FRIAX INDUSTRIE

TECHNICAL INSTALLATION MANUAL



GCW Water condensing unit

PRODUCT REGISTRATION

Register your products now to validate your installation and benefit from improved support if needed.

La FRENCH FAB

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LAURÉAT Réseau Entreprendre SAVOIE

EN-NT-SPC-GCW-0626

Specifications may change without prior notice to reflect product improvements.

Warning

Read the manual carrefully before using the device and
keep it for futur reference.



This symbol indicates that the installation manual should be read carrefully.



This symbol indicates that a technician must handle this equipment in referring to the installation manual.



This symbol indicates that information are available, such as the manual operating instructions or installation manual.

- Improper installation or use can result in personal injury, property damage, and voiding of the manufacturer's warranty. Failure to comply with safety instructions and local standards during the installation releases the manufacturer from all liability.

- Make sure to install the device in a place protected from the elements and frost-free.

- The equipment should be installed in a room without a permanent source of fire, such as open flame, a combustion device, an electric heater, etc..

- The possible stagnation of refrigerant gas leaks in unventilated rooms can create a risk of fire or explosion if the refrigerant comes into contact with an ignition source.

- Be aware that some refrigerant gases can be odorless.

- Any intervention on a refrigeration circuit must be carried out by a professionnal authorized by an accredited body certifing the competence to handle refrigerant fluids.

- The appliance must be free of obstructionsat all times to ensure proper operation and reduce safety risks.

- Do not puncture any component of the refrigerant circuit.
- Use care when handling the equipment to avoid malfunction.

- The device must be installed in accordance with local wiring regulations.

- Make sure that the characteristics of the device are compatible with those of electrical installation.

- Make sure the AC outlet is grounded.

- Do not use the device if it is damaged.

- Do not connect the power supply until the entire installation is complete.

- Always switch off the appliance and unplug it from the mains for cleaning and maintenance.

- Do not put your hands or objects in the air inlets and outlets.

- Do not try to repair the device yourself.

- Any use and / or modification not approved by the manufacturer may be dangerous for your safety and your health.

- This appliance must not be used by children.

- The user should understand and be aware of the potential dangers associated with the use of the device.

- Use only the means and / or tools recommended by the manufacturer for defrosting or cleaning.

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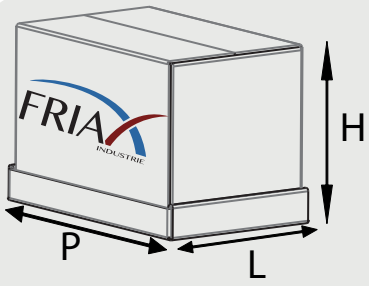
Presentation

Thank you for choosing a Friax cellar system to control the aging of your wines. Take the time to read this user manual. It will allow you to understand and master the operations to install and adjust your device.

Receipt of the package

We invite you to examine the package upon receipt for possible damage to the cardboard or missing items. Please note your comments regarding the condition of the package on the carrier's delivery note: they will be used in the event of damage noted upon unpacking.

Your package contains one outdoor unit.
The manual corresponding to the evaporator is located inside its packaging.



Dimensions excluding pallet : L x W x H

800mm x 600mm x 600mm



Group SPC GCW

Technical data

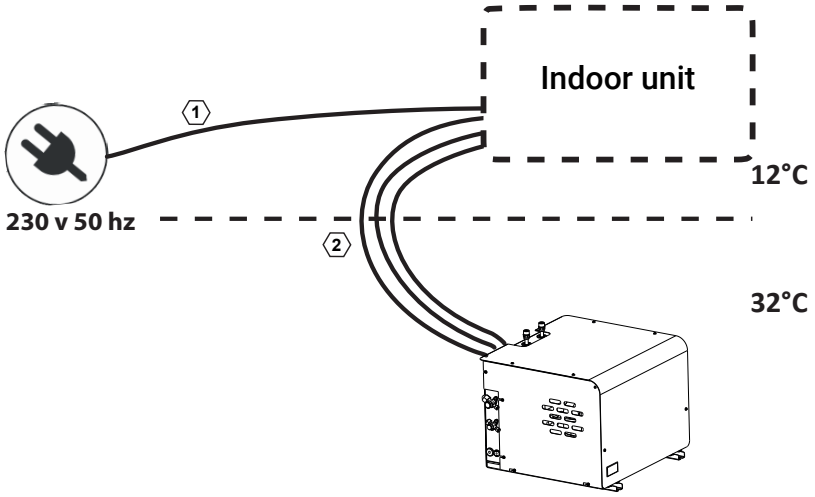
+32°C EXT	SPC	30	48	82	122	170	230
Fluid		R513A	R513A	R513A	R513A	R513A	R513A
Cooling capacity	W	780	1130	1470	2370	2750	3440
Outdoor unit	**SPC**	**30**	**48**	**82**	**122**	**170**	**230**
Voltage / frequency	50HZ	230V/1+T	230V/1+T	230V/1+T	230V/1+T	230V/1+T	230V/1+T
Air group absorbed intensity / Max intensity	A	2.49/3.82	3.47/3.92	4.89/7.32	4.48/8.82	4.89/10.32	8.2 / 15.1
Sound pressure level at 5m Standart	db	37	40	40	40	47	47
Sound pressure level at 5m with BNS	db	34	37	37	37	44	44
Gas connections Suction line	Ø	3/8"	3/8"	3/8"	1/2"	5/8"	5/8"
Gas connections Liquid line	Ø	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"
Precharge for 6m connection -add 20gr/m extra	gr	1175	1230	1300	1350	2100	2100
Max. distance between outdoor unit and evaporator	m	20	20	20	20	20	20
Raccordement eau W	Ø	2 x 1/2"M	2 x 1/2"M	2 x 1/2"M	2 x 1/2"M	2 x 1/2"M	2 x 1/2"M
Net weight	Kg	30	39	52	54	55	64
Body color		Grey anodique anthracite	Grey anodique anthracite	Grey anodique anthracite	Grey anodique anthracite	RAL7035	RAL7035

Electrical connections

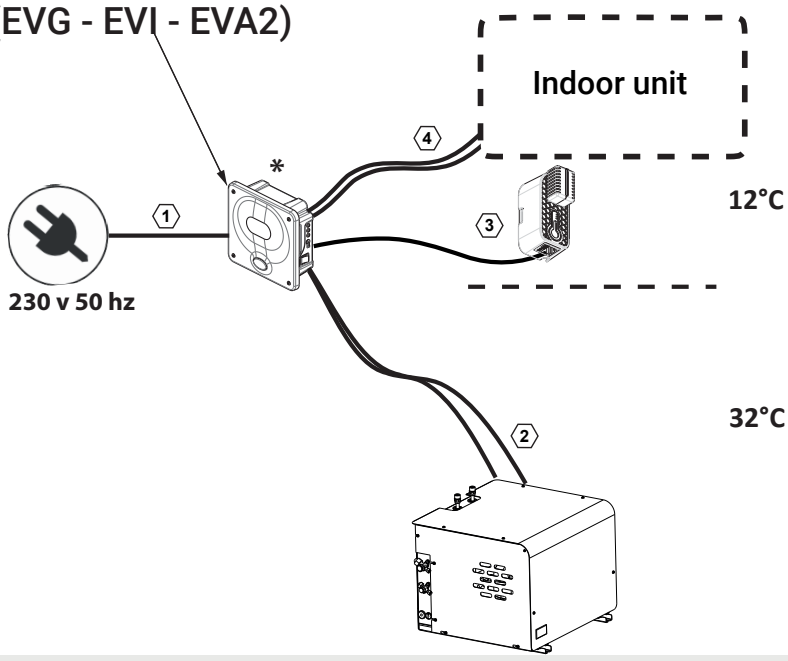
Models SPC GCG	30-48-82	122	170-230
Voltage / frequency	230V / 50Hz	230V / 50Hz	230V / 50Hz
Protection	10A	10A	16A
① Power supply ==> Evaporator	(Refer to the evaporator manual)	(Refer to the evaporator manual)	(Refer to the evaporator manual)
② Outdoor unit ==> Control box Max length 20 meters	1 x (5g1.5²) 1 x (3 x 1mm²) 1 x (2 x 0.5mm²)	1 x (5g1.5²) 1 x (3 x 1mm²) 1 x (2 x 0.5mm²)	1 x (5g2.5²) 1 x (3 x 1mm²) 1 x (2 x 0.5mm²)
Models with control unit			
③ Cellar probe ==> Control box	6 m RJ12 cable supplied	6 m RJ12 cable supplied	6 m RJ12 cable supplied
④ Indoor unit ==> Control box (Supplied cables fitted with connectors)	1x5g1.5mm² cable, 6 m long, fitted with connectors 1x 3x1mm² cable, 6 m long, fitted with connectors	2x5g1.5mm² cable, 6 m long, fitted with connectors 2x 3x1mm² cable, 6 m long, fitted with connectors	2x5g1.5mm² cable, 6 m long, fitted with connectors 2x 3x1mm² cable, 6 m long, fitted with connectors

