

MULTI SPLIT AIR CONDITIONERS – R32 - WIFI



USER and INSTALLATION MANUAL

OUTDOOR UNITS

ARGO DUAL 14 DCI R32 ARGO DUAL 18 DCI R32 ARGO TRIAL 21 DCI R32 ARGO TRIAL 24 DCI R32 ARGO QUADRI 28 DCI R32

Please read this manual carefully before installing and using the air conditioner, and retain for future reference.

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INFORMATION FOR CORRECT DISPOSAL OF THE PRODUCT IN ACCORDANCE WITH THE EUROPEAN DIRECTIVE 2012/19/EU



At the end of its working life this equipment must not be disposed of as an household waste. It must be taken to special local community waste collection centres or to a dealer providing this service. Disposing of electrical and electronic equipment separately avoids possible negative effects on the environment and human health deriving from an inappropriate disposal and enables its components to be recovered and recycled to obtain significant savings in energy and resources. In order to underline the duty to dispose of this equipment separately, the product is marked with a crossed-out dustbin.

INFORMATION FOR USE The Refrigerant R32



Appliance is filled with flammable gas R32.



Before installing and using the appliance, read the owner manual.



Before installing the appliance, read the installation manual.



Any repairs you need, contact the nearest authorized Service Centre and strictly follow manufacturer's Service Manual.

The Refrigerant R32

- To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The refrigerant is the fluoride R32 = GWP (Global warming potential) 675. This refrigerant is flammable and inodorous. It can lead to explosions under certain conditions, however the flammability of this refrigerant is very low and it can be ignited only by fire.
- Compared to other common refrigerants, R32 is a non-polluting refrigerant with no harm to the ozonosphere and a no effect upon the greenhouse effect. R32 has very good thermodynamic features which lead to a really high energy efficiency. The units therefore need less filling.

Warning:

Do not try to accelerate the defrosting process or to clean the appliance in different ways other than those recommended by the manufacturer. Should repair be necessary, contact your nearest authorized Service Centre. Any repairs carried out by unqualified personnel may be dangerous. The appliance has to be stored in a room that doesn't have any continuously operating ignition sources. (for example: open flames, an operating gas appliance or an operating electric heater.) Do not pierce or burn. Appliance has to be installed, used and stored in a room with a floor area larger than XX m². (Refer to table "a" in the section "Flammable refrigerant safety operations"). The appliance contains flammable R32 gas. Attention refrigerants have no smell.









INFORMATION FOR USE Precautions for use



WARNING

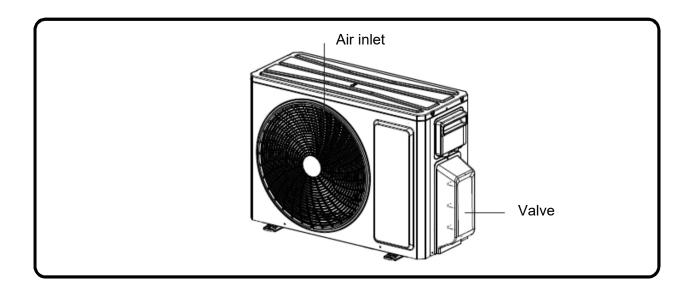
- This product is not a toy. Children of less than 3 years should be kept away unless continuously supervised.
- This device is not intended for persons (including children aged from 8 years and above) with reduced physical, sensory or mental capabilities, or without the necessary experience and knowledge, unless they have received the necessary supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Children aged from 3 and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given instruction concerning use of the appliance in a safe way and understand the hazards involved. Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.
- To prevent the risk of fire, do not connect the air conditioner to a multifunction socket.
- Always disconnect the power before servicing or cleaning the unit.
- To prevent the risk of electric shock or malfunction, do not spray water on the indoor unit.
- Do not spill water on the remote control.
- To prevent the risk of electrical shock or damage, do not attempt to repair the air conditioner yourself. After performing the checks in the troubleshooting section, contact an authorised service centre.
- Do not obstruct the inlet or outlet. Otherwise, a fault may occur.
- Contact a qualified technician if it is necessary to move the air conditioner to another location.
- Do not climb on or place heavy objects on the top panel of the outdoor unit. Otherwise, there is a risk of damage or personal injury.
- Do not put fingers or other objects in the air inlet/outlet grilles. Otherwise, there is a risk of damage or personal injury.
- The air conditioner must be properly earthed. Improper earthing can cause electrical shock.
- Always install a circuit breaker. Otherwise, a fault may occur.
- The unit must be installed and serviced by a qualified technician. Otherwise, there is a risk of damage or personal injury.

