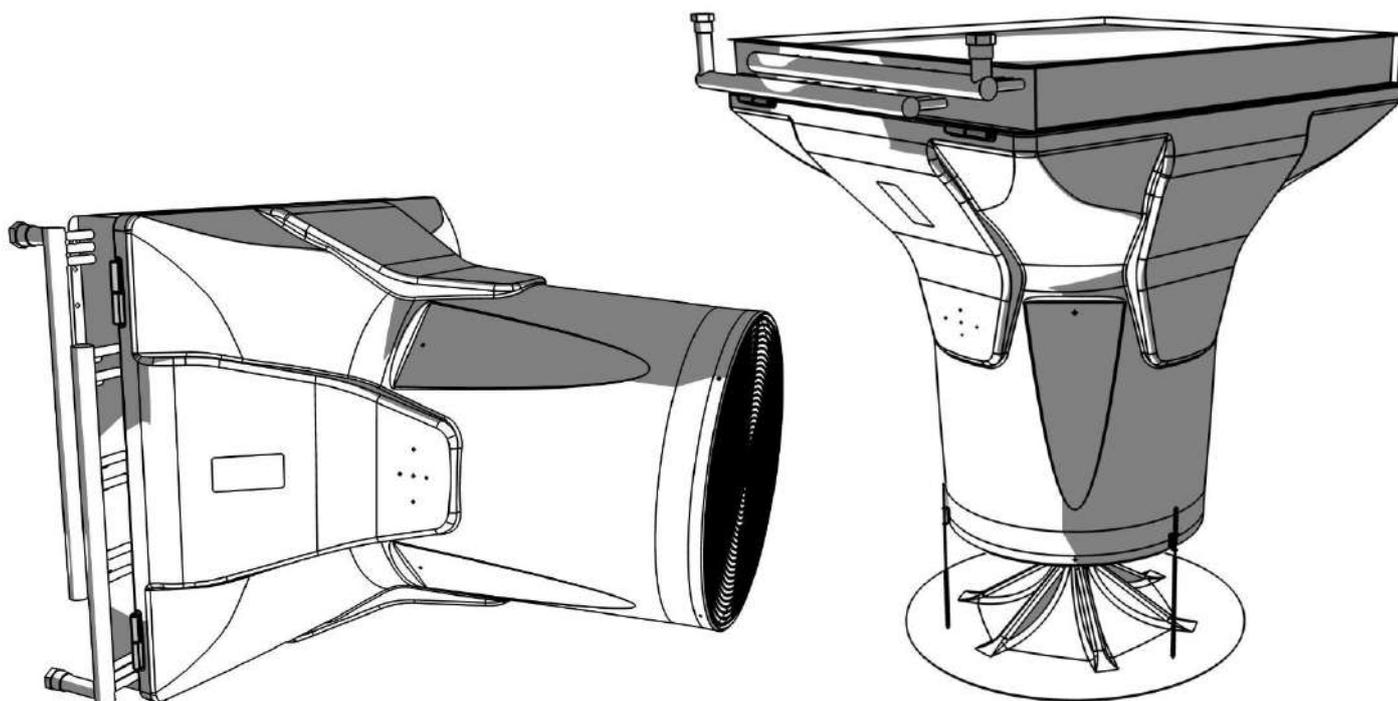


AP Max

HOT WATER AIR HEATER



**TRANSLATION OF ORIGINAL INSTRUCTIONS
ENGLISH**

It is mandatory to read this manual carefully before
install or perform operations on the machine.

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1 - INTRODUCTION

1.1 General Warnings

This appliance may only be used for the function for which it was expressly designed "Hot water air heater". Any other use is considered improper and dangerous.

Franco s.r.l. cannot be held liable for any damage resulting from improper, incorrect and unreasonable use or if the device is used in installations that do not comply with current safety regulations.

- Check the integrity of the machine when opening the packaging, paying particular attention to the presence of damage or deformation that could lead to breakage and/or malfunction during use. In such cases, do not connect the machine to the electrical and hydraulic mains. Carry out these checks before each use.
- Before connecting the appliance, make sure that the rating plate data correspond to those of your electrical distribution network. The data label is located on the side of the appliance (see section 1.9).
- Observe the safety regulations indicated for electrical equipment and in particular:
 - Follow the installation instructions of the appliance.
 - Do not place objects on the unit heater.
 - Prevent children and/or incapacitated persons from using the device without proper supervision;
 - Do not touch the unit heater during operation or during the cooling phase of the heat exchanger;
 - Never immerse the appliance in water or any other liquid. Do not touch the appliance if it accidentally gets wet: switch off the power supply before touching the appliance.
 - Do not put any objects inside the machine as it could be irreparably damaged.
 - Do not use accessories, spare parts and/or components not specified/supplied by the manufacturer.
 - Avoid touching the device with wet and/or damp hands.
 - Do not pull on the power cable or expose to risk of shearing.
 - Do not leave the device exposed to the weather (rain, sun, etc.).
 - In the event of a fault and/or malfunction of the appliance, switch it off immediately and disconnect the power supply
 - Do not attempt to open or tamper with the unit: contact a qualified technician.

1.2 Guidelines for the proper disposal of the product

Pursuant to European Directive 2012/19/EU:

At the end of its useful life, the product must not be disposed of with municipal waste. It can be handed in at the special separate waste collection centres set up by municipalities, or at retailers who provide this service. Disposing of the product separately avoids possible negative consequences for the environment and health resulting from inappropriate disposal, and allows the materials of which it is composed to be recovered in order to achieve significant savings in energy and resources. To emphasise the obligation to dispose of electrical and electronic equipment separately, the product is marked with a crossed-out wheeled bin.



1.3 Conventions used in this manual

The manual is divided into chapters, within which the operators to whom the instructions are addressed are specified, where necessary, in order to operate the machine safely.

The sequence of chapters responds to the temporal logic of the machine's life.

To facilitate immediate understanding of the text, terms, abbreviations and pictograms are used, the meaning of which is indicated below.

ABBREVIATIONS

Cap. = Chapter

Par. = Paragraph

Page = Page
 Fig. = Figure
 Tab. = Table

UNIT OF MEASUREMENT

The units of measurement used are those of the International System (SI).

1.4 Keeping and updating the instruction manual

The instruction manual must be kept with care and must accompany the machine in all changes of ownership that it may undergo during its life. Parts must not be removed, torn off or arbitrarily modified. The manual should be stored in an environment protected from moisture and heat and in the immediate vicinity of the machine to which it refers. The manufacturer can provide additional copies of the machine instruction manual at the user's request. You can request this by writing to **support@francosrl.com**. The manufacturer reserves the right to modify the design and make improvements to the machine without informing the customer, and without updating the manual already delivered to the user. However, in the event of changes to the machine installed at the customer's premises, agreed with the manufacturer and involving the modification of one or more chapters of the instruction manual, it will be the manufacturer's responsibility to send the affected users the chapters affected by the change. It is the responsibility of the user to replace the old chapters, homepage and table of contents with the new ones in all copies owned.

The manufacturer is responsible for the **original Italian language version**; in case of doubts regarding the translated versions, please refer to the Italian language and contact the manufacturer (support@francosrl.com) for verification.

1.5 Addressees

This manual is intended for the installer, operator and qualified personnel authorised to service the machine.

OPERATOR: means the person(s) in charge of installing, operating, adjusting, cleaning, repairing and moving a machine and performing the simplest maintenance operations;

QUALIFIED PERSONNEL/QUALIFIED WORKMAN: this refers to those persons who have attended specialisation courses, training, etc. and have experience in the installation, commissioning and maintenance, repair, transport of the machine.

The machine is intended for industrial use, and therefore professional and not general use, so its use must be entrusted to **qualified persons, in particular who**

- have reached the age of majority;
- They are physically and mentally fit to perform work of particular technical difficulty;
- Have been properly instructed in the use and maintenance of the machine;
- They were judged by their employer to be fit to perform the task entrusted to them;
- Be able to understand and interpret the operator's manual and safety instructions;
- They are familiar with emergency procedures and their implementation;
- Possess the ability to operate the specific type of equipment;
- Be familiar with the specific rules of the case;
- Have understood the operating procedures defined by the machine manufacturer.

The appliance may be used by persons with reduced physical, sensory or mental capabilities, or lack of experience or the necessary knowledge, provided that they are supervised or have received instructions concerning the safe use of the appliance and understanding of the dangers involved.

1.6 Pictograms

This section explains the meaning of the pictograms indicating the operator's qualification, the state of the machine, the hazards and the obligations/prohibitions to be observed. Their use makes it possible

to quickly and unambiguously provide the information necessary for the correct use of the machine in safe conditions.

