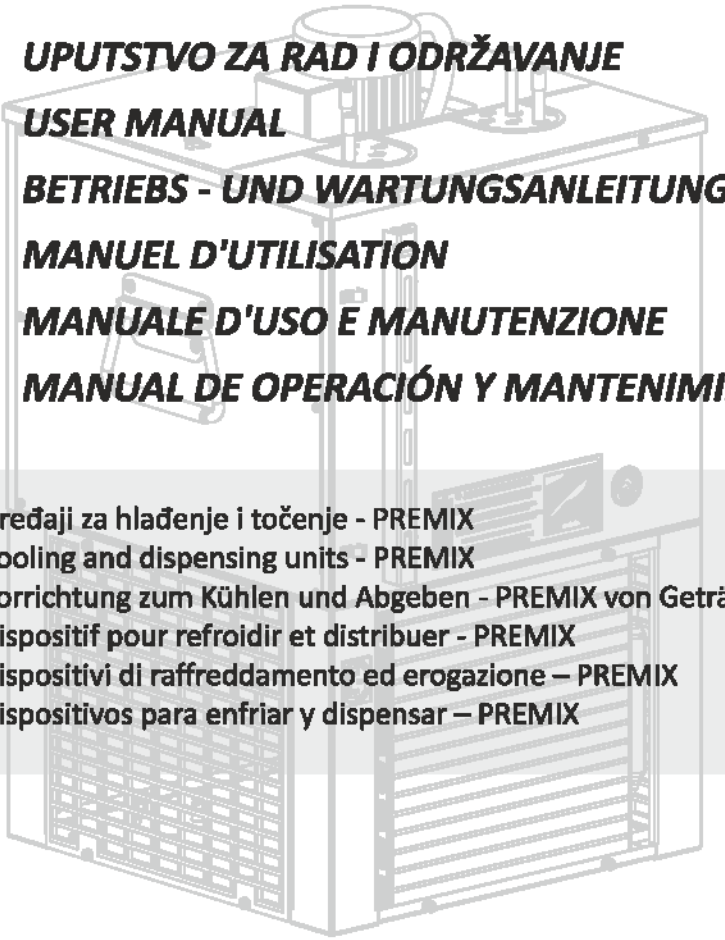
OPREMA d.d.

HR UPUTSTVO ZA RAD I ODRŽAVANJE
EN USER MANUAL
DE BETRIEBS - UND WARTUNGSANLEITUNG
FR MANUEL D'UTILISATION
IT MANUALE D'USO E MANUTENZIONE
ES MANUAL DE OPERACIÓN Y MANTENIMIENTO



Uređaji za hlađenje i točenje - PREMIX
Cooling and dispensing units - PREMIX
Vorrichtung zum Kühlen und Abgeben - PREMIX von Getränken
Dispositif pour refroidir et distribuer - PREMIX
Dispositivi di raffreddamento ed erogazione – PREMIX
Dispositivos para enfriar y dispensar – PREMIX

Code 399038

Original instructions v1.2 (06/2020)

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Catering equipment

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SIGNS USED IN MANUAL

Danger	**Points out on existing, direct danger for life or serious injuries for user and generally persons in the area, great attention needed and work with caution.**
Warning	**Points on existing on or around cooling unit, of potential risk of serious injury for user and generally persons in the area, great attention needed and work with caution.**
Danger	**Points out that cooling unit is under voltage. Always unplug cooling unit from electrical installation before any work on it to prevent damages and injuries.**
Danger	**Points out that cooling unit is filled with refrigerant R290, with high degree of ecological compatibility but also flammable.**
Notes	**Contains information that helps assure correct performance of cooling unit.**

MANUAL

This manual contains instructions for installation, use and handling with cooling units. It is a part of the unit, it has to be stored close to device in use and it helps technical staff during every movement or installation of cooling unit. Before installation and usage of unit, please read carefully this manual with all necessary information to assure correct and safe installation.

Warning **Check "Important security notes" (code 399036), attached to this manual.**

Notes **This manual refers to the standard versions of cooling units**
Non standard cooling units can have minor differences which are not described in this Manual.

REGULATORY COMPLIANCE

Company **Oprema d.d.** is manufacturer of professional cooling units for catering, with special accent on cooling units for cooling and dispensing beer, juices, wine, water and sparkling water. Quality, environment, health protection, work safety, product safety management policy and all components that are in contact with the beverage is the basic of managing all processes in Oprema d.d.

