

COMFORT LINE™

Instruction manual

EN7533229-03

06 - 2022



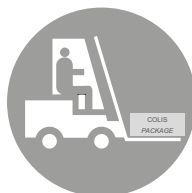
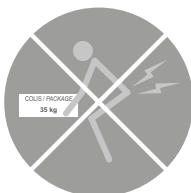
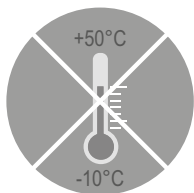
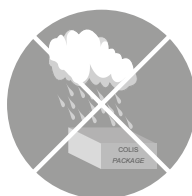
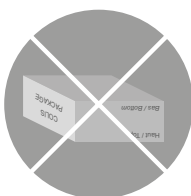


Fig. 1

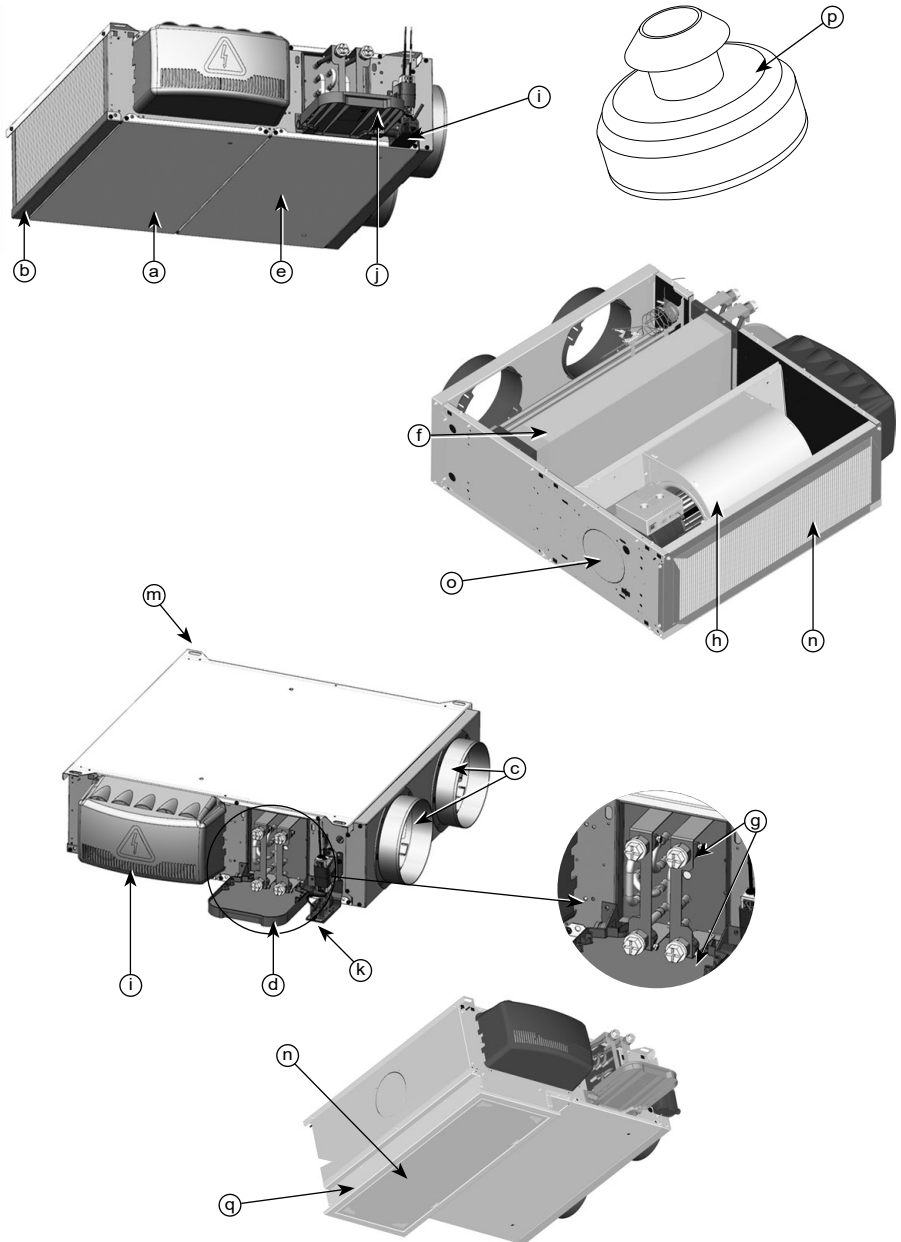


Fig. 2

Ref. produit/Item Ref.		Designation/Description	
7412910.430615		CFL12B 2TG500 LY ..	
An/Year	N° série/Serial Nbr	Composants/Components	Repère/Part
2016	02461545/0001	E39H TH8 230TH14	~
Moteur/Motor (Ph/Hz/V)	Batterie/Hydro. coil	Fluide/Fluid	
1+N 50/60HZ 230V/220V+T	2T2H	EAU	
P. moteur/Motor P. (W)	Elec Element (PH/Hz/V)	Maxi pressure	
74/89	1+N 50/60HZ 230/220V	1600000 PA (16BAR)	
I. moteur/Motor I. (A)	Elec Element P. (W)/I.(A)	Cablage/Wiring	
0.32/0.38	500	531	
tr. mn - 1/r.p.m.	Elec Diagram	N° Declaration CE	
	7349014	7341384.00	

