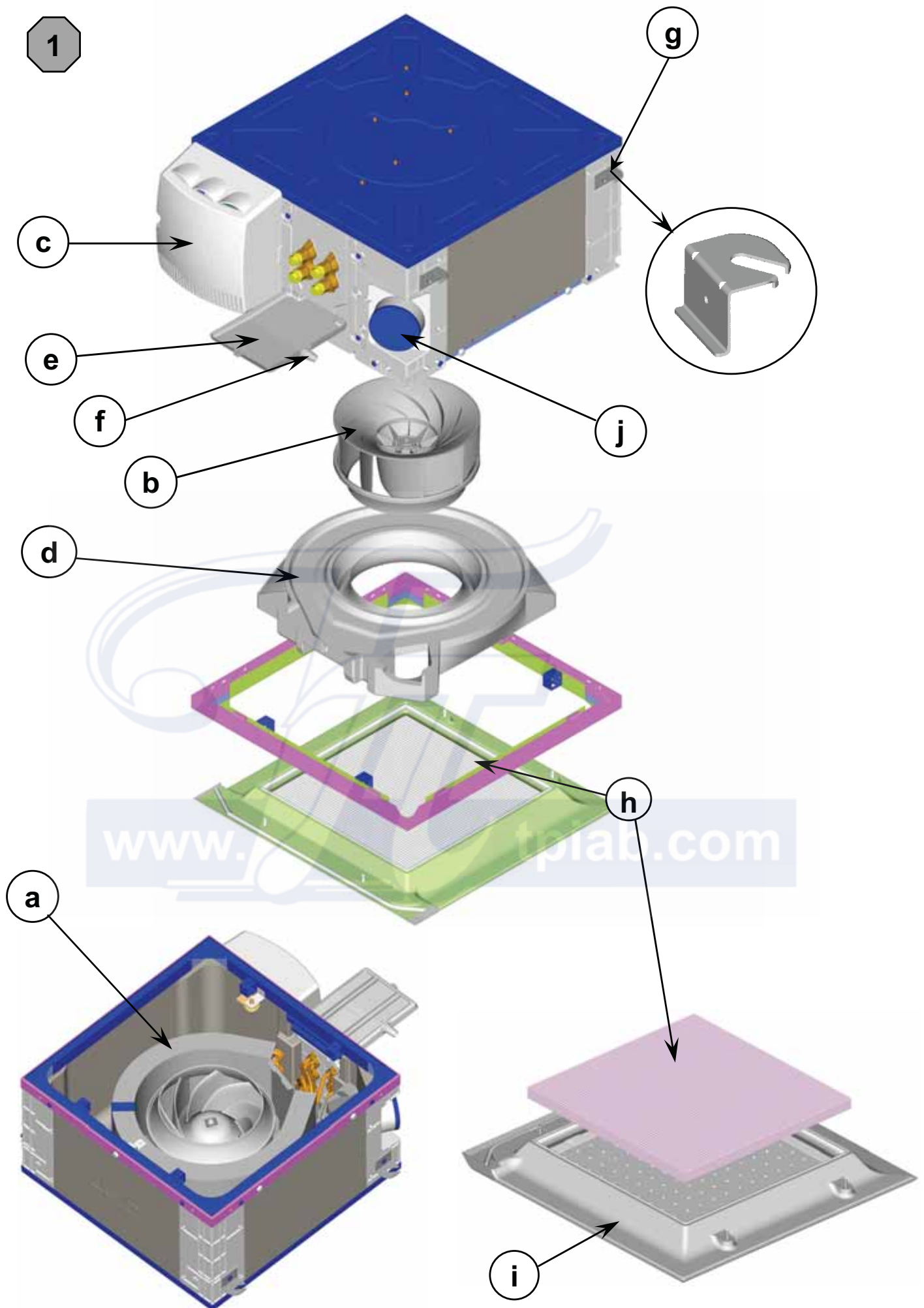


COADIS LINE

**Installation
Operation
Commissioning
Maintenance**







2

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2

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Ref. Product/Item Ref.		Designation/Description	
7309401		COADLINE CDL - 622T - S	
An./Year	N. Serie/Serial Nbr	Components/Components	
2011	01830836/0048		
Moteur/Motor (Ph/Hz/V)	Batterie/Hydro. coil	Fluide/Fluid	
1 + N 50/60HZ 230V + T	2T	EAU	
P. moteur/Motor P. (W)	Elec Element (Ph/Hz/V)	Maxi pressure (bar)	
		16	
I. moteur/Motor I. (A)	Elec Element P. (W)	Cablage/Wiring	
tr.mm - 1/r.p.m	Elec Element I. (A)	Elec Diagram	
		7301650	

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 30, av Jean Falconnier
 01350 CULOZ (FRANCE)
 tel : 33 (0)4 79 42 42 42
 www.ciat.com

