

# DUCT-SM 2

ID2-XY series from 27M to 53M

# **DUCT-SL 2**

ID2-XY series from 35M to 160M

# MANUAL FOR INSTALLATION, JSE AND MAINTENANCE





MOID00001-06 - 12/20

#### INTRODUCTION

Dear Customer,

Thank you for choosing a **CLIVET** product.

The **Duct-SM 2 / Duct-SL 2** model which you have chosen is a high performance product of advanced design and technology, high reliability and quality construction.

We suggest that you entrust its management and maintenance to professionally qualified personnel you trust, who, when necessary, only use original spare parts.

This manual contains important information and tips that must be followed for easier installation and the best possible use of the appliance.

#### **SERIES**

MULTISplit Systems			LIGHT Commercial systems		
Duct-SM 2	ID2-XY series from 27M to 53M		Duct-SL 2	S.ID2+MC2-Y series from 35M to	
		_	Duct-SL 2	160T	

#### SYMBOLS USED IN THE MANUAL AND THEIR MEANING



#### **WARNING**

To indicate special information.



# **CAUTION**

To indicate particularly important and delicate operations.



#### CAUTION DANGER

To indicate actions which, if not carried out correctly, may result in general accidents or may cause malfunctions or material damage to the device; therefore, they require special attention and adequate preparation.



#### ATTENTION ELECTRIC DANGER

To indicate actions which, if not carried out correctly, may result in accidents of electrical origin; therefore, they require special attention and adequate preparation.



# IT IS PROHIBITED TO

indicate actions that MUST NOT be performed.





#### FLAMMABLE MATERIAL

tes that the appliance uses a flammable refrigerant.

#### **WARRANTY**

The product **CLIVET** is covered by a **conventional warranty**, valid from the date of purchase of the appliance, the conditions of which are specified in the GENERAL CONDITIONS OF SALE available at **www.clivet.com** 



#### **WARNING**

- The warranty is void if the appliance has been used without following the instructions in this manual.
- The warranty will be forfeited if the customer makes changes and/or attempts to repair the product himself or through third parties not authorised by the manufacturer/authorised dealer.
- The product must be intended for the use intended by CLIVET for which it was expressly made. Any contractual and non-contractual liability CLIVET for damage caused to persons, animals or property by installation, adjustment, maintenance and misuse errors is excluded.

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# 1 GENERAL DETAILS

# 1.1 General warnings and safety rules



# **WARNING**

- This manual is the property of CLIVET and reproduction or transfer to third parties of the contents of this document is prohibited. All rights reserved. It is an integral part of the product; make sure that it is always supplied with the appliance, even in case of sale/transfer to another owner, so that it can be consulted by the user or by personnel authorized to carry out maintenance and repairs.
- Read this manual carefully before using the unit to ensure its safe operation.
- Periodically check the integrity of the power cord, plug and related socket. If the power cable is damaged, it may only be replaced by the manufacturer or the local distributor who sold the appliance or by authorised maintenance and repair personnel.
- The installation must be carried out by an authorized dealer or a qualified technician. Faulty installation may result in water leakage, electric shock or fire.
- Work on the refrigerant circuit must only be carried out by persons with a valid certification, issued by an accredited body, certifying their competence to handle refrigerants safely in compliance with the specifications in force in the sector.
- The installation must be carried out according to the instructions provided. An incorrect installation may cause water leaks, electric shock or fire.
- Install the drain hose according to the instructions in this manual. Incorrect draining can cause water seepage or flooding with possible damage to the home and other property.
- The device must be stored in such a way as to prevent any mechanical damage.
- Consult a qualified technician for unit repair or maintenance.
- Perform the installation using only the supplied accessories and parts specified. The use of non-standard components may cause water leakage, electric shock or fire and cause the unit to malfunction.
- Do not use any means other than those recommended by the manufacturer to accelerate the defrosting process or to clean the unit.
- The appliance must be placed in a room that does not contain any ignition sources operating continuously (e.g. open flames, gas appliances or electric heaters).
- Note that the coolants are odourless.
- Always use the specified cables for all electrical work. Connect the cables securely and secure them
  in a stable manner to prevent the terminals from being damaged by external forces. Incorrect electrical
  connection may cause overheating conditions and may result in fire and electrocution.
- The cables must be arranged so that the control board cover can close properly. If the control board cover is not closed properly, corrosion may occur and the connection points on the terminals may become hot, ignite or cause electric shock.
- In some functional environments such as kitchens, server rooms, etc., it is recommended to use specially designed air conditioners.
- The appliance is only suitable for use by children 8 years old and over and persons with reduced physical, sensory or mental capabilities or lack of experience or knowledge when they are properly supervised or have received instructions on the safe use of the appliance and have understood the associated dangers. Prevent children from playing with the appliance. Cleaning and maintenance operations must not be carried out by children without supervision.
- For electrical work, comply with the provisions of the national electrical code, local regulations, current regulations and the requirements contained in the installation manual. It is necessary to use an independent circuit and a single power outlet. Do not connect other appliances to the same electrical outlet. Insufficient electrical capacity or faulty electrical installation may cause risk of electric shock or fire.



#### **CAUTION DANGER**

- When connecting refrigerant piping, keep substances or gases other than the specified refrigerant from entering the unit. The presence of other gases or substances can reduce unit performance and cause an abnormal increase in pressure in the refrigeration cycle. This can lead to explosion hazards and resulting injuries.
- Install the unit on a stable stand that can support its weight. If the chosen stand cannot support the weight of the unit, or if the installation is not performed correctly, the unit may fall and cause injury and serious damage.
- Do not pierce or ignite the device.
- The appliance must be placed in a well-ventilated room whose dimensions correspond to those specified for operation.
- The product must be installed with earthing in accordance with the law to avoid the risk of electrocution.
- Do not install the unit in a location that may be exposed to combustible gas leakage. Any accumulation of combustible gas around the unit may cause a fire hazard.
- Do not operate the air conditioner in a very humid room, for example in a bathroom or laundry room. Excessive exposure to water can cause electrical components to short-circuit.



# IT IS PROHIBITED TO

- Make changes and/or repair attempts to the product. Any repairs must be carried out by a qualified technician.
- Touch the device with wet, damp and/or barefoot body parts. If you notice current leakage that can be detected on contact with metal parts of the appliance, disconnect the switch, unplug it from the power supply socket and contact an authorised dealer.
- Use of the appliance by children and persons with reduced capacity or lack of experience and specific knowledge unless they are assisted by qualified personnel responsible for their safety.
- Disperse in the environment and leave within the reach of children the packaging material as it may be a potential source of danger. It must therefore be disposed of in accordance with current legislation.
- Change the length of the power cable or use extension cables to power the unit.
- Use the same electrical outlet for other equipment. Incorrect or insufficient power supply may cause fire or electric shock hazard.



# **NOTES ON FLUORINATED GASES**

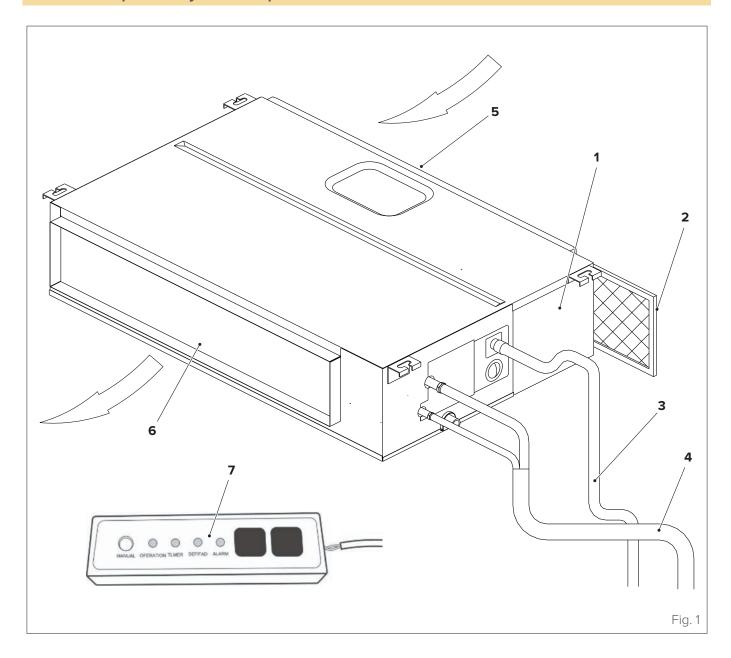
- This air conditioner contains fluorinated gas. For specific information on gas types and quantities, please refer to the plate found on the unit. It is always necessary to comply with national regulations regarding the use of gases.
- Installation, service, maintenance and repair of the unit must be performed by a qualified technician.
- The uninstallation and recycling of the product must be carried out by qualified technical personnel.
- If a leak detection device is installed in the system, it is necessary to check that there are no leaks at least every 12 months. When checking the unit for leaks, it is recommended to keep a detailed record of all inspections.
- Pay attention to the fact that refrigerant R32 is odourless.



#### FLAMMABLE MATERIAL

The refrigerant used inside this unit is flammable. A coolant leak that is exposed to an external ignition source can create fire risks

# 1.2 Description of system components



- 1 Electrical panel
- 2 Filter
- **3** Flexible drainage hose
- 4 Refrigerant connection pipe

- **5** Air inlet
- **6** Air outlet
- **7** Remote display



# **WARNING**

The images in this manual are provided for illustrative purposes only. The appearance of your device may differ slightly from the illustrations shown here. Refer to the actual characteristics of the unit.

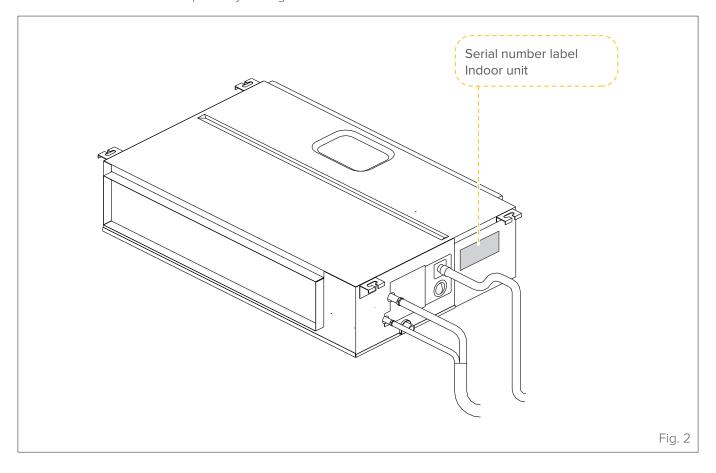
#### 1.3 **Accessories**

The air conditioner is equipped with the following accessories. Use all specified installation components and accessories to install it. Incorrect installation may cause water leakage, electric shock and fire, or cause the unit to malfunction.

	Description	Aspect	Quantity
Indoor unit installation	Installation use and maintenance manual		1
	Remote control		1
Remote control	Remote control support		1
	Fixing screw for the ST2.9 x 10 remote control holder		2
	AAA Alkaline battery. LR03	AAA ©	2
Accessories for refrigerant piping	Connection pipes	Liquid side	Components to be purchased separately. Consult your dealer for pipe sizes.
EMC magnetic ring	Magnetic ring (wind electrical cables twice around the magnetic ring)		1
Remote display	Remote display	WINDAL OFFICIAL STEPAG ALARY	1
	2 m connection cable for the remote display		1
Materials for drain pipe	Condensate drain pump		1

# 1.4 Identification

The indoor unit and the outdoor unit can be identified by the serial number label that shows the technical and performance data of the unit and what is required by the legislation in force.





# **CAUTION**

Tampering, removal, lack of identification labels or anything else that does not allow safe product identification, makes any installation and maintenance operation difficult.

# INSTALLATION

#### 2.1 Receiving the product

The appliance is supplied packed in several parcels. Handling must be carried out by appropriate means in view of the overall weight of the package.

Upon receiving the appliance, check the perfect integrity of all parts.

In case of damage to the equipment or missing material, please contact your authorised dealer promptly.



#### **WARNING**

The manual is an integral part of the product and therefore it is recommended that you read it before installing and commissioning the device and keep it with care for future reference or transfer to another Owner or User.



# IT IS PROHIBITED TO

disperse the packaging material in the environment and leave it within the reach of children as it can be a potential source of danger. It must be disposed of in accordance with current legislation.

#### 2.2 Size and weight

		Indoor unit					
	27M	35M	53M	70M			
Width (mm)	700	700	880	1100			
Depth (mm)	450	450	674	774			
Height (mm)	200	200	210	249			
Weight (kg)	18.0	18.0	24.3	31.5			

		Indoor unit					
	105M	140M	160M				
Width (mm)	1360	1200	1200				
Depth (mm)	774	874	874				
Height (mm)	249	300	300				
Weight (kg)	45.5	47.6	47.6				

#### 2.3 Installation - preliminary warnings



#### **WARNING**

Before installing the indoor unit, consult the label on the product package to check that the model number matches the model number of the outdoor unit.