Fig. 3

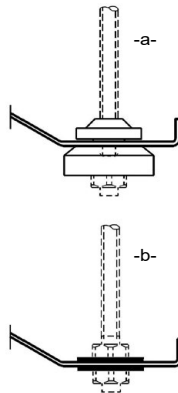


Fig. 4

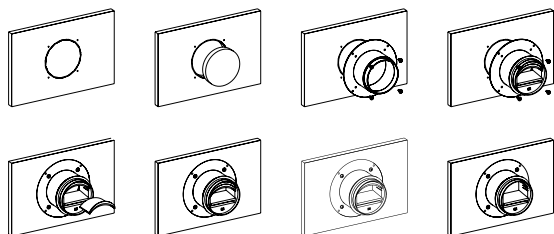


Fig. 5

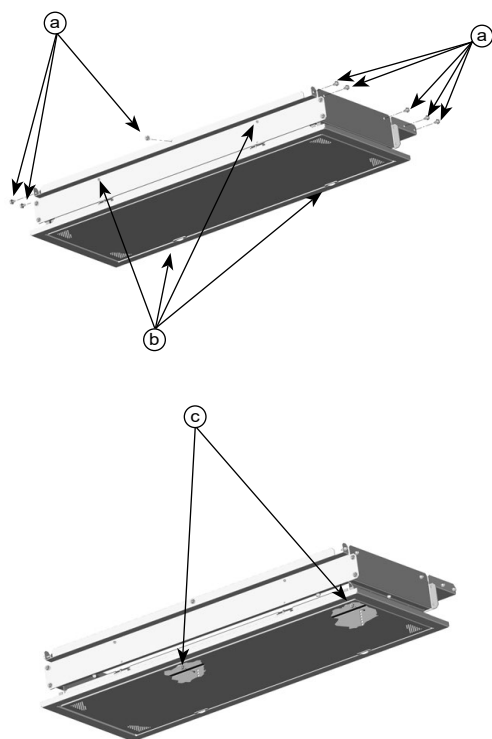


Fig. 6

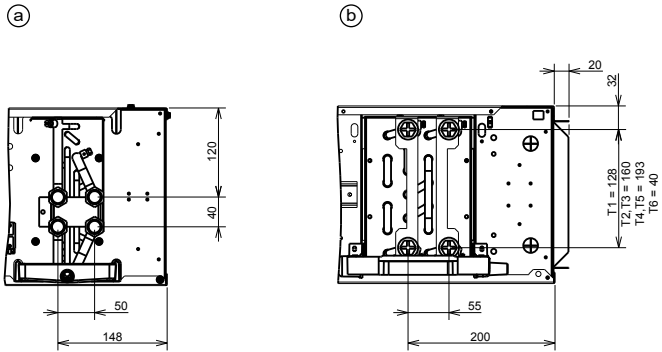


Fig. 7

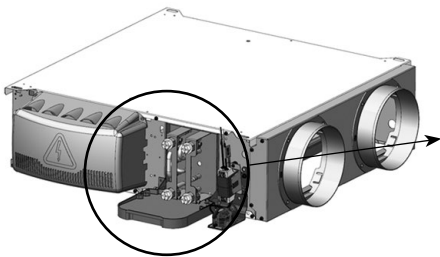


Fig. 8

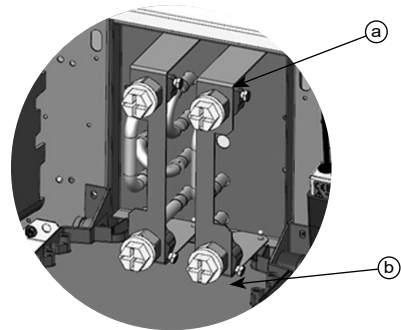
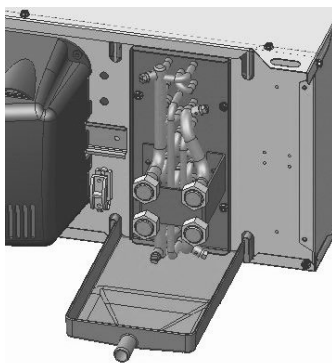


Fig. 9

a



b

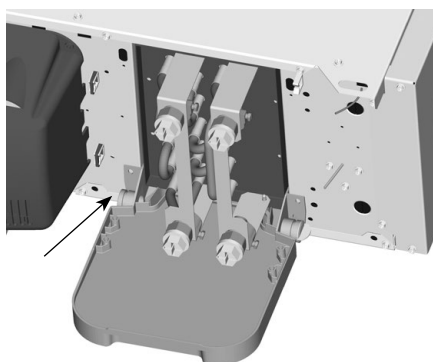
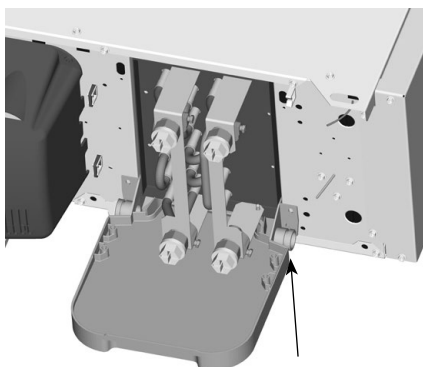


Fig. 10

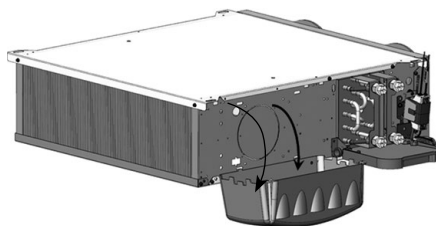
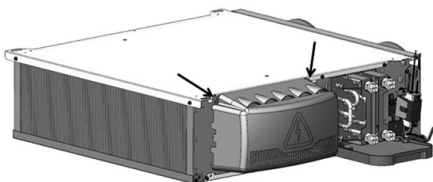


Fig. 11

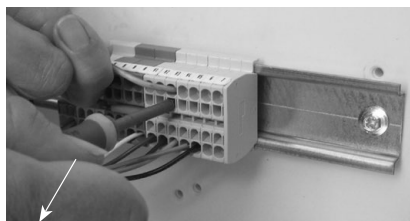
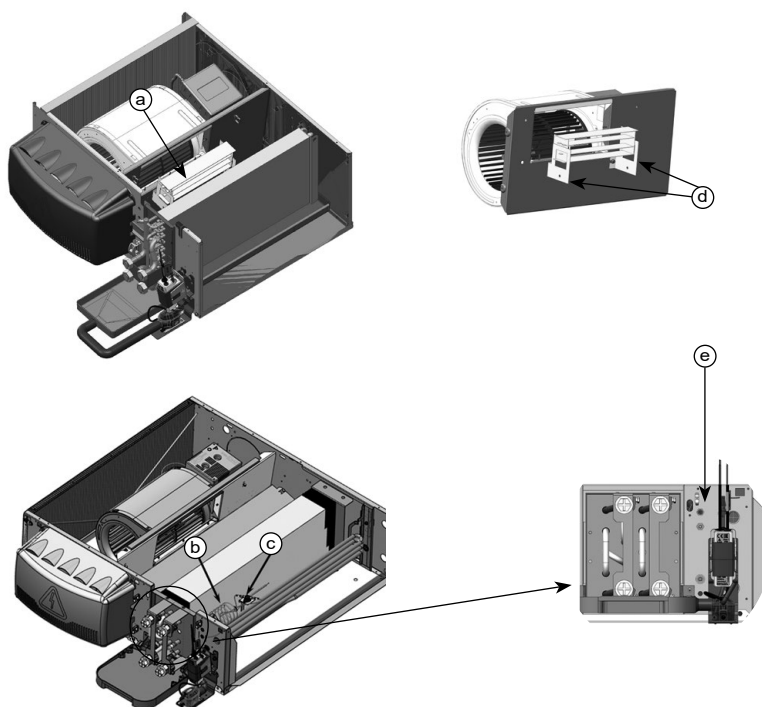


