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compact

ICE CUBES MAKERS

SERVICE MANUAL

STACKABLE PRODUCING UNITS

CP 150 E

F.A.G. - FABBRICA APPRECCHIATURE PER LA PRODUZIONE DEL GHIACCIO srl.
viale Edison, 13 - Trezzano sul Naviglio (MI) - ITALY

LEV1FG-296

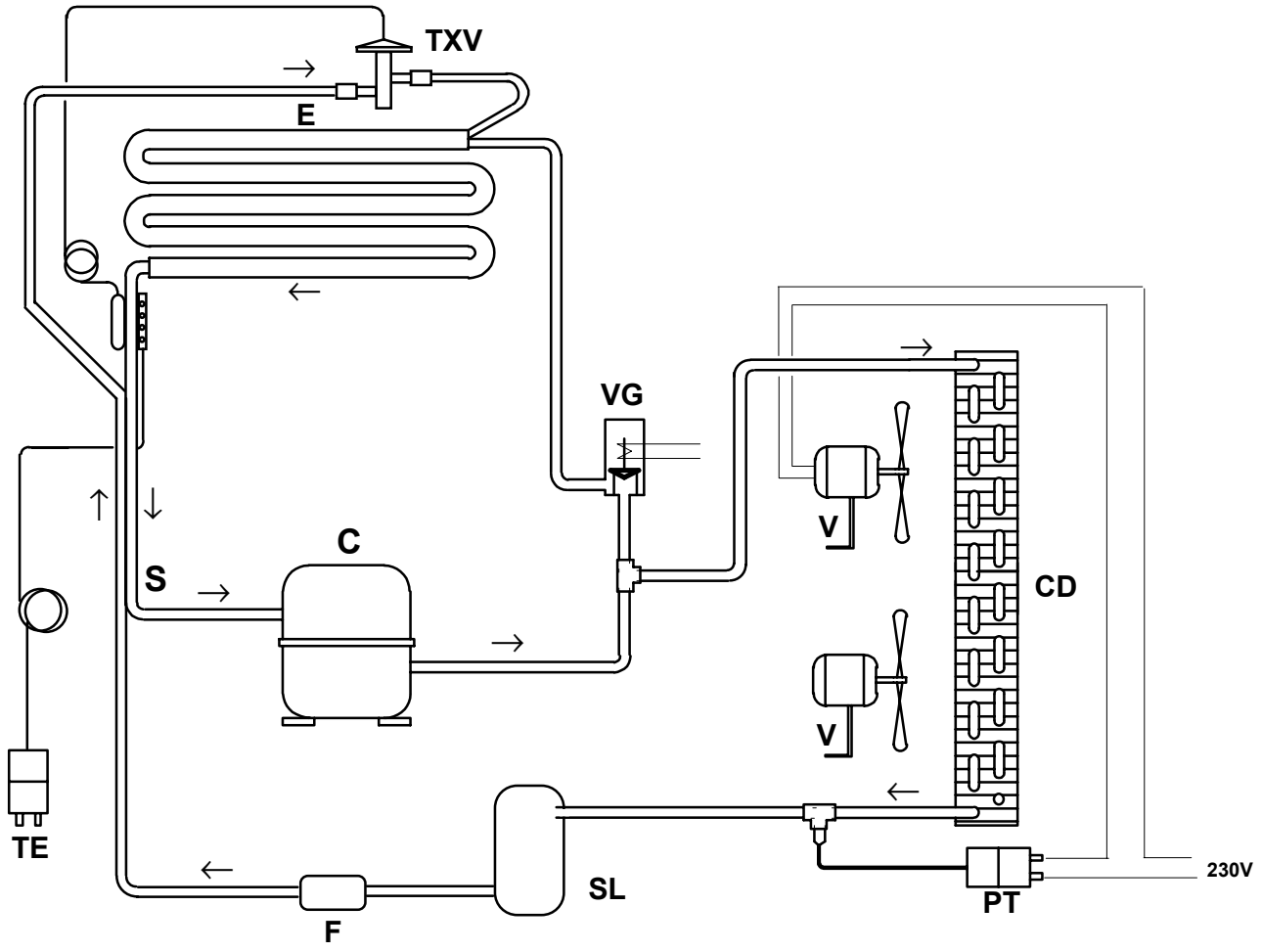
INDEX

1. HOW IT WORKS

The system is very simple and efficient. The evaporator is built up connecting together a series of reversed cups with a cooling coil. The refrigerant flows into the tubes while the pumps spray water into the cups. Thus inside each cup, an ice cube grows layer by layer.
When the cubes are ready, harvest starts : hot gas flows through cooling coil of the evaporator and fresh water enters on top of evaporator. Thus melts the outer surface of the cubes which fall into the bin.
A new freezing cycle then begins.
When the bin is full of ice, the unit stops production. When a quantity of ice is taken away, the unit restarts production.

1.A. REFRIGERATION SYSTEM

REFRIGERATION TUBING SCHEMATICS



AIR COOLED

C Compressor
V Fan motor
VG Hot gas valve
TXV Expansion valve
CD Air cooled condenser
PT Pressure switch
F Molecular sieve
E Evaporator
SL Liquid separator
S Heat exchanger
TE Evaporator thermostat

1.A.a.Freezing cycle

1. The compressor **C** pumps the refrigerant to the condenser **CD** or **CA** when the hot gas valve **VG** is closed.
2. The liquid line reaches the evaporator **E** through the receiver/tank **SL**, the molecular sieve **F** and the expansion valve **TXV**.
3. In the evaporator the refrigerant expands, thus producing the freezing effect.
4. Refrigerant goes back to the compressor suction line/heat exchanger **S**.
5. The freezing cycle ends when the evaporator thermostat **TE** reaches the set temperature thus starting the TIMER; when the time is over, the refrigeration cycle ends and the **VG** hot gas valve is opened.

1.A.b.Defrost cycle (harvest)

1. When the hot gas valve **VG** opens, refrigerant flows directly from the compressor **C** to the evaporator **E** and back to compressor through **S**.
2. Duration of harvest is fixed by the timer. There is a delay in starting the TIMER in defrost period. The TIMER is energized when the evaporator thermostat **TE** reaches the set high 'IN' temperature; for this reason the motor of the TIMER is connected directly with the COMMON contact of the evaporator thermostat. When harvest ends, the timer is de-energized, the hot gas valve **VG** is closed and a new freezing cycle begins.

