

MAJOR LINE™

Instruction manual

EN7514458-06

07 - 2023



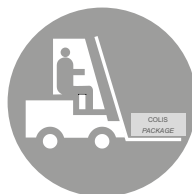
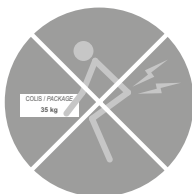
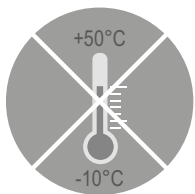
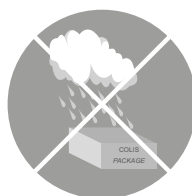
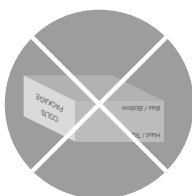


Fig. 1

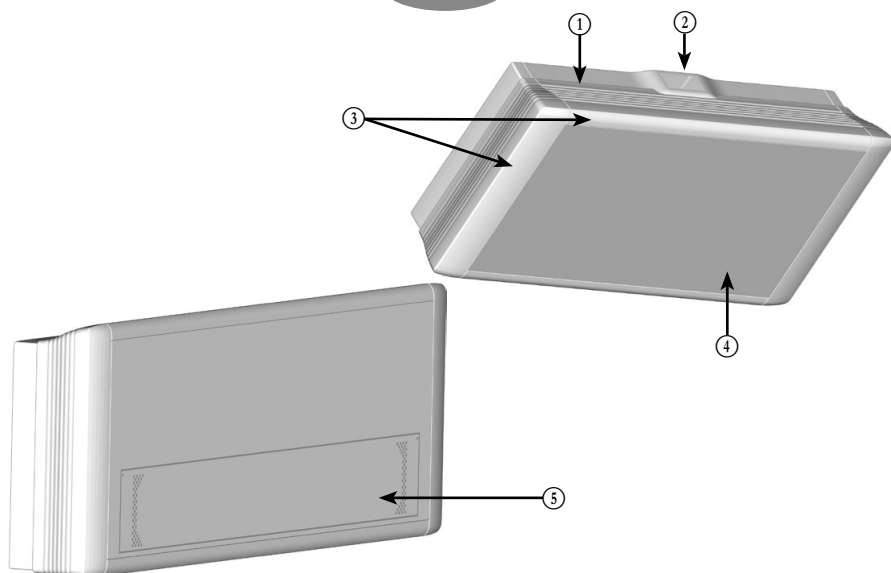


Fig. 2

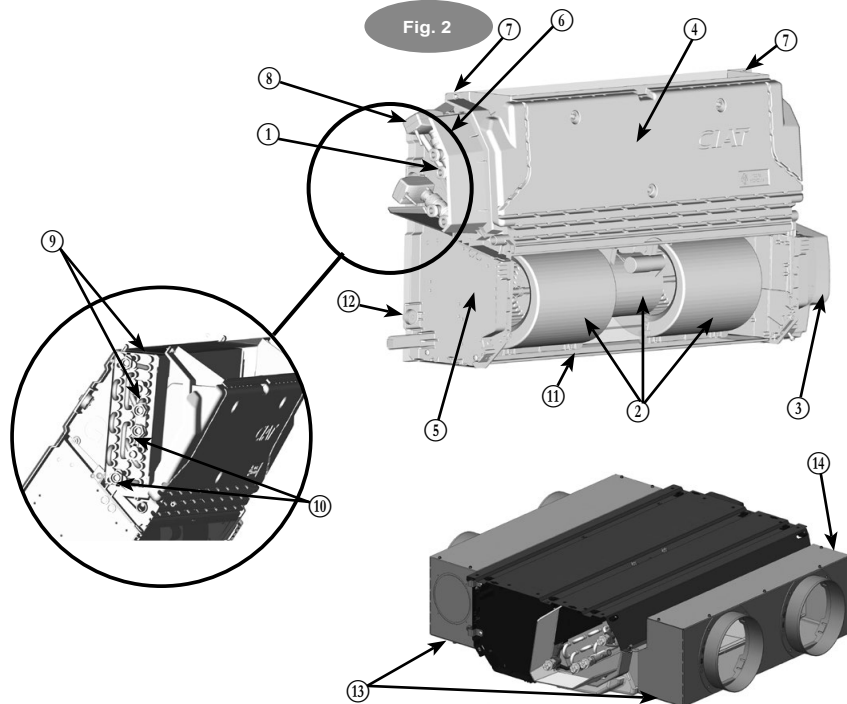


Fig. 3

Ref. produit/Item Ref.		Designation/Description	
7243072		MAJLINE 204P CV1/CH41 4TG	
An/Year	N° série/Serial Nbr	Composants/Components	Repère/Part
2013	02138806/0009		
Moteur/Motor (Ph/Hz/V)	Batterie/Hydro. coil	Fluide/Fluid	
1+N 50/60HZ 230V+T	4TG	EAU	
P. moteur/Motor P. (W)	Elec Element (Ph/Hz/V)	Maxi pressure	
40	SANS	1600000 PA (16BAR)	
I. moteur/Motor I. (A)	Elec Element P. (W)/I. (A)	Cablage/Wiring	
0.26	SANS	V1-V3-V4	
tr. mn - 1/r.p.m.	Elec Diagram	N° Declaration CE	
	7407433		

