EN

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Translation from originaL

SC

SC1200 + SC1200V

Use and installation manual

50Hz R410A MONOSPLIT

COLUMN

Cooling capacity 12,0 kW

Heating capacity 13,6 kW

AERMEC

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Dear customer,
Thank you for choosing an AERMEC product. It is the fruit of many years of experience and special design studies and has been made of the highest grade materials and with cutting edge technology.
In addition, all our products bear the CE mark indicating that they meet the requirements of the European Machine Directive regarding safety. The quality level is being constantly monitored, so AERMEC products are synonymous with Safety, Quality and Reliability.

The data may undergo modifications considered necessary for the improvement of the product, at any time and without the obligation for any notice thereof.

Thank you once again.
AERMEC S.p.A

COMPANY CERTIFICATIONS

SAFETY CERTIFICATIONS

This marking indicates that this product should not be disposed with other household wastes throughout the EU.
To prevent possible harm to the environment or human health from uncontrolled disposal of Waste Electrical and Electronic Equipment (WEEE), please return the device using appropriate collection systems, or contact the retailer where the product was purchased. Please contact your local authority for further details.
Illegal dumping of the product by the user entails the application of administrative sanctions provided by law

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PURPOSE OF THE UNIT:

Split-system air conditioners are designed solely for the purpose of air conditioning indoor rooms of a certain size and with the conditions of use appropriate to the installed output. DO NOT USE THESE UNITS FOR OTHER PURPOSES.
The heat pump versions can be operated for heating or cooling purposes.
Split-system air conditioners are composed of two main units which must be connected during the installation process.
The indoor unit of a split-system air conditioner is the element which diffuses treated air into the room to be air conditioned: do not install this unit outdoors.
The outdoor unit of a split-system air conditioner is the element which draws out heat from indoors, expelling it outside (Cooling mode); it also absorbs heat from outside to heat the rooms indoors (Heating mode). Install outdoors.
The operating management of the various air conditioner models is performed via remote control or panel on the machine

1. WARNINGS

1.1. WARNINGS FOR THE FITTER

- The unit and its accessories must only be installed and wired by professionals with the necessary technical qualifications in installation, conversion, extension and maintenance of the systems and who are trained to perform operational and safety checks on these systems. In this manual, these will generally be referred to as "Personnel with specific technical skills".
- This air conditioner must be installed according to national plant engineering regulations. Particular attention must be paid to safety guidelines and to ensuring that the wiring is correctly connected: incorrect wiring connection could result in supply cables, plug or power socket overheating, which could present a fire risk.
- Ensure that the air conditioner is connected to the power supply or to a power socket with the correct voltage and frequency. Using power supplies with the incorrect voltage and frequency could damage the unit and consequently risk starting a fire. The voltage must be stable, without major fluctuations.
- Install on a solid surface which can bear the weight of the air conditioner. Check the support is securely installed and the unit is absolutely stable after operating for a long time.
- To protect the unit against short circuits, fit a thermomagnetic isolator switch to the power line with a minimum contact gap of 3mm on both poles.
- The isolator switch and any plug must be installed in an easily accessible position.
- To ensure good drainage, the condensate discharge pipes must be correctly installed, following the installation instructions. Adopt the most suitable measures to avoid heat dispersion and the consequent formation of condensate. Incorrect installation of the pipes can result in water leaks, wetting furniture and other items in the room.
- Do not install the unit in a location where it could be affected by inflammable gas leaks or deposits of materials which are inflammable, explosive, poisonous, corrosive or hazardous substances. Do not use naked flames near the units. Risk of fire or explosion. Install the unit in a location with minimal levels of dust, fumes, humidity and corrosive agents in the air.
- Do not install in laundries.
- When installing the unit, allow sufficient technical clearance around the unit for maintenance.
- When installing the unit, ensure that the dimensions and weight of the unit are visible. Respect the dimensions stipulated in this manual with regards to the refrigerant line length, the height difference between the units, and the siphons to install along the refrigerant lines.
- For the outdoor unit, choose a location where the noise and air jets will not disturb the neighbours.
- For the outdoor unit, choose a location which will not disturb the flow of pedestrians and which is in accordance with local architectural regulations.
- Avoid obstructing the air flow in and out of the indoor and outdoor units.
- Do not make any modifications to the unit! Do not attempt to repair the unit alone, this is extremely dangerous! Incorrect operations could cause electric shocks, water leaks, fires etc. Contact your After Sales Service, these operations must only be carried out by "Personnel with the specific technical skills".
- Ensure that the power supply and the installed output are adequately scaled to supply the air conditioner correctly.
- Before operating the air conditioner, ensure that the electric cables, condensate discharge pipes and cooling connections have been correctly installed to avoid the risk of water leaks, refrigerant gas leaks and electric shocks.
- The air conditioner must be correctly earthed. Do not connect the earth cable to the gas or water pipes, to the lightning conductor, or to the earth cable of the telephone. Incorrect earthing could cause electric shocks.
- Do not handle the air conditioner or touch the keys with wet hands. Risk of electric shocks.
- The unit and the isolator switch must be turned off before carrying out maintenance work or cleaning. The rotation of the fans inside the unit can cause injury.
- Check that the power supply is disconnected before carrying out any operations on the unit.
- Do not place objects on the outdoor unit and do not climb on top of it.
- For the power supply, use undamaged cables with a section that is suitable for the load.
- Stranded cables can only be used with crimping terminals. Check the wire strands are well inserted.
- Take care when stretching the supply and connection cables around the units: the cables must not be subject to mechanical stress. The

cables must be protected.
- Do not make connections on the power supply cable: use a longer cable. Junctions can cause overheating and/or fires.
- If the power supply cable is damaged, it must be replaced by the manufacturer, After Sales Service or by another similarly qualified person, to avoid dangerous situations.
- Do not leave any cables in direct contact with the refrigerant pipes as they could reach high temperatures and moving parts, such as the fans.
- If the units are installed in a location exposed to electromagnetic interference, shielded twisted pair cables must be used for the communication connections between the units.
- To avoid communication errors between the units, ensure that the communication line cables are correctly connected to their respective terminals.
- Periodically check that the installation conditions of the unit have not been altered: have the system checked by "Personnel with specific technical skills".
- Install the indoor unit and the remote control at least 1 metre away from electrical appliances, TV, radio, and stereo equipment etc.
- After completing the electrical wirings, carry out a test. This operation must only be carried out by "Personnel with specific technical skills".
- Once started, the air conditioner must not be switched off for at least 5 minutes to prevent the return of oil to the compressor.
- The wiring diagrams are subject to continuous updates, so it is essential to use those on the machine as your reference.
- Only replace the fuses with others identical to the original ones.
- Allow a minimum distance of 1.5 metres between the units and any inflammable surfaces.

1.2. WARNINGS FOR THE USER

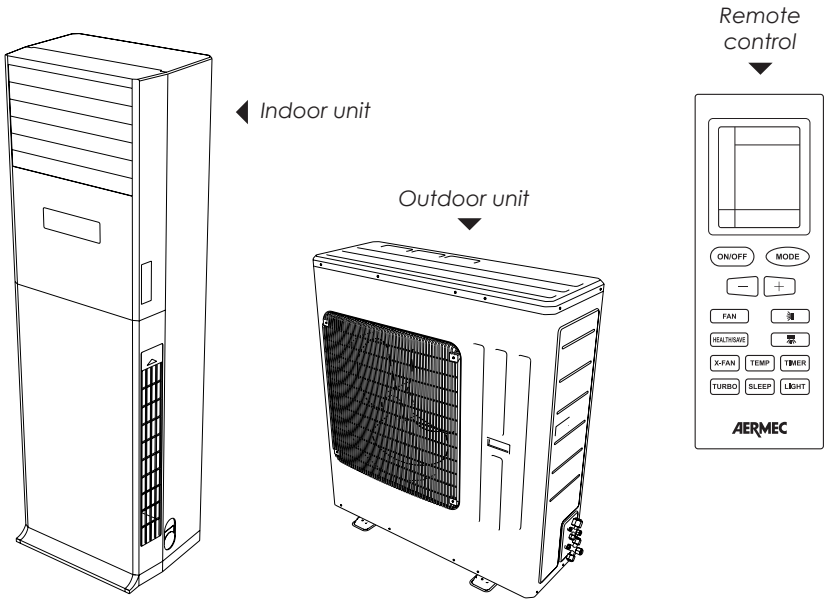
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and necessary knowledge if they are supervised or have received instructions concerning use of the appliance in a safe way and understand the hazards involved. Children should not play with the appliance. Cleaning and maintenance intended to be performed by the user should not be performed by children without supervision.
- Do not dismantle or repair the unit while it is in operation.
- Do not obstruct the air flow in and out of the indoor and outdoor units. A reduction in the air flow reduces the effectiveness of the air conditioner, and causes breakdowns and malfunctions.
- Do not spray or throw water directly onto the unit. Water may cause electric shocks or damage to the unit.
- Do not drop the remote control and do not press the keys with pointed objects: this could damage the remote control.
- Do not pull or deform the supply cable. If the cable is pulled or used inappropriately, the unit could be damaged and there is a risk of electric shock.
- Adjust the room temperature correctly to obtain a comfortable environment.
- Switch off the power supply if the air conditioner is not to be used for a long time. When the power supply switch is turned on, electricity is consumed even if the system is not operating.
- Do not leave the doors or windows open for long periods when the air conditioner is operating. The yield in Heating or Cooling mode is reduced if doors or windows are kept open.
- Position devices such as TV, radio, stereo, etc. at a distance of at least 1 metre from the indoor unit and the remote control. There may be some audio and video interference.
- The air conditioner has an AUTO RESTART function which stores the settings in the memory.
- If there is a power cut, when the power is restored the air conditioner will restart with the settings previously stored in the memory.

1.3. PRECAUTIONS FOR USE

- Ensure the equipment is not used by children or disabled people without suitable supervision; remember also that the equipment must not be used by children as a toy.
- Only use the remote control to adjust the air flow; do not force the fins into position with your hands.
- Do not direct the air jet straight at your body. Avoid heating or cooling the air excessively. This may cause health problems.
- Do not direct the air flow straight at animals and plants.
- Periodically check that the installation conditions of the unit have not been altered, and have the system checked by a qualified engineer.
- Do not remove the protection grilles. Do not insert your hands, or any objects, into the sockets or air vents.
- Do not place objects on the outdoor unit and do not climb on top of it. Objects or individuals may fall as a result: risk of damage or injury.
- In the event of issues with the air conditioner (e.g. burning smell), turn off the air conditioner and disconnect it from the power supply using the isolator switch. If the anomaly persists, the unit could be damaged and could cause electric shocks or fires. Contact your local After Sales Service.
- Do not use sprays or insecticides on the unit: risk of fire.
- Air the room. We recommend that the room where the air conditioner is installed is periodically aired, especially if many people occupy the room or if there is equipment that uses gas. Insufficient ventilation may result in a lack of oxygen.
- If the air conditioner is being used in a room where there are children, elderly or disabled people or bedridden patients, ensure that the room temperature is appropriate.
- Do not use the air conditioner to store food or to dry clothes.
- If the relative humidity is above 80% (with the doors and windows open) and the air conditioner has been operating in Cooling or Dehumidification mode for a long time, condensate water will probably form on the outlet of the indoor unit. This could cause unwanted dripping.
- Do not under any circumstances insert your fingers or any object into the unit.
- Do not use the main switch or the plug to switch the air conditioner on or off. Use the remote control to turn the air conditioner on and off.
- Energy saving advice: Do not leave doors and windows open while the unit is functioning. The effectiveness of the air conditioner is reduced, and energy is wasted.
- When operating in Cooling mode, the temperature selected must not be more than 5°C below the outdoor temperature, for optimum comfort and energy saving.
- When heating, select a moderate temperature.
- Limit the room's exposure to direct sunlight using blinds or by leaving the windows ajar.
- Do not place hot devices, flames or other heat sources near the unit. The effectiveness of the air conditioner is reduced, and energy is wasted.
- Clean the air filters once a fortnight.
- Be sure to disconnect the power supply when the unit is not being used for a long period of time. Disconnect the isolator switch from the power supply.

2. UNIT TYPE

Column type air conditioning units are ideal for all large environments, compact and easy to install they are the perfect solution for environments such as shops, restaurants, shopping centres or medical centres.
These units are equipped with a control panel on the machine and are also provided with an infra-red remote control.



3. NOTES ON OPERATION

3.1. DEFROSTING THE OUTDOOR UNIT

When the outside temperature is low but there is a high level of humidity, and the unit is operating in Heating mode, the condensate formed on the exchange surfaces of the outdoor unit tends to freeze, reducing the heating capacity. The unit control prevents this phenomenon by activating the automatic defrosting function. When this function is active, the fans of the indoor and outdoor units could switch off and the unit could suspend the hot air flow for a few minutes.

WARNING: During defrosting, the frost on the outdoor unit melts and forms water: it is necessary to provide an adequate water drainage system.

3.2. PREVENTING COLD AIR JETS

In Heating mode, ventilation on the indoor unit is inhibited (for up to two minutes from start-up) to allow the exchanger to reach the ideal temperature for heating; it is therefore normal to notice a delay between switching on the unit and activation of the ventilation.
The delay can be noticed under the following conditions:
1. Switching on Heating
2. After defrosting
3. Heating at low temperatures

3.3. VENTILATION WITH COMPRESSOR IDLE

In the following situations, and if the compressor is idle, the indoor unit operates at minimum speed, the horizontal fins rotate in a pre-fixed position:
1. In Heating mode when the operating set-point is reached.

4. FEATURES

- Refrigerant gas R410A
- Heat pump functioning with reverse cooling cycle and defrost control
- Centrifugal type 4-speed fan:
- 4 speeds can be selected directly (Minimum, Medium, Maximum, Turbo)
- AUTO speed by which the unit automatically selects the most suitable speed
- Rotary compressor
- Particularly quiet operation
- Microprocessor control
- Infra-red remote handset with liquid crystal display for full control of all appliance functions.
- Possible control via the panel on the machine; the panel also displays information on the operation of the unit via a display, and icons also on the display
- Timer for programming switch-on and/or switch-off
- Operating mode: Cooling, Heating, Dehumidification, Automatic and Fan only
- Sleep programme
- Quick Cooling / Heating (TURBO) function
- Prolonged ventilation function (X-FAN or BLOW) is used to prevent the formation of mould in the indoor unit during Cooling and Dehumidification
- Smart preheat function to avoid jets of cold air (heating mode)
- Self-diagnosis function
- Auto-Restart function after a power outage
- Outdoor unit defrost function
- Outdoor unit with connection for the condensate discharge
- Washable air filter
- Double motorised fins controllable via remote handset for vertical and horizontal supply air, with 5 fixed or floating positions (SWING)
- Cooling connections with flared ends
- Easy installation and maintenance
- Automatic operating mode suitable for the various installation environments (room, office, restaurant)

5. OPERATING LIMITS

SC1200		Indoor unit (°C)		Outdoor unit (°C)	
		Temperature D.B.	Temperature W.B.	Temperature D.B.	Temperature W.B.
Cooling	Nominal	27	19	35	/
	Maximum	32	23	43	/
	Minimum	21	15	18	/
Heating	Nominal	20	/	7	6
	Maximum	27	/	24	18
	Minimum	20	/	-15	/

WARNING: the safety devices can lock the unit in case they are used outside of the operating limits

6. TECHNICAL DATA

Indoor units				**SC1200V**
Outdoor units				**SC1200**
Cooling capacity	Nominal (Min÷Max)		W	12000 (3000 ÷ 13000)
Total input power	Nominal (Min÷Max)		W	4000 (660 ÷ 5400)
Current			A	6,0
Dehumidifying Volume			l/h	5
Seasonal Efficiency	Energy Efficiency Class	(1)		**A**
	SEER			5,1
	Pdesignc		kW	12,0
	Annual Electricity Consumption		kWh/annum	824
Heating Capacity	Nominal (Min÷Max)		W	13600 (3400 ÷ 14000)
Total input power	Nominal (Min÷Max)		W	4200 (700 ÷ 4400)
Current			A	6,5
Seasonal Efficiency (Average)	Energy Efficiency Class	(1)		**A**
	SCOP			3,8
	Pdesignh		kW	11,0
	Annual Electricity Consumption		kWh/annum	4053
Refrigerant	Type			R410A
	GWP		$kgCO_2$ eq.	2087,5
	Refrigerant Charge		kg	3,5
EER		(2)	W/W	3,00
COP		(2)	W/W	3,24
Rated Power Input		(3)	W	5400
Rated Current		(3)	A	9,5

Indoor Units			**SC1200V**
Air Flow Volume	Turbo/Max/Med/Min	m^3/h	1850/1800/1700/1530
Sound Power	Turbo/Max/Med/Min	dB(A)	63/61/58/56
Sound Pressure	Turbo/Max/Med/Min	dB(A)	52/50/48/45