Fig. 12



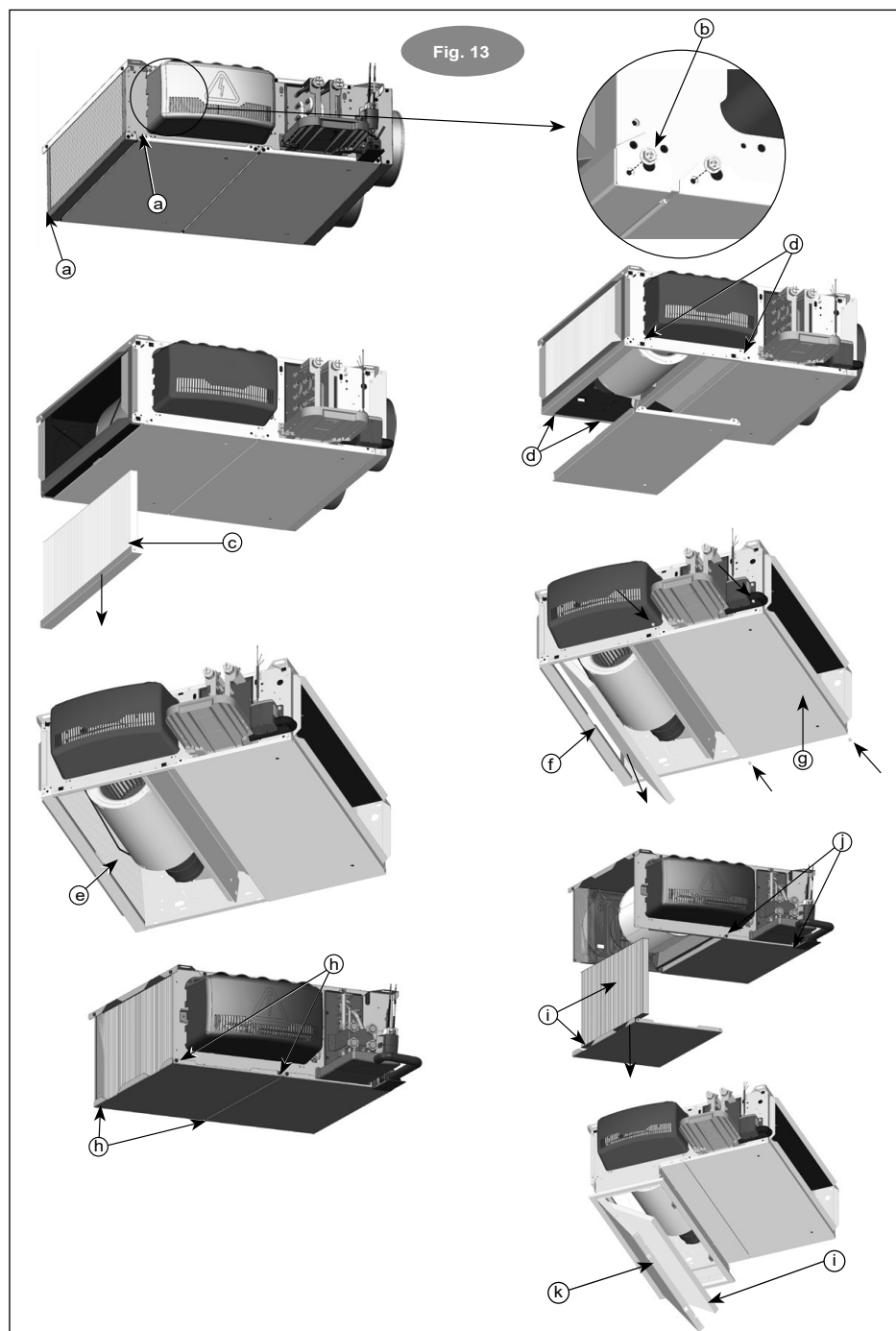


Fig. 14

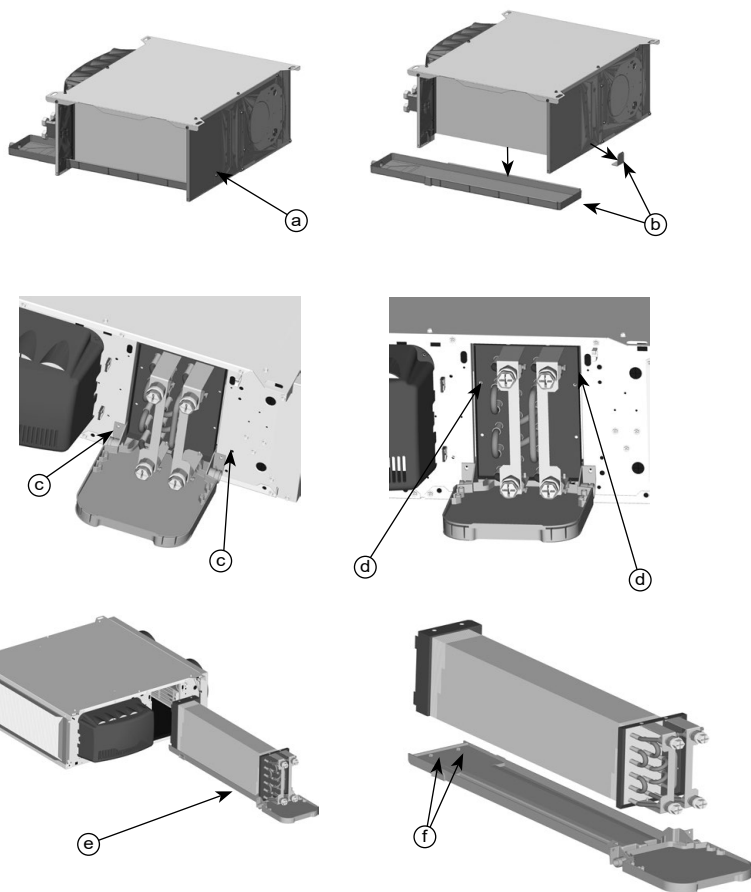


Fig. 15

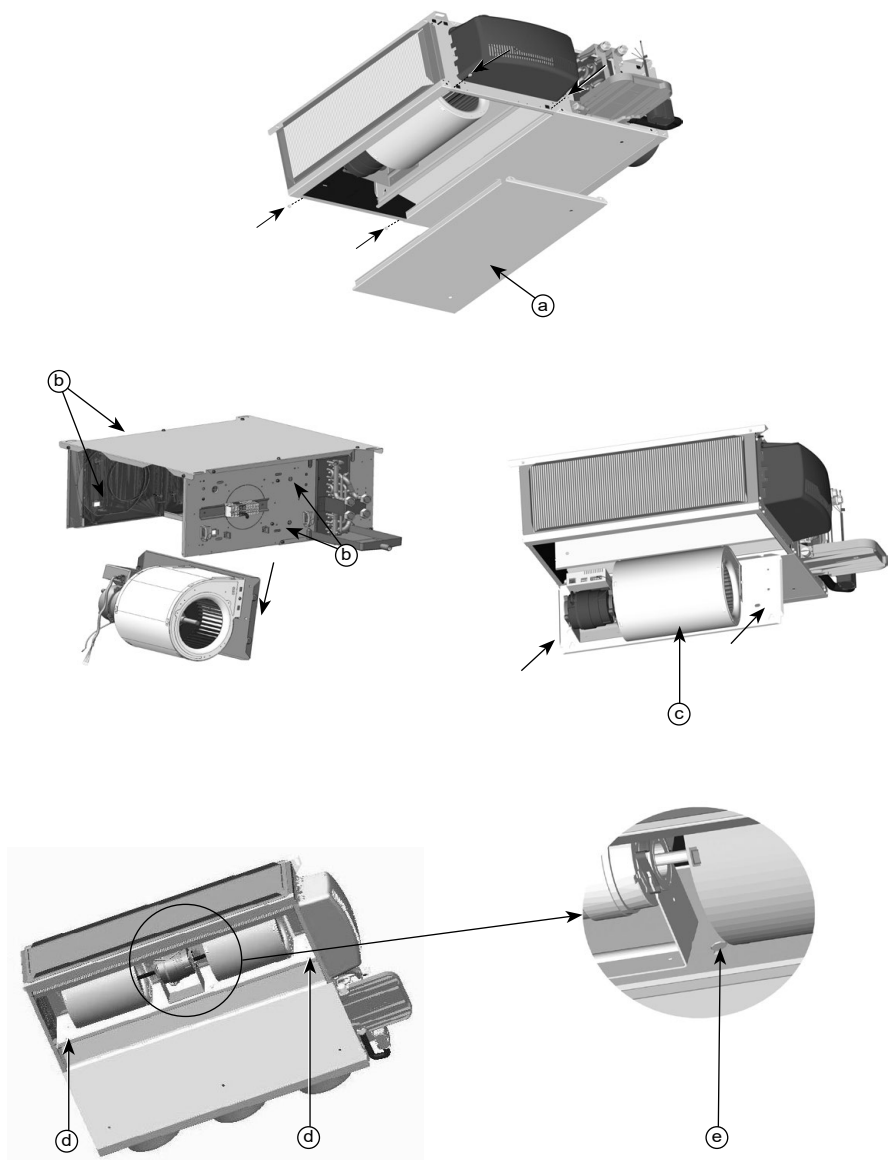


Fig. 16

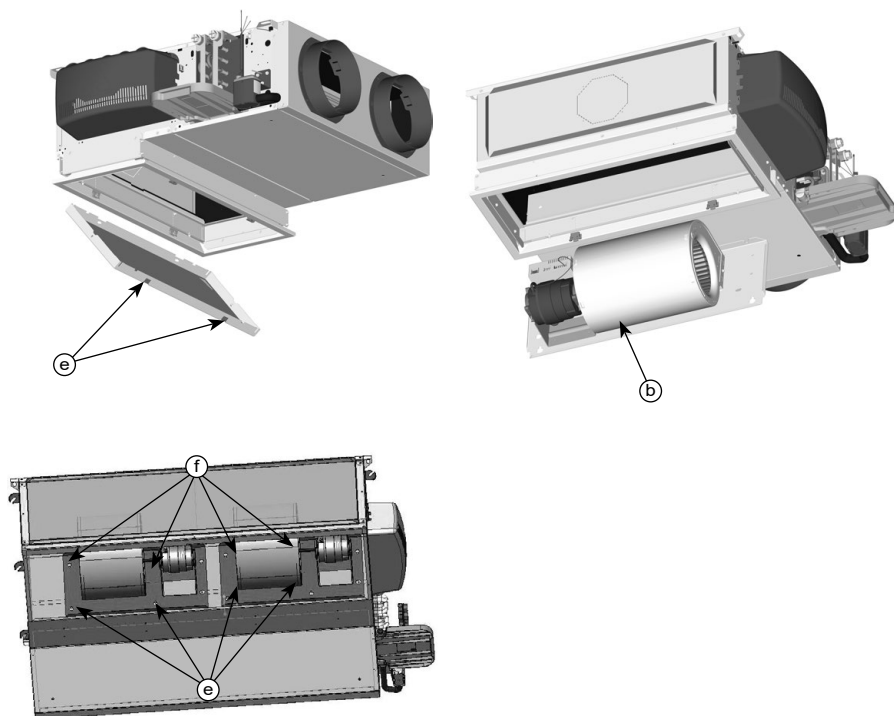


Fig. 17

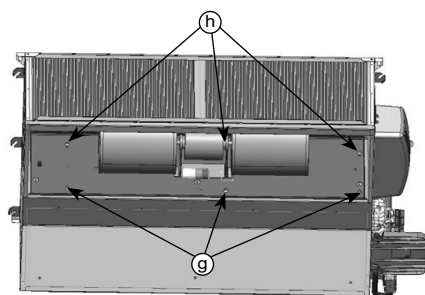


Fig. 18

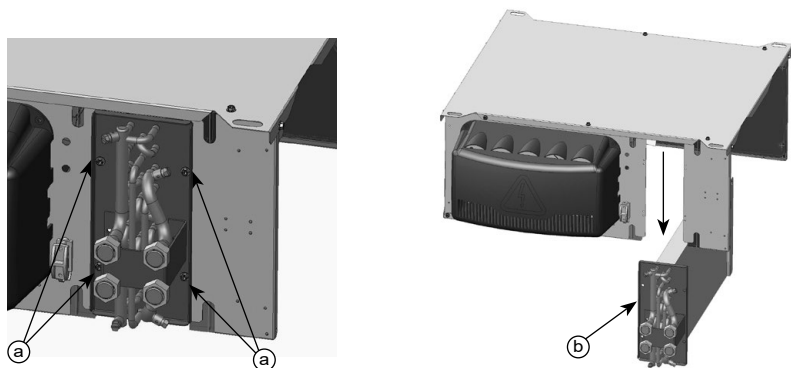
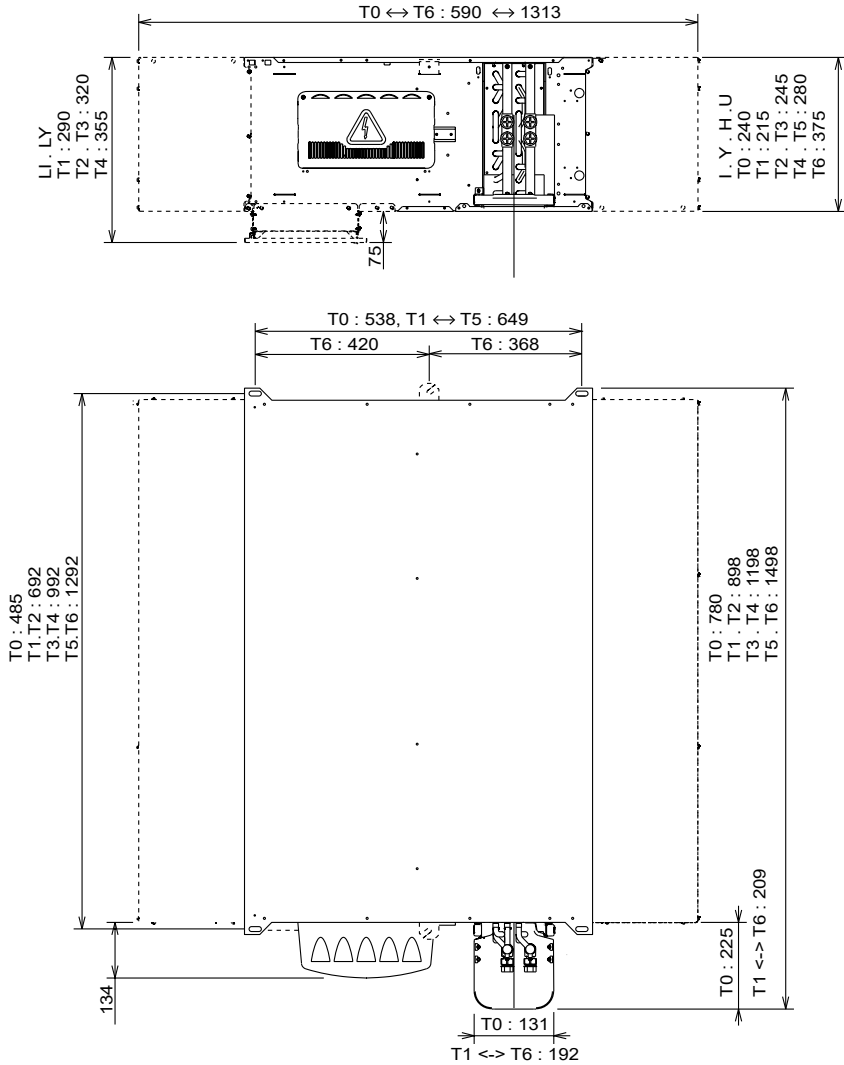


Fig. 19



COMFORT LINE™	Poids/Weight/Gewicht/Peso/Peso/Gewicht/Bec/аgırlık						
	T0	T1	T2	T3	T4	T5	T6
I	15	25	27	36	39	47	60
Y	15,5	27	29	39	42	51	66
H	16	34	34	46	49	60	77
U	21	35	38	51	57	-	-

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1 - UNPACKING, CHECKING AND STORING THE UNIT

Thank you for purchasing a **CIAT** unit. We trust that this unit will give you complete satisfaction.

To ensure correct operation, all connections (electrical, hydraulic, etc.) must be made in accordance with best industry practice and the regulations in force in the country of installation.

Your unit must be maintained and installed as recommended in this manual.

Each device bears a name plate. The reference number shown on the name plate must be quoted in all correspondence.

It is the recipient's duty to inspect the contents of the packages upon receipt:

- In the event of missing items, the customer must provide the exact number of parcels delivered.
- If any damage is found on delivery, report it on the delivery receipt in the presence of the delivery driver before the delivery note is signed.



In accordance with Article 133 of the French Code of Commerce, these claims must be reported to the carrier by registered letter within three business days of receipt. The terms "conditional" and "pending unwrapping" shall have no value. The client must unwrap the goods in the presence of the driver. Claims must be made at the time of delivery and be described in detail.

2 - HANDLING



For your safety, wear protective gloves



The unit must be handled with care and kept flat. Impacts may cause damage to the frame or the body of the unit and adversely affect its main functions and its appearance.

The unit should preferably be lifted by its mounting holes (Fig. 1, m) and **never** by the condensate pan or the collars. It is possible to carry out the installation using a fork-lift truck, as long as care is taken not to damage the unit.

The unit is placed inside the suspended ceiling. If the return has no duct, ensure that the rear of the unit is at a sufficient distance from the wall ($X = \text{min. } 250 \text{ mm}$).

3 - DESCRIPTION OF THE UNIT (FIG. 1)

The **COMFORT LINE™** (CFL) unit that you have just purchased is part of a range of comfort units with high available static pressure. It is used for heating, cooling, dehumidification and air filtration. It includes a coil with one or two hot water or cold water supply circuits and may include an electrical heater for heating.