Fig. 4

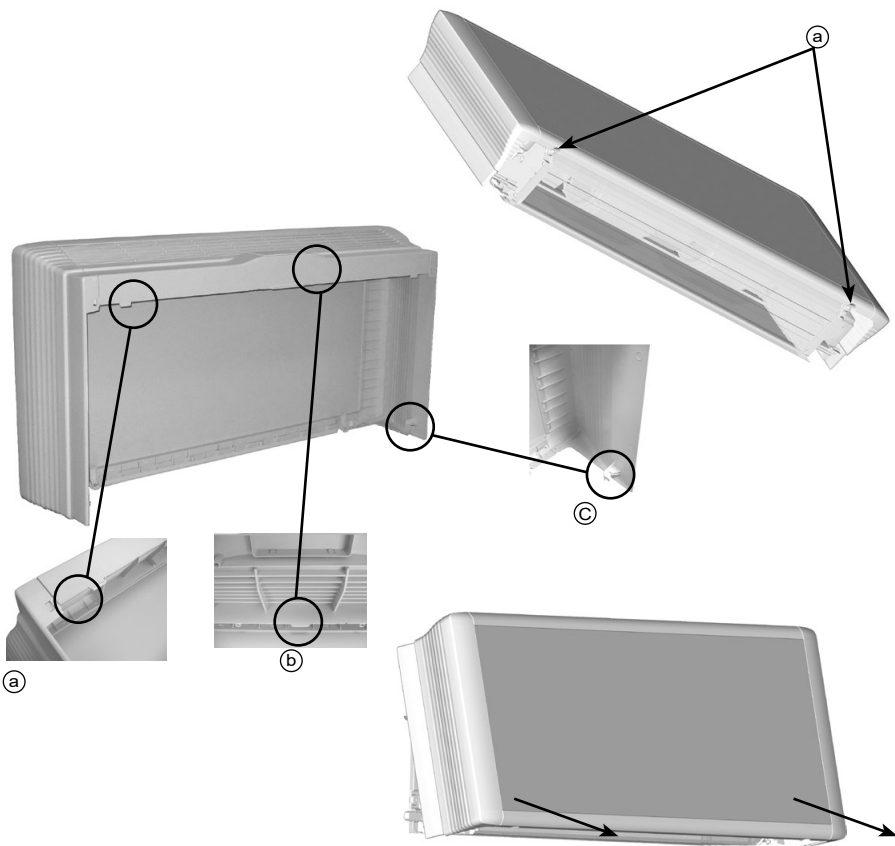


Fig. 5

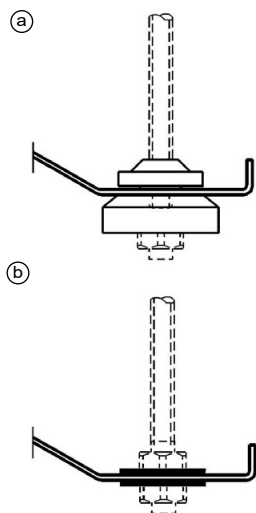


Fig. 6

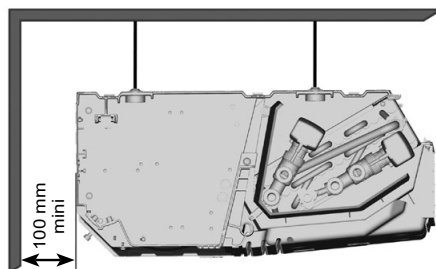


Fig. 7

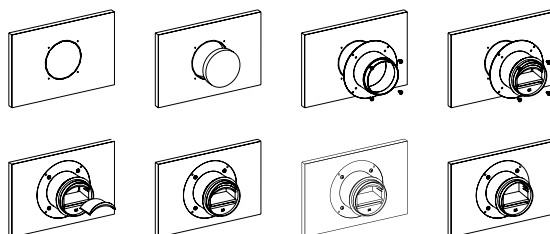


Fig. 8

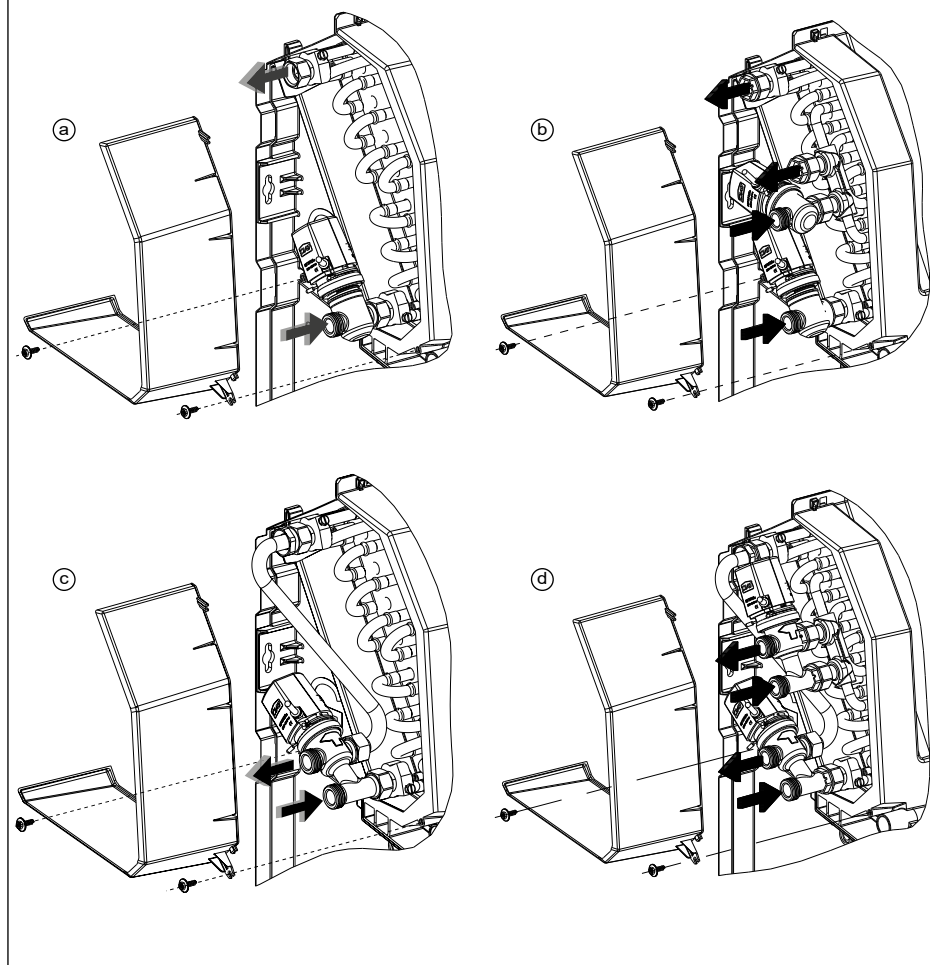


Fig. 9

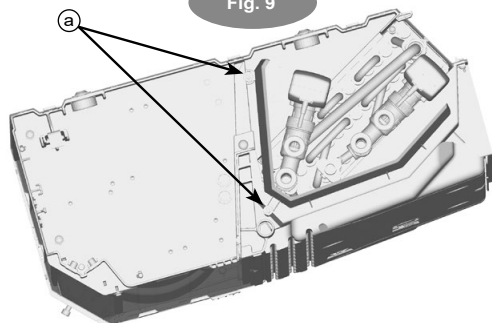


Fig.10

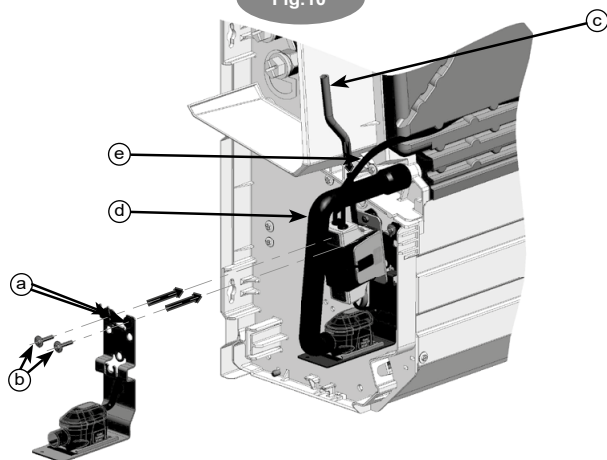


Fig. 11

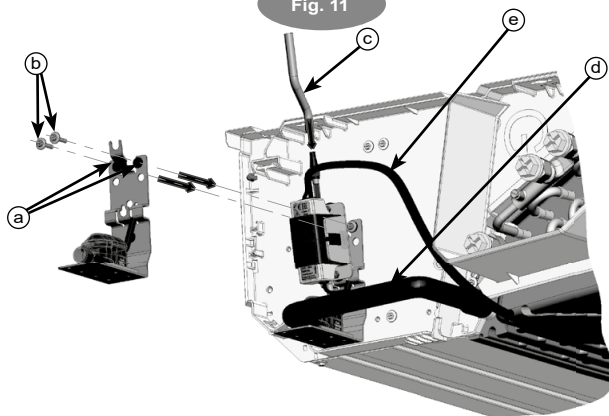