Made in France

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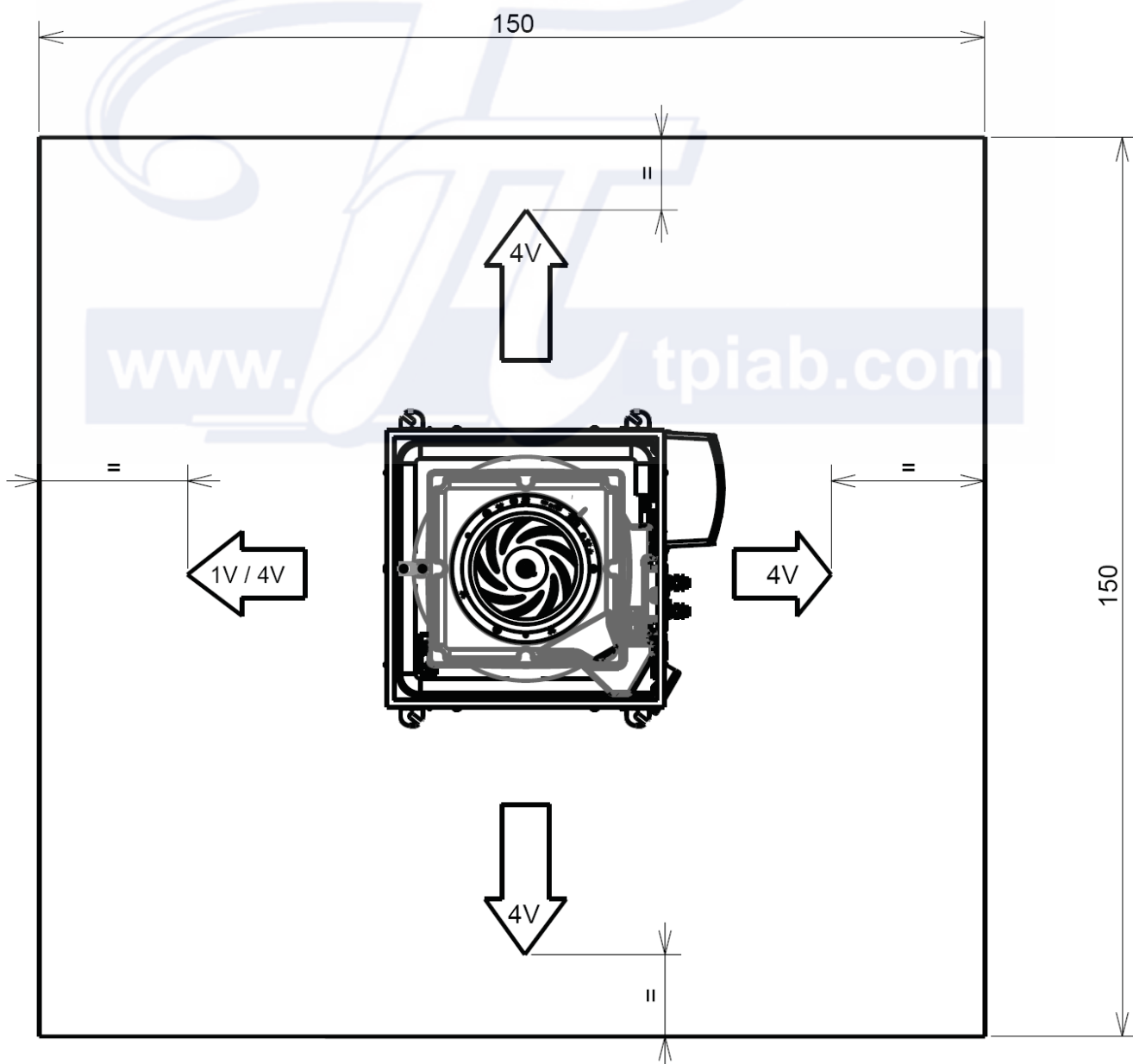
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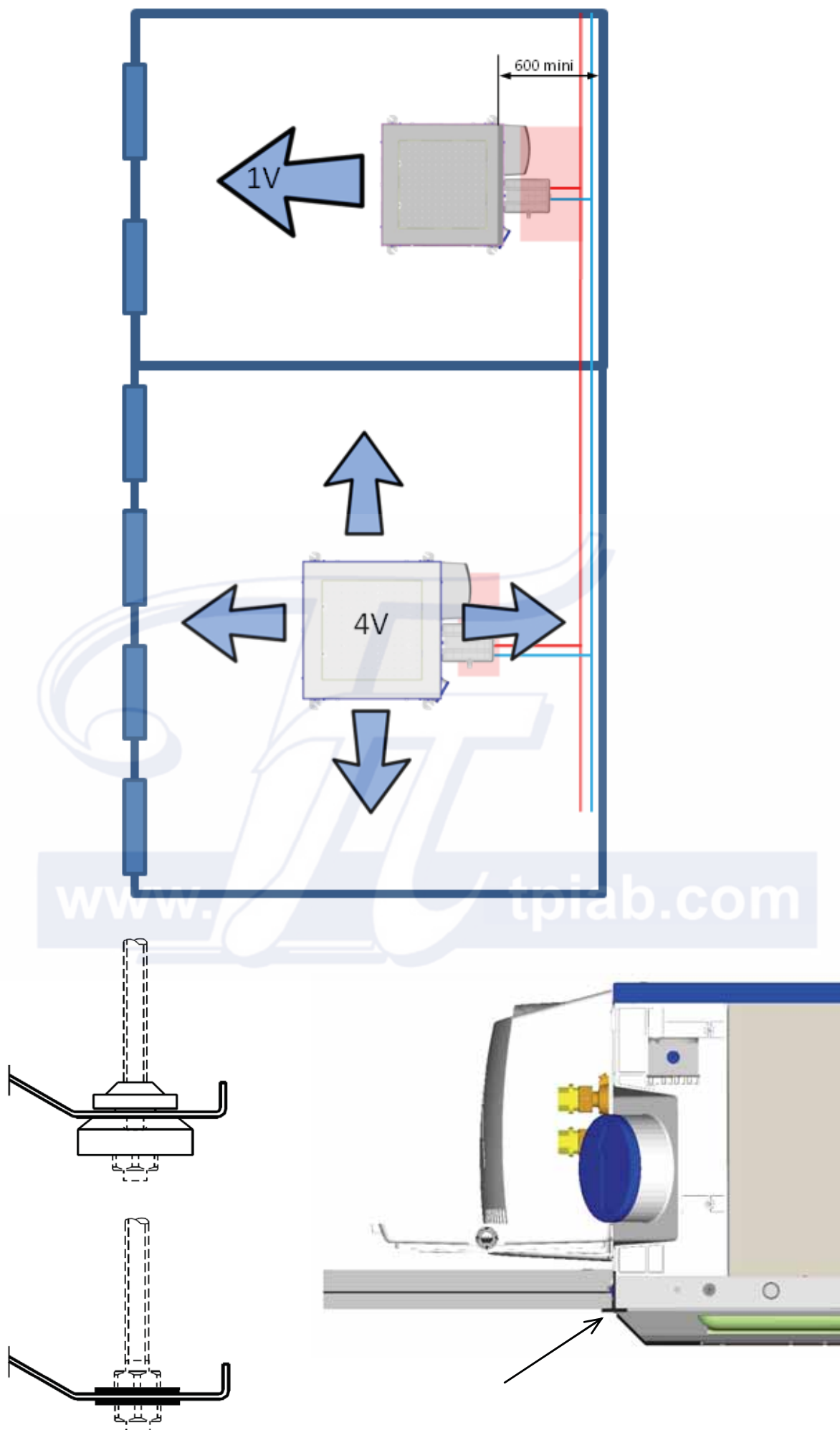
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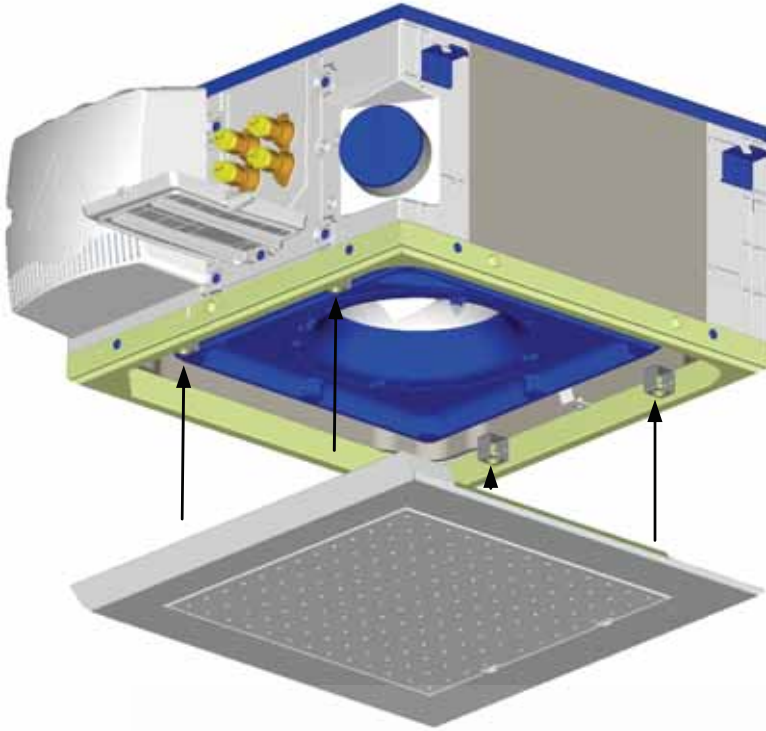
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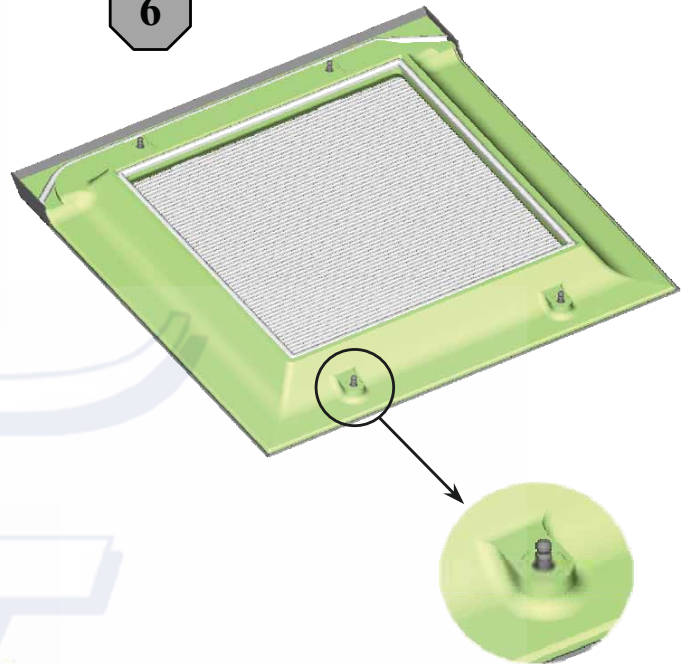
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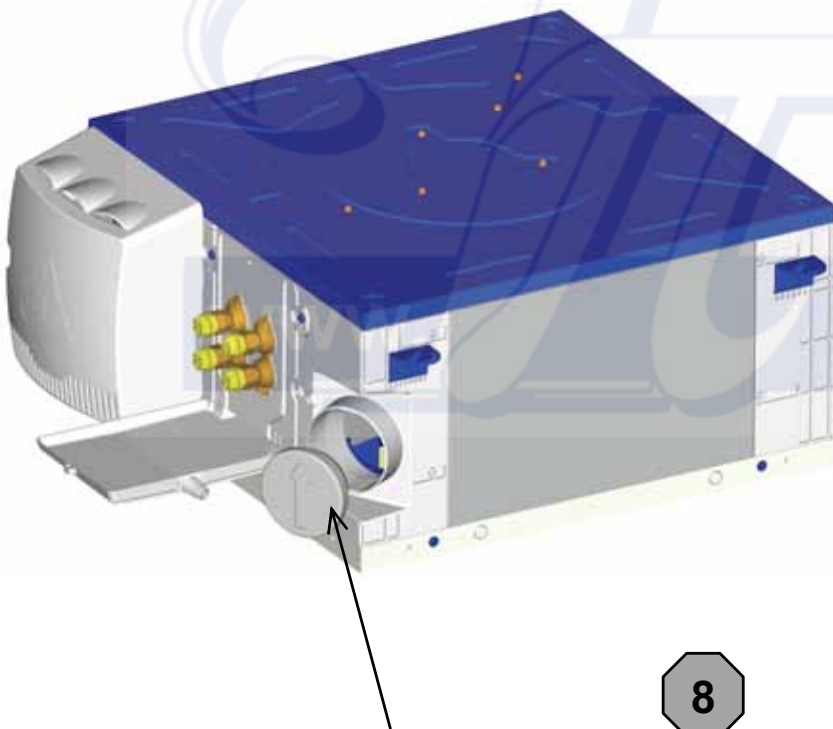
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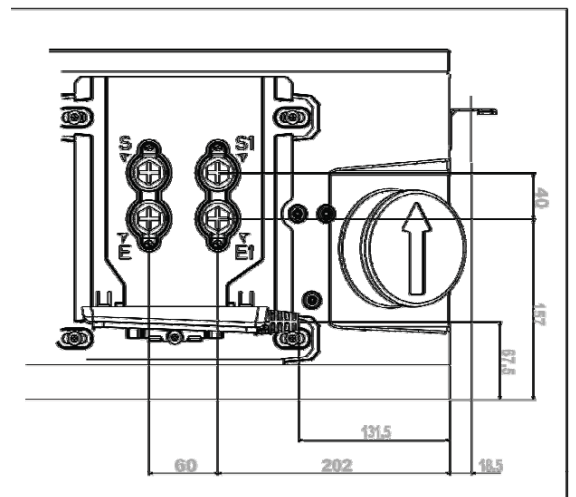
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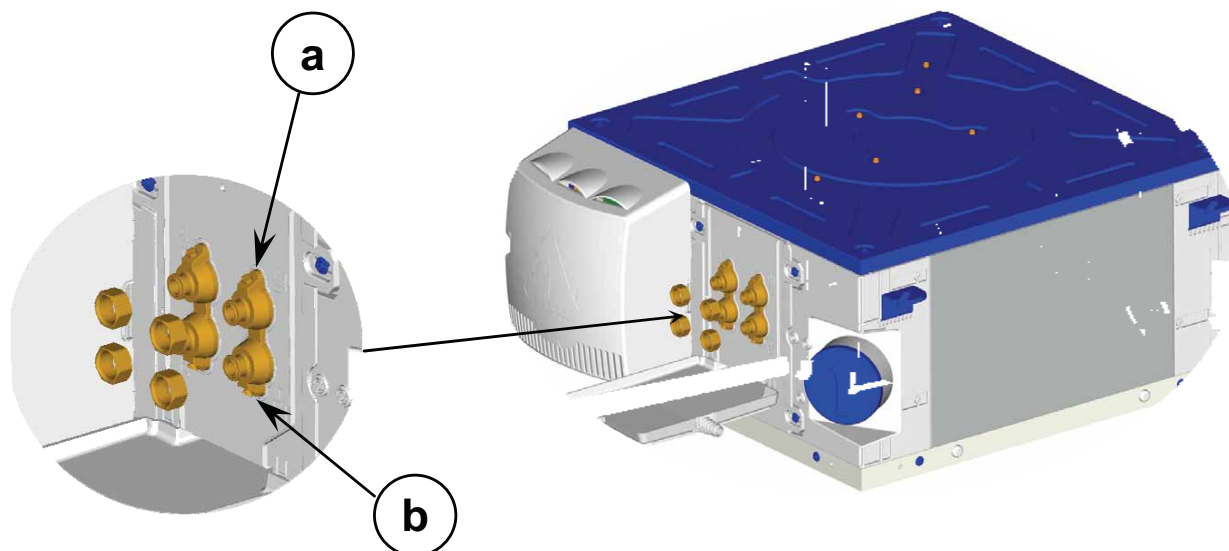
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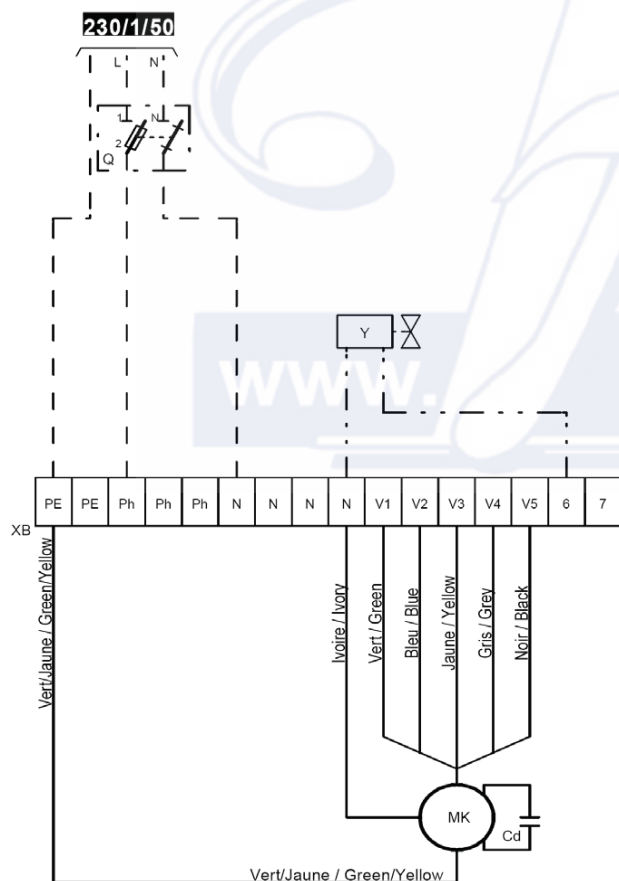