- Frequency band(s) in which the radio equipment operates 2400MHz-2483.5MHz.
- Maximum radio-frequency power transmitted in the frequency band(s) in which the radio equipment operates: 20dBm.

WARNING It is necessary that power supply Do not cut or damage the power In case of smoke or burning adopts the special circuit with smell, turn off the power supply cords and control cables. If the and contact the service center. protection through an air switch power cable and the cable of the and ensure it has sufficient control signal are damaged, they capacity. The unit switches on or must be replaced off automatically according to professional technician. user needs: do not turn on or turn device frequently otherwise it could suffer harmful effects. If the problem persists, the unit could be damaged and cause electrical shock or fire. The power supply must be Disconnect the power supply if Do not damage the power cord or equipped with a special circuit to the air conditioner is not used for use an unauthorized cable. prevent fire. a long time Otherwise. it mav cause overheating or fire. Otherwise, it may result in fire or Otherwise, the accumulation of electric shock. dust can cause overheating. When cleaning the unit, stop The voltage rating of this product Do not attempt to repair the air operation and turn off the power. is 220 - 240V, 50Hz. The conditioner yourself. compressor vibrates strongly if the voltage is too low, causing An improper repair can cause fire damage to the cooling system. or electric shock. For this reason, The electrical components are it is advisable to contact a service easily damaged if the voltage is center for repairs. too high. Otherwise, may occur electric shock or damage. Check if the installed media is Do not climb on the outdoor unit Earthing: The unit must be properly grounded. The cable grounding must be connected sufficiently stable. or place anything on it. If damaged, it can cause the The falling of the outdoor unit can with the appropriate device in the equipment to fall and cause be dangerous building. injury.

Description of components

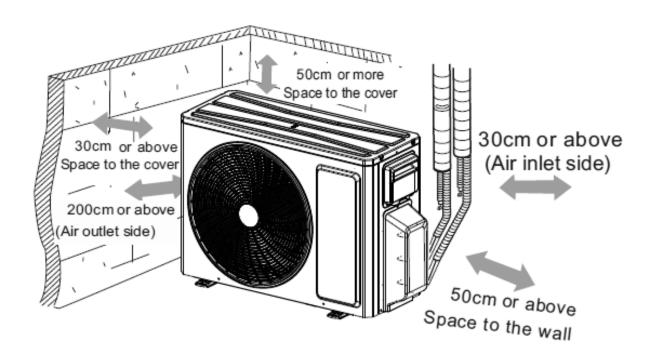
Outdoor unit



Operating temperature range

The operating temperature range (outdoor temperature) in cooling : from -15 $^{\circ}$ C $^{\sim}$ to +43 $^{\circ}$ C. The operating temperature range (outdoor temperature) in heating : from -15 $^{\circ}$ C $^{\sim}$ a +24 $^{\circ}$ C.

INSTALLATION INSTRUCTIONS Installation diagrams



INSTALLATION WARNINGS

WARNING: Make sure that the power supply is disconnected before carrying out any work on the unit.

WARNING: Wear appropriate personal protective equipment before carrying out any work on the unit.

WARNING: The appliance must be reinstalled in accordance with national system regulations.

WARNING: Wiring and installation must only be performed by a qualified technician trained to install, modify, extend and service the unit and perform safety and functionality tests.

WARNING: Install a device, master switch or electric plug that will allow all the power from the appliance to be switched off.

WARNING: Use only copper pipes for refrigerant connections.

WARNING: For the connection between the units, use only annealed and deoxidized copper pipe for conditioning and refrigeration and insulated with expanded polyethylene of min. 8 mm.

The following information is essential for correct unit installation. However, the installer should use his or her experience to install the unit according to specific requirements.