PICTOGRAMS RELATING TO OPERATOR QUALIFICATION

Symbol	Description
	General labourer: an operator without specific skills, capable of carrying out only simple tasks on the instructions of qualified technicians.
	Driver of lifting and handling equipment: an operator qualified to use lifting and handling equipment and machines (strictly in accordance with the manufacturer's instructions), in accordance with the laws in force in the country of the machine user.
	Mechanical maintenance technician: a qualified technician, capable of operating the machine under normal conditions, operating it with protections disabled, working on mechanical parts to carry out the necessary adjustments, maintenance and repairs. Typically, he is not qualified to work on electrical systems where voltage is present.
	Electrical maintenance technician: qualified technician, able to operate the machine under normal conditions, to operate it with protections disabled, is in charge of all electrical adjustment, maintenance and repair work. He is able to work in the presence of voltage inside cabinets and distribution boards.
	Manufacturer's technician: qualified technician made available by the manufacturer to carry out operations of a complex nature in particular situations or, in any case, as agreed with the user. The skills are, depending on the case, mechanical and/or electrical and/or electronic and/or software.

SAFETY PICTOGRAMS (ISO 7010)

The pictograms contained in a triangle indicate DANGER.

The pictograms contained in a circle impose a PROHIBITION/OBLIGATION.

Pictogram**Description**

Dangerous electrical voltage



General danger



Danger hot surfaces



Do not remove safety devices



Prohibition of cleaning, oiling, greasing, repairing or adjusting moving parts by hand



Obligation to cut power before starting work or repairs



Mandatory protective gloves



Compulsory safety footwear



Mandatory safety helmet

1.7 Applications

The AP Max unit heaters are used in the **industrial sector**, inside rooms where you want to raise the temperature, having hot process or central heating water available.

They can also be used inside shopping centres, workshops, showrooms, gyms, dairies, etc.

In the **livestock sector** they can be used in chicken farms, in tunnels with longitudinal, natural and chimney ventilation. In **agriculture** they are used for heating or cooling greenhouses and mushroom farms. Installed with vertical air flow, they allow heat destratification.

The materials used guarantee reliability and durability.

The exchanger is constructed with copper tubes and aluminium fins with increased pitch and thickness, painted with **cataphoresis**, a treatment that gives it a high resistance to corrosion.

The structure of the hot water air heater is made of **polypropylene**, a material with low specific weight and high chemical and mechanical resistance.

The fans used on the AP Max series are axial 6-pole single-phase (with pre-wired condenser) or three-phase, with IP 54 protection. The motors have class F insulation and are equipped with thermal protection with automatic reset. All hardware is stainless steel.



This machine must only be used for the purpose
for which it was designed:
- Water heating.



All other uses are to be considered improper and therefore dangerous.

1.8 Versions

The AP Max series unit heaters are available in the following versions:

2458000	Version AP Max 50 power 50 kW - 6,500 m ³ /h 230 V 1~ 50 Hz
2458010	Version AP Max 80 power 80 kW - 6,500 m ³ /h 230 V 1~ 50 Hz
2458002	Version AP Max 50 power 50 kW - 6,500 m ³ /h 400 V 3~ 50 Hz
2458012	Version AP Max 80 power 80 kW - 6,500 m ³ /h 400 V 3~ 50 Hz

1.9 Machine identification data and plates

Each machine is identified by a CE plate on which the machine's reference data is indelibly marked. For any communication with the manufacturer or service centres, always quote these references.

<p>Model : AP Max 50 unità di riscaldamento <i>air heater</i></p> <p>Potenza Termica: 87kW <i>Heating Power</i></p> <p>Portata d'aria: 6.500m³/h <i>Air Capacity</i></p> <p>Anno di Costruzione: 05/2022 <i>Construction Year</i></p>	 <p>Alimentazione: 230V ~ 50Hz <i>Power Supply</i></p> <p>Potenza: 400W <i>Power</i></p> <p>Assorbimento: 1,9A <i>Current</i></p>
 ART2458000  SER0002	<p>IP54</p> <p>Made in Italy</p>  
FRANCO s.r.l. - 12010 Cervasca (Italy)	

Fig.1.9.1

1.10 Description of Parts

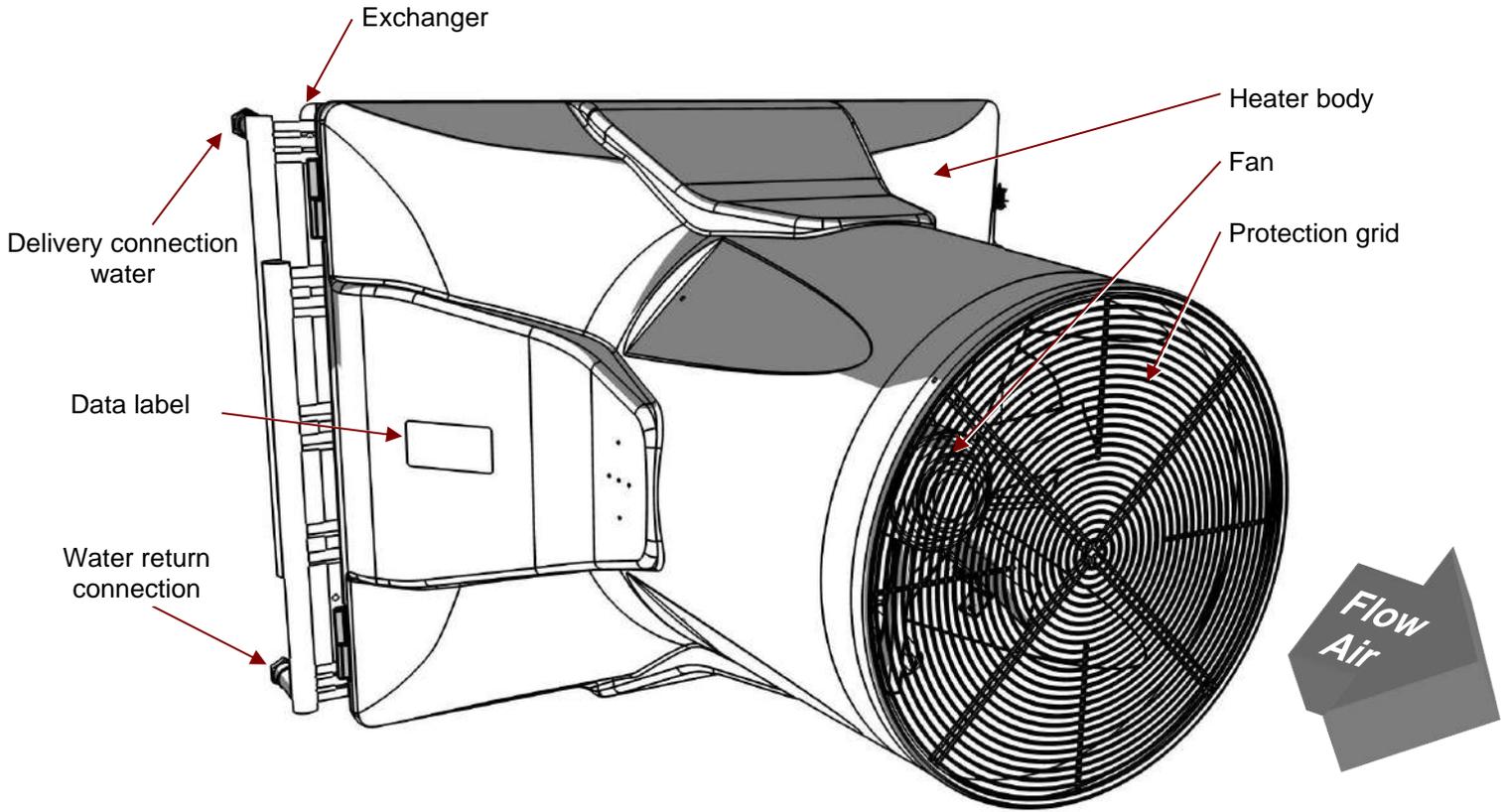
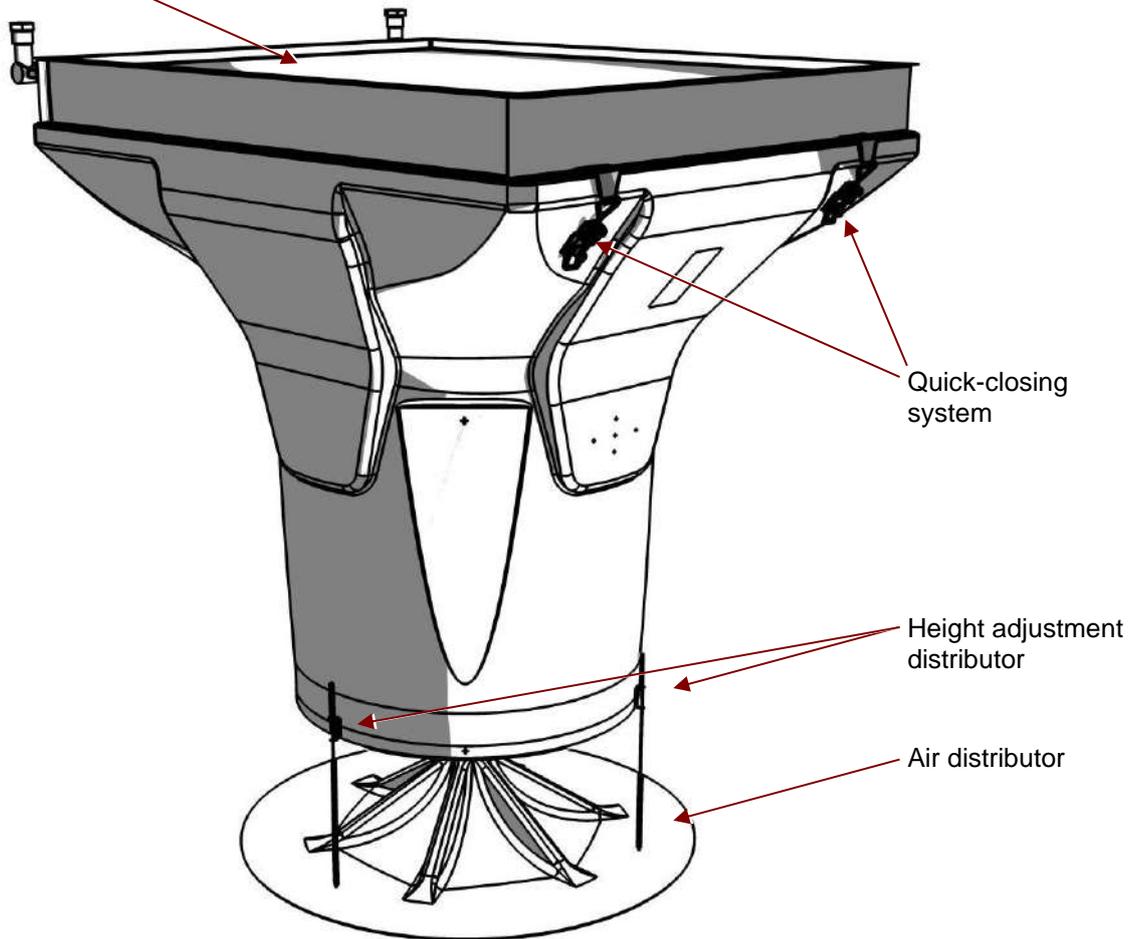