#### ATTENTION ELECTRIC DANGER

- All electrical connections must be done by a licensed electrician according to the provisions of national and local electrical codes.
- All electrical connections must be made according to the wiring diagram on the panels of the indoor and outdoor units.
- If the electrical system has serious safety problems, stop work immediately. Explain the situation to the customer and refuse to install the unit until the safety problem has been resolved.
- The power supply should correspond to 90-100% of the rated voltage. Insufficient power supply may cause malfunction, electric shock or fire.
- If the power cables are permanently installed connected to the electrical system, install overcurrent protection and a main power switch with a capacity of 1.5 times the maximum current of the unit.
- The power supply line must have a special protection upstream against short circuits and earthing leakage that sections the system with respect to other utilities. The technician must choose an approved differential circuit-breaker or main circuit breaker.
- Connect the unit to a single socket of a dedicated branch of the circuit. Do not connect other appliances to the same electrical outlet.
- The air conditioner must be properly grounded.
- All cables and conductors must be connected securely. Loosening a conductor may cause the terminal to overheat, which in turn may result in fire hazards or product malfunction.
- The electrical cables must not touch or rest against the refrigerant pipes, the compressor or any moving parts of the unit.

#### 2.4 Indoor unit installation

#### 2.4.1 Installation room



# **CAUTION**

The appliance must be placed in a well-ventilated room, with a minimum surface area that varies according to the amount of refrigerant present.

To calculate the minimum area of the installation room, proceed as described below:

- determine the total refrigerant charge (see section <u>"3.1.1 Refrigerant charge"</u> of the outdoor unit manual)
- identify the refrigerant charge value in the table below and derive the respective minimum area required for the installation room.

Refrigerant charge [kg]	Minimum surface [m²]
< 1.842	-
1.843	3.64
2.0	3.95
2.2	4.34
2.4	4.74
2.6	5.13
2.8	5.53
3.0	5.92
3.2	6.48
3.4	7.32
3.6	8.20
3.8	9.14
4.0	10.1
4.2	11.2
4.4	12.3
4.6	13.4
4.8	14.6
5.0	15.8
5.2	17.1
5.4	18.5
5.6	19.9
5.8	21.3
6.0	22.8
6.2	24.3
6.4	25.9
6.6	27.6
6.8	29.3
7.0	31.0

Refrigerant charge [kg]	Minimum surface [m²]
7.2	32.8
7.4	34.7
7.6	36.6
7.8	38.5
7.956	40.1

The following information can help you choose a suitable location for the indoor unit.

The installation location must have the following characteristics:

- good air circulation.
- ease of drainage.
- the noise emitted by the unit must not disturb other people.
- stability and robustness no exposure to vibration.
- sufficient capacity to support the weight of the unit. If the structure is too weak, the unit can fall and cause serious or fatal personal injury, material damage and damage to the appliance.
- at least one metre away from any other electrical device (e.g. TV, radio, computer).
- installation at least 2.5m off the floor.
- if the indoor unit is installed on a metal bracket, it must be earthed.
- the unit must be at least 1m away from the nearest wall
- the space must be sufficient for installation and maintenance operations.
- the space must be sufficient for connection of the piping and drain pipe.
- the ceiling must be horizontal and its structure must be strong enough to support the weight of the indoor unit.
- the air inlet and outlet must not be blocked.
- the airflow must be able to reach the whole room.

10



# It is PROHIBITED to install the indoor unit in the following locations:

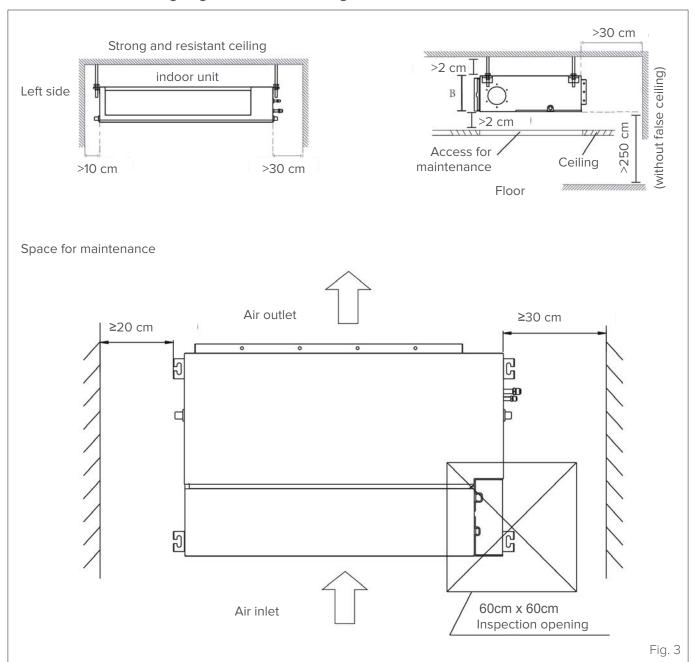
- in a bathroom or laundry room, because excess humidity can reduce its service life and corrode the cables;
- near sources of heat, steam or combustible gas;
- near flammable objects, such as curtains or fabrics;
- near obstacles that could obstruct air circulation;
- near the entrance;
- In an area that is not exposed to direct sunlight;
- areas exposed to strong electromagnetic waves;



# It is PROHIBITED to install the indoor unit in the following locations:

- oil extraction drilling or fracking areas;
- coastal areas with extremely salty air;
- areas with an atmosphere impregnated with caustic gases, for example near thermal sources;
- areas subject to strong power fluctuations, for example factories;
- enclosed spaces (cabinets, etc.);
- kitchens with natural gas cooker hobs;
- areas used for storing gas or flammable materials.

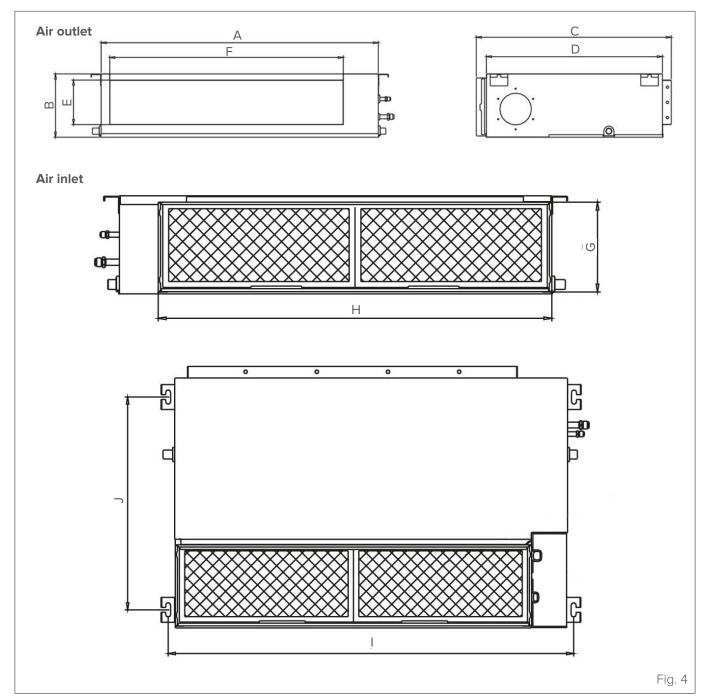
#### Please refer to the following diagram for wall and ceiling distances:



# 2.4.2 Hang the indoor unit

Referring to the figures below, locate the positions of the four bolt holes to be drilled in the ceiling. Mark the points on the ceiling where the holes for the hooks are to be drilled.

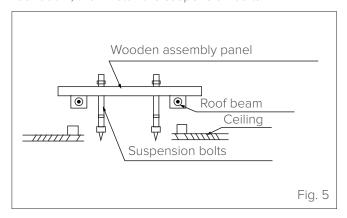
# Air inlet and outlet sizes:



Indoor unit	External sizes (mm)				Air outlet opening size (mm)		Air return opening size (mm)		Installed hook size (mm)	
	Α	В	С	D	E	F	G	Н	I	J
27M/35M	700	200	506	450	152	537	186	599	741	360
53M	880	210	674	600	136	706	190	782	920	508
70M	1100	249	774	700	175	926	228	1001	1140	598
105M	1360	249	774	700	175	1186	228	1261	1400	598
140M/160M	1200	300	874	800	227	1044	280	1101	1240	697

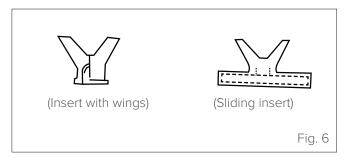
#### Wood

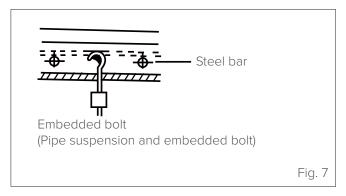
Place the wooden assembly panel crosswise over the roof beam, then install the suspension bolts



#### New concrete slab

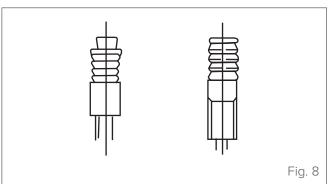
Embed the anchor bolts.





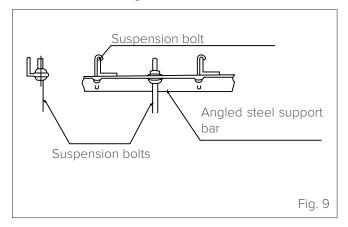
#### Original concrete slab

Install the suspension hook with expansion anchor  $45^{\circ}50 \text{ mm}$  deep in the concrete to prevent it from loosening.



#### **Roof with steel structure**

Install and use the angled steel brackets

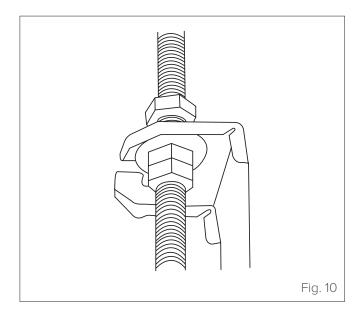


# 4

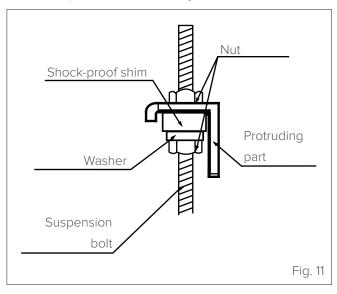
# **CAUTION DANGER**

The unit body must be aligned exactly with the hole. Before proceeding, check that the hole is the same size as the unit.

- 1 After installing the main body, install and assemble pipes and electrical cables. To decide where to start, determine the direction of the pipes to be installed. Particularly for ceiling installations, put the refrigerant pipes, the drainage pipes and the internal and external lines in their respective connection points before assembling the unit.
- 2 Installation of the suspension bolts.
  - Cut the roof beam.
  - Reinforce the cut part and re-join the beam.
- **3** After choosing the installation position, put the refrigerant piping, the drainage pipes and the internal and external electrical lines in their respective connection points before installing the appliance.
- **4** Drill 4 10 cm holes in the internal ceiling, in the positions marked for the hooks. Keep the drill bit at a 90° angle to the ceiling.
- **5** Fasten the bolt with the washers and nuts provided.
- 6 Install the four suspension bolts.
- **7** Assemble the indoor unit. Two people are needed to lift and fasten the unit. Insert the suspension bolts into the holes for attaching the unit. Fasten them with the washers and nuts provided.



**8** Assemble the indoor unit on the suspension bolts using suitable locking elements. Place the indoor unit level and check that it is aligned with a spirit level to avoid any leaks.



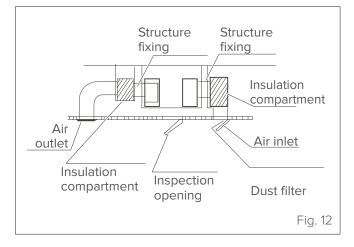


# **WARNING**

Ensure that the drain pipe slopes at least 1/100.

# **INSTALLATION OF ACCESSORY DUCTS**

- 1 Install the filter (option) based on the size of the air inlet.
- 2 Install the air passage frame between the body and the duct.
- **3** The inlet and outlet air ducts must be sufficiently spaced to avoid short circuits when the air passes through.
- 4 Connect the duct following the diagram below:



**5** For installation of the indoor unit, refer to the following static pressure values.

Indoor unit	Static pressure (Pa)	
27M/35M	0~60	
53M	0~100	
70M	0~160	
105M	0~160	
140M/160M	0~160	

**6** Change the static pressure of the fan motor according to the static pressure of the external duct.

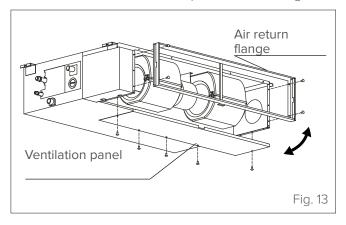


# **WARNING**

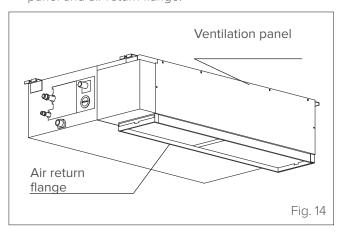
- Do not let the weight of the connection duct rest on the indoor unit.
- When connecting the duct, use a non-flammable flexible frame to prevent vibration.
- Wrap insulating foam material around the duct to prevent condensate from forming.
   On request of the end user, a liner can be fitted in the duct to reduce noise.

