



INSTALLATION GUIDE
SPLIT-REMOTE SCALA

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STEP 1: EVAPORATOR AND CONDENSER UNIT LOCATION

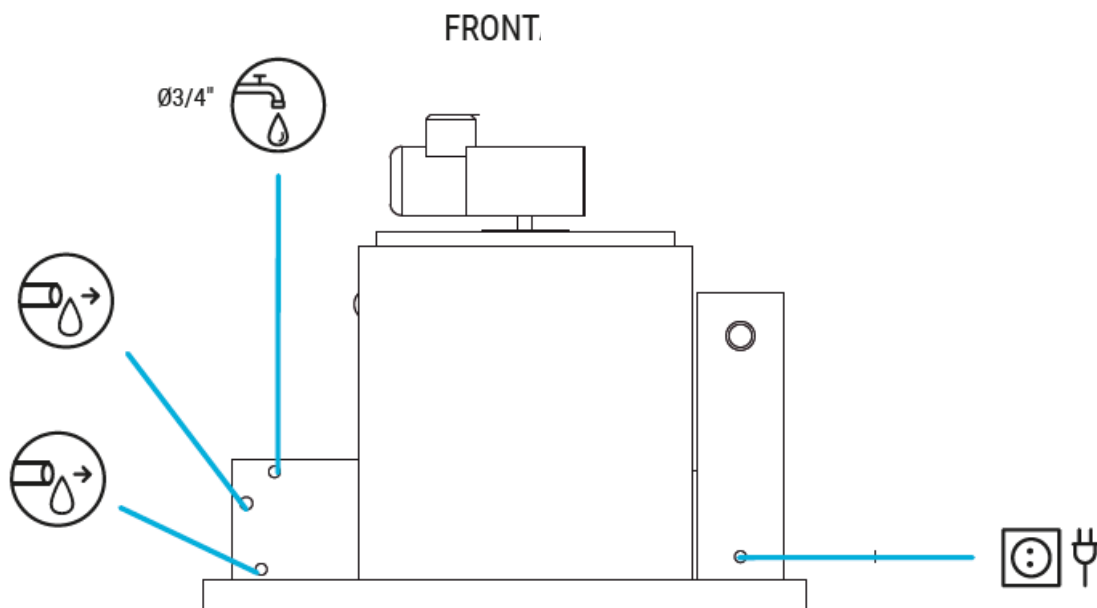
CHECKING THE PROPER CONNECTIONS:

ITV REMOTE CONDENSER UNIT (units from 400 kg up to 10 tons):

- It needs an electrical supply (check label with power supply specifications). Electrical box included.
- There is no electric connection between evaporator and condenser unit (only refrigeration line).
- Level the unit correctly.
- Check the air direction through the remote condenser, always install the unit with the air direction out to the ambient when installed in a wall, to avoid condensed air returning to the condenser.
- In the remote unites, the condenser unit is three phase, and the evaporator single phase.

SCALA SPLIT:

- It needs an electrical supply (check label with power supply specifications). It comes with no electric cable, ready to connect in the terminal connector inside the electric box. All the split units are single phase, except the units from 25 tons up to 50 tons, being three phase.
- Water supply: it needs a water tap nearby. The unit comes with one or two water hose, 3/4" GAS connection (depending on the model, check the table below).
- Drainpipe: The unit has an overflow pipe, to avoid spilling water out of the water bin in case of malfunction of the float. A drainage is needed it. The drainpipes must be straight, no siphons allowed, to let the water drain directly. It also has a faucet on the bottom of the water bin, to allow emptying the water box completely. The drain is 21 or 38 mm diameter, depending on the unit.



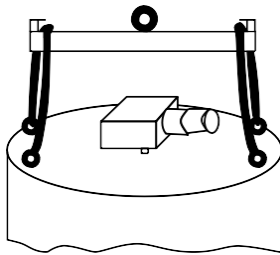
MODEL	PRODUCTION KG/24H	REFRIGERANT	ELECTRIC SUPPLY	ELECTRIC POWER W	WATER CONSUMPTION L/H
SCALA 400	400	R449A	220V/50-60Hz/1 phase	190	17
SCALA 600	600	R449A	220V/50-60Hz/1 phase	190	25
SCALA 1000	1000	R449A	220V/50-60Hz/1 phase	190	42
SCALA 1500	1500	R449A	220V/50-60Hz/1 phase	200	63
SCALA 2000	2000	R449A	220V/50-60Hz/1 phase	200	85
SCALA 3000	3000	R449A	220V/50-60Hz/1 phase	200	125
SCALA 5000	5000	R449A	220V/50-60Hz/1 phase	435	208
SCALA 10T	10000	R449A	220V/50-60Hz/1 phase	435	417
SCALA 15T	15000	R449A	220V/50-60Hz/1 phase	1000	625
SCALA 20T	20000	R449A	220V/50-60Hz/1 phase	1000	833
SCALA 25T	25000	R449A	220V/50-60Hz/1 phase	1000	1042
SCALA 30T	30000	R449A	220V/50-60Hz/1 phase	1000	1250
SCALA 35T	35000	R449A	380V/50-60Hz/3 phase	1120	1458
SCALA 40T	40000	R449A	380V/50-60Hz/3 phase	1120	1667
SCALA 50T	50000	R449A	380V/50-60Hz/3 phase	1120	2083