- | | |
|--|---|
| a - Fan motor assembly access panel and filter | j - Condensate drain pan |
| b - Filter runner except for size 0 | k - Condensate drain pump |
| c - Supply air collars | l - Condensate drainage |
| d - Header couplings | m - Oblong mounting hole Ø12 x 30 mm |
| e - Coil lower access panel | n - Air filter |
| f - Exchanger coil | o - Fresh air inlet knockout (opposite side to electrics box) |
| g - Air bleed and drain valves | p - Resilient mount |
| h - Fan motor assembly | q - Return air grille |
| i - Electrics box | |

3.1 - Name plate (Fig.2)

The name plate contains all the information required to identify the unit and its configuration. This plate is placed on the technical side that has all the connections, above the fresh air inlet.

Before contacting us, please note the serial no. and the designation.

- | | |
|------------------------|--|
| ① Code | ⑦ Wiring diagram reference |
| ② Serial number | ⑧ Motor speed wiring |
| ③ Unit designation | ⑨ Maximum operating pressure |
| ④ Rated motor power | ⑩ Electric heater specifications (if fitted) |
| ⑤ Motor rotation speed | ⑪ EC declaration number |
| ⑥ Coil type | |



This device may be used by children aged eight and over, and by persons with limited physical, sensory or mental capabilities, or by persons with insufficient experience or knowledge, provided that they are being correctly supervised or provided they have received instructions on how to use the device in complete safety, ensuring that they have a full understanding of any risks involved. Children must not play with the unit. User cleaning and maintenance must not be performed by children.

During normal use, this unit is intended to operate under the following conditions:

- Maximum altitude: 2000 m,
- Minimum and maximum storage temperatures: -20 °C/+65 °C,
- Minimum and maximum operating temperatures: 0 °C/+ 40 °C,
- Indoor return air maximum humidity level: 27°C DB (dry bulb) at 65% RH (Relative Humidity),
- Clean interior environment (no corrosive substances present).

The device is designed for indoor use, and requires protection from any form of impact. Protection rating IP 20 IK02.

This device is designed to operate in an over-voltage category II and pollution degree 2 environment, in accordance with IEC standard 664-1.

To ensure a pollution degree 2 environment, the device must be protected from water and oil splashes, and the dust allowed to settle on it must be limited.

3 - DESCRIPTION OF THE UNIT (FIG. 1)

3.2 - Models

The **COMFORT LINE™** is available in 8 standard models:

I : Metal sleeve on the discharge (optional on size 0) and optional metal sleeve on the intake

Y : Supply plenum with collars for round ducts + metal sleeve optional on intake

H : Return and supply plenum with collars for round ducts

U : Return and supply plenum with lateral collar for round ducts.

LI : Air recovery grille integrated into the device, with air supply via rectangular sleeve

Llk : LI model + air distribution kit

LY : Air recovery grille integrated into the device, with air supply via collars

LYk : LY model + air distribution kit

3.3 - Dimensions and weight

- Dimensions and weight, see Fig. 19.

4 - INSTALLATION AND CONNECTIONS



To prevent injury or damage to the unit or room, work must only be carried out by qualified personnel.

4.1 - Mechanical connections

Ensure that the suspended ceiling panels can be easily removed and that there is enough space to carry out maintenance and servicing operations.

The **COMFORT LINE™** must be suspended from the ceiling using 4 or 6 threaded rods either 6 mm or 8 mm in diameter (not supplied), which are fixed to the unit's 4 or 6 oblong holes using anti-vibration resilient mounts (optional, fig.3, a) or a nut/washer assembly positioned on either side of the mounting bracket (fig.3, b).

Note: CIAT strongly recommends the use of anti-vibration resilient mounts when securing the unit, in order to reduce the transmission of vibrations through the building structure during operation.

For LI, Llk, LY and LYk models, the unit should ideally be positioned inside the suspended ceiling in the entrance corridor of rooms, with the supply air opposite the window. The unit must never be placed in the centre of the room.



- **The unit must be perfectly level in relation to the suspended ceiling to prevent condensate draining problems (see procedure for removing the condensate pan on page 10.)**
- **If a room thermostat is fitted, place it on an inside wall (not behind a door) and at a height of 1,50 m from the floor. Keep it away from sunlight and all sources of heat.**

4.2 - Air connections

4.2.1 - Air quality

Comfort units are not designed to control the humidity of outside air. Fresh air handling must be provided by an independent system in accordance with accepted engineering practice (see **CIAT** air handling unit ranges).



All collars must be connected, whatever the model. None must be capped, either for the supply or return air.

4.2.2 - Fresh air knockout

If the fresh air return leads directly outside, the duct must not exceed 5 metres in length. The fresh air temperature must not be below -10 °C. A rain guard grille and a filter must be fitted (at the installer's expense) to prevent water or other material entering the duct from outside. If an auxiliary fan is being used (supplied by the installer), the flow of fresh air must be limited to 10% of the unit's nominal flow rate to prevent noise, coil frosting or air filter bypass problems.

4.2.3 - Adjusting the fresh air collars (Fig.4):

Either remove or leave on the shims needed to obtain the desired flow rate. The flow rate ranges are given on the label on the casing. 2 shims for minimum flow, 1 shim for medium flow, no shims for maximum flow.

The pressure difference must be between 50 and 100 Pa in order to obtain the desired flow rate.

Maintain the controller in the "BAS" (down) position.

4.2.4 - Fitting and adjusting the return air grille for assembly versions LI/LY (Fig.5).

The return air grille is fitted using 11 screws (a).

To adjust the height of the grille, remove the 4 panel screws (b) and adjust to the required height (max. clearance 40 mm). Secure the 4 screws once more (c).

4.3 - Hydraulic connections

Water always flows into the bottom of the coil and exits at the top.

For size 0, the pipes are positioned in the suspended ceiling as shown in Fig. 6, a. For sizes 1 to 6, the pipes are positioned in the suspended ceiling or raised floor as shown in Fig. 6, b.

The coils are equipped (fig.7) with a header coupling with flat face swivel nuts with a female thread, diameter G ½" or G ¾" depending on the size of the unit, and an O-ring (supplied by **CIAT**).

The header coupling is equipped with an air bleed valve (fig. 8, a) at the high point with partial draining at the low points (fig. 8, b) that can be manoeuvred using a 7 mm Allen key or a flat-blade screwdriver.

4 - INSTALLATION AND CONNECTIONS



The coil can be partially drained, however precautions must be taken during winter if the installation is shut down. To drain completely, air must be blown through the circuit.

Once the hydraulic connections are completed, it is not necessary to insulate the valves to prevent condensation (unless specifically required for the particular valves). A naturally inclined ABS pan extension may be supplied with the unit as an option (except for size 0). This recovers condensate from the valves and drains it via gravity or using a condensate drain pump (supplied as an option).

4.3.1 - Installation

To avoid damaging the **CIAT** valves or couplings, never torque tighten to more than 3,5 daN.m. Use two wrenches, one to hold and the other to tighten, to ensure a tight seal.

Always fit the valve in the right direction. On these 2 **CIAT** couplings, the direction of flow should be **A → AB** (A being connected to the coil and AB to the hydraulic network). The maximum allowable differential pressure for our valves (open or closed) is 100 kPa. We recommend not exceeding 60 kPa.

4.3.2 - Design

The installation of the hydraulic system is crucial to the correct operation of the system. Drain valves should therefore be placed at the appropriate points and in sufficient number. In addition, strainers should be fitted, as well as vents at circuit high points, balancing tees and shut-off valves on each coil and, if necessary, pressure relief valves.

4.3.3 - Filtration:

An efficient filtration system (recommended mesh size of 0,5 mm) should be fitted on the supply water and return water lines.

4.3.4 - Flushing:

The system must be flushed completely and filled with treated water to prevent the build-up of scale or sludge in the circuit. When flushing the circuit, **open the valve on the unit** to prevent any sludge or impurities from building up in the coil.

4.3.5 - Filling

Purge the coils during system start-up.

