



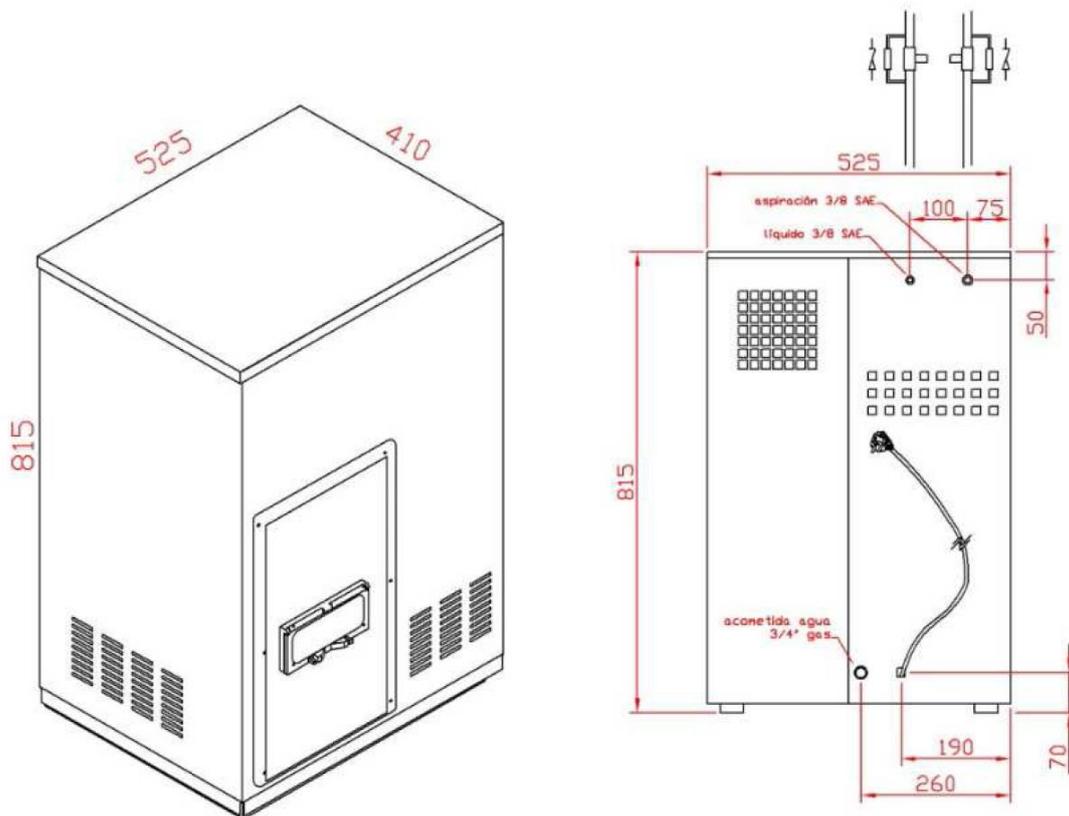
**GRANULAR ICE GENERATOR
IQ 850 CO2**

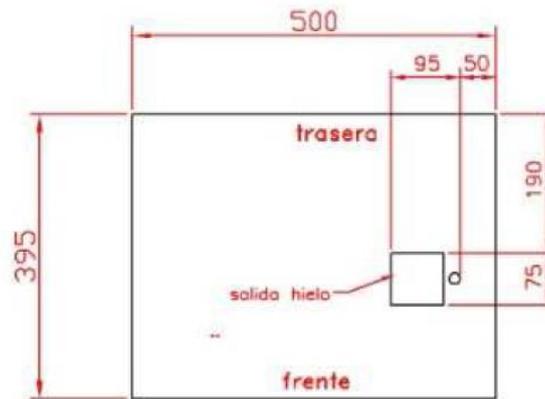
Installation guide

General description

The ice generator must be connected to a centralized refrigeration system with subcritical R744. The mains components are:

- Evaporator made of reinforced stainless steel
- Electronic expansion valve
- Evaporation constant pressure valve
- Gear motor with adjustable velocity
- Maximum high pressure 45 bar
- Maximum low pressure 30 bar
- Liquid sight glass





The hole in the top cover of the ice bin must be wider than 30 mm next to the bounded area

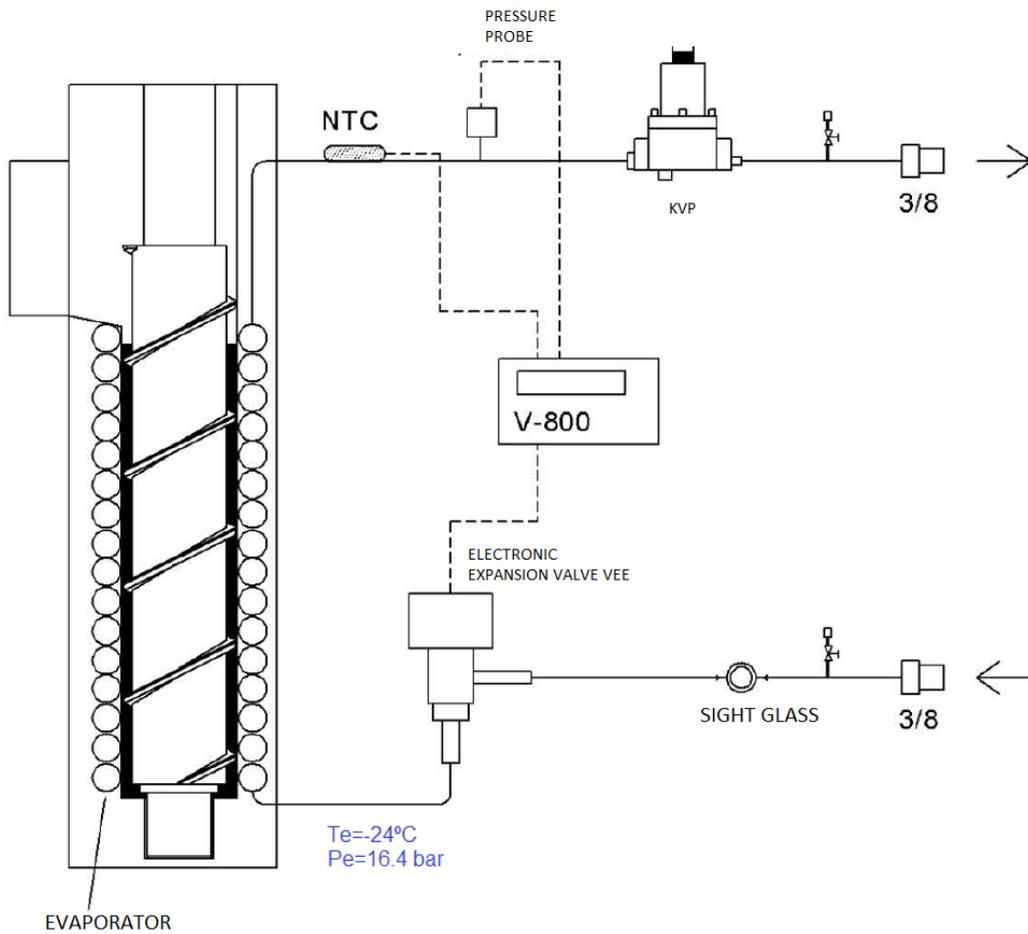
Electric connection.

- Electrical connection : Single phase 220-240V / 50 Hz
- Electrical power: 600W
- Intensity: 3.5 A
- Comes with a Schuko plug

Water connection.

- $\frac{3}{4}$ " flexible hose.
- 1 bar minimum water pressure.

Refrigeration connection.



- Unit pre charged with nitrogen 1 bar
- Lines to connect from the back of the unit
- SAE 3/8" male pressure connectors for liquid and suction. Open without closing valves.



Important. The service closing valves installed before the unit must have a backflow valve installed in parallel to avoid overpressures in the generator once closed.