MODEL	COOLING REQUIREMENT W	EVAPORATION TEMP. °C	WATER INLET	DRAIN EXIT DIAM. mm	LIQUID LINE DIAM.	SUCTION LINE DIAM.
SCALA 400	2200	-22	3/4"	21	3/8"	1/2"
SCALA 600	3300	-22	3/4"	21	3/8"	1/2"
SCALA 1000	5500	-22	3/4"	21	3/8"	7/8"
SCALA 1500	8250	-22	3/4"	21	5/8"	1 1/8"
SCALA 2000	11000	-22	3/4"	21	5/8"	1 1/8"
SCALA 3000	16500	-22	3/4"	21	1/2"	1 3/8"
SCALA 5000	27500	-22	3/4"	21	7/8"	2 1/8"
SCALA 10T	55000	-22	3/4"	21	1 1/8"	2 1/8"
SCALA 15T	82500	-22	2 x 3/4"	38	1 3/8"	3 1/8"
SCALA 20T	110000	-22	2 x 3/4"	38	1 3/8"	3 1/8"
SCALA 25T	137500	-22	2 x 1"	38	1 3/8"	4"
SCALA 30T	165000	-22	2 x 1"	38	1 5/8"	4"
SCALA 35T	165000	-22	2 x 1"	38	1 5/8"	5"
SCALA 40T	220000	-22	2 x 1"	38	1 5/8"	5"
SCALA 50T	275000	-22	2 x 1"	38	1 5/8"	5"

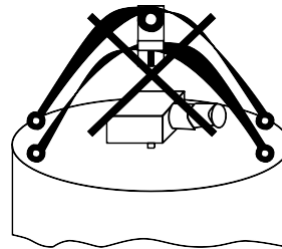
- The icemaker shall be lifted using the four shackles fixed on its base plate (for small-sized machine) or on its top (for large-sized machine) and shall be laid down slowly on the support or ice storage bin that has been put in place.

For large-sized icemaker, the correct steel cable lifting is as shown in this figure.

CORRECT LIFTING



INCORRECT LIFTING



- Level the unit correctly.

	Minimum value	Maximum value
Ambient temperature	5°	40°
Water temperature	5°	35°
Water pressure	1 bar	5 bar
Deviation from voltage rating	-10%	6%

STEP 2: REFRIGERATION CONNECTION BETWEEN BOTH UNITS

CONDENSER UNITS (only in the remote units)

CONDENSER UNIT PIPING CONNECTION

Check the liquid and gas pipe diameter. In the upper table, there are the diameters, depending on the unit

- The condenser unit comes charged with R449A refrigerant (remote units).
- For the Split units, connect the evaporator to a condenser unit that is able to give the required cooling capacity, with a -22°C evaporating temperature (check the upper table).
- Always connect the remote condenser unit to the refrigeration pipes by welding; the condenser unit in the remote machines always comes with the refrigerant charged inside the liquid vessel.
- Try to do a clean installation, as straight forward as possible.
- If the condenser unit is below the evaporator level, it is not necessary to install a siphon to allow the oil to return to the condenser unit, due to the gravity effect. However, if a slope is used after the evaporator exit to avoid the liquid migration during the stops towards the compressor, it is advice to install a siphon at the evaporator exit, in the suction line.
- If the condenser unit is higher or equal to the evaporator unit, a siphon must be installed at the evaporator exit, in the suction line, one every 4 meters vertical, and one every 8 meters horizontal.

SPLIT UNIT: It is connected to the condenser unit with the correct pipe, using the diameter in the table shown in the last step.

Keep in mind the only connection between condenser unit and evaporator is the refrigeration pipes.

The condenser unit in the remote machines comes with the correct charge of R449A, to lengths up to 15 meters. For bigger distances, it might be necessary to increase the charge and / or increase the Refrigeration pipes. Please contact factory to know the changes for more than 15 meters.

STEP 3: INSTALLATION LEAKING TEST AND VACUUM

- Once the refrigeration pipes are weld and connected, a leaking test must be done to check that the line has no leakage in the nuts or the welding.
- After checking for leakages, a correct vacuum must be done. We advise to keep vacuum for around 24 hours.

ATTENTION: Do not open the gas taps from the liquid vessel in the condenser unit (in remote units) before doing the vacuum, as the unit comes with refrigerant.

STEP 4: OPEN GAS AND LIQUID TAPS

- Once that everything is correctly installed and there are no leakages, and the vacuum has been done properly, open the liquid vessel on the condenser unit (only on remote machines), that comes with a refrigerant charge for 15 meters of distance between the remote condenser and the split unit. Open slowly the liquid tap and then the gas tap.

STEP 5: START UP

- Turn on the Split unit and the condenser unit (plug it to the electricity and switch on). The Split unit comes with an electronic box, with a 3 minutes delay start, for security reasons. After 3 minutes, the water pump and gear motor start, and the liquid solenoid valve opens, starting then the condenser unit (by high/low pressure switches).
- When the Split unit stops, by the main switch, full of ice (photocell) or a malfunction, the unit keeps with the gear motor on 3 minutes, to extract all the ice on the evaporator wall, while the liquid solenoid valve closes, to move all the refrigerant to the condenser unit (for security reasons), and stopping the condenser unit by low pressure switch.
- The Split unit comes with a velocity driver, that allows to modify the gear motor frequency of turn, allowing to obtain velocities lower than 50 Hz (factory setting) to increase the ice flake thickness, from 1.5 mm up to 3 mm. The production loss is not bigger than a 20% with a 30 Hz frequency. We do not advice to go lower than 30 Hz.
- The velocity driver also works as the thermal relay of the gear motor. It stops the unit when the gear motor is over torque.
- The motor must always be connected as triangle, never star mode (220 volts three phase).

SCALA SPLIT ELECTRIC DIAGRAM