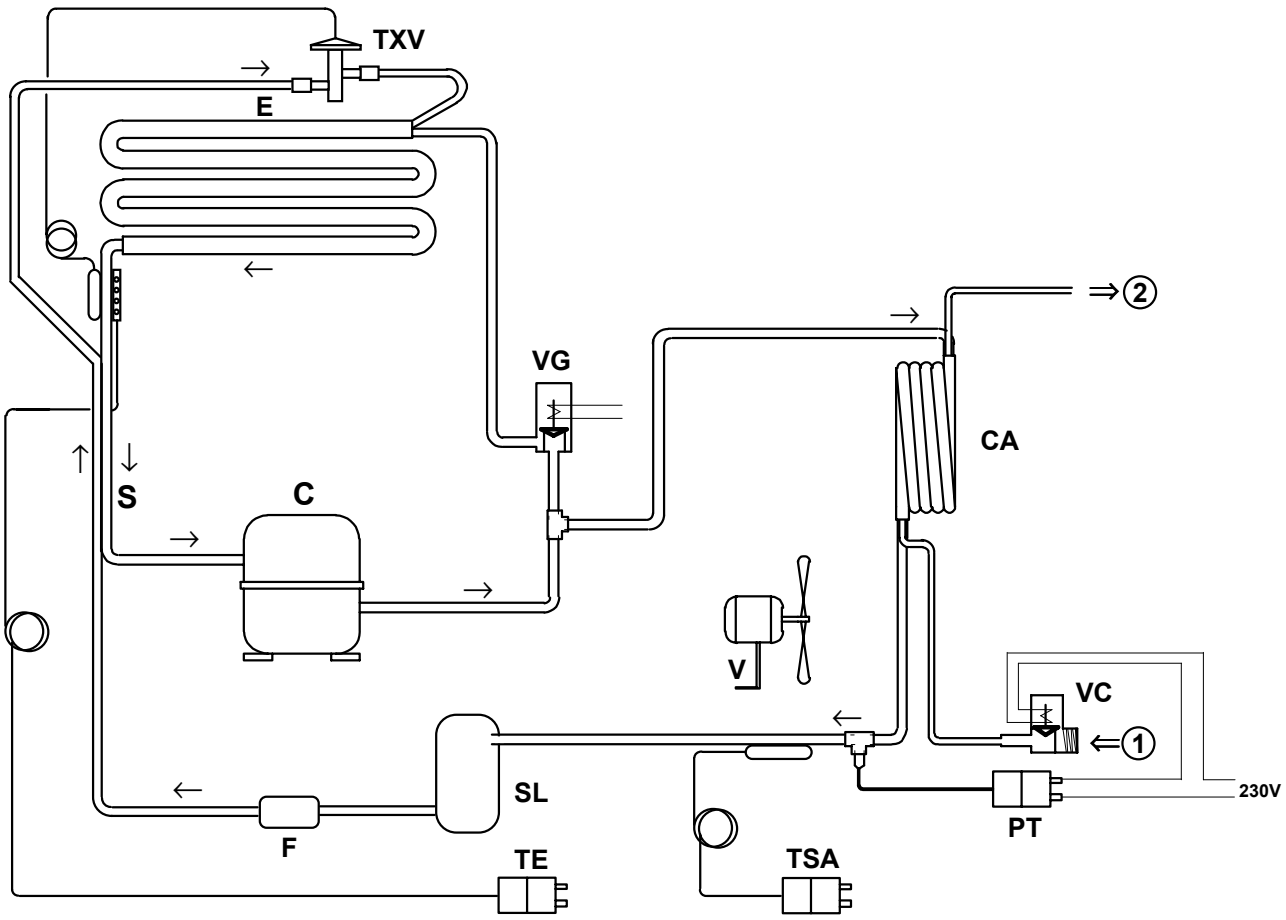
1.A.c.Air cooling

1. Models with air cooled condenser, have a lower fan motor **V** which is always energized, and an upper fan motor which is switched on and off by the pressure switch **PT**, which senses condensing pressure.
2. Pressure switch **PT** is factory set. After sale service is ***not allowed*** to make adjustments for any reason.

1.A.d.Water cooling

1. Models with water cooled condenser, have a fan motor **V** which is always energized.
2. Water inlet to condenser is regulated by the pressure switch **PT**, which senses condensing pressure and energizes or not the condenser water inlet solenoid valve **VC**.
3. The safety thermostat **TSA** feels condensing temperature, too. In case of excessive temperature, due e.g. to water shortage, valve failure etc., it shuts down the unit. When temperatures decreases, it starts again.
4. Condenser thermostats and pressure switch are factory set. After sale service is ***not allowed*** to change adjustments for any reason.

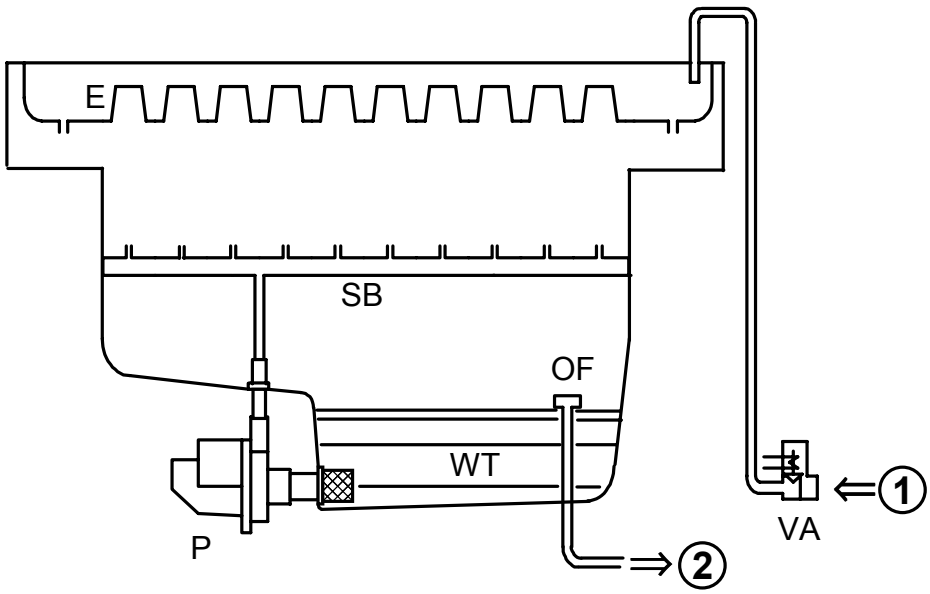
REFRIGERATION TUBING SCHEMATICS



WATER COOLED

C	Compressor
V	Fan motor
VG	Hot gas valve
VC	Condenser water valve
TSA	Safety thermostat
TXV	Expansion valve
CA	Water cooled condenser
PT	Pressure switch
TE	Evaporator thermostat
F	Molecular sieve
E	Evaporator
SL	Liquid separator
S	Heat exchanger
⇐①	Water inlet
⇒②	Water drain

1.B. WATER SYSTEM



P	Pump(s)
SB	Spray bar(s)
WT	Water tank
VA	Inlet water valve
E	Evaporator
OF	Overflow
⇐①	Water inlet
⇒②	Water overflow drain

1.B.a.Freezing cycle

1. The pumps **P** take water from the water tank **WT** through a suction pipe and send it to the spray bars **SB** (one for each pump).
2. The water sprayed by the nozzles reaches the cooled cups on the evaporator **E**. A quantity of water freezes and the excess falls again into the water tank.
3. The water inlet valve **VA** is closed.

1.B.b.Defrost cycle (harvest)

1. The water inlet valve **VA** is open. Fresh water goes up on top of evaporator, helping defrost.
2. From the top of the evaporator, water falls into the water tank and refills it.
3. Excess water is discharged by the overflow control **OF**.
4. The water pumps are not working.

1.B.c.Ice storage bin

1. The unit has a separate storage bin, so water from melted ice is drained separately.

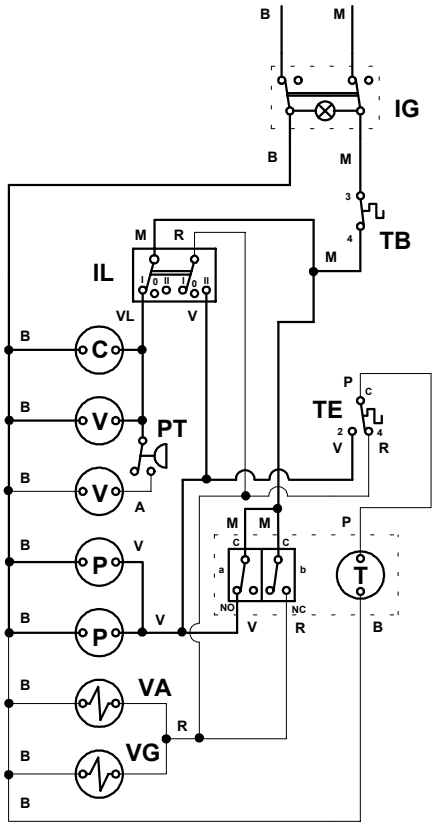
1.C. ELECTRICAL SYSTEM

The unit has a master switch **IG** and a toggle switch **IL** . Both switches are accessible removing the front panel.

1.C.a.TOGGLE SWITCH POSITION (I) - ICE

- Compressor is always ON. Upper fan motor is regulated by pressure switch **PT,** the lower one is always ON.
- The bin thermostat **TB** opens, when the ice-feeler is in contact with ice. The unit then stops.