- Do the vacuum to the refrigeration lines throughout the service valves sited next to the connection fittings.
- Open the service valves to complete the vacuum.

START UP AND SETTINGS

- Turn on the unit with the main switch on the front. After a **10 minute** delay the unit will start.
- Check the **frequency** on the speed driver, it must be 65 Hz.
- Check the gear motor **direction of rotation** (counter clockwise). There is a setting in the driver that won't allow rotation in the other direction.
- After **3 minutes** delay, the **electronic expansion valve** will start.
 - o Adjust the evaporation **temperature to -24°C (16.4 bar)** with the aspiration valve . To check the pressure connect a IWK terminal in the driver of the expansion valve (V800). The T2 will display the saturation temperature for CO2.
- Check that **no bubbles show in the sight glass**. A problem with the liquid feeding might turn in not enough refrigerant in the evaporator and lower the ice production.

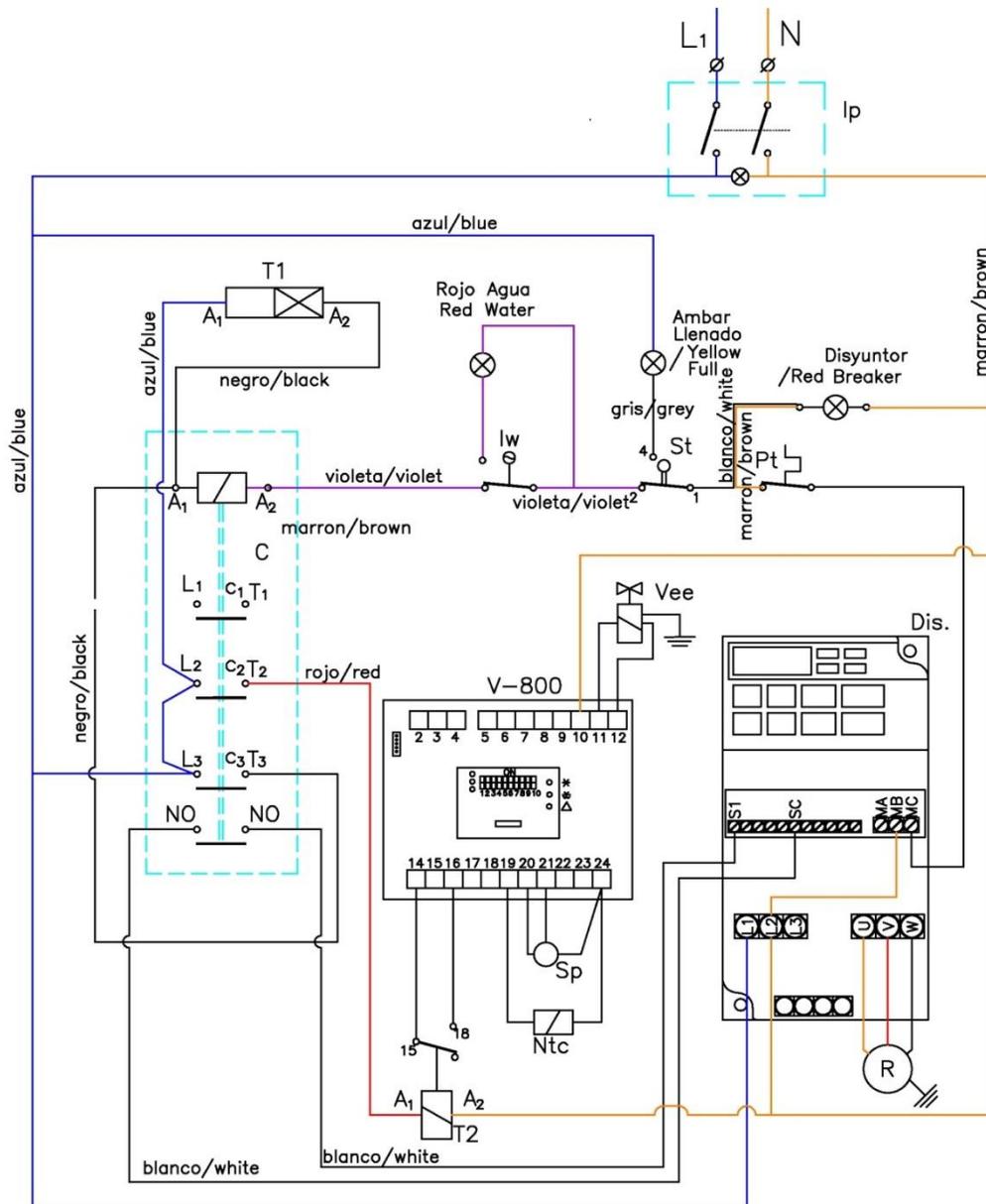
ALARMS AND SIGNALS

- **No water**. When there is no water pressure the unit stops. It will start again after a 10 minute delay.
- **Alarm in the speed driver**. If there is a blockage or a over torque in the gear box of the unit it will stop and a signal will light. To reset turn the unit off and on from the main switch. The error code is shown in the speed driver display.

Technical especificacions

Generator IQ 850 CO2	
Technical specifications	
dimension:	
width	525 mm
length	410
Height (with legs)	815
Net weight	88 Kg
Electrical data:	
voltage	220-240 V
frequency	50 Hz
power	600 w
intensity	3,5 A
Electric plug with Schuko	
Gear motor:	
voltage	220-400V (220V connection)
power	0,37 Kw
velocity (50Hz)	7,5 rpm
working velocity (65 Hz)	9,8 rpm
Speed driver	
Input voltage	220-240 (single phase) V
Output voltage	220 (three phase) V
Nominal power	0,55 kW
Refrigeration data:	
refrigerant	R744A (subcritical)
Evaporation temp.	-24°C