Within European union, all cooling units are harmonized with following directives;
Directive 2014/55/EU (LVD) – electrical safety of cooling units (low voltage equipment)
Directive 2014/30/EU (EMC) – electromagnetic compatibility

CE This product meets all basic demands of EU legislation which are relevant to this product

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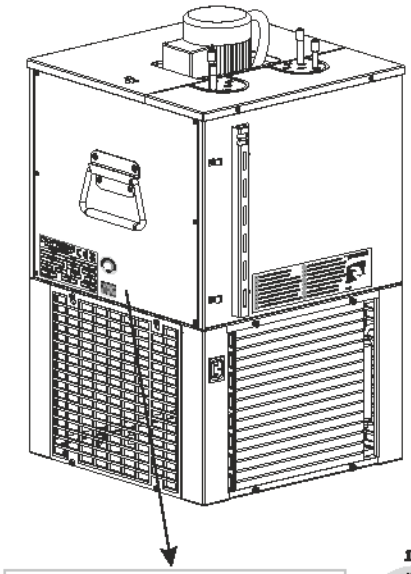
COOLING UNIT MARKS AND CHARACTERISTICS

Every cooling unit has its own identification number/code. This number is on the plate/label "technical data". Plate/label with technical data is the only way to identify cooling unit; it contains all necessary data about unit which are relevant to the user/service people for quick and simple identification.



1. Type: name of the cooling unit
2. Model: cooling unit model
3. Serial number: serial number of cooling unit
4. Code: unit identification code
5. Climate class: climate class
6. (V): voltage in volts
7. (Hz): frequency in Herz
8. Power: electricity in kW during normal work
9. Run: current in Ampers during normal work
10. Compressor: working volume of compressor in cm3 or HP or W
11. Type and quantity of refrigerant in the system in grams
12. Total EQ. CO2: CO2 equivalent in tons (related to refrigerant charge)
13. GWP : Global Warming Potential
14. Weight: weight of unpacked unit in kg
15. Quality control: unit is tested for secure usage
16. Oprema: manufactured in Oprema d.d. (with destroying and removing this label you lose warranty)

This manual is valid for next cooling units:

OKSI, BERG, OP, BC, ECO, DRY, V&H (50,60,100,200)

WARRANTY

Warranty on cooling unit is valid for 24 months from date of production, except if different is not agreed by contract. We recommend to save original packing box and material, invoice at least during warranty period.

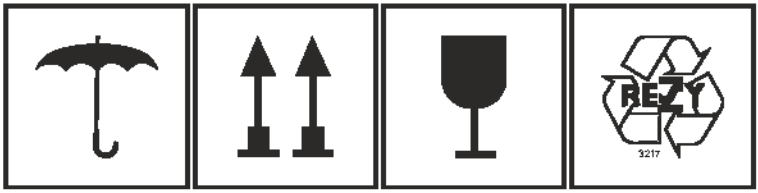
TRANSPORT AND STORAGE

To avoid damage of the cooling unit, it is important to handle with care during loading and unloading.
Crane can be used for unit movement only if unit is on pallet.

- DO NOT turn around the unit

- DO NOT shake the unit or complete packing

Unit has to be stored in adjusted and clean space, with temperature between 0-40°C. It is necessary to take care that there are no leftovers of water in cooling unit. Do not store coolers one on the other, and take care to set them in vertical position like as marked on packaging.



PACKING POSTPONEMENT

When cooling unit is unpacked, it is necessary to check whether it is in proper condition (visually undamaged). In case of any doubt on damage of cooling unit within packaging, do not install and use the unit. During packing postponement we ask you to respect local legislation about packing postponement. Do not incinerate packing parts or throw them to the environment. Packing of this cooling unit can be recycled in total. Keep packing material away from children.

AMBIENT CONDITIONS FOR INSTALLATION

Cooling unit has to be installed in the place where it is protected from rain, water sparkles, on place with temperature correspondent to its climate class (marked on label Technical data); In case this terms are not assured you lose warranty and malfunctions in performance are possible.
Possible climate classes are:

SN – temperature of environment from 10°C to 32°C
N – temperature of environment from 16°C to 32°C
ST – temperature of environment from 18°C to 38°C
T – temperature of environment from 18°C to 43°C

PROCEDURE IN CASE OF MALFUNCTION

Most of technical issues can be easily solved by simple procedures. In this purpose we ask you to read instructions carefully before informing service people or manufacturer. In case you cannot solve the problem by using instructions from this manual, please contact the seller from which the unit was bought. Keep units in good condition and do not allow any modification on it, except if they are approved by the manufacturer.

DISPENSING PROCEDURE

During dispensing use open containers only

This type of cooling units has to be used for dispensing drink only for open containers and for immediate usage (glasses, bottles). Dispensed product has to be used immediately: you cannot keep it or store in bottles.
Any other use is considered as not appropriate and with this potentially dangerous for health of consument. Producer of cooling units disclaims any responsibility for damage occurred during inappropriate use of this dispensing unit.