Schematic diagram

Evaporator with integrated controller (EVPL2 - EVX2)



Remote control box (EVG - EVI - EVA2)



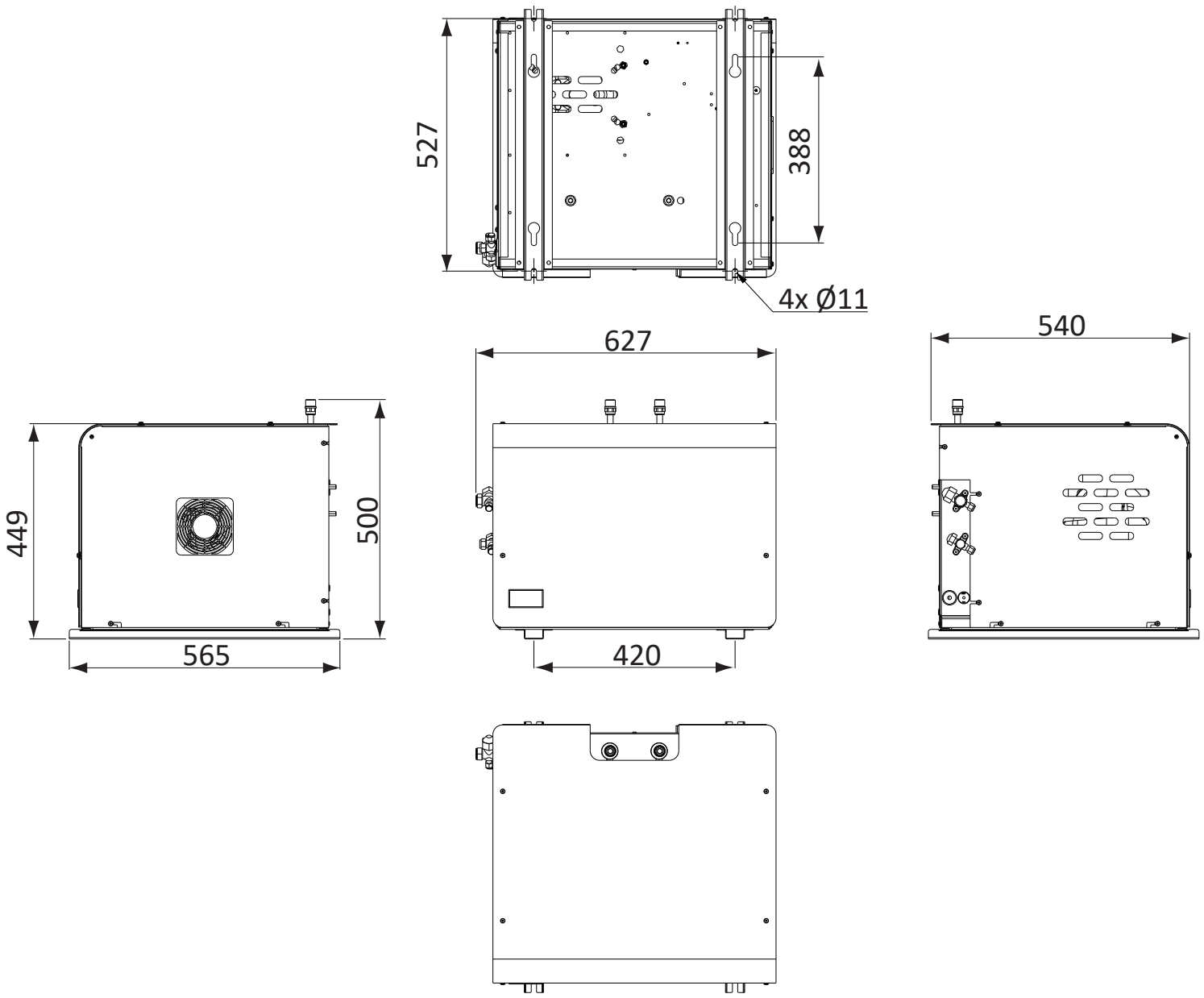
The regulation box must be less than 6m from the evaporator for the probe to function properly.

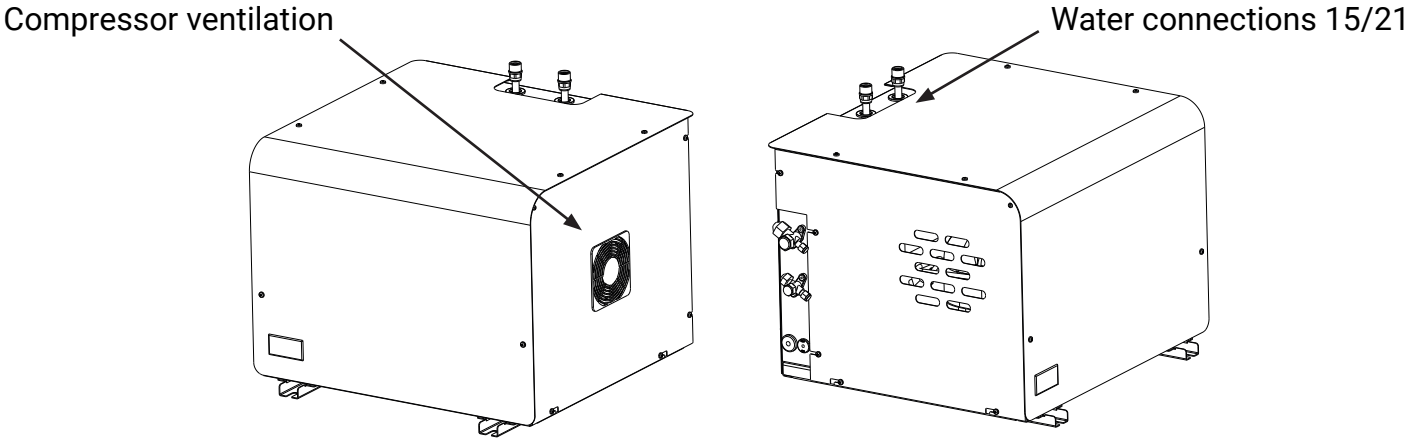
*A pump-down solenoid valve is supplied with the EVA2 evaporator model, size SPC170.

Outdoor unit

1. Dimension Outdoor Unit

GCW 30-230





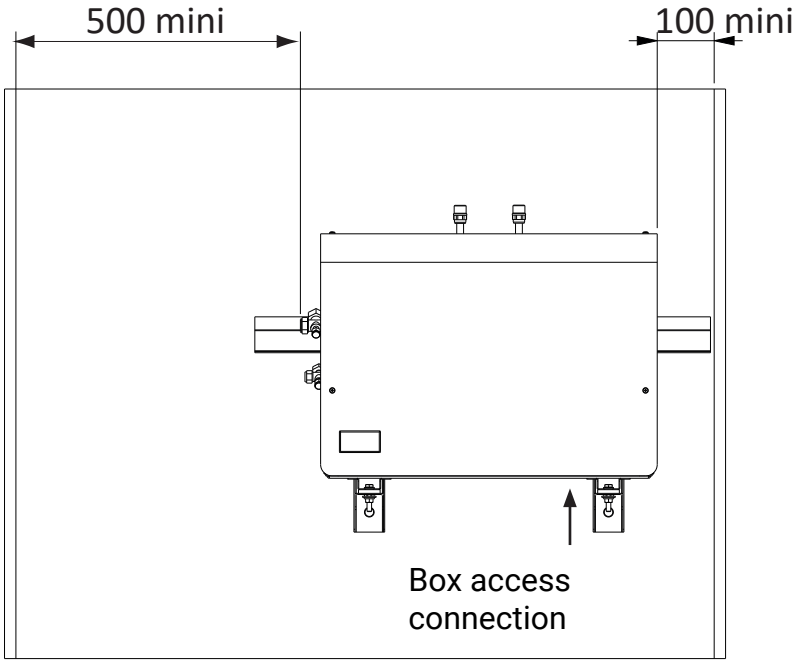
The installation of the Low Noise Kit (LNK – sold separately) must be carried out before mounting the outdoor unit.