Cooling requirement	3400 w
Liquid connection	3/8" SAE
Suction connection	3/8" SAE
Maximum high pressure	45 bar
Maximum low pressure	30 bar
Electronic expansión valve	
VEE pulse valve driver V800/P1	
Pressure probe	0-30 bar
Temperature probe	quick NTC IP-68 10K
Evaporation constant pressure valve:	
Máximum pressure	45 bar
range	2-21 bar
setting	-24°C (16.4 bar)
Water connection:	
Flexible hose	3/4"
Nominal production (water temp. 15°C)	
	850 Kg/24h

Electrical diagram



- C. –Contactor / Contactor
- Dis. –Compact General Purpose Inverter (motorgear) / Variador (motorreductor)
- T2 –Temporizador retardo solenoide / liquid valve timer
- Ntc –Sonda Temperatura
- Sp –Sonda de Presión
- Vee –Bobina Válvula Expansión
- V800 –Driver Válvula Expansión
- Pt. –Motor thermal protection / Protección térmica motor
- St. –Full storage bin stop / Paro depósito almacén lleno
- lw. –Water level pressure switch / Interruptor nivel de agua
- R. –Gearmotor / Motorreductor
- Ip. –On/off switch / Interruptor On/Off
- T1. –Start timer / Temporizador a la conexión

Settings

Omron speed driver JZAB0P4BAA

Nominal power 0.55 kW

Nominal I 3A

Setting	Factory setting	UNIT	Description
		CO ₂ GENERATOR	
A1-01	2	0	Setting change not available
b1-01	1	0	working frequency by keyboard (d1-01)
b1-02	1	1	run by contact sc-s1
b1-03	0	1	instantaneous stop
b1-04	0	1	turning direction not available
b1-17	0	1	turns on when the start up contact is closed while giving power to the unit
C1-01	10	5	acceleration seconds
C6-02		6	15 khz noise reduction
d1-01	0	70	working frequency
d2-01	100	100	upper frequency limit %100 de E1-04
d2-02	0	65	lower frequency limit % de E1-04
E1-04	50	80	maximum frequency
H2-01	E	E	exit relay NO-NC
L6-01	0	4	over torque, alarm and stops. Detection during start up and working
L6-02	150	80	intensity limit % over variator nominal
L6-03	0,1	10	seconds to give over intensity alarm
o2-02	1	0	keyboard blocked
o3-01	0	2	Data copied from keycard