WIRING DIAGRAM
air cooled



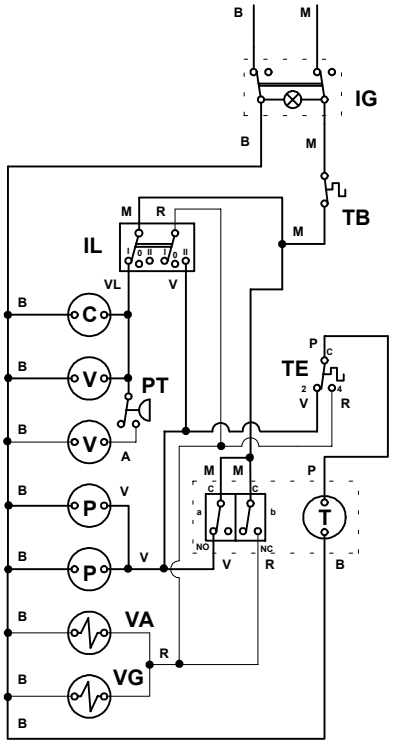
A) Start of freeze cycle

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
V_2	fan motor	**ON (PT)**
P	pumps	**ON**
T	timer	**OFF**
a	micro a	**C-NO**
b	micro b	**C-NO**
VG	gas valve	**OFF**
VA	water valve	**OFF**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**

A) Start of freeze cycle. The pumps spray water to the cups on the evaporator which is freezing. The evaporator thermostat **TE** has not reached the set-point. It is in WARM position.

M Brown
B Blue
V Green
R Red -
A Orange
P Pink

WIRING DIAGRAM
air cooled

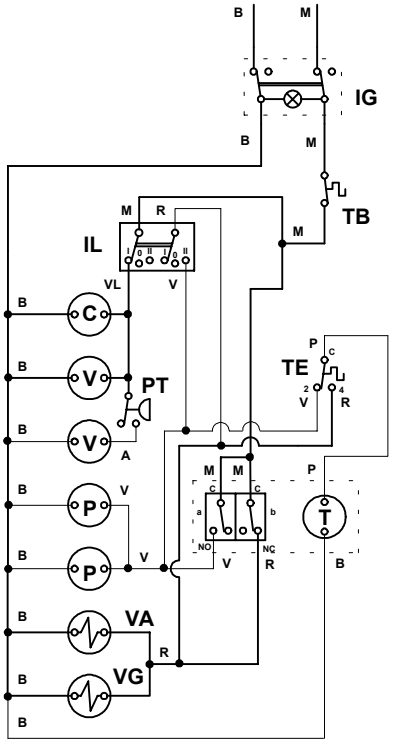


B) End of freeze cycle

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
V_2	fan motor	**ON (PT)**
P	pumps	**ON**
T	timer	**ON**
a	micro a	**C-NO**
b	micro b	**C-NO**
VG	gas valve	**OFF**
VA	water valve	**OFF**
TE	evaporator thermostat	**COLD (C-2)**
TB	bin thermostat	**closed**

B) End of freeze cycle. The evaporator thermostat **TE** has reached the set-point. It is in COLD position. The timer starts to complete freezing cycle.

WIRING DIAGRAM
air cooled

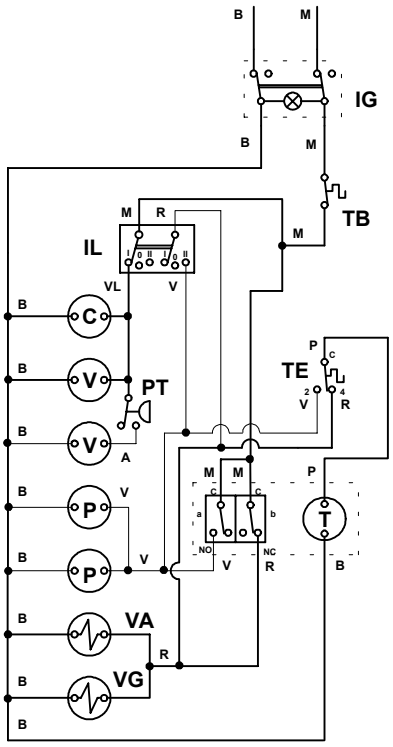


C) Start of defrost

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
V_2	fan motor	**ON (PT)**
P	pumps	**OFF**
T	timer	**OFF**
a	micro a	**C-NC**
b	micro b	**C-NC**
VG	gas valve	**ON**
VA	water valve	**ON**
TE	evaporator thermostat	**COLD (C-2)**
TB	bin thermostat	**closed**

C) Start of Defrost. Microswitches **a** and **b** are operated by the two levers and the rotating cam of the timer. The pumps stop and the hot gas and water valves open. The evaporator thermostat is still in COLD position. The motor of the timer stops.

WIRING DIAGRAM
air cooled

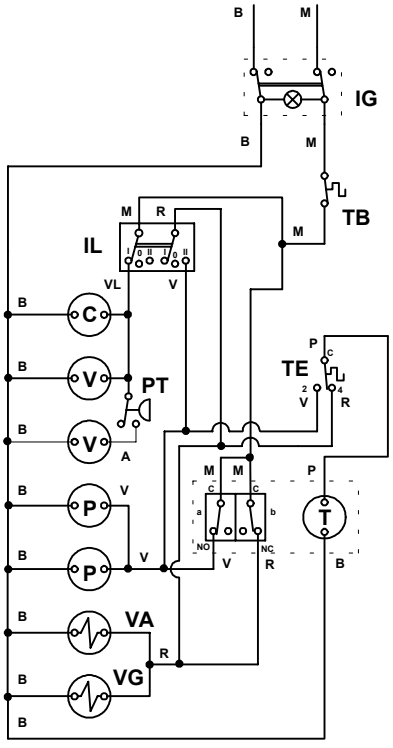


D) Defrost

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
V_2	fan motor	**ON (PT)**
P	pumps	**OFF**
T	timer	**ON**
a	micro a	**C-NC**
b	micro b	**C-NC**
VG	gas valve	**ON**
VA	water valve	**ON**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**

D) Defrost. The evaporator thermostat switches to WARM position starting the motor of the Timer, thus completing defrost.

WIRING DIAGRAM
air cooled

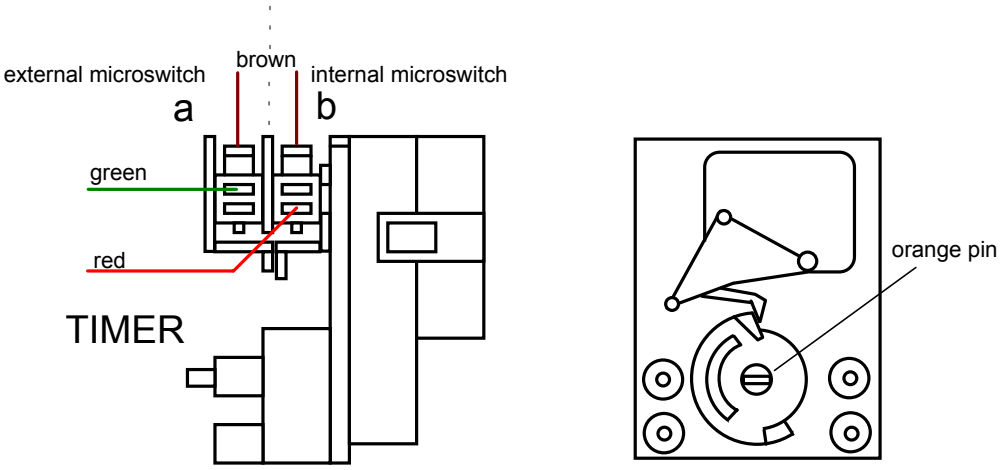


E) End of defrost

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
V_2	fan motor	**ON (PT)**
P	pumps	**ON**
T	timer	**ON**
a	micro a	**C-NO**
b	micro b	**C-NC**
VG	gas valve	**ON**
VA	water valve	**ON**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**

E) End of Defrost. Defrost ends when both levers reach top of the rotating cam of the timer. This is not simultaneous but first the external micro **a** and then the internal micro **b** are activated.