4.3.6 - Water quality recommended for water coils

It is recommended to carry out a bacteriological analysis (detection of ferrobacteria, bacteria producing H₂S and reducing sulfates) and a chemical analysis (to avoid problems with scaling and corrosion) of the water.

- Total hardness (French scale) 10 < TH < 15
- Chloride [CL⁻] < 10 mg/l
- Sulfate [SO₄²⁻] < 30 mg/l
- Nitrate [NO₃⁻] = 0 mg/l
- Dissolved iron < 0,5 mg/l
- Dissolved oxygen 4 < [O₂] < 9 mg/l
- Carbon dioxide [CO₂] < 30 mg/l
- Resistivity 2000 < Resistivity < 5000 Ωcm
- pH 6,9 < pH < 8

4.3.7 - Operating limit recommendations:

Cooling coil inlet minimum water temperature: **5°C**

Heating coil inlet maximum water temperature (2-tube application without electric heaters): **70°C**

Heating coil inlet maximum water temperature (2-tube application with electric heaters operating simultaneously): **55°C**

Heating coil inlet maximum water temperature (4-tube application): **90°C**

Maximum operating pressure: 16 bar

Indoor return air min./max. temperature: **+0°C/+40°C**

Indoor return air maximum humidity level: **27°C DB** (dry bulb) at **65% RH** (Relative Humidity).

4 - INSTALLATION AND CONNECTIONS

4.3.8 - Operating recommendations:

To prevent any inopportune opening of the thermo-actuators on control valves with thermal motors, the temperature of the air surrounding the thermo-actuators should not exceed 50°C. This is especially important for units installed in confined spaces (e.g. in suspended ceilings).

CIAT shall not be liable for damage to valves caused by faulty design of the hydraulic supply network or incorrect commissioning.

To protect against the risk of condensation when using chilled water, lagging should be placed along the entire lengths of pipes and the ends must be completely sealed. When using the water coil and electrical heater, we advise against using cross-linked polyethylene (PEX) pipes to supply water to the unit. This is because overheating of the electrical heater could cause the water temperature to rise briefly.

This could cause the rapid deterioration of the PEX pipe near the unit and cause it to burst. We recommend using stainless steel braided (or equivalent) hoses for hydraulic connections.

4.4 - Condensate pump draining connection

For size 0:

The condensate pan is inclined with no water retention, and equipped with a 16 mm external diameter end piece. (Fig.9, a).

For sizes 1 to 6:

The condensate pan is inclined with no water retention, equipped with a 22 mm external diameter end piece and a plug supplied with the unit.

The installer can change the condensate draining side by switching the bushing and the cap (fig.9, b).

The drain pipe can be separate for each unit or connected to a main drain pipe sized to allow the condensates from all the units to flow through at the same time. Use a clear flexible and/or rigid drain pipe with a minimum slope of 1 cm/m, with a constant gradient along its whole length and no low points.

Install a siphon trap measuring at least 5 cm to prevent unpleasant gases or odours venting from the drain.

4.5 - Connecting the condensate drain pump (option)

The condensate drain pump can be supplied mounted on the unit as an option. Its technical specifications are as follows:

For sizes 0 to 5:

- Maximum flow of 8,5 l/h for a pumping height of 2 metres and a horizontal pipe length of 5 metres.
- Maximum flow of 7 l/h for a pumping height of 4 metres and a horizontal pipe length of 5 metres.

The operation points are provided in the table below.

Connect a clear drain pipe (not supplied) with an internal diameter of 6 mm between the pump outlet and the wastewater pipe. This pipe should not be pinched or touch the unit or any other external component.

Table of actual flow rates for the pump connected to a PVC pipe with an internal diameter of 6 mm.

Pump performance: Water flow rate in litres per hour (-15% / +20%)				
Discharge height	Horizontal length of the discharge pipe			
	5 metres	10 metres	20 metres	30 metres
1 metre	10,4	9,1	8,3	7,3
2 metres	8,5	7,8	7	6,4
3 metres	7,9	7,1	6,3	5,8
4 metres	7	6	5,3	4,9

4 - NSTALLATION AND CONNECTIONS

For size 6:

- Maximum flow of 16 l/h for a head height of 2 metres and a maximum pipe length of 5 metres.
- Maximum flow of 15 l/h for a head height of 2 metres and a maximum pipe length of 10 metres.

The operation points are provided in the table below. Connect a clear drain pipe (not supplied) with an internal diameter of 6 mm between the pump outlet and the wastewater pipe. This pipe should not be pinched or touch the unit or any other external component.

Table of actual flow rates for the pump connected to a PVC pipe with an internal diameter of 6 mm.

Pump performance: Water flow rate in litres per hour				
Hauteur de refoulement	Total length of the discharge pipe			
	5 metres	10 metres	20 metres	30 metres
0 metre	20	19	18	17
2 metres	16	15	14	13,5
4 metres	11,5	11	10,5	10
6 metres	-	8,5	7,5	6,5
8 metres	-	6	5	4
10 metres	-	4	3,5	2,5

Under operating conditions outside of the temperature and relative humidity ranges recommended in the "Operating limit recommendations" section, the discharge pipe must be insulated to prevent the formation of condensation, which could damage the installation and the pump. We recommend using a flexible transparent PVC type pipe with internal diameter 6 mm/external diameter 9 mm. It is essential to ensure that the pump connections are sealed. A clamp can be used for this purpose.



Make sure that the flow of water to be discharged in the thermal selection is suitable for your application.

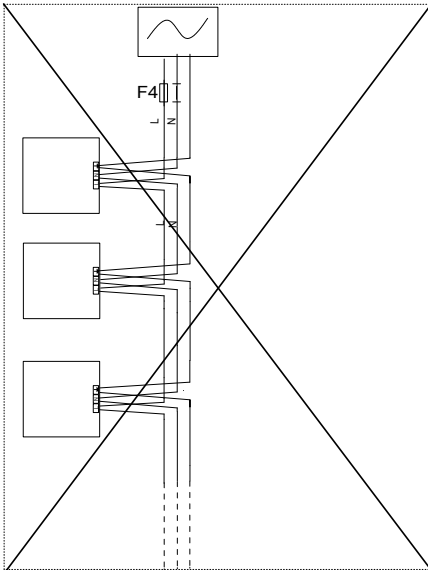
Note: this accessory must always be used with a valve control device, to ensure valve control of the high safety device when the valve is closed (closure of the condensate drains).

4 - NSTALLATION AND CONNECTIONS

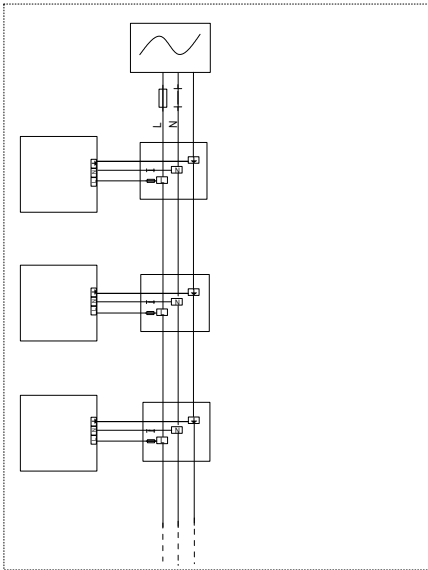
4.6 - Electrical connections

Wiring diagram for connecting several units

Incorrect wiring for several units



Correct wiring for several units



- Disconnect the electrical supply to the unit before carrying out any work and wait at least 20 mins before working on or near the heating elements. Beware of the risk of burns.

Only personnel qualified to work on electrical connections may carry out installation and maintenance work. Before connecting the unit to the network, ensure that the voltage matches that indicated on the name plate ($230 \pm 10\%$ /1-ph/50-60 Hz).