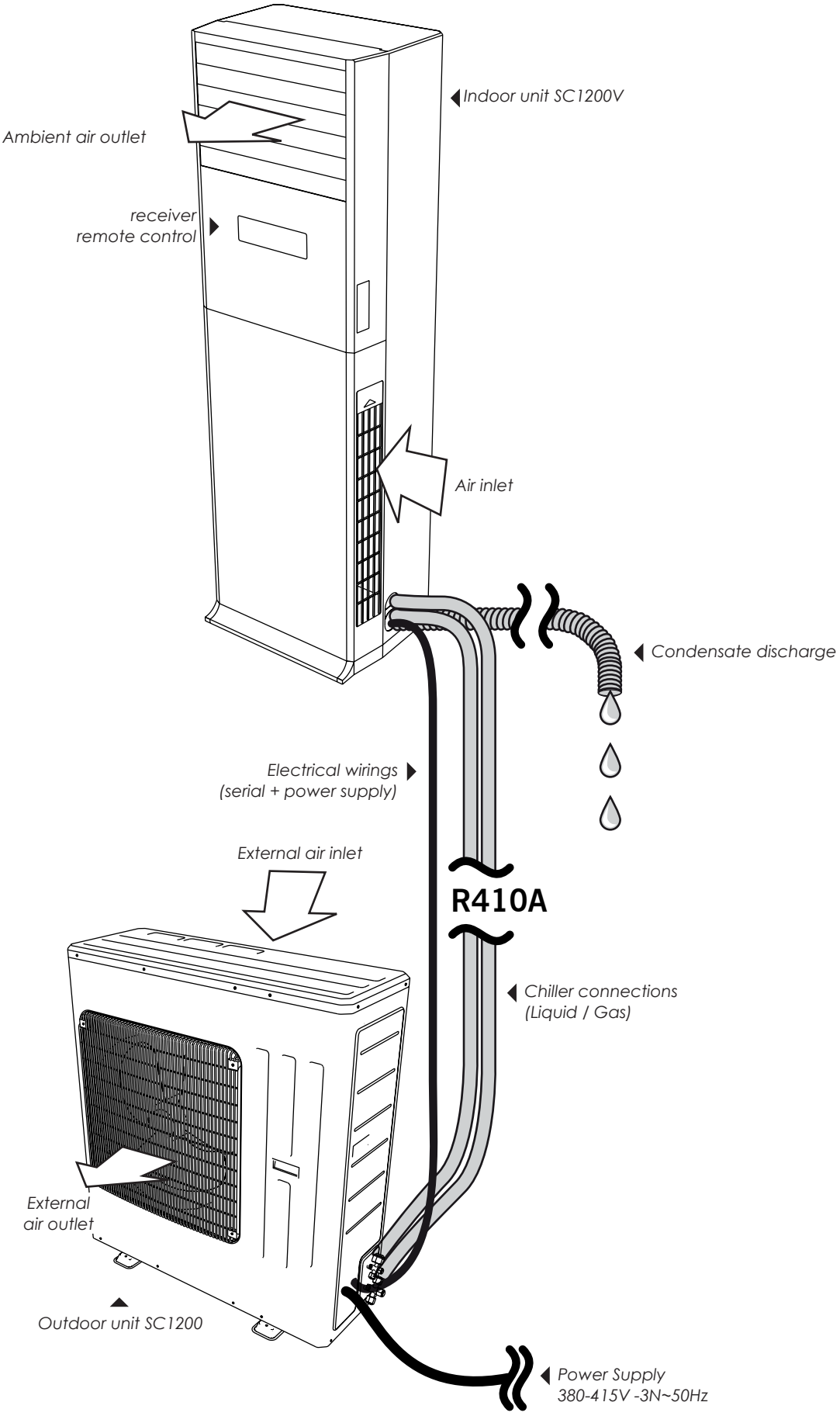
Outdoor units				**SC1200**
Air Flow Volume	Max		m^3/h	2000
Sound Power	Max		dB(A)	70
Sound Pressure	Max	(4)	dB(A)	63
Compressor			Type	Rotary DC Inverter

Pipe Diameter	Liquid	inch	3/8"
	Gas	inch	5/8"
Connection Pipe	Øe Liquid	mm (inch)	9,52 (3/8")
	Øe Gas	mm (inch)	15,9 (5/8")
	Max Distance Length	m	25
	Max Distance Height	m	10
Power Supply		Indoor unit	220-240V~50Hz
		Outdoor unit	380-415V 3N~50Hz

Cooling (EN-14511 e EN-14825)
Indoor Air Temperature 27°C D.B./ 19 W.B.; Outdoor Air Temperature 35°C; Max Speed; Pipe Length 5m
Heating (EN-14511 e EN-14825)
Indoor Air Temperature 20°C D.B.; Outdoor Air Temperature 7°C D.B./ 6°C W.B.; Max Speed; Pipe Length 5m

Min = Minimun; **Med =** Medium; **Max =** Maximum
(1) According to Delegated Regulation (EU) No 626/2011
(2) EER / COP according to EN-14511, declared only for the purpose of tax deductions in force upon realization of this publication
(3) Rated Power Input (Rated Current) is the Maximum Power Input (Maximum Current) of the System according to Rated Condition of EN-60335 and EN-60335-2-40
(4) Sound Pressure Level measured in *Anecoinc Room, Test Point r = 1,5m*

7. DESCRIPTION OF COMPONENTS



INSTALLATION OF UNIT

8. NOTES FOR INSTALLATION OF UNIT

8.1. WARNINGS CONCERNING INSTALLATION

The unit and its accessories must only be installed and wired by professionals with the necessary technical qualifications in installation, conversion, extension and maintenance of the systems and who are trained to perform operational and safety checks on these systems. In this manual, these will generally be referred to as "Personnel with specific technical skills".

- Check that the power supply is disconnected before carrying out any operations on the unit.
- Incorrect installation can result in water leaks, electrocution or fires.
- After a prolonged period of use, check that the installation conditions of the unit have not been altered, and have the system checked by a qualified engineer.
- Do not make any modifications to the unit! Do not attempt to repair the unit alone, this is extremely dangerous!
- Incorrect operations could cause electric shocks, water leaks, fires etc.
- Contact your local dealer or After Sales Service: these operations must only be carried out by "Personnel with the specific technical skills".

8.2. INSTALLATION AND TRANSPORT

- Transportation must be carried out by experts.
- The unit and its accessories must only be installed and wired by professionals with the necessary technical qualifications in installation, conversion, extension and maintenance of the systems and who are trained to perform operational and safety checks on these systems. In this manual, these will generally be referred to as "Personnel with specific technical skills".
- For the installation, be sure to use only the accessories and parts specified; failure to observe this precaution may result in electric shocks, electric discharge or fires.
- When carrying out the installation, take into consideration strong winds, typhoons and earthquakes. Incorrect installation could cause the device to fall, and lead to accidents.
- If the unit needs to be moved to another place, consult your local retailer or the After Sales Service beforehand; this should only be carried out by "Personnel with specific technical skills".
- To ensure good drainage, the condensate discharge pipes must be correctly installed, following the installation instructions. Adopt the most suitable measures to avoid heat dispersion and the consequent formation of condensate. Incorrect installation of the pipes can result in water leaks, wetting furniture and other items in the room.

8.3. NOISE

- Choose a well-ventilated area, to avoid reduced performance or increased noise.
- Choose a position where the hot air or noise emitted from the outdoor unit will not disturb your neighbours.
- Never place objects near the air outlet or the unit, as this could reduce performance or increase the noise level.
- If abnormal noises are heard during operation, contact the local After Sales Service immediately.

8.4. INSTALLATION POSITION

- Have the installation checked periodically, 3-4 times a year, by "Personnel with specific technical skills".
- Avoid places within the reach of children.
- Avoid exposure to other heat sources or to direct sunlight.
- Install the indoor unit away from TV, radio and other electrical equipment.
- Do not install the unit in a location where it could be affected by inflammable gas leaks. This could start a fire. Install the unit in a location with minimal levels of dust, fumes and humidity in the air.
- In salty coastal areas, or in areas near sulphurous hot springs, contact the retailer before installation to ensure the unit can be safely used.
- Do not install in laundries.

8.5. WIRING

- The unit and its accessories must only be installed and wired by professionals with the necessary technical qualifications in installation, conversion, extension and maintenance of the systems and who are trained to perform operational and safety checks on these systems. In this manual, these will generally be referred to as "Personnel with specific technical skills".
- Ensure that the installation is wired in compliance with the laws and standards in force, and with the instructions in this manual.
- To protect the unit against short circuits, fit a thermomagnetic isolator switch to the power line with a minimum contact gap of 3mm on both poles.
- Check the earth cable is connected to the earthing system of the building itself.
- For the power supply, use undamaged cables with a section that is suitable for the load.
- Do not make connections on the power supply cable: use a longer cable. Junctions can cause overheating and/or fires. Do not repair damaged cables: replace them with new cables with a suitable section. Have repairs carried out by "Personnel with specific technical skills".
- The wiring diagrams are subject to continuous updates, so it is essential to use those on the machine as your reference.
- Ensure that the air conditioner is connected to the power supply or to a power socket with the correct voltage and frequency. Using power supplies with the incorrect voltage and frequency could damage the unit and consequently risk starting a fire. The voltage must be stable, without major fluctuations.
- The installation must be carried out in compliance with the national standards relating to electrical systems, wiring and safety.

EARTHING:
Check the earth cable is connected to the earthing system of the building itself. Ensure that a suitable differential switch is installed for earthing purposes. Do not connect the earth cable to the gas or water pipes, to the lightning conductor, or to the earth cable of the telephone.

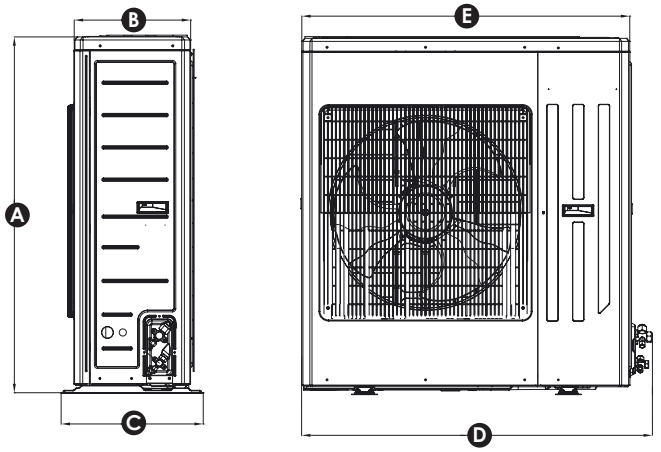
WARNING

- **Water pipes:** Some parts of the water pipes are made of plastic materials and are not suitable for earthing.
- **Gas pipes:** If there is an accidental electrical discharge from the air conditioner, it could easily cause a fire or even an explosion.

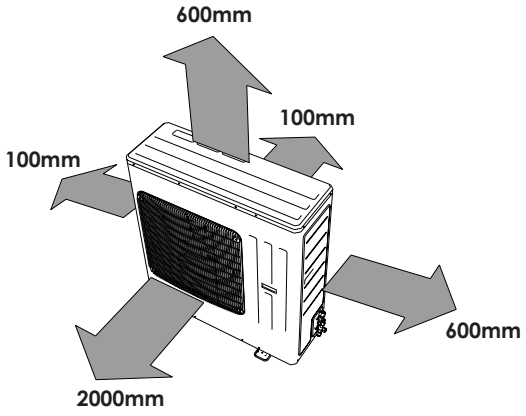
9. OUTDOOR UNIT INSTALLATION

9.1. OUTDOOR UNIT DIMENSIONS

	SC1200
	(mm)
A	1107
B	360
C	440
D	1018
E	950
F	440
G	631
Weight (kg)	94



9.2. MINIMUM CLEARANCES FOR OUTDOOR UNIT

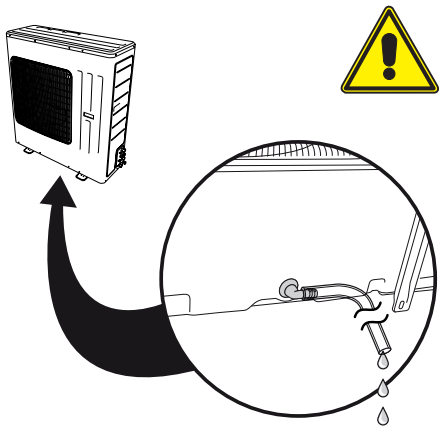


9.3. PRECAUTIONS FOR OUTDOOR UNIT INSTALLATION

- To guarantee the unit operates correctly, the choice of location for the installation must meet the following criteria:
- The outdoor unit must be installed so as to ensure that air discharged from the unit itself is not recirculated and there is sufficient space around the machine for operations and maintenance.
- The installation site must be well-ventilated so that the outdoor unit can take in and discharge sufficient quantities of air. Ensure that there are no obstacles near the outdoor unit's air inlets or outlets. Remove any obstacles which may be blocking the intake or discharge of air.
- The site of the installation must be sufficiently solid to bear the weight of the outdoor unit, and it must also be able to absorb any vibrations and insulate against noise. Ensure that the air and noise coming from the unit do not disturb your neighbours.
- The site of the installation must ensure that the outdoor unit cannot become buried in snow and it is not subject to the effects of fumes from fuel and oils.
- Avoid direct exposure of the unit to solar radiation: it is recommended to install protection.
- The installation site must guarantee drainage of rainwater and water produced during the defrosting cycle.
- Always ensure adequate condensate

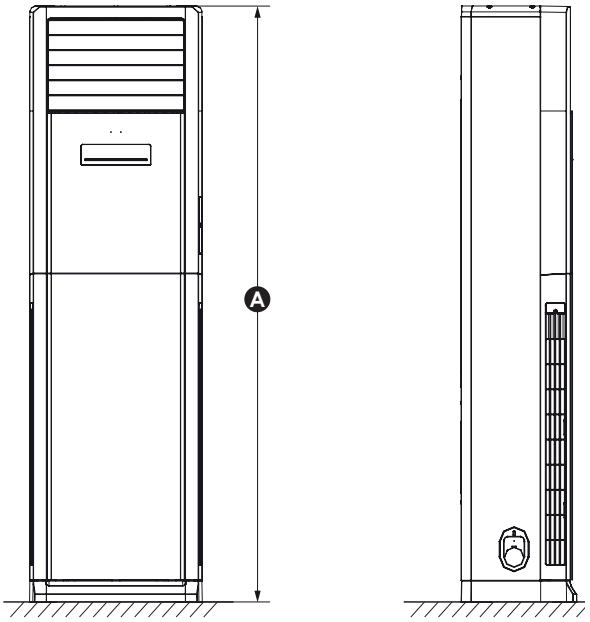
drainage is installed. The condensate drain connection supplied with the unit (external diameter of the connection = 15.8mm) must be installed below the base of the outdoor unit and connected to a pipe of a suitable diameter.

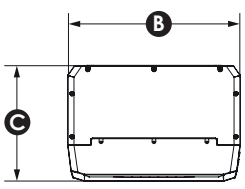
- The site of installation must be positioned so that the discharge air outlet is not exposed to strong winds and the air discharged must be free to disperse into the atmosphere.
- Seal up any holes in the base which are not connected to a drain pipe.



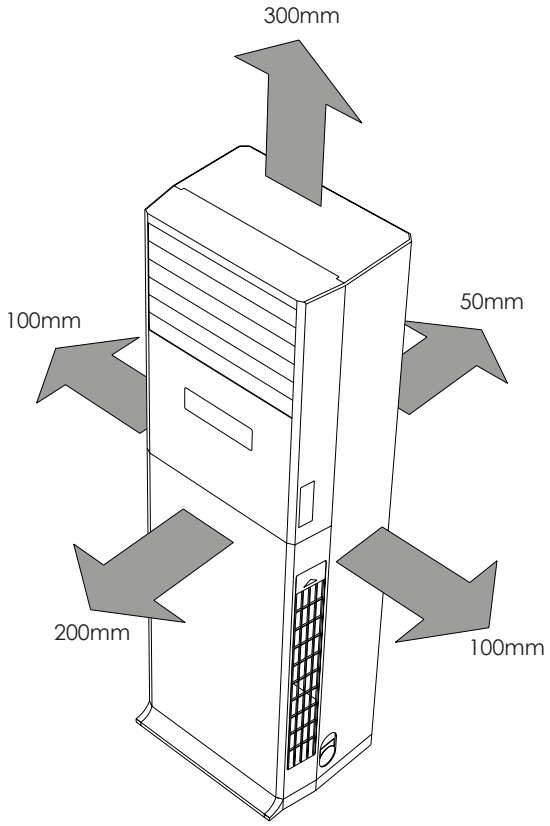
9.4. DIMENSION OF THE INDOOR UNIT

	SC1200V
	(mm)
A	1870
B	400
C	580
Weight (kg)	58





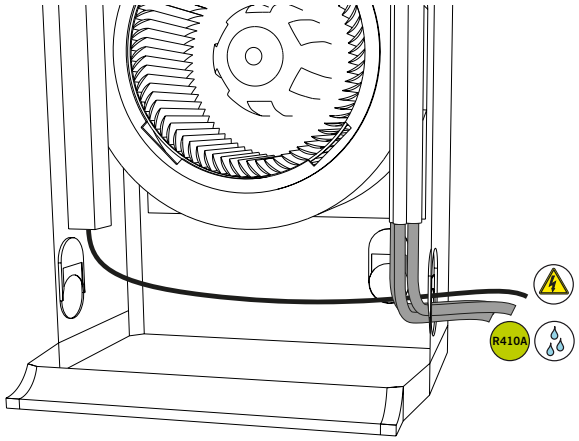
9.5. MINIMUM CLEARANCES FOR INDOOR UNIT

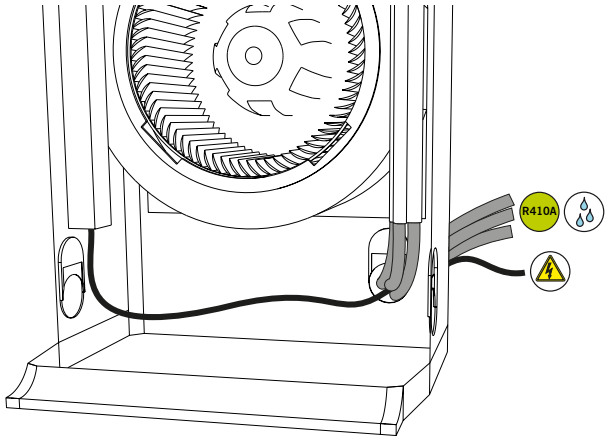


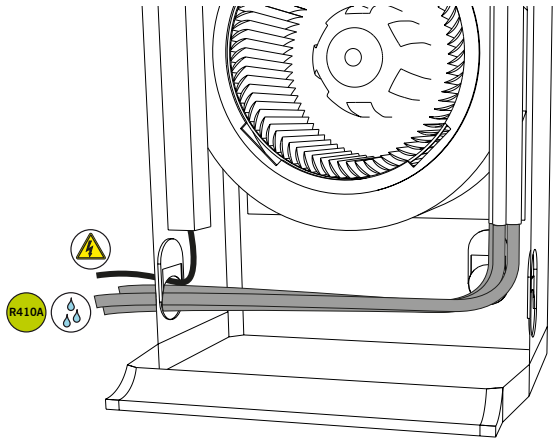
9.6. CHOOSING THE INSTALLATION AREA FOR THE INDOOR UNIT

- There must be no obstacles near the air discharge outlets and air suction inlets of the indoor unit, so that the air can circulate freely.
- Ensure the installation complies with the minimum technical clearances specified in the installation diagram.
- The installed unit must be horizontal and level.
- Choose the position for locating the unit. The wall must be solid, and able to bear a weight of at least 60kg and must not increase the noise level or vibrations produced during operation.
- The site of the installation must allow easy condensate drainage and easy connection to the outdoor unit.
- Ensure there is adequate space for care and maintenance.
- Installation in dusty or smoky environments (kitchens with cookers, etc.) can clog the filter, the exchanger and the condensate discharge pipe, resulting in reduced performance and the risk of condensate water overflow.
- If the unit is installed in a kitchen, ensure that the fume extractor hood is sufficient to extract all fumes from the cookers. Install the unit far away from cookers to avoid the intake of fumes into the air conditioner.
- Install the unit further than 1m away from other electrical appliances such as TVs, radios, audio equipment, etc.
- Do not install the unit in a location where it could be affected by inflammable gas leaks.
- Do not install the unit near a laundry, bathroom, shower or swimming pool.
- To avoid problems with the air conditioner, avoid installation in locations:

1. Where there is a lot of oil.
2. Where there is an acid base.
3. Where the power supply is irregular.







9.7. INSTALLING THE INDOOR UNIT ON THE WALL

- The indoor unit allows the connections to be positioned in different directions (see drawings opposite):
- For connections passing through the back, right or left, remove the push-out on the selected side of the unit; the connections must go through the wall, requiring a service hole in the wall.
- Service hole (if the installation requires), diameter 55-65mm (for electric line providing supply and communication with the outdoor unit, condensate discharge and copper pipes).
- The hole must incline slightly downwards towards the outside.
- Insert a sleeve into the service hole to protect the lines which must run inside.
- Make all the connections, from the connections on the indoor unit to the outdoor unit, passing through the service hole.
- Seal the service hole with material suitable for the type of wall.
- Make all the connections as indicated in the specific chapters.
- The electrical power supply of the split air conditioner must be connected to the outdoor unit. The indoor unit is connected to the outdoor unit via the 4-pin connection cable.
- Ensure that the air filters are correctly seated.
- For added safety, you may want to secure the unit to the wall using the supplied fixing bracket

10. COOLING CONNECTIONS

10.1. REFRIGERANT PIPES

- Refrigerant R410A
- Use copper pipes for gas and liquid, as indicated in the relative table (see the connection pipes table).
- Before assembling the insulated copper pipes on the refrigerant lines, seal both ends of each pipe to protect the inside from dust and humidity. The inside of the pipes must be perfectly clean and free of any foreign bodies.
- Try to avoid bending the pipes. If you must bend them, the bend radius should be greater than 100mm.

WARNING:

- **The above table shows the quantity of refrigerant gas to add, according to the models, for each additional metre of piping.**
- **The pipe wall must be at least 0.8mm thick, and the pipe must be able to withstand a pressure of 6.0 MPa.**
- **The longer the connection pipe, the lower the level of efficiency**

10.2. SELECTION OF THE REFRIGERANT CONNECTION LINES

Indoor units		**SC1200V**
Outdoor units		**SC1200**
Refrigeration pipework		
Maximum refrigerant tube length	m	25
Maximum (indoor/outdoor) cooling line level difference	m	10
Refrigerant to be added	g/m	50
Compressor		
Refrigerant charge	kg	3,5
Refrigeration pipework		
Diameter of liquid refrigerant connections	mm (inch)	9,52 (3/8")
Diameter of refrigerant gas connections	mm (inch)	16 (5/8")

10.3. TIGHTENING TORQUE FOR FLARED CONNECTIONS

Pipe diameter	**Pipe thickness**	**Tightening torque**
(inch)	**(mm)**	**(Nm)**
1/4"	≥0.8	15 - 20
3/8"	≥0.8	30 - 40
1/2"	≥0.8	45 - 55
5/8"	≥0.8	60 - 65

10.4. FITTING THE CONNECTION PIPE

Outdoor unit A

Indoor unit B

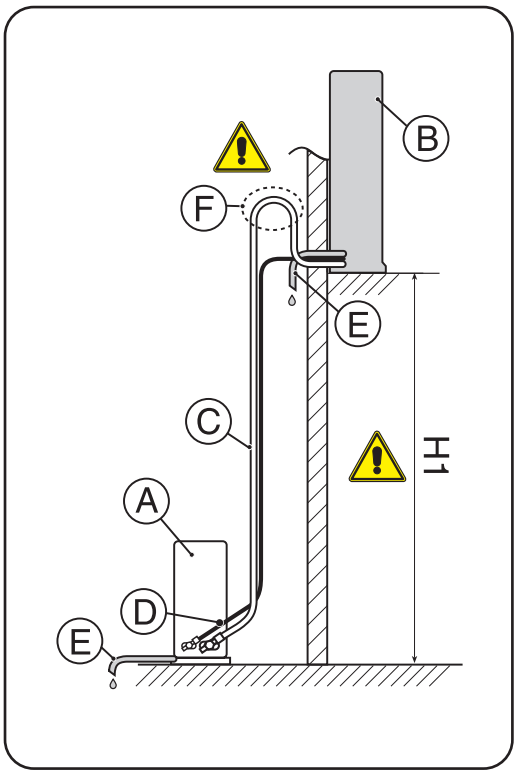
GAS line C

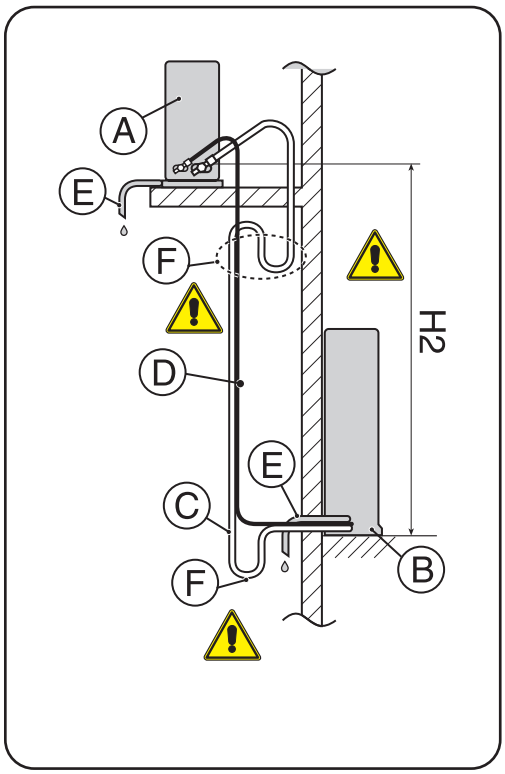
LIQUID line D

Condensate discharge E

Siphon F

WARNING:
H1 ≤ 10m
H2 ≤ 10m





OUTDOOR UNIT BELOW AND INDOOR UNIT ABOVE
In this case it is necessary to install a siphon (F) on the suction piping (C) in order to block the outflow of refrigerant and thereby to avoid liquid returning to the compressor. The connection pipes must be insulated. The maximum height difference between the indoor unit and the outdoor unit must not exceed the values indicated in the table.

OUTDOOR UNIT ABOVE AND INDOOR UNIT BELOW
In this case, provision must be made on the suction piping (C) for siphons (F) every 3 metres of height difference. These siphons allow the oil to return to the compressor. The connection pipes must be insulated. The maximum height difference between the indoor unit and the outdoor unit must not exceed the values indicated in the table.

WARNING:
Wrap pipe insulating material around the joint on the indoor unit and secure it with plastic straps to avoid condensate forming at the joints.

10.5. FITTING THE REFRIGERANT LINES

To prepare the copper pipes, proceed as follows:

1. Measure the inner and outer pipe precisely.
2. Use a pipe which is slightly longer than the measurement taken.
3. Cut the copper pipes to measure using the pipe cutter and smooth the ends with a pipe reamer (Fig. A);
4. Insulate the pipes and fit conical nuts before fitting collars to the ends of the pipes (Fig. B);
5. To fit the conical collars at 45° use a bevel edging tool (Fig. C);
6. Deburr the inside of the refrigerant pipe.
7. During reaming, the end of the pipe must be above the reamer to prevent the ingress of dust into the pipe.
8. Ensure that the inside of the pipe is clean and free of any swarf.
9. Check the conical surface is in line with the pipe, and that it is smooth, without fractures and of uniform thickness (Fig. D).

To make the cooling connections, proceed as follows:

1. Feed the lines, the condensate discharge pipe and the electric cables through the hole in the wall, aligning the ends of the lines with the couplings on the units (the lines are fitted on site, before feeding them through the hole, seal the end with tape to prevent the ingress of dirt).
2. Shape the refrigerant lines until they are aligned with the couplings on the outdoor unit.
3. (You are advised to avoid bending the refrigerant lines with a radius of less than 100mm, so as not to crush the pipe section).
4. If the difference in height between the indoor unit and the outdoor unit exceeds 3 metres (H1 - H2), and the outdoor unit is positioned above the indoor unit, it is recommended to provide a siphon or a loop on the gas pipe to facilitate the return of lubricating oil to the compressor.
5. Before connecting the pipes to the unit, check the position is correct.
6. Remove the protection from the ends of the refrigerant lines.
7. Clean the joint surfaces so the tightening surfaces are in perfect contact.
8. Lubricate the connections inside and out with a thin layer of engine oil.
9. Connect and tighten the pipes to the outdoor unit; use a wrench and counter-wrench to avoid subjecting the machine structure to torsion (Fig. F).
10. Connect and tighten the refrigerant lines on the indoor unit; use a wrench and counter-wrench to avoid subjecting the pipes to torsion (Fig. E).
11. Respect the tightening torque indicated in the table.

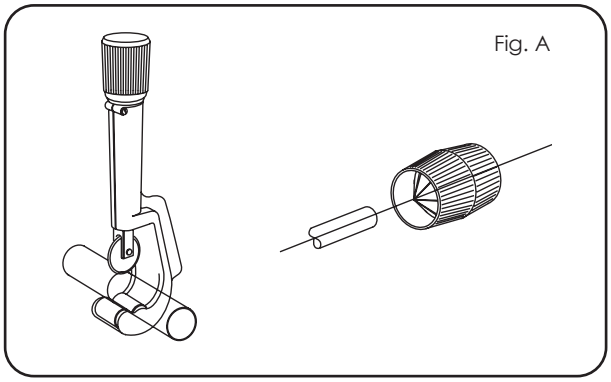


Fig. A

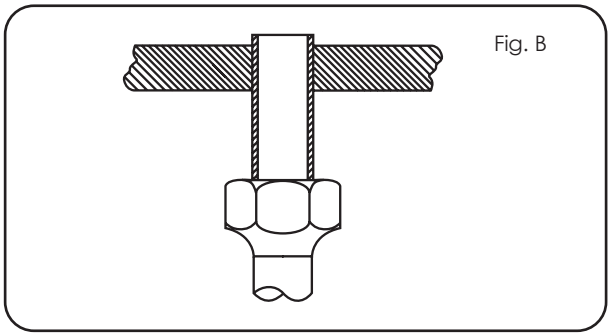


Fig. B

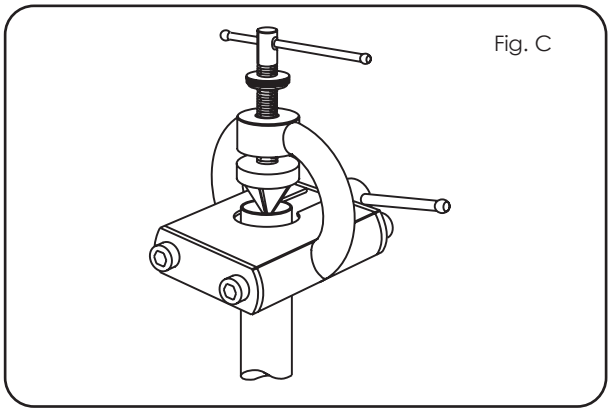


Fig. C

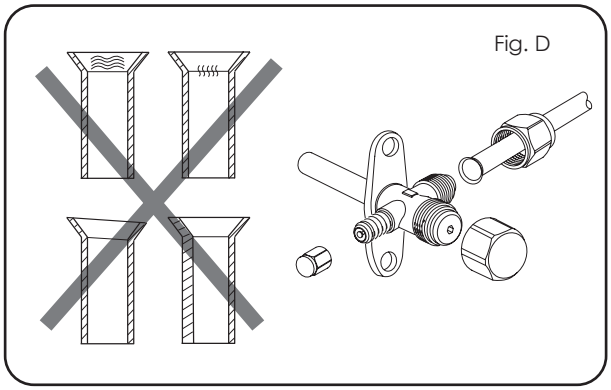


Fig. D

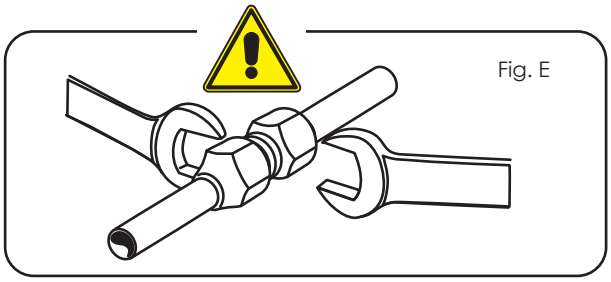


Fig. E

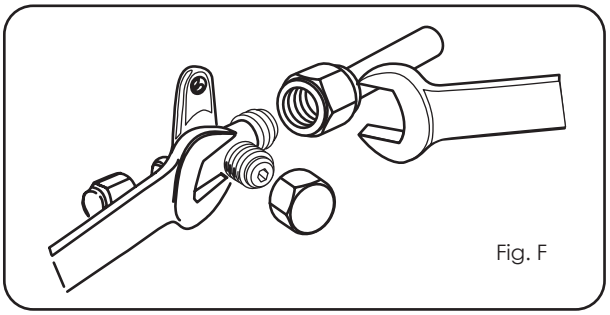
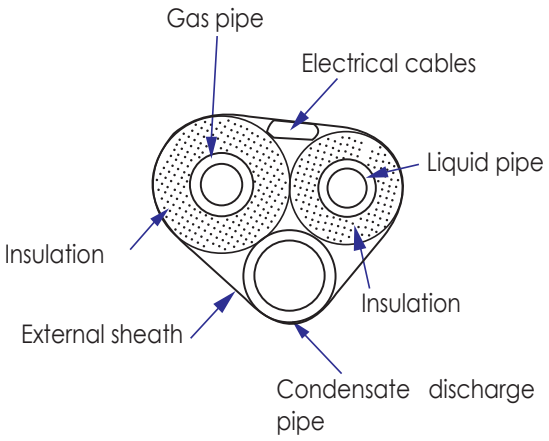
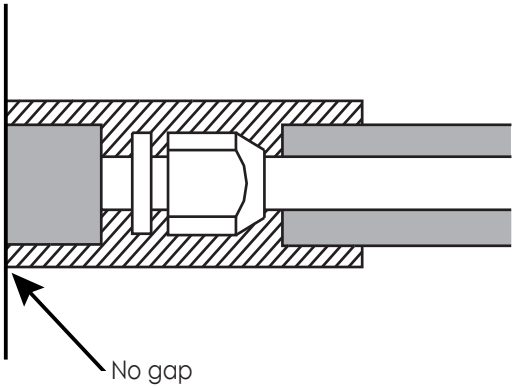


Fig. F

10.6. NOTES FOR THE CONSTRUCTION OF REFRIGERANT LINES

- When connecting the indoor unit to the connection pipe, do not force the couplings on the indoor unit, as this could cause cracks in the capillary pipes and other pipes on the indoor unit, causing them to leak.
- The connection pipe must be supported by a suitable bracket. The unit should not bear the weight of the pipe.
- To avoid leaks and the formation of condensate on the connection pipes, these must be covered in thermal insulation material bound with adhesive tape and insulated from the air.
- The connection joint with the indoor unit must be wrapped in thermal insulation. There must be no gaps between the pipe connection and the wall of the indoor unit.
- After wrapping the pipes in protective material, they should never be bent at an acute angle as this could crack or break them.
- Use adhesive tape to cover the pipes:
- Use adhesive tape to bind together the connection pipes and the cables. To prevent condensate flowing out of the discharge pipe, separate the discharge pipe from the connection pipe and cables.
- Use thermal insulating tape to bind together the pipes from the bottom of the outdoor unit to the upper end of the pipe where it enters the wall. When using insulating tape, the final wrap should half cover the first wrap of tape.