# **ADJUST THE AIR INLET DIRECTION**

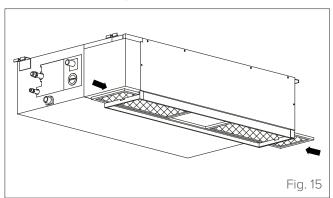
1 Disassemble the ventilation panel and the flange



**2** Change the assembly positions of the ventilation panel and air return flange.



**3** When installing the filter mesh, insert it into the flange as shown in the figure below.



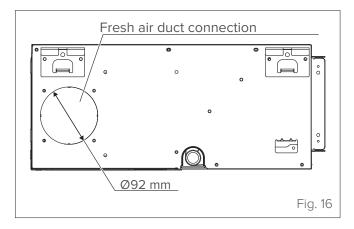


#### **WARNING**

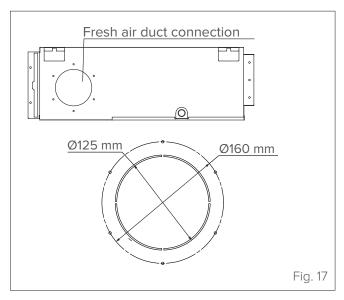
All images in this manual are provided for illustration purposes only. The air conditioner purchased may have slightly different characteristics, even though the aspect is similar.

# **INSTALLATION OF THE FRESH AIR DUCT**

# 27M - 35M models



#### 53M - 160M models

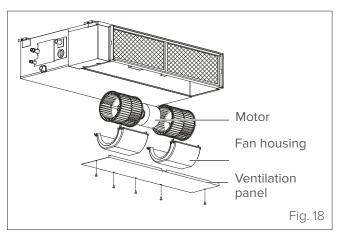


# MOTOR AND DRAIN PUMP MAINTENANCE

The example refers to the rear ventilation panel

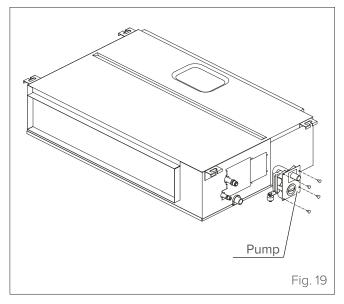
#### Motor maintenance:

- 1 Remove the ventilation panel.
- 2 Remove the fan housing.
- **3** Remove the motor.



#### Pump maintenance:

- **1** Remove the four screws from the drain pump.
- **2** Unplug the pump's power cable and the water level switch cable.
- 3 Disconnect the pump.



# 2.4.3 Fan operation settings



# **WARNING**

For the setting with wired controller, see "Using the wired controller to set the external static pressure"

Ducted indoor units offer the user the possibility of setting a profile of standard flow rates that the unit will keep constant by self-regulating its head.

The user can choose from two modes:

- constant airflow: the unit automatically controls the fan speed to keep the selected standard flow rates constant (see chart PAR.0);
- variable airflow: the user can choose from 4 operating profiles and the flow rate changes according to the pressure drops in the duct.



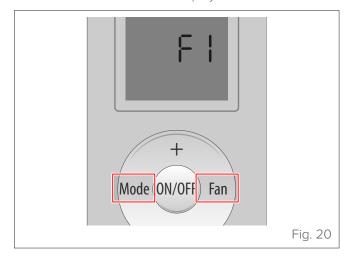
# **WARNING**

This setting must be made before the first installation with the standard remote control. After setting, the default settings cannot be reset.

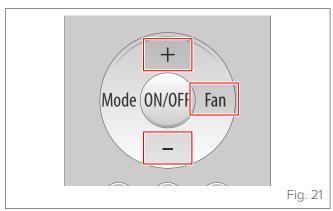
**1** This function can be set with the remote control only within 10 minutes of the unit being switched on and must be done in standby mode.

**2** Take the batteries out of the remote control and put them back in: during the first 30 seconds press the MODE + FAN buttons for 5 seconds. The remote control will go into "function selection"

mode and "F 1" will be displayed.



3 Use '+' and '-' and select " d '4", press 'FAN' to confirm. The unit will run the flow control test for 3 to 6 minutes.



**4** Use '+' or '-' to select " *E* **9**", press 'MODE' to enter parameter selection mode. Press '+' or '-' to select a parameter from 0-4 and press 'MODE' to confirm.

Parameter	Description		
0	Constant airflow function The unit automatically controls the head so that the flow rate corresponds to the standard one by adjusting the fan speed.		
1	Variable airflow function		
2	The flow rate decreases when the pressure drops increase		
3	Note: the available head increases by		
4	selecting parameter 1 to 4		

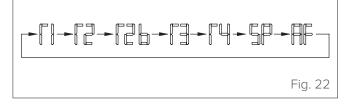
Set the parameter following the size charts for the installed unit

# **USING THE WIRED CONTROLLER TO SET** THE EXTERNAL STATIC PRESSURE

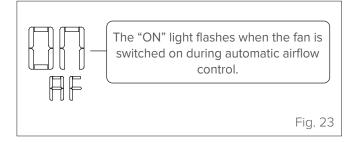
The automatic airflow control function can be used to set the external static pressure.

Automatic airflow control acts on the amount of air emitted, automatically adjusting it to the nominal amount.

- Make sure that the operating test is carried out with the coil dry. If it is not, operate the unit for 2 hours in FAN ONLY mode to dry the coil.
- Make sure that the power supply has been wired and the air duct has been installed and check that any damper closures are open. Ensure that the air filter is fitted properly to the air intake side of the unit's duct.
- If there are multiple air inlets and outlets, adjust the dampers so that the airflow of each inlet and each outlet complies with the nominal flow rate. Make sure that the unit is in FAN ONLY mode. Press the airflow control button on the remote control to change the flow rate to H or L (high or low).
- Set the parameters for automatic airflow control. When the air conditioning unit is switched off, carry out the following steps:
  - Press "COPY".
  - Press "+" or "-" to select the AF (airflow).



- Press "CONFIRM". The air conditioning unit will then start the fan for automatic airflow control.





# **CAUTION DANGER**

DO NOT adjust the dampers when the automatic airflow control is active.

After 3 to 6 minutes, operation of the air conditioner will stop once the automatic airflow control has finished

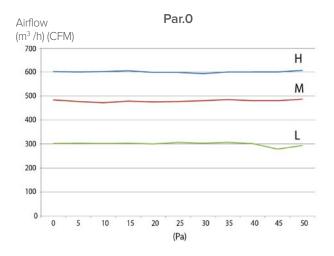


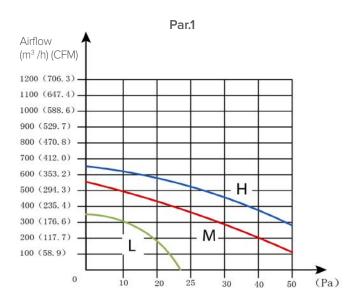
#### **WARNING**

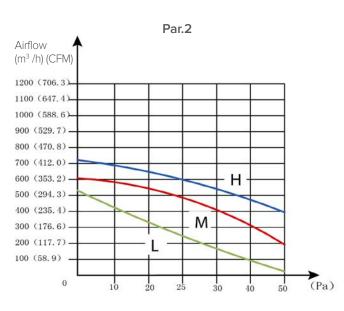
- If there are no changes to the ventilation after the automatic airflow control has finished, reset the automatic airflow control again.
- If there are still no changes to the ventilation, contact an authorised dealer, especially if this occurs after checking the outdoor unit or if the unit has been moved to a different location.
- Do not use the remote control for the automatic airflow control if using auxiliary fans, outdoor air handling unit or HRV through the duct.
- If the ventilation has changed, reset the automatic airflow control following the above procedure.