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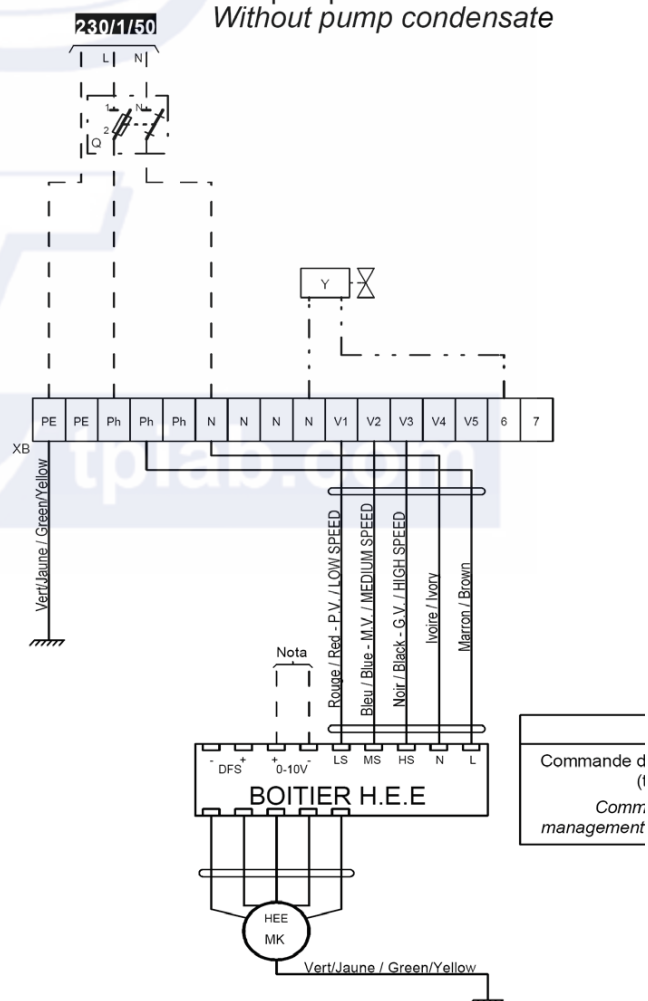