Fig.1.10.1 Exchanger



1.11 Transport and handling



The machine is properly packed before being placed in sturdy cardboard containers. Avoid damage to machine components by taking great care when opening the packaging.

Check the integrity of the machine by checking that there are no visibly damaged parts.

Do not dispose of packaging elements in the environment, they should be placed in appropriate collection places.

The AP Max can be lifted and suspended using the appropriate brackets.

WARNING!

Before moving the device you must:



- a. stop the machine,
- b. switch off the power supply,
- c. cut off the water supply,
- d. Wait for the heat exchanger to cool down.

To lift the machine, use suitable lifting gear (see weight table).

Lift it slowly, taking care that it does not fall, and move the straps according to the centre of gravity.

1.12 Warranty

This appliance is guaranteed for 12 months from the date of manufacture for all faults attributed to a proven manufacturing or material defect. The warranty does not cover all parts damaged by transport, bad or incorrect maintenance, neglect, incapacity for use, improper use, tampering by unauthorised personnel and in any case by causes beyond the control of Franco s.r.l. of Cervasca (CN). During the warranty period, Franco s.r.l. undertakes to replace or repair, free of charge, those parts which prove to be defective at source.

The intervention must be carried out at Franco s.r.l. with transport paid for by the user.

1.13 Manufacturer's identification data

Manufacturer
FRANCO S.r.l.

Legal - administrative headquarters
VIA NAZIONALE, 80 - 12010 CERVASCA (CN) - ITALY

Contact
Tel.: (0039) 0171 - 61.16.63
Email: info@francosrl.com
Web: www.francosrl.com

1.14 Declarations

The machine is manufactured in accordance with the relevant Community Directives applicable at the time of its placing on the market.

The machine is not among those mentioned in All. IV of Directive 2006/42/EC.

1.15 Declaration of Conformity

(Annex IIa Dir. 2006/42/EC)

THE MANUFACTURER

FRANCO s.r.l.

Company

Via Nazionale, 80

Address

12010

Postcode

CN

Province

Cervasca

City

Italy

State

STATES THAT THE MACHINE

Water heater

Description

AP Max 50 / AP Max 80

Model

2458000 / 2458002 / 2458010 / 2458012

Code

AP Max Water heater

Trade name

Space heating or cooling

Intended use

complies with the following European Directives:

2006/42/EC
(2014/35/EU)
2014/30/EU

Machinery Directive
(Low Voltage Directive)
Electromagnetic Compatibility Directive

Harmonised standards and reference specifications used:

EN 12100:2010
EN 60335-1:2012 + A11:2014 + A13:2017
EN 61000-3:2013, EN 55014-1:2017, EN 55014-2:2015

Legal person authorised to set up the Technical File:

FRANCO s.r.l.

Name

Via Nazionale, 80

Address

12010

POSTCODE

CN

Province

Cervasca

City

Italy

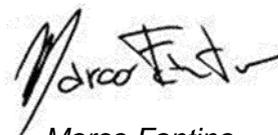
State

Place and date of document

Cervasca, 02/05/2022

Rev. 00/2022

The manufacturer Signature



Marco Fantino
Administrator

2 - INSTALLATION

2.1 Preliminary Operations



For the AP Max hot water air heater to be operational, it is necessary to have:

- mains with voltage and frequency characteristics suitable for the machine with earth and protective devices;
- Connection to a hot / cold water production system;
- Condensate water drainage connection.



The installation must fulfil the requirements safety regulations in force in the country of destination of the device.

Therefore, make sure that all connections necessary to operate the appliance have been correctly set up.

2.2 Positioning

The AP Max unit is a unit for pendant installation. The unit can be installed horizontally, free-flowing, or vertically downwards with the diffuser plate.

Depending on the type of installation, assemble and fasten the special brackets supplied as accessories to the unit, by means of which the unit heater can be suspended using suitably dimensioned holding means (chains, wire ropes, etc.). The centre distances of the eyebolts/fixing holes are shown in Fig. 2.2.1.



Ensure that the means of attachment and the structure from which the unit will be suspended are able to withstand the relevant stresses (own weight, vibrations) If necessary, contact qualified personnel for verification.