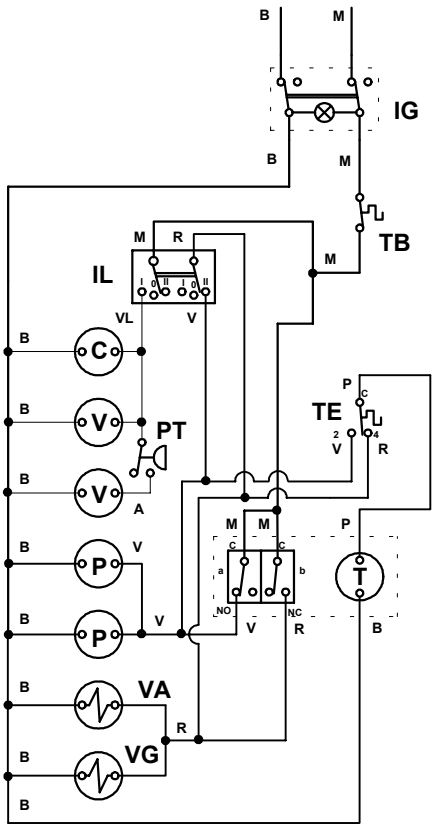
IT IS VERY IMPORTANT NOT TO CHANGE CONNECTIONS BETWEEN THE TWO INTERNAL (a) AND EXTERNAL (b) MICROSWITCHES OF THE TIMER.



It is possible to manually put the unit in defrost cycle by turning the orange pin of the TIMER clockwise.

1.C.b.TOGGLE SWITCH POSITION (II) - RINSE

WIRING DIAGRAM
air cooled



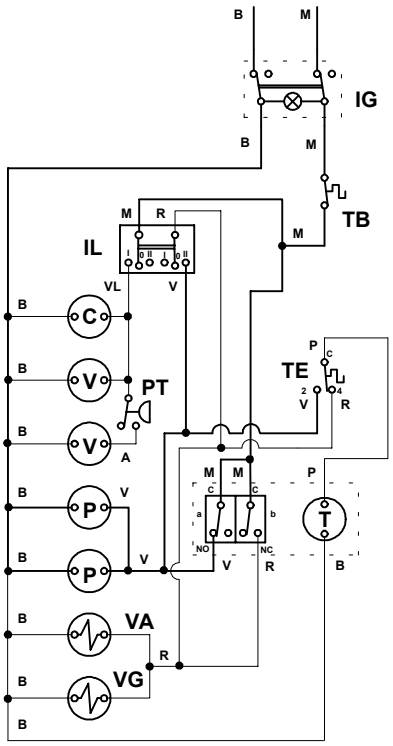
F) Rinse cycle

IG	master switch	**ON**
IL	toggle switch	**position II**
C	compressor	**OFF**
V_1	fan motor	**OFF**
V_2	fan motor	**OFF**
P	pumps	**ON**
T	timer	**ON**
a	micro a	**C-NO/C-NC**
b	micro b	**C-NO/C-NC**
VG	gas valve	**ON**
VA	water valve	**ON**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**

F) Rinse cycle. The compressor is OFF. The pumps, the water and gas solenoid valves are energized. The Timer is also ON, but does not affect operation.

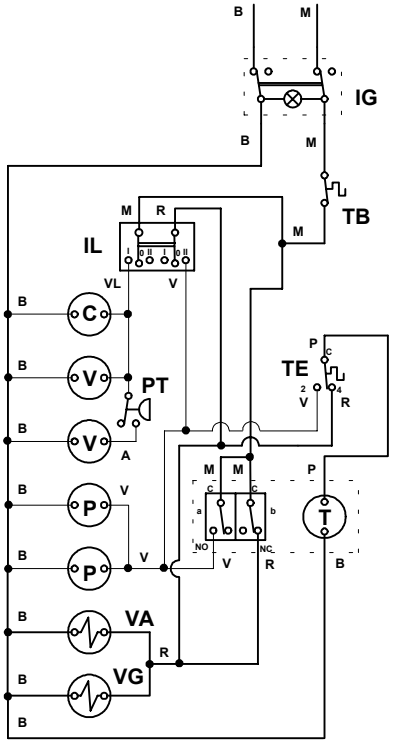
1.C.c.TOGGLE SWITCH POSITION (0) - WASH

WIRING DIAGRAM
air cooled



F1) TIMER in freeze position

IG	master switch	**ON**
IL	toggle switch	**position 0**
C	compressor	**OFF**
V_1	fan motor	**OFF**
V_2	fan motor	**OFF**
P	pumps	**ON**
T	timer	**OFF**
a	micro a	**C-NO**
b	micro b	**C-NO**
VG	gas valve	**OFF**
VA	water valve	**OFF**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**



F2) TIMER in defrost position

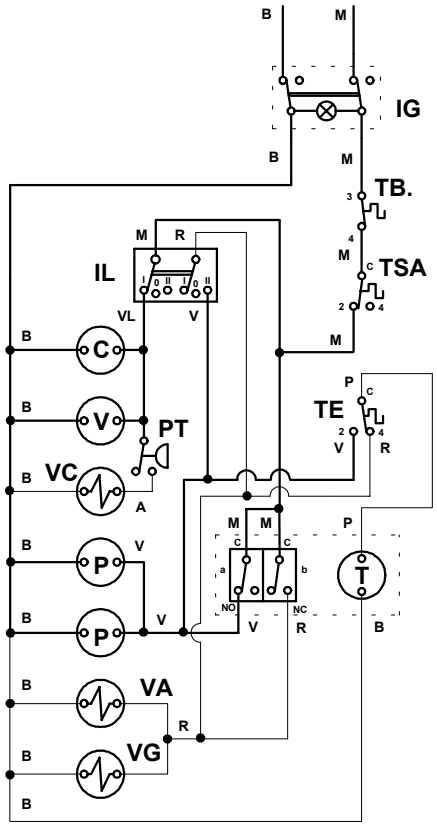
IG	master switch	**ON**
IL	toggle switch	**position 0**
C	compressor	**OFF**
V_1	fan motor	**OFF**
V_2	fan motor	**OFF**
P	pumps	**OFF**
T	timer	**ON**
a	micro a	**C-NC**
b	micro b	**C-NC**
VG	gas valve	**ON**
VA	water valve	**ON**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**

F) Wash Cycle. If the TIMER is in freeze position, the two pumps are energized. If the TIMER is in defrost position pumps are OFF, the water and gas solenoid valve and the motor of the TIMER are energized, therefore condition F2 is maintained for the duration of a normal defrost-cycle.

1.C.d.TOGGLE SWITCH POSITION (I) - ICE - Water cooled models

Water inlet to condenser is regulated by the pressure switch **PT**, which senses condensing pressure and energizes or not the condenser water inlet solenoid valve **VC**.
The safety thermostat **TSA** feels condensing temperature, too. In case of excessive temperature, due e.g. to water shortage, valve failure etc., shuts down the unit. When temperatures decreases, it starts again.

WIRING DIAGRAM
water cooled



A) Start of freeze cycle

IG	master switch	**ON**
IL	toggle switch	**position I**
C	compressor	**ON**
V_1	fan motor	**ON**
VC	condenser water valve	**ON (PT)**
P	pumps	**ON**
T	timer	**OFF**
a	micro a	**C-NO**
b	micro b	**C-NO**
VG	gas valve	**OFF**
VA	water valve	**OFF**
TE	evaporator thermostat	**WARM (C-4)**
TB	bin thermostat	**closed**
TSA	safety thermostat	**closed**

All the other diagram are similar to the air cooled ones, provided you change the **V_2** fan motor with the condenser water inlet valve **VC** , and you add the safety thermostat **TSA.**

2. INSTALLATION

2.A. CONNECTIONS

1. Choose a location far from heating sources and in a well ventilated dry place, not dusty, near water inlet & drain connections.
2. Provide enough clearance at both sides and at rear of the unit (20 cm at least).