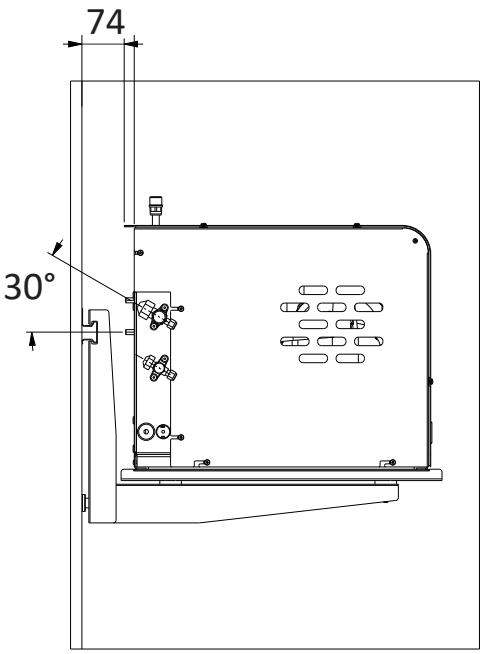
2. Fixing Outdoor Unit

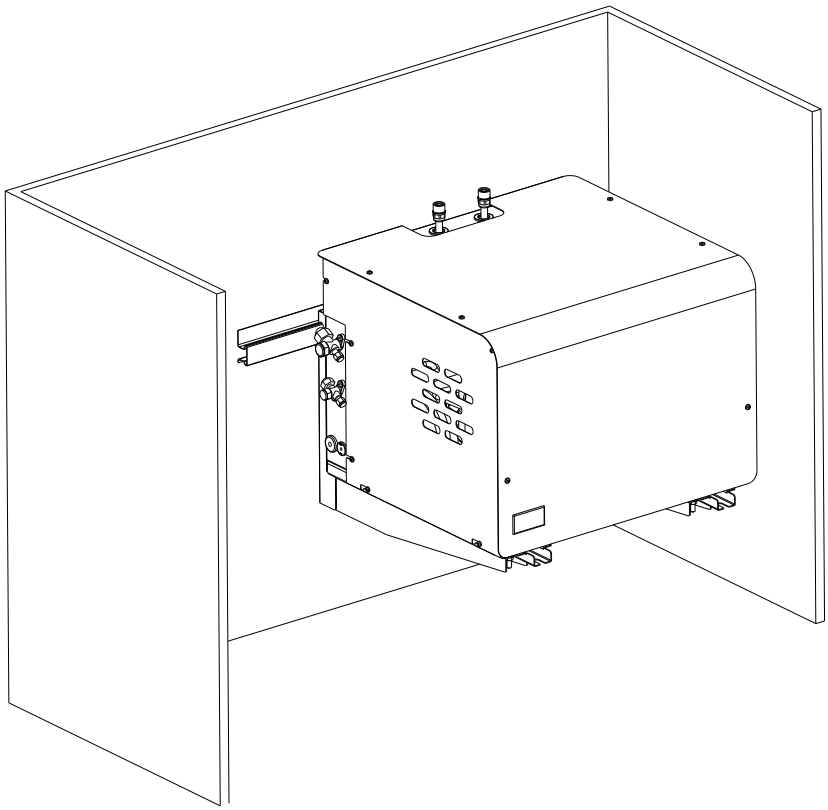
Advice:
- Favour open areas, out of the sun
- Beware of noise for neighbours.
- Raise the unit to avoid leaves and snow.
- Check the solidity of the supports.

Wall fixing

Installation with KS2M kit (sold separately)

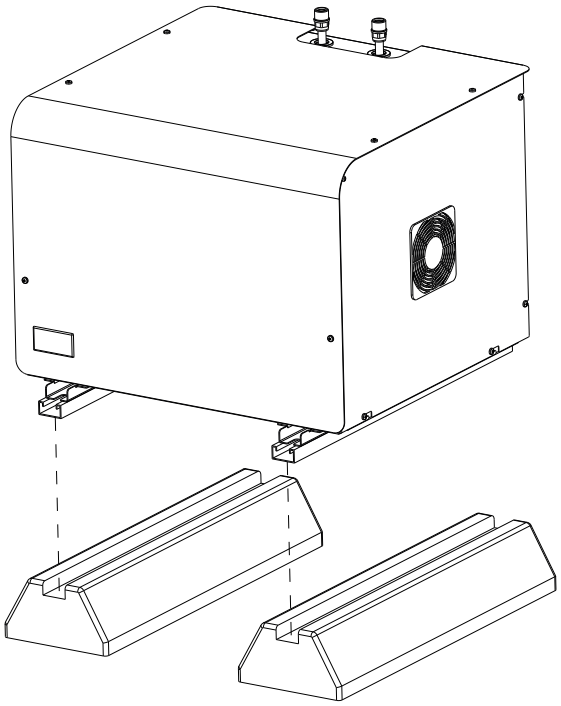


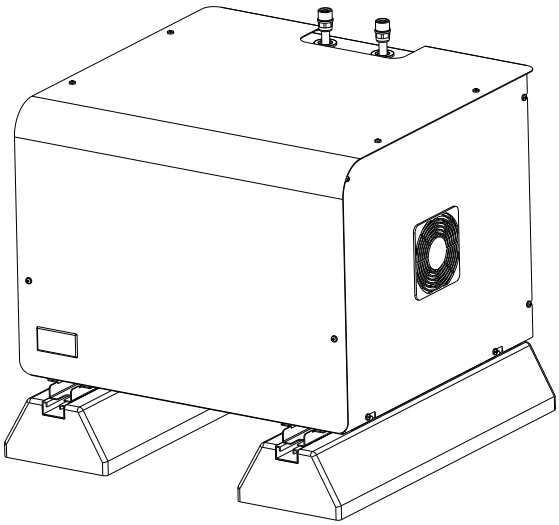




Floor fixing

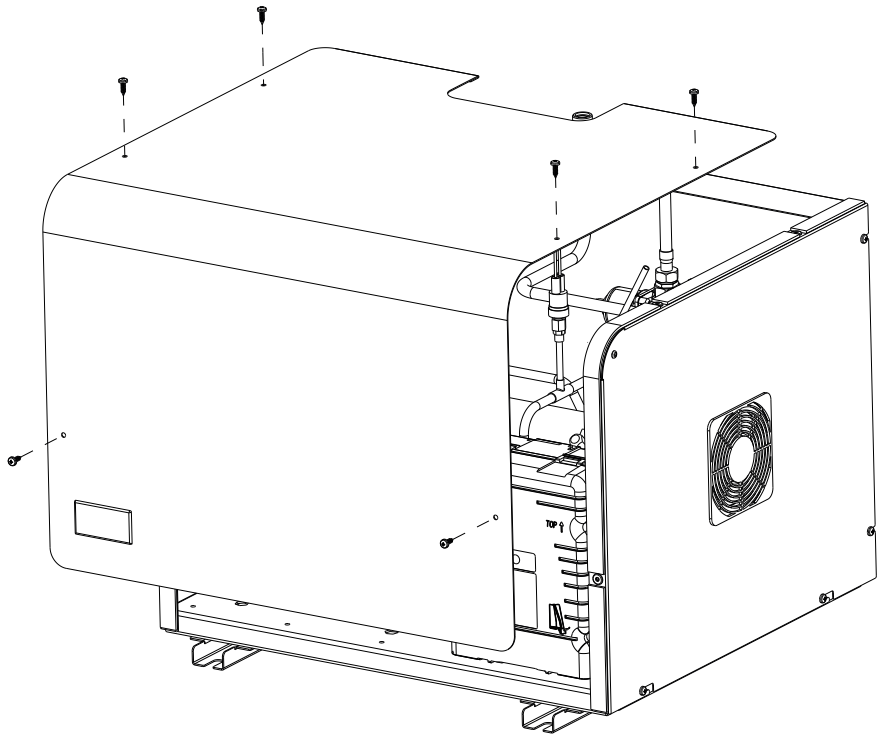
The GCW unit can be placed on the floor using Rubber Foot (not supplied or sold by Friax)
to avoid operating vibrations.