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Sans pompe de condensats
Without pump condensate

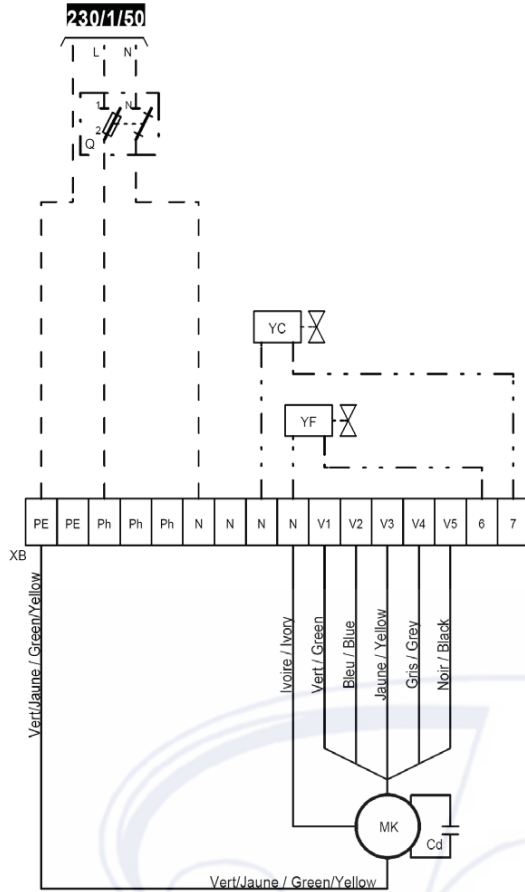


Sans pompe de condensats
Without pump condensate

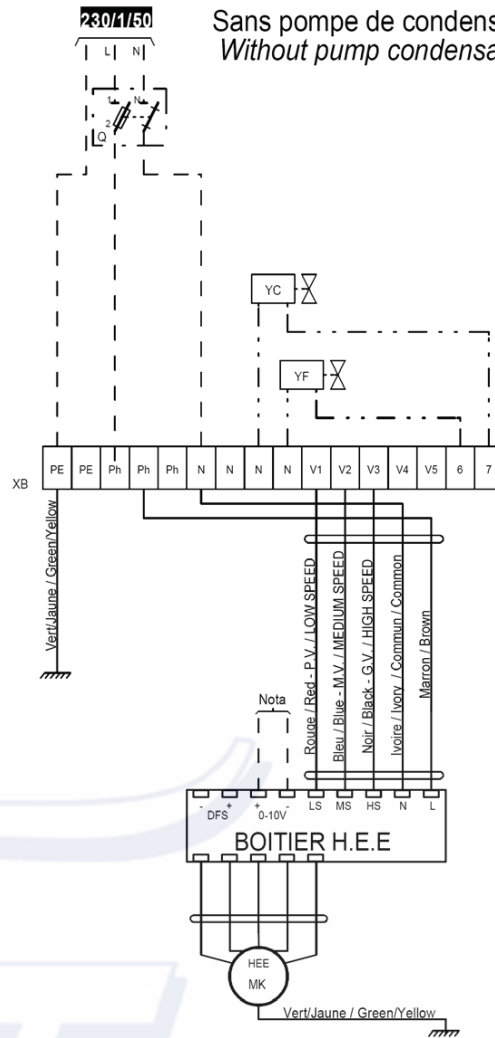


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Sans pompe de condensats
Without pump condensate

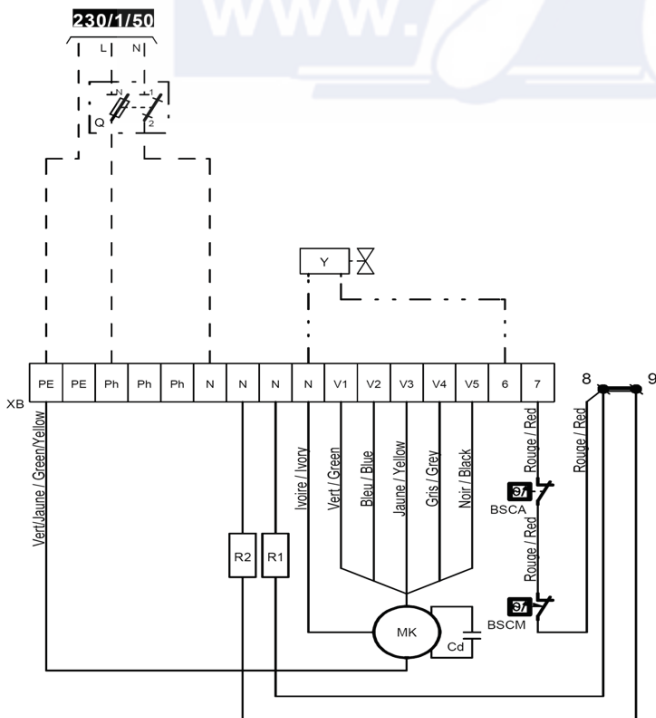


Sans pompe de condensats
Without pump condensate

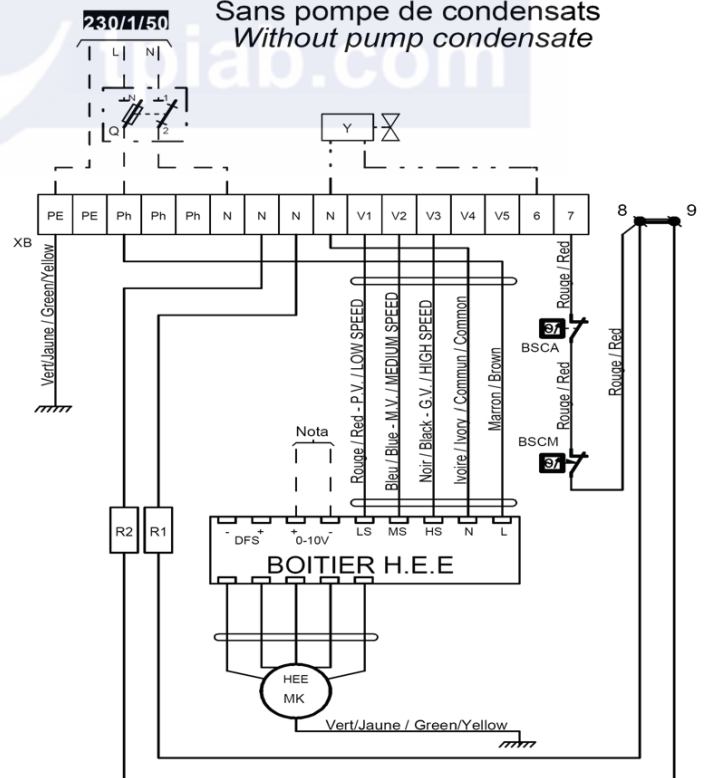


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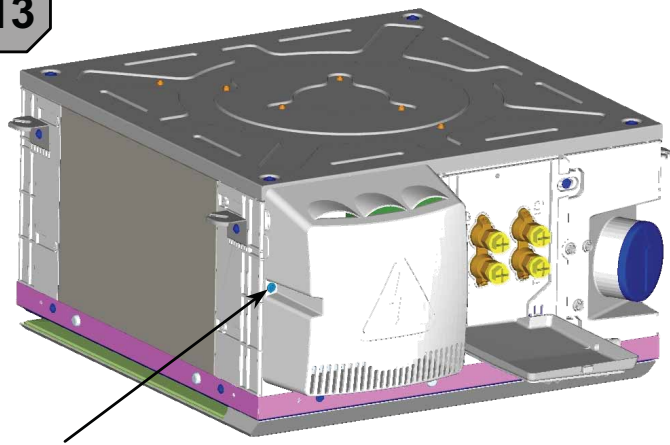
Sans pompe de condensats
Without pump condensate