DO NOT USE UNIT OUTSIDE AND DO NOT EXPOSE IT TO RAIN.

3. Set upstream of the units an electrical multi pole disconnect switch having a contact separation of at least 3 mm in all poles. Switch rating shall comply with power specifications of each ice-maker, as per specifications given in the plate on rear of each unit.

ALL CONNECTIONS SHOULD BE MADE IN ACCORDANCE WITH EXISTING LOCAL ELECTRICAL REQUIREMENTS.

4. Power supply must match voltage specifications on registration plate on rear of unit. +/- 6% deviation permitted. On higher rushes no assurance of correct operation is given.
5. Water inlet should be regulated by a 3/4" threaded tap, for an easy installation of the supply hose.

ATTENTION! CONNECT UNIT TO DRINKING (POTABLE) WATER ONLY.

6. Check if water inlet pressure is between 1 to 3 bar. If it is higher, install a pressure reducer set at 2,5 bar.
7. Water outlet must be at ground level connected to an open vented siphon.

2.B. SET-UP

2.B.a.SINGLE INSTALLATION - AIR COOLED CONDENSER UNITS

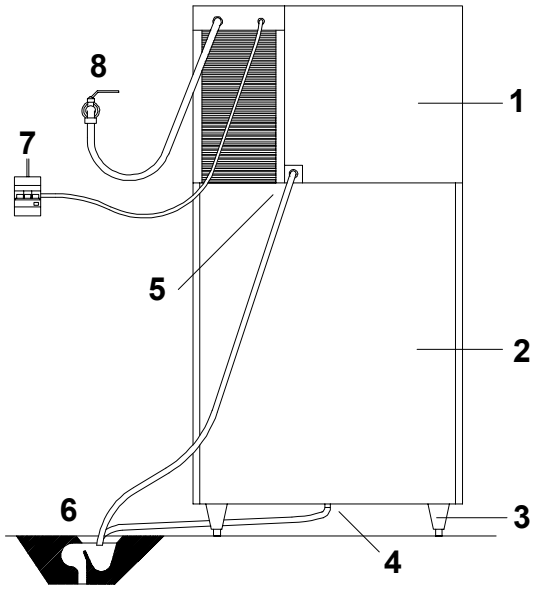
1. The machine is a stand alone producing unit that must be fixed to a suitable ice storage bin.
2. Prepare the bin to receive the producing unit. Fix the enclosed adjusting feet and be sure they are screwed in tightly to prevent bending, connect a hose to the drain of the bin and place the sealing tape on the top of the bin.
3. Unpack the ice maker without turning the unit upside down, check for damage, remove all cartons and the wooden pallet.
4. Place the unit on the bin.
5. Remove front and lateral panels and fix the unit to the bin through the existing holes.
6. Remove the bag with the accessories from inside the unit. Take care of the Final User Manual and give it to your customer. Remove the external ice chute and the water blinds assembly. Check that the two water spray-bars and the internal ice chute are in the correct position, then re-install water blinds assembly and the external chute.
7. Place the ice feeler, with the cap of the ice bin level thermostat inside, towards the inside part of the bin, taking off the fixing tape, and screwing the feeler on the right lateral internal part of the unit. Handle the feeler with care to avoid any damage to the cap of the thermostat. (see the fig.2.B.3 as follows).
8. Connect the unit to the external multi-pole switch for electric supply.
9. Check that the unit is perfectly level. If required, adjust leveling feet of the bin.
10. Connect the water inlet solenoid valve to the water mains tap with the rubber water supply tube.
11. Connect a drain hose to the water outlet of the unit and the open vented siphon at floor level.
12. Open tap on water mains and check for leakage.
13. Switch on main external disconnect switch.
14. Switch ON master switch. If toggle switch I/0/II is in ‘0’ position (WASH), the unit charges water. Position ‘II’ (RINSE) charges water and energizes the two water pumps. In this way it is possible to fill the unit with fresh water at first installation and check the pumps.

We suggest filling the unit with water, starting the pumps, then switch the master switch OFF and drain all the water, removing the plug which is placed in front of water tank, thus cleaning the water circuit.

Repeat this cleaning procedure every times you want to clean the water tank and after a long shut-off period.

15. Re-insert the plug, then switch the master switch ON and the toggle switch I/0/II to '0'
16. After completing the fill-up procedure, open external multi-pole switch, switch toggle switch I/0/II to 'I' (ICE) and the master switch to ON, then re-install all the panels.

To start and stop unit, only use the external disconnect multi-pole switch.



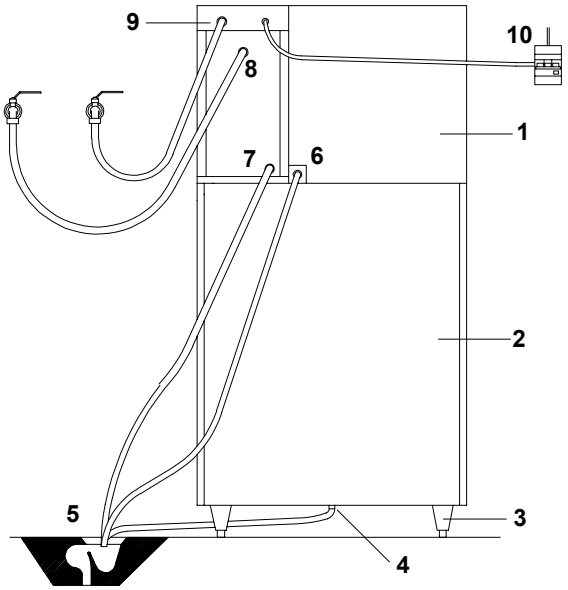
air cooled single installation

1. producing unit CP 150
2. ice storage bin BIN 245
3. leveling feet
4. bin drain
5. unit drain
6. open vented siphon at floor level
7. multi-pole disconnect switch
8. water mains tap

fig. 2.B.1

2.B.b.SINGLE INSTALLATION - WATER COOLED CONDENSER UNITS

1. Follow steps 1 to 9 as described before (2.B.a).
2. Connect the water inlet solenoid valve to the water mains tap with the rubber water supply tube.
3. Connect the water supply to the condenser water inlet
4. Connect a drain hose to the water outlet of the unit and the open vented siphon at floor level.
5. Connect a drain hose to condenser water outlet.
6. Open taps on water mains and check for leakage.
7. Follow steps 13 to 16 as described before (2.B.a).