IF THE OUTDOOR UNIT IS INSTALLED BELOW THE INDOOR UNIT

• The condensate discharge pipe must be positioned above ground level and the end section of the pipe must not be immersed in water. All the pipes must be fixed to wall with brackets.
• Wrap the pipes in tape from bottom to top.
• All the pipes must be bound together and wrapped in tape and fixed to the wall with brackets.
• The hole in the wall must be sealed.

IF THE OUTDOOR UNIT IS INSTALLED ABOVE THE INDOOR UNIT

• The pipe must be tilted and the end section of the pipe must be lower than the indoor unit. The condensate discharge pipe must be positioned above ground level and the end section of the pipe must not be immersed in water. All the pipes must be fixed to wall with brackets.
• Wrap the pipes in tape from bottom to top.
• All the pipes must be bound together and wrapped in tape and fixed to the wall with brackets.
• The hole in the wall must be sealed.

WARNING

To connect the indoor unit to the refrigerant lines it is necessary to remove the plastic protective closure from the liquid/gas connections and use the brass taper nuts supplied.

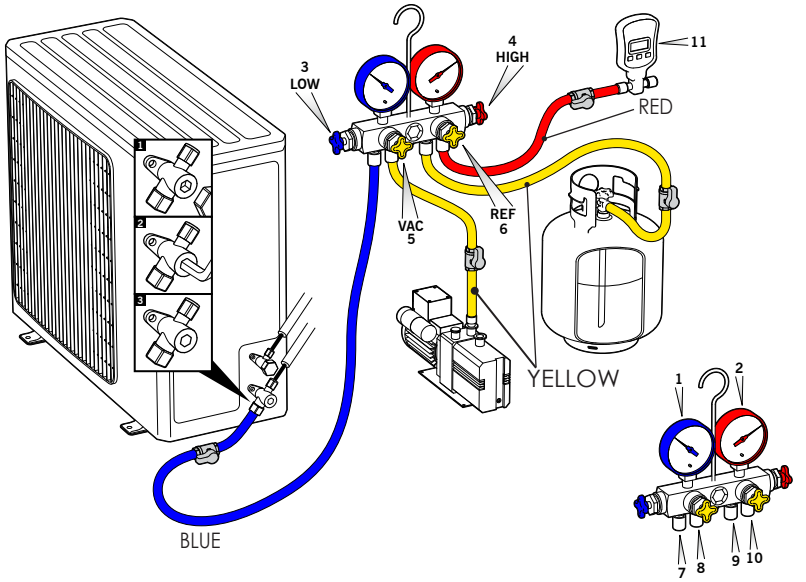
10.7. CONDENSATE DISCHARGE

- The condensate discharge hose can be positioned on the left or right (removing the relevant knockout from the casing) or to the rear as previously indicated.
- The diameter of the condensate discharge hose must be the same as - or greater than - the diameter of the connection pipe.
- Seal the connections and wrap with insulating material to prevent the formation of condensate on the external surfaces of the pipe
- Keep the condensate discharge hose short and tilt it downwards with a gradient of at least 1:100.
- Do not bend the condensate discharge hose.
- After connecting the hose, check that the condensate water flows freely
- To check the drainage, pour water into the condensate discharge tray.
- Check that the condensate water drains correctly. The connection of the condensate discharge hose must be leak-free

10.8. CREATING A VACUUM AND TOPPING UP THE REFRIGERANT GAS CHARGE

The fitter must be equipped with:

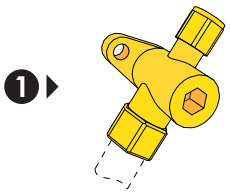
- A vacuum pump for chiller systems, ideally a two-stage pump, equipped with a non-return valve in the event of a power cut or if the pump is switched off.
- A suitable pressure gauge unit for the refrigerant gas added to the system being operated on.
- Pipes for connecting the pressure gauge unit to the cooling circuit on the unit, equipped with valves to shut off the flow of refrigerant gas.
- A vacuum gauge with a needle or an electronic gauge (recommended) to check the vacuum level.
- Digital thermometer.



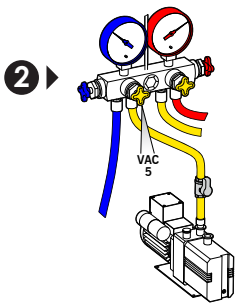
Key:

1. LP pressure gauge
2. HP pressure gauge
3. LP cock marked "LOW"
4. HP cock marked "HIGH"
5. cock connected to the vacuum pump marked "VAC"
6. refrigerant cock marked "REF"
7. attachment for connecting the hose to the LP side
8. attachment for connecting the hose to the vacuum pump
9. attachment for connecting the hose for the refrigerant
10. attachment for connecting the hose to the HP side
11. Vacuum gauge

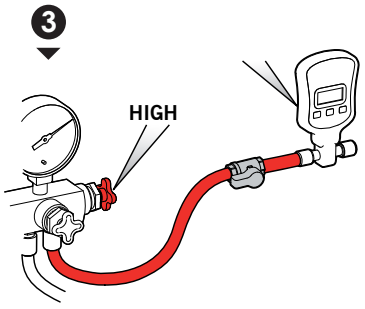
1. CONNECTING THE LOW PRESSURE HOSE AND CREATING THE VACUUM; Using the service socket (split-systems normally have a single socket), connect the hose to the service connection on the outdoor unit and to the inlet on the pressure gauge unit, shut off using the blue cock marked "LOW" (Blue hose).



2. Connect the hose to the vacuum pump and to the inlet on the pressure gauge unit, shut off using the yellow cock marked "VAC" (Yellow hose).

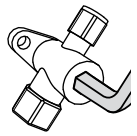


3. CONNECTING THE VACUUM GAUGE; If using an electronic vacuum gauge to measure the correct vacuum level, connect the connection on this to one of the hoses not used on the pressure gauge unit, for example to the red HP hose, shut off using the red cock marked "High". The other connection on the detector which is not connected should be kept closed.

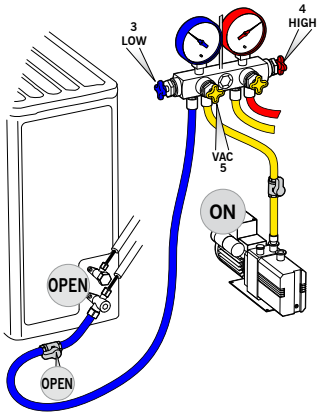


4. DISCONNECTING THE UNIT FROM THE POWER SUPPLY; Ensure that the condensing and evaporation units are not connected to the power supply (check carefully).

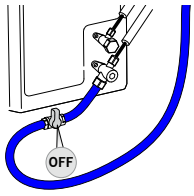
5 CHECKING THAT THE COCKS ARE SHUT OFF ON THE OUTDOOR UNIT; Ensure that the shut-off cocks (brass) on the outdoor unit are completely closed (carefully check the cocks with a suitable Allen key).

5 

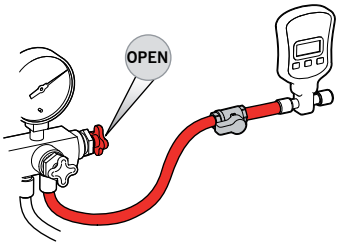
6 CHECKING THE CONNECTION HOSES AND LEVEL OF VACUUM CREATED BY THE PUMP; Switch on the vacuum pump. To connect the two hoses and thereby connect the LP side to the vacuum pump:
- Open the blue cock marked "LOW" on the pressure gauge unit.
- Open the yellow cock marked "VAC" on the pressure gauge unit.

6 

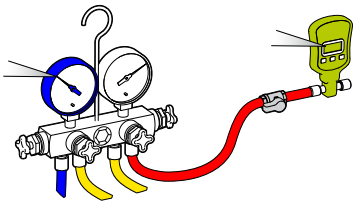
7 The cock placed on the connection hose to the outdoor unit must remain closed, therefore, when the vacuum pump is on, the blue and yellow connection hoses are under vacuum.

7 

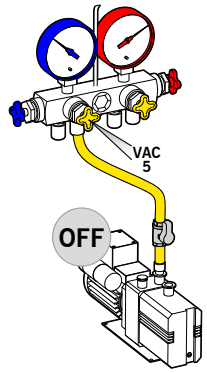
8 To also create a vacuum in the red hose connected to the electronic vacuum gauge, the red cock marked "HIGH" on the pressure gauge unit must also be opened.

8 

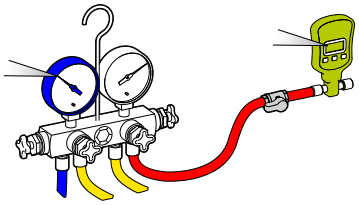
9 Check the level of vacuum that can be created by the pump, then refer to the value obtained by the vacuum gauge.

9 

10 Still under the same conditions, after a few minutes:
- Close the yellow cock marked "VAC"
- Switch off the vacuum pump (which must be fitted with a shut-off valve)

10 

11 Check that the vacuum gauge does not show a drop in the vacuum level compared with when the pump was operating. This operation also serves as a safety check to ensure that the hoses used are not worn and therefore leaking.

11 

10 CREATING A VACUUM ON THE REFRIGERANT LINES; If the connection hose seal test is positive, and no leaks are found, you can proceed to create a vacuum on the refrigerant lines connecting the condensing unit to the evaporator unit.

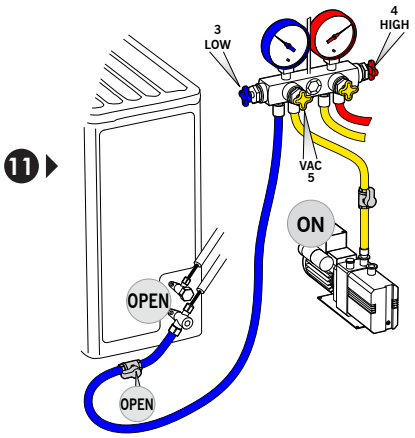
11 Creating a vacuum on the refrigerant lines
- Switch the vacuum pump back on,
- Open the cock on the hose side and open the brass cocks on the outdoor unit.
- The cocks marked "LOW", "VAC" and "HIGH" on the pressure gauge unit should be kept open.
- Wait for a few minutes (Note: a good sign that the vacuum is being created is the change in the noise emitted by the pump).

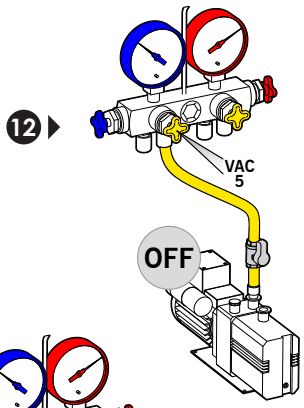
12 When the vacuum pump shows a sufficient level of vacuum, wait a few minutes and then proceed with the following operations:
- Close the yellow cock marked "VAC".
- Switch off the vacuum pump.
- Check that the vacuum gauge does not show a drop in the vacuum level compared with when the pump was operating.

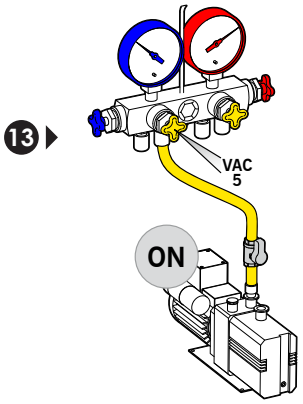
13 If the vacuum level reading does not change (an indication that the cooling circuit is not leaking):
- Switch the vacuum pump back on.
- Open the cock marked "VAC".
- Continue to create the vacuum for a few minutes.

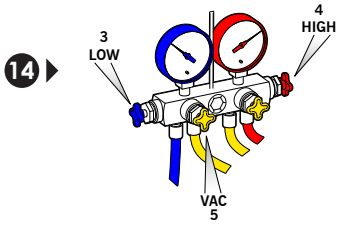
14 Close the cocks marked "LOW", "VAC" and "HIGH".
- Wait a few minutes and then switch on the unit in Cooling mode.

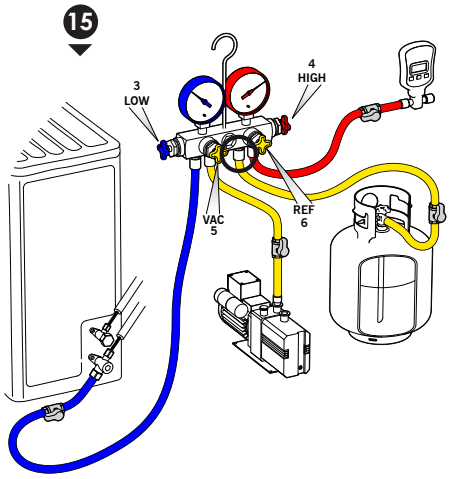
15 TOPPING UP THE REFRIGERANT GAS; Depending on the length of the lines, if the installation needs topping up with refrigerant gas, proceed as follows:
- Switch on the unit in Cooling mode.
- Leave the LP hose connected to the pressure gauge unit.
- The cock marked "VAC" should be kept closed.
- Connect the cylinder of refrigerant gas to the hose connected to the pressure gauge unit connection (see the connection circled in the figure).
- Open the tap on the cylinder (which must be fitted with an immersed hose).
- Bleed the air from the hose leaving the connection on the pressure gauge unit slightly loose until the gas does not flow out, then slowly tighten the connection.
- Open the cock marked "LOW".
- Position the cylinder on electronic scales.
- Open the cock marked "REF" in short bursts, in order to add the required amount of refrigerant..











11. ELECTRICAL WIRINGS

11.1. ELECTRIC WIRING

- Before carrying out any work, switch off the power supply to the air conditioner.
- All the parts and materials supplied on site must comply with the local laws and regulations.
- All the connection lines must comply with the electrical wiring diagram. Incorrect connection could cause the air conditioner to malfunction or suffer damage. The wiring diagrams are subject to continuous updates, so it is essential to use those on the machine as your reference.
- The unit and its accessories must only be installed and wired by professionals with the necessary technical qualifications in installation, conversion, extension and maintenance of the systems and who are trained to perform operational and safety checks on these systems. In this manual, these will generally be referred to as "Personnel with specific technical skills".
- In the specific case of electrical wirings, the following must be checked:
  - Measurement of the electrical system insulation strength.
  - Continuity of the protection wires.
- To protect the unit against short circuits, mounted on the supply line of an thermomagnetic isolator switch (IG) with a minimum contact separation of at least 3mm in all poles. Respect the measurements given in the table.
- Check the earth cable is connected to the earthing system of the building itself.
- Ensure that the installation is wired in compliance with the laws and standards in force, and with the instructions in this manual.
- If the power supply cables, earth cables, communication cables or wired panel cables are damaged, they must be replaced with cables with the same specifications. Have repairs carried out by "Personnel with specific technical skills".
- Follow the guidelines given in this manual to determine the minimum cable section for the supply cables, earth cables and communication cables.
- Ensure that the air conditioner is connected to the power supply or to a power socket with the correct voltage and frequency as indicated on the data plate. Using power supplies with the incorrect voltage and frequency could damage the unit and consequently risk starting a fire. The voltage must be stable, without major fluctuations.
- The available electric power should be sufficient to supply the air conditioner.
- The power supply cable should be safe and secure, in order to avoid damage caused by pulling out the cable terminal.
- Do not make junctions on the power supply cable: use a longer cable. Replacement cables must have the same specifications. Junctions can cause overheating and/or fires. Have repairs carried out by "Personnel with specific technical skills".
- All the power supply lines must use terminals with wire-end ferrules or single-wire terminals. Stranded cables without wire-end ferrules could cause electrical bridges.
- Do not leave any cables in contact with the cooling pipe, the compressor or moving parts such as the fans.
- Do not modify the circuits inside the air conditioner. The manufacturer cannot be held responsible for any damage or malfunction due to incorrect line connections.
- Before accessing the terminals all of the power supply circuits need to be connected.

11.2. EARTH CONNECTION

- The air conditioner is a Class I electrical appliance, so it is essential to provide a reliable earthing connection.
- The yellow and green wire in the air conditioner and the earth wire cannot be used for other purposes. The cable cannot be secured with a screw through the wire as this could result in an electric shock.
- The user must provide a safe earthing connection. Check the earth cable is connected to the earthing system of the building itself.
- Check a suitable differential switch is installed for earthing electrical discharge. Do not connect the earth cable to the following components:
  - Water pipes
  - Gas pipes
  - Drain pipes
  - Lightning conductor
  - Telephone earth cable
  - Other locations considered unsafe by "Personnel with specific technical skills".

