

Instruction manual

H4000 HELIOTHERME®

DESTRATIFIER TPL 4000



EN7512234-05

06 - 2021

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Thank you for purchasing a **4000 series HELIOTHERME®** or **TPL**. We hope that you will be completely satisfied with this CIAT air heater or destratifier unit.

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.

1 - RECEIPT OF THE UNIT

The unit is delivered in packages which are labelled for easy identification (type, model, etc.).

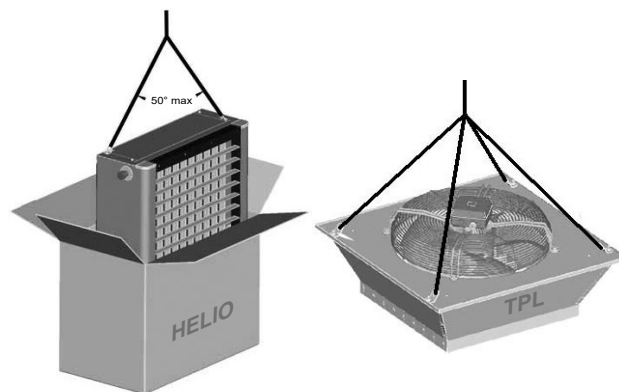
Each unit bears a name plate. The reference number shown on the name plate must be quoted in all correspondence.

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 upon delivery, describe the damage observed 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.

For an air heater operating with more than 10% fresh air, this is not compliant with Regulation (EU) No. 1253/2014.



2 - HANDLING

Handle the unit with care.

The unit can be installed with a forklift truck using the slings. These should be positioned on the 2 or 4 lifting rings as shown in the diagram below.

3 - TECHNICAL CHARACTERISTICS

3.1 - ROTOREX fan motor assembly



1 Ph/230 V AC motor

Use	Model	Motor	Rotation speed	Nom. current	Abs. pressure	IP	Thermal cut-out	Class	Operating temp.
HEATING	H4350	SINGLE-PHASE 230 V 50 Hz	1330 rpm	0.70 A	150W	44	NO	F	-40°C / +60°C
	H4400 / TPL4400		1400 rpm	1.30 A	300W	54	YES 6.3 A - 165 °C		-40°C/+70°C
	H4450 / TPL4450		1380 rpm	2.01 A	480W				
	H4500 / TPL4500		1403 rpm	2.78 A	630 W				
	H4630 / TPL4630		913 rpm	2.60 A	580 W				

3 Ph/400 V AC motor

Use	Model	Motor	Rotation speed		Nom. current	Abs. pressure	IP	Thermal cut-out	Class	Operating temp.
HEATING	H4350	THREE-PHASE 400V 50 Hz	HS - Δ	1385 rpm	0.35 A	110W	44	NO	F	-40°C / +60°C
	LS *		1175 rpm	0.15 A	70W					
	H4400 / TPL4400		HS - Δ	1404 rpm	0.50 A	260 W	54	YES 6.3 A - 165 °C		-40°C/+70°C
	LS *		1176 rpm	0.30 A	170 W					
	H4450 / TPL4450		HS - Δ	1385 rpm	1.13 A	550 W				
	LS *		1040 rpm	0.64 A	380 W					
	H4500 / TPL4500		HS - Δ	1391 rpm	1.51 A	770 W				
	LS *		1176 rpm	0.90 A	520 W					
	H4630 / TPL4630		HS - Δ	870 rpm	1.30 A	590W				
	LS *		750 rpm	0.63 A	250 W					
	H4630S		HS - Δ	870 rpm	1.30 A	590W				
			LS *	750 rpm	0.63 A	250 W				

3.2 - CORROBLOC fan motor assembly



CORROBLOC 1 Ph/230 V AC motor

Use	Model	Motor	Rotation speed	Nom. current	Abs. pressure	IP	Thermal cut-out	Class	Operating temp.
HEATING	H4350	SINGLE-PHASE 230 V 50 Hz	1225 rpm	1.00 A	200W	65	YES 6.3 A - 165 °C	F	-40°C/+70°C
	H4400		1200 rpm	1.60 A	340W				
	H4450		1290 rpm	2.30 A	480W				
	H4500		1290 rpm	3.00 A	650W				
	H4630		800 rpm	2.60 A	510W				

CORROBLOC 3 Ph/400 V AC motor

Use	Model	Motor	Rotation speed		Nom. current	Abs. pressure	IP	Thermal cut-out	Class	Operating temp.
HEATING	H4350	THREE-PHASE 400V 50 Hz	HS - Δ	1260 rpm	0.5 A	200W	65	YES 6.3 A - 165 °C	F	-40°C/+70°C
			LS *	950 rpm	0.2 A	120 W				
	H4400		HS - Δ	1350 rpm	0.80 A	300W				
			LS *	1000 rpm	0.4 A	200W				
	H4450		HS - Δ	1230 rpm	1.0 A	500 W				
			LS *	810 rpm	0.5 A	310 W				
	H4500		HS - Δ	1350 rpm	1.6 A	660 W				
			LS *	1060 rpm	0.9 A	450W				
	H4630		HS - Δ	905 rpm	1.26 A	530 W				
			LS *	650 rpm	0.6 A	300W				

3 - TECHNICAL CHARACTERISTICS

3.3 - HEE fan motor assembly (EC motor)



Single-phase motor

Use	Model	Motor	ROTATION SPEED	NOM. I (A)	P. (W) ABS	IP	Protection	CLASS	Operating temp.
HEATING	H4300	1 PH/230 V 50/60 Hz	1500 rpm	0,80	85	54	TACH	B	-25 °C/+55 °C
	H4350		1480 rpm	1,35	165	54	TACH	B	-25 °C/+50 °C
	H4400 / TPL4400		1760 rpm	2,2	500	55	NC 250 VAC/2 A	F	-25 °C/+60 °C
	H4450 / TPL4450		1500 rpm	2,2	500	55	NC 250 VAC/2 A	F	-25 °C/+60 °C
	H4500 / TPL4500		1440 rpm	3,25	740	55	NC 250 VAC/2 A	F	-40 °C/+60 °C
	H4630 / TPL4630		1020 rpm	3,2	730	55	NC 250 VAC/2 A	F	-40 °C/+60 °C
COOLING	H4300	1 PH/230 V 50/60 Hz	1500 rpm	0,80	85	54	TACH	B	-25 °C/+55 °C
	H4350		1040 rpm	0,65	73	54	TACH	B	-25 °C/+60 °C
	H4400 / TPL4400		1760 rpm	2,2	500	55	NC 250 VAC/2 A	F	-25 °C/+60 °C
	H4450 / TPL4450		1500 rpm	2,2	500	55	NC 250 VAC/2 A	F	-25 °C/+60 °C
	H4500 / TPL4500		970 rpm	1,1	250	55	NC 250 VAC/2 A	F	-25 °C/+60 °C
	H4630 / TPL4630		770 rpm	1,1	250	55	NC 250 VAC/2 A	F	-25 °C/+60 °C