# FLOW RATE / HEAD CHARTS

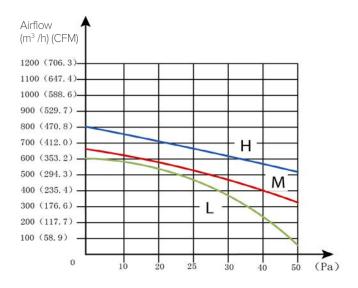
#### 27M/35M unit

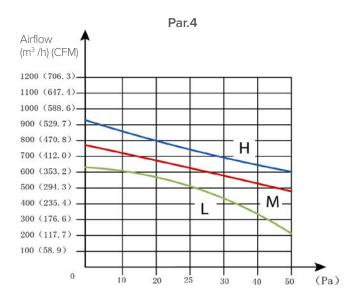












(Pa) = available static pressure

# Fan speed

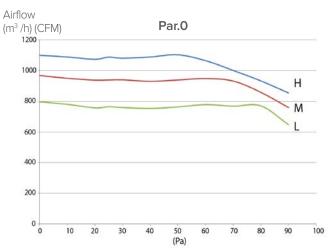
- H High speed

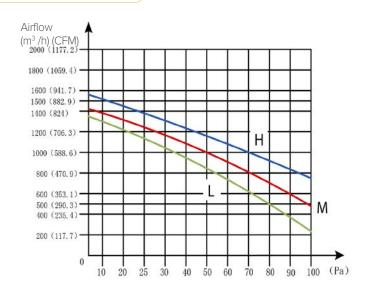
■ Medium speed

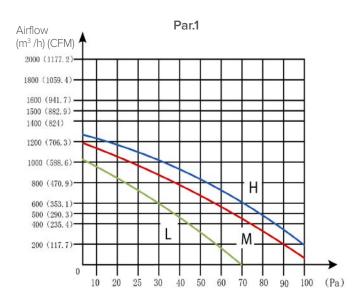
— L Low speed

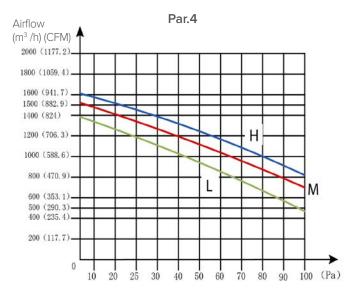
# Installation

# 53M unit

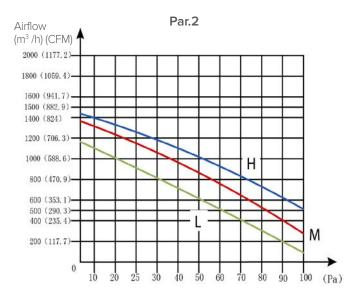








(Pa) = available static pressure

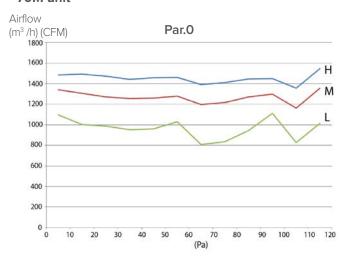


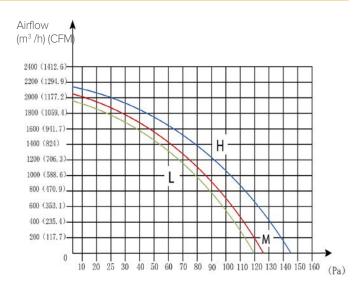
High speedM Medium speedL Low speed

Fan speed

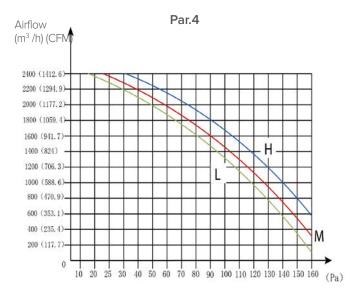
Par.3

# 70M unit

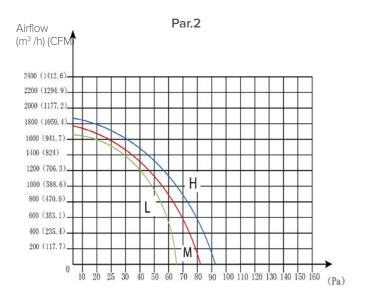








(Pa) = available static pressure



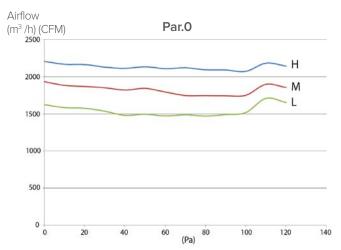
H High speedM Medium speedL Low speed

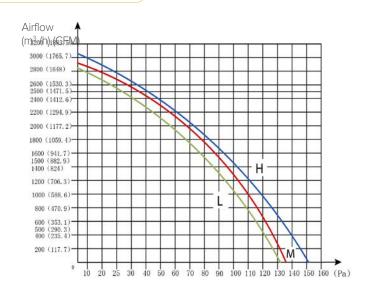
Fan speed

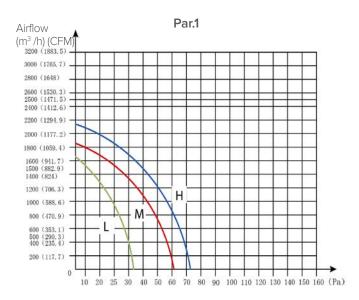
Par.3

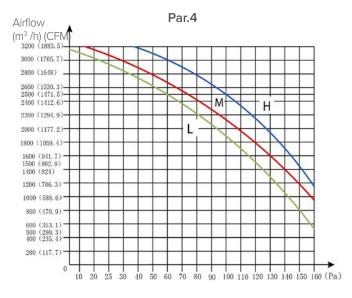
# Installation

#### 105M unit

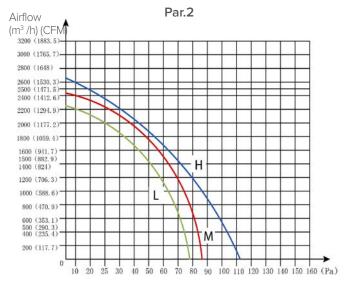








(Pa) = available static pressure

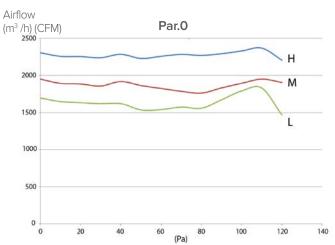


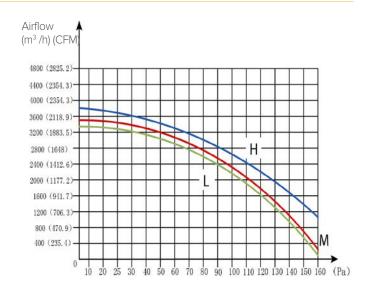
High speedM Medium speedL Low speed

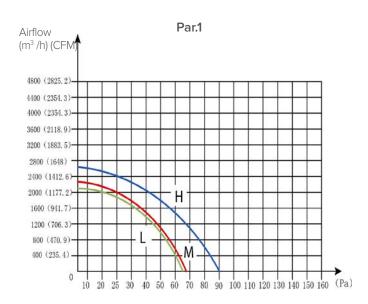
Fan speed

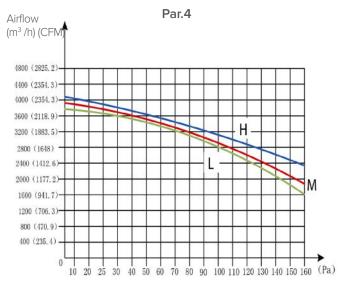
Par.3

# 140M unit

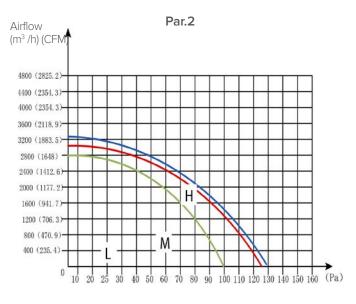








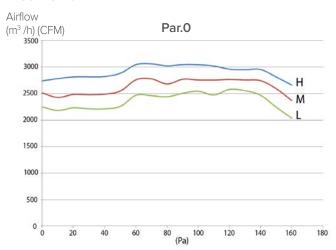
(Pa) = available static pressure



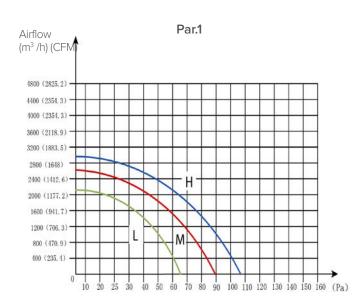
Par.3

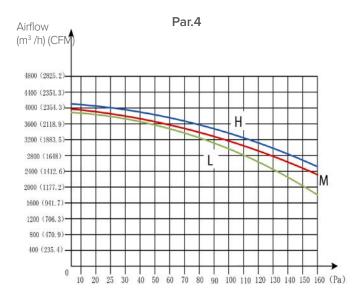
#### Installation

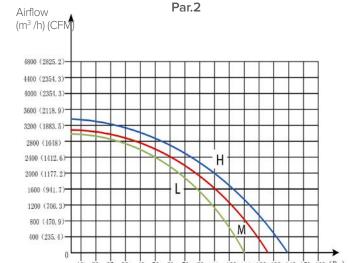
# 160M unit











(Pa) = available static pressure

# Fan speed

- H High speed

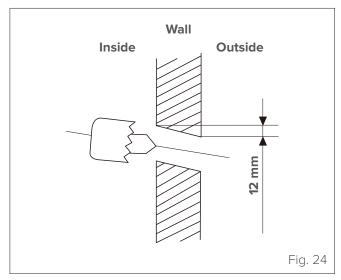
■ Medium speed

— L Low speed

# 2.4.4 Preparation for connection pipes

It is necessary to make a hole in the wall where the refrigerant piping, drainage pipe and electrical cables that will connect the indoor unit to the outdoor unit will pass through.

- 1 Determine hole position in the wall according to the position of the outdoor unit. The hole in the wall should have a minimum diameter of 65 mm and a slight downward slope to facilitate drainage (see "Fig. 24").
- 2 Drill the hole in the wall using a 65 mm drill bit. The hole should have a slight inclination, so that the outer end is lower than the inner one by about 12 mm. This will facilitate water drainage.



3 Insert the protective sleeve into the wall, which will protect the edges of the hole and improve the seal after installation.



# **CAUTION DANGER**

When drilling holes, pay attention to avoid electrical wires, hydraulic hoses and other delicate components.



#### CAUTION

The drain pipe outlet must be at least 5 cm from the floor. If it touches the ground, the unit can block and not work properly. If the water is discharged directly into the sewer system, use a U- or S-shaped drain pipe to block odours which would otherwise flow back inside.

# 2.4.5 Drainage pipe

The drainage pipe is used to drain the water from the unit. Incorrect installation can cause damage to the unit and other material damage.



#### **CAUTION DANGER**

- Insulate all of the pipes to prevent condensate from forming, which could cause water damage.
- If the drainage pipe is bent or not installed properly, the water can escape and cause the float switch to malfunction.
- In HEAT mode, the outdoor unit discharges water. Make sure that the drainage pipe is in a suitable area to avoid water damage and slipping hazards caused by the discharge water freezing.
- **DO NOT** pull the drainage pipe, as this could detach it.

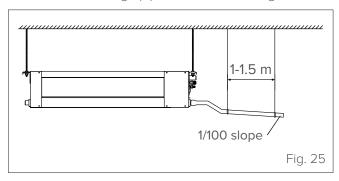


#### **WARNING**

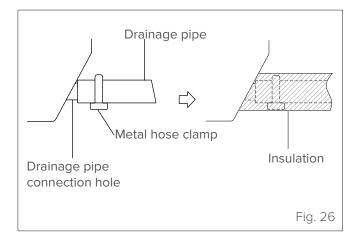
A polyethylene pipe (outer diameter = 3.7-3.9cm, inner diameter = 3.2cm) is required for this installation, which you can find in hardware shops or from your local dealer.

#### **INSTALLATION OF INDOOR DRAINAGE PIPE**

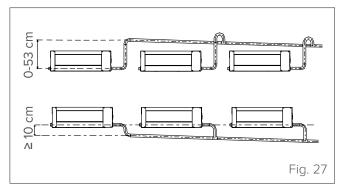
1 Install the drainage pipe as shown in the figure:



- **2** Cover the drainage pipe with a heat-insulating material to prevent condensate and possible water leaks.
- 3 Connect the end of the drainage pipe to the unit's outlet pipe. Wrap the end of the pipe and securely fasten it with a hose clamp.



**4** If connecting more than one drainage pipe, follow the installation diagram below:

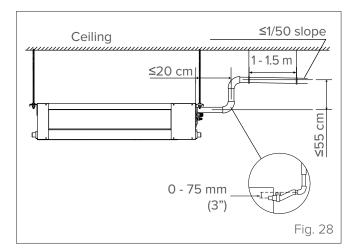


# INSTALLATION OF THE DRAIN PIPE FOR UNITS WITH PUMP.



# **WARNING**

- When using an extension for the drainage pipe, tighten the connection on the inside with an additional protection pipe to stop it from coming loose.
- The drainage pipe must slope by at least 1/100 to prevent the water from flowing back into the air conditioner.
- To stop the pipe from bending, fix the suspension elements every 1-1.5 m.
- If the drainage pipe outlet is higher than the pump fitting on the unit body, use a lifting pipe for the discharge outlet of the indoor unit. The lifting pipe must be installed no more than 55 cm from the false ceiling and no further than 20 cm from the unit. Incorrect installation can cause the water to flow back into the unit.
- To prevent air bubbles from forming, keep the drainage pipe horizontal or slightly inclined upwards (<75 mm).</li>

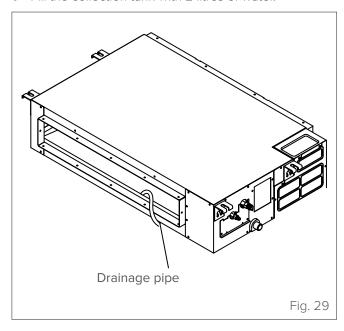


# **DRAIN TEST**

Check that the drainage pipe is not blocked. This test must be carried out in new builds before finishing the ceiling.

# Unit without pump.

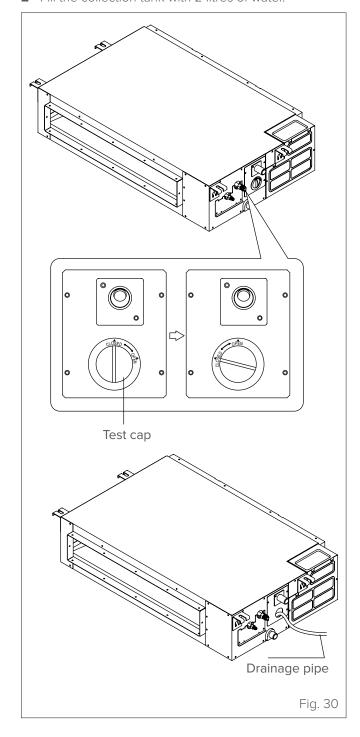
1 Fill the collection tank with 2 litres of water.



2 Check that the drain pipe is not blocked.

# Unit with pump.

- 1 Remove the test cap.
- 2 Fill the collection tank with 2 litres of water.



- **3** Switch the unit on in COOLING mode. You will hear the noise of the drain pump. Check that the water drains properly (a delay of 1 minutes before discharge is acceptable, based on the length of the drain pipe) and check that there are no leaks at the joints.
- **4** Switch the air conditioner off and put the cap back on.

# 2.4.6 Configuration with TWIN indoor units

# **POSSIBLE COMBINATIONS**

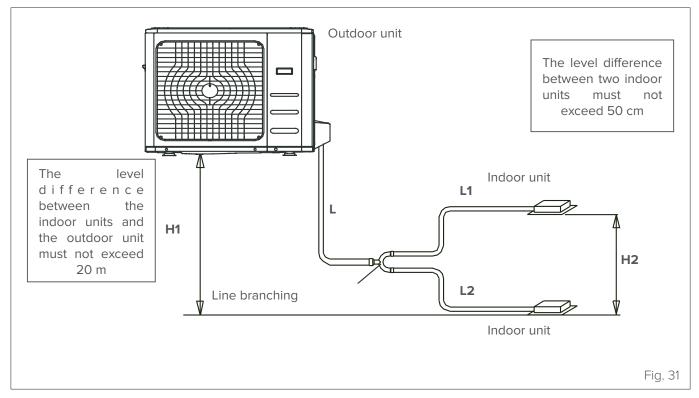
TWIN indoor units are designed to be installed in one room.

The controller is used to control the main unit while the secondary unit follows the on/off, set-point, operating mode and fan speed settings.



#### **REFRIGERANT PIPING**

When multiple indoor units are connected to a single outdoor unit, make sure that the length of the refrigerant pipe and the level difference between the indoor units and the outdoor unit meet the conditions given in the diagram below:



	Length allowed					
	Total length	65m	L+Max (L1, L2)			
Pipe length	Max.length of single lines	15m	L1, L2			
	Max.difference between the two L1-L2 lines	10m	L1, L2			
Lovel difference	Max.indoor-outdoor unit level difference	20m	H1			
Level difference	Max.level difference between two indoor units	0.5m	H2			



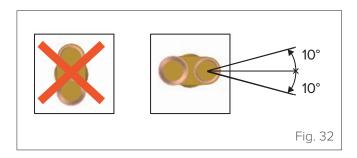
# **WARNING**

Make sure that the length of the refrigerant pipe, the number of bends and the level difference between the indoor unit and the outdoor unit meet the requirements given in the table.



#### **CAUTION DANGER**

- The Y joint must be installed horizontally.
   An angle of more than 10° can cause malfunctions.
- DO NOT install the connection pipe before installing both the indoor and outdoor units.
- Insulate the gas side and liquid side pipes to prevent water leaks.



# Connection pipe sizes for the indoor unit.

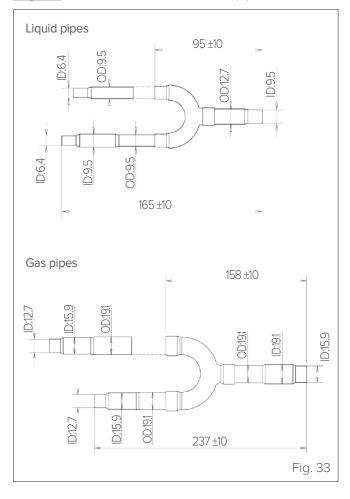
Model	Main pipe dimensions (mm)		
	Gas side	Liquid side	
70M	Ø 15.9 mm (5/8")	Ø 9.52 mm (3/8")	
105M	Ø 15.9 mm (5/8")	Ø 9.52 mm (3/8")	

#### Connection pipe sizes for the outdoor unit.

Based on the table below, select the diameters of the connection pipes for the outdoor unit.

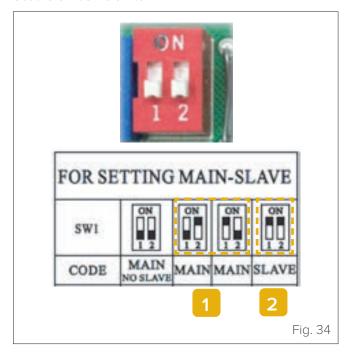
Model	Main pipe dimensions (mm)			
Model	Gas side	Liquid side	First Y joint	
105M-105T	Ø 15.9 mm (5/8")	Ø 9.52 mm (3/8")	FQZHN-01D	
140T	Ø 15.9 mm (5/8")	Ø 9.52 mm (3/8")	FQZHN-01D	
160T	Ø 15.9 mm (5/8")	Ø 9.52 mm (3/8")	FQZHN-01D	

To use the Y joint, cut the pipe following the diagram in "Fig. 33" to fit the internal and external pipe.



