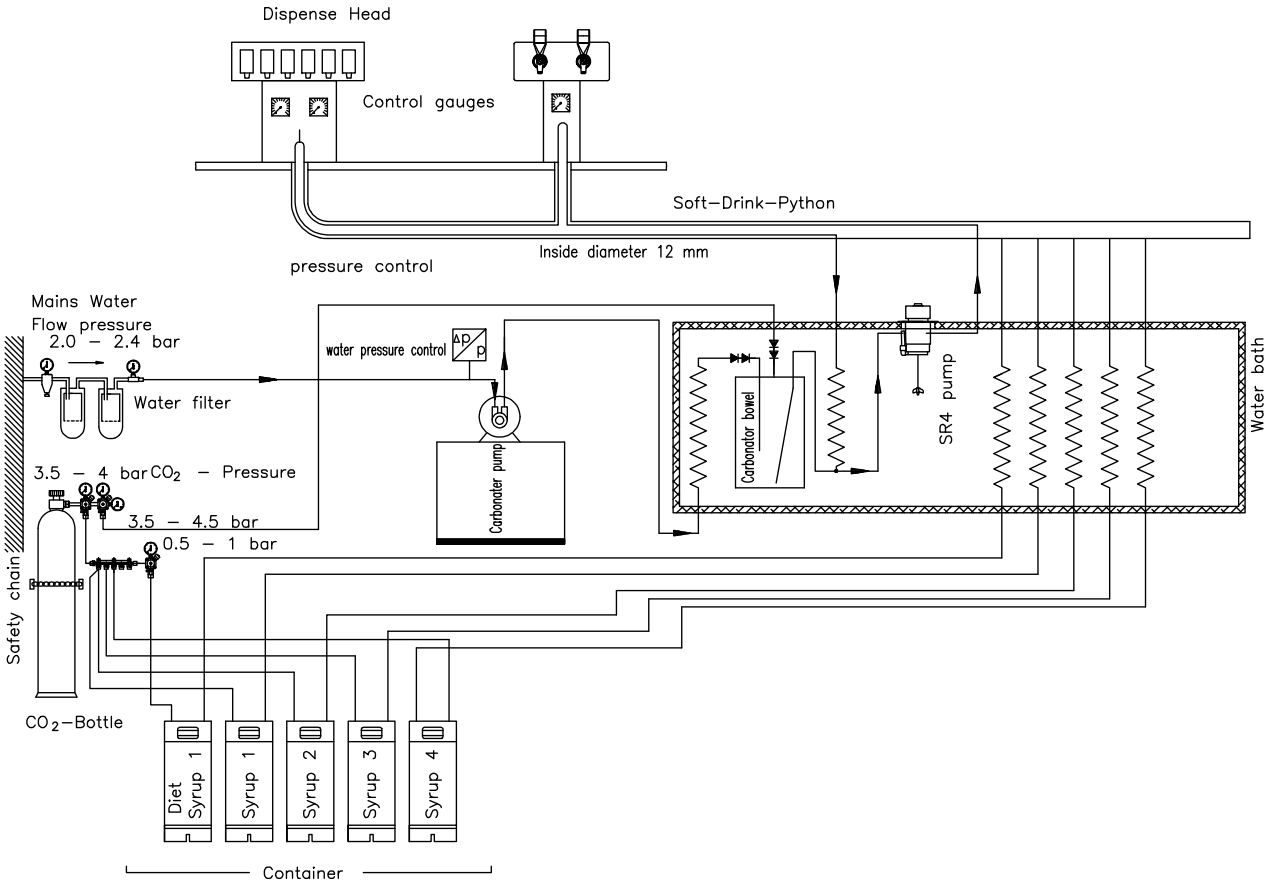
9.1 Flow Chart of PC 5 SC 2 POM



9.2 Flow Chart of PC 5 SC 5 POM

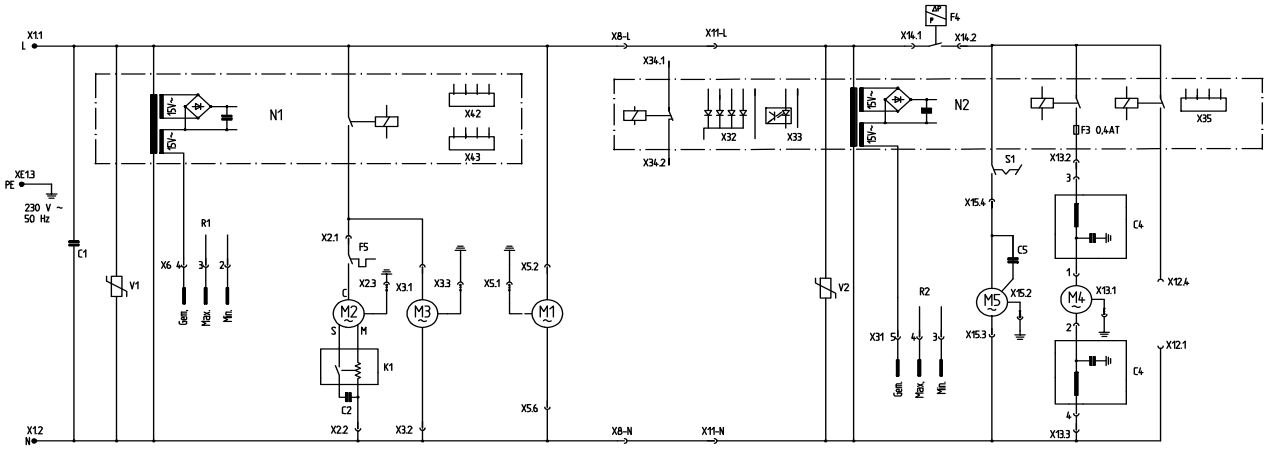


9.3 Flow Chart of PC 7 SC and PC 9 SC



10. Circuit Diagram

10.1 Circuit diagram PC 5 SC 2 POM



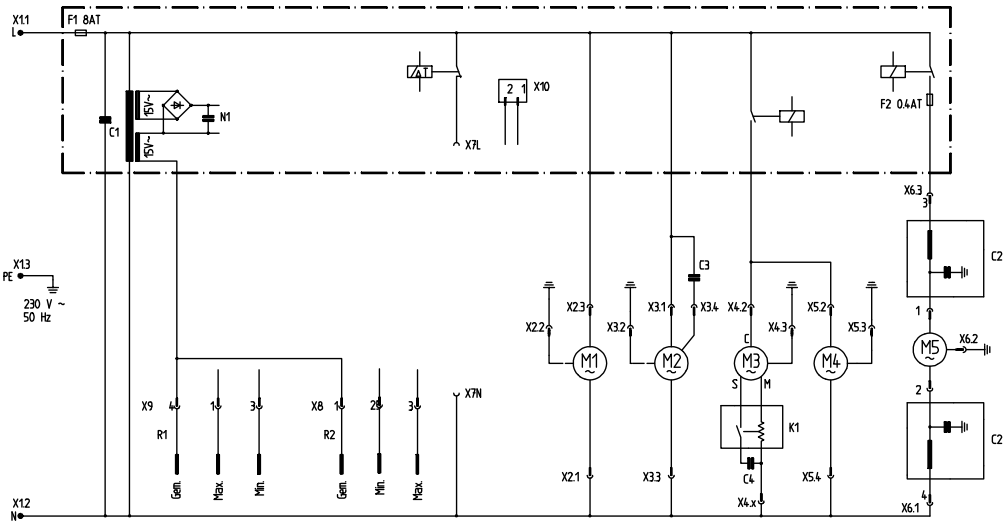
C1 Interference capacitor
C2 Start capacitor
C4 Interference filter
C5 Working capacitor
F3 Fuse 0,4AT
F4 Pressure control water inlet
F5 Overload protection
K1 Start relais
M1 Motor agitator
M2 Compressor
M3 Fan motor
M4 Motor Carbonator pump
M5 Motor Recirculation pump

N1 Icebank control
N2 Level control
R1 Icebank probe
R2 Level probe
V1 Varistor S14 K275
V2 Varistor S14 K275
X1 Plug power-in
X2 Plug compressor
X3 Plug fan motor

X5 Plug agitator motor
X6 Plug icebank probe
X8 Plug icebank control
X11 Plug Level control
X12 Plug solenoid valve
X13 Plug carbonator pump
X14 Plug pressure control water inlet
X15 Plug recirculation pump
X31 Plug level probe
X32 Terminal Block (Stillwater Steering)