3. Cover removal

Using a screwdriver, unscrew the 6 screws holding the cover and remove it carefully to avoid damaging it.

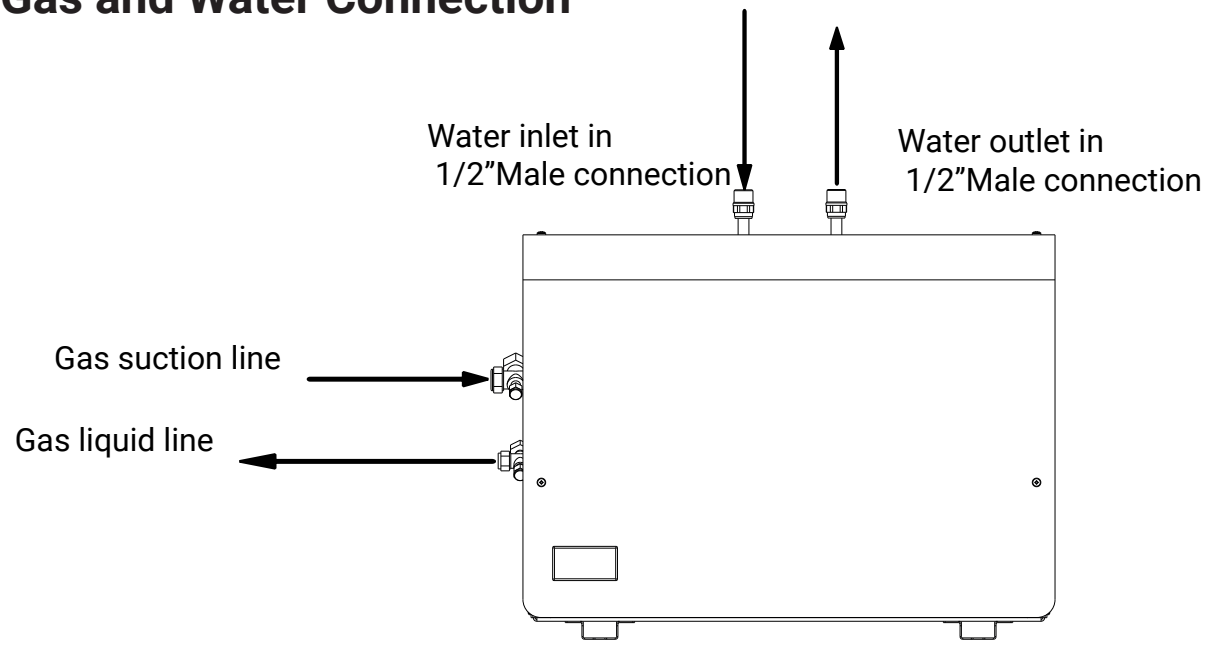


Hydraulic Connection

Water units are designed for installation in rooms above 0°C. Where the water must not freeze. The water supply circuit must be cleaned of all impurities before connection, to prevent the pressostatic valve from clogging and impairing operation.

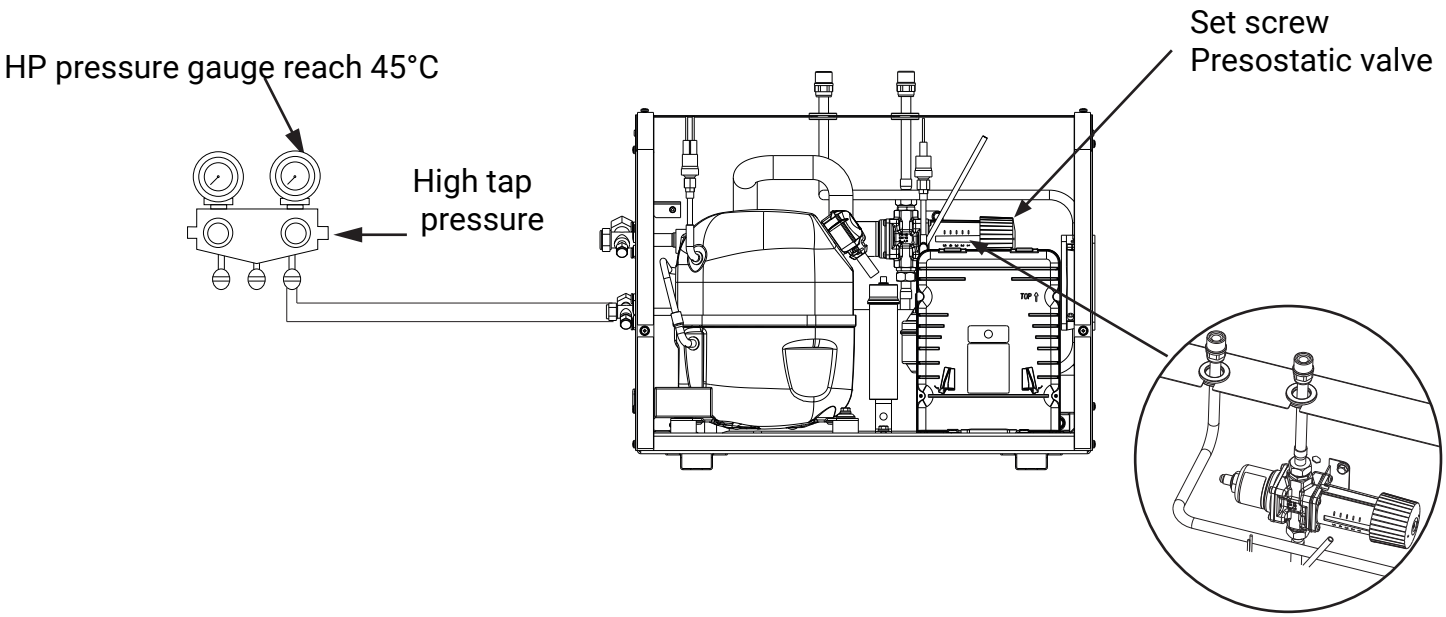
The Friax groups are designed to work with a water regime between 7 and 20°C, condensation is regulated by a presostatic valve which must be adjusted for condensation at 45°C..

1. Gas and Water Connection



2. Adjust the presostatic valve

Connect your pressure gauge hose to the schrader of the Liquid service valve.
Adjust the water flow with the presostatic valve screw and using a spanner, until the water is balanced. condensation around 45°C.



Refrigeration connection

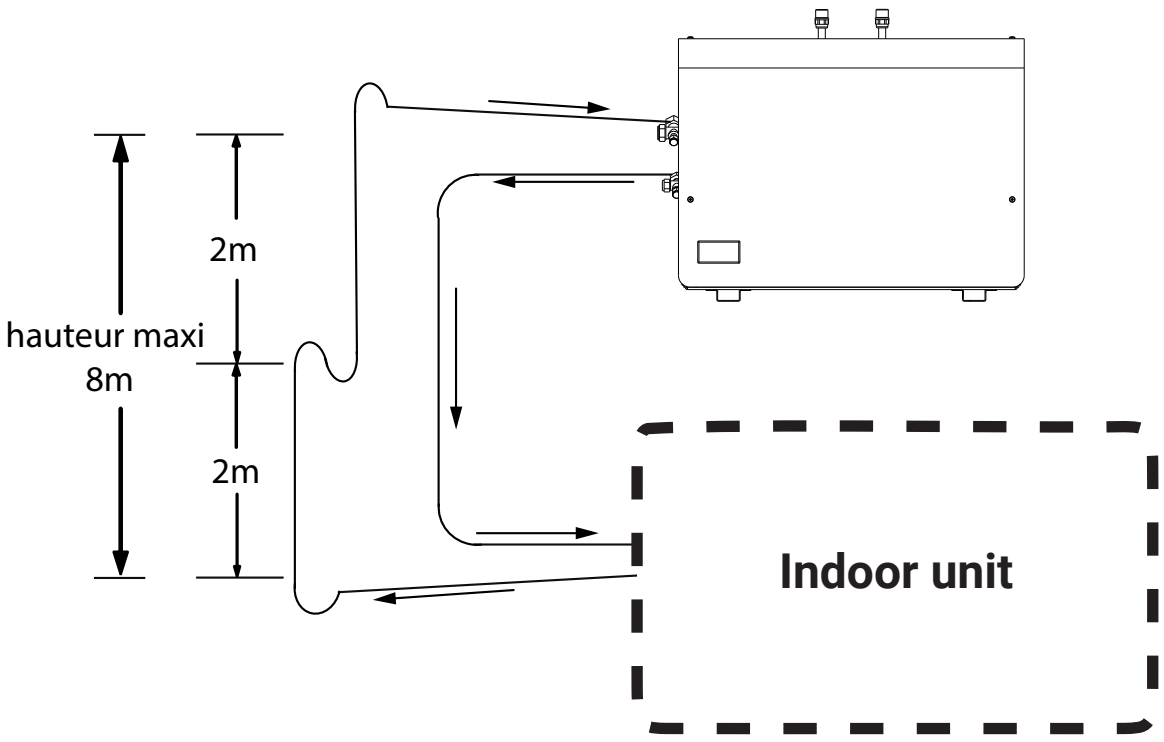
Be sure to read this carefully before installing your FRIAX equipment if the outdoor unit is above the evaporator.