COMFORT LINE™	Motor reference	AC Asynchronous Motor							HEE Brushless Motor						
		T0	T1	T2	T3	T4	T5	T6	T0	T1	T2	T3	T4	T5	T6
Max power input (W)	V5	71	74	119	166	180	223	611	48	37	72	113	97	172	343
	V4	48	48	104	124	125	192	523	26	22	54	47	38	117	330
	V3	34	42	88	111	110	163	455	13	14	36	27	22	67	307
	V2	21	36	67	96	95	149	391	6	8	14	14	13	36	178
	V1	14	34	51	93	90	129	333	4	5	6	9	8	17	110
Max current draw (A)	V5	0,31	0,32	0,53	0,70	0,77	0,95	2,68	0,37	0,25	0,47	0,69	0,61	1,06	2,59
	V4	0,20	0,22	0,45	0,52	0,53	0,81	2,32	0,20	0,16	0,36	0,30	0,25	0,73	2,36
	V3	0,15	0,2	0,38	0,47	0,48	0,69	2,02	0,12	0,11	0,25	0,18	0,15	0,43	2,22
	V2	0,09	0,18	0,29	0,42	0,42	0,64	1,73	0,07	0,07	0,11	0,10	0,10	0,24	1,32
	V1	0,07	0,18	0,22	0,41	0,40	0,57	1,48	0,06	0,06	0,06	0,07	0,07	0,12	0,75

4 - INSTALLATION AND CONNECTIONS

An earth connection is compulsory. CIAT shall not be liable for incidents resulting from faulty or non-existent earthing. Always follow the wiring diagram delivered with unit.

To access the electrical terminal block:

Disconnect the unit from the electrical power supply



Use a Phillips screwdriver or a size 7 Allen key to undo the 2 screws securing the electrics box cover (Fig.10).

Always use an electrician's flat-blade screwdriver.

COMFORT LINE™ offers a choice between two types of motor technology: asynchronous and brushless (low consumption).

■ The asynchronous motor:

To optimise the unit's performance and depending on the type of control used, the unit has five speeds numbered V1 to V5 connected to the terminal block in the electrics box (V1= low speed and V5= high speed).

The customer must wire the speeds for the thermostat at the top of the terminal block between V1 and V5.

To open a connection point and change the cabling (Fig. 11):

- Place the end of a flat-blade screwdriver in the hole located just below the cable to be removed, release the cable and move it to the marker for the desired speed.
- Place the screwdriver in the hole again just below the desired speed, insert the cable and remove the screwdriver; this ensures a secure contact.

Repeat the procedure for the remaining customer speeds.



The wires coming from the motor and connected to terminals V1 to V5 must never be interconnected.



It is essential to refit the electrical box casing once all the cabling and adjustment operations are complete.

■ The brushless motor:

Depending on the controller or thermostat fitted with the unit, the motor may be controlled by a 0-10V control signal or 3 speed on/off control.

- With a controller managing a 0-10 V control signal: The 0-10V setpoint voltage information is issued by the controller itself. Refer to the operating and configuration instructions supplied by the manufacturer.
- With a controller or thermostat managing a 3-speed on/off control: Depending on the controller or thermostat, use the thermostat to select the ventilation speed to be modified, or use the "CIAT speed control unit" accessory supplied as an option. It is possible to change the speed (rpm), following the instructions supplied with the speed control unit.



To prevent any risk of damage, never connect several asynchronous or brushless fan coil unit motors in parallel for the same thermostat.

IMPORTANT NOTE: Brushless motor

The electrical connection for **CIAT** Comfort Units must be made in compliance with international standard IEC 60364 (Electrical Installations for Buildings).

4 - INSTALLATION AND CONNECTIONS

The leakage current on all our comfort units conforms to the requirements of IEC 60335-2-40 (Safety of household and similar electrical appliances):

- Complete comfort unit (with electric heaters) equipped with a multi-speed motor: maximum leakage current = 2 mA.
- Complete comfort unit (with electric heaters) equipped with an HEE motor (brushless technology): maximum leakage current = 4,5 mA.

Electromagnetic compatibility in accordance with Emission standard 61000-6-3 EN 550141-1, tool class and Immunity 61000-6-1 (Residential, commercial and light industry class).



The unit's compliance with the above standards does not guarantee the compliance of the installation as a whole (several other factors not relating to the unit may be involved). As a result, the installer must observe the applicable recommendations in order to guarantee compliance.



General safety instructions for units with electric elements:

- The rotation speed of the HEE motor must not be below 550 rpm for size 0 and 400 rpm for sizes 1 to 6.
- The operation of the electric heater must be fan-controlled. Power to the electrical heaters should be cut and the fan delay activated whenever the fan motor assembly is stopped intentionally or unintentionally.
- Ensure that the type of control chosen when the system is completely shut down allows post ventilation of the comfort unit for at least 2 minutes.

To ensure the hot water and electrical heaters work correctly when used simultaneously, we recommend only low temperature settings are used to ensure our safety devices operate correctly.

For size 0, a double safety feature protects units equipped with heaters from accidental overheating:

- The integrated self hold safety thermostat with auto reset (Fig.12, a).
- The thermo fuse (Fig.12, a).

For sizes 1 to 6, two thermostats protect units equipped with heaters from accidental overheating:

- The manual temperature limiter (fig.12, b).
- The automatic temperature limiter (fig.12, c) always located next to the electrics box.

Do not reset these thermostats until the potential causes of the overheating have been checked:

- Turning on the unit without the fan.
- Filter partially clogged.
- Coil and fan stopped simultaneously by control.



Never connect several fan coil unit motors in parallel on the same thermostat.

For size 0, if the thermo fuse is blown, then the electrical heater must be replaced.

- Remove the fan motor assembly (see the section "Removing the fan motor assembly").
- Disconnect the faston terminals which make up the electrical heater's wiring loom from the heater.
- Undo the screws on the electrical heater (Fig.12, d).

Perform these steps in reverse to fit the new electrical heater.

For sizes 1 to 6, the unit can be manually reset by inserting a screwdriver in the hole (fig.12, e).

5 - SERVICING AND MAINTENANCE

The unit must be serviced periodically between the heating and cooling seasons.

In particular, components prone to clogging (filter, condensate drain pan, coil, etc.) must be checked.



Disconnect the electrical and hydraulic supplies to the unit before carrying out any work and wait at least 20 mins before working on or near the heating elements.



For your safety, wear protective gloves to prevent the risk of burns from hot pipes.

5.1 - Air filter

The filter is crucial to the correct operation of the unit. Without it, the heat exchange coil would become clogged, the performance would drop and the unit's sound level and electrical consumption would increase.

The **COMFORT LINE™** is equipped as standard with the G3 or Epure filter. We recommend replacing it annually. If maintenance is carried out more frequently, dust can be removed from the filter by running a vacuum attachment in the opposite direction to the flow of air. The above recommendations are for information only. **CIAT** recommends regular inspections of the filter's appearance in order to define the frequency with which it should be replaced, which varies depending on the premises and the operating conditions.

The unit may be supplied without a filter at the customer's request. **The customer must ensure at least G3 upstream filtration. Failure to do so will lead to loss of the motor warranty cover.**

For LI/LY assembly version, the unit will be supplied with a compulsory G3 or Epure filter.

The filter should never be cleaned using water or detergent products, which could cause the spread of bacteria.

■ Accessing the filter (Fig.13), I, Y, H, U models:

- **Option 1**
- Mark the 2 screws on the filter bracket runner (a).
- Undo the screws (b).
- Guide the filter downwards into its runner (c).
- Release the filter from its housing.
- Once the new filter has been fitted, slide it against the rod, hold it securely and place the bracket runner back in position.
- Tighten the 4 screws (a and b).

- **Option 2**

- Remove the filter access panel using the 4 screws (d).
- Pivot the filter bracket rod against the FMA (e).
- Pull the filter downwards and tilt to remove (f).
- Once the new filter has been fitted, slide it against the rod, hold it securely and refit the filter access panel.
- Tighten the 4 screws (d).
- **Option 3**
- Undo the 4 screws on the filter access panel (h).
- Guide the filter access panel and filter downwards (i).
- Once the new filter has been fitted, hold it securely and refit the filter access panel.
- Tighten the 4 screws (d).