N.B.: Warning: if the HEE motor is being used without a control, please respect the rotation speeds (with control voltage) listed below

Use	Model	Rotation speed	Maximum control voltage (V)
HEATING	H4300	1500 rpm	10
	H4350	1359 rpm	9
	H4400 / TPL4400	1605 rpm	7,7
	H4450 / TPL4450	1507 rpm	9,9
	H4500 / TPL4500	1325 rpm	8,1
	H4630 / TPL4630	1000 rpm	7,7
COOLING	H4300	1280 rpm	8,5
	H4350	1095 rpm	9,5
	H4400 / TPL4400	1111 rpm	5
	H4450 / TPL4450	1018 rpm	5
	H4500 / TPL4500	974 rpm	10
	H4630 / TPL4630	772 rpm	10

4 - HEAT EXCHANGER

4.1 - Low Pressure Water Coil

Copper tube
Aluminium honeycomb fins

LP water coil	H4300	H4350		H4400		H4450		H4500		H4630		H4630S
Number of heating rows	2	1	3	1	3	1	3	1	3	1	3	1
Number of cooling rows	2	3										-
Coil capacity (L)	0,8	0,68	1,66	0,96	2,28	1,38	3,22	2,18	4,55	2,97	6,4	2,97
Connection diameter	½ "	¾ "				1 "		1 " ¼				
Connection type	Threaded unions 243 GCU F/M											
Operating pressure	13 bar											
Max pressure	16 bar											
Max T°	110°C											

4.2 - High Pressure Fluid Coil (superheated water, oil, etc.)

316L stainless steel tube
Aluminium honeycomb fins

HP oil/water coil	H4350	H4400	H4450	H4500	H4630
Number of heating rows	1				
Coil capacity (L)	1,19	1,69	-	2,66	3,69
Connection diameter mm	33,7	42,4	-	42,4	42,4
Connection type	Smooth 316L stainless steel (to be welded)				
Maximum operating pressure	16 bar				
Test pressure	24 bar				
Max T°	200°C				

4.3 - High Pressure Steam Coil (HPSC)

316L stainless steel tube
Aluminium honeycomb fins

HP steam coil	H4350	H4400	H4450	H4500	H4630
Number of heating rows	1				
Coil capacity (L)	0,97	1,22	-	1,95	2,86
Connection diameter mm	26,9	33,7	-	48,3	48,3
Connection type	Smooth 316L stainless steel (to be welded)				
Maximum operating pressure	16 bar				
Test pressure	24 bar				
Max T°	200°C				

4.4 - Electric heater (EH)

Stainless steel single-tube heater
Aluminium honeycomb fins

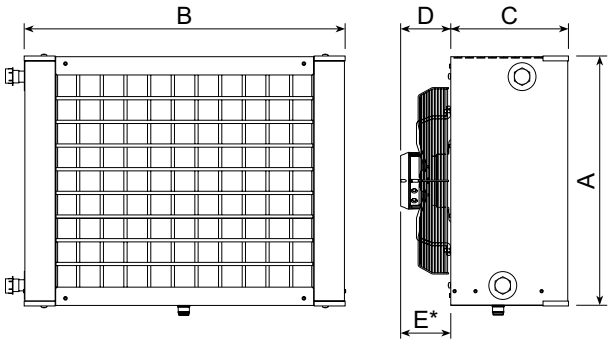
Electric heater	H4350	H4400	H4500
Electrical power kW	9,6	18,9	28,8
No. of stages	2	2	2
Heating element output per unit kW	0,8	0,9	1,2
Power per stage kW	2,4 - 7,2	5,4 - 13,5	10,8 - 18
Connection type	Manifold block		
Max T°	Double overheating thermostat with AUTO and MAN reset		

5 - DIMENSIONS

5.1 - H4000 HELIOTHERME®

Size		H4300	H4350	H4400	H4450	H4500	H4630	H4630S
A		395	460	555	618	714	874	872
B		600	646	700	813	918	1050	1050
C	mm	286	286	286	286	336	336	295
D		-	101	142	142	142	142	126
E*		126	126	143	143	188	200	-
Weight (kg)	1 row	-	21	30	40	50	62	60
	2 rows	18	-	-	-	-	-	-
	3 rows	-	26	34	44	56	72	-

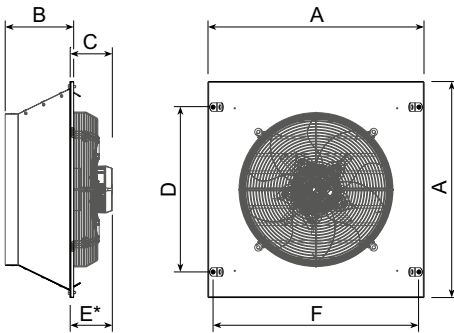
E* = HEE FMA



5.2 - TPL4000 Destratifier

Size		TPL40	TPL45	TPL50	TPL63
A		586	666	747	907
B		183	212	225	273
C	mm	143	143	143	143
D		370	470	570	705
E*		143	143	188	200
F		552	632	712	872
Weight	kg	17	22	25	33

E* = HEE FMA



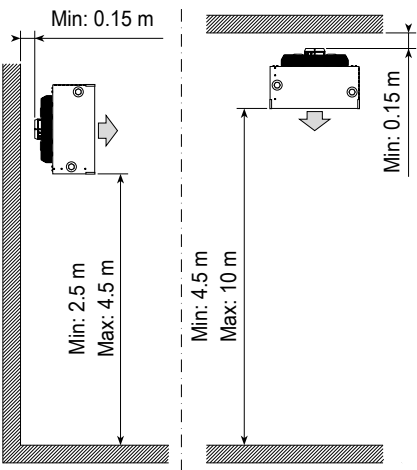
6 - SETUP

6.1 - H4000 HELIOTHERME®

To ensure correct air diffusion and to comply with the EN 294 standard relating to safety zones, you are recommended to position HELIOTHERME® units at a height of:

- Between 2.5 and 4.5 metres when wall-mounted
- Between 4.5 and 10 metres when ceiling-mounted.

If the fan motor assembly is removed, also ensure that the rear of the unit is a sufficient distance from the wall to allow access:

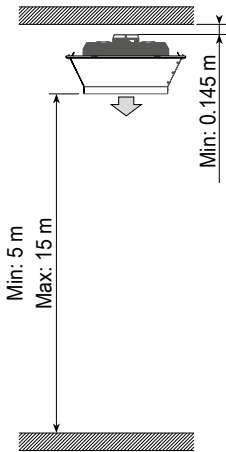


6.2 - TPL4000 Destratifier

To ensure correct air diffusion and to comply with the EN 294 standard relating to safety zones, you are recommended to position DESTRATIFIERS at a height of:

- Between 5 and 15 metres.