Effect the piping connection (flare fittings).
After making the connections, evacuate the piping and the evaporator through the Schrader service ports located on the condensing unit valves. Check that the vacuum is maintained. If the pressure does not rise, fully open the valves to allow the refrigerant to circulate throughout the installation. Fully back-seat the valves, replace the caps and tighten them using a suitable tool. For a nitrogen pressure test of the circuit, do not exceed 18 bar and inject nitrogen only through the high-pressure line to avoid damaging the expansion valve. Before commissioning, perform a complete leak check using a suitable electronic leak detector. Start the system, wait a short time and verify that the refrigerant charge is correct. If refrigerant is missing, bubbles will appear in the liquid sight glass located near the filter drier. Add refrigerant slowly until the bubbles disappear. Tighten the Schrader service port caps securely at the end of the operation.

The group contains the gas charge for the split and 6m of refrigeration connections. Beyond this, provide an additional 20g/m of bonding. The group is sized for pipes up to 20 m. It is best not to insulate high pressure liquid piping.

On horizontal pipes:
Low areas (oil trap) between the evaporator and the compressor must be avoided. The conduits horizontals should descend slightly towards the compressor. For ducts, the suction speed must not be less than 4 m/s.

On vertical pipes:
If the vertical suction ducts are less than 2 m high, they must be installed with two siphons, one below and one above the conduit. If the conduits are longer than 2m, it will be necessary add a siphon every 2m in height (8m MAX).



1. Pipe preparation and flaring

1. Cut the copper pipe correctly with a pipe cutter (Fig1, 2).
2. Deburr gently while holding the pipe downwards to avoid introducing filings into the tube. (Fig.3)
3. Remove the “FLARE” nuts attached to the device slip them onto the pipes after removing all burrs. ⚠ (It is impossible to install them after the work flare).
4. Flaring work (Fig.4, 5). Flare with the tool you will use as shown in Table 1 and check the condition of the seat. It must not show any scratches or signs of breakage. Also check the dimension “L” (Fig.6)
5. Control If the flare does not conform to usage, cut off the flared part and redo the flare.

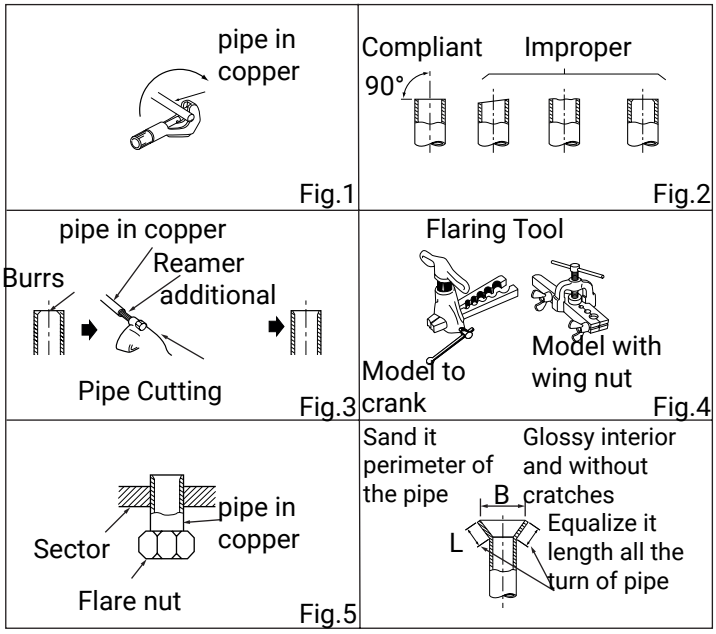


Table list 1

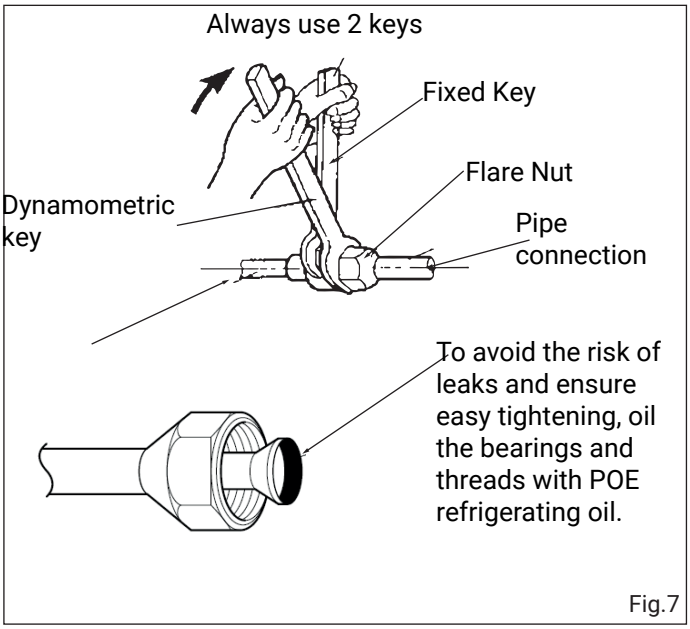
Pipe	“L” dimensions	Flaring B (+-0.4mm)
6,35 mm (1/4”)	1,8 à 2 mm	9,1 mm
9,52 mm (3/8”)	2,5 à 2,7 mm	13,2 mm
12,7 mm (1/2”)	2,6 à 2,9 mm	16,6 mm
15.87 mm (5/8”)	3.1 à 3.4 mm	19.8 mm

2. Shaping refrigeration pipes

- The pipes will be shaped exclusively with a bender or a bending spring to avoid any risk of crushing or breakage.
- Do not bend copper at an angle greater than 90°.
- Never bend more than 3 times in the same place, otherwise the beginnings of breakage may appear (hardening of the metal).

3. Refrigerant pipes connections

1. Align the centers of the connecting pipes and tighten the nut by hand until contact is made established.
2. Tighten the nut with a wrench and a torque wrench as shown in the diagram (Fig7.).



WARNING

Only remove caps from pipes and faucets when you are about to make the connection