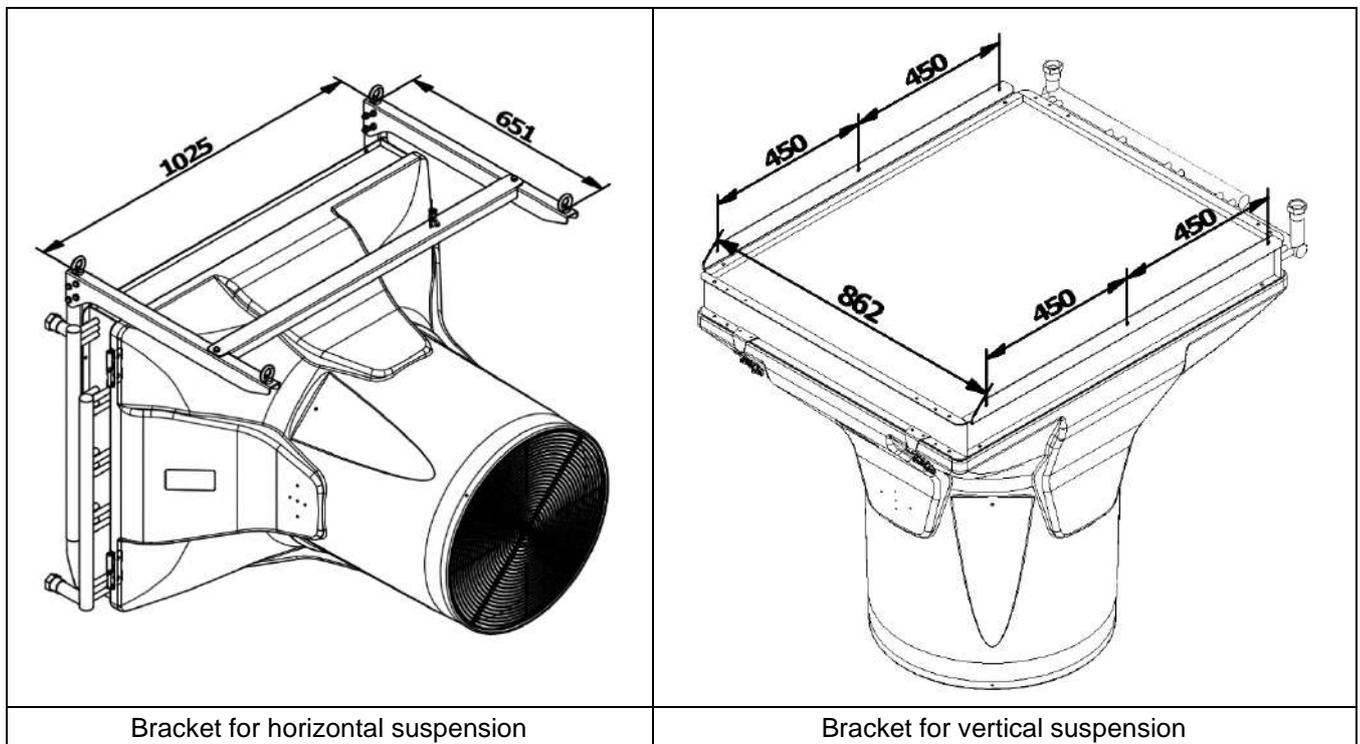


Fig. 2.2.1 - Position of holes for suspension/staffing



The AP Max must be positioned in such a way as to allow optimal intake and distribution of air in the served space and the performance of necessary maintenance work. In heating mode, the AP Max generates a high temperature air flow.

- Do not deposit any combustible material or objects within 3 m of the heater.
- It is also advisable to maintain the following minimum distances between the device and walls/ceilings:
 - Minimum distance from the ceiling: 1 m
 - Minimum distance from wall (or ceiling) - suction side: 0.6 m
 - Minimum distance from side walls: 1 m
 - Minimum distance from wall - discharge side: 3 m

WARNING!



- **The installation must ensure compliance with the requirements of standard UNI EN ISO 13857:2008 with regard to protection against accidental contact of operators with moving parts of the machine and the relevant safety distances.**



- **IT IS FORBIDDEN TO REMOVE THE GUARDS!**

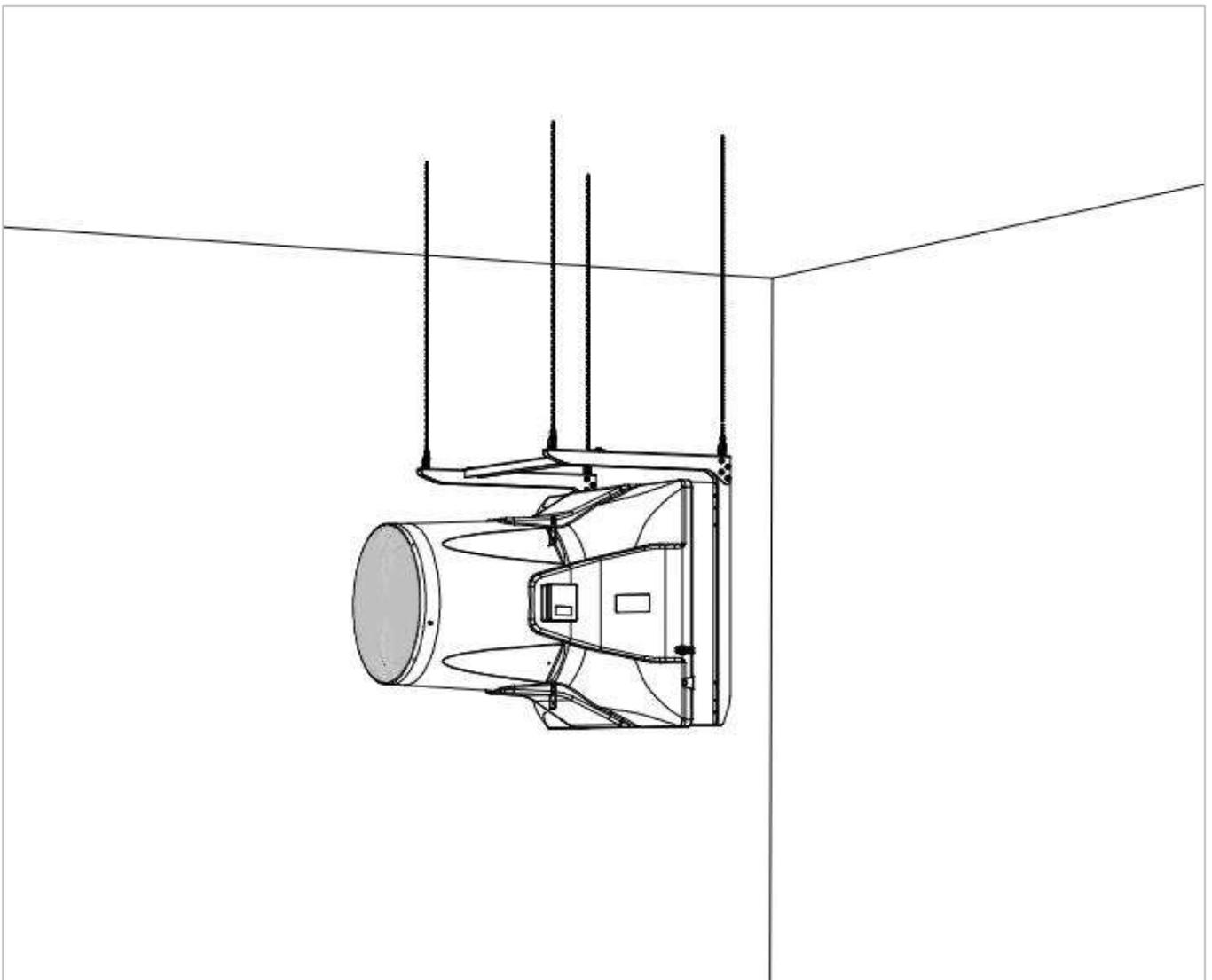
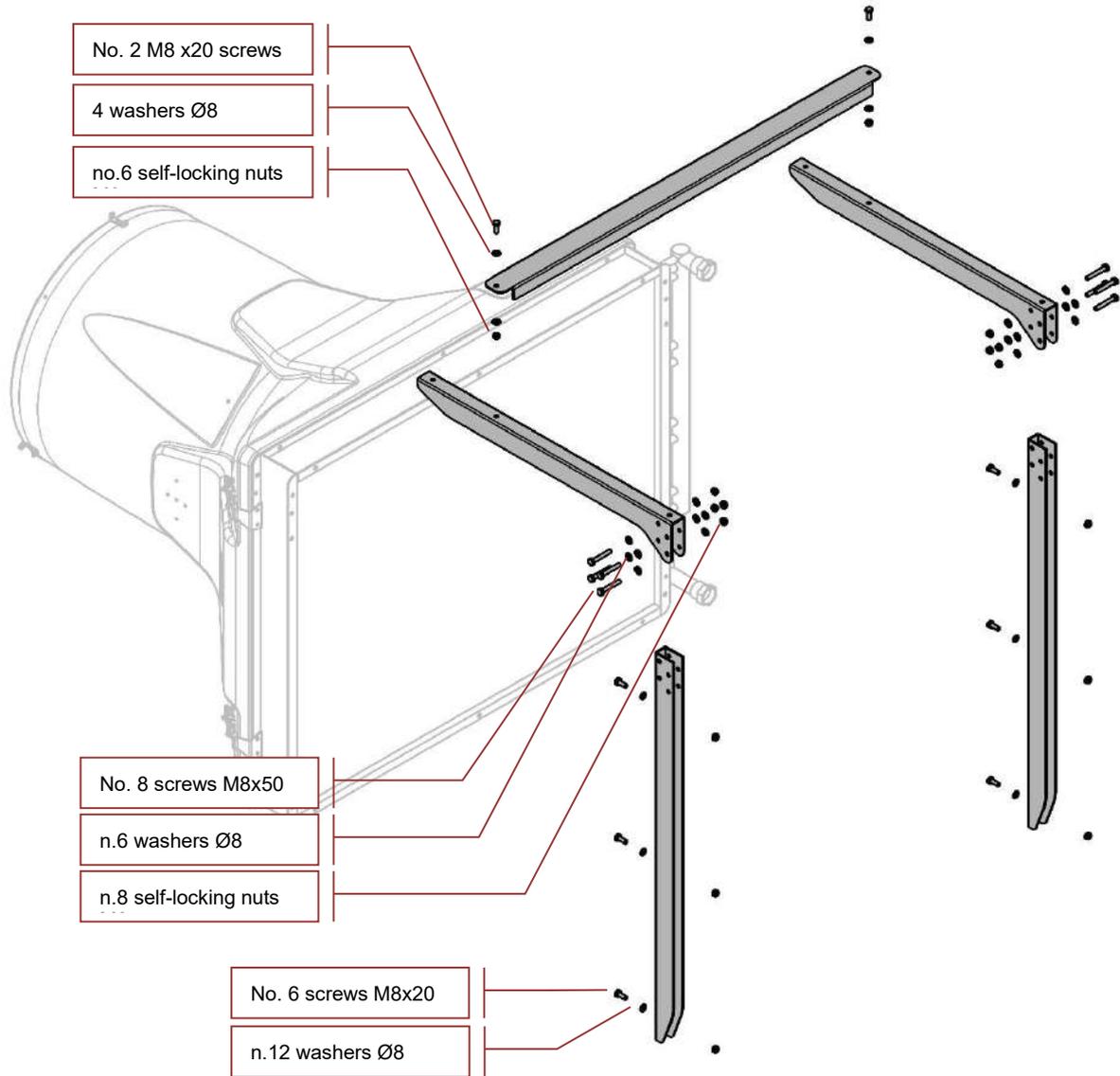
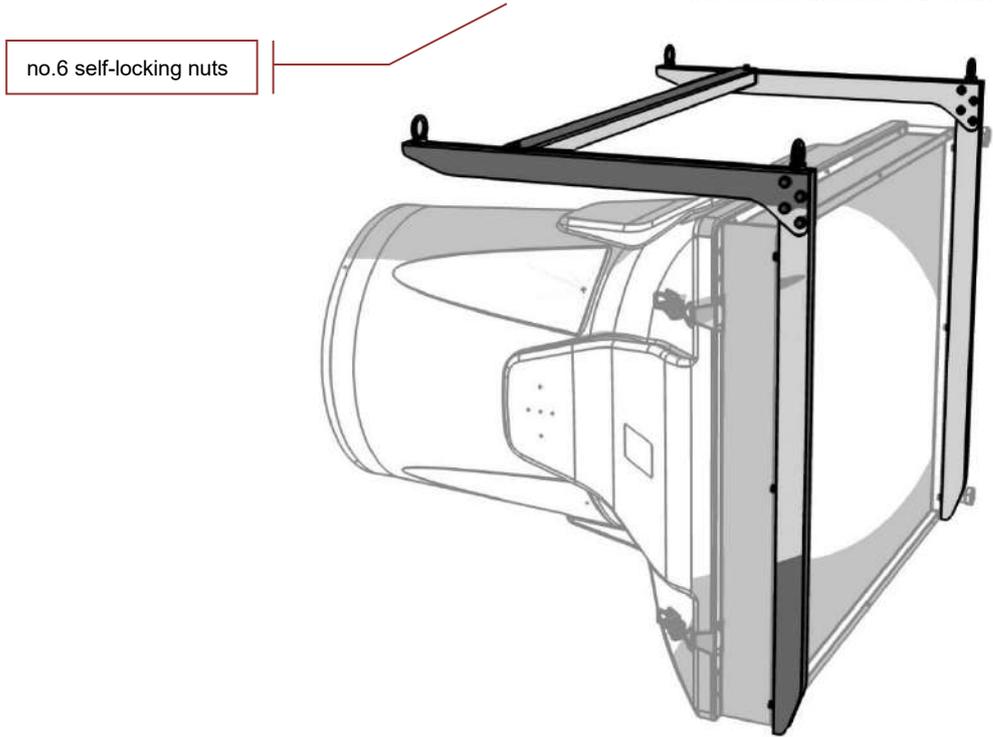