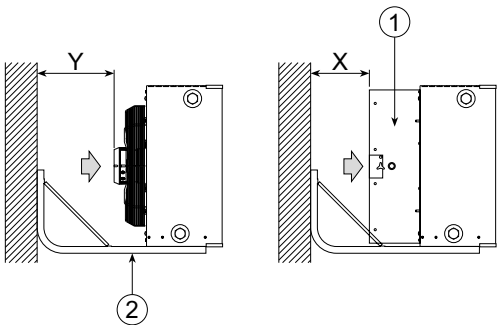
The rear of the unit must be at least 145 mm from the wall to facilitate removal of the fan motor assembly when necessary.



6.3 - Wall-mounted H4000 HELIOTHERME®

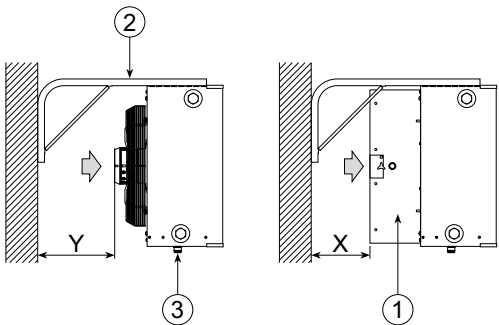
Installation using wall-mounting support kit

Installation mainly for HEATING purposes



Installation using low wall-mounting support kit

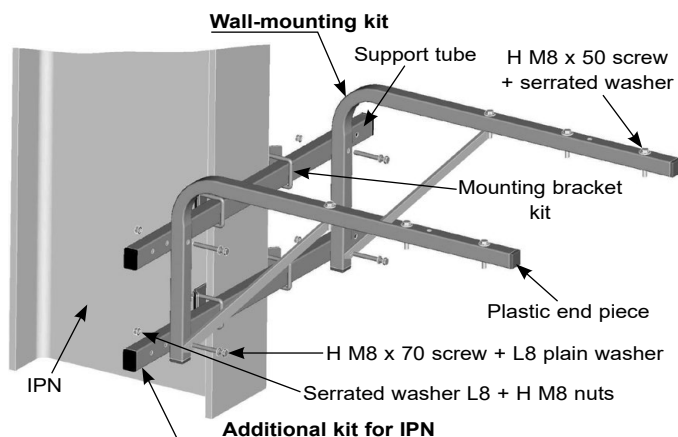
Installation mainly for COOLING or REVERSIBLE purposes



Size		H4300	H4350	H4400	H4450	H4500	H4630	H4630S
①		Filter box wall bracket						
②		Wall bracket (Code 7181226)						
③		Drain sleeve in cooling mode, outer diameter 32						
X	mm	310				260		
Y	mm	390				340		
Distance to allow between the wall bracket legs for HELIOTHERME® mounting								
Dimensions	mm	512	558	610	710	808	943	943

6 - SETUP

Installation with wall-mounting kit + additional kit on IPN



Assembly procedure:

1. Pre-assemble the clamping plates on the brackets using the Ø 8 mm serrated washers and the H M8 nuts (not tightened).
2. Fit the bracket assemblies onto the support tubes by sliding them over the end.
3. Fix the legs of the wall bracket (7181226) using the 4 H M8x70 screws, the 4 x Ø 8 mm plain washers, the 4 x Ø 8 mm serrated washers and the 4 x H M8 nuts, allowing the distances detailed above.
4. Move the support assembly onto the IPN and slide the bracket assemblies so that the lips are clamped onto the IPN. Tighten the bracket nuts to lock the assembly in place.
5. Fix the HELIOTHERME® unit using the 4 x H M8 x 50 screws supplied with the wall bracket.

Size	4300	4350	4400	4450	4500	4630	4630S
Distance mm	512	558	610	710	808	943	943

Code for additional kit for fastening on an IPN

Reference	7181228	7181230
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6.4 - Ceiling-mounted H4000 HELIOTHERME®

Installation with ceiling-mounting kit

Installation only possible for HEATING applications.



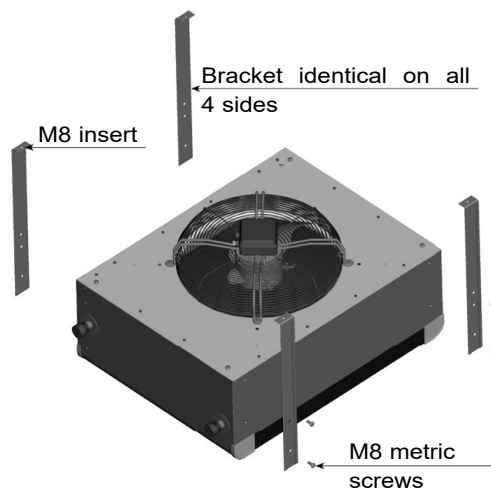
Ceiling mounting using fluids at temperatures above 90°C is prohibited if the heat exchanger is still supplied with fluid when the ventilation is switched off. (Motor warranty invalidated if the motor is damaged due to the thermal inertia of the coil)

To be provided by the client:

- M8 threaded rods
- Lock nuts underneath the inserts

Assembly procedure:

1. Remove the 8 x M8 screws. (Upper and lower section of the HELIOTHERME®)
2. Fit the ceiling brackets and refit the M8 screws in their original locations.



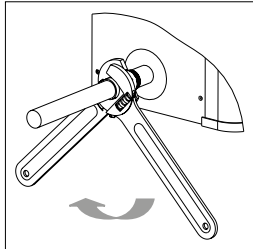
7 - WATER CONNECTIONS

7.1 - Connection to be tightened (HELIO THERME® LP Water)

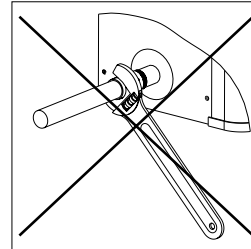
The side of the HELIO THERME® hydraulic connection may also be positioned to the left or right of the air flow direction simply by turning it (for HEATING applications). Ensure that the cable glands on the motor terminal box are facing downwards to ensure the assembly is correctly sealed.

The hydraulic connection on the HELIO THERME® LP water version is screwed in using threaded unions. The coil supply pipes and the general supply pipes must be connected and tightened according to good working practice, namely, using two adjustable wrenches to avoid any torsion of the coil collector.

CIAT shall in no way be held liable for damage to the coil if these installation instructions are not followed and the warranty shall be invalidated.