Table list 2

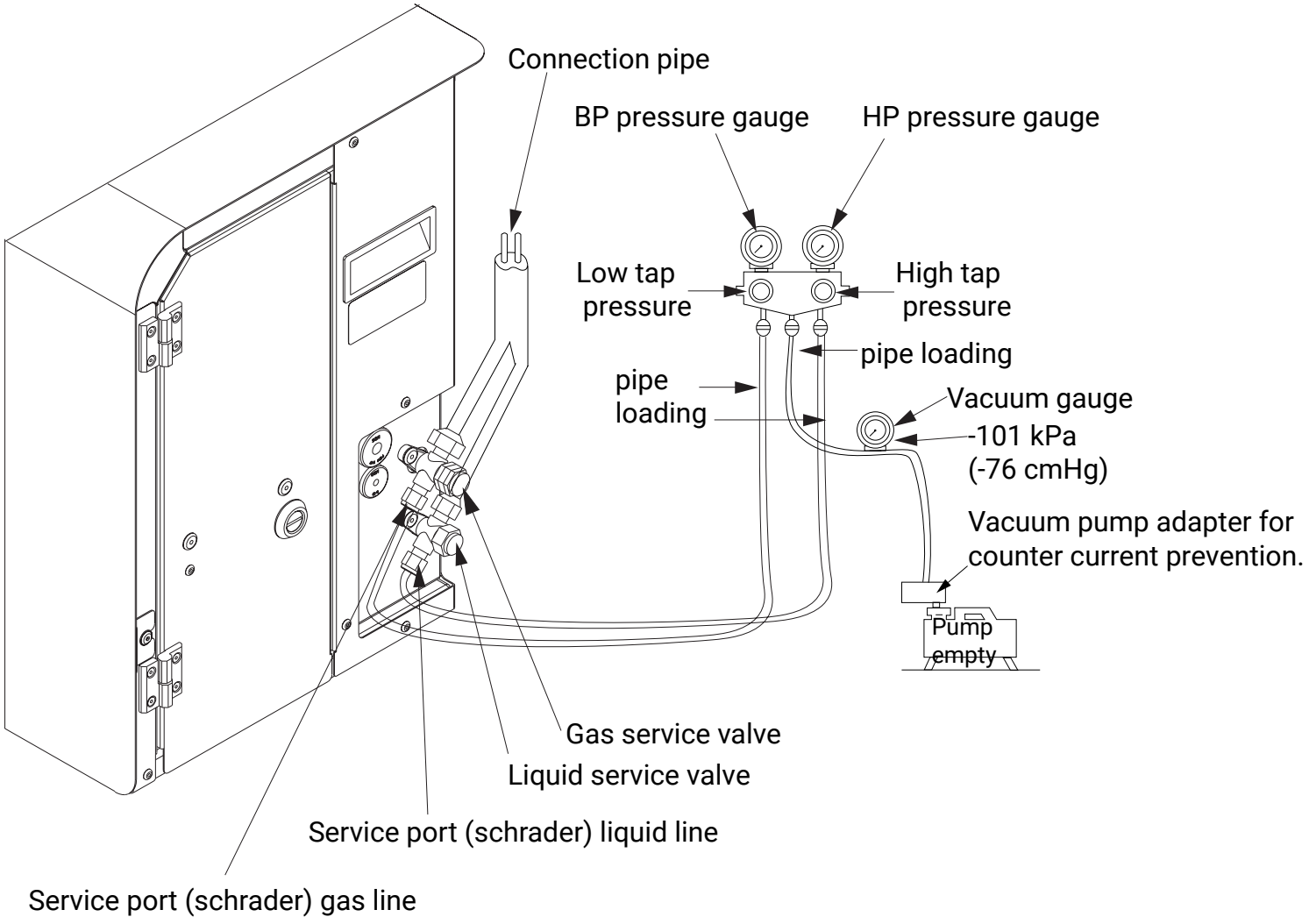
Pipe	“L” dimensions
6,35 mm (1/4”)	16 à 18 N.m
9,52 mm (3/8”)	33 à 42 N.m
12,7 mm (1/2”)	49 à 61 N.m
15.87 mm (5/8”)	60 à 70 N.m

WARNING

Pay particular attention to the positioning of the pipe facing its connection. If the pipe is misaligned, tightening by hand is impossible and the thread may be damaged. The small pipe must always be connected before the large one.

4. Using the vacuum pump

1. Remove the charging port caps (Schrader) from the service valves of the gas lines and liquid lines of the outdoor unit (Fig8).
2. Connect the charging pipes to the schraders of the gas (Blue) and liquid (Red) side service ports.
3. Connect the charging hose (yellow) to the vacuum pump nozzle.
4. Completely open the low and high pressure taps (blue and red) of the pressure gauge.
5. Activate the vacuum pump to start the evacuation. Perform the evacuation for 15 minutes if the length is 20 meters (15 minutes for 20 meters assuming a pump flow rate of 27 liters per minute) then check that the pressure gauge reading is -101kPa (-76cmHg)
6. Close the low and high pressure taps (Blue and red) of the pressure gauge then turn off the vacuum pump.
7. Check the vacuum resistance for around thirty minutes and look for leaks with a suitable electronic detector.
8. If a pressure drop or leak is noted, repair it and repeat steps 5 to 7.



5. Handling of valves

Once the vacuum is complete,

1. Fully open the control rods by turning them outwards but do not try to open them beyond the stop. (Start with the liquid side then the gas side).
2. Start the air conditioner and wait for a while, check the gas charge, the liquid indicator should not be bubbling.
3. In case of length greater than 6m, finish the charge slowly by adding an additional 20g per meter and finish the charge at the liquid indicator (it should no longer bubble).
4. Remove the charging hoses from the gas and liquid side service ports.
5. Tighten the operating rod caps and maintenance ports according to the torque table 3 (Fig.8)

Table list 3

Cap	Cap Size (H)	Couple
Stem cap maneuver	H17-H19	14~18 N.m (1.4 à 1.8 kgf.m)
	H22-H30	33~42 N.m (3.3 à 4.2 kgf.m)
Port cap maintenance	H14	8~12 N.m (0.8 à 1.2 kgf.m)
	H17	14~18 N.m (1.4 à 1.8 kgf.m)

Compact Valve Hose Size	Hex key size
12.70 and smaller in size	A = 4 mm
15.88mm	A = 5 mm