Fig. 12

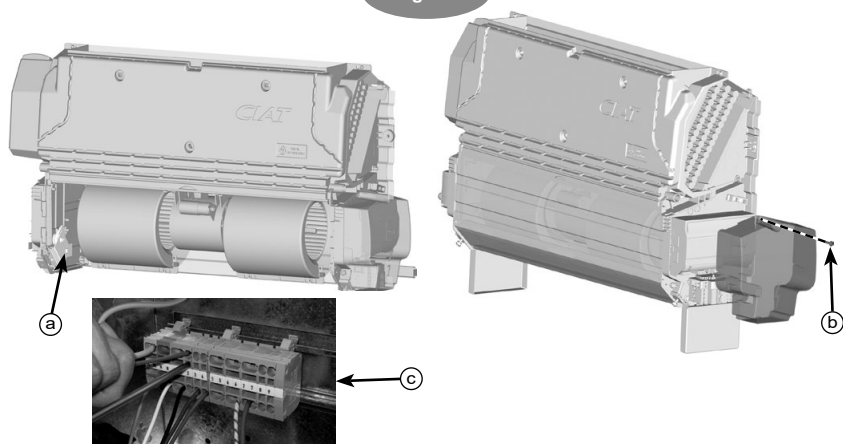


Fig. 13

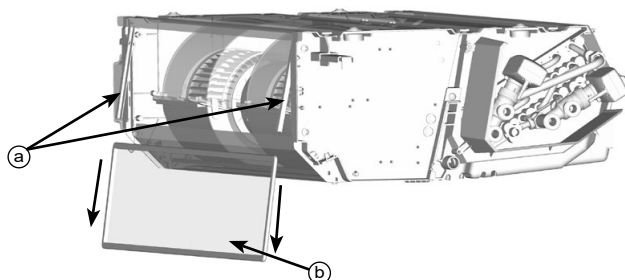


Fig. 14

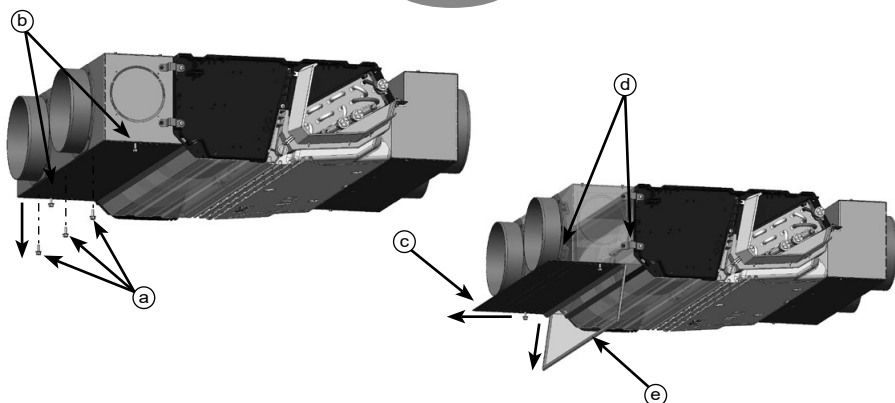


Fig. 15

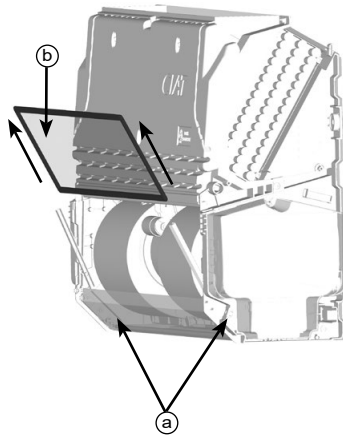


Fig. 16

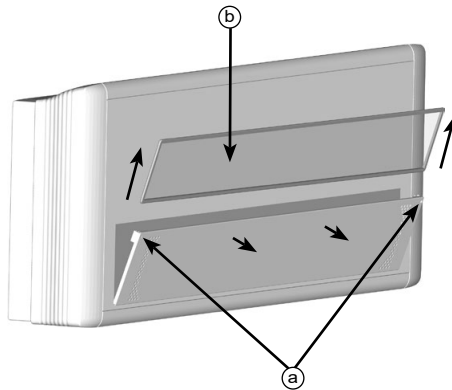


Fig. 17

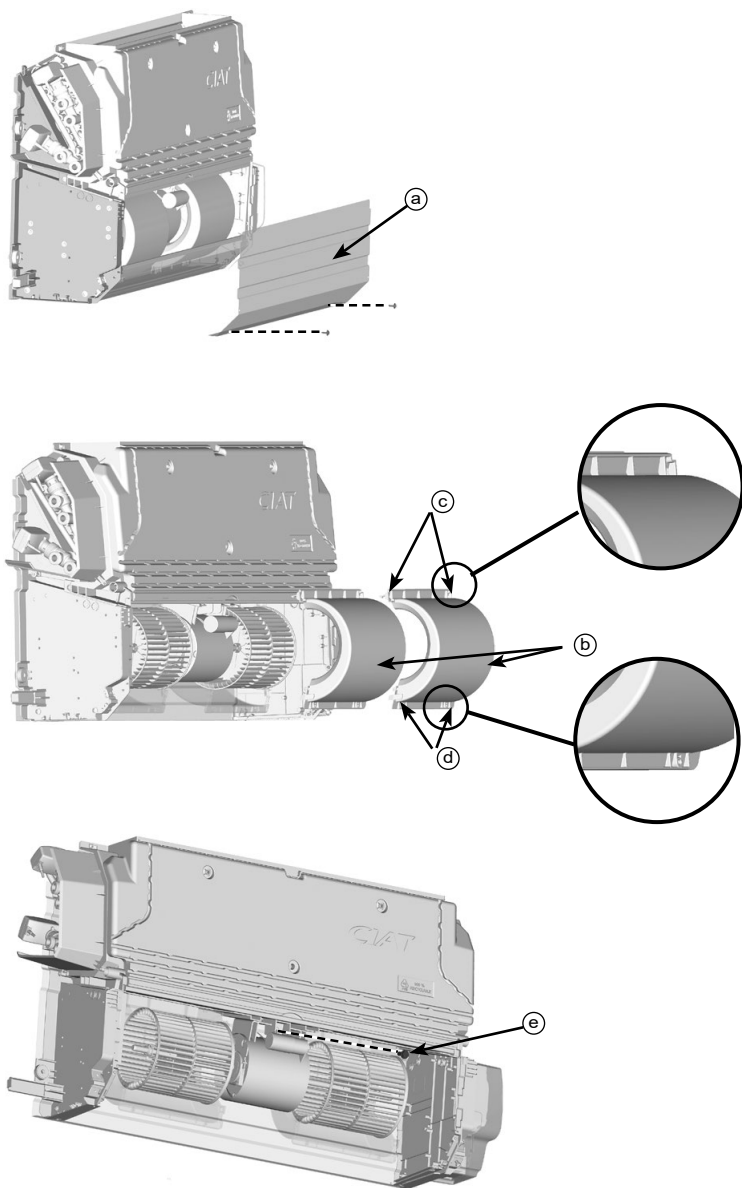
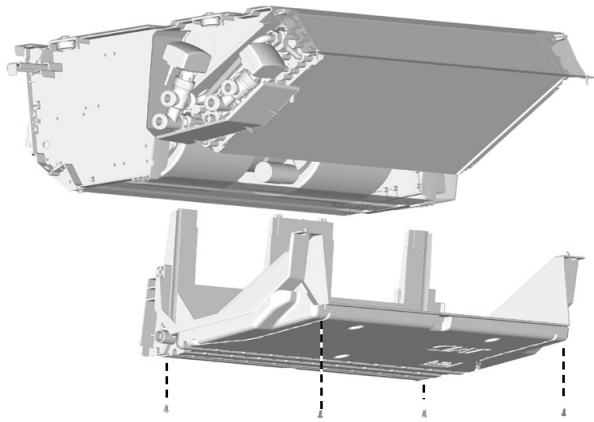


Fig. 18



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CIAT thanks you for purchasing a **MAJOR LINE** unit. We trust that it will give you complete satisfaction. To ensure correct operation, all connections (electrical, utilities, etc.) must be made in accordance with industry practice and the regulations in force in the country of use. Your **MAJOR LINE** must be maintained as recommended in this manual.