Notes

Terms used in further text. Bottle with refrigerant (which has to be suitable for nutritional use: CO_2, N_2, Argon, mix of CO_2 and N_2 etc.) in further text CO_2, which is used for pressure of premix beverage (beer, juice, water etc.) in further text beer from container (container, barrel, bag in box etc.) in further text barrel.

Warning

Always assure appropriate pressure regulator for type of valve on the bottle.

WORKING PRINCIPLE

CO_2 exits the bottle, gets through pressure regulator and CO_2 line, goes on keg head firmly adjusted to beer barrel. With pressure of CO_2 which is higher than pressure in the barrel, beer is pressed through the valve on keg head and with beer line it is brought to the cooling unit. Beer is cooled by passing through beer coils which are connected to taps (for undercounter unit they are mounted on tower) for beer dispensing in the glasses (mugs).

Danger

To prevent risk of injuries and damages, bottle CO2 always has to be positioned in vertical position, fixed on wall holder. If there is any doubt on gas release, especially in small spaces, it is necessary to ventilate potentially contaminated space.

INSTALLATION

Warning

In accordance to current law regulations, installation and release of cooler in function, this needs to be done by specialized and trained technical staff.

There are 2 basic groups of coolers for cooling and dispensing beer:
- Coolers for cooling beer with water bath
- Coolers for cooling beer with aluminum block

Each cooler consists of cooling device and cooling bath or aluminum block.
Cooler can be installed in outdoor ambient under condition that it is protected from rainfall and direct sun rays. If it is installed in inner ambient, it needs to be in the space where room temperature does not over cross borders of climate class which can decrease cooling efficiency.

Cooler needs to be properly set on surface where maximally allowed incline is 2 degrees. For installation of cooler with air cooling it is necessary to assure enough free space for cooler (0,4m in front of air entrance/exit). Cooler needs to be set on straight surface with enough fresh air, away from heat source, minimally 7cm from the wall and 30cm from the other cooler. Free air circulation around cooler needs to be assured.

Warning

Please assure enough air circulation for fan !

Danger

Each cooler produced with refrigerant R290 in amount of 150g (look at Technical data), needs to be installed in ambient with minimum volume of 19m3 (max allowed is 8g/m3). Coolers cannot be installed in ambient used as halls or emergency exits. Coolers from group 3 (in the cooling system is less than 150g) can be installed anywhere without extra precautions according to the norm EN-60335-2-89.

For coolers with water cooled heat exchanger it is necessary to assure continuous water inflow and drain away for cooling. Heat exchanger in SPLIT systems can be set on places where temperature does not cross border values of climate class. Split systems have installed electronic circuit which regulates work of distanced unit. Distanced units (heat exchangers) cannot be under direct liquids, sprays, fumes etc., and continuous air flow needs to be assured.

Jack for distanced unit has to be in accordance with valid regulations IEE. For all coolers needs to be assured that they are not in direct proximity with heat source. Ambient temperature on which cooler is installed is very important for cooling capacity, especially for coolers with air cooling. General rule is that with the increase of ambient temperature cooling capacity is lower and consumption of electricity is increased. Coolers are produced with single-phase cable, so it is necessary to assure grounded jack with voltage 230V and 50Hz very close.

Voltage deviations should not be more than 10% of its nominal value because this can cause damage of electrical components. Beer kegs and bottle CO_2 we can set under counter, in room nearby or basement.

Danger **During installation, cooler needs to be unplugged from electricity until installation and probation test is done. Cooler should not be turned on until 2 hours after installation.**

- Install pressure reducer CO_2 on bottle (bottle needs to be closed)
- Connect CO_2 entrance on keg head
- Connect beverage exit from keg head on cooler connection (cooling coils)
- Connect cooler (cooling coils) with the tower for dispensing (taps)
- Connect entrance and exit of water bath recirculation on the way that recirculation line goes to the place of dispensing as close as possible. Recirculation line will be used as extra beer cooling. Check if the J-G valve for water recirculation is completely open (if J-G exists on recirculation line)
- On cooler with water cooling connect entrance of cooling with water supply network. Connect exit of water cooling system so waste water could flow on supposed place. Open valve for water entrance. Water will not flow through cooler as long as cooling system does not start with work
- For SPLIT system coolers connect outside heat exchanger with the cooler and pour glycol (or ethylene or propylene – fluid that does not freeze under <0°C) in the tank. Distanced unit exchanger connect to the cooler electronically. Check if all valves are completely open to assure undisturbed flow.
- Pour clean water in water bath with evaporator
- Connect the cooler to electricity. With this cooling system, motor agitator and fan are turned on.
- For Split system coolers after few minutes of work it is necessary to check if in the tank is enough glycol and pour extra glycol if necessary
- Open the valve on CO_2 bottle, if pressure is in red area, bottle should be replaced
- Set pressure CO_2 on barrel on the pressure that is suggested from beer producer (this is mostly 2,5bar). If barrel with beer is set further from the cooler or under cooler, it is necessary to adjust the pressure (increase) for 0,02bar for each meter horizontal length or for 0,1bar for each meter of vertical length
- On the dispensing tap pour few glasses and with regulation screw adjust wanted flow. During this try out beer will still be too warm because cooling system needs 2-4 hours to make enough ice so cooler is ready for dispensing properly. Needed time depends on starting temperature of water in water bath, ambient temperature and amount of ice wanted in the water bath.