11.3. CONNECTING THE POWER SUPPLY CABLE (INDOOR UNIT)

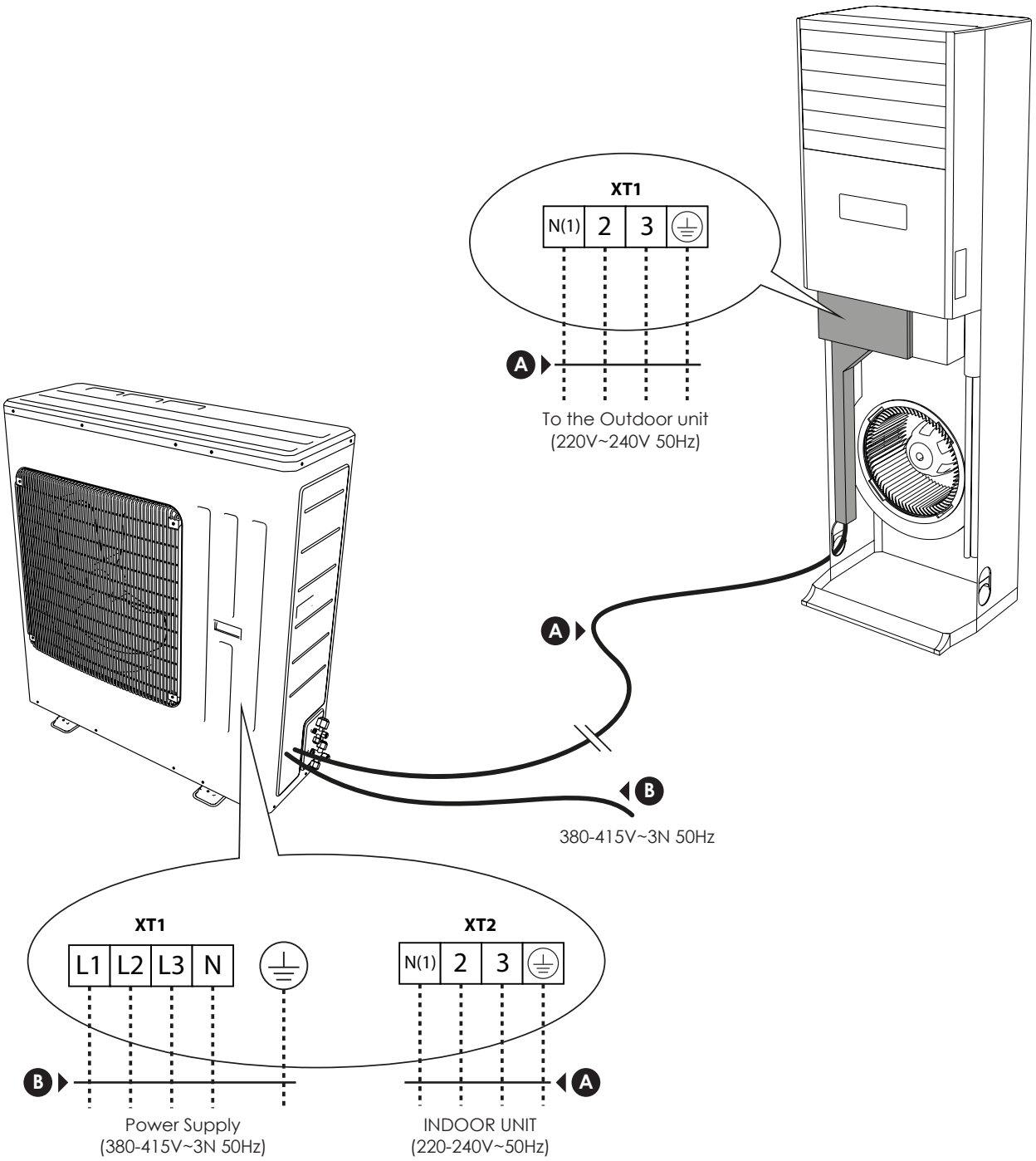
- The power of the air conditioner must be connected to the indoor unit. Observe the wiring diagrams.
- Power cable:
  - In case you need to replace the cable with a longer one, use a cable with the features shown in the table in this manual.
  - To protect the unit against short circuits, mounted on the supply line of thermomagnetic isolator switch with a minimum contact separation of at least 3mm in all poles.
- Connection cable between units: use a cable with the features shown in the table in this manual.
- Connecting the multi-core cables:
  - Use a wire stripper to remove the insulating layer (10 mm long) from the end of the multi-polar cable.
  - Using crimping pliers, fit a terminal (compatible with the size of the control board) to the end of each cable pole.
  - Remove the screw from the unit control board.
  - Insert the terminal of the cable in the control board, and fix it with the screw.

11.4. CONNECTING THE POWER SUPPLY CABLE (OUTDOOR UNIT)

Connection between units:

- Remove the handle on the right side of the outdoor unit.
- Remove the clamp.
- Attach the 3 phases and the neutral of the cable to the control board as shown in the wiring diagram.
- - Attach the ground wire to the screw marked with the symbol ⏚ as shown in the wiring diagram.
- - Tighten the screws firmly.
- - After tightening the screws, make sure the wire is secure.
- - Secure the cable with the cable clamp.
- - Replace the handle on the right side of the outdoor unit.

Electrical wiring connecting the indoor and the outdoor unit

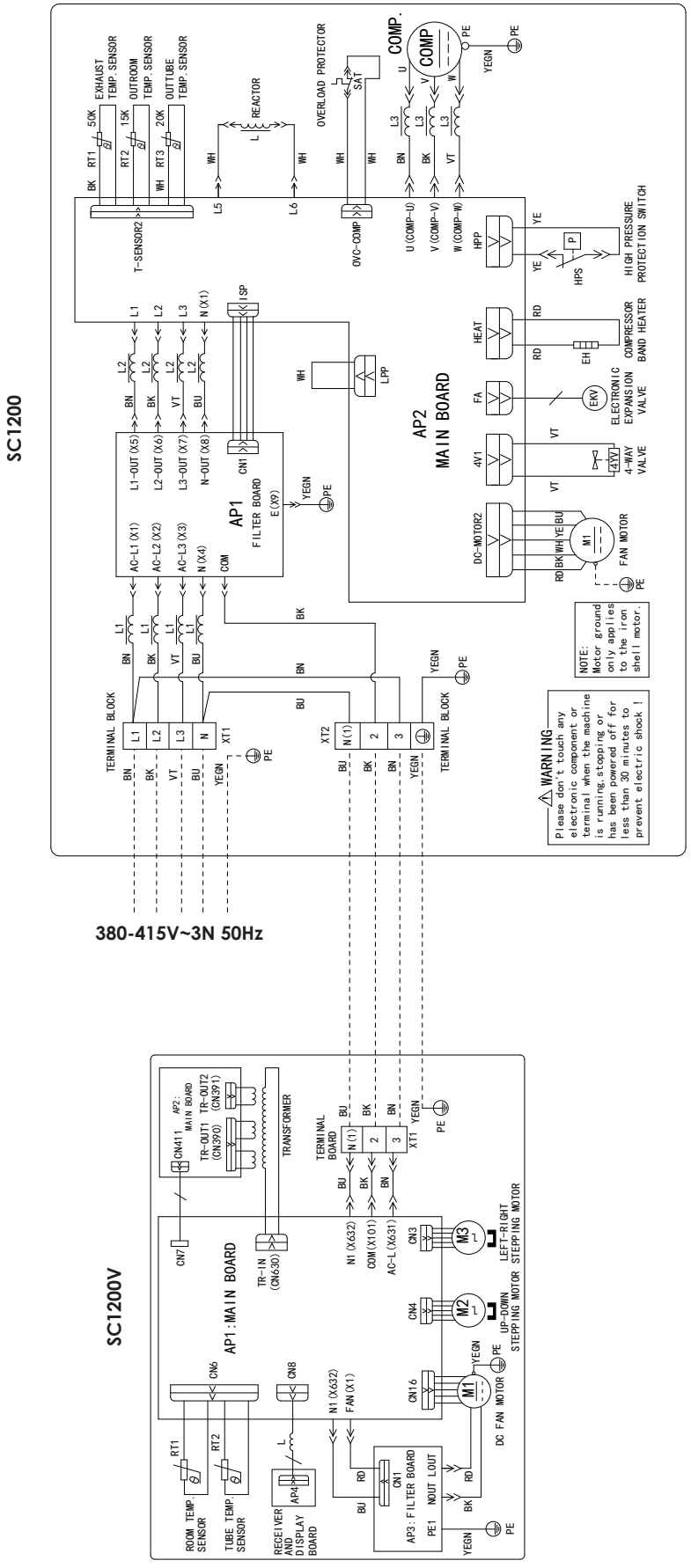


Wire	Use	Cable type	Notes	Maximum length
A	Indoor unit power cable	4x1mm^2	Cable not provided	25m
B	Outdoor unit power cable	5x2.5mm^2	Cable not provided	15m

Unit	**Suggested Thermomagnetic switch (not provided)** (*)
SC1200	16A

(*): the value indicated in the table represents a suggested value; The sizing of the thermomagnetic switch must be in accordance with national laws and regulations.

11.5. ELECTRICAL CONNECTION SC1200V + SC1200



12. OPERATING TEST

Before commissioning the air conditioner, an operating test must be performed. Proceed as follows:

Preparing for the test

1. Check that the network voltage is correct.
2. Do not connect the unit to the power supply before installation is complete.
3. Ensure that the connection and supply cables are correctly connected to the unit.
4. Ensure that the gas and liquid pipe valves are open.
5. Remove any dust and swarf created during installation.

Running the test

1. Switch on the unit, press the ON/OFF button (on the remote control) to start the test.
2. Press the MODE button several times, select COOL, HEAT, FAN, etc. and check that the unit runs smoothly.
3. Check the operation of the condensate discharge.

13. ROUTINE CHECKS FOLLOWING INSTALLATION

ITEMS TO CHECK	POSSIBLE ANOMALY	SITUATION
Is the unit firmly fixed?	The unit could fall, vibrate or generate noise.	✍
Has a check for refrigerant leaks been performed?	Poor performance.	✍
Is the thermal insulation sufficient?	It could cause condensate and dripping water.	✍
Does the unit correctly drain the condensate water?	It could cause condensate and dripping water.	✍
Does the power supply voltage correspond to the one indicated on the label?	Electrical operating fault or damage to components which could be blown.	✍
Have the cables and pipes been connected correctly and safely?	Electrical operating fault or damage to components which could be blown.	✍
Has the unit been safely grounded via an earth connection?	Risk of electrocution. Damage to components.	✍
Have the guidelines the manual regarding electric cable type and section been followed?	Failure to do so could cause electrical operating faults or damage to components which could be blown.	✍
Are the air inlet and outlet on the indoor unit free of obstacles?	Poor performance.	✍
Have the pipe length and refrigerant charge been recorded?	Poor performance. Impossible to check the amount of refrigerant added.	✍

14. MAINTENANCE

14.1. GENERAL NOTES

- **Disconnect the power supply before cleaning the unit**
- **Disconnect the power supply when the air conditioner is off**
- **Do not pour water directly to the unit may cause an electrical shock**
- **Clean the cabinet with a soft, dry cloth or a cloth slightly dampened with water or detergent (do not use solvents)**

14.2. CLEANING THE FRONT PANEL

Clean the dirty side of the panel with a cloth dampened with warm water. Do not immerse the panel in water, so as not to damage the electrical circuit.

14.3. CLEANING THE AIR FILTER

Remove the air filter (as shown in the following figures):

1. Unscrew the screw on the air intake side.
2. extract the lower part of the body containing the filter.
3. Remove the filter upwards.
4. Cleaning the air filter:
- Use a vacuum cleaner
- If heavily soiled, use a mild detergent and water
5. Dry the filter by exposing it to direct sunlight
6. Replace the filter when it is dry
7. Reinstall the air filter:
- Replace the filters.
- Close the panel.

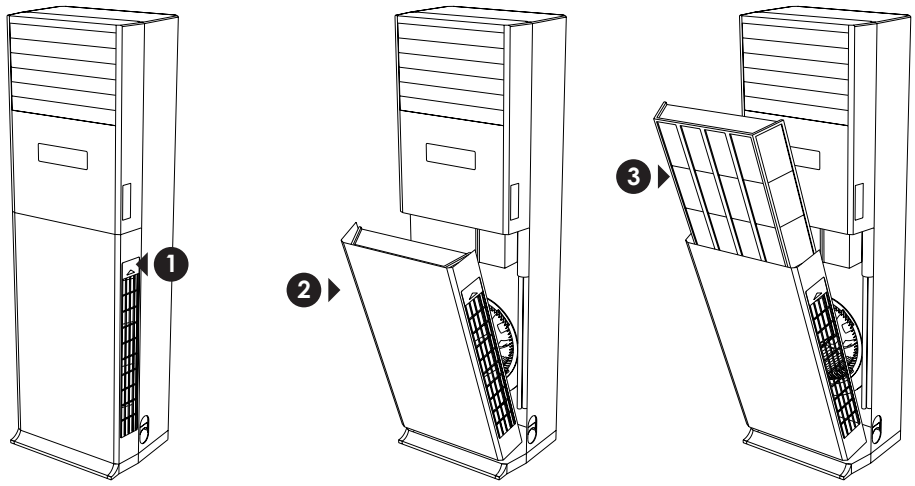
NOTES:
Do not clean with hot water.
Do not dry the flame.
Do not operate the air conditioner without the air filter.
Do not use brushes or tools drives.

14.4. CHECK BEFORE STARTING

- Check to make sure that the inlet and outlet are not obstructed by objects on both units, external and internal.
- Check to make sure that the cable ground connection is connected and not damaged.
- Check to make sure the air filter is clean.
- Make sure that the remote control batteries are exhausted.
- Make sure that the indoor and outdoor units are not damaged and that they are securely fastened.

14.5. MAINTENANCE AFTER USE

- Disconnect the power supply.
- Clean the filter and the indoor unit.
- Clean the outdoor unit and remove any obstructions from the battery.
- Restore and repaint any rusty surfaces on the outdoor unit.



WARNING:
- **This equipment is not intended for use by persons (including children) with reduced physical or sensory impairment, or lack of experience and knowledge, unless an individual is responsible for the supervision and safety of people above provide them with the necessary instructions and supervision.**
- **The device should not be used by children as a game.**
- **Instruct the customer on how to use the system, showing him / her the included manual.**
- **Make sure that the power user falls within the tolerance (+ / -10%).**

15. ALARMS DISPLAY

If malfunctioning occurs during system functioning, the units show the relative alarm code which easily permits to the After-Sales Service Area to identify the cause of errors; such alarm code will appear both on indoor unit (through two-digit display and possibly through the flashing symbols cooling and heating) and on outdoor unit (by flashing LEDs on the electronic board); the following table indicates the alarm codes and their causes.

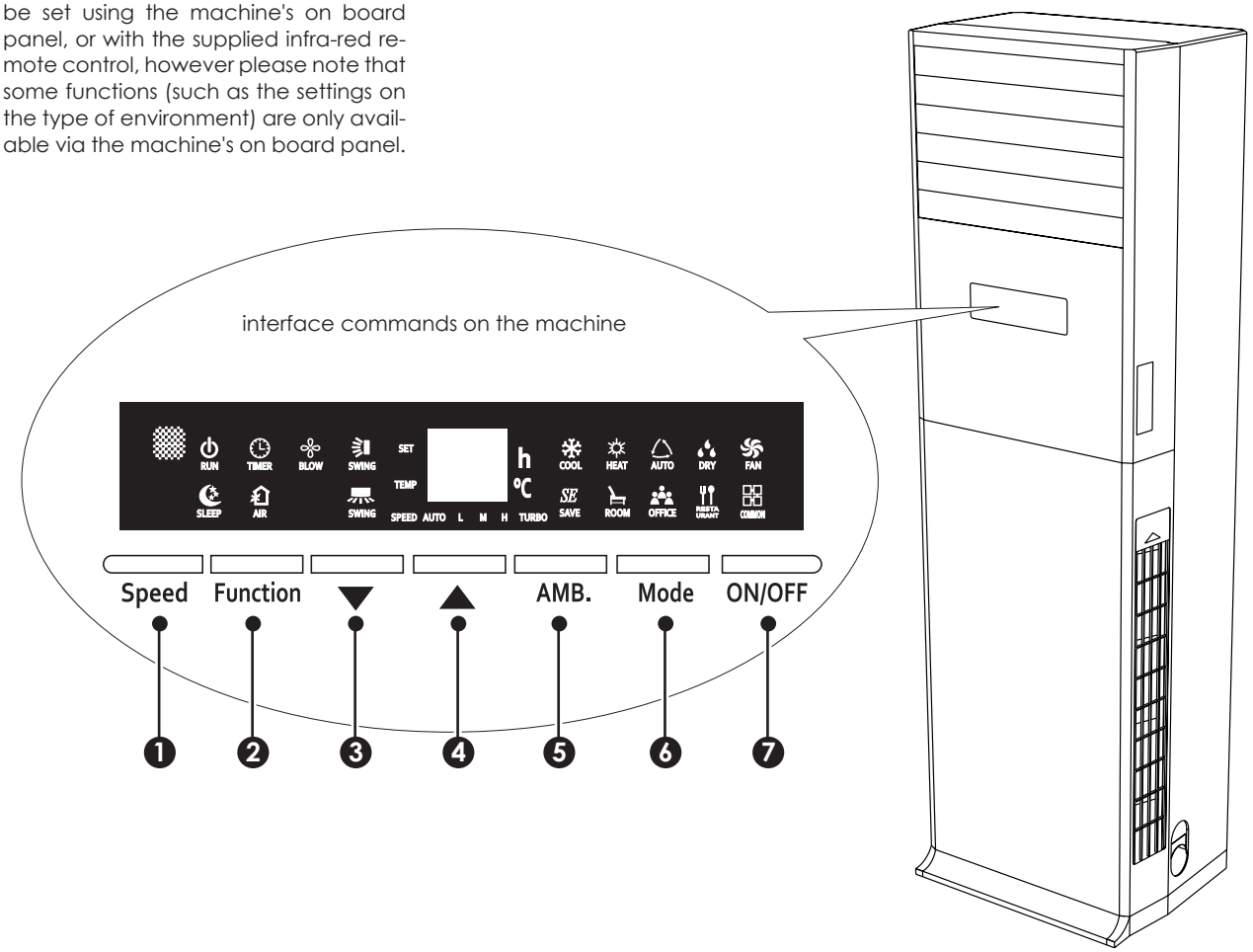
15.1. ALARM CODES FOR UNITS SC1200

Code on the display	Alarm description
E1	High pressure alarm
E2	Anti-freeze alarm
E3	Low pressure alarm
E4	High temperature compressor discharge alarm
E5	Electrical overload alarm
E6	Communication error between indoor and outdoor unit
F1	Room air temperature sensor disconnected or short-circuited
F2	Coil Temperature sensor (indoor unit) disconnected or short-circuited
F3	Outside air temperature sensor disconnected or short-circuited
F4	Coil temperature sensor (outdoor unit) disconnected or short-circuited
F5	Sensor on the discharge disconnected or short-circuited
H6	Fan not working on the indoor unit
P5	Error generated by a wrong power supply to the compressor
H3	Compressor overload alarm.
H5	Power inverter protection module
HC	Alarm generated from the module for the elimination of disorders
H7	No synchronisation on compressor
LC	Start-up procedure failed
PU	Malfunction of condensers on the outdoor unit card
P7	Malfunction on the outdoor unit power module
P8	High temperature on the outdoor unit power module alarm
PH	Error continued voltage transformers (too high value)
PL	Error voltage on board (direct current)
PC	Current sensor malfunction
P0	Reset of the power Inverter module
Ld	Power supply error (phase errors)
P6	Communication error with the control module
PU	Malfunction of condensers on the outdoor unit card

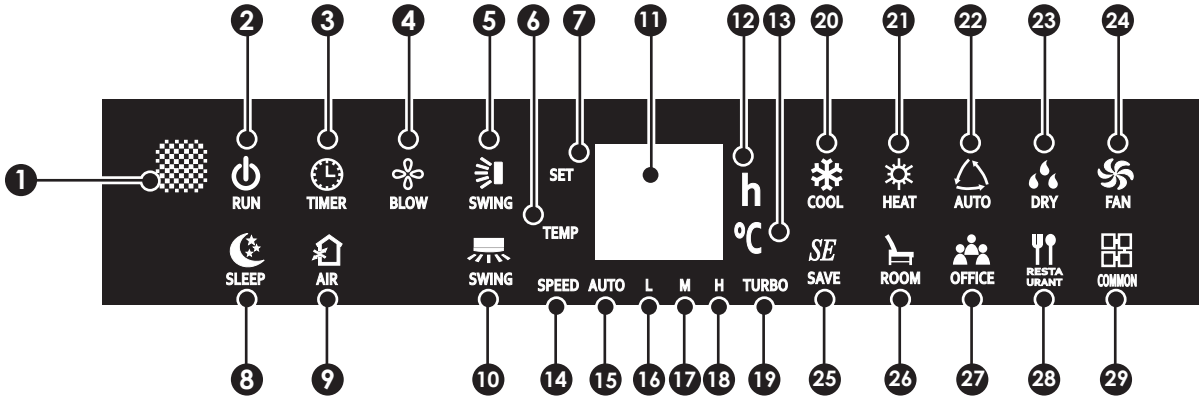
USING THE UNIT

15.2. PANEL ON THE MACHINE

All functions of the air conditioner can be set using the machine's on board panel, or with the supplied infra-red remote control, however please note that some functions (such as the settings on the type of environment) are only available via the machine's on board panel.