Sans pompe de condensats
Without pump condensate



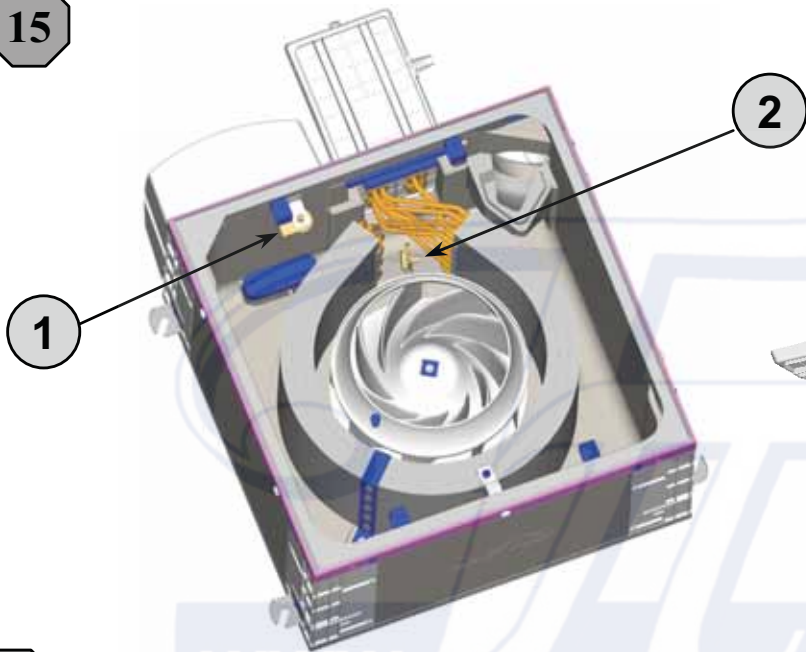
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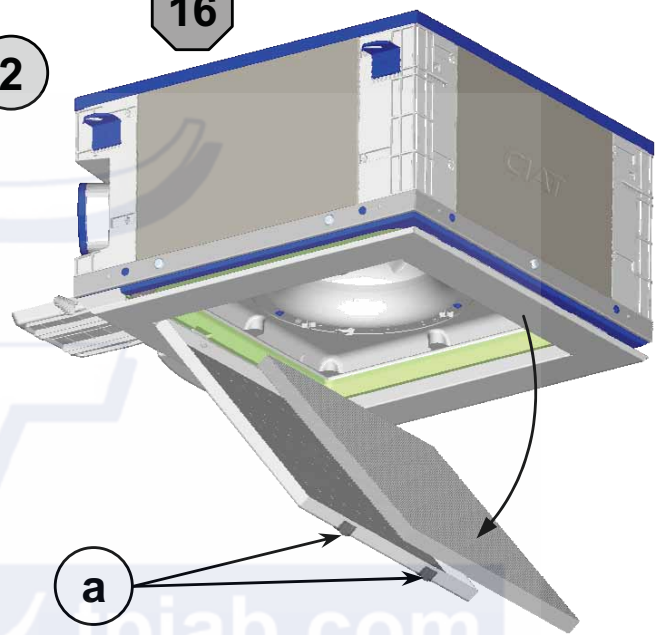
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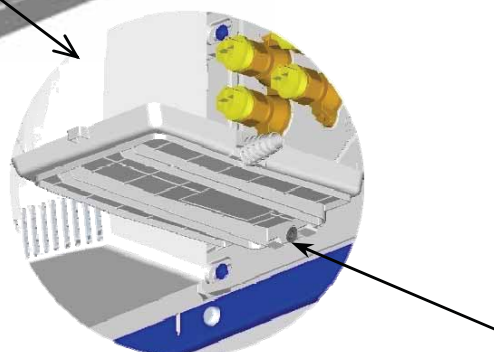
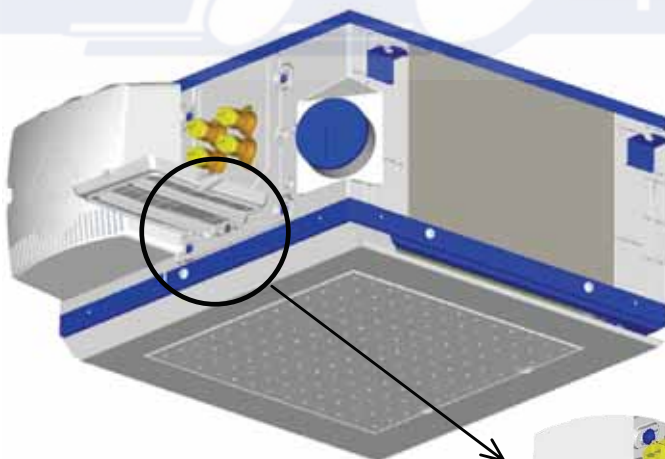
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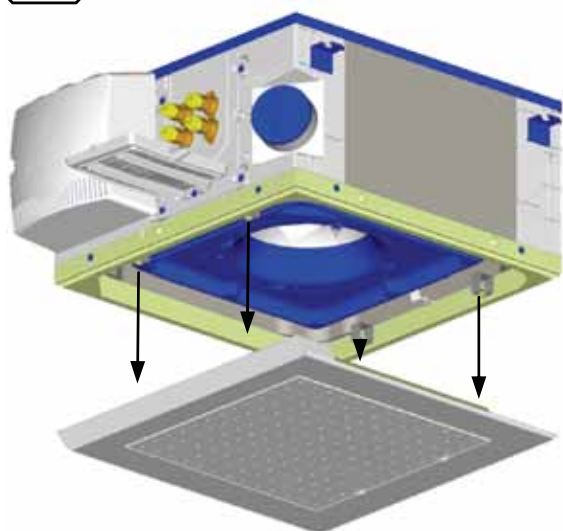
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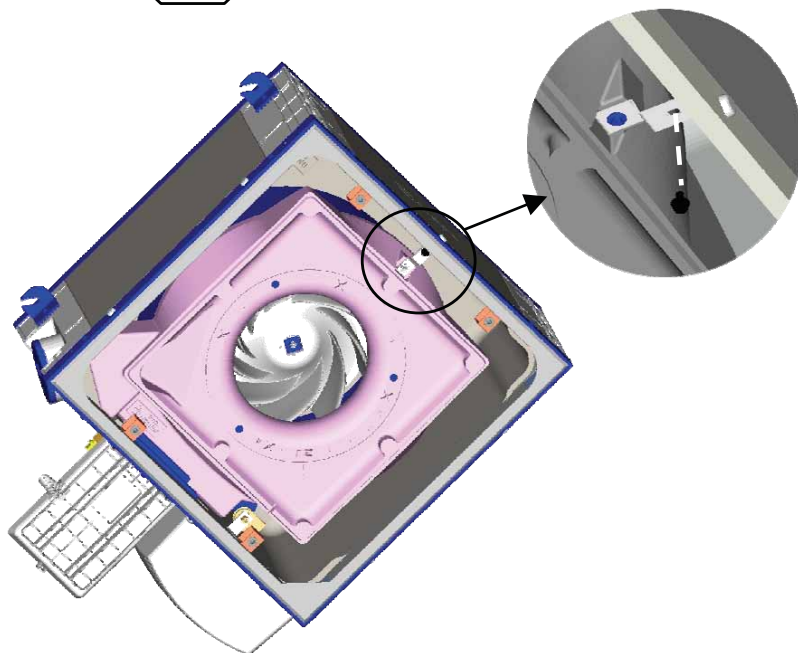
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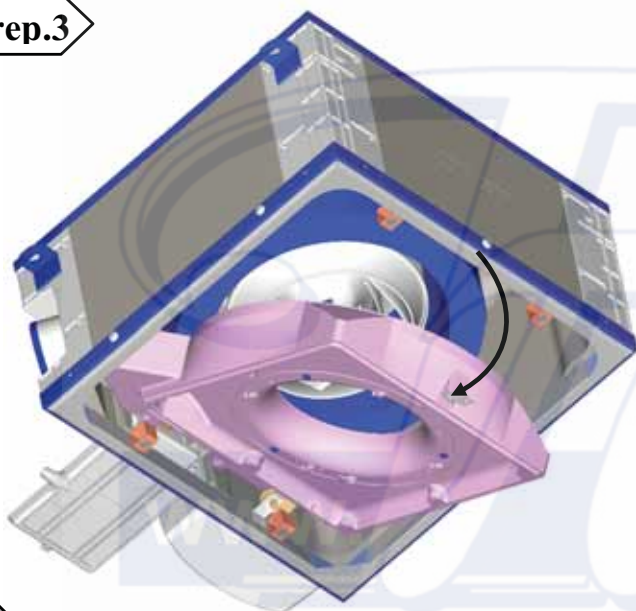
rep.1