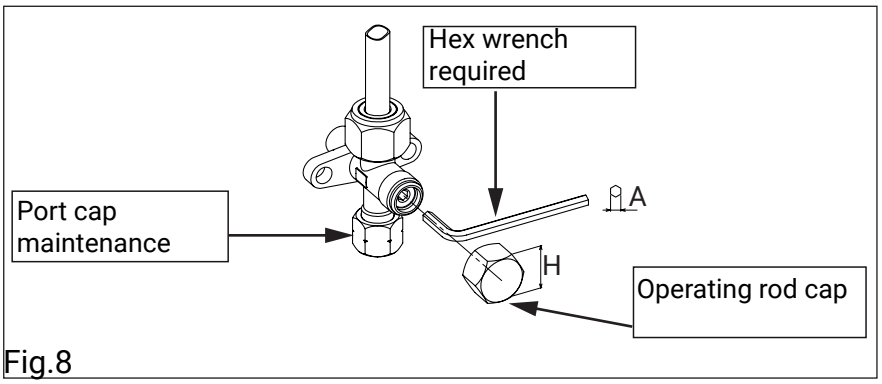


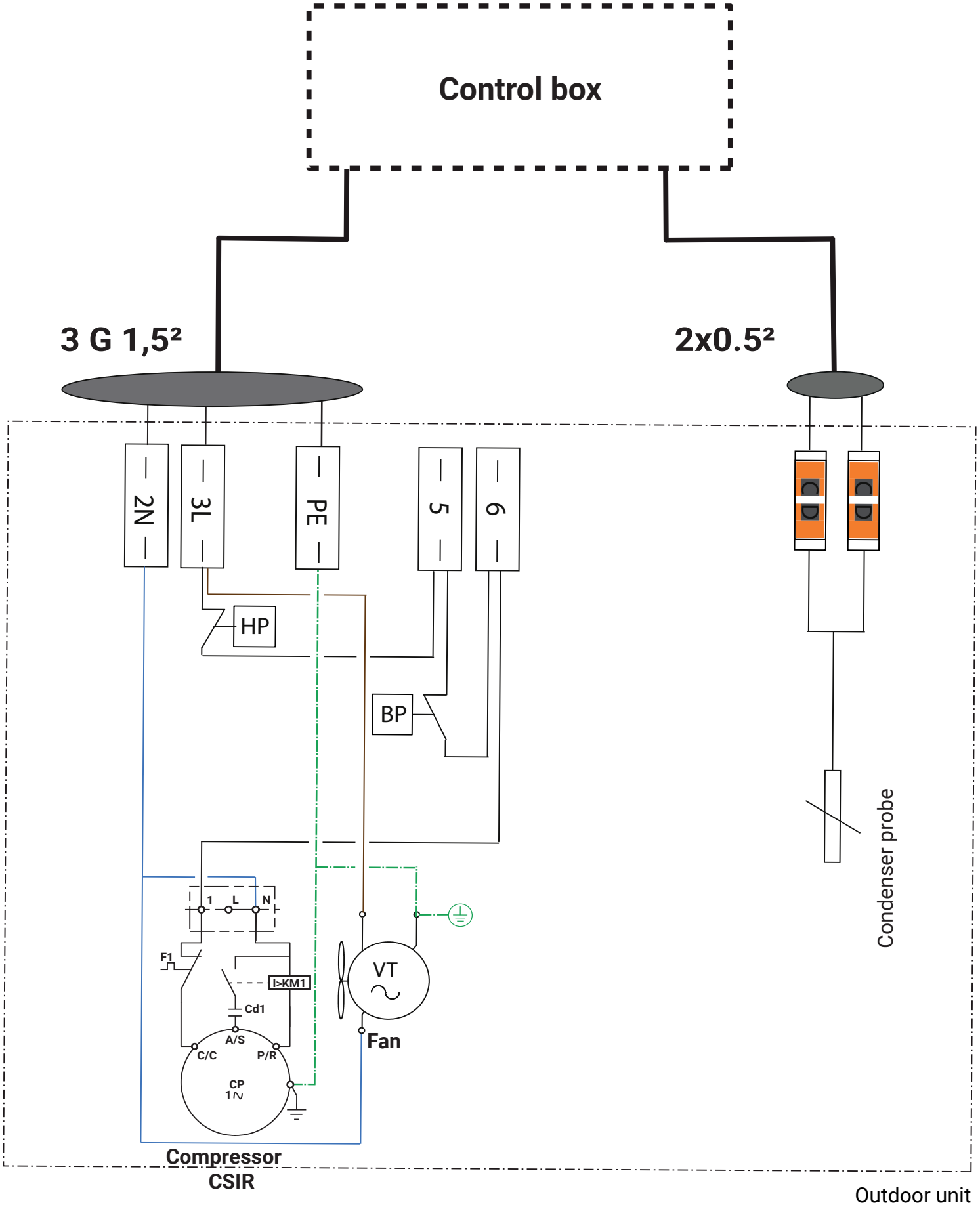
Fig.8

The condensing unit contains one gas charge for 6 m of connection. Beyond that add an additional load of 20g/m of pipe. The condensing unit is designed for a max pipe distance of 20 m. Do not insulate the high pressure liquid pipe.

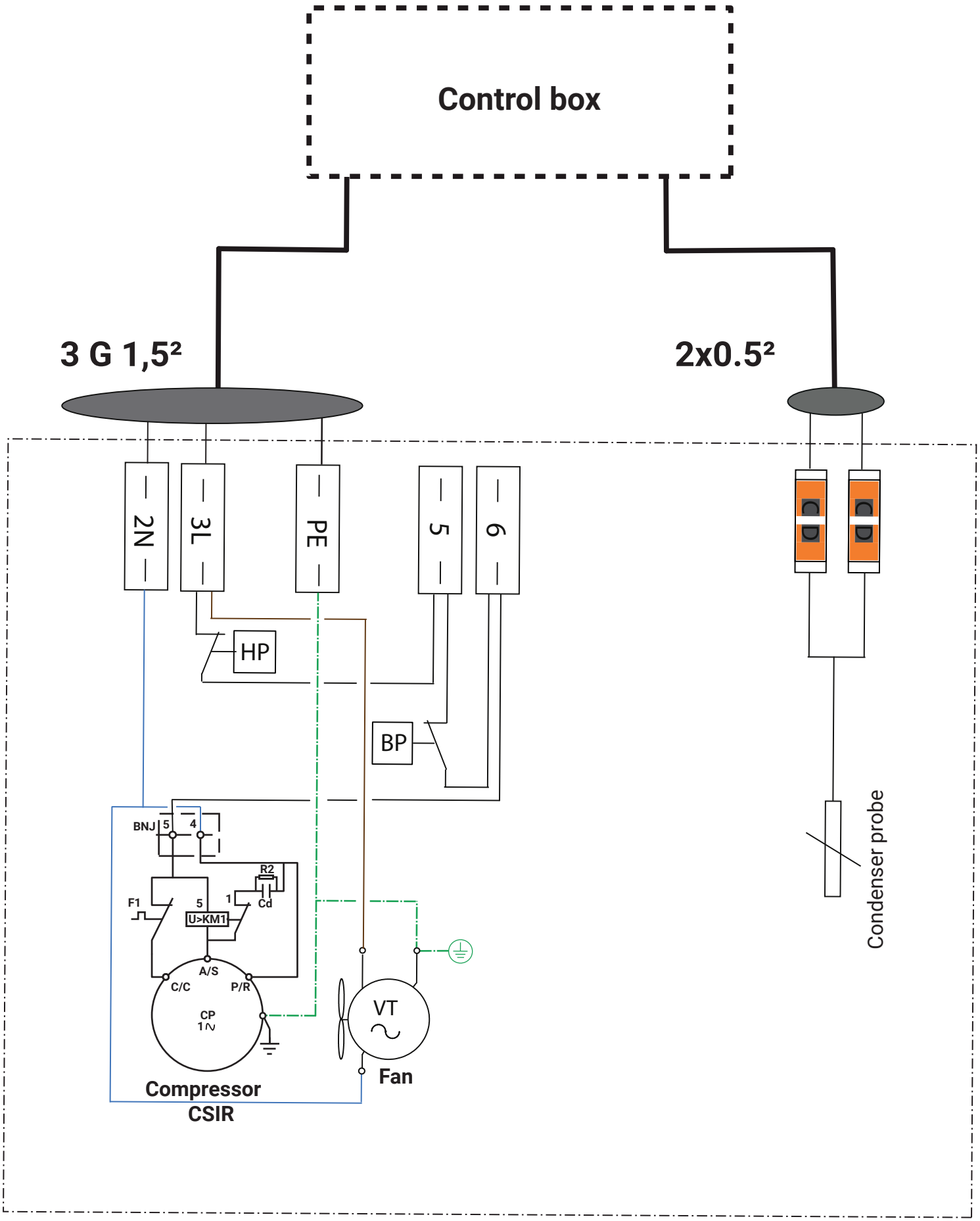
WARNING
KEEP IN MEMORY 5 IMPORTANT POINTS REGARDING PIPING **1. Avoid dust and humidity (in the connection pipes).** **2. Tighten the connections (between the tubes and the unit) securely.** **3. Exhaust the air in the connection pipes using the VACUUM PUMP.** **4. Check for gas leaks (connection points).** **5. Verify, before use, that all service valves are fully open.**