#### INDOOR UNIT CONFIGURATION

Set the SW1/SW5 switch

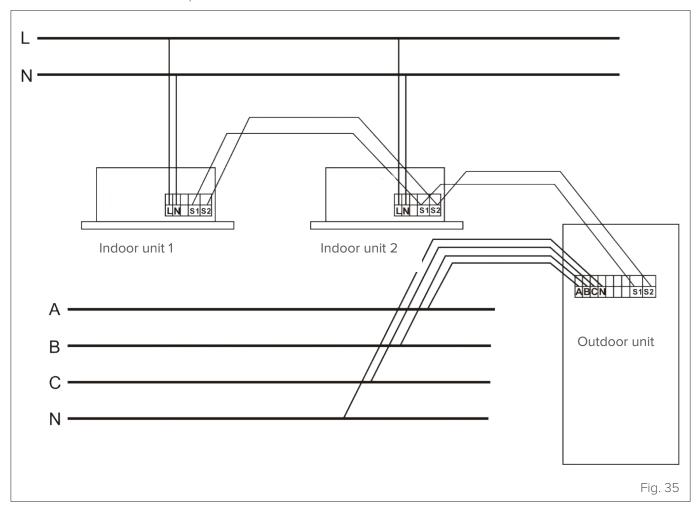


- **1** Master indoor unit: alternate 1 and 2 (one ON and the other OFF)
- 2 Slave indoor unit: both 1 and 2 ON.

# TWIN UNIT CONNECTION

The indoor unit and the outdoor unit are powered separately. The 2 indoor units must be connected to the same power supply source.

The S1 and S2 terminals of both indoor units must be connected to the S1 and S2 terminals of the outdoor unit, but S1 and S2 can be connected non-polarised.



TW/IN configuration	Outdoor unit power supply	Indoor unit power supply	Signal
TWIN configuration	no.of cables/cross section	no.of cables/cross section	no.of cables/cross section
70M + 70M indoor units 140T outdoor unit	4 x 2.5mm <sup>2</sup> + G	2 x 2.5mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>
105M + 105M indoor units 160T outdoor unit	4 x 2.5mm <sup>2</sup> + G	2 x 2.5mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>

# 2.4.7 Electrical connections

Cables with the following characteristics are required for power supply and communication between the indoor and outdoor units:

Indoor	Power supplied from outdoor unit	Signal from outdoor unit	
unit	no.of cables/cross section	no.of cables/cross section	
27M	2 x 1mm <sup>2</sup> + G	2 x 1mm <sup>2</sup>	
35M	2 x 1mm <sup>2</sup> + G	2 x 1mm <sup>2</sup>	
53M	2 x 1mm <sup>2</sup> + G	1 x 1mm <sup>2</sup>	
70M	2 x 1mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>	
105M	2 x 1mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>	
140M	2 x 1mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>	
160M	2 x 1mm <sup>2</sup> + G	2 x 0.2mm <sup>2</sup>	

The indicated cross-sections are suitable for a wiring length of up to 5 metres.



#### ATTENTION ELECTRIC DANGER

Before making electrical connections, turn off the main switch of the system.



#### **WARNING**

WRITE DOWN THE SPECIFICATIONS OF THE FUSES.

The air conditioner board (PCB) is equipped with a fuse for overcurrent protection. Fuse specifications are printed on the circuit board, for example:

**Indoor unit:** T5A/250VAC - T10A/250 VAC **NOTE**: The fuse is ceramic.

- **1** Prepare the cable for connection:
  - Using a wire stripper, strip the rubber sheath at both ends of the cable and expose approximately 15 cm of the internal conductors.
  - Strip the insulation sheath at the ends of the conductors.
  - Using a crimping tool, crimp U-type wire terminals to the ends of the conductors.



# **CAUTION**

When crimping, clearly identify live cables ("L") and other cables.

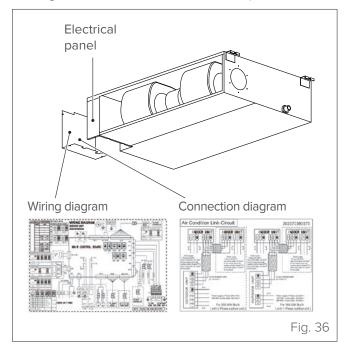
- **2** Take the cover off the indoor unit's electrical panel.
- **3** Take the cover off the indoor unit's electrical panel with a screwdriver. This will give you access to the terminal block.



#### **WARNING**

All connections must be made exactly as shown in the wiring diagram on the inside of the terminal block cover of the indoor unit.

- **4** Pass the power cable and the signal cable through the cable outlet.
- **5** Connect the U-shaped wire terminal to the terminals. Match the colours/labels of the cables to the labels on the terminal block, then screw the U-shaped wire terminal of each cable firmly to the corresponding terminal block. Refer to the serial number and wiring diagram on the cover of the electrical panel.

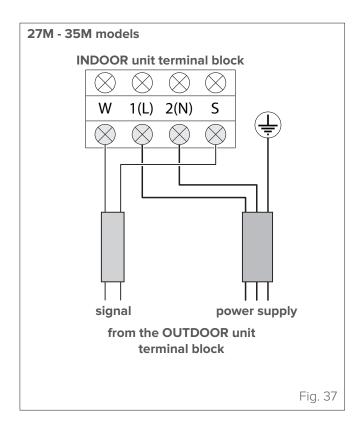


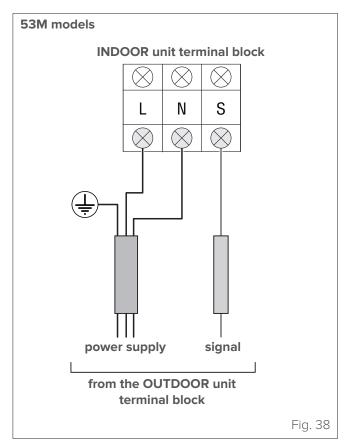
**6** Looking at the front side of the unit, match the colours of the cables to the labels on the terminal block, connect the U-shaped terminals and screw each cable securely to the corresponding terminal.

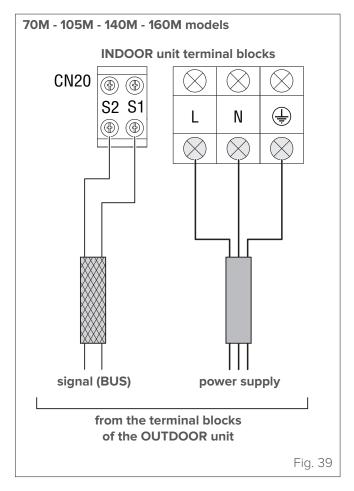


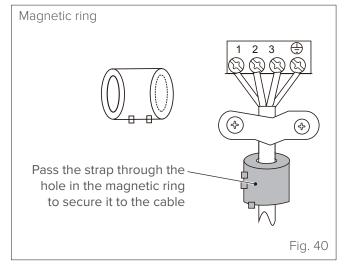
#### **CAUTION DANGER**

- DO NOT SWITCH LIVE AND NEUTRAL CABLES. Such a configuration is dangerous and may cause the air conditioner to malfunction.
- The refrigerant circuit can get very hot. Keep the interconnection cable away from the copper pipe.
- **7** Secure the cables with the corresponding cable ties. The cable must not be slack and must not pull the U-shaped wire terminal.
- 8 Refit the cover on the electrical panel.



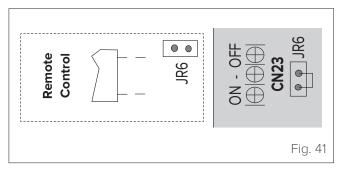






#### **REMOTE ON-OFF**

For the input of the remote control terminal CN23 (ON- OFF) and the JR6 quick-release connector  $\frac{1}{2}$ 



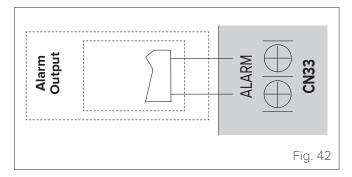
- Remove the JR6 quick-release connector when using the ON-OFF function;
- When the remote switch is OFF (OPEN), the unit will be turned off;
- When the remote switch is ON (CLOSE), the unit will be turned on;
- When the remote switch is opened/closed, the unit will respond to the request within 2 seconds;
- When the remote switch is ON, the remote/wired control can be used to select the mode; when the remote switch is OFF, the unit will not respond to the remote/wired control request.

When the remote switch is OFF, the remote/wired control is on, code CP will be shown on the display board.

 The input voltage is 12 V DC, the maximum design current is 5 mA.

#### **ALARM**

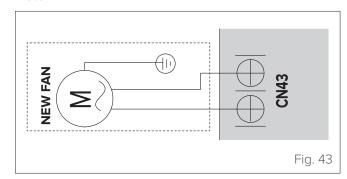
For the input of ALARM connector CN33



- The terminal input is set up for ALARM connection, but there is no voltage; the power supply comes from the ALARM system (not from the unit)
- Although the design voltage can withstand even higher values, we strongly advise connecting a power supply of less than 24 V and a current of less than 0.5 A
- If this problem occurs on the unit, the relay will be closed, thus activating the ALARM

#### **OUTDOOR AIR FAN**

For the input of terminal CN43 of the new outdoor air motor.



- Connect the fan motor to the input, regardless of the motor's L/N;
- The output voltage is the power supply;
- The outdoor air motor cannot exceed 200 W or 1A; choose the lower value:
- The new outdoor air motor will start when the internal fan motor is running; when this motor stops, the outdoor air motor also stops;
- When the unit goes into forced cooling mode or power test mode, the outdoor air motor will not work.

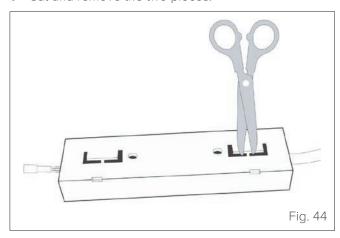
# 2.5 Installation of the remote display

The remote display has a built-in signal receiver for controlling the indoor unit with the remote control.

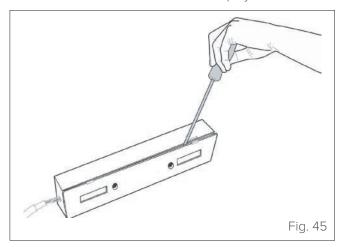
The remote display is supplied with the indoor unit but is not connected to the board.

Proceed as follows to install and connect it.

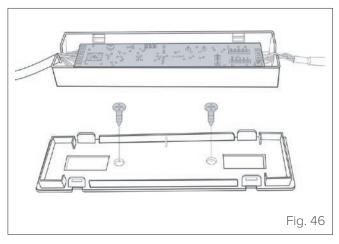
1 Cut and remove the two pieces.



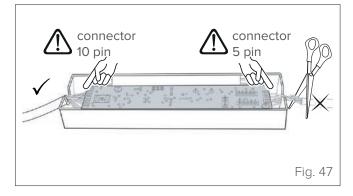
2 Take the bottom off the remote display box.



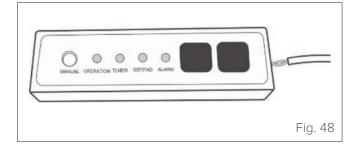
**3** Remove the protective PVC. Fasten the bottom of the display box with the two screws.



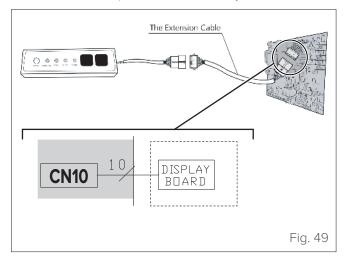
**4** Cut the cable on the 5-pin connector side.



**5** Fasten the protective PVC cover on the bottom of the remote display.



**6** Connect the 10-pin connector of the remote display to the CN10 connector of the main board. Use the 2m extension lead provided if necessary.



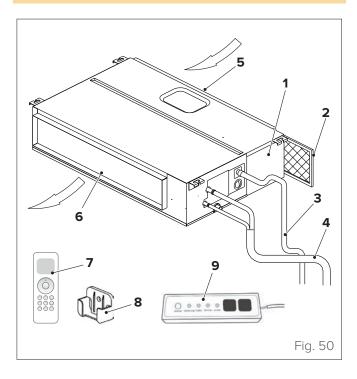


#### **WARNING**

The remote display must be fixed in a position that allows it to receive the signal from the remote control without interference.

# 3 USE

# 3.1 Description of system components



- 1 Electrical panel
- 2 Filter
- 3 Flexible drainage hose
- 4 Refrigerant connection pipe
- **5** Air inlet
- 6 Air outlet
- **7** Remote control
- 8 Remote control support
- 9 Remote display



#### **WARNING**

The images in this manual are provided for illustrative purposes only. The appearance of your device may differ slightly from the illustrations shown here. Refer to the actual characteristics of the unit.



#### **CAUTION DANGER**

- If an abnormal condition occurs (e.g. there is a smell of burning), turn the unit off immediately and ask the dealer for assistance to avoid the risk of injury, fire or electrocution.
- DO NOT allow the indoor unit or the remote control to get wet. Humidity can cause an electric shock or a fire risk.
- DO NOT insert fingers, bars or other objects into the air inlet or outlet openings. These operations can be dangerous because the fan can rotate at high speed.
- DO NOT use flammable sprays, such as hairspray or paint, near the unit. These materials can cause fire or combustion.

