Triton 100 / 350

(100V 50-60Hz)

Operating Instructions

14 1888 181 - 09/03 - Version C

Triton 100 / 350

(100V 50-60Hz)

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.
For further claims please refer to our conditions of sale and conditions of payment.

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: .....

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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.

The unit is filled by the service technician with water and adjusted to temperature or ice bank mode.
The operator must not open the unit.

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.

The mains connection is connection form Y and must be exchanged by an authorized customer service.

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. Intended use

The Triton soda circuit cooler is designed for cooling non-alcoholic drinks (premix products and their base/syrup). Food suitable CO_2 is used for propellant. The cooling of other drinks or liquids is forbidden.

The inlet temperature of the liquids must not exceed 32°C otherwise the pressure in the refigeration cycle will rise above specification.

The energy exchange from the cooling coil to the drink takes place in a liquid bath with water.
No other liquids are endorsed for use in the liquid bath other than water.

4. Installation Requirements

4.1 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.

	Triton 100	Triton 350
Heat output in watt	650	1200
Air flow in m^3/hour	300	360

[1)] 2/3 HP Version

4.2 Electrical Connections

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

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

	Triton 100	Triton 350
Power consumption in watts	540	1000

5. 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 any other qualified person to avoid safety hazard.

5.1 Water Connection

Connecting only to drinkable water

Connect the device to a feed line with an inner diameter of 10 mm. We recommend using 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 must be minimum 2 bar (mount control pressure gauge on water pressure regulator).

5.2 CO_2-Connection

You will require minimum a stage-wire pressure regulator with 7 bar. Using tubing with an inner diameter of 4 mm, connect the pressure regulator to the carbonator. Set the CO_2-pressure to 3.5 to 4.5 bar.

The unit include a CO_2-pressure switch to switch off the dispensing valves at a CO_2-pressure less than 3 bar.

5.3 Connecting Premix and 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 of the cooler circuit carbonator.

5.4 Connecting Soda Water and Still Water

Connect the soda water to the forward and backward fittings at the Triton. The inside diameter of the tubes should be 13 mm.

The still water has to be connected to the still water outlet of the Triton. The flow pressure is adjusted to 3.2 bar. If nessesary, it can be adapted to the local requirements.

5.5 Power Supply of the Electric Valves

The Triton standard version is equipped with a transformer with 24 Volts~ 100 VA for the electric power supply of the valves in the tower.

For the power supply of the valves these are connected to the connecting bus (X40 for Triton 350 and L1 for Triton 100 at the circuit diagram) at the Tritons inner panel according to the circuit diagram.

In the case of insuficient CO_2-pressure at the carbonator inlet, the power supply to the valves is switched off and buzzer is switched on. In addition to this a lamp, indicating low pressure, can be connected to the connecting bus according to the circuit diagram.

For Triton 350 a complete emptying of the carbonator bowl is prevented by switching off the power supply of the valves in time.The power supply is switched on automaticly after the carbonator bawl has been filled up again.

5.6 Connection of Still Water Control

For still water, one switching cable (1 x 0.75 mm^2) per still water tap must run from the soda circuit carbonator to the still water tap. The electronic control system is actuated via this cable. An additional cable from one of the still water valves is necessery.

6. Putting into and out of Service

6.1 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 valve on the CO_2-cylinder and the 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 at the regulator valve.
Clockwise to increase the pressure.
Counter-clockwise to reduce the pressure.
Afterwards check the CO_2-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 CO_2-valve after the check.

Open the water feed line and check the flow pressure in it (minimum value: 2.0 to 3.0 bar). Set it at the control screw on the water pressure regulator (not contain in the supply schedule).

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

6.2 Turning on the Unit

The water bath must be filled up to ca. 1 cm under the overflow with tap water. Refer to the technical data for the amount required. Make sure when filling that the water is filled in only over the filler neck. Reference: Use for this a suitable funnel. 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 a 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 during this time. The break time of 3 minutes is valid for turning on the device and after a break down of the power supply.