- Do not install the unit in locations where there are flammable gases or acid or alkaline substances that may irreparably damage the copper-aluminium heat exchangers or internal plastic components.
- Do not install the unit in offices or kitchens where oil vapours mixed with treated air may settle on the exchange coils, reducing performance, or on the unit's internal parts, damaging the plastic components. When installing or relocating the unit, be sure to keep the refrigerant circuit free of air or substances other than the specified refrigerant.
- Any presence of air or other foreign matter in the refrigerant circuit will cause increased system pressure or compressor failure, resulting in damage.
- When installing or relocating the unit, do not charge refrigerant that does not conform to that indicated on the nameplate or unidentified refrigerant. Otherwise, it may cause abnormal operation or an accident.
- When refrigerant needs to be recovered, in case of transfer or repair of the unit, make sure the unit is operating in cooling mode. Then, completely close the valve on the high pressure side (liquid valve). Approximately 30-40 seconds later, completely close the valve on the low pressure side (gas valve), stop the unit immediately and disconnect the power supply. The time for refrigerant recovery should not exceed 1 minute.
- If refrigerant recovery takes too long, air can be sucked in and cause pressure increase or compressor failure, resulting in injury.
- During refrigerant recovery, ensure that the liquid valve and gas valve are completely closed and the power supply is disconnected before disconnecting the connecting pipe.
- If the compressor starts to operate when the shut-off valve is open and the connecting pipe is not connected, the air will be drawn in and will cause the pressure to rise or the compressor to break, resulting in injury.
- When installing the unit, make sure that the connecting pipe is firmly connected before the compressor starts to run.
- Prohibit installation of the unit where there may be a leak of corrosive gas or flammable gas.
- In case of gas leaks from the unit, explosions and other accidents may occur.
- Do not use extension cables for electrical connections. If the electric cable is not long enough, please contact an authorized local service center and ask for an appropriate electric cable.
- Inadequate wiring can cause electric shock or fire.

- Use the specified cable types for electrical connections between indoor and outdoor units. Securely lock the cables so that their terminals do not receive external stress.
- Electric cables with insufficient capacity, incorrect cable connections and insecure cable terminals may cause electric shock or fire.

Choosing a location for installation

Essential requirements Indoor unit Do not install the unit in the following locations. 1. There should be no obstructions near the air Otherwise, a fault may occur. inlet or outlet. 1. Locations with extreme heat sources or 2. Choose a location where the condensate can flammable or explosive gases or vapours. drain out easily without causing a nuisance. 2. Locations with high-frequency devices (e.g. 3. Choose a convenient location to connect the outdoor unit to the power outlet. welding machines, medical equipment). 3. Locations close to coastal areas. 4. Choose a location out of the reach of children. 4. Locations with oils or fumes in the air. 5. The site should be strong and solid enough to 5. Locations with sulphide gas. support the weight of the indoor unit and prevent Other locations that have special conditions. noise or vibration. 6. The unit should be installed 2.5 m from the floor. 7. Do not install the indoor unit directly above Do not operate the unit in the immediate vicinity of laundrettes, bathtubs, showers or swimming electrical equipment. 8. Try to keep a certain distance from fluorescent pools. lights. **Outdoor unit**

- 1. Choose a location where the noise and airflow produced by the outdoor unit will not annoy neighbours.
- The location should be well ventilated and dry; the outdoor unit must not be exposed to direct sunlight or strong winds.
- 3. The site should be able to support the weight of the outdoor unit.
- 4. Check that the installation complies with the requirements of the dimensional drawing for installation.
- 5. Choose a location out of the reach of children and away from animals or plants. If this is not possible, install safety fencing.

Electrical connection requirements

Safety precautions

- 1. Electrical safety standards must be met when installing the unit.
- 2. Use a power supply circuit and circuit breaker that comply with local safety regulations.
- 3. Make sure that the power supply matches the requirements of the air conditioner. An unstable power supply or incorrect wiring may result in a fault. Install suitable power cables before switching on the air conditioner.
- 4. Correctly connect the live, neutral and earth wires to the power outlet.
- 5. Disconnect the power supply before carrying out any work on the electrical circuit or carrying out any safety work. For models with a plug, make sure the plug is easily accessible after installation.
- 6. Do not connect the power before installation is complete.
- 7. Do not use the appliance if the power cable or plug are damaged. If the power cable is damaged it must be replaced by the manufacturer, retailer or other qualified person to avoid a hazard.
- 8. Since the temperature of the cooling circuit is high, keep the interconnecting cable away from the copper pipe.
- 9. The unit must be installed in accordance with national wiring regulations.
- 10. Installation must only be performed by trained individuals in accordance with regulations.