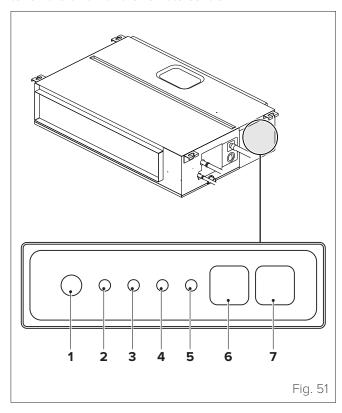


# **WARNING**

- DO NOT touch the air outlet while the flaps are swinging. Fingers can get trapped or the unit can break down.
- To prevent the appliance from deteriorating, do not use the air conditioner for preservation purposes (food, plants, animals, works of art, etc.).
- DO NOT touch the indoor unit's evaporator coils. The evaporator coils are sharp and can cause personal injury.
- DO NOT place objects that are not resistant to humidity under the indoor unit. A relative humidity of 80% can cause condensate to form.
- DO NOT expose heat generating appliances to cold air and do not place them under the indoor unit. The airflow can cause incomplete combustion, while the heat can cause the unit to deform.
- After long periods of use, check the indoor unit to make sure that it is not damaged.
   Damage can cause the indoor unit to fall and cause personal injury.
- If the air conditioner is used at the same time as other heating devices, the room must be aired properly to avoid oxygen deficiencies.
- DO NOT use the air conditioner if an insecticidal fumigant is used in the room.
   The chemicals can be absorbed by the unit and create dangerous situations for people who are hypersensitive to those substances.

# 3.2 Manual operation (without remote control)

If the remote control does not work, the unit can be operated manually with the **manual control** button located on the indoor unit. Note that manual operation is only a temporary solution, and it is highly recommended to run the unit with the remote control.



- 1 Manual button
- 2 Operation indicator
- **3** Timer light
- 4 PRE-DEF indicator (preheating/defrosting)
- **5** Alarm indicator
- 6 Infrared receiver
- 7 LED display (shows the temperature set or the error codes if an alarm is triggered)
  - MANUAL button: This button is used to select the operating mode in the following order: AUTO, FORCED COOL, OFF.
  - Forced Cooling Mode: In FORCED COOL mode, the operation light flashes. The system operates with the fan at high speed for 30 minutes, then switches to AUTO mode. During this operating cycle, the remote control is disabled.

# 3.3 Other functions

#### Automatic restart

If the power supply to the unit is interrupted, the unit will automatically restart with the last settings when it is restored.

#### Detection of refrigerant leaks

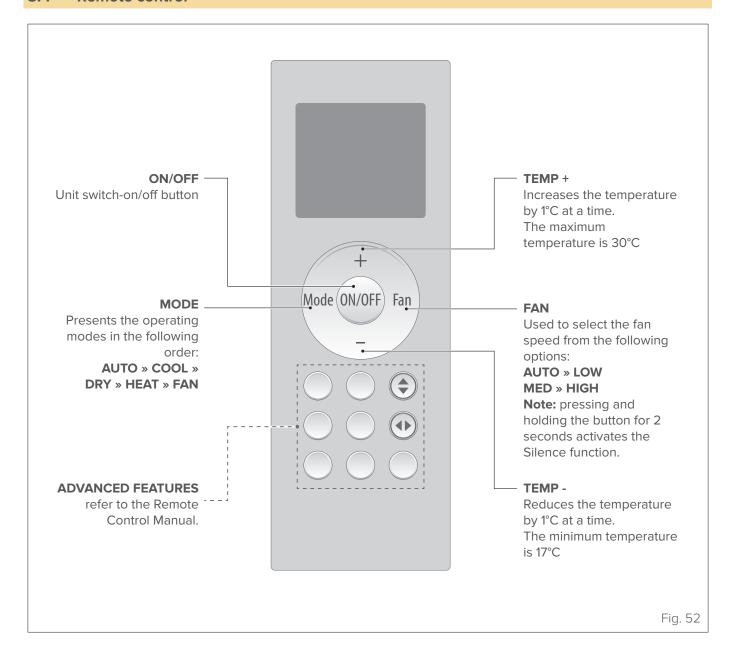
The indoor unit automatically displays "EC" when it detects a refrigerant leak.



#### **WARNING**

For a detailed explanation of the unit's advanced features (such as TURBO mode and self-cleaning functions), refer to the **Remote Control Manual**.

# 3.4 Remote control



# 3.5 Operation

For optimum performance in cooling, heating and dehumidification modes, use the unit within the temperature ranges below. If the air conditioner is used outside of these ranges, some protective functions may trip and cause suboptimal operation.

	Cooling Mode	Heating Mode	Dehumidification Mode
Room temperature	17°C ÷ 32°C	0°C ÷ 30°C	10°C ÷ 32°C
Outdoor temperature	-15°C ÷ 50°C	-15°C ÷ 24°	0°C ÷ 50°C

# To further optimise unit performance, take the following steps:

- Keep doors and windows closed.
- Limit power consumption using the ON TIMER and OFF TIMER.
- Avoid obstructing air inlets or outlets.
- Inspect and clean the filters regularly.

## 4 MAINTENANCE

It is good practice to periodically clean both the internal and external parts of the appliance. This guarantees its proper operation and durability.

Carry out periodic maintenance of the appliance in accordance with the regulations in force.

Maintenance must be carried out by qualified technical personnel.

## 4.1 Cleaning the indoor unit



## ATTENTION ELECTRIC DANGER

- Before cleaning or maintenance, always switch off the air conditioner and disconnect it from the power supply.
- DO NOT replace blown fuses with fuses of different amps because this could damage the circuit or cause a fire hazard.
- Check that all cables are connected correctly. Incorrectly connecting cables can create a fire or electrocution risk.



### **CAUTION**

- Use only a soft, dry cloth to clean the unit.
   If the unit is particularly dirty, you can use a cloth moistened in warm water.
- Check that the drain pipe is installed according to the instructions. If it is not, water leaks may occur resulting in material damage and fire and electrocution risks.



## IT IS PROHIBITED TO

- use chemicals or chemically treated cloths to clean the unit;
- use benzene, thinners, polishing powders or other solvents to clean the unit.
   These substances can cause cracking or deformation of the plastic surface;
- use water at temperatures above 40°C to clean the front panel. Very hot water can cause the panel to deform or discolour.

## 4.2 Cleaning the air filter

The filter stops dust and other particles from entering the indoor unit. A build-up of dust can reduce the efficiency of the air conditioner. For optimal efficiency, clean the air filter every two weeks or, if the zone is very dusty, more frequently. If the filter is very clogged and cannot be perfectly cleaned, it is advisable to replace it.



#### **WARNING**

It can be dangerous to remove and clean the filter . Disassembly and maintenance operations must be carried out by certified technical personnel.



## **CAUTION DANGER**

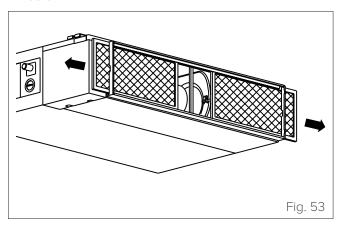
When removing the filter, avoid touching the metal parts of the unit. Sharp metal edges can be sharp.



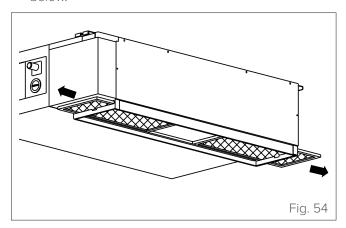
## IT IS PROHIBITED TO

dry the filter by exposing it to direct sunlight. The filter may shrink

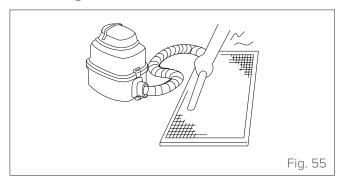
1 If the unit has rear ventilation, remove the filter following the directions of the arrows in the figure below.



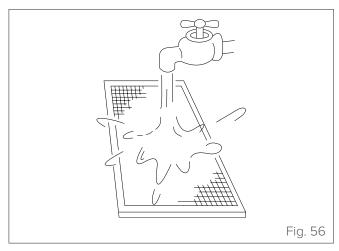
2 If the unit has downward ventilation, remove the filter following the directions of the arrows in the figure below.



- 3 Remove the air filter.
- **4** Clean the air filter with a vacuum cleaner or wash it with warm water and a mild detergent.
  - If you use a vacuum cleaner, put the inlet side facing the vacuum cleaner.



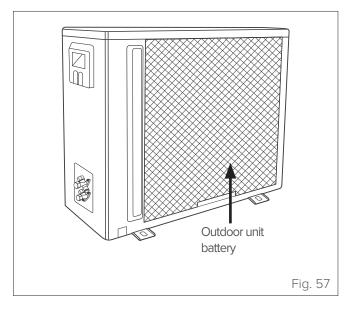
 If you use water, the inlet side must face downwards, in the opposite direction to the water flow.



- **5** Rinse the filter with clean water and let it dry in a cool, dry place, away from direct sunlight.
- 6 Once dry, reinsert the filter into the indoor unit.

## 4.3 Cleaning the outdoor unit

If the battery in the outdoor unit is clogged, remove the leaves and debris and then remove the dust with a jet of air or water.



## 4.4 Repairing refrigerant leaks

If there is a refrigerant leak, "EC" will appear on the LCD display and the LED will flash.

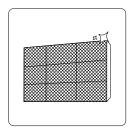


### **CAUTION DANGER**

- If there is a refrigerant leak, switch the air conditioner and any other fuel heating device off, ventilate the room and contact your local dealer. The refrigerant is toxic and flammable. DO NOT use the air conditioner until the leak has been repaired.
- If the air conditioner is to be installed in a small room, necessary measures must be taken to prevent the concentration of refrigerant in the room from exceeding the safety limit in the event of leaks. An excessive concentration of refrigerant can cause serious harm to health and be a serious risk to safety.

#### 4.5 **Extended periods of inactivity**

If you do not plan to use the air conditioner for an extended period of time, proceed as follows:



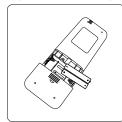
Clean all filters



Activate the Ventilation mode until the unit is completely dry (at least 12 hours)



Switch the unit off and disconnect it from the mains power supply



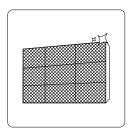
Remove the batteries from the remote control

#### Maintenance at the start of the 4.6 season

After a long period of non-use, or before a period of frequent use, proceed as follows:



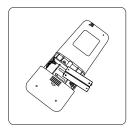
Check that the cables are intact



Clean all filters



Check that there are no leaks



Replace batteries

Remove all obstacles that could block the openings of the indoor and outdoor units.

Clean the air filter and the front grille of the indoor unit. Refit the clean and dry air filter in its original position.

Turn the main power switch on at least 12 hours before switching the unit on.

## 4.7 Troubleshooting



#### **CAUTION DANGER**

If any of the following conditions occur, switch the unit off immediately.

- The power cable is damaged or unusually hot.
- You can smell burning.
- The unit makes loud or abnormal noises.
- A fuse blows or the circuit breaker trips frequently.
- Water or other substance have fallen into the unit, or water or other substance have leaked from the unit.

DON'T TRY TO SOLVE THE PROBLEM YOURSELF. IMMEDIATELY CONTACT AN AUTHORISED SERVICE CENTRE.

## 4.7.1 Common problems

The problems described below do not represent malfunctions and, in most cases, do not require repair.

Problem	Possible causes	
The unit does not switch on when the ON/OFF button is pressed	<ul> <li>The unit has a 3-minute delay protection feature that prevents overloading. The unit cannot be restarted until three minutes have elapsed since shutdown.</li> <li>If the operation light and the PRE-DEF indicators (Preheating/Defrosting) are on, this means that the outdoor temperature is too low and the anti-cold function has been started to defrost the unit.</li> </ul>	
The unit switches from Cooling/Heating mode to Ventilation mode	<ul> <li>The unit can change operating mode to prevent frost formation. As the temperature rises, the unit will return to the previously set mode.</li> <li>The set temperature has been reached and the compressor has switched off. The unit will continue to operate in response to temperature changes.</li> </ul>	
The indoor unit emits a white haze	- In humid regions, a marked difference in temperature between the air in the room and the air conditioning can cause a white mist to form.	
Both the indoor and outdoor units emit a white haze	- When the unit restarts in Heating mode after a defrosting cycle, it may emit a white haze due to moisture generated by the defrosting process.	
The indoor unit is noisy	<ul> <li>An air current noise is heard when the ventilation slit returns to its original position.</li> <li>You will hear a crackling sound after the Heating mode is activated due to the expansion and contraction of the plastic parts of the unit.</li> </ul>	
Both the indoor and outdoor units are noisy	- Slight hissing during operation: this noise is normal and is due to the circulation of refrigerant gas in the indoor and outdoor units.  - Slight hissing when the system starts up, immediately after shutdown or during defrecting; this poise is normal and is caused by stopping or changing the direction of	
The outdoor unit is noisy	- The unit emits various noises depending on the operating mode in use.	
Indoor or outdoor unit emits dust	- During a long period of non-use, dust may accumulate on the unit and be emitted when it is turned on again. This problem can be partly solved by covering the unit during prolonged periods of inactivity.	
The unit smells bad	<ul> <li>The unit may absorb ambient odours (furniture, cooking, cigarettes, etc.) and emit them during operation.</li> <li>Mold has formed on the unit's filters and must be removed.</li> </ul>	
The fan of the outdoor unit is not working	- During operation, fan speed is controlled to optimise the operation of the air conditioner.	
Operation is erratic or unpredictable, or the unit does not respond to commands	Interference from mobile phone repeaters and remote amplifiers may cause the unit to malfunction. In this case, try to solve the problem as follows:  - Disconnect the unit from the power mains and then reconnect it.  - Press the ON/OFF button on the remote control to restart operation.	