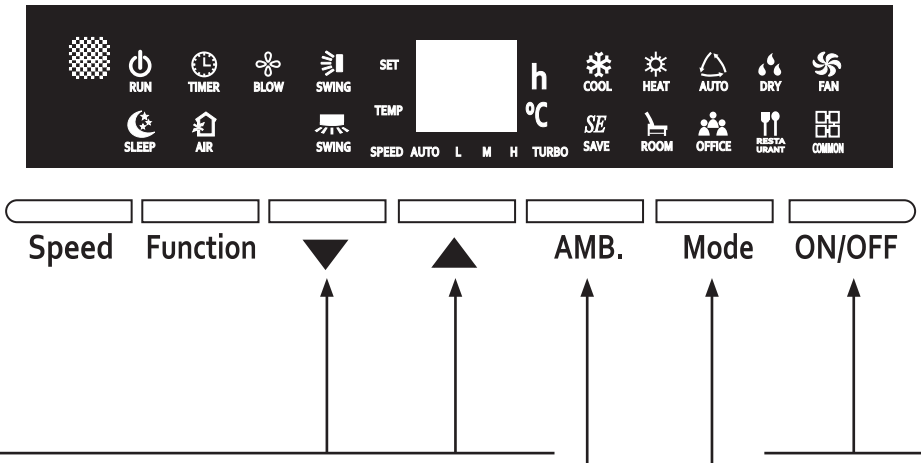


Alarm	Function of the button:
1	Selection of the various fan speeds
2	This button allows to scroll through the various available functions
3	Allows to increase a value, or to activate a function selected with the "Function" key
4	Allows to decrease a value, or to deactivate a function selected with the "Function" key
5	Allows to set an automatic program based on the type of environment in which the unit is installed (Programs: energy saving, home, office, restaurant, common)
6	Allows to select the operating mode (Cooling, Heating, Dehumidification, Fan Only or Auto)
7	Allows to switch the unit ON and OFF:



Alarm	Function of the button:
1	Infra-red receiver
2	Indicates the status of the unit (the icon is green if the unit is on and red if the unit is in standby)
3	If the icon is active, indicates that a timer is set on the system (On or Off)
4	If the icon is active, indicates that the prolonged ventilation has been activated
5	The icon indicates that the continuous vertical swing is active (top to bottom)
6	This icon indicates that the figures on the display represent the temperature
7	This icon indicates that the figures on the display represent the current temperature set-point
8	The icon indicates that the night-time comfort function is currently active
9	This icon is not used
10	The icon indicates that the continuous horizontal swing is active (left to right)
11	Two-digit display
12	Indicates that the hour set for the on or off timer are shown on the display
13	Indicates that a temperature is currently displayed (expressed in °C)
14	Indicates (along with one of the above icons) the current setting for the fan speed
15	Indicates that the fans are set to "AUTO" speed
16	Indicates that the fans are set to "MINIMUM" speed
17	Indicates that the fans are set to "MEDIUM" speed
18	Indicates that the fans are set to "MAXIMUM" speed
19	Indicates that the fans are set to "TURBO" speed
20	Indicates that the cooling mode is currently active
21	Indicates that the heating mode is currently active
22	Indicates that the automatic mode is currently active
23	Indicates that the dehumidification mode is currently active
24	Indicates that the fan only mode is currently active
25	Indicates that the energy saving program is currently active
26	Indicates that the home saving program is currently active
27	Indicates that the office saving program is currently active
28	Indicates that the office saving program is currently active
29	Indicates that the common saving program is currently active

16. FUNCTIONS AVAILABLE VIA THE MACHINE'S ON BOARD PANEL



Pressing the **ARROW** key permits to perform different functions, depending on the context in which they are pressed:
• Increase or decrease the temperature set-point, in the modes that permit;
• Allows to scroll through the available functions (after pressing the Function key) on the unit;
• By simultaneously pressing both arrow keys and holding them down for at least 3 seconds, activates the key lock (indicated by the initials LC on the display of the indoor unit);
• Performing one of the available test modes;

WARNING after installing the unit, a heating or cooling test can be run for the first start-up; to perform such tests it is necessary to:

HEATING TEST MODE:
When turning on the unit, press the key (▲) twice within 20s; the heating test will last for 5 minutes (unless interrupted before hand via the OFF button on the machine's panel or on the remote control) and in the event errors occur during the test, the relative code will appear on the display of the indoor unit.

COOLING TEST MODE:
When turning on the unit, press the key (▼) twice within 20s; the heating test will last for 5 minutes (unless interrupted before hand via the OFF button on the machine's panel or on the remote control) and in the event errors occur during the test, the relative code will appear on the display of the indoor unit.

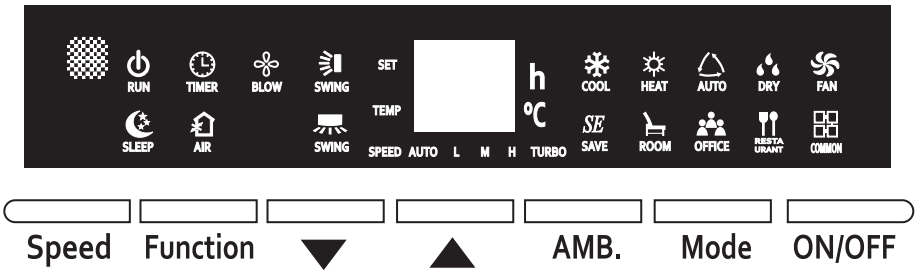
By pressing the **ON/OFF** key it is possible to switch the unit on or off. the colour of the RUN icon changes depending on the status of the unit (red units on standby, green unit on).

Pressing the **Mode** key will select the operating mode to be applied to the unit; Each press of the key will scroll through the available modes in accordance with the following layout:

Each different operating mode enables or disables particular settings:
• **Automatic** (): the temperature set-point and the speed of the fans are automatically set (and can not be changed by the user); the swing of the vertical and horizontal fins will be modified;
Cooling ( ): the temperature set-point, the speed of the fans and functions related to swing of the vertical and horizontal fins will be modified;
• **Dehumidification** (): the temperature set-point and the speed of the fans are fixed; the swing of the vertical and horizontal fins will be modified;
• **Ventilation only** (): The temperature set-point is disabled; the speed of the fans and the swing of the vertical and horizontal fins will be modified;
• **Heating** (): the temperature set-point, the speed of the fans and functions related to swing of the vertical and horizontal fins will be modified;

Pressing the **AMB**. allows to select the operating scenario to be applied to the unit (the operating scenario is a specific automatic program based on the type of environment in which the unit is installed); each press of the key will scroll through the available modes in accordance with the following layout:

WARNING the scenarios can only be set via the machine's on board panel; only the energy saving (SAVE) or the default (COMMON) scenario can be set via remote control



The speed of the fans can be changed by pressing the SPEED key (for modes that permit); there are 5 various speeds available (all indicated by the corresponding icon displayed on the display of the machine's on board panel): auto, low, medium, high and turbo.

The functions available on the unit can be set by pressing the **Function** key; each time this button is pressed, will switch to the next function, according to the following list (warning: the icon flashes to indicate that the function is selected):

(1) Set continuous vertical swing ( ):
the function is enabled by pressing key (▲) and stopped pressing key (▼);

(2) Set continuous horizontal swing ( ):
the function is enabled by pressing key (▲) and stopped pressing key (▼);

(3) Set the continuous ventilation ( ):
the function is enabled by pressing key (▲) and stopped pressing key (▼);

(4) Set the Off timer ( ):
WARNING: the unit can manage two different timers, one for the programmed OFF and one for the ON; if the procedure is performed with the machine on, an Off timer will be set, and if carried out with the machine off, an On timer will be set.
Pressing the key (▲) will increase the number of hours set for the timer, while the key (▼) will decrease the number of hours set for the timer; to confirm the value to be assigned, just press the Function key, passing to the next function or wait for 5 seconds without pressing any key.
Once a timer has been set, the relative icon will remain on indicating that a programmed On or Off is set on the system; to delete a time setting, enter it as mentioned above and set the "blank character" as the new value, which is shown by scrolling all the values up to the value after 24;

(5) Set the night-time comfort function ( ):
the function is enabled by pressing key (▲) and disabled pressing key (▼);

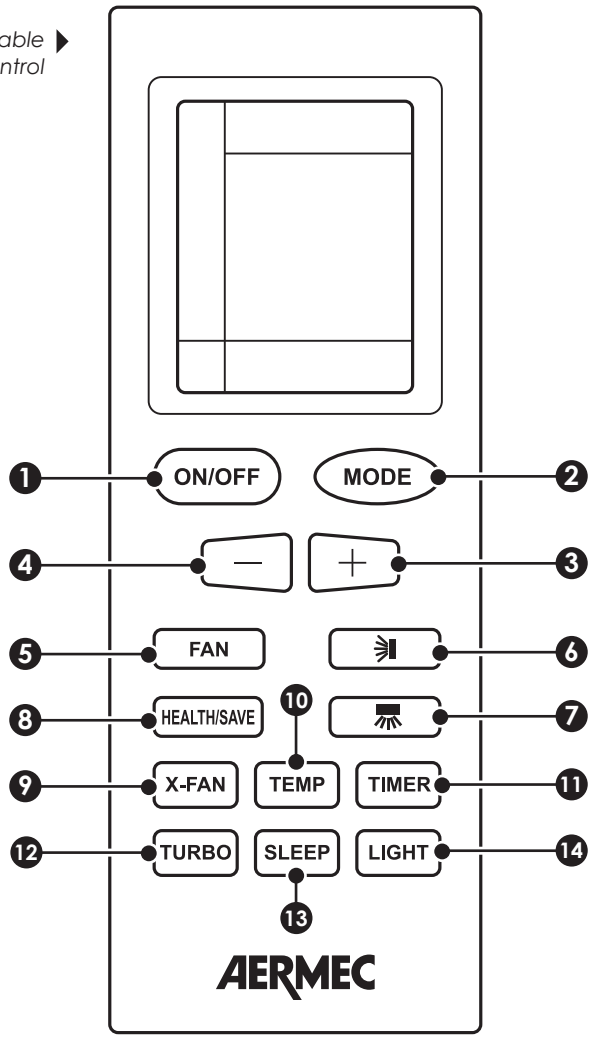
(6) Set the operating set-point for the active operating mode ( ):
pressing the (▲) key increases the operating set-point, while pressing the (▼) key will decrease the operating set-point;

(7) Displays the current room temperature ( ):
pressing the (▲) key or the (▼) key displays the room temperature value on the display of the unit;

16.1. REMOTE CONTROL

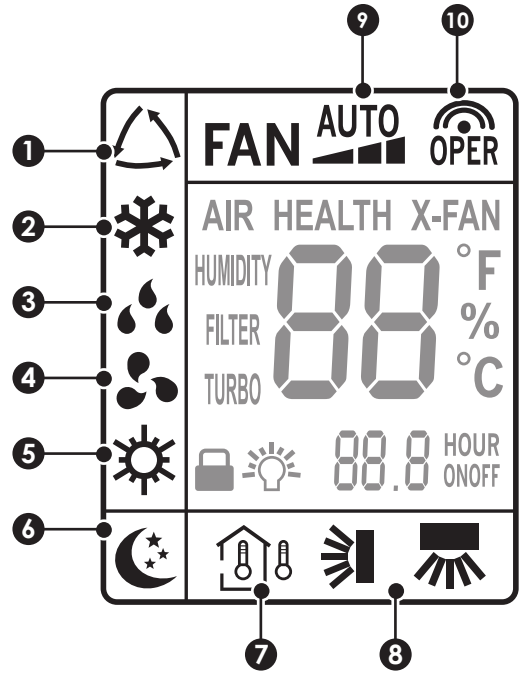
- Some of the buttons of the remote control are not used for the required air conditioner and are therefore not described in these instructions. Pressing of these keys will not affect the operation of the air conditioner.
- Check there are no obstructions between the receiver and the remote control.
- The maximum distance between the IR receiver and the remote control is 8 metres, to ensure the signal is correctly received.
- Position the remote control at least 1 metre away from TVs, radios, stereos, etc. There may be some audio and video interference.
- Do not drop or throw the remote control.
- Do not let liquids enter the remote control, and do not leave it in direct sunlight or in hot places.
- When the remote control sends a signal the symbol OPER appears on the display, the receiver of the indoor unit emits a sound to confirm reception of the signal.

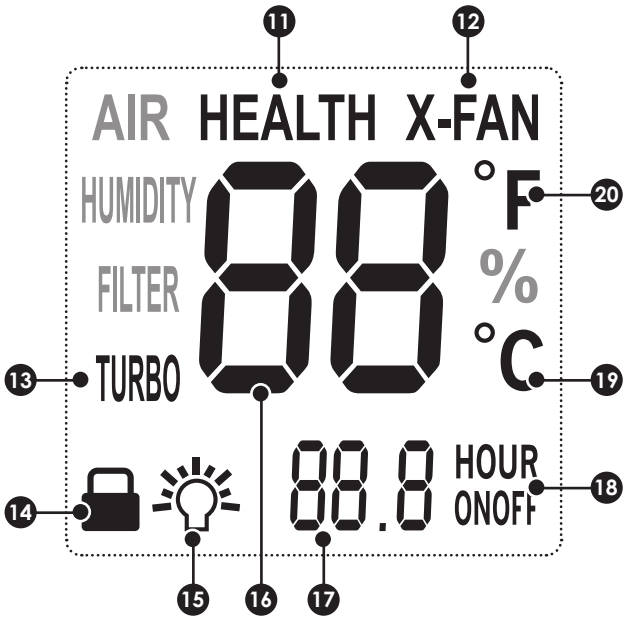
Keys available on remote control



Alarm	Function of the button:
❶	Switches the unit on or off
❷	Operating mode selection
❸	Increases value (operating set-point, timer, etc.)
❹	Decreases value (operating set-point, timer, etc.)
❺	Sets the fan speed
❻	Sets the operation of the motorised vertical air discharge fin (swing function)
❼	Sets the operation of the motorised horizontal air discharge fin (swing function)
❽	This button allows to manage two different functions: the left side of the button activates or deactivates the air ionizer device for air sanitation; the right side activates or deactivates the energy saving function (this function is can only be applied to the cooling mode)
❾	Sets the function for extended ventilation
❿	Shows on the indoor unit display the temperature set-point and the room air temperature
⓫	Activates or deactivates the timer ON and timer OFF function
⓬	Activates or deactivates the maximum fan speed (TURBO)
⓭	Activates or deactivates the SLEEP function (this function is applicable to the cooling and heating modes). Once activated this function will control the unit in order to maintain an ideal temperature (this temperature is automatically calculated and cannot be set)
⓮	Activates or deactivates the display of information of the indoor unit

remote control display icons available





Alarm	Functions represented by the icons:
❶	Indicates the AUTOMATIC mode is active
❷	Indicates the COOLING mode is active
❸	Indicates the DEHUMIDIFICATION mode is active
❹	Indicates the VENTILATION mode is active
❺	Indicates the HEATING mode is active
❻	Indicates the SLEEP function is active
❼	Indicates which temperature is shown on the display of the indoor unit (internal temperature or set-point temperature)
❽	Indicates the state of the SWING function (vertical or horizontal)
❾	Indicates the actual fan speed
❿	Indicates the setting has been transmitted to the receiver located on the indoor unit
⓫	Indicates that the air ionizer is active
⓬	Indicates the extended ventilation function is active (only in cooling or dehumidification)
⓭	Indicates the TURBO function is active (the fan speed is forced by this function)
⓮	Indicates that all the buttons of the remote control are locked
⓯	Indicates the room air and set-point temperatures are active on the display of the indoor unit
⓰	Indicates the operating set-point temperature in the various modes
⓱	Indicates the on or off time programmed by the user
⓲	Indicates if a timer is set for On or Off
⓳	Indicates that the unit of measurement set for the temperature set-points are °C or °F
⓴	Indicates that the unit of measurement set for the temperature set-points is °F

NOTE:
Some icons are unnecessary for the remote control and the air conditioner, therefore will not be described in these instructions. The display of any of these icons will not affect the operation of the air conditioner in any way.