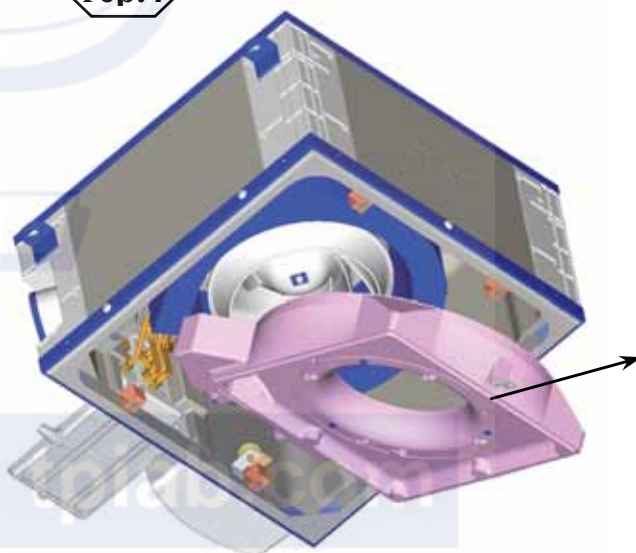
rep.2



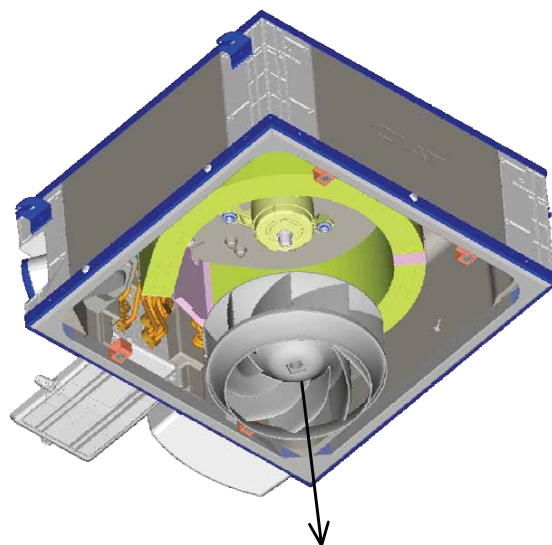
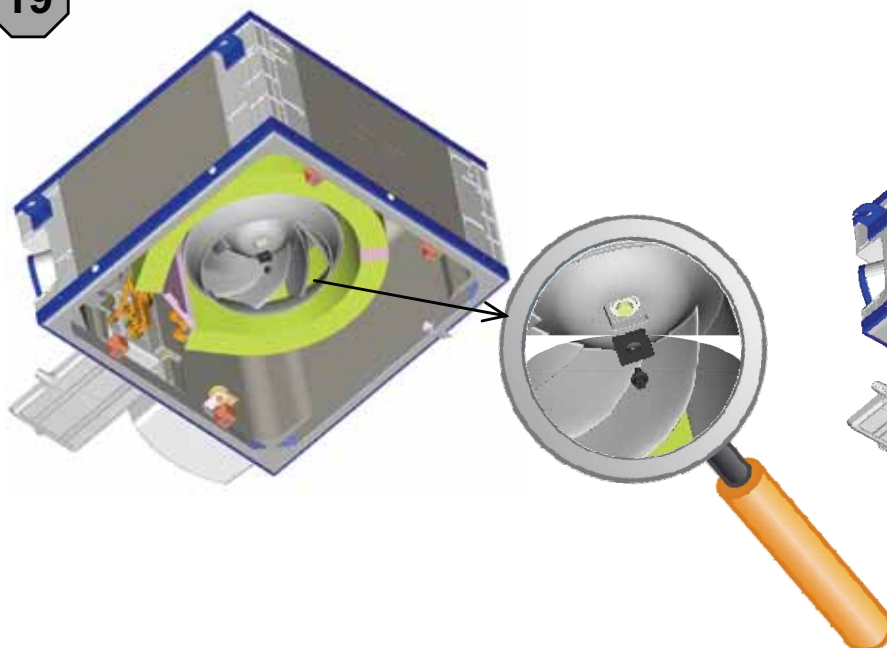
rep.3