Notes **Same instructions for installation can be used also on coolers for cooling and dispensing wine or premix juices and with other type of refrigerants.**

HANDLING WITH COOLER

1.Open main valve of bottle CO_2
2.During the work keep track of pressure on bottle CO_2, when manometer needle goes into red area, then replace the bottle
3.When barrel is empty, replace the barrel and wash connection on the barrel and keg head. Cooler with air compressor needs to be turned off (switch ON/OFF) if barrel is not connected
4.Close the valve on bottle CO_2 when cooler is not in use anymore

5. Select wanted working mode (winter-summer) on switch (for cooler with this option). In summer mode cooler creates ice bank that allows bigger dispensing capacity on temperature <6°C in winter mode, cooler does not produce ice and temperature in water bath is adjustable by thermostat. Temperature of dispensed beverage depends on the temperature in water bath. Some coolers have installed thermostat that can work in regime cold water-ice. With adjustment of button in area from 1-7 you set working regime for cooler.

Warning **Cooler should not be unplugged from power supply after closing time for bar, cooler will stop working by itself when sufficient ice will be made, apropos when wanted bath temperature will be reached.**

Danger **Service and maintenance of cooler can be done only by qualified staff. All parts of electro installation and water installation need to be in accordance with national and local legislation. Always use only original parts for spare parts. Do not use defective cooler.**

CLEANING AND MAINTENANCE OF SYSTEM

Danger **During cleaning, disconnect cooler from power supply.**

Cleaning and maintenance of system we divide to:
1.Daily assignment
2.Monthly assignment
3.System sanitation

Notes **If cooler is defective caused by mistake in maintenance or some other reason, we suggest to put notification on the cooler about this.**

Daily assignment:
It is necessary to keep cooler clean, space around cooler, tower for dispense including tap and drip tray.

Monthly assignments:

Once a month it is necessary to check water in water bath and add water if necessary. Clean dirt and dust from cooler (especially condenser on coolers with air cooling). Do not use high pressure because it can damage condenser. If condenser is not cleaned from dust, cooler can have lower cooling effect.

Cooler sanitation:
This should be done by professional. It is necessary for hygiene and quality of dispensed beer. Frequency of sanitation is determined by beer producer. It is recommended to be done at least once in 3 months. Before disinfection of cooler make sure that you read and understood instructions for disinfection product and that you have all protection equipment needed (gloves, masks etc.). Make sure you have good air ventilation in the room. Some cooler components can be damaged by aggressive cleaning. Producer is not responsible for any damage caused by use of aggressive or toxic disinfection product.

SERVICE AND REPAIR

In purpose of assurance of your safety and in accordance to current legislation, all repairs must be done by authorized personnel.

For service and repair on coolers with R290 service people should be special trained and qualified for handling with flammable substances. This includes knowledge about tools, work with compressor and cooling unit, basic legislations and precautions regarding service and repair.

Danger **Do not use open flame or potential spark sources in proximity of cooler with R290 in use.**

Notes **In case cooler will not be used for some time, empty water bath, protect cooler from dust and storage it in original package on dry place.**

INSTRUCTIONS FOR COOLER DISASSEMBLING

Warning **Procedure of cooler disassembling must be done with compliance to legislation.**

-Steel, plastic and other materials must be disposed by authorized person
-Isolation material must be disposed by authorized company and person
-Each refrigerant (check label) must be removed with special equipment by authorized person and company.
Refrigerants should not be spread in working space.

Danger **Coolers with mark**

are with refrigerant R290 (propane). Considering that cooler with this refrigerant contains flammable refrigerant, please dispose cooler out of work according to legislation. Contact your seller or local authorized company for disposal of cooler.