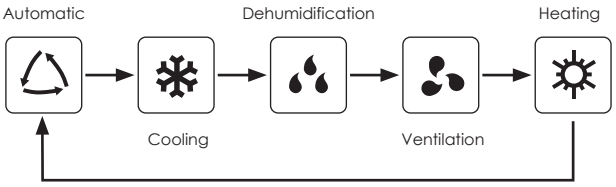
17. FUNCTIONS AVAILABLE THROUGH THE REMOTE CONTROL

17.1. SWITCHING THE UNIT ON OR OFF

By pressing the ON/OFF button it is possible to switch the unit on or off. When off some information is still displayed on the remote control: the operating set-point of the last operating mode used, and switch on timers programmed (HOURS ON) and any icons tied to the function active during the last switch on of the unit (X-FAN function, enabling the display of the indoor unit, enabling of the air ionizer, etc.) Once switched on the unit uses the settings selected during the last operating session.

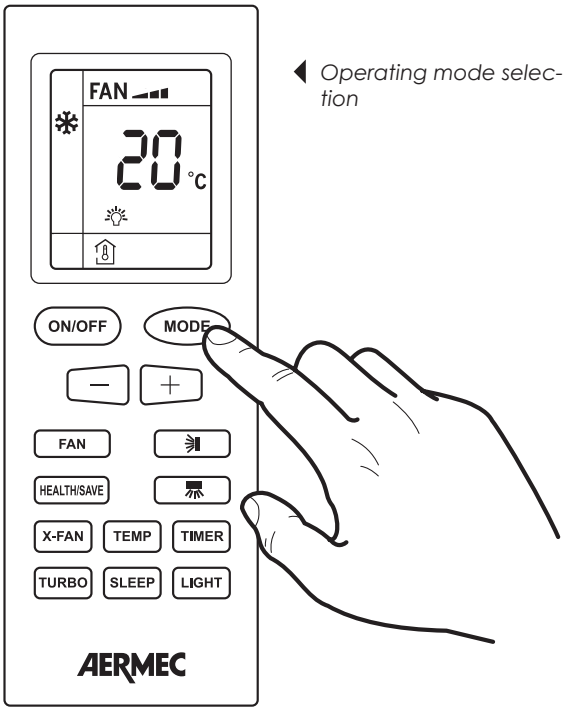
17.2. SELECTING AN OPERATING MODE

If the unit is on, pressing the MODE button allows passing from one operating mode to the next, in this sequence:



The various operating modes have different features and ranges:

- **AUTOMATIC mode:** in this mode no set-point value is displayed on the remote control and the fan speed setting is AUTO. During the AUTOMATIC mode the unit calculates whether to cool (room temperature > 25°C), heat (room temperature < 20°C) or just ventilate (room temperature between 20°C and 25°C);
- **COOLING mode:** in this mode the user must set the operating set-point and a fan speed. If the room air temperature is higher than the set-point the unit is switched on until the room temperature drops below the set-point value.
- **DEHUMIDIFICATION mode:** in this mode the user must set the operating set-point but not the fan speed (which remains fixed at minimum). If the room air temperature is higher than the set-point the unit is switched on until the room temperature drops below the set-point value.

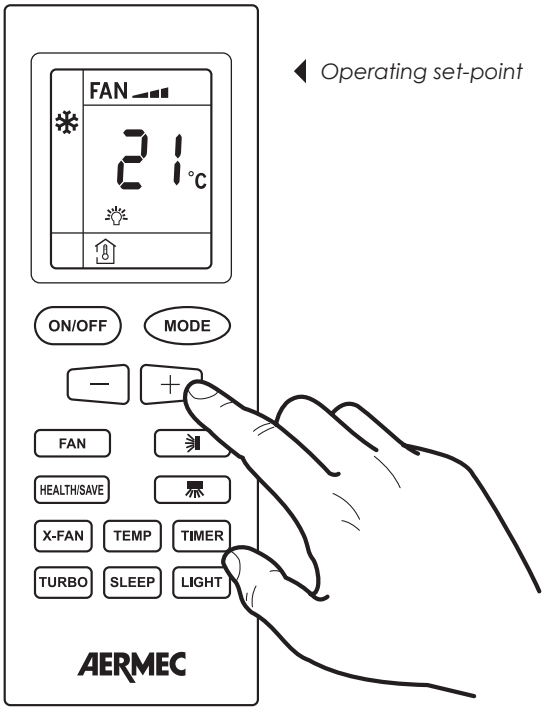


- **VENTILATION mode:** in this mode the user must set only the fan speed. This mode provides no heating or cooling but only uses the internal fan to ventilate the space.

- **HEATING mode:** in this mode the user must set the operating set-point and a fan speed. If the room air temperature is lower than the set-point the unit is switched on until the room temperature rises above the set-point value.

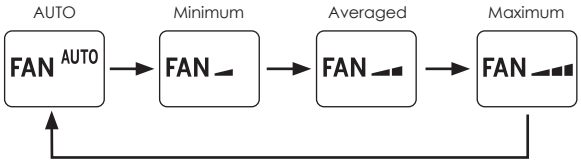
17.3. SETTING THE OPERATING SET-POINT

All the operating modes (except the automatic one) require an room air temperature value to control to: this is called the operating set-point.
If the unit is on (and the automatic mode is not selected), pressing the [−] and [+] buttons allows decreasing or increasing the operating set-point. The set-point value is displayed in the central part of the remote control's display.



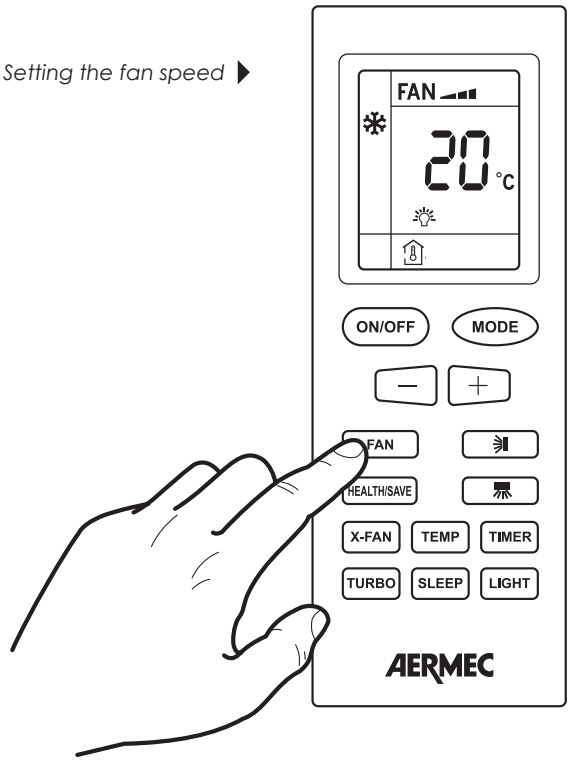
17.4. SETTING THE FAN SPEED

If the unit is on (and the automatic or dehumidification modes are not selected), pressing the FAN button allows the selection of the fan speed. Pressing the button allows changing the fan speeds as shown in the icons below, in the following sequence:



NOTE:
Besides the three speeds (AUTO automatically selects the best speed based on the room temperature), there is a function called TURBO (explained earlier) which adds a further speed above the maximum speed.

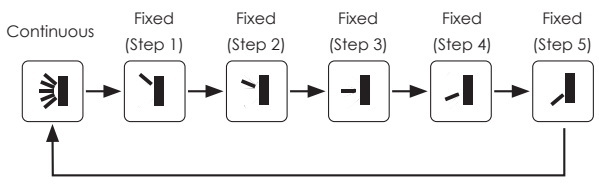
Setting the fan speed



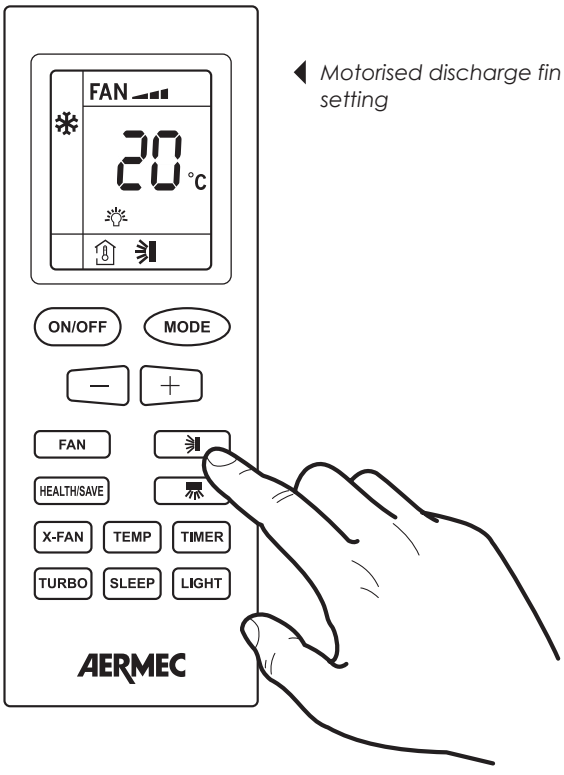
17.5. SETTING THE MOTORISED DISCHARGE FIN (SWING)

If the unit is on, pressing the key (or the key) allows the activation of the swing function of the motorised discharge fin. This fin varies the direction of the flow of air into the ambient, on the basis of the selected position. The control logic of this function is split between two different modes (to pass from one mode to the other press simultaneously the and buttons with the unit switched off. If the function has been correctly set the remote control display will flash for two seconds the icon):

- **SIMPLIFIED mode:** this is the default active mode. Pressing the button shown above allows the swing of the fin to be activates or deactivated. Once activated (the icon is displayed) the swing is continuous, from the lowest to the highest point. To stop the fin in a particular position it is necessary to press the button again, once the desired position is reached.
- **COMPLETE mode:** With the unit on, pressing the button allows the setting of the following sequenced steps, one by one:

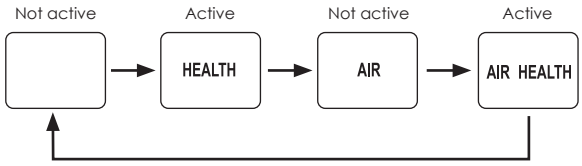


Motorised discharge fin setting



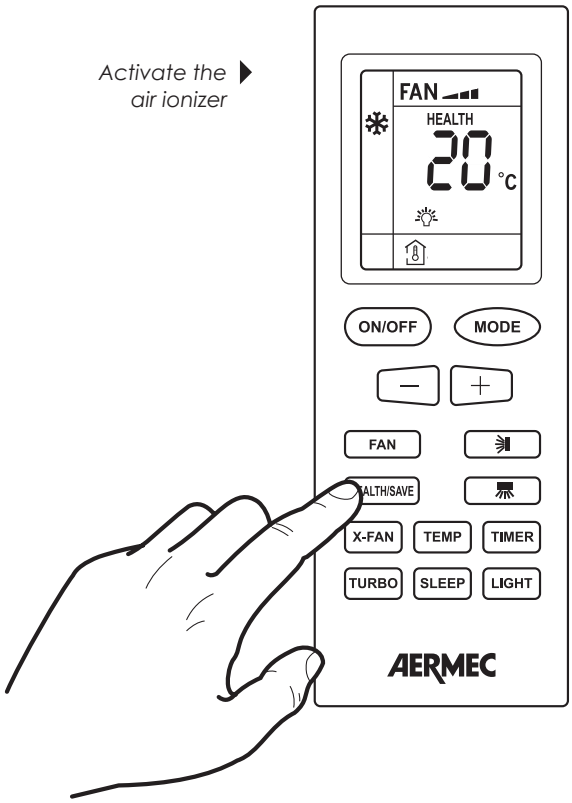
17.6. ACTIVATING/DEACTIVATING THE AIR IONIZER

These units are fitted with a device that can reduce the bacterial load of the air and reduce odours; if the unit is on, the air ionizer can be set, enabled or disabled by pressing the left side of the key (HEALTH/SAVE); below are shown the possible icons (each subsequent press of the key allows to switch from one to the other) displayed on the remote control display for the relative status of the air ionizer:



WARNING:
This key manages two different functions (ionizer and energy saving), depending which side of the button is pressed activates one or the other; press the left button to enable the AIR IONIZER

Activate the air ionizer

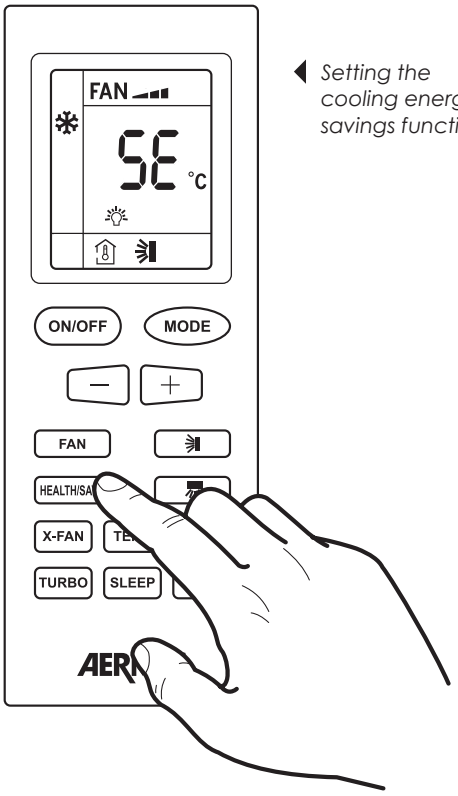


17.7. ENABLE/ DISABLE THE ENERGY SAVING FUNCTION (COOLING)

If the unit is on (and the cooling mode is selected), pressing the right side of key (HEALTH/SAVE) allows to enable or disable this function. once this function is enabled, SE will appear on the display of the unit and the temperature set-point or the speed of the fans can no longer be changed, which will be set at 27° C with automatic fan speed, in order to decrease consumption by dehumidifying the environment (an additional key press will disable the function)

WARNING:
This key manages two different functions (ionizer and energy saving), depending which side of the button is pressed activates one or the other; press the right side of the button to enable the COOLING ENERGY SAVING function

Setting the cooling energy savings function

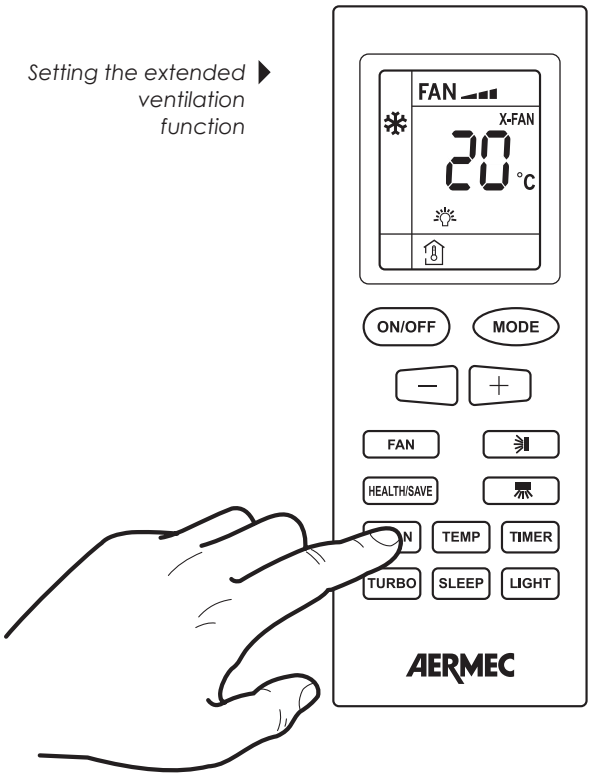


17.8. ACTIVATING / DEACTIVATING THE EXTENDED VENTILATION

During the operation in cooling mode, the condensate caused by the humidity in the air is formed on the heat exchanger within the unit. This function allows the ventilation to be extended for two minutes after the unit is switched off, thereby drying the heat exchanger.
If the unit is on (and the cooling or dehumidification mode is selected), pressing the X-FAN button allows activating or deactivating of this function. On the remote control the display the icon X-FANwill appear or disappear to indicate if the function is activated or deactivated.