The agitator motor is a closed version.
Attention! Temperatures up to 80°C are normal.

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).

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

At the Triton 350 the circulation pump has to be switch on manual by using the switch at the level control board. In the case off too low water pressure the circulation pump does not start.
At the Triton 150 the circulation pump has be swicht on manual by using the switch at housing of unit.
Attention! Dry running of the circuit pump coursed a demage.

Function of the 3-PIN probe
In the case the carbonator bowl is so emptyed that the empty probe is out of water the electric dispensing valves in the tower is switched off. That prevents CO_2 in the soda water circuit and trouble during dispensing soft drinks.
The dispensing valves are switched on when the carbonator bowl is filled up to the maximum level.

6.3 End of Operation

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

6.4 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. The air must then be carefully bleed 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.

6.5 Putting out of Service

Perform the following steps in case of longer 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 system emptied and cleaned.
Only trained specialists are carry out this procedure.

7. Instructions for Cleaning

Comply with the national regulations for cleaning dispense equippment 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 noozle 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 dirt on the fins (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 by trained specialists only on the basis of the following recommendations:

To be cleaned by trained specialists	CO_2-lines	Beverage-lines	Syrup-lines	Soda water-lines
Before operation		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			

8. Problems and Troubleshooting

Before looking for problems with the dispensing equipment, first check:
Is the 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	Use brush to clean condenser louvres
	Too much beverage being dispensed	Note out-put capacity
Beverage too warm, compressor not running	Compressor defective	Call service technician
	Electric control defective	Call service technician
Beverage foams at a tap	Syrup stored too long and enriched with CO_2	Connect container with fresh product
Beverage foams at all taps	CO_2-pressure too high	Set pressure
	All syrups enriched with CO_2	Connect container with fresh product
	All beverages too warm	Check storage temp 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 2 bar Check whether the carbonator motor is running; if not, call service technician
CO_2-volume in the beverage is too low	Air in carbonator	Bleed air
	Too much beverage being dispensed	Watch output capacity
	CO_2-cylinder empty	Change CO_2-cylinder
	Globe valve on CO_2-cylinder closed	Open globe valve
	Valve on pressure regulator closed	Open valve
	CO_2-pressure too low	Adjust pressure
	Water temperature too high	Adjust to lower temperature
Too much or not enough syrup in the beverage	Regulator in tap is clamping	Call service technician
	Pressure for syrup too low or too high	Adjust CO_2-pressure

9. Technical Data

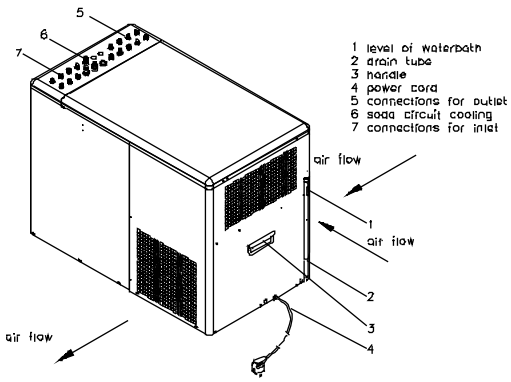
	Triton 100	Triton 350
Output capacity at a dispense rate of 2 drinks of 0.3 liters each per minute**	105	350
Weight of ice bank in kg	5	18
Ice bank performance in kcal	400	1440
Supply voltage	100 V / 50-60 Hz	
Power consumption in watt	350	1000
Compressor output in watt (hp)*	300 (1/5)	395 (60Hz) (1/2)
Refrigerant R134 a in kg	0.200	0.330
Carbonator pump output in liter/hour	120	280
Circulation pump output in liter/hour	135	320
Number of cooling coils		
Syrup	6	6
Premix		1
Drinking water	1	1
Still water	1	1
Dimensions in mm		
Height	450	595
Width	340	780
Depth	540	433
Shipping weight in kg	40	85