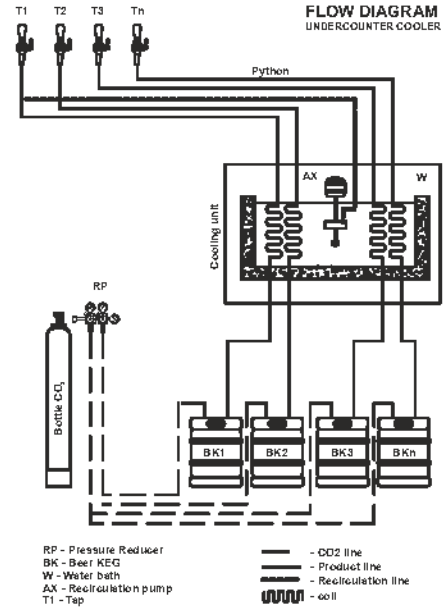
According to Legislation about Management of waste electrical and electronic device, and according to EU Legislation 2002/96/EC, symbol with waste disposal crossed can on equipment or package is stating that product should after use be disposed separately from other waste, connected to decreased use of dangerous substances in electronic and electrical equipment and adequate waste disposal. Separated collect and recycling of this equipment is decreasing possible negative effect on environment and health, and assures that some of the materials are being reused. Not authorized disposal of this product by user could cause apply of legal sanctions in accordance with current legislation.

Malfunctions on cooling system

Description	Possible reason	Repair description
Compressor is not working	1. Full ice bank	1. Thermostat is turning off compressor when sufficient ice bank is made. Compressor starts with work again when there is no enough ice bank
	2. Cooler not connected to power supply	2. Connect cooler to power supply
	3. Connecting cable connector not plugged in	3. Connect connector
	4. To low voltage of power supply	4. Minimal voltage for normal work is 208V
	5. Plug socket broken or connection cable broken	5. Call for service
	6. Broken starting relay, starting condenser or work condenser of compressor	6. Call for service
	7. Broken thermostat or electro installation	7. Call for service
	8. Broken compressor	8. Call for service
	9. Compressor protection activated during overheating	9. Call for service
Compressor working all the time but no ice bank	1. To much dispense	1. Decrease dispense
	2. Cooler is positioned on to warm place or air flow is not sufficient	2. Change the position of cooler or clean condenser from dust
Motor agitator not working	1. To low voltage	1. Minimal voltage for normal work is 208V
	2. Broken motor agitator	2. Call for service
	3. Connection cable not connected or broken	3. Call for service
	4. Connector on connection cable not connected	4. Connect connector

Malfunctions during dispense

Description	Possible reason	Repair description
Beverage is not exiting dispense tap	1. Barrel is empty	1. Replace barrel
	2. Bottle CO2 is empty	2. Replace bottle Co2
	3. Valve on CO2 is closed	3. Open the valve
	4. To low pressure in barrel	4. Adjust pressure
	5. Keg head not connected well on the barrel	5. Set keg head properly
	6. Beverage frozen in coil	6. Call for service
Beverage is exiting tap to slowly	1. Tap compensator is partly open	1. Regulator on tap turn opposite clockwise
	2. Keg head is not adjusted properly to barrel	2. Adjust keg head
	3. CO2 pressure to low	3. Adjust pressure or replace bottle if it is empty
Dispensed beverage is warm or not tasting god	1. Cooling is not set well	1. Call for service
	2. To old beverage in barrel	2. Replace the barrel
	3. Tube and installation set is not sanitized	3. Repeat sanitation or call for service
Beverage is dispensed clear but with too much foam	1. Glass is too warm	1. Cool down the glass
	2. Improper dispense technique	2. Use proper technique
	3. Too small or to big pressure	3. Regulate pressure
Foam is exiting from tap with strokes	1. Keg head not adjusted to barrel properly	1. Adjust keg head
	2. No beverage in barrel	2. Replace the barrel
Foam is not remaining	1. There are remains of grease or cleanser	1. Wash the glass with appropriate cleanser and rinse in clean water
	2. Beverage in barrel is too old	2. Replace the barrel
Beverage is dripping from tap	1.	1. Call for service
Bottle of CO2 is emptying too fast	1.	1. Call for service

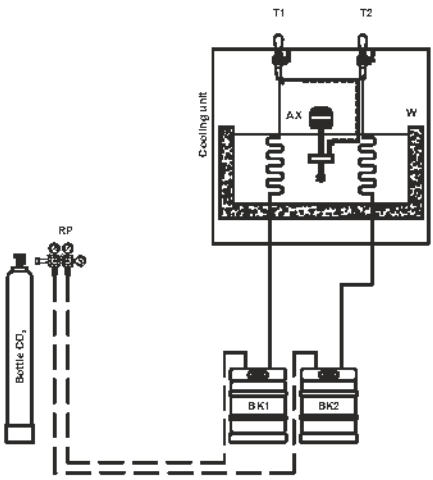


FLOW DIAGRAM
UNDERCOUNTER COOLER

RP - Pressure Reducer
BK - Beer KEG
W - Water bath
AX - Recirculation pump
T1 - Tap