Two keys are used to ensure the counter torque; the HELIO connection tube will not be pierced.



If only one key is used, the connection tube may twist and be pierced.
This is not covered by the CIAT warranty

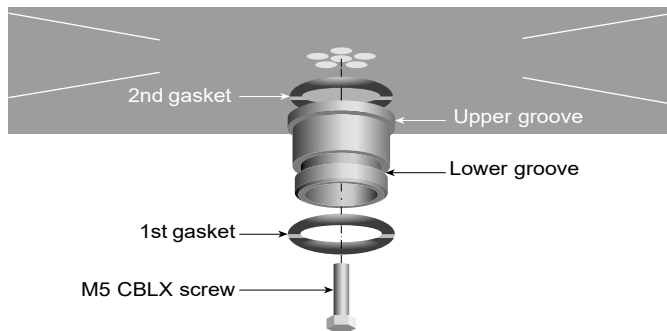
7.2 - Connection to be welded (HELIO THERME® HP fluid)

Ensure that the casing and the rubber caps are protected from the excessive heat produced during welding by using a damp cloth when welding between the HELIO THERME® and the supply pipes.

Welding must be carried out according to good working practice, especially on the filler metal.

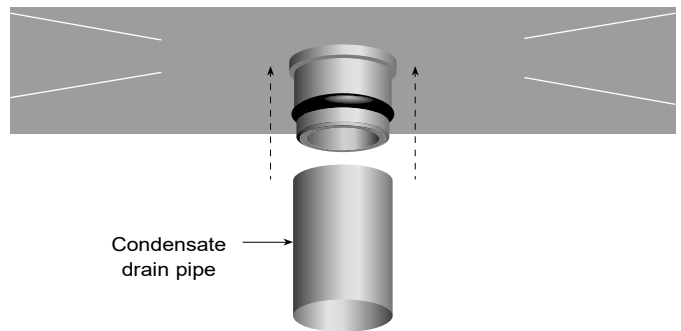
7.3 - Condensate drain connection (HELIO THERME® used for cooling or reversible purposes)

For COOLING applications, the condensate drain pan is integrated into the HELIO THERME®. This is of antibacterial design thanks to its diamond pointed based.



Procedure for fitting the union on the pan:

1. Position the 1st gasket into the lower groove on the union
2. Position the 2nd gasket into the upper groove on the union
3. Fix the assembly onto the condensate drain pan using the M5 CBLX screw supplied in the threaded insert fixed onto the pan.



Condensate drain pan connection

Once the union is fitted with these gaskets, fit the pipe onto the union (outer diameter 32 mm). The gaskets provide an adequate seal for the union.

Nevertheless, it is important to ensure that this connection between the union and the pipe does not bear all the weight of the drain column fitted with a siphon which must be installed according to good working practice (risk of detachment).

8 - ELECTRICAL CONNECTIONS



Before connecting the unit to the mains, ensure that the voltage matches that given on the unit's name plate (230 V - 50 Hz for single-phase and 400 V - 50 Hz for three-phase). The unit must be connected to earth.

CIAT shall not be liable for incidents resulting from faulty or non-existent earthing.

- **H4000 HELIOTHERME® and TPL4000 Destratifier:**

- Direct connection to AC Single-Phase and AC Three-Phase fan motor assembly
- Diagram 7168208

- **AC single-phase fan motor assembly**

- 1 Ph/230 V AC motor + proximity switch + RTR thermostat connection --> Diagram 7528218
- 1 Ph/230 V AC motor + proximity switch + AC thermostat connection --> Diagram 7528219

- **HEE single-phase fan motor assembly**

- 1 Ph/230 V EC motor + proximity switch + EC 3-speed thermostat connection --> Diagram 7528220
- Direct connection --> Diagram 7423956
- HELIOTHERME® 1 Ph/230 V EC motor + HEE 1-PHASE BOX wiring diagram --> Diagram 7400559
- HELIOTHERME® 1 Ph/230 V EC motor + HEE 1-PHASE BOX field connection --> Diagram 7400560

- **AC three-phase fan motor assembly**

- Schematic diagram 2-speed in MAN → Diagram 7272770
- Schematic diagram 2-speed in AUTO → Diagram 7113020

- **With electric heater (EH)**

- Fan-controlled operation

The operation of the heating coil must be fan-controlled. Power to the electric heating elements must be cut whenever the fan motor assembly is stopped intentionally or unintentionally.

It is essential to ensure that a time delay is set up so that the fan is only allowed to stop after the power to the coil is cut (post-ventilation) (minimum 180 seconds).

- **Protection against overheating**

This is provided by 2 temperature limit thermostats (AUTO & MAN)

These must always be positioned at the top (which means that the electrical connection must be positioned to the left when looking at the unit from the front, opposite the supply air).

It is important to ensure that the operation of the electric coils is controlled by the safety thermostat cut-out.

- Schematic diagram for 2-stage coil with 3-PHASE fan motor assembly → Diagram 5952024
- Schematic diagram for 3-stage coil with 3-PHASE fan motor assembly → Diagram 5952018
- Schematic diagram with ECO+ ELEC BOX --> Diagram 7227323

9 - POWERING UP

At system start-up:

- Remove the bridge on the terminal block (see "Motor connection" diagram 7168208).
- Ensure that the motor rotates in the right direction (see marking indicating the fan's normal direction of rotation).
- Measure the current consumed by the motor:
 - If this is equal to or less than the current indicated on the unit's data plate, the installation is in good working order.
 - If the input current consumed is greater than indicated on the data plate, stop the motor immediately and check the installation and the connections. If the motor appears to be the source of the fault, contact the supplier.

10 - MAINTENANCE

Our equipment does not require any special maintenance, but you must ensure that the following are performed annually:

- Retighten all the electrical connections
- Retighten all the screws on the unit
- Clean the propeller with a slightly damp cloth
- Clean the coil by blowing it with air on LP water versions and electrical versions or by using a high-pressure cleaner on HP water versions or HPS versions.
- Clean the casing and the diffuser using a slightly damp cloth
- These actions must be carried out by qualified personnel, with the power switched off