factory setting R449

Name	Description	UM	Min	Máx	Default setting	R404A	R448a	R449a	CO2
AT1 folder									
U01	PWM period	s	3	10	6		3		6
U02	maximum valve opening %.	%	0	100	100		100		100
U03	valve actuation % after blackout for time set by OtF.	%	0	100	0		65		65
U04	valve actuation % after defrost for time set by OtF.	%	0	100	0		0		0
U05	Valve operating time at maximum opening for alarm signal.	min	0	255	60		60		60
U06	minimum valve useful opening %.	%	0	U07 (100)	0		0		0
U07	maximum valve useful opening %.	%	U06 (0)	U02 (100)	100		100		100
OP folder									
HOE	Enable MOP		0	1	0		n		y
HdP	MOP activation delay on startup	s	0	999	0		0		0
HOt	Evaporator temperature upper threshold	°C	-60	100	0		0		-10
tAP	Minimum time that temperature upper threshold is exceeded for alarm activation	s	0	255	180		180		180
OH folder									
OHE	Overheating calculation by reference enable		0	1	1		y		y
OHt	Overheating higher threshold.	°C	0	100	15		7		15
OLt	Overheating lower threshold.	°C	0	100	8	2 (*)	4 (*)		10
Otr	Overheating calculation period	s	0	999	20		20		20
OSt	Overheating calculation time	°C	0	100	0,1		0,1		0,1
OtF	Valve opening freezing timer.	s	0	1999	0		0		0
OPb	Threshold overheating	°C	-999,9	-0,1	-10		-100		-100
Oti	Overheating integer time	s	0	1999	1000		60		60
Otd	Overheating derivation time	s	0	1999	0		0		0
A_F	PID manual or automatic		0	1	-		1		1
dUt	Duty cycle PID manual mode		0	100	-		0		0
Add folder									
PIS	Protocol selection. t= Televis; d=Modbus.		0	1	t		t		t
dEA	Index of the device within the family (valid values from 0 to 14).		0	14	0		0		0
FAA	Device family (valid values from 0 to 14).		0	14	0		12		12
PTY	Modbus parity bit.		0	2	E		E		E
Ptb	Baud rate.		0	5	96		96		96
CnF folder									
H00	Overheating probe configuration (input 1)		diS / nTC / 420		nTC		ntc		ntc
H01	Saturation probe configuration (input 2)		diS / nTC / 420 / rA / rEt		420		rA		rA
H03	Lower current limit for input.	bar	-50	150	-0,5		0		0
H04	Upper current limit for input.	bar	H03	999	7		10		30
H05	Pressure measurement unit.		PSi / bAr		bAr		bAr		bAr
H06	Temperature measurement unit. °C °F		°C / °F		°C		°C		°C
H10	Select refrigerant.		/507 /PAr		404	404	448	449	744
H11	Configurability and polarity of digital input 1	nº	0	3	0		1		1
H12	Configurability and polarity of digital input DI2. Same as H11.	nº	0	3	0		0		0
H15	Valve opening % during probe error.				0		0		0
H21	Configurability of digital output DO1		diS / SOL / AL		SOL		SOL		SOL
H22	Configurability of digital output DO2		diS / SOL / AL		diS		diS		diS
H30	Command from digital input or serial port		di / LAN / rEt		LAN		di		di
H60	Plant type	nº	0	16	1		1		1

(*) Units with a serial number lower than 17738736 increase by 2°C (NTC probe improved contact)

Dip-switches setting V800

	R404	CO2
1= OFF (down) 2= OFF (down)		
3= OFF (down)		<i>The IWK/V keyboard only will work with the Dip-switch 3 OFF</i>
4= ON 5= ON 6= ON		select the refrigerant with H10
7= OFF (down) 8= OFF (down) 9= OFF (down) 10= OFF (down)		Not used