- CO2 line
- Product line
- Recirculation line
- coil

FLOW DIAGRAM
OVERCOUNTER COOLER



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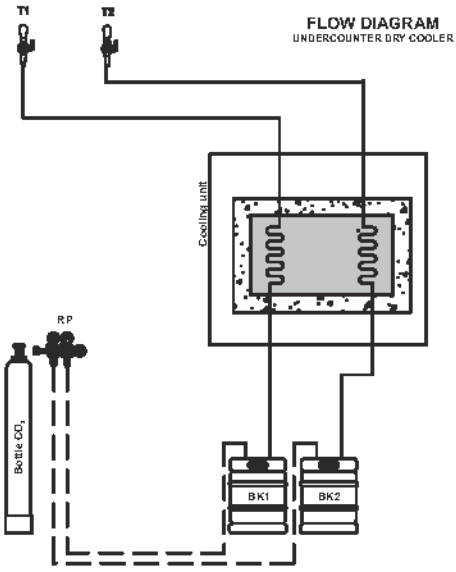
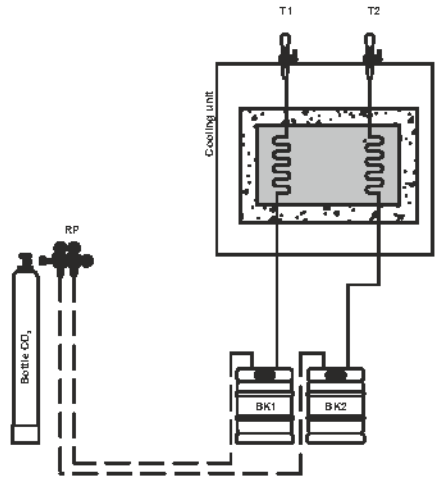


FLOW DIAGRAM
UNDERCOUNTER DRY COOLER

RP - Pressure Reducer
BK - Beer KEG
W - Water bath
AX - Recirculation pump
T1 - Tap

- CO2 line
- Product line
- coil

FLOW DIAGRAM
OVERCOUNTER DRY COOLER



RP - Pressure Reducer
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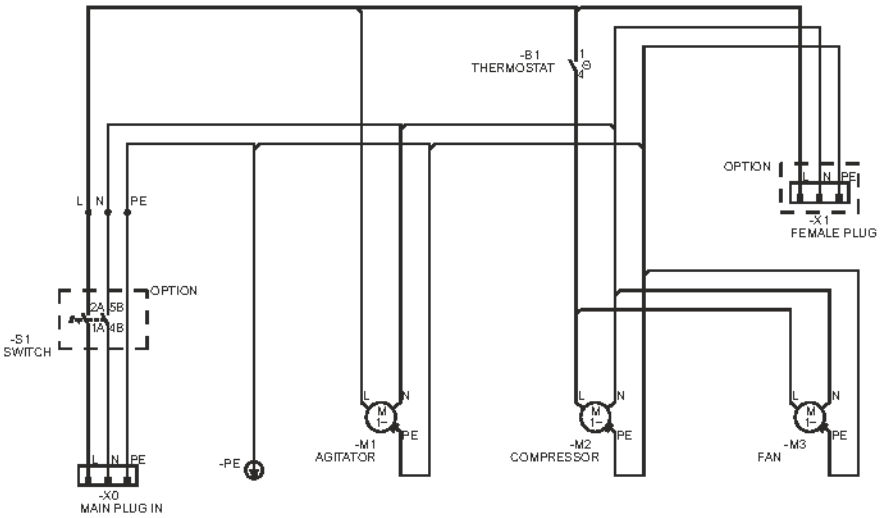
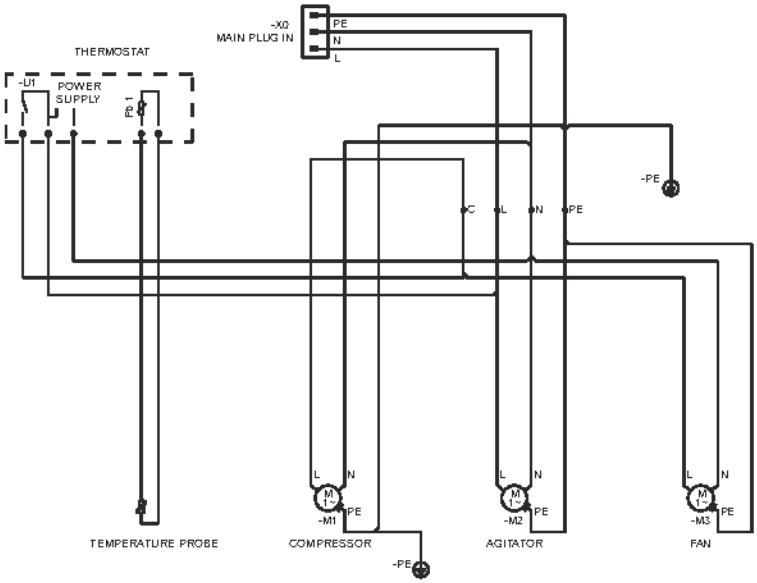
- coil