1 - DELIVERY, CHECKS AND STORAGE

The unit is delivered in packages that are labelled for easy identification.

Each unit bears a data plate. Include the reference number shown on the data plate in all correspondence.

It is the sole responsibility of the recipient 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.
- All damaged or missing items must be reported on the delivery note in the presence of the 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 reg 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 - DESCRIPTION OF THE UNIT

CV, CH Model with Casing (fig. 1)

The **MAJOR LINE** (MJL) unit that you have just purchased is part of a range of multipurpose comfort units. 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 and an array of options.

- | | |
|---|--|
| 1- Discharge grille | 4- Front panel in RAL 9010 precoated sheet metal |
| 2- Central point of access to the control terminal (control optional) | 5- Return grille in perforated sheet metal for the front Return air version. |
| 3- ABS PC end plates and side members | |

NCV, NCH Model without Casing (fig. 2)

- | | |
|---|---|
| 1- Heat exchange coil | 8- Valve(s) (option or accessory) |
| 2- Fan motor assembly | 9- Air bleed screw |
| 3- Access to motor terminal | 10- Coil drain screw |
| 4- Main ABS PC single unit condensate pan with insulation reinforced by PSE panelling | 11- Air filter |
| 5- Condensate drain Ø 22mm | 12- Resilient mount (accessory) |
| 6- Ancillary condensate pan | 13- Supply and return plenums, H or U assembly (option) |
| 7- Slots for attaching to the wall or ceiling | 14- Supply plenums (accessory) |

Name plate (fig. 3)

The name plate contains all the information required to identify the unit and its configuration. This plate is placed on the condensate pan insulation. 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 output | 10- Electric heater specifications if applicable |
| 5- Motor rotation speed | 11- CE declaration no. |
| 6- Type of coil | |

2 - DESCRIPTION OF THE UNIT



This unit 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 unit in complete safety, ensuring that they have a full understanding of any risks involved. Children must not be allowed to play with the unit. User cleaning and maintenance must not be performed by children.

If this unit is used without supervision in an area with children or animals, for wall mounting with casing (MJLCV), it is recommended that the assembly with feet + grilles (accessories) is used to provide additional protection to prevent access to the filter. The list of assemblies and accessories is available from your installer or on the product selection documentation.

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

- Maximum altitude: 2000 m,
- Minimum and maximum storage temperature: -20°C/+65°C,
- Minimum and maximum operating temperature: 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 unit requires protection from any form of impact during use. Protection rating IP 20 IK02.

This unit is designed to operate in an overvoltage category II and pollution degree 2 environment, in accordance with IEC standard 664. To ensure a pollution degree 2 environment, the unit must be protected from water and oil splashes, and the dust allowed to settle on it must be limited.

3 - HANDLING



For your safety, wear protective gloves!



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

3.1 - Removing and refitting the casing

When installing the unit, the casing must be removed and replaced in its original packaging, to protect it from any risk of scratching. The protective electrostatic casing film must always be removed before the casing is finally repositioned.

To remove the casing (fig. 4):

- **Standard model, return air underneath:** Remove the two ¼ turn screws on the lower section of the casing (a). Then swivel the lower section towards you and lift the casing.
- **Front return air model:** Remove two ¼ turn screws and the grille. This gives access to the two ¼ turn screws in the casing; remove them, then swivel the lower section towards you and lift the casing.

Note: if the unit is equipped with a control with flush-mounted terminal, remember to disconnect the quick-release connector, accessible on the side on top of the electrics box.

To refit the casing (fig.4)

- Position the casing so that it leans at an angle (lower part towards you) making sure that the central lug (B) is correctly centred,
- Adjust the rear lugs on the rear panel of the frame (A),
- Return the casing to an upright position so that the brackets on the frame clip into the feet on the casing (C).

3.2 - Installing the unit

The unit should preferably be lifted by its mounting holes and never by the condensate pan, the plenums or the collars. (NCH H or NCH U model)

It is possible to carry out the installation using a fork-lift truck, as long as care is taken not to damage the unit.

4 - MECHANICAL CONNECTION



To protect against injury or damage to the unit or room, the hydraulic connections must be made by qualified personnel only.

Horizontal model:

The unit is installed in the ceiling.

The unit must be secured using 4 x 6 mm or 8 mm threaded rods (not supplied), to be attached to the 4 oblong holes using antivibration resilient mounts (accessory).



Do not fit the metal washer

For an NCH model, ensure that the suspended ceiling panels can be easily removed and that there is enough space to carry out maintenance and servicing operations.

For an NCH U model, the supply plenum must also be secured to the ceiling using a 6 mm or 8 mm threaded rod (not supplied), to be attached to the support bracket using a resilient mount (accessory, fig. 5, a) or a nut and washer assembly placed either side of the support bracket (fig. 5, b).

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

Vertical model:

- Fixed to the wall by 4 screws
- Placed on the ground with support feet or air recovery unit (model with air recovery underneath)
- Placed directly on the ground (model with air recovery on the front)



- **All units must be perfectly level.**
- Check that there is a sufficient gap between the back of the unit and the wall (horizontal model, assembly without air recovery unit) or the floor (vertical model, assembly without feet) (min. 100mm) (fig. 6) if the air recovery is not ducted.
- If a room thermostat control is provided, place it on an inside wall (not behind a door) at a height of 150 cm from the floor. Keep it away from sunlight and all sources of heat.

5 - AIR CONNECTIONS

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's** ranges of air handling units).



On all models with plenums, all collars must be connected. None must be capped, either at the supply or return air.

Fresh air knockout

The fresh return air must be taken from air pretreated by an air handling unit which complies with European regulation No. 1253/2014.

Under no circumstances may fresh air from outdoors be connected directly to the unit.