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

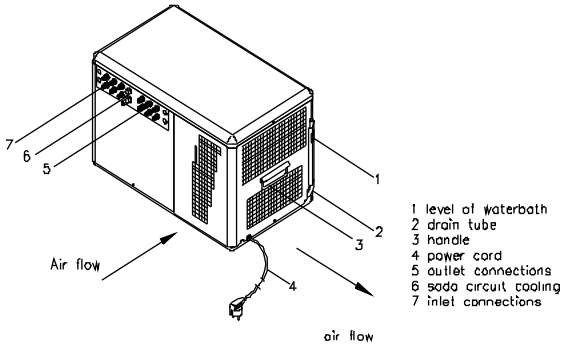
Cooling capacities and output capacity at 24°C ambient temperatures and water or syrup inlet temperatures of 24°C and beverage outlet temperatures of less than 5°C.
When Cornelius pythons are used, a cooling loss of 13 kcal/hour per running meter must be included in calculations.

We reserve the right to make modifications.

10. Illustration of the Triton



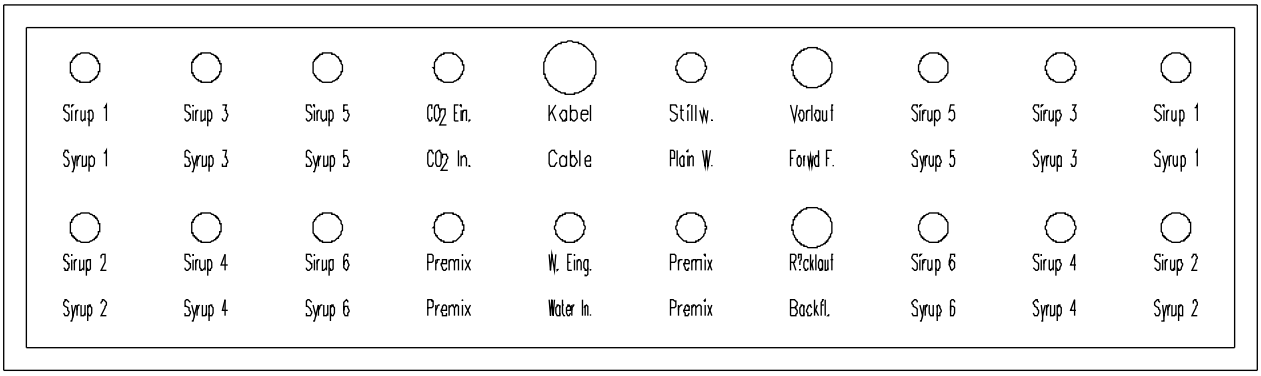
Triton 350



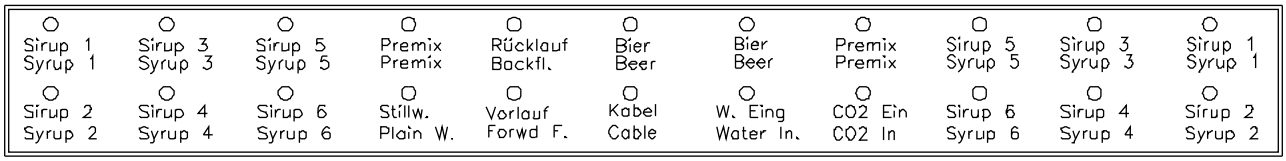
Triton 100

10.1 Connections at the Unit