■ **Accessing the filter (Fig.13), LI/LY models:**

- Mark the 2 retaining lugs (k) positioned on the micro perforated return air grille.
- Push the 2 lugs to release the return air grille.
- Lower the hinge-mounted return air grille until it is at right angles to the diffuser.
- Release the filter (l) from its housing.
- After fitting a new filter, refit the return air grille. Lock it to the panel by simultaneously pushing the 2 lugs sharply upwards.
- Check that the grille is securely affixed.

5.2 - Condensate drain pan

The main condensate drain pan and the pan extension must be kept clean. The pans and drainage fittings may be completely cleaned using non-abrasive, water-based detergents. Also check periodically that the drain pipe is not blocked, bent or kinked, and has the required gradient of -0°/+2 along its entire length.

Before starting up the unit, check that the water flows properly into the condensate pan by pouring some water into it.

5 - SERVICING AND MAINTENANCE

■ Removing the pan (Fig.14):

Firstly, disconnect the pump, if fitted, and the condensate drain for sizes 0 to 6 and the hydraulic coil for sizes 1 to 6.

For size 0:

- Remove the coil lower access panel by removing the 4 lateral screws securing it in place (fig.13, j).
- Undo the 2 bracket screws for the pan (a).
- Remove the bracket and guide the condensate pan downward (b).

For sizes 1 to 6:

The coil can be removed sideways or vertically.

- Remove the lower panel under the coil by removing the 4 lateral screws securing it in place (fig.13, l).
- To remove the condensate pan, undo the 2 screws on the side of the pan (c).
- Undo the 2 screws on the hydraulic coil (d).
- Pull the pan/coil assembly towards you (e).
- Place the assembly on a flat surface.
- Detach the hydraulic coil from the condensate pan using the two centring pins (f).

To refit, perform the operation in reverse order.

The lower panel must be removed, otherwise the coil and insulating material could be damaged during refitting. We recommend removing the lower panel when the pan is removed.



Note: Before starting up the unit, check that the water flows properly into the condensate pan by pouring some water into it. If the flow is not correct, look for possible causes of the problem.

5.3 - Fan motor assembly

Periodically check the cleanliness of the impeller and the motor. If necessary, clean them using a vacuum cleaner, taking care not to damage them.

The electric motor's bearings are lubricated for life and do not require specific maintenance.

■ Removing the fan motor assembly:

- **HEE Brushless motor, I/Y/H/U models (fig.15):**
- Open the electrics box.
- Disconnect the wires which form the fan motor assembly bundle.
- Remove the removable lower panel (a) using the 4 screws.
- Remove the removable panel. For size 0, ensure the filter is guided downwards as the only support is provided by the removable panel.

- **Asynchronous motor, I/Y/H/U models (Fig. 15):**
- Remove the removable lower panel (a) using the 4 screws.

- Remove the removable panel. For size 0, ensure the filter is guided downwards as the only support is provided by the removable panel.

- Disconnect the motor wiring loom from the unit's internal wall using the quick-release connector.

- **Brushless HEE motor, LI/LY models (Fig. 16):**

- Open the electrics box.

- Disconnect the wires which form the fan motor assembly bundle.

- Push the two lugs to release the return air grille (e).

- Lower the hinge-mounted return air grille until it is at an angle of approximately 45°.

- Unhook the grille.

- **Asynchronous motor, LI/LY models (Fig. 16):**

- Open the electrics box.

- Disconnect the wires which form the fan motor assembly bundle.

- Push the two lugs to release the return air grille (e).

- Lower the hinge-mounted return air grille until it is at an angle of approximately 45°.

- Unhook the grille.

- Disconnect the motor wiring loom from the unit's internal wall using the quick-release connector.

- **For both types of motor (all models) (Fig.15):**

For size 0:

- If the electrical heater is fitted, then the coil lower access panel must also be removed using the 4 screws.

- Remove the electrics box.

- Hold the FMA securely.

- Undo and remove the 4 FMA retaining screws on the lateral panels (b).

- Remove the FMA.

Sizes 1 and 2:

- Hold the FMA securely.

- Undo and remove the 2 FMA retaining screws on the platform (c).

- Remove the FMA.

Sizes 3, 4, 5:

- Undo and remove the 2 lateral screws on the platform (d).

- Undo the central screw (e) without removing it.

- Lower the FMA and release it from the central lock hole.

5 - SERVICING AND MAINTENANCE

- For the HEE Brushless motor, Size 6 (Fig.16):

- Hold the FMA securely.
- For each FMA, unscrew and remove the 2 lower screws (e).
- For each FMA, unscrew but do not remove the 2 upper screws (f).
- Lower the 2 FMA and release them from the lock holes.

To refit, perform the operation in reverse order.

- For the HEE Asynchronous motor, Size 6 (Fig.17):

- Unscrew and remove the 3 lower screws (g).
- Unscrew but do not remove the 3 upper screws (h).
- Lower the 2 FMA and release them from the lock holes.

To refit, perform the operation in reverse order.

5.4 - Heat exchange coil

A clean coil is crucial to the efficiency of the unit. If necessary, clean the coil with a vacuum cleaner, taking care not to damage the fins.

If the coil must be disassembled on account of a leak: Disconnect the electrical supply to the unit before carrying out any work.

■ Removing the coil:

For size 0 (Fig.18):

Firstly, disconnect the coil.

- Undo the 4 screws on the hydraulic coil (a).
- Guide the hydraulic coil downwards (b).

For sizes 1 to 6, refer to the section "Removing the condensate drain pans".

To refit, perform the operation in reverse order, remembering to bleed the coil before refilling with water.

CIAT's products carry the CE mark, demonstrating that they may be sold throughout the European Union. This mark is your assurance that **CIAT's** products are safe to use.

6 - CERTIFICATE OF CONFORMITY



Declaration of Conformity UE

This unit complies with the provisions of European Directives:

- 2006/42/EC (Machinery)
- 2014/30/EU (EMC)
- 2011/65/EU (RoHS)
- 2009/125/EC (Eco Design) and regulation 327/2011/EU
- REGULATION (EC) No 1907/2006 (REACH)



UK Declaration of Conformity

This unit complies with the requirements of:

- Supply of Machinery (Safety) Regulations 2008
- Electromagnetic Compatibility Regulations 2016
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2019, and following amendments
- UK REACH Regulations 2019

UK Importer:

- Toshiba Carrier UK Ltd, Porsham Close, Roborough, Plymouth, PL6 7DB

7 - TESTING & WARRANTY

All our units are tested and proven before leaving the factory.

They are guaranteed against all manufacturing defects. **CIAT** shall not be held liable for any type of corrosion. **CIAT's** warranty does not cover damage resulting from incorrect electrical wiring, inadequate electrical or thermal protection or failure to use a filter.

CIAT's warranty on motors is limited to the terms of warranty extended by its supplier.

Work performed on the motor by the installer will invalidate the corresponding warranty.

8 - SAFETY CONSIDERATIONS RELATING TO FINAL SHUT-DOWN

Separate the units from their energy sources, allow them to cool down and then drain completely.

DISMANTLING

Never work on a unit that is still powered on.

Respect the local environmental laws and regulations.

Presence of waste electrical and electronic equipment (WEEE): At the end of its life, units must be disassembled, with any contaminated fluids removed by professionals, and then processed via approved channels for waste electrical and electronic equipment (WEEE).

Check whether any part of the unit can be recycled for another purpose.

Sort the components according to their material for recycling or disposal, in accordance with regulations in force.

Materials to be recovered for recycling - Steel - Copper - Brass - Aluminium - Plastics - Insulation.

The proportions of materials for each unit are listed in the Product Environmental Profile (PEP) available at the following website: <http://www.pep-ecopassport.org/fr/consulter-les-pep/> or on request from our departments.

Any contaminated fluids must be disposed of by specialist professionals.