**NOTE**: if the problem persists, contact your local dealer or nearest service centre, providing a detailed description of the malfunction and specifying the model code.

## **Anomalies and remedies**

If problems occur, please check the following before contacting a service centre.

Anomalies	Possible causes	Remedies		
	The set temperature may be higher than the room temperature	Set a lower temperature		
	The heat exchanger of the indoor or outdoor unit is dirty	Clean the heat exchanger (Service Centre)		
	The air filter is dirty	Remove the filter and clean it following instructions		
	The air inlet or outlet of the indoor or outdoor unit is blocked	Switch the unit off, remove the cause of the obstruction and switch the air conditioner on again		
Unsatisfactory cooling	Open doors and windows	Close doors and windows when using the unit		
performance	Sunlight produces excessive heat	Close curtains and windows during the hottest hours or when the sun is brightest		
	Too many heat sources in the room (people, computers, electronic devices, etc.)	Reduce heat sources		
	Low refrigerant level due to leakage or prolonged use	Check for leaks, reseal the system if necessary and refill the refrigerant (Service Centre)		
	The SILENCE function is active	The SILENCE function can reduce product performance by reducing the frequency of operation. Deactivate the SILENCE function.		
	Power failure	Wait for power to be restored		
	The unit is turned off	Switch on the device		
	The fuse is blown	Replace the fuse (Service Centre)		
The unit does not work	Remote control batteries are low	Replace batteries		
	Protection function with 3-minute delay is active	Wait three minutes before restarting the unit		
	The timer is active	Deactivate the timer		
	The amount of refrigerant in the system is excessive or insufficient	Check for leaks and top up the refrigerant (Service Centre)		
The unit starts or stops frequently	Incompressible gas has entered or moisture has penetrated the system.	Evacuate the system and recharge the refrigerant (Service Centre)		
	The compressor is faulty	Replace the compressor (Service Centre)		
	The voltage is too high or too low	Install a voltage controller (Service Centre)		
	The outside temperature is extremely low	Using an auxiliary heating appliance		
Unsatisfactory heating performance	Cold air enters through doors and windows	Close doors and windows when using the unit		
	Low refrigerant level due to leakage or prolonged use	Check for leaks, reseal the system if necessary and refill the refrigerant (Service Centre)		
The indicator lights continue to flash An error code appears on the display of the indoor unit: • E0, E1, E2	The unit may stop or continue to operate properly. If the indicator lights continue to flash or error codes are displayed, wait approximately 10 minutes. The problem may solve itself. If not, disconnect the unit from the power mains and reconnect it. Switch on the unit. If the problem persists, disconnect the unit from the power supply and contact the nearest service centre.			
• P1, P2, P3 • F1, F2, F3				

**NOTE**: if, after performing the above checks and diagnostic procedures, the problem persists, switch the unit off immediately and contact an authorised service centre.

## 4.8 53M indoor unit error codes

Error code	Cause	Timer light	"Operation light (flashes)"
E0/EA	Indoor unit EEPROM parameter error	OFF	Once
E1	Communication error between the indoor unit and the outdoor unit	OFF	Twice
E3	Internal fan speed outside the normal range	OFF	4 times
E4	Indoor room temperature sensor T1 circuit open or in short circuit	OFF	5 times
E5	T2 evaporator coil temperature sensor circuit open or in short circuit	OFF	6 times
EC	Detection of refrigerant leaks (for some models)	OFF	7 times
EE	Water level alarm malfunction	OFF	8 times
F0	Current overload protection	ON	Once
F1	Outdoor room temperature sensor T4 circuit open or in short circuit	ON	Twice
F2	T3 condenser coil temperature sensor circuit open or in short circuit	ON	3 times
F3	TP compressor drain temperature sensor circuit open or in short circuit	ON	4 times
F4	Outdoor unit EEPROM parameter error	ON	5 times
F5	External fan speed outside the normal range (for some models)	ON	6 times
FA	Communication error between two internal chips (for some models)	ON	11 times
P0	IPM malfunction or IGBT overcurrent protection	FLASHING	Once
P1	Over-voltage/under-voltage protection	FLASHING	Twice
P4	Compressor inverter drive error	FLASHING	5 times
P5	Indoor unit mode conflict (combination with MULTI outdoor unit)	FLASHING	6 times
P6	Low pressure protection (for some models)	FLASHING	7 times
P7	IPM module high temperature protection (for some models)	FLASHING	8 times

#### 4.9 27M - 35M - 70M - 105M - 140M -160M indoor unit error codes

Error code	Cause	Timer light	"Operation light (flashes)"
EO	Internal EEPROM malfunction	OFF	Once
E1	Communication malfunction between the indoor unit and the outdoor unit	OFF	Twice
E3	Internal fan speed malfunction	OFF	4 times
E4	Temperature sensor T1 circuit open or in short circuit	OFF	5 times
E5	Temperature sensor T2 circuit open or in short circuit	OFF	6 times
EC	Detection of refrigerant leaks	OFF	7 times
EE	Water level alarm malfunction	OFF	8 times
E8	Communication error between master and slave units (for twin configuration)	OFF	9 times
E9	Other malfunction of indoor units (for twin configuration)	OFF	10 times
Ed	Faulty outdoor unit (due to the old communication protocol)	OFF	11 times
F0	Overcurrent protection (for some units)	ON	Once
F1	Temperature sensor T4 circuit open or in short circuit	ON	Twice
F2	Temperature sensor T3 circuit open or in short circuit	ON	3 times
F3	Temperature sensor T5 circuit open or in short circuit	ON	4 times
F4	External EEPROM malfunction (for some units)	ON	5 times
F5	External fan speed malfunction	ON	6 times
F6	Temperature sensor T2B circuit open or in short circuit (for free-match indoor units)	ON	7 times
F7	Communication error between the automatic lifting panel and the slim box	ON	8 times
F8	Faulty automatic lifting panel (for slim box with automatic lifting panel)	ON	9 times
F9	Automatic lifting panel not closed (for slim box with automatic lifting panel)	ON	10 times
FA	Communication malfunction between two internal chips (for DUCT-SL 2)	ON	11 times
P0	IPM module malfunction	FLASHING	Once
P1	DC voltage protection too high/too low	FLASHING	Twice
P2	Maximum compressor temperature protection	FLASHING	3 times
P3	Low room temperature protection	FLASHING	4 times
P4	Compressor inverter drive protection	FLASHING	5 times
P6	Compressor low pressure protection	FLASHING	7 times
P7	Faulty external IGBT sensor	FLASHING	8 times

## 5 DISPOSAL

The manufacturer is registered on the National EEE Register, in compliance with implementation of Directive 2012/19/EU and pertinent national regulations on electrical and electronic equipment waste.

This Directive requires electrical and electronic equipment to be disposed of properly.

Equipment bearing the crossed-out wheelie bin symbol must be disposed of separately at the end of its lifecycle to prevent damage to human health and to the environment.

Electrical and electronic equipment must be disposed of together with all of its parts.

To dispose of "household" electrical and electronic equipment, the manufacturer recommends contacting an authorised dealer or an authorised ecological site.

"Professional" electrical and electronic equipment must be disposed of by authorised personnel through established waste disposal authorities around the country.

In this regard, here is the definition of household WEEE and professional WEEE.

**WEEE** from private households: WEEE originating from private households and WEEE which comes from commercial, industrial, institutional and other sources which, because of its nature and quantity, is similar to that from private households. Subject to the nature and quantity, where the waste from EEE was likely to have been used by both a private household and users of other than private households, it will be classed as private household WEEE;

**Professional WEEE**: all WEEE which comes from something other than private households.

This equipment may contain:

- refrigerant gas, the entire contents of which must be recovered in suitable containers by specialised personnel with the necessary qualifications;
- lubrication oil contained in compressors and in the refrigeration circuit to be collected;
- mixtures with antifreeze in the water circuit, the contents of which are to be collected;
- mechanical and electrical parts to be separated and disposed of as authorised.

When the components to be replaced for maintenance purposes are removed or when the entire unit reaches the end of its life and needs to be removed from the installation, waste should be separated by its nature and disposed of by authorised personnel at existing collection centres.



35M

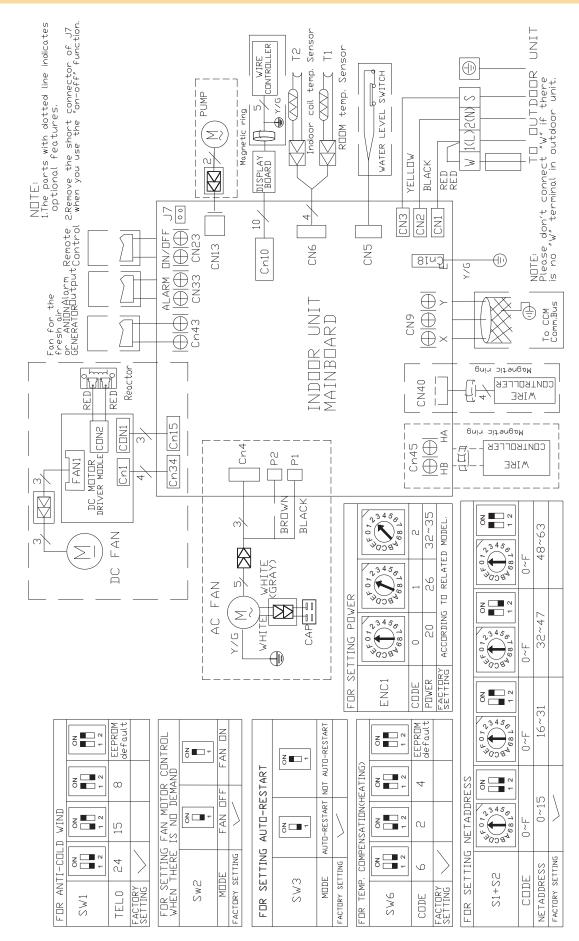
**SIZE** 27M - 35

SERIES

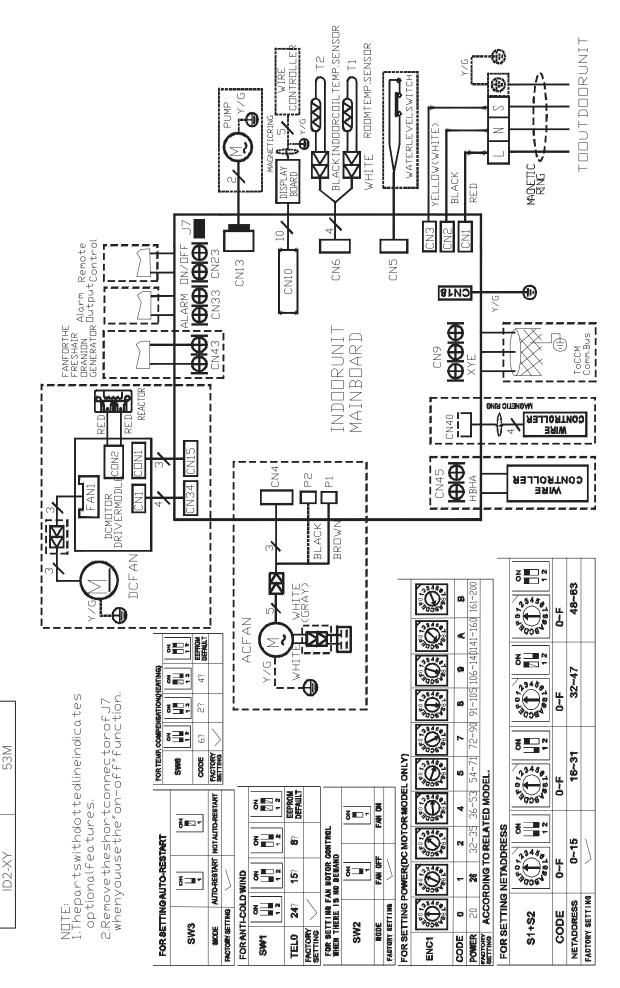
ID2-XY

## **6 ATTACHMENTS**

## 6.1 Indoor unit wiring diagrams (27M - 35M)



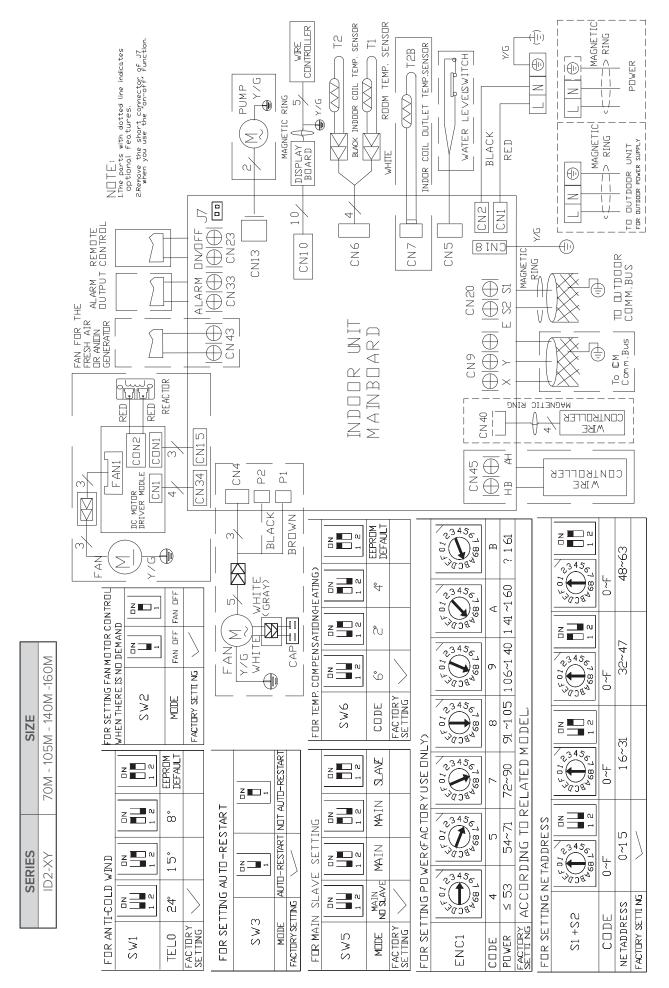
## 6.2 Outdoor unit wiring diagrams (53M)