Triton 100



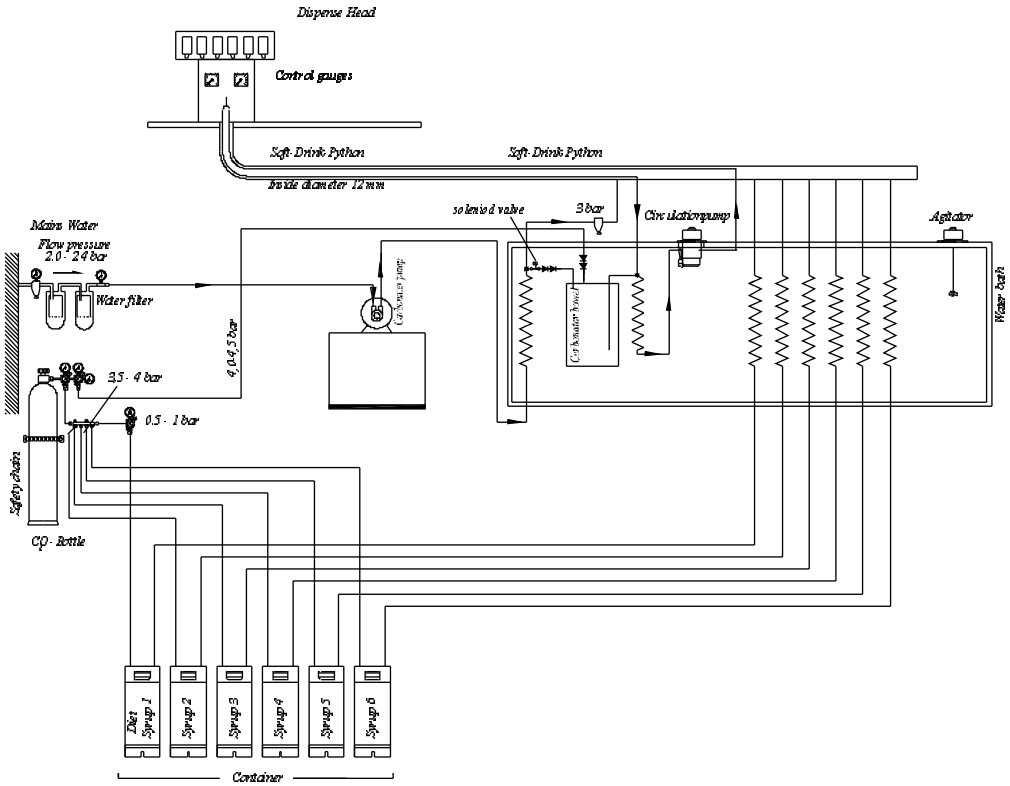
Triton 350



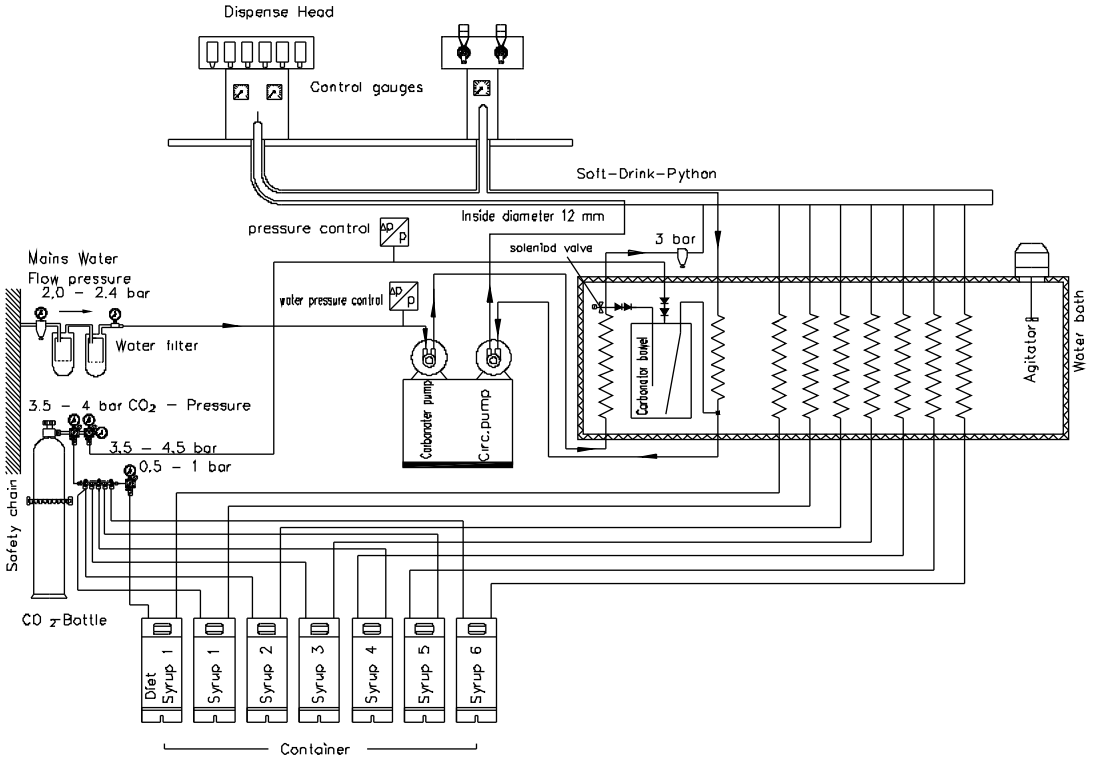
11. Flow Chart and Circuit Diagram

11.1 Flow Chart

Flow Chart Triton 100

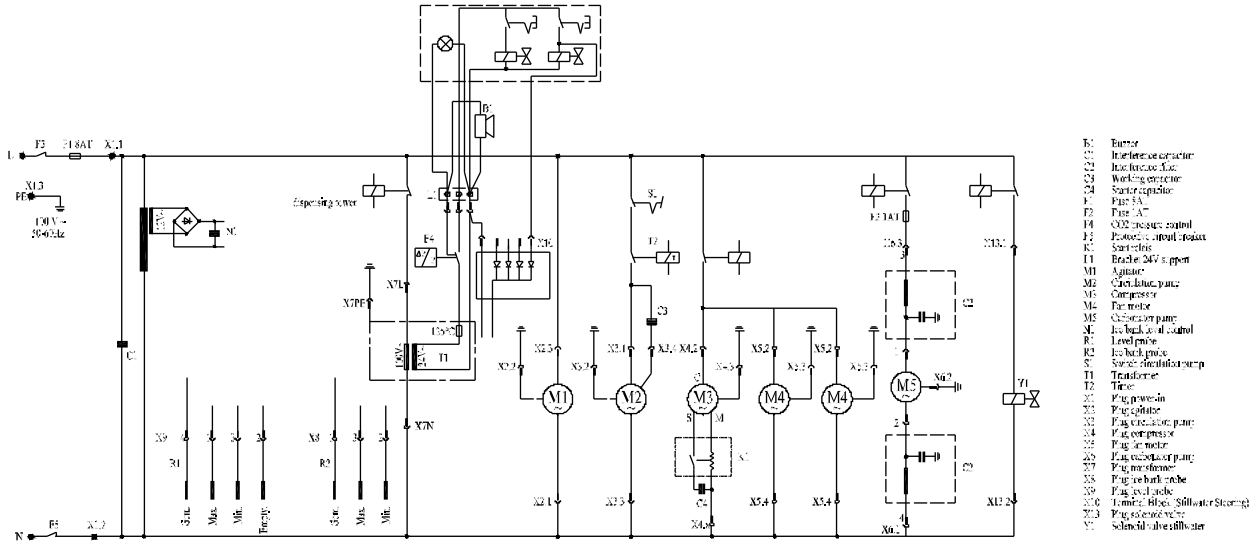


Flow Chart Triton 350

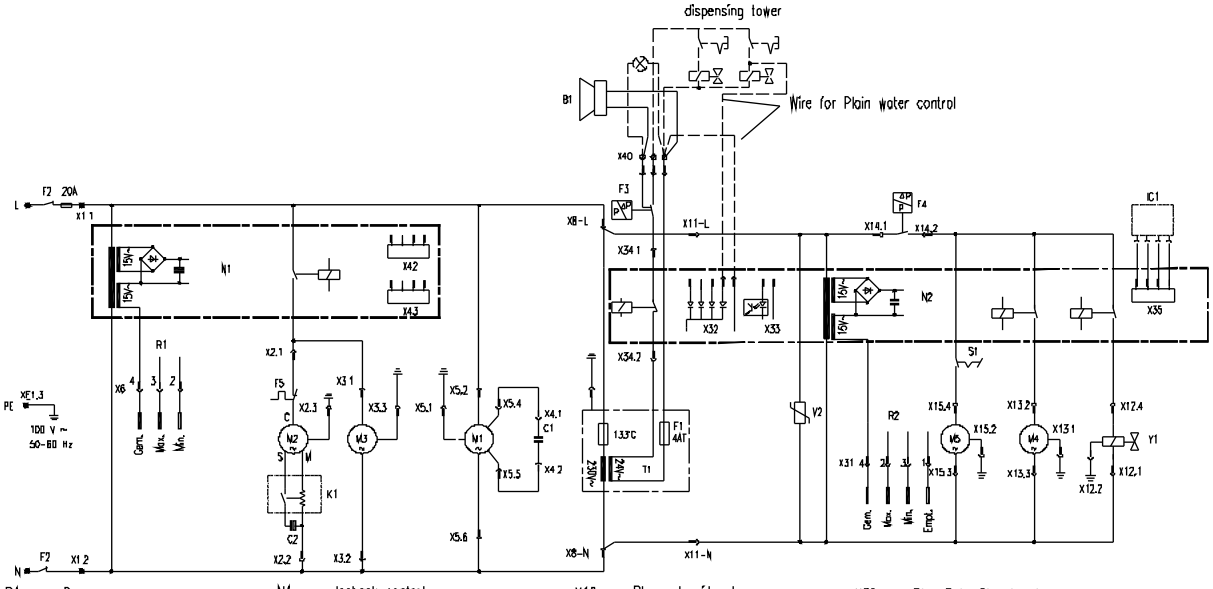


11.2 Circuit Diagram

Circuit Diagram Triton 100



Circuit Diagram Triton 350



B1	Buzzer	N1	Icebank control	X12	Plug solenoid valve	X35	Plug Data Chip Level
C1	Working capacitor	N2	Level control	X13	Plug carbonator pump	X40	Terminal Block (24 V)