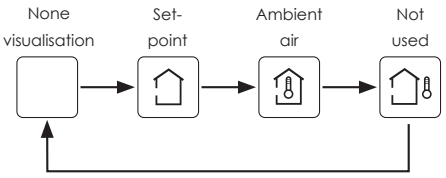
NOTE:
If the unit is switched off the icon relating to this function will still be visible (if this function is activated)

Setting the extended ventilation function



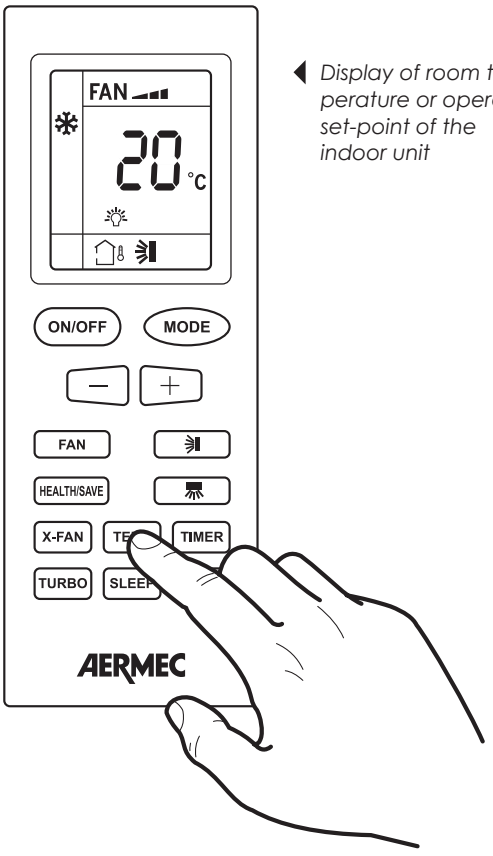
17.9. DISPLAYING THE ROOM TEMPERATURE OR THE OPERATING SET-POINT (ON THE INDOOR UNIT DISPLAY)

Through the use of the remote control it is possible to display the room temperature value read by the indoor unit, or display the current operating set-point used by the unit. This information is displayed on board the indoor unit's display (paragraph 8.1).
If the unit is on and if the indoor unit display is enabled (paragraph 8.1), pressing the TEMP key allows the display of the following values on the indoor unit's display (successive pressing passes from one to the next):



NOTE:
The default display on the indoor unit's display is the operating set-point; the room temperature value is displayed for 3 seconds after which the display returns to the operating set-point. To display the room temperature again it is necessary to select the corresponding symbol on the remote control.

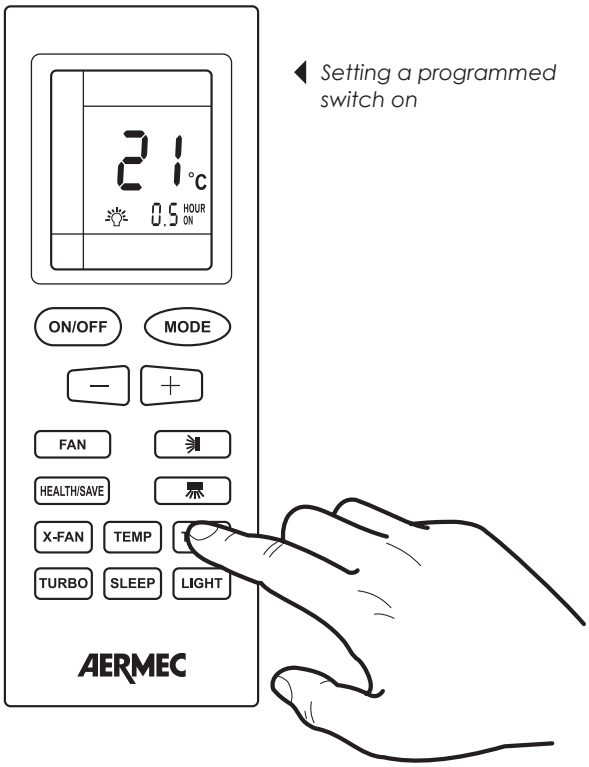
Display of room temperature or operating set-point of the indoor unit



17.10. SETTING OR CANCELLING A PROGRAMMED SWITCH ON (HOUR ON)

The units have a timer with which it is possible to program an activation by specifying how long before the activation should take place (this time can vary from 0.5 to 24 hours). If the unit is switched off (and no other programmed switch on is present), by pressing the TIMER key you enter the time programming mode (in this mode the HOUR ON flashes) and by pressing the keys − and + it is possible to set the time after which the unit is enabled; Pressing the TIMER button again confirms the time and activates the timer programme.
If you want to cancel a programmed switch on, just press the TIMER key to cancel the previous programming, after cancellation the icon HOUR ON will disappear from the display of the remote control

NOTE:
- **Once a programmed switch on is set, the operating mode, the working set-point and fan speed, will be the same as those present when the unit stops.**
- **If after setting a programmed switch On the air conditioner is manually switched on, the time setting is cancelled automatically.**

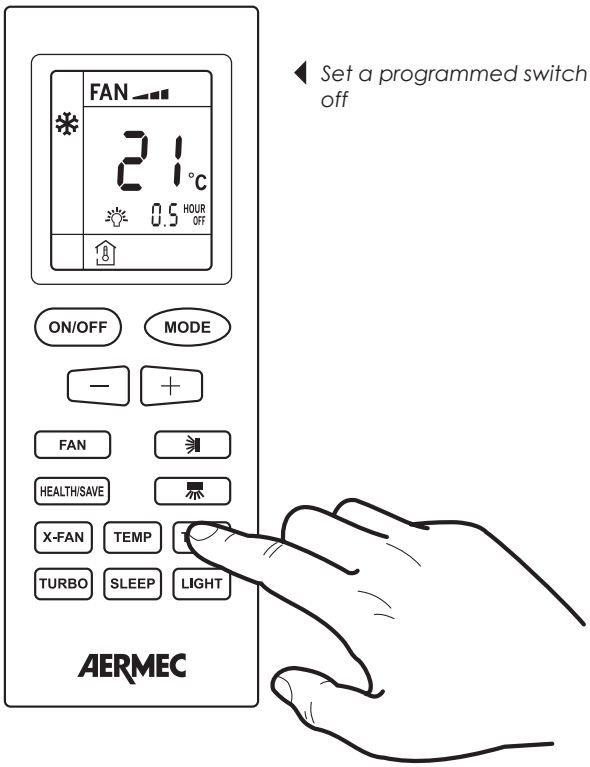


Setting a programmed switch on

17.11. SETTING OR CANCELLING A PROGRAMMED SWITCH OFF (HOUR OFF)

The units have a timer with which it is possible to program an activation by specifying how long before the activation should take place (this time can vary from 0.5 to 24 hours). If the unit is switched on (and no other programmed switch off is present), by pressing the TIMER key you enter the time programming mode (in this mode the HOUR OFF icon flashes) and by pressing the keys − and + it is possible to set the time after which the unit is disabled; Pressing the TIMER button again confirms the time and activates the timer programme.
If you want to cancel a programmed switch off, just press the TIMER key to cancel the previous programming, after cancellation the icon HOUR OFF will disappear from the display of the remote control

NOTE:
If after setting a programmed switch Off the air conditioner is manually switched off, the time setting is cancelled automatically.

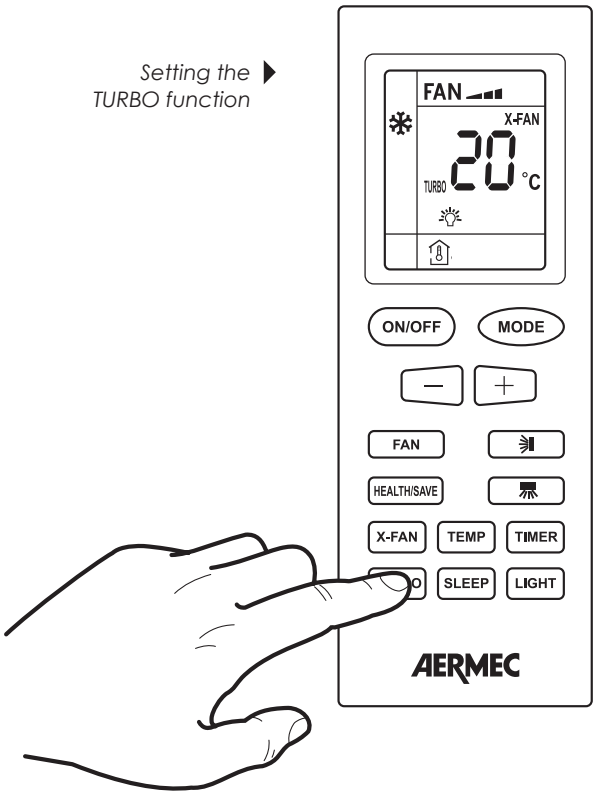


Set a programmed switch off

17.12. ACTIVATING / DEACTIVATING THE TURBO FUNCTION

The unit allows the setting of three fan speeds during the various operating modes (except the automatic mode and the dehumidification mode). There is an additional speed called turbo.
If the unit is on, pressing the TURBO button activates or deactivates this function. If the function is active the icon TURBO is shown on the remote control's display.

Setting the TURBO function



17.13. ACTIVATING / DEACTIVATING THE NIGHT-TIME COMFORT FUNCTION

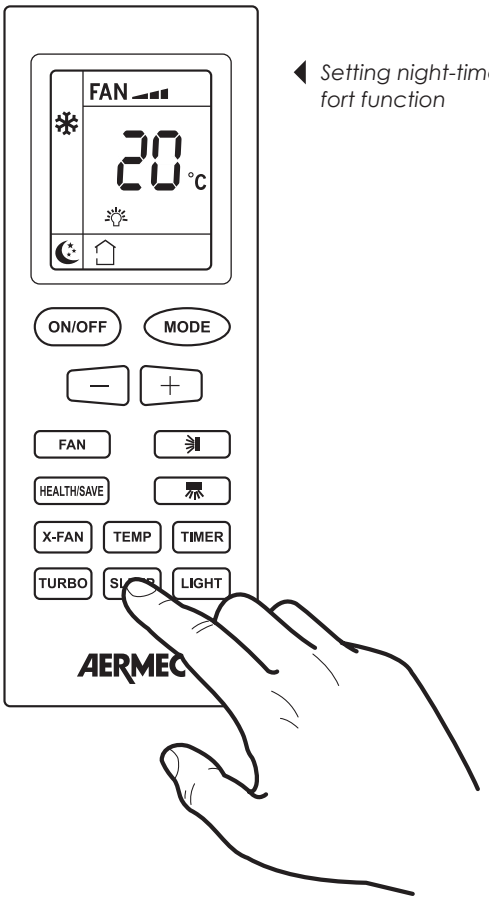
The night-time comfort function controls the air conditioner in an optimal way during the night. The following logic is applied:

- **In cooling or dehumidification:** after an hour of operation the set-point is raised by 1° C, after two hours of operation the set-point is raised by 2° C;
- **In heating:** after an hour of operation the set-point is lowered by 1° C, after two hours of operation the set-point is lowered by 2° C;

If the unit is on (except in automatic or ventilation mode), pressing the SLEEP activates or deactivates the night time health function. If the function is active the icon is displayed on the remote control.

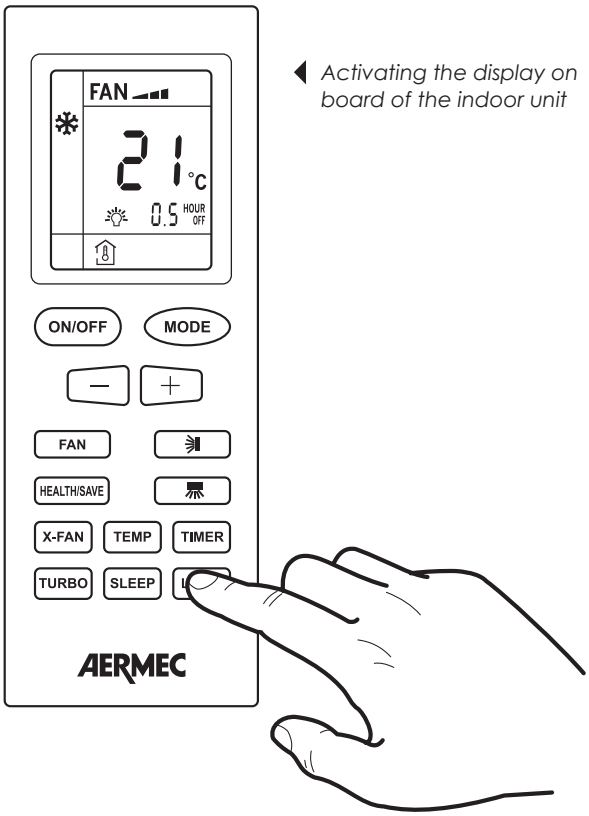
NOTE:
The night time health function is deactivated by switching off the unit, and on restarting will not be active; this function can be activated at any time.

Setting night-time comfort function



17.14. ACTIVATING / DEACTIVATING THE INDOOR UNIT'S DISPLAY

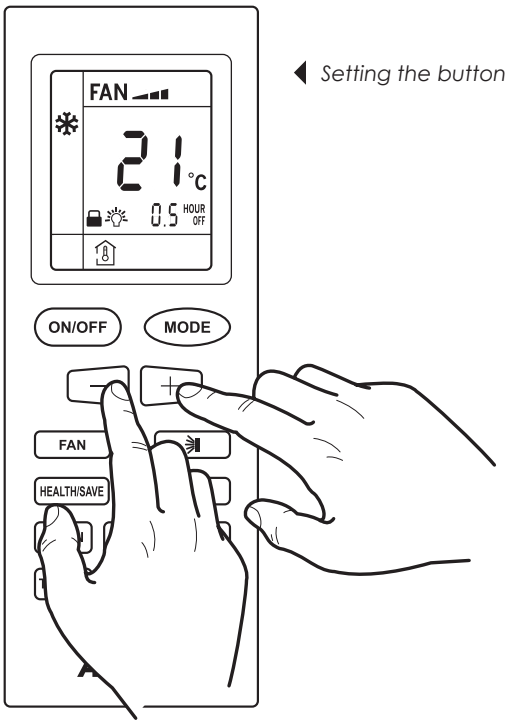
As described in paragraph 8.1, the display on the indoor unit must be activated using the remote control;
To activate the displays on the indoor unit front panel press the key [LIGHT] on the remote control.
Once the button is pressed the symbol will appear on the remote control's display, indicating the activation of the display on board of the indoor unit. Pressing the button again deactivates the display.



Activating the display on board of the indoor unit

17.15. SETTING OR REMOVING THE BUTTON LOCK

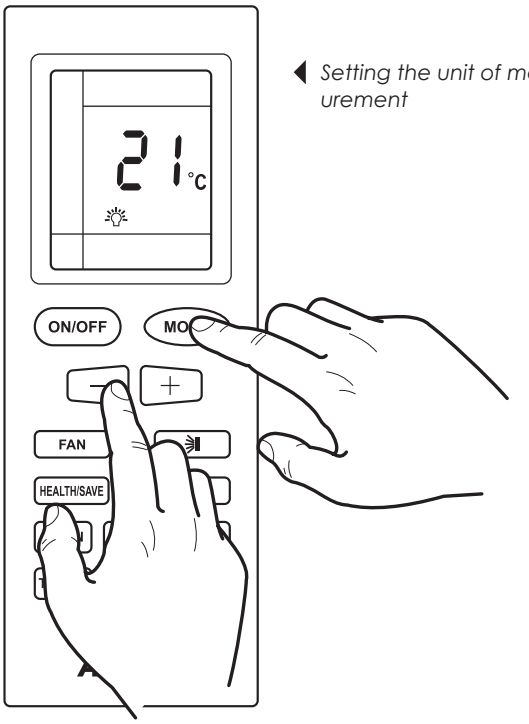
To lock or remove the lock of the buttons on the remote control, press the [−] and [+] buttons simultaneously. The icon on the remote control's display shows that the keypad of the remote control is locked.



Setting the button lock

17.16. SETTING THE UNIT OF MEASUREMENT

The unit can display the temperature values in °C or in °F. To change the unit of measurement simultaneously press the [—] and (MODE) buttons with the unit switched off. The temperature value on the remote control's display is automatically converted.

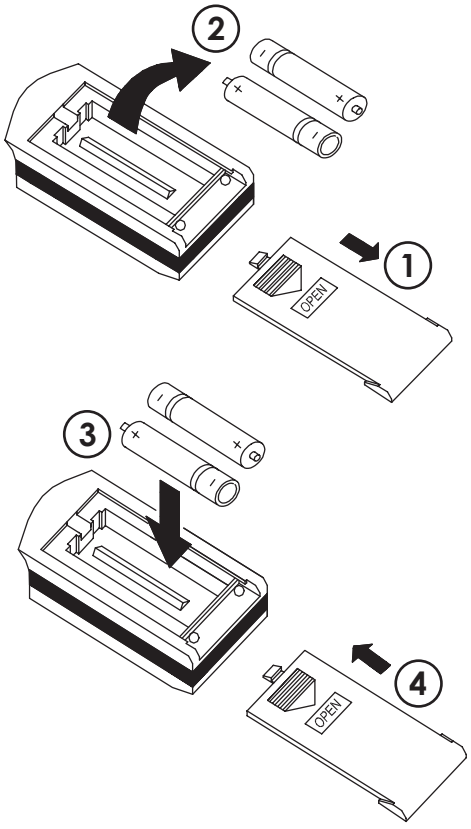


Setting the unit of measurement

17.17. REPLACING THE REMOTE CONTROL'S BATTERIES

To replace the batteries of the infra red remote control proceed as follows:

1. Open the battery cover by sliding it in the direction of the arrow.
2. Remove the old batteries.
3. Insert two new 1.5V alkaline high performance batteries, type LR03 (AAA), taking care not to reverse the polarity.
4. Close the battery cover.



NOTE:

- **When batteries are replaced use new batteries of the recommended type.**
- **Remove the batteries if the remote control is not used for extended periods.**
- **The remote control can emit a signal up to a maximum distance of 7 metres.**
- **The unit can be affected by signals transmitted by remote controls for televisions, video recorders, or other devices used in the same room.**

WARNING:
In the event of loss or damage of the remote control the unit can be started and stopped using the emergency button as indicated in section 8.1.

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