11 - FREQUENTLY ASKED QUESTIONS

Questions/Problems	Possible causes	Remedies
The flow rate is not as it should be	The propeller is not turning in the right direction. The coil is fouled The filter is clogged	See the information on "Switching on" See the information on "Maintenance" Wash the filter using an environmentally-friendly detergent or replace the filter.
The heating capacity is insufficient	The propeller is not turning in the right direction. The flow rate (or the water temperature) supplied by the HELIOTHERME® is not sufficient.	See the information on the "Switching on" page Refer to the pages on "Heat, air and sound performance" relating to your HELIOTHERME® unit and compare your data to the information in the table.
The HELIOTHERME® unit is making an unusual noise	The propeller is dirty which unbalances it, creating an awkward noise. The fan motor assembly is not sufficiently secured to the casing and the assembly vibrates.	See the information on the "Maintenance" page See the information on the "Maintenance" page
The fan motor assembly is consuming more current than the value indicated on the data plate	The propeller is not turning in the right direction.	See the information on the "Switching on" page
The fan motor assembly is not turning	The coil is fouled (or the filter is clogged), the motor therefore overheats and the thermal cut-out cuts the electrical supply to the motor.	Clean the coil (or the filter) according to the information on "Maintenance" and wait for the thermal cut-out to cool down.
The Electrical HELIOTHERME® unit is off when I want it to heat up	The coil is fouled, the internal temperature is therefore too high and the temperature limit thermostats (AUTO or MAN) have cut the supply.	Clean the coil by blowing air on it, then reset the manual reset safety thermostat after the temperature has dropped.
I ordered a HELIOTHERME® 4000 for HEATING purposes. I want to change my installation to also provide COOLING for my premises. Is this possible?	-	Yes. It is essential that the supply air speeds on the coil be controlled however to avoid the creation of droplets (this can be done easily using the 5-speed autotransformer with a fan motor assembly with 1-PHASE). It is also important to allow condensate to drain.

12 - 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.

The motors are not covered by the warranty in cases of incorrect electrical connection or inadequate protection.

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

13 - REGULATIONS



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)
- 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
- UK REACH Regulations 2019

UK Importer:

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

14 - ASSEMBLY OPTIONS

Assembly option (assembly accessories, return/diffusion modules)

Wall bracket and Additional IPN kit

Model	Wall bracket product code	Additional IPN kit product code	Assembly diagram
H4300	7181226	7181228	7194594
H4350			
H4400			
H4450			
H4500		7181230	
H4630			
H4630S			

Ceiling bracket

Model	Code	Assembly diagram
H4300	7282116	7193136
H4350		
H4400		
H4450		
H4500		
H4630		
H4630S		

Filter box

Model	Code	Assembly diagram
H4300	7417083	7193132 Appendix F
H4350	7185105	
H4400	7185106	
H4450	7185107	
H4500	7185108	
H4630	7185110	
H4630S	7185110	

Diffuser on door

Model	Code	Assembly diagram
H4300	7417084	7204354 Appendix H
H4350	7185133	
H4400	7185134	
H4450	7185135	
H4500	7185136	
H4630	7185137	
H4630S	7185137	

Diffuser for large spaces

Model	Code	Assembly diagram
H4300	-	-
H4350	-	-
H4400	7185138	7204355 Appendix I
H4450	7185139	
H4500	7185140	
H4630	7185141	
H4630S	7185141	

15 - CONTROL UNITS

Eco+ 1-PH BOX (for HELIOTHERME® or destratifier units fitted with 1-PHASE motors)

Thank you for purchasing the electronic regulation solution "Eco+ 1-PH BOX" for HELIOTHERME® or DESTRATIFIER units fitted with 1-PHASE motors. Up to 3 HELIOTHERME® or 3 DESTRATIFIER units can be controlled using a single box.

This box allows the following:

- Proportional variation of the supply air speed of the ROTOREX 1-phase fan motor assembly (FMA) according to the heating requirements of your building.
⇒ **Heat or cool as precisely as possible in accordance with your needs.**
- The heat exchanger is proportionally supplied with water according to the heating requirements of your building (available with valve kit option).
⇒ **The supply air temperature will be controlled thereby increasing your comfort level.**
- The internal timer can be configured on a weekly basis using 3 operating modes (Comfort, Eco, Frost protection), allowing you to use your air heaters economically and responsibly.
⇒ **The heat gain achieved by your building will depend on its occupancy level.**



Refer to the instruction manual supplied in the packaging of your Eco+ 1-PH BOX for further information or contact your CIAT agent

Eco+ 3-PH BOX (for HELIOTHERME® or destratifier units fitted with 3-PHASE motors)

Thank you for choosing the "PLUG & PLAY" (the electrical components are selected and wired, facilitating installation) control solution with built-in Eco+ 3-PHASE BOX electronics for HELIOTHERME® or DESTRATIFIER units equipped with 3-phase motors.

This box allows the following:

- Automatic or manual selection of two supply air velocities for the three-phase ROTOREX fan motor assembly (FMA), based on the heating demand for your building.
⇒ **Heat or cool as precisely as possible in accordance with your needs.**
- Supply water to one or more heat exchangers in proportion to your building's heat requirements (available with the optional valve kit or on the circulator).
⇒ **Control your supply air temperature to improve comfort levels and maintain the range of the air streams.**
- Choose between fresh air only or mix with frost protection via the actuator to be installed on the 2-channel mixing box with built-in filter (available with the fresh air kit damper actuator + frost protection thermostat kit) or 100% recirculated air.
⇒ **Adjust the fresh air rates in your building to meet prevailing requirements or based on room occupancy levels (built-in timer).**
- Make wise use of your air heaters with the built-in programmable weekly timer with five operating modes (Off, Fresh Air Comfort, Return Air Comfort, Eco and Frost Protection).
⇒ **The heating and fresh air requirements for your building will depend on its occupancy level.**
- Centralised management of the HELIOTHERME® or DESTRATIFIER units via the master controller allowing 3 Eco+ 3-PHASE BOX slave units to be controlled (one Eco+ 3-PHASE BOX slave unit controls a single HELIOTHERME® or DESTRATIFIER unit).
⇒ **You can view the operating status of your HELIOTHERME® or DESTRATIFIER unit individually (fresh air or return air, motor fault, risk of frost etc.)**



Refer to the instruction manual supplied in the packaging of your Eco+ 3-PH BOX box for further information or contact your CIAT agent.

Eco+ ELEC BOX (for HELIOTHERME®S equipped with electric heaters and 3-phase motors)

Thank you for choosing the "PLUG & PLAY" (the electrical components are selected and wired, facilitating installation) control solution with built-in Eco+ ELEC BOX electronics for HELIOTHERME® units equipped with electric heaters and 3-phase motors. This box allows the following:

- Selection and combination of the electric heater power stages in various combinations based on heating demands of your building.
⇒ **Precision heating to meet your every need.**
- Post-ventilation of the electric heater when the building no longer requires heating.
⇒ **This protects your installation and your building from any potential fire hazards, in compliance with articles CH34/37 and EN 60204-1 relating to fire hazards.**
- Make wise use of your air heaters with the built-in programmable weekly timer with four operating modes (Off, Comfort, Eco and Frost Protection).
⇒ **The electrical requirements of your building will depend on its occupancy level.**
- Centralised management of the HELIOTHERME®S via the master controller allowing 3 Eco+ ELEC BOX slave units to be controlled (one Eco+ ELEC BOX slave unit controls a single HELIOTHERME®).
⇒ **You can view the operating status of your HELIOTHERME® individually (current operating mode, coil fault, motor fault...)**

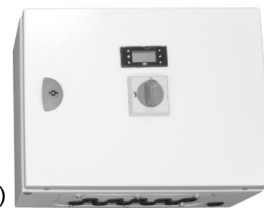


Refer to operating manual no. 09.36 supplied in the packaging of your ELEC Eco+ BOX for further information or contact your CIAT agent.