Fig. 2.2.2 - Example of horizontal flow installation

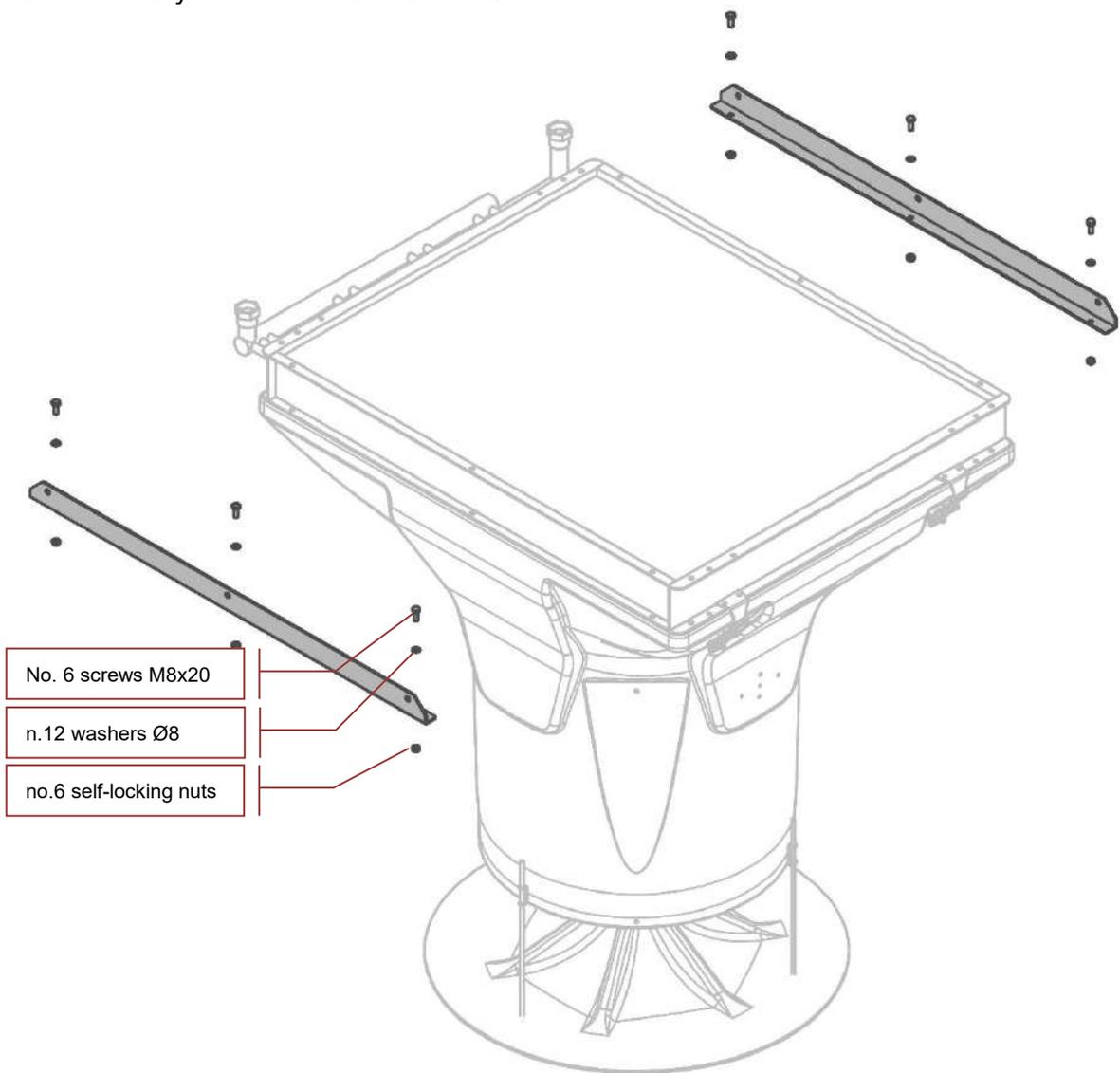
2.3 Assembly diagrams

Bracket assembly for horizontal installation:



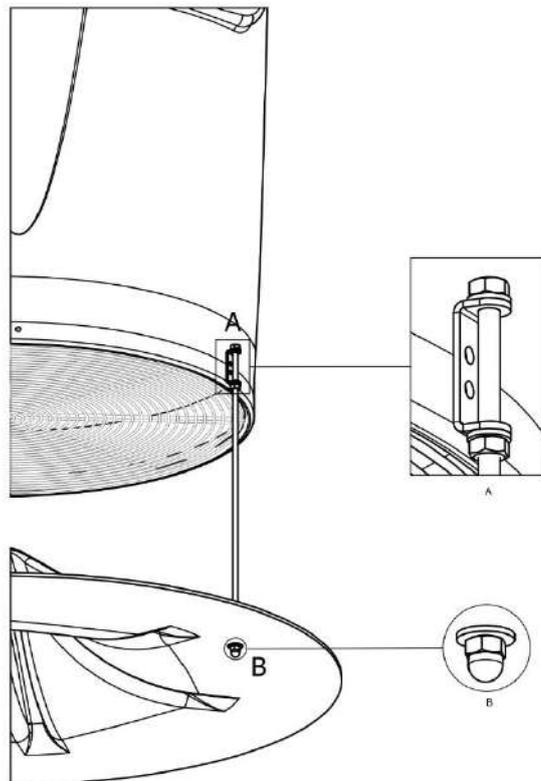


Bracket assembly for vertical installation:



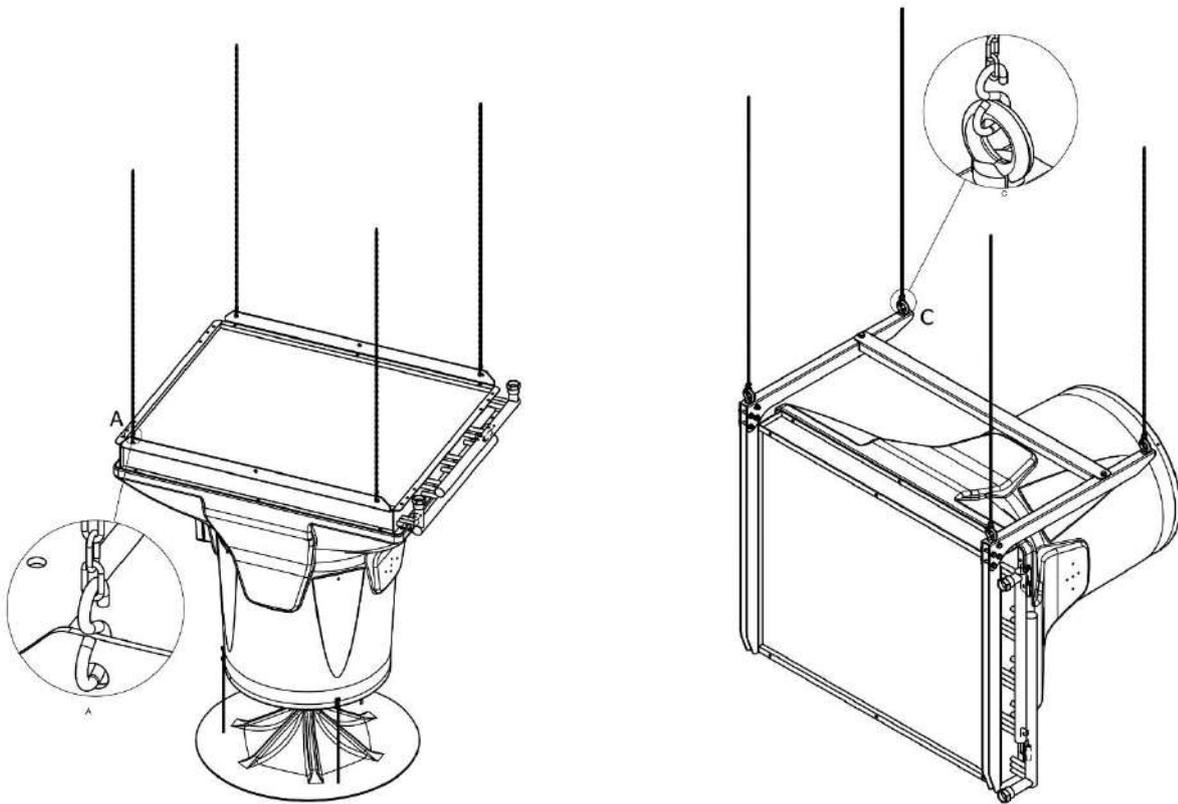


Distributor plate assembly for vertical flow installation



Vertical flow installation:
suspension by chains

Horizontal flow installation: suspension by
chains



2.4 Electrical Connection



The installation involves the use of an ON/OFF thermostat which controls the power supply to the machine: it is however possible to use an ON/OFF switch instead, with the only difference being that starting and stopping the machine must be done manually. The choice, however, does not affect the installation procedure described below.



- The electrical connection must be carried out by recognised and licensed specialist technicians in accordance with the regulations in force.
- Ensure that the characteristics of the electrical supply current are as indicated.
- It is mandatory to connect the equipment to an efficient earthing line.

An earth leakage circuit breaker must be installed in the power supply network. In addition, a protection fuse of the delayed motor starting type must be installed. The motors are equipped with automatic reset thermal protection.

2.5 Hydraulic connection

Make the connection to the flow and return water pipes of the heating system at the points provided (See Fig. 1.10.1 - Flow/return connection).

Avoid twisting the connections when connecting to the line, counteract the tightening with a spanner. The thermal system must be adapted to the characteristics of the appliances in use and comply with the regulations in force.

3 - OPERATION

3.1 Preliminary Operations

Before putting the unit heater into operation, check that

1. All connections, both electrical and hydraulic, are made according to the instructions in this manual;
2. The hot water air heater is free and clear;
3. The flow and return water taps are open;

3.2 First Start-up



- Check the correct air flow direction (Fig. 3.2.1);
- Ensure that all wires are positioned evenly and that they are not pinched or overstretched;
- Ensure that the hydraulic connections are correct;

- Open the water supply tap and check that there are no leaks along the filling circuit;

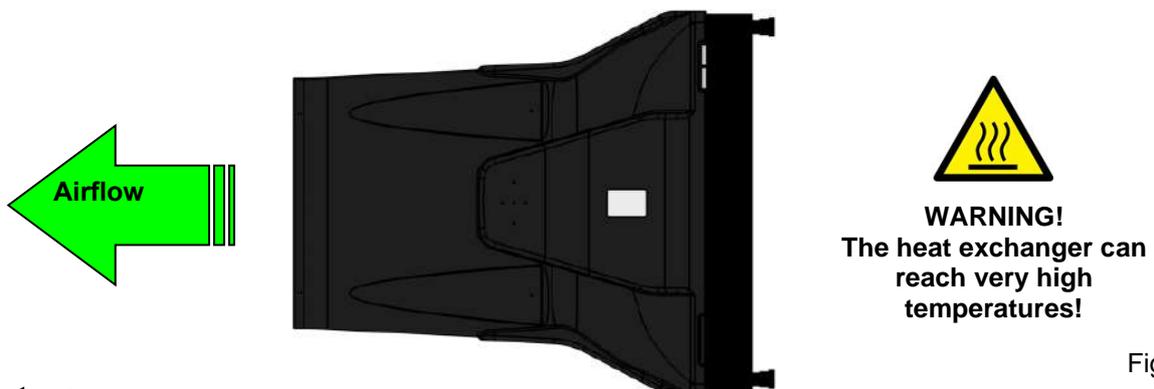


Fig. 3.2.1

3.3 Start-up

The machine starts automatically as soon as power is supplied. The heat exchanger heats the air, which is then distributed into the room by the fan.

4 - MAINTENANCE



The operations described in this chapter must only be carried out by authorised and qualified personnel, using suitable personal protective equipment. Before carrying out any work, disconnect the power supply and cut off the water supply.

Periodically check the efficiency of the heating system and the correct operation of the fan. Keep the machine clean, avoid the accumulation of dirt on the unit, periodically clean the heat exchanger and the fan.

4.1 Cleaning the machine

Perform the following operations periodically, ensuring that the machine is disconnected from the mains and the heat exchanger has cooled down completely:

- Keep the machine body, fan and motor housing clean regularly using a soft, damp cloth and a non-toxic, solvent-free cleaning agent, without applying excessive pressure. Do not direct any water jets, even indirectly, at the motor and electrical parts.
- **Do not use solvents.** Keep the heat exchanger clean with the help of a stiff-bristled brush: scrub the fins being careful not to damage them.
- In the event of unusual noises and vibrations, check the tightness of screws and bolts.
- Use only original Franco s. r. l. spare parts.

4.2 Replacing the fan

- Switch off the power supply and disconnect the motor fan cable.
- Release the two quick-release fasteners to open the fan compartment, then slide the machine body off the hinges.
- Use two hexagonal spanners 13 to remove the four M8 bolts that secure the fan motor. Remove the fan cable by loosening the cable gland.
- Remove the fan from its housing and position the new fan.
- Secure the fan with the bolts previously removed; check that the fan blades are free to turn. Reconnect the cable and check the air flow.

4.3 Replacing the exchanger

- Disconnect the unit heater from the power supply.
- Heat the connections with a heat gun to soften the sealant in the fitting.
- Release the 2 quick-release fasteners (Fig. 4.4.1).
- Open the fan compartment (Fig. 4.4.2)
- Remove the machine body from the hinges (Fig. 4.4.3).
- Remove the unit heater from the fixing system (chains, brackets)
- Remove the hinges and locking hooks from the exchanger and refit them in the same position on the new exchanger (fig. 4.4.4);
- Reassemble the bracket system and the machine body with the fan, inserting the hinges and engaging the fasteners.