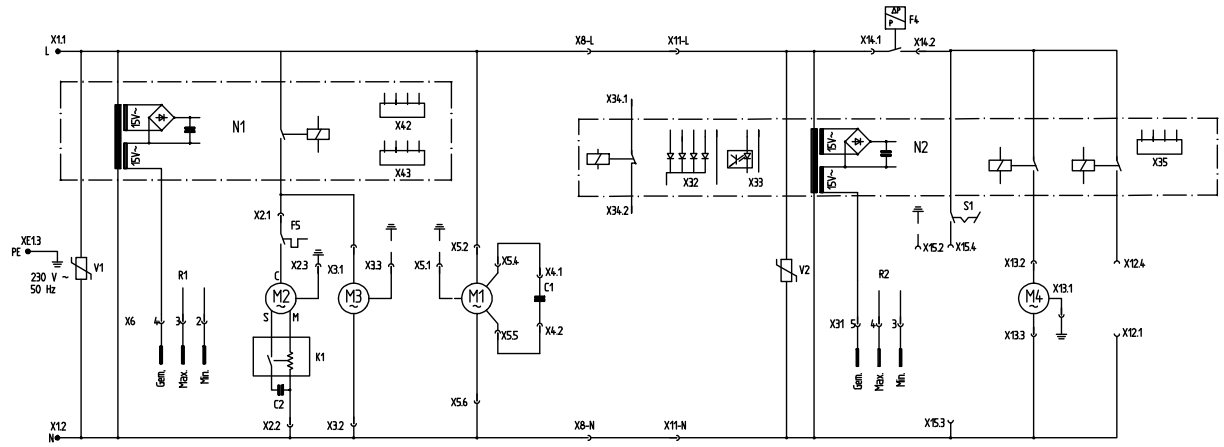
X33 Terminal Block (Stillwater Steering Mechanic)
X34 Plug solenoid switch off
X35 Plug Data Chip Leval
X42 Plug Temperature Display
X43 Plug Data Chip Ice bank

10.2 Circuit diagram PC 5 SC 5 POM



C1 Interference capacitor
C2 Interference filter
C3 Working capacitor
C4 Starter capacitor
F1 Fuse 8AT
F2 Fuse 0,4AT
K1 Start relais
M1 Agitator
M2 Circulation pump
M3 Compressor
M4 Fan motor
M5 Carbonator pump
N1 Ice bank leval control
R1 Level probe
R2 Ice bank probe
X1 Plug power-in
X2 Plug agitator
X3 Plug circulation pump
X4 Plug compressor
X5 Plug fan motor
X6 Plug carbonator pump
X7 Plug transformer
X8 Plug ice bank probe
X9 Plug level probe
X10 Terminal Block (Stillwater Steering)

10.3 Circuit diagram PC 7 SC and PC 9 SC



C1 Working capacitor
C2 Starter capacitor
F4 Pressure control water inlet
F5 Overload Protection
K1 Start relais
M1 Motor SR 4-pump
M2 Compressor
M3 Fan motor
M4 Carbonator pump

N1 Icebank control
N2 Level control
R1 Icebank probe
R2 Level probe
V1 Varistor S14 K275
V2 Varistor S14 K275
X1 Plug power-in
X2 Plug compressor

X3 Plug fan motor
X4 Plug working capacitor
X5 Plug motor SR4-pump
X6 Plug icebank probe
X8 Plug icebank control
X11 Plug Level control
X12 Plug solenoid valve
X13 Plug carbonator pump
X14 Plug pressure control water inlet

X31 Plug level probe
X32 Terminal Block (Stillwater Steering)
X33 Terminal Block (Stillwater Steering Mechanic)
X34 Plug solenoid switch off
X35 Plug Data Chip Leval
X42 Plug Temperature Display
X43 Plug Data Chip Ice bank

11. Installation Check List

You can use this check list to review the installation of the device. Fill out the check list and keep it with the operating instructions.

Part number of the device:	_____	
Serial number of the device:	_____	
Installation site:	_____	
Installation date:	_____	
Installed by:	_____	
Settings:	**Target**	**Actual**
Water flow pressure:	2 bar	____ bar
CO2 pressure:	3.5 to 4.5 bar	____ bar
CO2 volume at 4°C:	4.0% by vol.	____ % by vol
Carbonator filling time:	approx 8 sec	____ sec