Fitting and adjusting fresh air collars (accessory)

- Remove the washer from the pre-punched panel by cutting the attachment points.
- Fasten the collar with or without controller using the 4 screws supplied.
- 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.

6 - HYDRAULIC CONNECTIONS

The coils are fitted with a female hydraulic connection, a flat face swivel nut (diameter 1/2" and 3/4", depending on the size) and sealing gaskets (supplied with the unit), an air bleed valve and a drain valve.

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

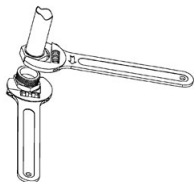
To install a control valve with a flat face (**CIAT** valve kit available) (fig. 8):

- **Two-way valve:** screw the valve and gasket provided directly on the hydraulic connections at the coil intake (at the bottom):
 - 2-way valve, 2 pipe version (fig. 8a)
 - 2-way valve, 4 pipe version (fig. 8b)
- **Three-way valve + built-in bypass:** add the copper pipe (supplied with the **CIAT** valve kit) before fitting the valve:
 - 4-way valve, 2 pipe version (fig. 8c)
 - 4-way valve, 4 pipe version (fig. 8d), onto the coil cooling connection.

6.1 - Installation

CIAT recommends a default tightening torque of 7 N.m (max. 18 N.m) to avoid any damage to the couplings and the exchanger.

During connection, always use a holding wrench on the component being connected to ensure the header is not twisted.



Ensure that the fluid flow direction indicated on the valve body is respected. The maximum allowable differential pressure for our valves (open or closed) is 100 kPa. **CIAT** recommends not exceeding 60 kPa.

For a unit pre-fitted with control valves, check the tightness of the couplings/valves before/after connecting to the network.

6.2 - Recommendations on hydraulic connections

The design of a hydraulic network 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 drains at circuit high points, balancing tees on each **MAJOR LINE** and, if necessary, discharge valves.

Pressure safety:

The installation must be protected against any risk of pressure surges. Special care must be taken to protect against the risks linked to expansion of the energy transfer fluid and to the total hydrostatic pressure.

Filtration:

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

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 system, open the valve on the unit to prevent any sludge or scale entering the coil:

- If the power has not yet been switched on, the valve will be open.
- If the control has already been switched on, the valve will switch to "normally closed" operation. The valve must be opened either via the control device or by removing the valve actuators.

Filling:

Drain the coils during commissioning.

6 - HYDRAULIC CONNECTIONS

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 $4 < [O_2] < 9$ mg/l
- Carbon dioxide [CO₂] < 30 mg/l
- Resistivity $2000 < \text{Resistivity} < 5000 \Omega\text{cm}$
- pH 6,9 < pH < 8

Operating limit recommendations:

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

Heating coil inlet maximum water temperature (2-pipe application without electrical heater): **90°C**

Heating coil inlet maximum water temperature (2-pipe application with simultaneous electrical heaters): **55°C**
(min. air flow rate = 200 m³/h)

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).

Operating recommendation:

To prevent any inopportune opening of the thermo-actuators, the temperature of the air surrounding the thermo-actuators should be kept at no higher than 50°C. This risk must be taken into account, especially for units in a confined space (**e.g.** units installed in a suspended ceiling).

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 completely sealed at its ends. 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.

7 - CONDENSATE DRAIN PAN

The **MAJOR LINE** is equipped with a sloping polymer pan which does not retain water, fitted with a Ø22 mm external drain end piece and a plug.

When the unit is delivered, the pan is blocked on both sides (2 plugs), so it is therefore imperative that the plug is removed from the side where the hydraulic connection is to be made.



If the hydraulic connection side is switched, do not forget to refit the plug to the other side.

The connection can be made on the left or right-hand side of the unit. The drain hose can be separate for each unit or corrected to a main drain hose. Use a translucent and/or rigid drain pipe with a minimum slope of 1 cm/m, with a constant

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

An auxiliary pan must be installed on the connection side using the 2 screws
(fig. 09, rep. a).

8 - CONDENSATE DRAIN PUMP

The **MAJOR LINE** can be equipped with a condensate drain pump.

Its technical specifications are as follows:

- 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.

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 m	10 m	20 m	30 m
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



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).

Under operating conditions outside of the recommended temperature and relative humidity ranges (page EN-7), the discharge pipe must be insulated to prevent the formation of condensation, which could damage the installation and the pump. We recommend the use of a crystal clear translucent PVC pipe with an internal diameter of 6 mm and an external diameter of 9 mm. The tightness of the connections to the pump must be verified using a clamp.

Fitting the pump, vertical model (fig.10) and horizontal model (fig.11):

If the pump is delivered separately as a kit, screw the pump onto the unit using the 2 mounts (a) and 2 screws (b), and connect the hose to the condensate pan (d). Connect a clear drain hose (not supplied) (c) with an interior diameter of 6 mm between the pump outlet and the wastewater pipe.

Finally, connect the power cables (e) as shown in the diagram supplied with the unit.

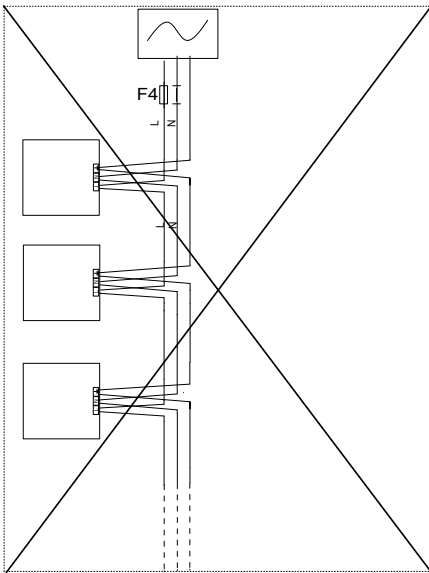


This hose should not be pinched or touch the unit or any other external component. Wire as indicated on the attached circuit diagram.