C2	Starter capacitor	R1	Icebank probe	X14	Plug pressure control water inlet	X42	Plug Temperature Display
F1	Fuse 4AT	R2	Level probe	X15	Plug recirculation pump	X43	Plug Data Chip Ice bank
F2	protect.circuit breaker+fuse 20A	T1	Transformer	X31	Plug level probe	Y1	Solenoid valve
F3	CO2 pressure control	V2	Varistor S20_K275	X32	Terminal Block (Stillwater Steering)		
F4	Pressure control water inlet	X1	Plug power-in	X33	Terminal Block (Stillwater Steering Mechanic)		
F5	Overload protection	X2	Plug compressor	X34	Plug solenoid switch off		
F6	Pressure switch	X3	Plug fan motor				
IC1	Data Chip	X4	Plug working capacitor				
K1	Start relais	X5	Plug motor agitator				
M1	Motor agitator	X6	Plug icebank probe				
M2	Compressor	X8	Plug icebank control				
M3	Fan motor	X11	Plug Level control				
M4	Motor Carbonator pump						
M5	Motor Recirculation pump						

12. 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
CO_2 -pressure:	3.5 to 4.5 bar	____ bar
CO_2 -volume at 4°C:	4.0% by vol.	____ % by vol.
Carbonator filling time:	about 8 sec	____ sec
CO_2 -pressure switch	3 bar	____ bar
Stillwater pressure switch	3.2 bar	____ bar
pressure switch stillwatercontrol	4.2 bar	____ bar