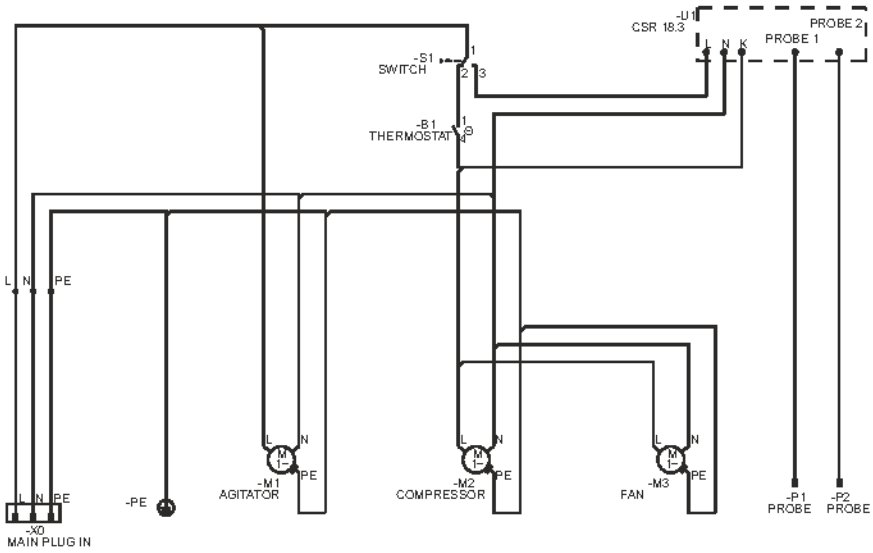
ELECTRIC DIAGRAM - Thermostat



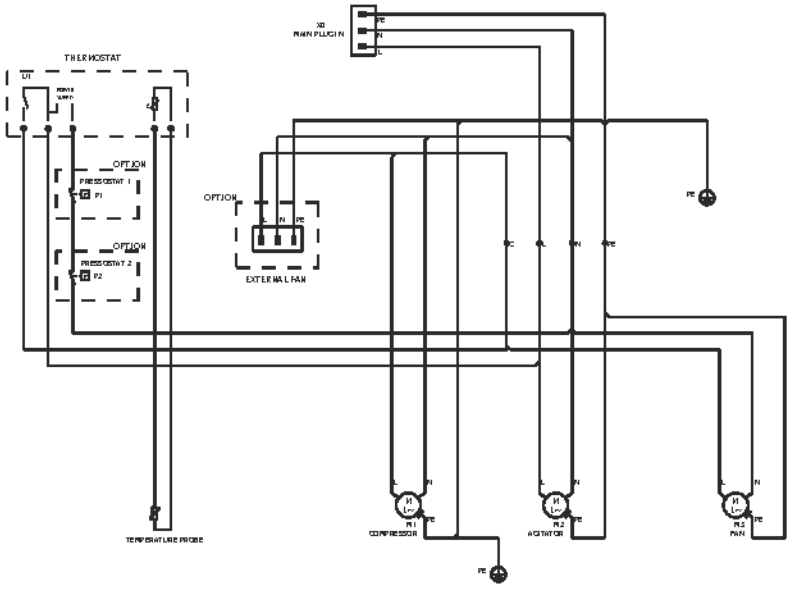
ELECTRIC DIAGRAM - Electronic Thermostat