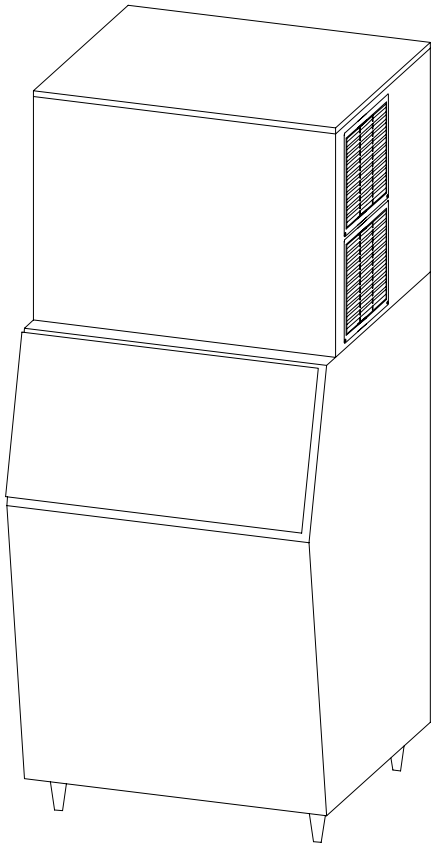


water cooled single installation

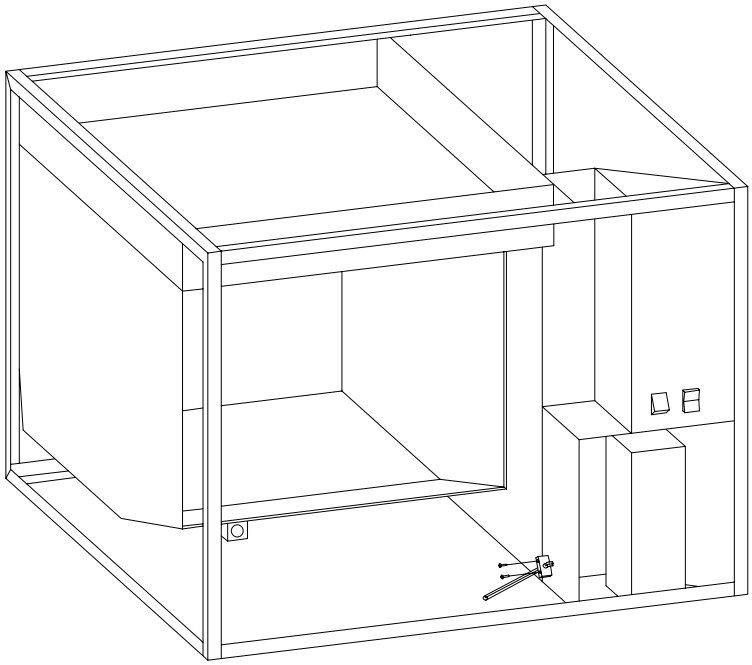
1. producing unit CP 150
2. ice storage bin BIN 245
3. leveling feet
4. bin drain
5. open vented siphon at floor level
6. unit drain
7. condenser water outlet
8. condenser water inlet
9. ice producing water inlet
10 multi-pole disconnect switch

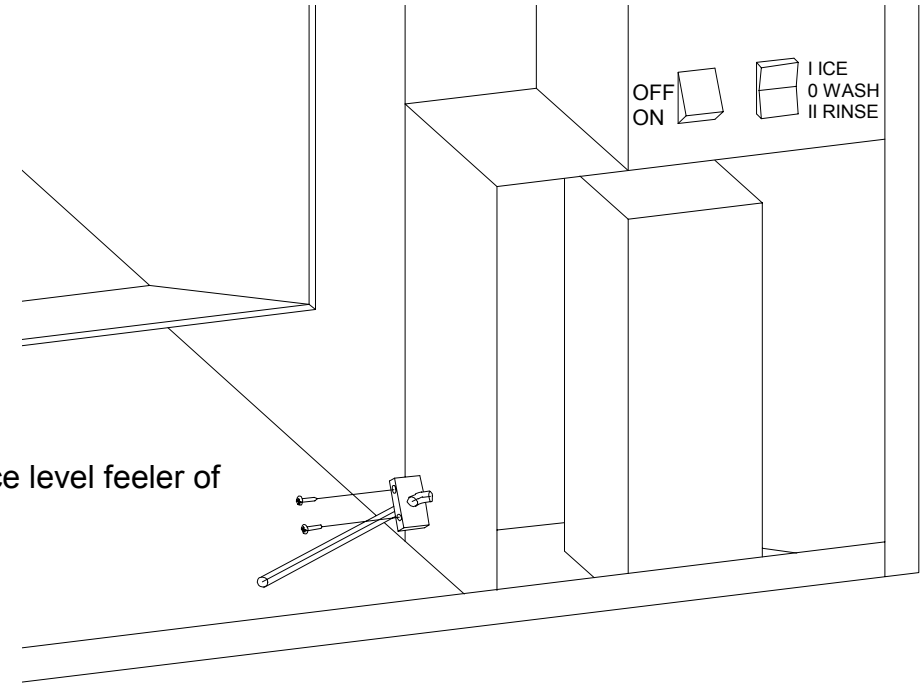
fig. 2.B.2

CP 150 installed on an ice storage BIN 245



inside of CP 150





Positioning of ice level feeler of Bin Thermostat

fig. 2.B.3

2.B.c.DOUBLE INSTALLATION PROCEDURE

It is possible to install one unit stacked to another one on the same bin. For this purpose a special *stacking kit* , described as follows, is needed.

1. STACKING KIT

The kit for double installation mod. 150 includes the following items:

• TOP ICE COLLECTOR with ice level feeler	cod. 3564	1 pc.	(part 2)
• TOP EXTERNAL ICE CHUTE	cod. 3567	1 pc.	(part 3)
• BOTTOM EXTERNAL CLOSURE	cod. 3565	1 pc.	(part 4)
• KNURLED HEAD SCREW M4	cod. 0080	2 pcs.	
• HEX. HEAD SCREW 6MAx40	cod. 0533	2 pcs.	
• HEX. HEAD SCREW 6MAx20	cod. 0540	2 pcs.	
• TAB WASHER d.6	cod. 0535	4 pcs.	
• NUT 6MA	cod. 0534	4 pcs.	
• WATER DRAIN TUBE	cod. 0831	10 cm	
• DRAIN PLUG	cod. 4219	1 pc.	
• SEALING TAPE	cod. 1628	3 m	

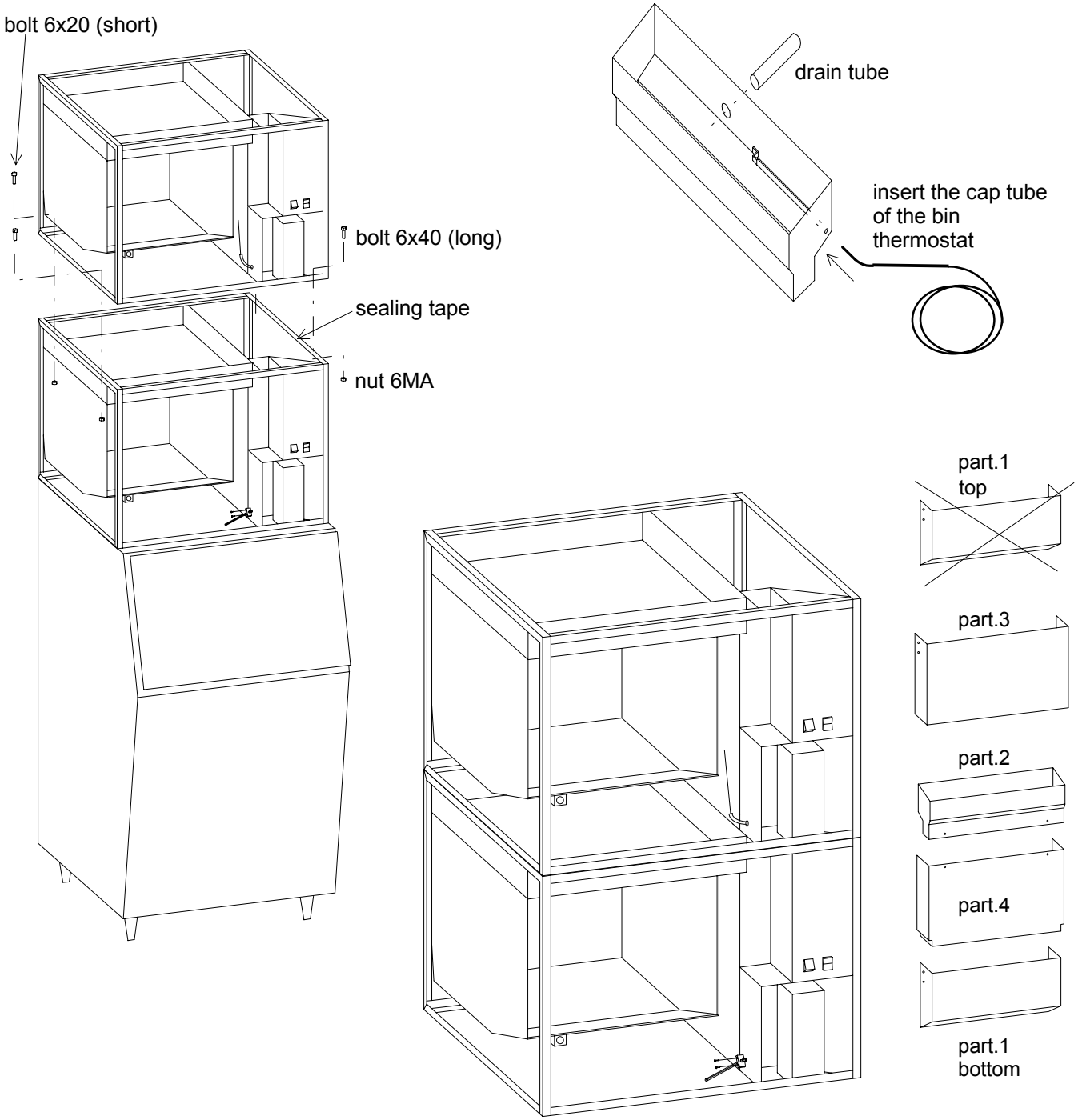
2. INSTRUCTIONS FOR INSTALLATION:

1. Install bottom unit on its bin following instructions for single installation (see # 2.B.a)
2. Remove all the panels of bottom and top unit.
3. Fix the sealing tape on the frame of bottom unit, where top unit will be placed.
4. Place top unit on the frame of bottom unit and fix them with bolts and nuts using the existing holes.
5. Remove the external plastics ice chute of bottom and top unit (part.1) keeping the fixing knurled head screws.
6. Remove the cap tube of the bin thermostat of top unit from the ice level feeler placed besides the water tank and gently insert it thoroughly into the ice level feeler inside the TOP ICE COLLECTOR (part. 2).
7. Insert the TOP ICE COLLECTOR (part.2) between the front brace of the frame and the evaporator support of bottom unit. Connect the drain tube to the water tank routing through the existing hole, then plug the tube.
8. Replace the standard plastics external ice chute of top unit with the TOP EXTERNAL ICE CHUTE (part.3), st.steel, using the same knurled head screws.
9. Connect the TOP ICE COLLECTOR to the BOTTOM EXTERNAL CLOSURE and fix it with the included screws.
10. Re-install the original plastics external ice chute (part.1) of lower unit with its knurled head screw. The BOTTOM EXTERNAL CLOSURE (part.4) must fit inside.
11. Complete the set-up procedure for the top unit following the instruction as per a single unit. Note that the top unit must be connected to a separate external multi-pole switch, and has its own water inlet & drain connections. There is no electrical connection between top & bottom units.
12. After re-installing all removed panels and completing electrical and water connections, the two units can be started.

NOTE:

The type of installation lets you start one unit, or the other, or both.
For better performance, we suggest you not start the two units together, but leave a delay of time (say a quarter of an hour), between the two start-ups.

DOUBLE INSTALLATION - STACKING KIT SCHEMATIC



3. START-UP & TEST

When all the installation procedures have been completed, and all panels have been re-placed in position, you can start-up the unit.

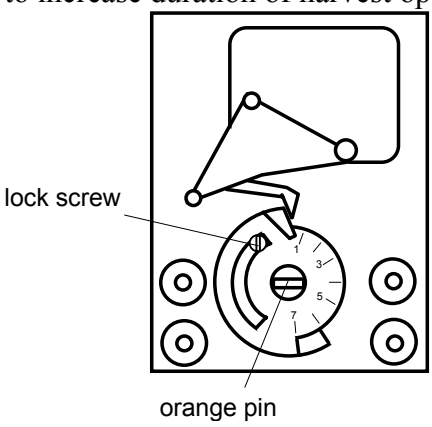
3.A. START-UP

1. Clean walls and bottom of storage bin with a wet cloth.
   If needed, follow instructions for sanitizing the storage bin and/or the ice-maker.
2. Open tap on water mains and check for leakage.
   Always charge water before starting ice production at first installation, or after a shut-off period.
3. Ambient temperature must range 10°C to 43°C .
   Water temperature must be between 10°C and 25°C
4. Switch main external disconnect switch on.
   To switch unit ON and OFF operate on the external disconnect switch only.
5. Unit starts production.
   Within half an hour the first ice cubes will fall inside the storage bin
6. For best performance, we suggest that ambient temperature should be between 12°C and 38°C

3.B. TEST

1. Wait three producing cycles before making any adjustment, then check the ice cubes. They must have a small dimple. If they are too empty, turn the adjusting screw of the ice-control thermostat clockwise to '+'. If they are too full, turn the screw counter clockwise to '-'.
2. Always make slight adjustments and wait for results. Do not insist on obtaining a full cube without any dimple by adjusting the evaporator thermostat (ice-control) to full '+'.
   Especially with hot external temperatures, adjusting the evaporator thermostat (ice-control) to full '+' will cause the unit to have very long producing cycles, with a great decrease in production. It is also possible that too full cubes won't fall into the bin during the defrost cycle and so they will be cut and melted by water spray, obtaining the opposite of what thought.
3. If cubes are white or not complete, clean spray bar and nozzles.
4. With ice in contact with the ice bin level feeler inside the bin, the unit should stop within 1 min. If not, slightly turn the adjusting screw of the bin thermostat counter clockwise towards 'SUMMER' until the unit stops. With the feeler cleared from ice, the unit should restart within 5 min. If not, screw slightly clockwise towards 'WINTER'.
5. To reach thermostats and Timer remove front panel.
6. *Final User is not allowed to make adjustments of the thermostats or to service unit.*

With water and/or ambient temperature below 10°C, to help ice cubes fall into the bin, it is possible to increase duration of harvest operating on the adjustable cam of the Timer.



Timer

To change duration of harvest cycle, loosen the lock screw releasing the moving cam.
Change position of the cam referring to the numbers printed on the orange part.
Lock the cam with the screw.

fig. 3.B.1

4. CLEANING

CAUTION ! : HAZARDOUS MOVING PARTS INSIDE MOTOR COMPARTMENT !
Do not operate with panels removed !

DANGER ! : ELECTRIC SHOCK HAZARD !
Disconnect power before servicing unit !

4.A. CONDENSER CLEANING

Clean condenser every month.
Disconnect power, remove side panel and brush away dust and dirt from the condenser with a hard brush and a vacuum cleaner.

CAUTION: the fins of the condenser have sharp edges which might hurt your fingers.

A dirty condenser causes loss of production and may jeopardize correct operation of the unit.

4.B. INTERNAL CLEANING & SANITIZING

CAUTION ! : DO NOT MIX CLEANER AND SANITIZING SOLUTION TOGETHER

WARNING ! WEAR RUBBER GLOVES AND SAFETY GOGGLES WHEN HANDLING ICE MACHINE CLEANER OR SANITIZER

4.B.a.Cleaning - To remove lime scale or other mineral deposits

1. Disconnect power and remove front panel.
2. To drain water tank, gently remove external ice chute and take away the rubber plug in front of the water tank.
3. To clean tank and water system, add an approved liquid ice machine cleaner to water tank following the directions of the manufacturer of the product.
   Otherwise you can pour two spoons of vinegar or citric acid in the water tank.
4. Place toggle switch in the WASH position (0) and turn the orange pin of the TIMER clockwise until it is in defrost position thus charging fresh water.
5. After some minutes, as the motor of the TIMER is energized, the TIMER will be in freeze position and the pumps will be energized.
6. If the water tank is not full, repeat point 4 & 5.
7. Leave the unit work for some minutes. (15 min.).
8. To rinse place toggle switch in the RINSE position (II): both water inlet valve and pumps will be energized.
9. To drain water switch master switch off, then take the rubber plug away.