4.4 Accessories

A complete range of accessories that can be combined with your AP Max is available, such as electronic thermostats, electrical wiring and plumbing accessories, air conveyors and ducting for ducting the intake. Ask your supplier for the accessories catalogue for more details.

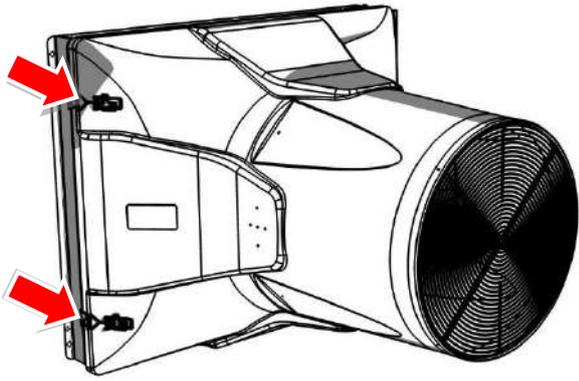


Fig. 4.4.1

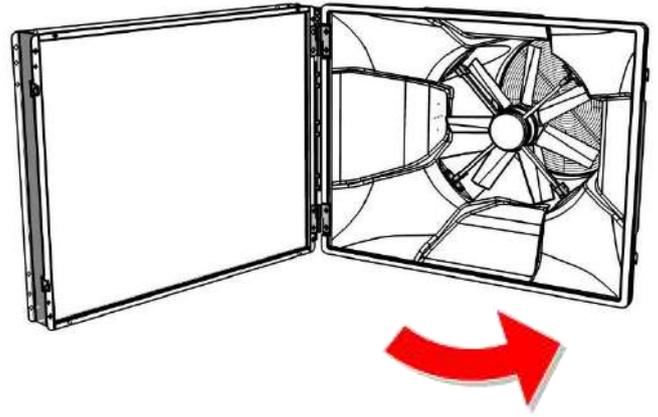


Fig. 4.4.2

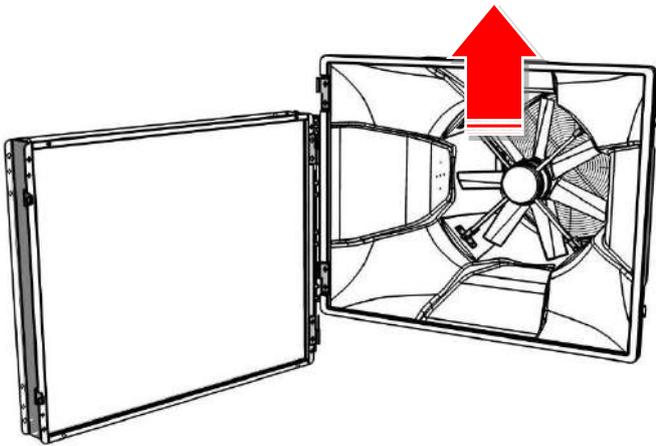


Fig. 4.4.3

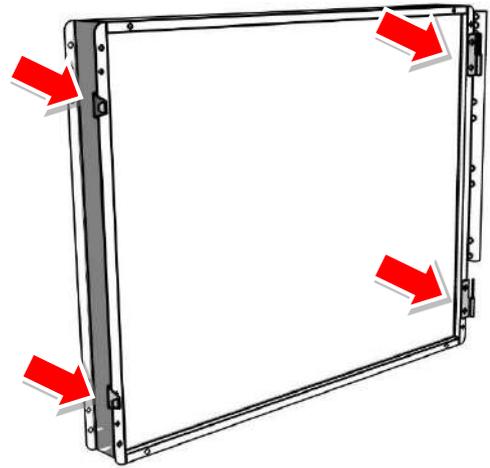
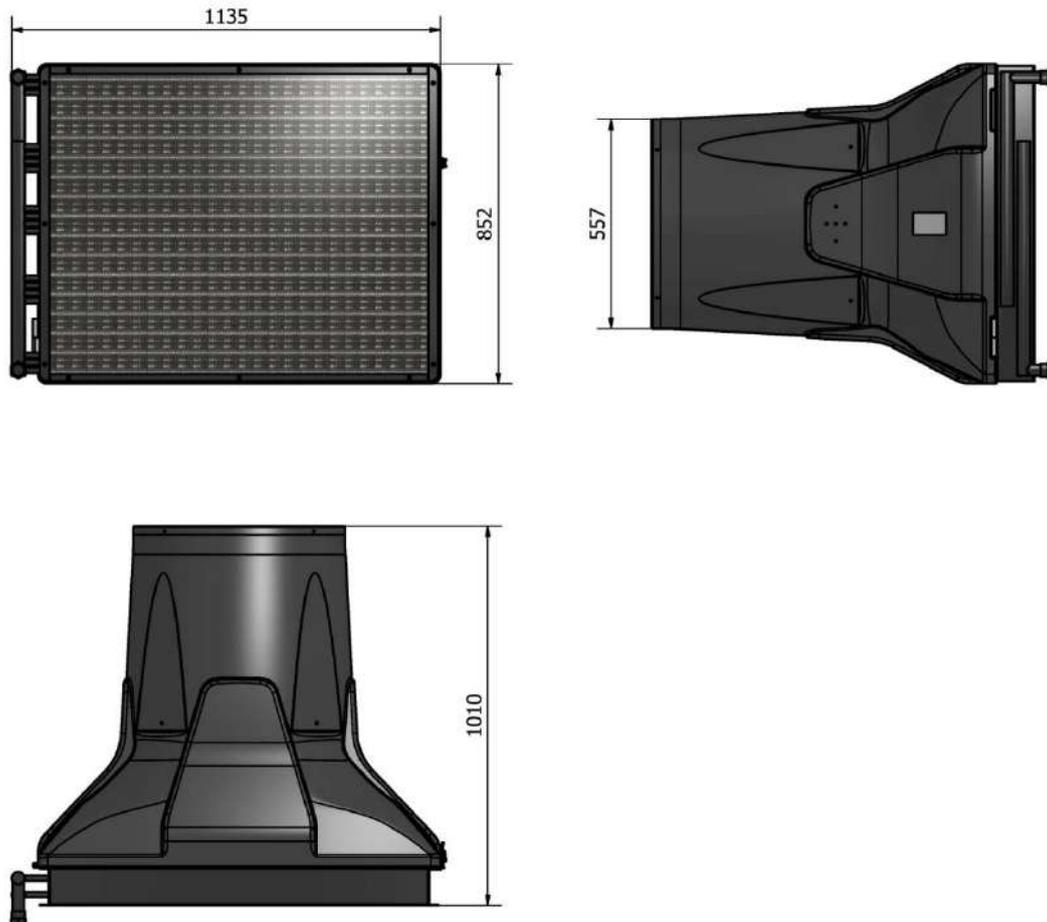


Fig. 4.4.4

5 - TECHNICAL CHARACTERISTICS

5.1 Technical Data



GENERAL DATA				
Model	Weight*	Content of water	Attacks	Nominal heat output (TAI=15°C TWI/TWO=85°C/75°C)
	[kg]	[l]		[kW]
AP Max 50	50	7	1" F	87
AP Max 80	55	14	1¼" F	113

* empty

FAN TECHNICAL CHARACTERISTICS			
Type		1~	3~
Voltage	[V]	230	400
Frequency	[Hz]	50 / 60	50 / 60
Fan diameter	[mm]	560	560
Air flow rate	[m³/h]	6500 / 7100	6500 / 7100
Engine power	[W]	400 / 530	390 / 500
Absorbed current	[A]	1,9 / 2,8	0,6 / 1,5
Speed	[rpm]	920 / 1000	840 / 913
Noise	[dB]	68	68
Degree of protection		IP54	IP54
Insulation class		F	F

HEATING DATA

AP Max 50

dT	TWI	TWO	TAI	PT		TAO	QW	DPW
°C	°C	°C	°C	kW	kCal	°C	l/h	kPa
10	55	45	15	46,08	39.622	35,1	4.017	44,6
10	65	55	15	59,80	51.419	41,1	5.238	68,2
10	75	65	15	73,48	63.182	47,0	6.460	95,3
10	85	75	15	87,08	74.876	53,0	7.696	125,7
10	55	45	30	25,30	21.754	41,6	2.205	15,6
10	65	55	30	38,88	33.431	47,8	3.403	32,1
10	75	65	30	52,32	44.987	54,0	4.601	52,6
10	85	75	30	65,72	56.509	60,1	5.779	76,6
15	55	40	15	41,89	36.019	33,3	2.432	18,7
15	65	50	15	55,93	48.091	39,3	3.258	30,0
15	75	60	15	69,65	59.889	45,4	4.082	43,0
15	85	70	15	83,40	71.711	51,4	4.907	57,6
15	55	40	30	20,40	17.541	39,4	1.184	5,3
15	65	50	30	34,81	29.931	46,0	2.030	13,1
15	75	60	30	48,52	41.720	52,2	2.839	22,8
15	85	70	30	62,06	53.362	58,4	3.649	34,3