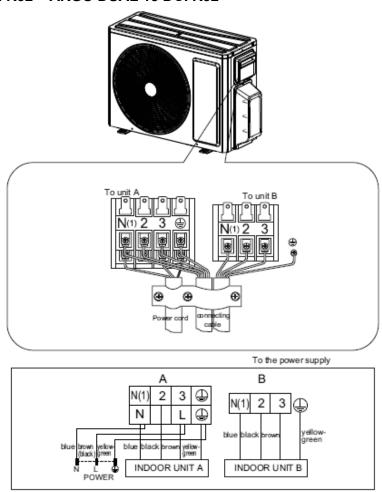
The unit is charged with a slightly inflammable refrigerant, R32. Improper handling of this gas may expose people and materials to serious damage. More details on this refrigerant are given at the beginning of this manual.

Earthing

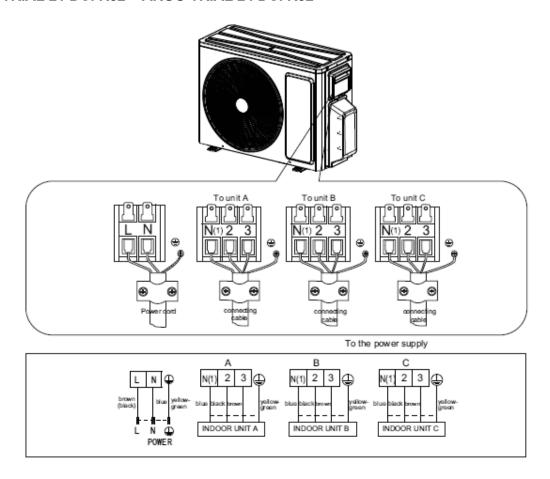
- 1. The air conditioner is a Class I appliance. The unit must be earthed with an appropriate device by a qualified technician. Ensure the unit is always properly earthed. Otherwise electric shock may result.
- 2. The green-yellow wire of the air conditioner is the earthing wire and may not be used for other purposes.
- 3. The earth resistance must meet national standards for electrical safety.
- 4. The unit must be positioned so that the plug is accessible.
- 5. An all-pole isolating switch with a minimum contact gap of 3mm in each pole must be connected to the fixed cable.
- 6. Insert a switch with sufficient power and observe the following table. The air switch must include a magnetic and thermal function for protection against short circuits and overloads. (Warning: do not use only the fuse to protect the circuit).

Air conditioner	Air switch capacity
14-18K	16A
21-24-28K	25A

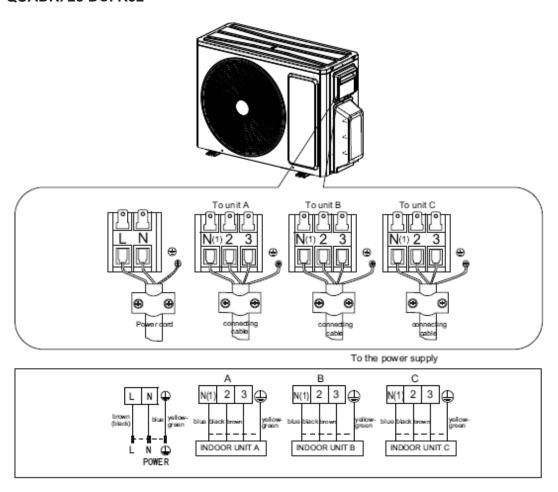
ARGO DUAL 14 DCI R32 - ARGO DUAL 18 DCI R32



ARGO TRIAL 21 DCI R32 - ARGO TRIAL 24 DCI R32



ARGO QUADRI 28 DCI R32



Outdoor unit installation

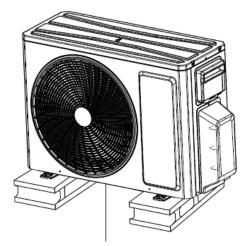
For all connections refer to the wiring diagrams supplied with the unit. If the outdoor unit was connected to a higher level than the one of the indoor unit, you must make a siphon. The outdoor unit must be installed outdoors, in a perfectly horizontal position, respecting the minimum distances to allow the air to flow and the execution of any maintenance. The unit is built with resistant materials to protect it from any weather condition so it's not necessary to protect it in a particular way. Make sure however that the heat exchanger is not exposed to the danger of hail. If you want to attach the unit to a wall, use brackets appropriately sized to support the weight of the unit. Condensation produced due to the operation in heating can be piped to a drain using the appropriate predisposition.