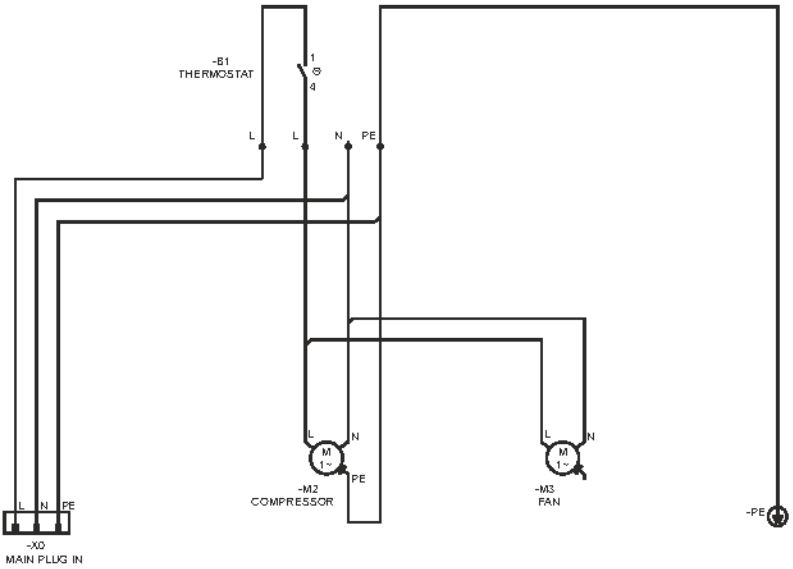
ELECTRIC DIAGRAM - Thermostat + Ice bank relays



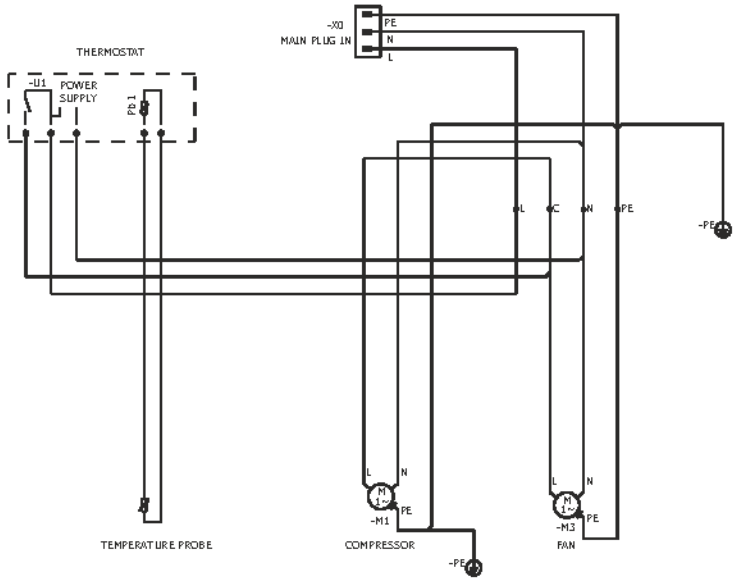
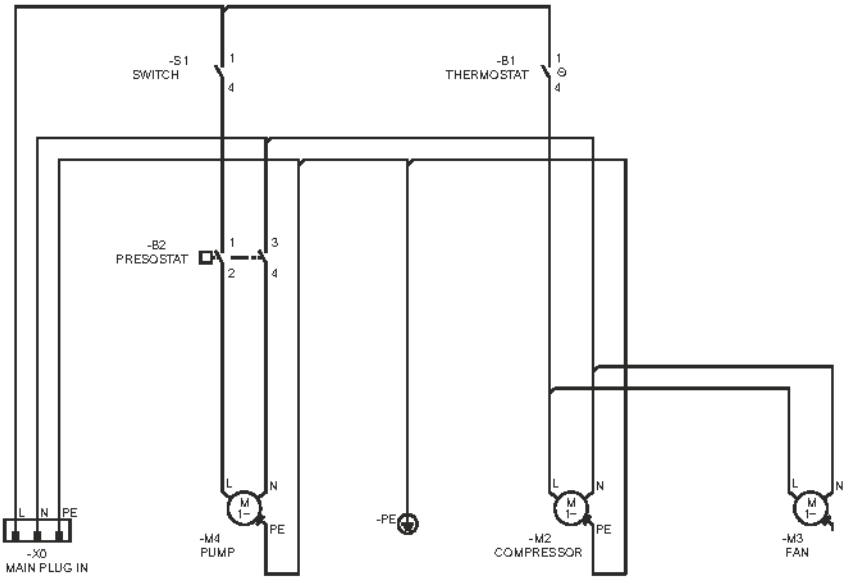
ELECTRIC DIAGRAM - Thermostat + Pressostat



ELECTRIC DIAGRAM - Thermostat (Dry cooler)



ELECTRIC DIAGRAM - Electronic Thermostat (Dry cooler)



ELECTRIC DIAGRAM - Thermostat (Dry cooler with air pump)