14 - CONTROL UNITS

HEE 1-PH BOX (for HELIOTHERME® or destratifier units fitted with HEE 1-PHASE motors)

Thank you for purchasing the "HEE 1-PHASE BOX" electronic control solution for HELIOTHERME® or DESTRATIFIER units fitted with HEE 1-PHASE motors. Up to 6 HELIOTHERME® or 6 DESTRATIFIER units or 3 HELIOTHERME® + 3 DESTRATIFIER units can be controlled using a single box.



This box allows the following:

- Proportional variation of the supply air speed of the HEE 1-phase fan motor assembly (0-10V FMA) according to the heating requirements of your building.
⇒ **Heat or cool as precisely as possible in accordance with your needs.**
- Supply water to one or more heat exchangers according to your building's heat requirements (available with the optional valve kit).
⇒ **Control your supply air temperature to improve comfort levels and maintain the range of the air streams.**
- Choose between fresh air only or mix with frost protection via the servomotor to be installed on the 2-channel mixing box with built-in filter (available with the fresh air kit damper servomotor + frost protection thermostat kit) or 100% recirculated air.
⇒ **Adjust the fresh air rates in your building to meet current requirements or based on room occupancy levels (built-in timer).**
- The internal timer can be configured on a weekly basis using 3 operating modes (Comfort, Eco, Frost protection), allowing you to make environmentally-sound use of your air heaters.
⇒ **The heating requirements of your building will depend on its occupancy level.**
- Centralised management of the HELIOTHERME® units via the master controller allowing up to 10 HEE 1-PHASE BOX slave units to be controlled (one HEE BOX master or slave unit controls 6 HELIOTHERME® units or 3 HELIOTHERME® units + 3 TPL).
⇒ **The display shows the operating status of each individual HELIOTHERME® unit (fresh air or return air, motor fault, risk of frost, etc.)**
- All of the protective devices necessary to connect 6 units (HELIOTHERME® or TPL) as well as 6 valve kits.
⇒ **Plug & Play solution**
- A remote on/off control is available as well as a two separate fault summaries. Possibility to communicate via ModBus, JBUS or Bacnet IP.
⇒ **Networked solution**

Refer to the instruction manual supplied in the packaging of your HEE 1-PH BOX for further information **or contact your CIAT agent.**

3-speed HEE THERMOSTAT

• Functions

The HEE control includes a temperature selector (range from 10°C to 30°C) that maintains the room temperature at the selected value.

• FAN operation

The user can use the fan speed selector button to set the fan's operating mode to manual or automatic.

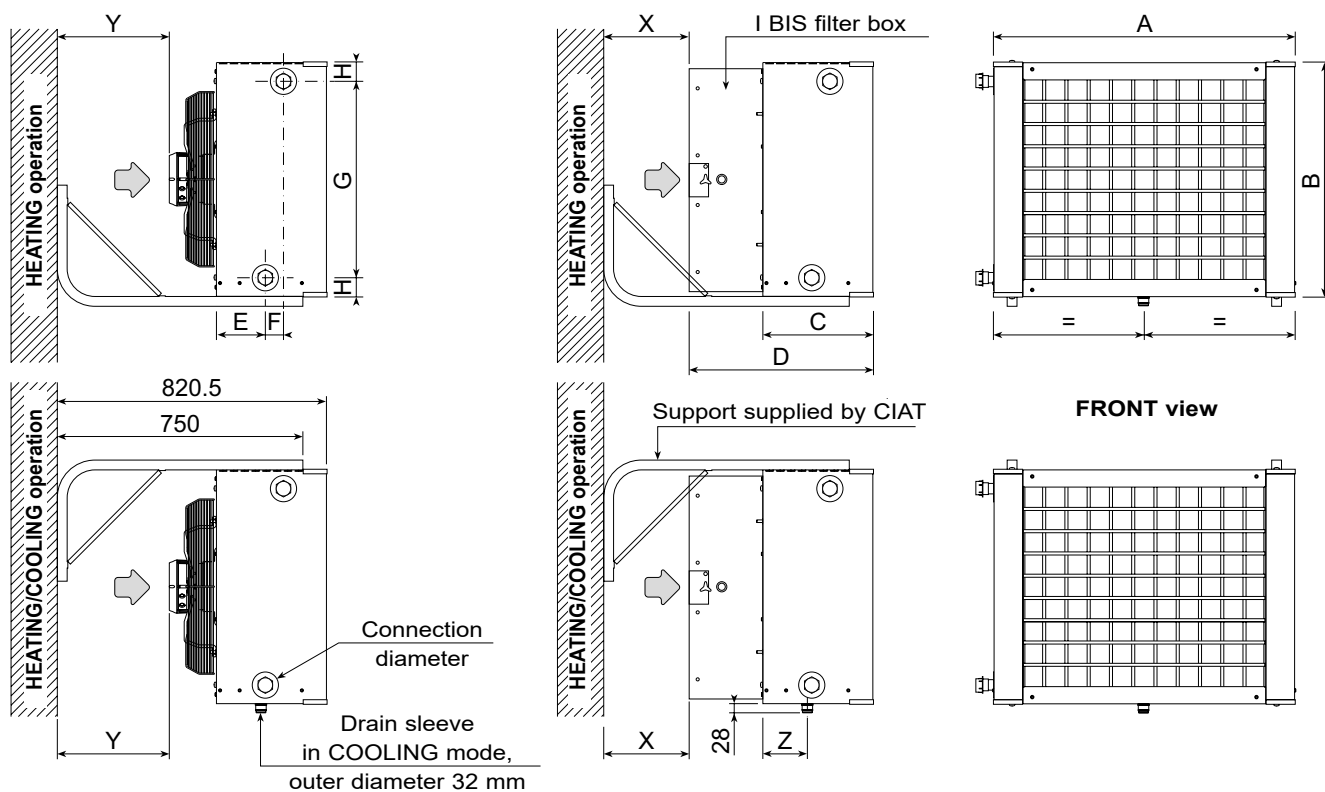
⇒ **In manual mode**, three types of speed can be selected (low, mid, high) depending on the requirements or energy saving mode. This energy saving mode is particularly useful for air conditioning in rooms at night or rooms left unoccupied for long periods.