Fix the outdoor unit support

- 1. Choose the location of the system based on the structure of the house.
- 2. Fix the support of the outdoor unit in the chosen position with expansion screws.

Note:

- Take sufficient protective measures when installing the outdoor unit.
- Make sure that the stand can support at least four times the weight of the unit.
- The outdoor unit must be placed at least 3cm above the floor in order to install the drain joint.
- For the unit with refrigerant capacity of 2300W ~ 5000W, 6 expansion screws are required; 8 expansion screws are required for the unit with 6000W ~ 8000W cooling capacity; For the unit with refrigerant capacity of 10000W ~ 16000W, 10 expansion screws are required.



at least 3cm above the floor

Vacuum pump

Use the vaacum pump

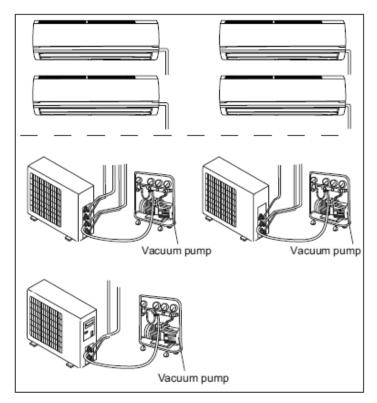
Humid air left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit using a vacuum pump.

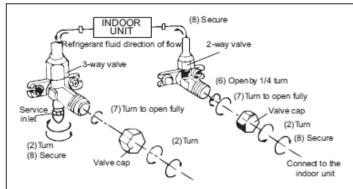
- (1) Unscrew and remove the caps from the 2-way and 3- way valves.
- (2) Unscrew and remove the cap from the service valve.
- (3) Connect the vacuum pump hose to the service valve.
- (4) Operate the vacuum pump for 10-15 minutes until an low-pressure knob on the vacuum pump coupling.absolute vacuum of 10 mm Hg has been reached.
- (5) With the vacuum pump still in operation, close the Stop the vacuum pump.
- (6) Open the 2-way valve by 1/4 turn and then close it after 10 seconds. Check all the joints for leaks using liquid soap or an electronic leak device.

Vacuum pump

Vacuum pump Location

- (7) Turn the body of the 2-way and 3-way valves. Disconnect the vacuum pump hose.
- (8) Replace and tighten all the caps on the valves.





Diameter (mm)	Twisting moment (N.m)
1/4"	15-20
3/8"	35-40
1/2"	45-50
5/8"	60-65
3/4"	70-75

Leakage detection

- 1. With leakage detector: Check if there is leakage with leakage detector.
- 2. With soap water: If leakage detector is not available, please use soap water for leakage detection. Apply soap water at the suspected position and keep the soap water for more than 3min. If there are air bubbles coming out of this position, there's a leakage.

Install the drain fitting and the drain hose

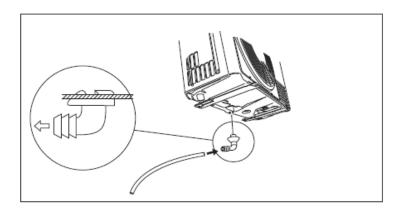
Use bolts to secure the unit to a flat, solid floor. (for model with heat pump only)

Condensation is produced and flows from the outdoor unit when the appliance is operating in the heating mode. In order not to disturb neighbors and to respect the environment, install a drain fitting and a drain hose to channel the condensate water. Install the drain fitting and rubber washer on the outdoor unit chassis and connect a drain hose to it as shown in the figure.

The refrigerant pipes must not exceed the maximum heights 15m.

The sum of the capacity codes of the indoor units should be among 50%-150% of that of the outdoor unit

NOTE: As for the shape of drainage joint, please refer to the current product. Do not install the drainage joint in the severe cold area. Otherwise, it will be frosted and then cause malfunction.