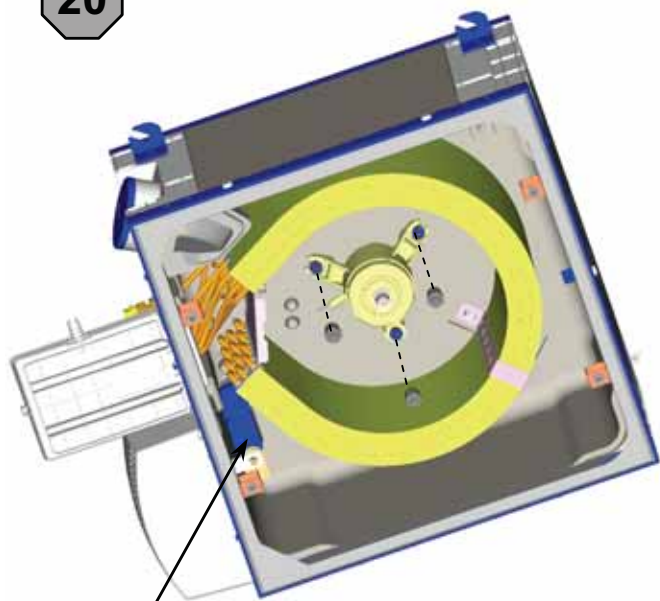
rep.4



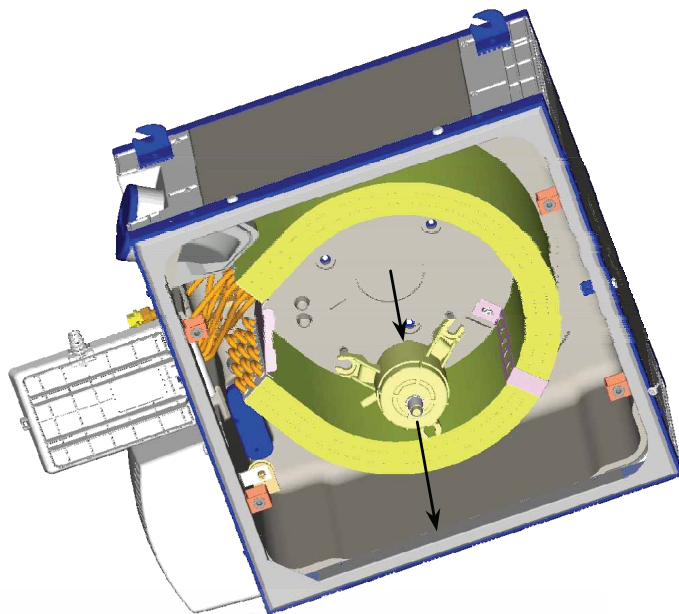
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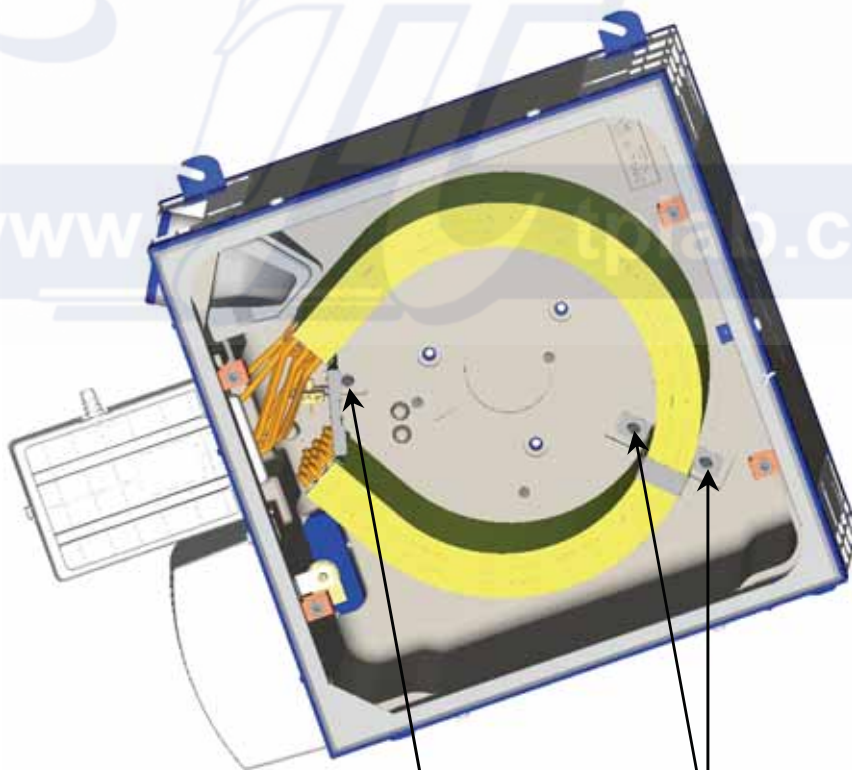


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UNPACKING, CHECKING AND STORING THE UNIT

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

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

Your unit must be maintained as recommended in this manual.

The unit is delivered in two separate packages. An air handling unit and a return/discharge panel, with a label on the packaging bearing all the details required for identification (type, model, etc.).

Each unit bears a data plate. Include the reference number shown on the data plate 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 upon delivery, report it on the delivery receipt in the presence of the delivery driver before the delivery note is signed.

IMPORTANT: 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.

HANDLING



For your safety, wear protective gloves!

Important: the unit must be handled with care and preferably laid 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 using the brackets. 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. The unit must be fixed to the ceiling using the 4 threaded rods (not supplied) on the 4 support brackets.

DESCRIPTION OF THE UNIT (fig.1)

- a-Heat exchange coil
- b-Fan motor assembly
- c-Electrical box
- d-Main condensate drain pan
- e-Auxiliary condensate drain pan
- f-Condensate drain
- g-Support brackets
- h-Air filter
- i-Air return/discharge panel
- j-Fresh air inlet

Data plate (fig.2)

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

The data plate contains all the information required to identify the unit and its configuration. This plate is positioned on the technical face containing all the connections, above the fresh air inlet. Before contacting us, please note the serial no. and the designation.

INSTALLATION & CONNECTION



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

→ Mechanical connections

Ensure there are no obstacles in order to guarantee optimal air distribution.

An electrostatic film applied to the air intake prevents dust from entering the unit during assembly and can be left in place until the diffuser is fitted in its final position.

The air handling box is fitted inside the suspended ceiling at the edge of the room with the air discharge opposite windows and the electrical box facing the interior of the building for models with a 1-way return/discharge panel. For 4-way models, position the box in the centre of the room with the electrical unit facing the interior of the building. Ensure that the neighbouring suspended ceiling panels can be easily removed to allow maintenance and servicing operations to be carried out. The Coadis Line must be suspended from the ceiling using 4 threaded rods either 6 mm or 8 mm in diameter (not supplied), which are fixed to the unit's 4 support brackets using antivibration resilient mounts (optional, fig.4-A) or a nut/washer assembly positioned on either side of the mounting bracket (fig.4-B)

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

The fitting template (fig.3) on the air handling unit packaging allows the anchoring points for the threaded rods to be traced on the ceiling according to the selected diffusion, rep.A→ 1 way (1V) or rep.B→ 4 ways (4V).

Insert the threaded rods in the notches on the support brackets. The unit must be level and resting lightly on the base of the T profiles of the suspended ceiling (fig.4-C).

Important:

- **The unit must be perfectly level in relation to the suspended ceiling to prevent condensate draining problems.**
- **For configurations with a 1-way return/discharge panel, the rear of the unit must be a sufficient distance from the wall (at least 600 mm) to allow suitable access to the hydraulic, electrical and air connections. Reminder: the air discharge is always directed towards glass partitions in order to minimise heat flow due to radiation.**

- ***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.***

→ Air connections

Mounting the return/discharge panel

1-way or 4-way return/discharge panel (fig. 5): We recommend fitting this component only when the box is already installed in the suspended ceiling to prevent damage to the panel or clogging of the filter during tests when switching on for the first time.

The panel is supported by a connection comprising 4 ball joints/couplers (fig.6)

- Remove the electrostatic film applied to the box's air intake.
- Mark the 4 positioning squares on the counter frame (fig.5). The ball joint centre to centre distances are different to prevent assembly errors.
- Hold the panel with both hands at opposite corners.
- Fit the panel by pressing each ball joint firmly and sharply.

Attention: do not press hard on the corners of the panel as this could deform them. Check that the panel is securely affixed.

The COADIS LINE has a directly integrated return/discharge interface which isolates the flow of air handled by the unit from the suspended ceiling. The use of a connecting air duct between the air return and discharge is therefore not necessary.

The COADIS LINE has an inlet for clean fresh air equipped with a 100 mm diameter connection sleeve integrated in the frame, with a removable plug (fig.7).

The ducts used may be coated with an anti-condensation material (fibreglass 12-25 mm thick)

- Remove the plug from the fresh air inlet
- Position the duct on the connection sleeve
- Place a retaining clamp around the duct in contact with the connection sleeve
- Tighten the clamp and check the integrity of the connection

If the fresh air return leads directly outside, the duct must not exceed 5 metres in length. A rain guard grille and a filter must be fitted (at installer's expense) to prevent water or other material entering 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.

→ Hydraulic connections

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

The pipes are positioned in the suspended ceiling as shown in figure 8, which is also printed on the fitting template.

The coils are equipped with a header coupling with flat face swivel nuts with a female thread, diameter G½ " and an O-ring (supplied by CIAT) (fig.9).

The header coupling is equipped with an air bleed valve (fig. 9 a) at the high point with partial draining at the low points (fig. 9 b) that can be manoeuvred using a 7 mm Allen key or a flat-blade screwdriver.

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

If the hydraulic connections are completed, it is not necessary to insulate the valves to prevent condensation (unless they are specific valves). A naturally inclined ABS auxiliary condensate drain pan is supplied with the unit. This collects condensates from the valves and coil (from the main pan) and evacuates them via gravity or using a condensate drain pump supplied as an option.

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 the 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.

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 and shut-off valves on each coil and, if necessary, discharge valves.

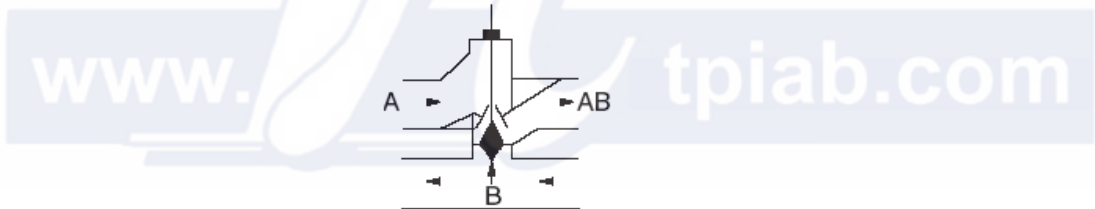
Filtration:

An efficient filtration system (recommended efficiency of 0.5 mm) should be fitted on the water supply and return lines.