For a more thorough cleaning you can remove spray bars, ice chute and water blinds and clean them separately.

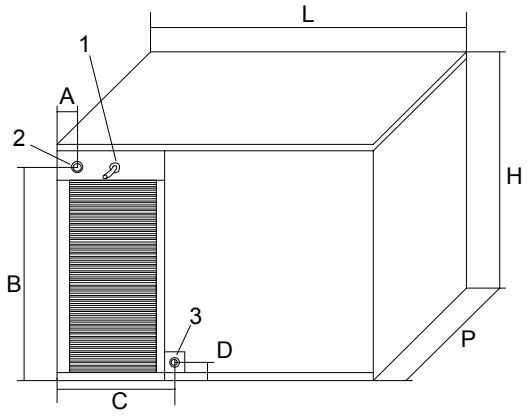
4.B.b.Sanitizing - To remove algae or slime

1. To sanitize ice storage bin, take away all the ice and gently wipe walls and bottom of the bin with a cloth and a sanitizing cleaner following the directions of the manufacturer of the product.
   You can use household products or a diluted solution of sodium hypoclorite (bleach).
2. To sanitize water tank and all the water system, follow instructions for cleaning using a sanitizing product instead of a cleaner.

It may be necessary to connect water supply to a water treatment system to inhibit scale formation, filter sediment or remove chlorine taste.
Water treatment will pay for itself through decreased maintenance, higher efficiency and quality of product.

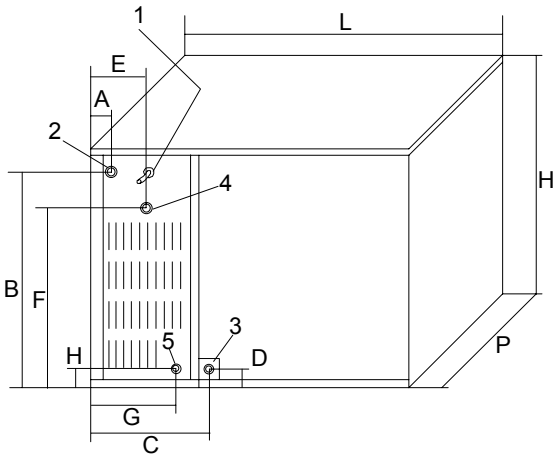
5. GENERAL INFORMATION

5.A. WEIGHTS & DIMENSIONS



dimensions air cooled

1) Electrical cord
2) Water inlet (ice making) 3/4”
3) Water drain ø 16mm



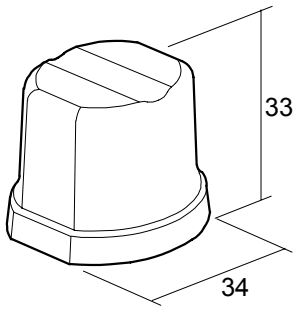
dimensions water cooled

1) Electrical cord
2) Water inlet (ice making) 3/4”
3) Water drain ø 16mm
4) Condenser water inlet 3/4”
5) Condenser water drain ø 16mm

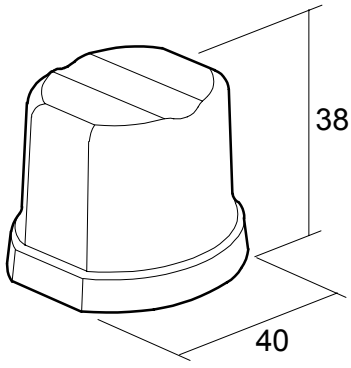
	L	P	H	A	B	C	D	E	F	G	H
	mm			mm		mm		mm		mm	
air cooled	765	640	575	75	505	285	45	-	-	-	-
water cooled	765	640	575	75	505	285	45	130	335	210	55

5.B. CUBE SIZE

Two types of ice cubes are available on this producing unit, the standard cube and the big cube. The standard cube has an average weight of 19 grams, while the big one has an average weight of 32 grams.
Shapes and dimensions are explained in fig. 5.B.1.



standard cube 19g



big cube 32g

fig. 5.B.1

The two versions can be easily detected because the models producing the big cube 32g show the letter **G** after the model number (e.g. CP150EG = air cooled model - big cube).

5.C. GENERAL DATA

MODEL	TIMER ADJUSTMENT DEFROST	N. OF CUBES PER CYCLE	Q.TY OF ICE PER CYCLE IN GRAMS	THEORETICAL WATER USAGE l/h	
				air cooled	water cooled
CP 150 E	3	120	2280	36	80
CP 150 EG	2,5	99	3168	36	80

MODEL	NET WEIGHT kg	GROSS WEIGHT kg	SHIPPING VOLUME m^3	TOTAL AMPS	POWER W	FUSE RATE	COMP. RESSOR	REFRIGERANT CHARGE g	
								air cooled	water cooled
CP 150 E	75	80	0,43	6,3	1200	16A	1 Hp	1000	800

5.D. PRODUCTION

5.D.a.THEORETICAL DAILY ICE PRODUCTION - N. of cubes/24h

Average production at different ambient temperatures with water temperature of 10°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	7100	6700	6300	5900	5500
CP 150 E G	4500	4200	3900	3600	3350

Average production at different ambient temperatures with water temperature of 15°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	6600	6400	6100	5750	5400
CP 150 E G	4200	4000	3750	3500	3250

Average production at different ambient temperatures with water temperature of 21°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	6200	6000	5800	5600	5300
CP 150 E G	3900	3750	3600	3350	3100

5.D.b.THEORETICAL DAILY ICE PRODUCTION - kg/24h

Average production at different ambient temperatures with water temperature of 10°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	134,9	127,3	119,7	112,1	104,5
CP 150 E G	144	134,4	124,8	115,2	107,2

Average production at different ambient temperatures with water temperature of 15°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	125,4	121,6	115,9	109,3	102,6
CP 150 E G	134,4	128	120	112	104

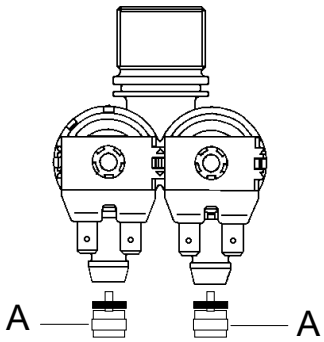
Average production at different ambient temperatures with water temperature of 21°C

MODEL	15°C	21°C	25°C	30°C	38°C
CP 150 E	117,8	114	110,2	106,4	100,7
CP 150 E G	124,8	120	115,2	107,2	99,2

5.E. WATER VALVE & FLOW REGULATOR CHART

5.E.a.AIR COOLED

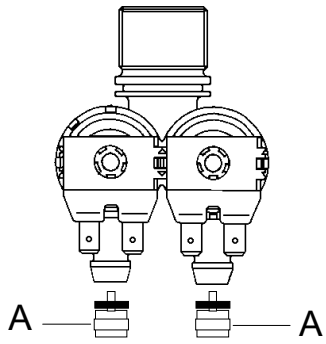
ELBI double water solenoid valve



FLOW REGULATORS- A - *ice making water inlet*		
TYPE	COLOR	MODELS
1,2 l/m	**ORANGE**	CP 150 E

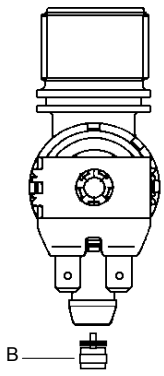
5.E.b.WATER COOLED

ELBI double water solenoid valve
connected to ice making water inlet



FLOW REGULATORS- A - *ice making water inlet*		
TYPE	COLOR	MODELS
1,2 l/m	**ORANGE**	CP 150 EW

ELBI single water solenoid valve
connected to condenser water inlet



FLOW REGULATOR - B - *condenser water inlet*		
TYPE	COLOR	MODELS
2,5 l/m	**ORANGE**	CP 150 EW