SIZE

SERIES

## 6.3 Outdoor unit wiring diagrams (70M - 105M - 140M -160M)



#### 6.4 **Declaration of conformity**



# DECLARATION OF CONFORMITY EU DICHIARAZIONE DI CONFORMITÀ UE

KONFORMITÄTSERKLÄRUNG EU DECLARATION DE CONFORMITE EU DECLARACIÓN DE CONFORMIDAD EU

#### **W**E DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE MACHINE

DICHIARIAMO SOTTO LA NOSTRA SOLA RESPONSABILITÀ CHE LA MACCHINA WIR ERKLÄREN EIGENVERANTWORTLICH, DASS DIE MASCHINE NOUS DÉCLARONS SOUS NOTRE SEULE RESPONSABILITÉ QUE LA MACHINE EL FABRICANTE DECLARA BAJO SU EXCLUSIVA RESPONSABILIDAD QUE LA MÁQUINA

**DIRECT EXPANSION TERMINALS - Heat pump CATEGORY** 

TERMINALI AD ESPANSIONE DIRETTA - Pompa di calore **CATEGORIA** 

DIREKTVERDAMPFUNGSGERÄTE - Wärmepumpe **KATEGORIE** 

TERMINAUX À DÉTENTE DIRECTE - Pompe à chaleur CATEGORIE

TERMINALES POR EXPANSIÓN DIRECTA - Bomba de calor CATEGORIA

TYPE / TIPO / TYP / TYPE / TIPO

#### ID2-XY 27M ID2-XY 35M ID2-XY 53M

- COMPLIES WITH THE FOLLOWING EEC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:
- RISULTA IN CONFORMITÀ CON QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE CEE, COMPRESE LE ULTIME MODIFICHE, E CON LA RELATIVA LEGISLAZIONE NAZIONALE DI RECEPIMENTO:
- DEN IN DEN FOLGENDEN EWG-RICHTLINIEN VORGESEHENEN VORSCHRIFTEN, EINSCHLIEßLICH DER LETZTEN ÄNDERUNGEN, SOWIE DEN ANGEWANDTEN LANDESGESETZEN ENTSPRICHT:
- EST CONFORME AUX DIRECTIVES CEE SUIVANTES, Y COMPRIS LES DERNIÈRES MODIFICATIONS, ET À LA LÉGISLATION NATIONALE D'ACCUEIL CORRESPONDANTE
- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CEE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

X 2014/35/EC low voltage directive

direttiva bassa tensione

Bestimmungen der Niederspannungsrichtlinie

directive basse tension directiva de baja tensión

 $\boxtimes$ 2014/30/UE electromagnetic compatibility

compatibilità elettromagnetica Elektromagnetische Verträglichkeit compatibilité électromagnétique compatibilidad electromagnética

 $\boxtimes$ 2009/125/CE Ecodesign / Progettazione ecocompatibile / Ecodesign / Éco-conception / Ecodiseño

 $\boxtimes$ 2011/65/UE RoHs

-Unit manufactured and tested according to the followings Standards:

-Unità costruita e collaudata in conformità alle seguenti Normative:

-Unité construite et testée en conformité avec les Réglementations suivantes

-Unidad construida y probada de acuerdo con las siguientes Normativas

-Gebautes und geprüftes Gerät nach folgenden Normen

30/09/2019

EN 55014-1 :2017 EN 55014-2 :2015 EN 61000-3-3 :2013 EN 61000-3-2 :2014

EN 60335-2-40 :2003+A11 :2004+A12 :2005+A1 :2006+A2 :2009+A13 :2012

EN60335-1:2012+A11:2014+A13:2017 EN 62233:2008 EN 62321-1:2013 EN 62321-2:2014 EN 62321-3-1:2014 EN 62321-4:2014 EN 62321-5:2014 EN 62321-6:2015

EN 62321-7-1 :2015 EN 62321 :2009

-Responsible to constitute the technical file is the company n°.00708410253 and registered at the Chamber of Commerce of Belluno Italy

-Responsabile a costituire il fascicolo tecnico è la società n° 00708410253 registrata presso la Camera di Commercio di Belluno Italia

-Verantwortliche für die technischen Unterlagen zusammenstellen n°.00708410253 ist das Unternehmen bei der Handelskammer von Belluno Italien registriert

-Responsable pour compiler le dossier technique est la société n°00708410253 enregistrée à la Chambre de Commerce de Belluno en Italie

-Encargado de elaborar el expediente técnico es la empresa N º 00708410253 registrada en la Cámara de Comercio de Belluno Italia

NAME / NOME / VORNAME / PRÉNOM / NOMBRE

SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS

COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO

STEFANO

BEILÒ LEGALE RAPPRESENTANTE

CLIVET S.P.A. - Via Camp Lonc, 25 - Z.I. VILLAPAIERA - 32030 FELTRE (BL) – ITALIA
Cap. Soc. Eur 20.000.000 i.v. – C.F. e reg.lmpr. BL n°.00708410253 – R.E.A. n°.66577 –P.I./ VAT :IT 00708410253
Tel. +39 0439 3131 - Fax +39 0439 313300 – Sito Web : <a href="www.clivet.it">www.clivet.it</a> E-mail : <a href="mailto:info@clivet.it">info@clivet.it</a> - Registro A.E.E. IT08020000001697

FELTRE.



## **DECLARATION OF CONFORMITY EU**

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#### WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE MACHINE

DICHIARIAMO SOTTO LA NOSTRA SOLA RESPONSABILITÀ CHE LA MACCHINA WIR ERKLÄREN EIGENVERANTWORTLICH, DASS DIE MASCHINE NOUS DÉCLARONS SOUS NOTRE SEULE RESPONSABILITÉ QUE LA MACHINE EL FABRICANTE DECLARA BAJO SU EXCLUSIVA RESPONSABILIDAD QUE LA MÁQUINA

**DIRECT EXPANSION TERMINALS - Heat pump CATEGORY** TERMINALI AD ESPANSIONE DIRETTA - Pompa di calore **CATEGORIA** DIREKTVERDAMPFUNGSGERÄTE - Wärmepumpe **KATEGORIE** TERMINAUX À DÉTENTE DIRECTE - Pompe à chaleur **CATEGORIE** TERMINALES POR EXPANSIÓN DIRECTA - Bomba de calor **CATEGORIA** 

TYPE / TIPO / TYP / TYPE / TIPO

**ID2-XY 70M** 

- COMPLIES WITH THE FOLLOWING EEC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:
- RISULTA IN CONFORMITÀ CON QUANTO PREVISTO DALLE SEGUENTI DIRETTIVE CEE, COMPRESE LE ULTIME MODIFICHE, E CON LA RELATIVA LEGISLAZIONE NAZIONALE DI RECEPIMENTO:
- DEN IN DEN FOLGENDEN EWG-RICHTLINIEN VORGESEHENEN VORSCHRIFTEN, EINSCHLIEßLICH DER LETZTEN ÄNDERUNGEN, SOWIE DEN ANGEWANDTEN LANDESGESETZEN ENTSPRICHT:
- EST CONFORME AUX DIRECTIVES CEE SUIVANTES, Y COMPRIS LES DERNIÈRES MODIFICATIONS, ET À LA LÉGISLATION NATIONALE D'ACCUEIL CORRESPONDANTE
- ES CONFORME A LAS SIGUIENTES DIRECTIVAS CEE, INCLUIDAS LAS ÚLTIMAS MODIFICACIONES, Y A LA RELATIVA LEGISLACIÓN NACIONAL DE RECEPCIÓN:

2014/35/EC M low voltage directive

direttiva bassa tensione

Bestimmungen der Niederspannungsrichtlinie

directive basse tension directiva de baja tensión

 $\boxtimes$ 2014/30/UE electromagnetic compatibility

compatibilità elettromagnetica Elektromagnetische Verträglichkeit compatibilité électromagnétique compatibilidad electromagnética

M 2009/125/CE Ecodesian / Progettazione ecocompatibile / Ecodesian / Éco-conception / Ecodiseño

 $\boxtimes$ 2011/65/UE RoHs

-Unit manufactured and tested according to the followings Standards:

-Unità costruita e collaudata in conformità alle seguenti Normative

-Unité construite et testée en conformité avec les Réglementations suivantes

-Unidad construida y probada de acuerdo con las siguientes Normativas

-Gebautes und geprüftes Gerät nach folgenden Normen

EN 55014-1 :2017 EN 55014-2 :2015

EN 61000-3-3 :2013 EN 61000-3-2 :2014

EN 60335-2-40 :2003+A11 :2004+A12 :2005+A1 :2006+A2 :2009+A13 :2012

EN 60335-1 :2012+A11 :2014 EN 62233 :2008

EN 62321-1 :2013 EN 62321-2 :2014 EN 62321-3-1 :2014 EN 62321-4 :2014 EN 62321-5 :2014 EN 62321-6 :2015 EN 62321-7-1 :2015 EN 62321 :2009

-Responsible to constitute the technical file is the company n°.00708410253 and registered at the Chamber of Commerce of Belluno Italy

-Responsabile a costituire il fascicolo tecnico è la società n° 00708410253 registrata presso la Camera di Commercio di Belluno Italia -Verantwortliche für die technischen Unterlagen zusammenstellen n°.00708410253 ist das Unternehmen bei der Handelskammer von Belluno Italien registriert

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NAME / NOME / VORNAME / PRÉNOM / NOMBRE

SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS

COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / CARGO

STEFANO BÉLLÒ

LEGALE RAPPRESENTANTE

20/09/2018 FELTRE.

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Tel. +39 0439 3131 - Fax +39 0439 313300 – Sito Web : <a href="www.clivet.it">www.clivet.it</a> E-mail : <a href="mailto:info@clivet.it">info@clivet.it</a> - Registro A.E.E. IT08020000001697





## **DECLARATION OF CONFORMITY EU**

DICHIARAZIONE DI CONFORMITÀ UE KONFORMITÄTSERKLÄRUNG EU DECLARATION DE CONFORMITE EU DECLARACIÓN DE CONFORMIDAD EU

#### WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE MACHINE

DICHIARIAMO SOTTO LA NOSTRA SOLA RESPONSABILITÀ CHE LA MACCHINA WIR ERKLÄREN EIGENVERANTWORTLICH, DASS DIE MASCHINE NOUS DÉCLARONS SOUS NOTRE SEULE RESPONSABILITÉ QUE LA MACHINE EL FABRICANTE DECLARA BAJO SU EXCLUSIVA RESPONSABILIDAD QUE LA MÁQUINA

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TYPE / TIPO / TYP / TYPE / TIPO

ID2-XY 105M

- COMPLIES WITH THE FOLLOWING EEC DIRECTIVES, INCLUDING THE MOST RECENT AMENDMENTS, AND THE RELEVANT NATIONAL HARMONISATION LEGISLATION CURRENTLY IN FORCE:
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2014/35/EC M low voltage directive

direttiva bassa tensione

Bestimmungen der Niederspannungsrichtlinie

directive basse tension directiva de baja tensión

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compatibilità elettromagnetica Elektromagnetische Verträglichkeit compatibilité électromagnétique compatibilidad electromagnética

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EN 55014-1 :2006+A1 :2009+A2 :2011 EN 55014-2 :2015 EN 61000-3-

EN 61000-3-3:2013 EN 61000-3-12:2011 EN 61000-3-11:2000

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NAME / NOME / VORNAME / PRÉNOM / NOMBRE

SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS

COMPANY POSITION / POSIZIONE / BETRIEBSPOSITION / FONCTION / PARGO

STEFANO BELLÒ

LEGALE RAPPRESENTANTE

20/09/2018 FELTRE,

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# DECLARATION OF CONFORMITY EU DICHIARAZIONE DI CONFORMITÀ UE

KONFORMITÄTSERKLÄRUNG EU **DECLARATION DE CONFORMITE EU** DECLARACIÓN DE CONFORMIDAD EU

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TYPE / TIPO / TYP / TYPE / TIPO

ID2-XY 140M ID2-XY 160M

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direttiva bassa tensione

Bestimmungen der Niederspannungsrichtlinie

directive basse tension directiva de baja tensión

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NAME / NOME / VORNAME / PRÉNOM / NOMBRE

SURNAME / COGNOME / ZUNAME / NOM / APELLIDOS

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STEFANO BELLÒ

LEGALE RAPPRESENTANTE

FELTRE.

20/09/2018

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