Electrical connection

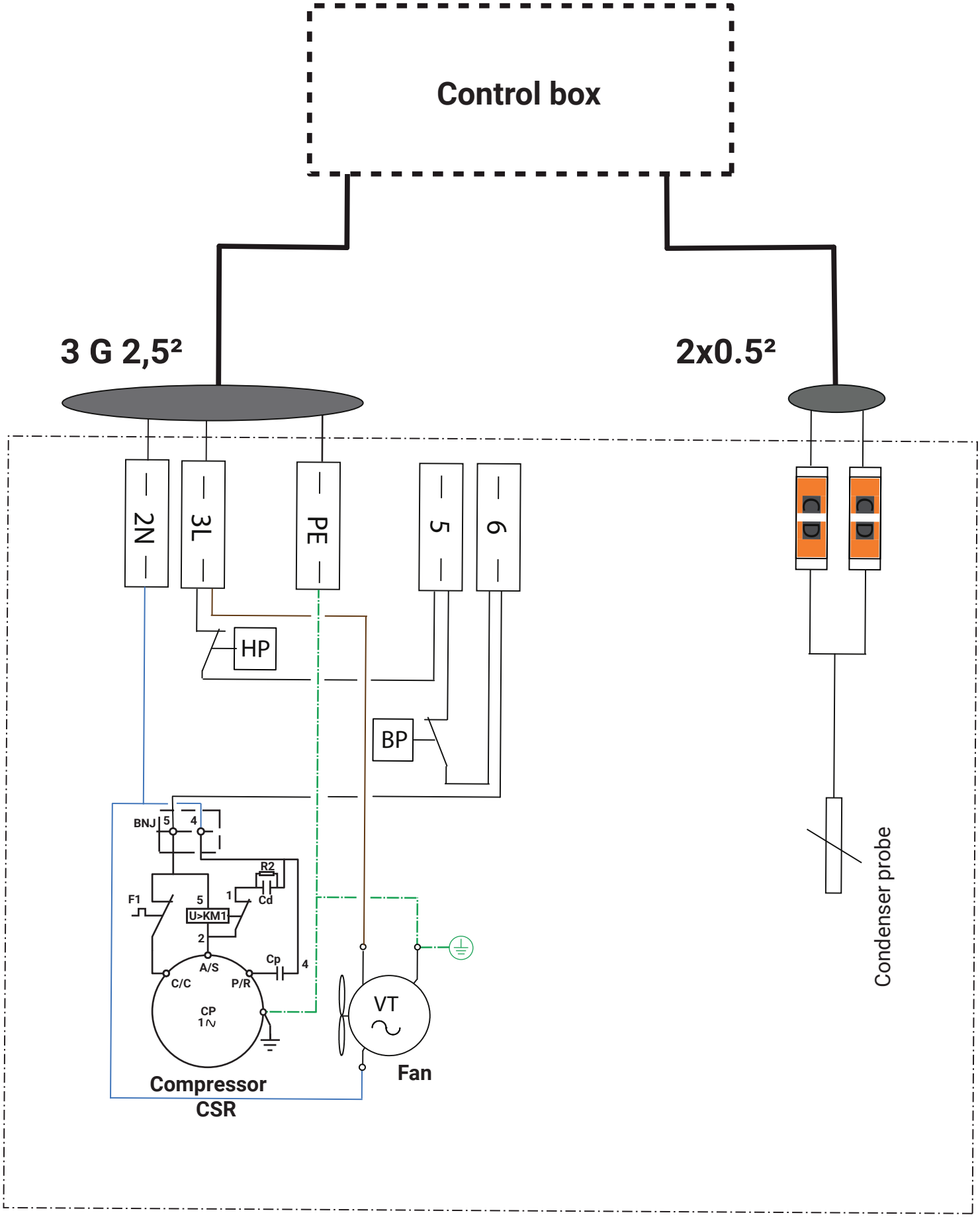
Water condensing unit SPC 30-48



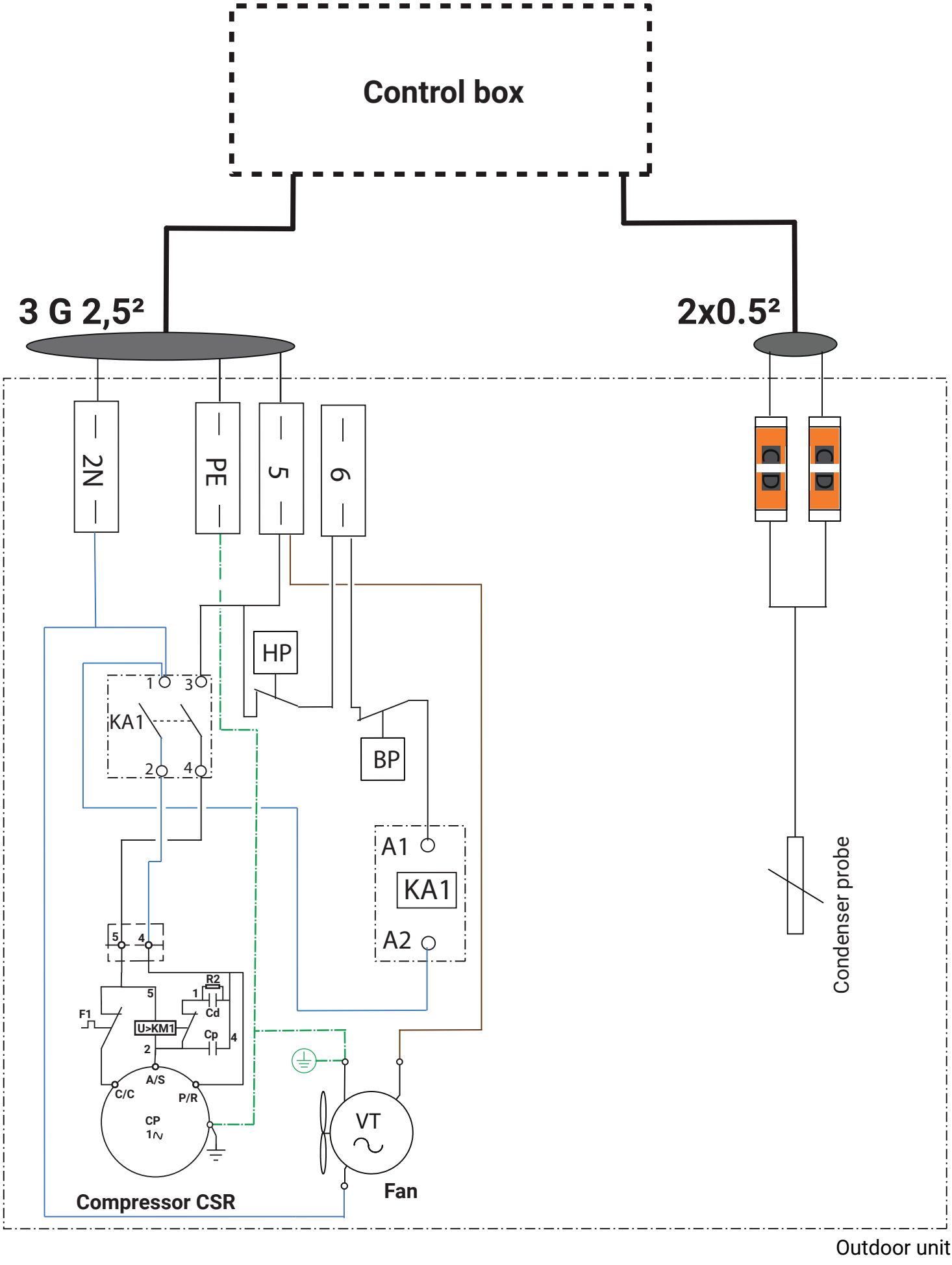
Water condensing unit SPC 82



Water condensing unit SPC 122



Water condensing unit SPC 170-230



Maintaining your cellar air conditioner

The following maintenance operations, repeated **every 6 months**, will ensure that your air conditioner retains its optimum performance and lasts as long as you and your wine.

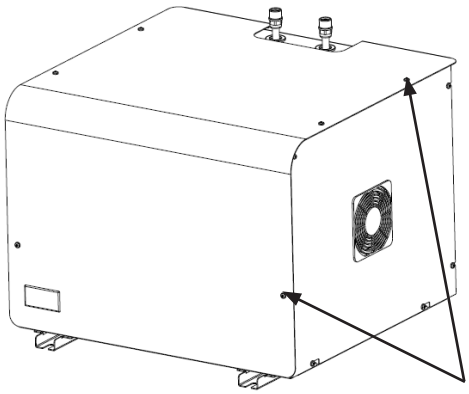
Warning!

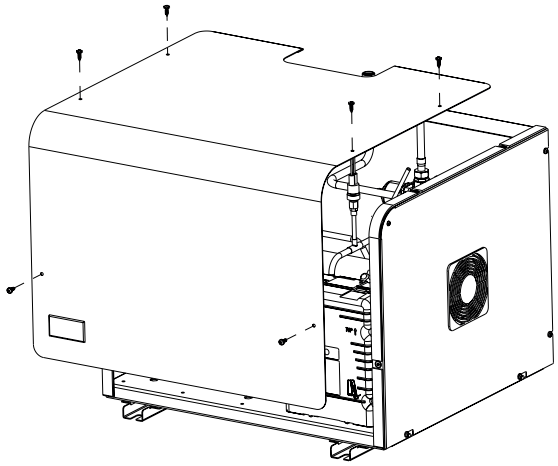
Before any maintenance operations, turn off the device using the remote control then cut off the power supply at the main circuit breaker to avoid any risk of electrocution.

Any intervention on a refrigeration circuit must be carried out by a professional authorized by an accredited body certifying the competence to handle refrigerant fluids.

Maintenance of a GCW condensing unit:

1. Using a phillips screwdriver, open the cover by unscrewing the 6 fixing screws.
2. Lay the cover aside to avoid damaging it.
3. **Visual inspection:** look for leaks, damage or loose electrical connections.
4. Using a blower and hoover, blow and vacuum the inside of the unit, taking care to remove all dust and leaves.
5. Blow out the heat extraction fan, checking that the fan turns manually without resistance.
6. Check that the water circuit is clean to avoid blocking the presostatic valve (lime scale, impurities and filter if fitted).
7. Check that the valve is correctly set to maintain the pressure corresponding to 45°C condensation.
8. Check for leaks using a leak detector.
9. Switch on the power supply and restart the air conditioner.
10. On restarting, check the gas charge (the liquid sight glass must not bubble).
11. Close the cover.





Bonnet fixing screw

Restore power to the main circuit breaker

Maintenance logbook

DATE	COMMENTS	TECHNICIAN

NOTES

NOTES

NOTES

231/233 Rue de la Prairie
F-73420 Voglans

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