⇒ **In automatic mode**, the fan speeds are controlled by a microprocessor housed in the control unit, according to the temperature selected. (see table below. (3 speeds possible depending on the HELIOTHERME® model)

Shunt 6	Shunt 7	Shunt 8		LOW	MID	HIGH	Heliotherm model	
							Heating	Cooling
Closed	Closed	Closed	→	2 V	6 V	10 V	H4300 / H4450	H4500 / H4630
Closed	Closed	Open	→	2 V	4 V	6 V	-	-
Closed	Open	Closed	→	6 V	8 V	10 V	-	-
Closed	Open	Open	→	2 V	3 V	4 V	-	H4400 / H4450
Open	Closed	Closed	→	8 V	9 V	10 V	-	-
Open	Closed	Open	→	5 V	6 V	7 V	H4400 / H4630	-
Open	Open	Closed	→	4 V	6 V	8 V	H4500	H4300
Open	Open	Open	→	3 V	6 V	9 V	H4350	H4350

16 - WALL BRACKET

Diagram 7192990



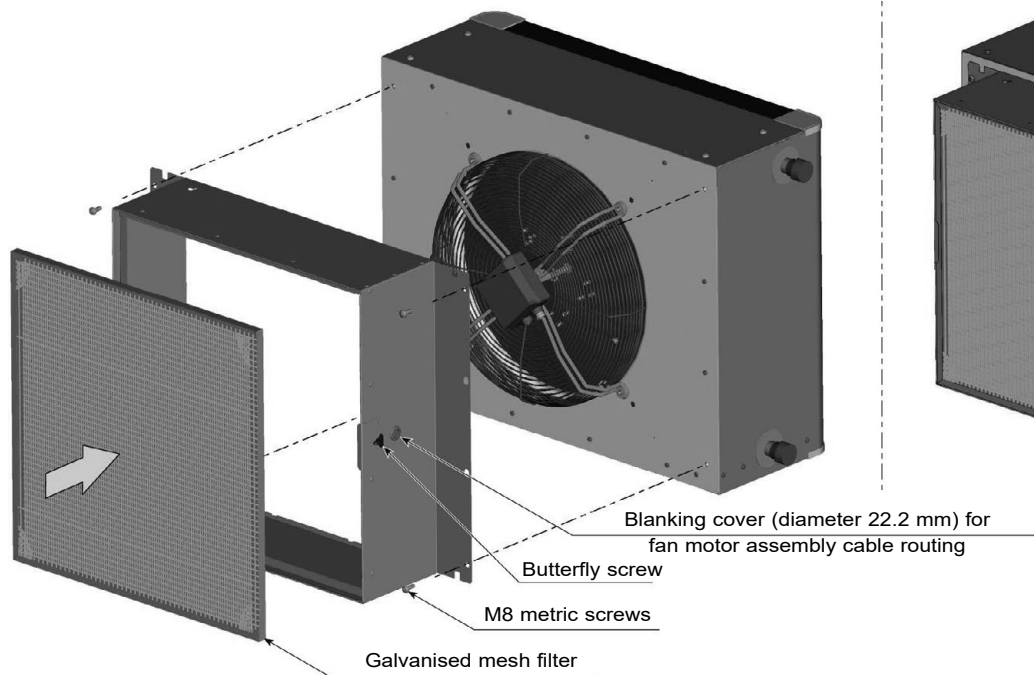
Model	A	B	C	D	E	F	G	H	Connection diameter	X	Y	Z
H4300	600	395	286	506	115	0	290	52	G 1/2" union	260	340	110
H4350	646	459	286	506	100	53	357	51	G 3/4" union	310	390	110
H4400	700	555	286	506	100	53	451	52	G 3/4" union	310	390	110
H4450	813	618	286	506	100	53	510	54	G 1" union	310	390	110
H4500	918	714	336	556	149	53	600	57	G 1" 1/4 union	260	340	135
H4630	1050	874	336	556	149	51	758	58	G 1" 1/4 union	260	340	135
H4630S	1050	874	336	556	149	51	758	58	G 1" 1/4 union	260	340	135

17 - FILTER BOX

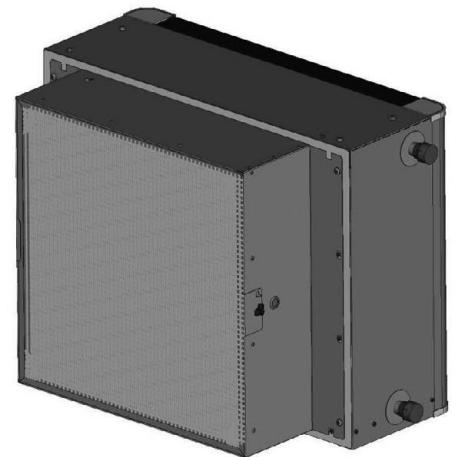
Assembly procedure:

1. Remove the galvanised mesh filter to facilitate handling.
2. Remove the 4 x M8 screws found at the ends of the HELIOTHERME®.
3. Fit the filter box in position on the unit.
4. Refit the 4 x M8 screws in their original positions to secure the filter box in place.
5. Refit the galvanised mesh filter, held in place by the 2 brackets and the 2 butterfly screws.