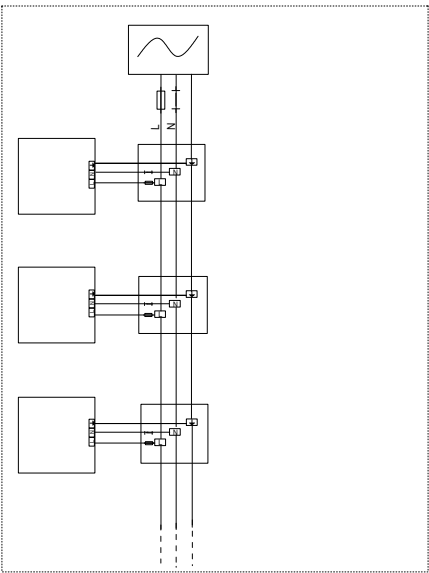
9 - ELECTRICAL CONNECTIONS

Wiring diagram for connecting several units

Incorrect wiring for several units



Correct wiring for several units



- Ensure that the power supply to the unit is disconnected before carrying out any work.
- Only personnel qualified to perform electrical and maintenance work may make electrical connections.

As indicated on the data plate, the unit must be connected to a single-phase 230V power supply (230/1/50Hz-60Hz).

MAJOR LINE	Motor speed	AC Asynchronous Motor (230V/50Hz)						HEE Brushless Motor (230V/50Hz)					
		102/104	202/204	302/304	402/404	502/504	602/604	102/104	202/204	302/304	402/404	502/504	602/604
Power input during operation (W)	V5	33	58	88	106	108	135	11	25	32	77	90	100
	V4	31	41	67	93	94	114	9	15	22	63	80	75
	V3	29	36	52	80	79	99	6	11	13	36	42	55
	V2	27	31	42	72	72	88	5	8	7	21	26	32
	V1	26	27	35	63	63	77	4	5	3	11	13	16
Max. input current (A)	V5	0,14	0,25	0,38	0,46	0,47	0,59	0,11	0,20	0,29	0,62	0,71	0,74
	V4	0,13	0,18	0,29	0,40	0,41	0,50	0,09	0,13	0,20	0,50	0,62	0,67
	V3	0,13	0,16	0,23	0,35	0,34	0,43	0,07	0,11	0,13	0,30	0,35	0,44
	V2	0,12	0,13	0,18	0,31	0,31	0,38	0,06	0,09	0,08	0,19	0,21	0,27
	V1	0,11	0,12	0,15	0,27	0,27	0,33	0,06	0,06	0,06	0,11	0,13	0,16

The unit must be earthed. CIAT shall not be liable for incidents resulting from faulty or non-existent earthing. Always follow the circuit diagram delivered with unit.

9 - ELECTRICAL CONNECTIONS

To access the electrical terminal block:



Disconnect the unit from the electrical power supply.

Dismantle the casing (fig. 4) for a CV/CH unit.

Remove the screw from the electrics box enclosure (fig. 12b).

Modifying the motor speeds:

Always use an electrician's flat-blade screwdriver when performing cabling operations.

MAJOR 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.12c).

- 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 back in the hole 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 electrics box cover once all the cabling and adjustment operations are complete.

■ **The brushless motor:**

This has a motor speed electronic control unit which uses a 0-10 V control signal or 3-speed on/off control (to be selected by the customer depending on the controller or thermostat used with the unit).

- Controller or thermostat for 3-speed on/off control:

Power up the unit and select the ventilation speed to be modified using the thermostat.

Use the "CIAT speed control unit" accessory supplied as an option to adjust each speed (rpm) in accordance with the instructions included with the speed control unit.

- 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.



If electrical heaters are used, the lowest speed setting should never be below 400 rpm.

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

9 - ELECTRICAL CONNECTIONS

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). The leakage current for all our Comfort Units complies with the requirements of standard IEC 60335-2-40 (Household and similar electrical appliances - Safety):

- Complete comfort unit (with electrical heaters) equipped with a multi-speed motor: maximum leakage current = 2 mA.
- =Complete comfort unit (with electrical heaters) equipped with an HEE motor (Brushless technology): maximum leakage current = 3,5 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.

Electrical safety:

To ensure user safety, earthing is compulsory.

The installation must be equipped with a device to protect against earth faults.

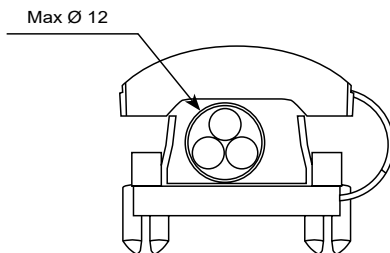
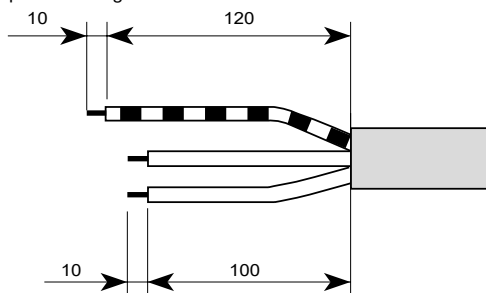
A disconnect device must be built into the installation between the supply and the 230 VAC power network, and must be easy to access. The disconnect device must simultaneously disconnect the two poles (live and neutral), and have a distance of at least 3 mm between the contacts, in compliance with the installation instructions.

The mains power cable must have 3 conductors (blue, brown, green/yellow) and its cross section and type must comply with the specifications set out by the applicable EN or IEC standard. Refer to the selection sheet or the name plate to determine the maximum input current. The cable must be fed into the box via the circular hole fitted with a protective grommet and secured in the dedicated strain relief.