AP Max 80

dT	TWI	TWO	TAI	PT		TAO	QW	DPW
°C	°C	°C	°C	kW	kcal	°C	l/h	kPa
10	55	45	15	60,97	52.425	41,6	5.317	39,5
10	65	55	15	78,51	67.507	49,2	6.872	59,6
10	75	65	15	95,95	82.503	56,8	8.436	82,6
10	85	75	15	113,33	97.447	64,4	10.009	108,2
10	55	45	30	33,98	29.218	45,6	2.963	14,2
10	65	55	30	51,24	44.059	53,5	4.487	28,3
10	75	65	30	68,29	58.719	61,3	6.006	45,6
10	85	75	30	85,29	73.337	69,1	7.525	65,7
15	55	40	15	56,45	48.539	39,6	3.279	17,2
15	65	50	15	74,32	63.904	47,4	4.333	26,8
15	75	60	15	91,97	79.080	55,1	5.386	37,9
15	85	70	15	109,48	94.136	62,7	6.443	50,4
15	55	40	30	28,30	24.334	43,0	1.644	5,1
15	65	50	30	46,87	40.301	51,5	2.733	12,0
15	75	60	30	64,29	55.280	59,5	3.766	20,3
15	85	70	30	81,50	70.078	67,4	4.792	30,0

dT = difference TWI / TWO
 TWI = inlet water temperature
 TWO = outlet water temperature
 TAI = inlet air temperature

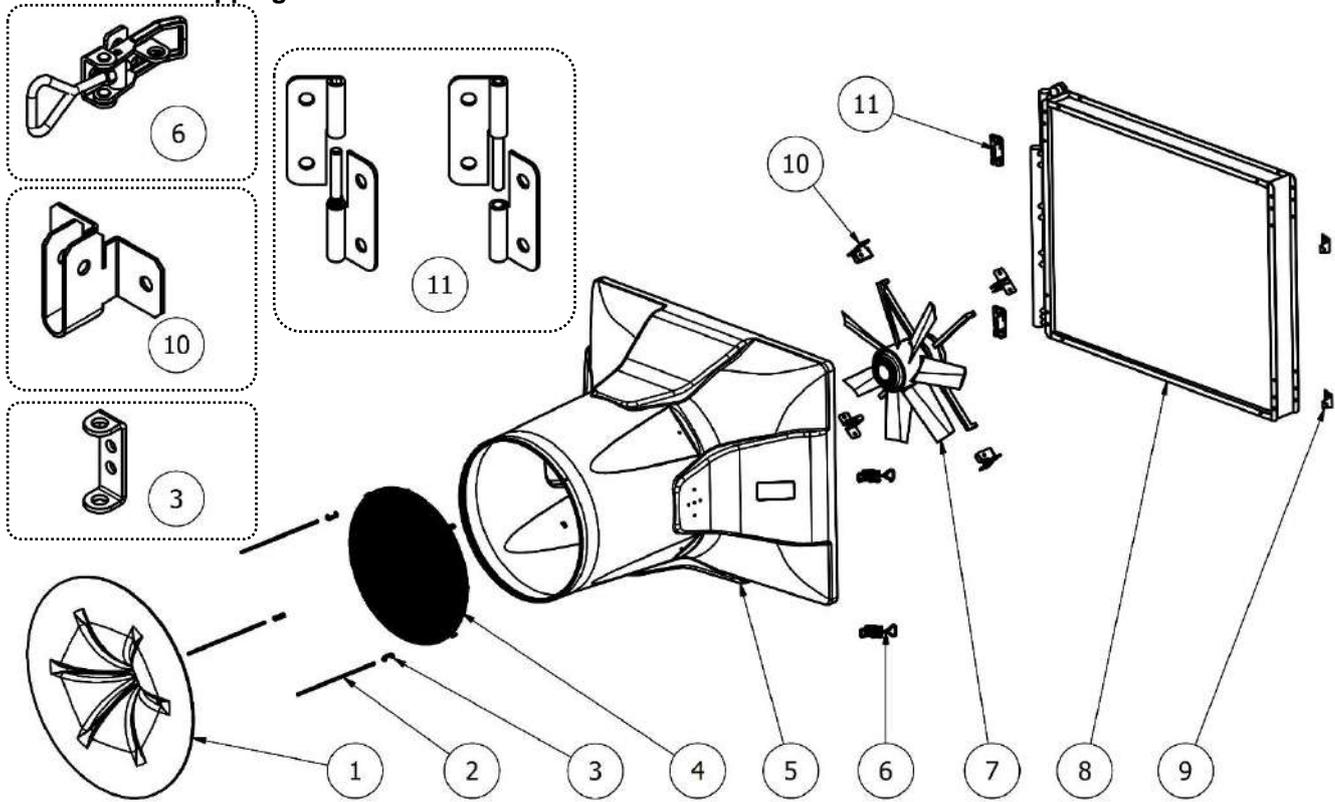
DPW = water-side pressure loss
 PT = total power
 TAO = outlet air temperature
 QW = water flow rate

5.2 Spare parts list



Only use original spare parts.
Orders must be placed specifying the following:

- Appliance model
- Part reference as indicated in the drawing
- Quantity of pieces to order
- Shipping address



Pos.	Qty	Art.	Description
1	1	2403001	AIR DISTRIBUTOR
1a	1	2456008	AIR DISTRIBUTOR FIXING KIT
2	3	2455013	DISTRIBUTOR ADJUSTMENT ROD
2a	3	2456009	DISTRIBUTOR ADJUSTMENT ROD FIXING KIT
3	3	2455012	DISTRIBUTOR ADJUSTMENT ROD HOLDER
3a	3	2456010	DISTRIBUTOR ADJUSTMENT ROD HOLDER FASTENING KIT
4	1	2452000	SAFETY NET
4a	1	2456000	SAFETY NET FIXING KIT
5	1	2403000	MACHINE BODY
6	2	7206002	SNAP FASTENER
6a	2	2456003	SNAP FASTENING KIT
7	1	2453400	FAN 1~ 230 V 50 Hz
7	1	2453401	FAN 3~ 400 V 50 Hz
7a	1	2456001	FAN FASTENING KIT
8	1	2403100	HEAT EXCHANGER AP MAX 50
8	1	2403110	HEAT EXCHANGER AP MAX 80
9	2	2403201	HOOKS FOR SNAP FASTENERS
9a	2	2456004	FASTENING KIT FOR SNAP FASTENERS
10	4	2403200	FAN SUPPORTS
10a	4	2456002	FAN BRACKET FIXING KIT
11	2	7206000	HINGE WITH PIN - RIGHT-HAND OPENING
11	2	7206001	HINGE WITH PIN - LEFT-HAND OPENING
11a	2	2456005	HINGE FASTENING KIT

5.3 Circuit diagrams

The cables used must be suitable for carrying the current intensity (A) of the motor (sect. 5.1).
 The screws of the terminal box must be carefully tightened.
 Ensure that the characteristics of the electrical supply current comply with the table (sect. 5.1).
 Install a magnetic differential circuit breaker upstream of the equipment.
 Protect with a suitable motor protector (see Section 5.1 - fan specifications).



Make sure that all connectors in the fan's electrical box are securely connected, that the box cover is securely fastened and that the locking screws are tightened securely to ensure the required degree of protection.

6 - TROUBLESHOOTING GUIDE



The operations described in this chapter must only be carried out by authorised and qualified personnel, using suitable personal protective equipment. Before carrying out any work, disconnect the power supply and cut off the water supply.

PROBLEM	CAUSE	SOLUTION
The machine does not start	Power failure	Check the electrical connection or operation of the mains supply
No air comes out or air flow is weak	Fan power is switched off	Check the fan power supply line
	The hot water air heater is dirty or clogged	Clean the machine by checking that the heat exchanger is not obstructed
	The motor is defective	Contact specialised and authorised personnel for motor replacement
The air leaving the unit heater is not heated	The hot water production system is not working or is defective	Check that there are no leaks along the thermal circuit, contact authorised and specialised personnel to check the system
The fan is noisy	The fan is dirty	Cleaning the unit heater
	The fan is broken	Contact specialised and authorised personnel for fan replacement
The machine vibrates	The fan is dirty	Cleaning the unit heater
	The fan is broken	Contact specialised and authorised personnel for fan replacement
	The machine is not correctly installed	Check machine fixings; tighten loose screws

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