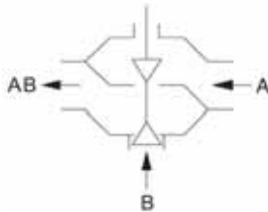
Flushing:

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 impurities from entering the coil:

- Thermo valves: remove the servomotor and fit the cap, which will cause pressure to be applied to the shaft, thereby opening the passage or request that the control valve opens.



- 3-position modulating valves: if the power has not yet been switched on, the valve will be open by default. If the control has already been powered up, remove the servomotor to release the rod and open the passage.



Filling

Drain the coils during commissioning.

Operating limit recommendations:

Cooling coil inlet minimum water temperature: **7°C**

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

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

Heating coil inlet maximum water temperature (4-tube application): **80°C**

Maximum operating pressure: **16 Bar**

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

Interior return air maximum relative humidity: **60%**

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 completely sealed at its ends. When using the water coil and electric heater, we advise against using cross-linked polyethylene (PEX) pipes to supply water to the unit. This is because overheating of the electric heater could cause the water temperature to rise briefly. This could cause 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.

→ Connecting the auxiliary condensate drain pan

A naturally inclined ABS auxiliary condensate drain pan with no standing water and equipped with a connecting bushing is supplied with the unit. The condensate is drained via the bushing (drain height 70 mm), which can receive tubes with an internal diameter of 15 to 20 mm. The drain hose can be separate for each unit or connected to a main drain hose 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 for a minimum slope of 1 cm/m, with a constant gradient along its whole length and no low points. Install a siphon measuring at least 5 cm to prevent unpleasant gases or odours exiting the hose.

→ Electrical connections



- Disconnect the electrical supply to the unit before carrying out any work.
- Only personnel qualified to perform electrical work may make electrical connections.

Before connecting the unit to the network, ensure that the voltage matches that indicated on the motor's data plate (230/1/50-60Hz).

Coadis Line	Motor code	AC Asynchronous Motor			HEE Brushless Motor		
		612	622 - 624	632 - 634	612	622 - 624	632 - 634
Input power (W)	V5	75	75	98	35	36	57
	V4	45	45	73	15	14	32
	V3	38	38	59	11	10	22
	V2	28	28	48	7	7	15
	V1	19	19	35	5	5	9
Input current (A)	V5	0.33	0.33	0.43			
	V4	0.20	0.20	0.32			
	V3	0.16	0.16	0.26			
	V2	0.12	0.12	0.21			
	V1	0.08	0.08	0.15			

Consult us


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

Circuit diagrams for customer applications should be based on the diagrams supplied:

- Unit wiring for 2-pipe systems (fig.10).
- Unit wiring for 4-pipe systems (fig.11).
- Unit wiring for 2-pipe systems with an electric heater using 2 heating elements (P=900 or 1200W Max) (fig.12).

Note: if necessary, the output of the 300W electric heater can be reduced by removing the shunt positioned between terminals 8 and 9.

CIAT recommends using a system that controls the unit in relation to the temperature of the water (to actuate the valve(s)) and the use of an electric heater.

All the electrical connections are routed into the electrical box indicated by . The electrical box is equipped with a cable grommet to allow the cables to be routed up to the terminal block.

To access the electrical terminal block:



Disconnect the unit from the electrical power supply.

Use a screwdriver to undo, but not remove, the lateral retaining screw on the electrical box casing (fig.13).

Modifying the motor speeds: a screwdriver must be used to install the wiring.

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

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 cable 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.14):

- 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 again 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.

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

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

Brushless motor: this has a motor speed electronic control unit which uses a 0-10V 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:
- Switch on 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 N08-43 instructions included with the speed control unit.
- Controller managing a 0-10V 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.

N.B.:

If electric 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.

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 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 elements) equipped with a multi-speed motor: maximum leakage current = 2mA
- Complete comfort unit (with electric elements) equipped with an HEE motor (brushless technology): maximum leakage current = 4.5mA.

Electromagnetic compatibility in accordance with Emission standard 61000-6-3 (EN55014-1, Tool class) and **Immunity 61000-6-1** (Residential, commercial and light industry class).

Important: 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 never be below 400 rpm.
- Fan control: the electric heater must be controlled by the fan. Power to the electric elements should be cut 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 (we recommend a post ventilation period of 2 minutes).
- Units equipped with heating elements are protected against accidental overheating by 2 temperature limiting thermostats (fig.15), 1 with manual reset (1) and 1 with automatic reset (2).

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

- Powering up without the fan.
- Filter partially clogged
- Coil and fan stopped simultaneously by control.

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.

AIR FILTER

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

The COADIS LINE is equipped as standard with an EPURE high-efficiency pleated filter. We recommend replacing the filter every two years. If maintenance is carried out more frequently, the filter can be cleaned 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.

To guarantee optimal thermal, acoustic and air purification efficiency throughout the unit's life, CIAT recommends the use of an EPURE filter. Using a different type of filtration system could compromise the performance of the unit and be detrimental to users.

Accessing the filter (fig.16):

- Mark the two retaining lugs (a) positioned on the micro perforated return air grille
- Push the two 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 from its housing.
- After fitting a new filter, refit the return air grille. Lock it near to the panel by simultaneously pushing the two lugs sharply upwards.
- Check that the grille is securely affixed.

Note: The micro perforated return air grille must never be pushed in beyond the discharge panel

CONDENSATE DRAIN PANS

The main and auxiliary condensate drain pans 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.

Removing the pans:

- To remove the auxiliary pan (fig.17), undo the screw located under the pan and release it from its position.
- To remove the main pan (fig.18):
 - Hold the panel with both hands at opposite corners.
 - Pull the return/discharge panel towards you to release the ball joints from their housings (1)
 - Next, undo the retaining screw using a screwdriver to separate the pan from the frame (2). Tilt the pan (approx. 30°) downwards (3) and release it from its retaining lugs (4).

To refit, perform the operation in reverse order.

FAN MOTOR ASSEMBLY

Periodically check the cleanliness of the impeller and the motor. If necessary, clean them using a vacuum cleaner. Handle the vacuum attachment carefully to avoid damaging them.

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

Removing the fan motor assembly:

- Open the electrical unit
- Disconnect the wires which form the fan motor assembly bundle.
- Hold the panel with both hands at opposite corners.
- Pull the return/discharge panel towards you to release the ball joints from their housings
- Undo the retaining screw on the main condensate drain pan using a screwdriver (fig.18).
- Remove the pan by tilting it (approx. 30°) downwards and release it from its retaining lugs (fig.18).
- Undo the retaining screw for the impeller and its foolproofing device (fig.19) using a screwdriver and remove the impeller
- Remove the grommet cap (fig. 20, no. 1)
- Pull the fan motor assembly bundle towards the interior of the box
- Undo the 3 motor retaining screws and remove the motor (fig.20).

To refit, perform the operation in reverse order.

HEAT EXCHANGE COIL

A clean coil is crucial to the efficiency of the unit. If necessary, clean the coil with a vacuum cleaner.

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

- Insulate the unit hydraulically from the network and drain the coil.
- Disconnect the coil inlets and outlets
- Hold the panel with both hands at opposite corners.
- Pull the return/discharge panel towards you to release the ball joints from their housings
- Undo the retaining screw on the main condensate drain pan using a screwdriver (fig.18).

- Remove the pan by tilting it (approx. 30°) downwards and release it from its retaining lugs (fig.18).
- Undo the retaining screw for the impeller and its foolproofing device using a screwdriver and remove the impeller (fig.19)
- Undo the 2 screws on the coil retaining clamp (fig. 21-a) and the coil connecting plate screw (fig. 21-b).
- Remove the coil

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

RETURN/DISCHARGE PANEL

Wipe the walls with a damp, slightly soapy sponge and buff them using a soft, dry cloth.
Never use abrasive products.

CE CERTIFICATE OF CONFORMITY



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.

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