Post-installation checks

Checks	Possible fault			
Has the unit been installed securely?	The unit could fall, move or produce excessive noise.			
Is the thermal insulation of the pipes sufficient?	Risk of condensation and dripping water.			
Has the check for gas leaks been executed?	Risk of cooling (heating) not satisfactory.			
Does the water drain properly?	Risk of condensation and dripping water.			
Does the supply voltage match the voltage indicated on the data plate?	Risk of malfunction or damage to components.			
Have the piping and electrical wiring been installed correctly?	Risk of malfunction or damage to components.			
Has the unit been properly earthed?	Risk of electric leakage.			
Does the power cable meet requirements?	Risk of malfunction or damage to components.			
Are there any obstructions at the air inlet or outlet?	The cooling (heating) capacity may be insufficient.			
Have the dust and other particles produced during installation been removed?	Risk of malfunction or damage to components.			
Are the gas valve and liquid valve of the connecting tube fully open?	The cooling (heating) capacity may be insufficient.			
Have the length of the refrigerating tube and the amount of the refrigerant charge been registered?	It is not easy to decide the amount of the refrigerant charge to add.			
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Safety operation of flammable refrigerant

Qualification requirement for installation and maintenance

- All workers who engage with the refrigeration system should bear the valid certification awarded by the authoritative organization, and the qualification recognized by the industry for dealing with the refrigeration system.
- The refrigeration system can only be repaired following the methods suggested by the equipment's manufacturer.

Installation notes

- The air conditioner mustn't be used in a room that has running fire or heat sources (such as, working coal gas ware, operating heater).
- Do not drill holes in the circuit or burn the connection pipe.
- The air conditioner must be installed in a room that is larger than the minimum room area. The minimum room area is shown on the following "table a".
- Leak test is mandatory after installation.

table a - Minimum room area (m²)

	Charge amount (kg)	≤1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2	2.1	2.2	2.3	2.4	2.5
Minimum	floor location	1	14.5	16.8	19.3	22	24.8	27.8	31	34.3	37.8	41.5	45.4	49.4	53.6
	window mounted	1	5.2	6.1	7	7.9	8.9	10	11.2	12.4	13.6	15	16.3	17.8	19.3
alea(III 7)	wall mounted	1	1.6	1.9	2.1	2.4	2.8	3.1	3.4	3.8	4.2	4.6	5	5.5	6
	ceiling mounted	1	1.1	1.3	1.4	1.6	1.8	2.1	2.3	2.6	2.8	3.1	3.4	3.7	4

Maintenance notes

- Check whether the maintenance area or the room area meet the requirement of "table a"- the unit is only allowed to be operated in rooms that meet these requirements.
- Check whether the maintenance area is well-ventilated. The continuous ventilation status should be kept during the entire operation process.
- Check whether there is a fire source or potential fire source in the maintenance area. Running fire is prohibited in the maintenance area and the "no smoking" sign should be hanged.
- Check whether the warning sign is in good condition, otherwise replace it.

Welding

- If it is necessary to cut or weld the refrigerant system pipes in the maintenance procedures, please follow the steps here below:
 - a. Shut down the unit and cut power supply
 - b. Eliminate the refrigerant
 - c. Vacuum with a vacuum machine
 - d. Clean the pipes with the N2 gas
 - e. Cut and weld or
 - f. Bring the unit to a service centre for welding
- The refrigerant should be recycled in a specialized storage tank.
- Make sure there aren't any free flames near the outlet of the vacuum pump and that it's well-ventilated.

Filling the refrigerator circuit

- Use refrigerant filling appliances specialized for R32. Make sure that different kinds of refrigerant don't contaminate one another.
- The refrigerant tank should be kept upright when filling with the refrigerant.
- Stick the label on the system after filling is finished.
- Don't overfill.
- After filling is finished, please test the unit for leakage detection before the operation test;
 another test for leakage detection should be carried out when the refrigerant is removed.

Safety instructions for transportation and storage

- Please use a flammable gas detector to check before unloading and opening the container.
- No fire source and no-smoking.
- · According to the local rules and laws

TESTING AND OPERATION

Test operation

Preparation of test operation

- The client approves the air conditioner.
- Specify the important notes for air conditioner to the client.