Filter box during assembly



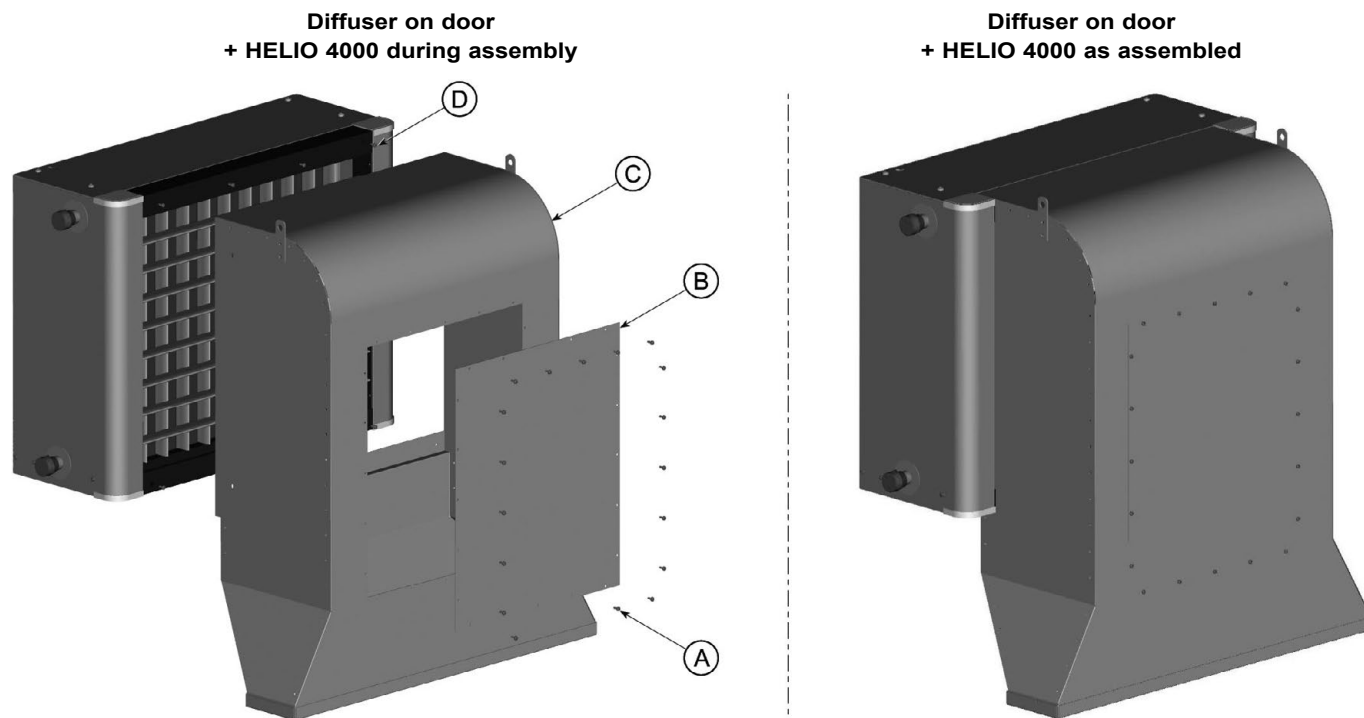
Assembled filter box



18 - DIFFUSER ON DOOR

Assembly procedure:

1. Remove the double deflection grille fitted as standard on the HELIOTHERME® if it is present
2. Remove the CBLX 4.85x14.5 screws (A) which secure the guard plate (B) on the diffuser (C)
3. Place the diffuser support against the HELIOTHERME® and secure it using the CBLX screws supplied (D)
4. Refit the guard plate (B) and secure it with the CBLX screws (A)



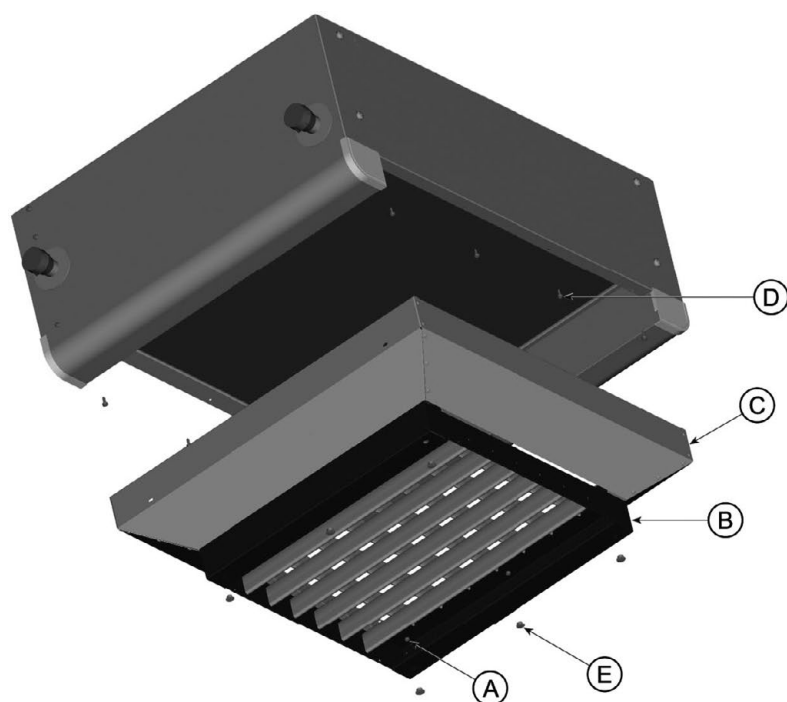
Warning: Use a system that is suited to the diffuser mounting.

19 - DIFFUSER FOR LARGE SPACES

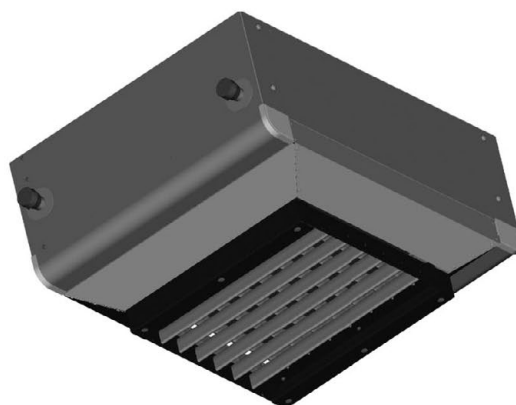
Assembly procedure:

1. Remove the double deflection grille fitted as standard on the HELIOTHERME® if it is present
2. Remove the 6 CBLX 4.85x14.5 screws (A) which secure the grille (B) on the support (C)
3. Place the diffuser support against the HELIOTHERME® and secure it using the CBLX screws supplied (D)
4. Refit the grille (B) and secure it with the CBLX screws (A)
5. Fit the matching grille blanking covers supplied with this accessory (E)

**Extra height diffuser
+ HELIO 4000 during assembly**



**Extra height diffuser
+ HELIO 4000 as assembled**



20 - FINAL SHUTDOWN

Shutting down

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

Recommendations for disassembly

- Use the original lifting equipment.
- Sort the components according to their material for recycling or disposal, in accordance with regulations in force.
- Check whether any part of the unit can be recycled for another purpose.

Fluids to be recovered for treatment

- Energy transfer fluid depending on the installation, water, glycol/water mix, oil etc.

Materials to be recovered for recycling

- Depending on the installation: steel, copper, aluminium, plastics

Waste electrical and electronic equipment (WEEE)

- At the end of its life, this equipment must be disassembled and contaminated fluids removed by professionals and processed via approved channels for electrical and electronic equipment (WEEE).
- In France, CIAT has formed a partnership with ECOLOGIC for the collection and recovery of professional waste governed by European Directive WEEE 2012/19/EU. This partnership simplifies the mandatory administrative procedures and ensures that old equipment is recovered via an official, structured channel. In terms of renovation work in France (mainland and overseas), for every CIAT unit installed, our partner will collect and dismantle your existing equipment (see conditions with Ecologic).
To request collection, please contact Ecologic:
Tel.: 01 30 57 79 14 - E-mail: operation-pro@ecologic-france.com
- For other countries, please refer to the legislation in force and the specific solutions available to ensure your waste is processed legally.