Its maximal diameter must be 12 mm. It must be clamped at low speed with a torque not exceeding 0,8 Nm.

Connection

Connect the electrical connections to the connectors as per the wiring diagram below, and lock the wires using the special cable grommets.



Power cable

9 - ELECTRICAL CONNECTIONS



Connect the earth before making any other connections.

Check that the stripped section of the GREEN/YELLOW cable is longer than the others.

The electrical connection cables must be type H05 VVF with PVC insulation in accordance with the standard EN 60335-2-40.

The power cable must have a minimum cross section of 2,5 mm².

If the indoor unit is equipped with electric heating, there is just one power supply; in this case, ensure that the power cable is correctly sized.

General safety instructions for units with electric heating elements:

- Fan-controlled operation: the electrical heater (1 or 2 elements) must always be fan-controlled. Power to the electric heating elements should be cut and post-ventilation activated whenever the fan motor assembly is stopped intentionally or unintentionally.
- 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.
- Units equipped with heaters are protected against accidental overheating by 2 temperature limiter thermostats (fig. 12, rep. a), always fitted on the electrics box side. Do not reset these thermostats until the potential causes of the overheating have been checked:
 - Powering up without ventilation.
 - Filter partially clogged.
 - Coil and fan stopped simultaneously by control.



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

10 - CARE AND MAINTENANCE

The unit must be serviced periodically between the heating and cooling seasons. In particular, components prone to clogging (filter, condensate pan, coil, condensate pump, etc.) must be checked.



Ensure that the hydraulic and power supplies to the unit are disconnected before carrying out any work and wait at least 20 mins before working on or near the heaters.



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

10.1 - Air filter maintenance

The filter is key to ensuring the unit runs correctly. Without it, there is a risk the heat exchange coil will become clogged. We recommend changing the filter between each operating season. For more frequent maintenance, the filter can be cleaned by running a vacuum attachment in the opposite direction to the flow of air. Check

the filter's appearance regularly. The required cleaning frequency will depend on where the unit is installed and its operating conditions.

For an NCH model equipped with a plenum at the air recovery, 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. The filter should never be cleaned using water or detergent products, which could cause the spread of bacteria.

Standard air recovery (fig. 13):

Horizontal model:

Removing the filter from the rear of the unit: swivel the runners (a) and slide the filter (b) towards the bottom, freeing it from the runners.

Vertical model:

Removing the filter from the inside of the unit: swivel the runners and slide the filter towards you, freeing it from the runners.

NCH H or NCH U model (fig. 14):

Remove the screws located at the edge of the plenum (a) and partially unscrew the screws on the sides of the plenum (b).

Slide the lower plenum panel (c) to give access to the rear section of the unit. Swivel the runners (d) and release the filter (c) by pulling it downwards.

10 - CARE AND MAINTENANCE

Front air recovery (fig. 15):

Vertical model:

To remove the filter, swivel the runners (a) and release the filter (b) by pulling it upwards.

Horizontal model:

To remove the filter, swivel the runners and release the filter by pulling it towards you.



When refitting the filter, ensure the runners are securely clipped in to lock them.

Front air recovery, cased model (fig. 16):

Turn the 2 x 1/4 turn screws (a), swivel the grille and remove the filter (b) from its housing.

10.2 - Fan motor assembly maintenance

Periodically check the cleanliness of the impellers and the motor. If necessary, clean them using a vacuum cleaner, taking care not to damage them. No special maintenance is required for the electric motor.

Removing the fan motor assembly (Fig. 17):

- Disconnect the wires from the motor (on the terminal) after the unit has been powered off.
- Remove the air filter (see filter maintenance).
- Remove the front fan motor assembly panel (a).
- Remove the 1/2 scroll(s) (b) by unclipping the 2 lugs, with a tool (screwdriver) (c) and the 2 disassembly clips (d).
- Unscrew the motor retaining screw (e).
- Remove the motor/impeller assembly from the unit.

To reassemble the fan motor assembly, perform these steps in the opposite order.

10.3 - Condensate drain pan maintenance

The condensate pan must be kept clean. Clean the plastic pan and its connection fittings completely with water-based non-abrasive cleaners.

Cleaning must be carried out with the pan removed, by unscrewing the 2 side screws and the 2 front screws from the pan (fig.18).

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.

10.4 - Exchanger coil maintenance

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 water coil and the condensate drain.
- Remove the fan motor assembly (see the section above)
- Remove the condensate pan (see the section above)
- Unscrew the side screws from the exchanger coil and remove it from its housing between the unit's support feet.

Note: The condensate pan can be removed without having to remove the heat exchange coil.

10.5 - Casing maintenance

To maintain the appearance of the unit, wipe it clean with a slightly soapy, damp sponge and buff it with a soft, dry cloth. Use water-based non-abrasive cleaners.

11 - TESTS AND 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 an air filter.

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

Under no circumstances must the fitter carry out work on the motor. This will invalidate any future claims on the warranty.

12 - CE 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/UE

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

13 - 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.

The quality management system of this product's assembly site has been certified in accordance with the requirements of the ISO 9001 standard (latest current version) after an assessment conducted by an authorized independent third party.

The environmental management system of this product's assembly site has been certified in accordance with the requirements of the ISO 14001 standard (latest current version) after an assessment conducted by an authorized independent third party.

The occupational health and safety management system of this product's assembly site has been certified in accordance with the requirements of the ISO 45001 standard (latest current version) after an assessment conducted by an authorized independent third party.

Please contact your sales representative for more information.

Carrier S.C.S, Rte de Thil - 01120 Montluel, France.

The manufacturer reserves the right to change the product specifications without notice.

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