Method of test operation

- Put through the power, press ON/OFF button on the remote controller to start operation.
- Press MODE button to select AUTO, COOL, DRY, FAN and HEAT to check whether the operation is normal or not.
- If the ambient temperature is lower than 16°C, the air conditioner can't start cooling.

APPENDIX

Configuration of connection pipe

- 1. Standard length of connection pipe: 5m, 7.5m, 8m.
- 2. Min. length of connection pipe.

For the unit with standard connection pipe of 5m, there is no limitation for the min length of connection pipe. For the unit with standard connection pipe of 7.5m and 8m, the min length of connection pipe is 3m.

Max. length of connection pipe is shown as below.

Models	14-18K	21-24K	28K
Max length of connection pipe	40	60	70
Max length of connection pipe (simple one indoor unit)	20	20	20

1. Method to calculate the additional charge amount of oil and refrigerant with the extended connection pipe: if the length of the connection pipe is increased by 10m compared to the standard length, add 5ml of refrigerant oil for every 5m of pipe added.

Method for calculating the amount of additional refrigerant charge (liquid pipe):

- 1. amount of additional refrigerant charge = additional length of liquid pipe x additional amount of refrigerant charge per meter.
- 2. Based on the standard pipe length, add the refrigerant according to the requirement shown in the table above

Method to calculate the amount of additional refrigerant charge (liquid pipe): amount of additional refrigerant charge = additional length of liquid pipe x additional amount of refrigerant charge per meter.

Always write the additional refrigerant charge on the data label affixed to the unit outside.

	Connection p	ipe diameter	Additional refrigerant charge R32
	Liquid pipe (mm)	Gas pipe (mm)	(g/m)
9-12K	Ф6,35	Ф _{9,52}	16

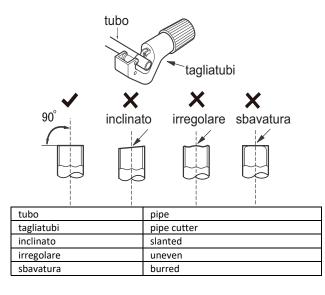
Procedure for extending the piping

N.B.:

Improper extension of piping is the main cause of refrigerant leaks. Proceed as shown below:

1. Cut the pipe

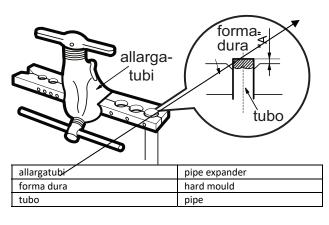
- Check the length of the pipe based on the Expand the port using a pipe expander. distance between the indoor unit and outdoor
- Cut the required pipe using a pipe cutter.



2. Remove burrs

 Remove burrs with a file, ensuring they do not go into the pipe.

5. Expand the port



N.B.:

• "A" varies according to diameter:

Outdoor diameter	A (mm)				
(mm)	Max.	Min.			
6.35 (1/4")	1.3	0.7			
9.52 (3/8")	1.6	1.0			

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tubo	pipe
limatrice	file
verso il basso	downwards

3. Secure an insulating tube

4. Install a union nut

• Remove the union nut on the indoor connecting pipe and outdoor valve. Install the union nut on the pipe.



6. Inspection

Check the quality of the expanded port. If defective, expand the port again following the procedure described above.

superficie liscia



lunghezza uguale

superficie liscia	smooth surface
allargamento imperfetto	defective expansion
lunghezza uguale	equal length
inclinato	slanted
superficie danneggiata	surface damaged
fessurazione	cracked
spessore irregolare	uneven thickness

tubo di raccordo	union pipe
tubo	pipe

REGULATION (EU) No. 517/2014 - F-GAS

The unit contains R32, a fluorinated greenhouse gas with global warming potential (GWP) = 675.

Do not release R32 into the atmosphere.

DUAL 14 DCI R32 - Kg. 0,75 = Tonn CO₂ equiv. 0,51

DUAL 18 DCI R32 - Kg. 0,90 = Tonn CO₂ equiv. 0,61

TRIAL 21 DCI R32 - Kg. 1,60 = Tonn CO₂ equiv. 1,08

TRIAL 24 DCI R32 - Kg. 1,70 = Tonn CO₂ equiv. 1,147

QUADRI 28 DCI R32 - Kg. 1,80 = Tonn CO₂ equiv. 1,215



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