AQUA F

SERIES DSDH-P AQ 1 S 190 - 190S - 300 - 300S

Packaged monoblock heat pump for domestic hot water production



SIZE	190	190S	300	300S
Heating capacity kW	1 ,2	1,2	1,5	1,5

R-290

ErP

BOLLETTINO TECNICO

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Features and benefits

Description of the system

AQUA F is the specialised heat pump system for the production of domestic hot water.

With AQUA F, domestic hot water is produced in a much more cost-effective manner. AQUA F heat pump technology transforms renewable energy in the air into heat that can be used to raise the temperature of the water contained in the storage tank.

All this takes place with minimal use of electricity: AQUA F is four times more efficient than a conventional electric boiler: in economic terms, this means a 75 per cent reduction in electricity costs for the same amount of heat supplied.

The unit is designed and built to be installed indoors, with only the power supply and water pipes needing to be connected.

TOP efficiency

AQUA F attains the highest levels of efficiency on the market today. Thanks to the careful design of the refrigerant circuit, it achieves class A+ according to the ErP directive.

The high COP values allow great savings in terms of energy and operating costs, in addition to an increase in the use of renewable energy.



Enamelled steel tank with coil-wound heat exchanger

The innovative active electronic anode and the enamelled steel tank guarantee a high level of protection against corrosion. The additional magnesium anode protects the product in the event of a power failure.

The aluminium heat exchanger (condenser) uses microchannel technology to maximise the contact surface area for improved heat exchange. This ensures maximum safety by preventing any contamination between the refrigerant and domestic water.



Features and benefits

Wide operating range

The state-of-the-art technology, both in terms of components and control logic, allows AQUA F to be used at extreme temperatures. AQUA F can work in an air temperature range of -20°C to +46°C in combined operation (heat pump + electric heater) and even -7°C to + 43°C in heat pump mode.

Domestic water temperatures of over 65°C can also be reached using the heat pump alone.





Advanced control options

AQUA F has a Modbus connection port for integration with third-party home automation systems.

The unit is also compatible with CONTROL4 NRG, the Clivet supervision system that optimises operation of residential systems.

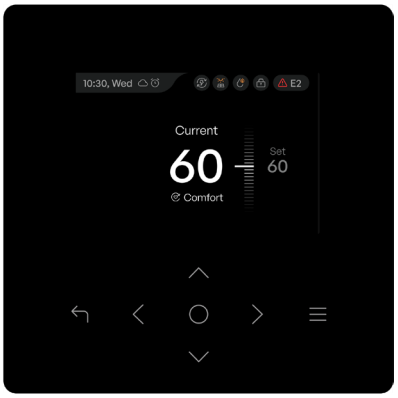
AQUA F has an input for integration with photovoltaic panels.

The AQUA F unit also comes as standard with a Wi-Fi function: this means it can be controlled remotely, using the App on a smartphone to view and set the main parameters.

AQUA F can manage up to 8 units hydraulically connected in parallel. Thanks to the advanced operating logic, this function allows optimal and efficient use of all the interconnected units.



User interface



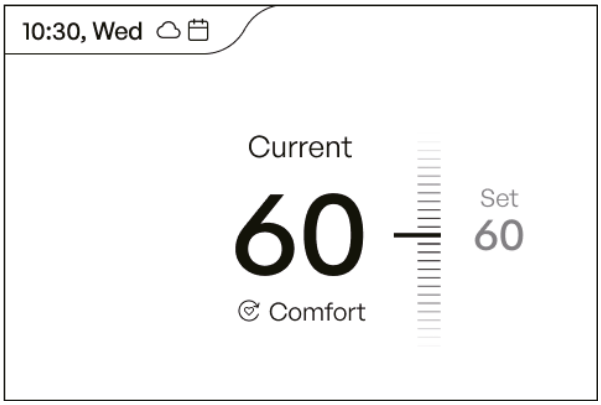
The control panel mounted on the unit can be used to control the AQUA F.
The control panel is designed to be extremely user-friendly, with 7 buttons for accessing all the parameters with ease.

The control unit allows you to view:
- the instantaneous water temperature;
- the operating status of the unit;
- the operating status of the compressor and electric heater;
- the presence of any faults.

and to set:
- the operation mode
- the SET temperature of the storage tank;
- scheduling of up to six switching on or off times for the unit per day;
- manual activation of the electric heater;
- manual activation of the anti-legionella disinfection cycle;
- switch-on and switch-off of the unit.

Buttons	Name	Function
	MENU	To open the various menus from the HOME page.
	OK	To enter a submenu To confirm entered values
	BACK	To go back to the previous menu To return to the previous level or page. Long button press to return straight to the home page.
	DOWN - UP	To move the cursor on the screen/navigate in the menu structure/adjust parameter settings Long press to enter quick control mode
	SX - DX (left - right)	To move the cursor on the screen/navigate in the menu structure/adjust parameter settings
	Screen lock	Long press to unlock/lock the screen
	Installer	Installer settings Long press to open the screen to enter the password

Features and benefits



1	10:30, Wed	Date and time
2		Wi-Fi (disabled)
3		Cloud (disabled) The network is connected to Wi-Fi but not connected to the cloud
4		Cloud (enabled)
5		Daily scheduling
6		Weekly scheduling
7	⚠ E2	Alarm (active)
8		Keypad lock
9	Boost	Electric heater and heat pump work together to reach the set temperature.
10	Comfort	Operation of the heat pump takes priority and the electric heater is activated according to the external conditions when the temperature is low or the capacity of the heat pump is insufficient.
11	Set 60	Water temperature setting
12	Current 60	Current water temperature;
13	Off	Unit off
14		Holiday mode
15		Solar (enabled)
16		Sterilisation (anti-legionella)
17		Electric heater (enabled)
18		Smart grid (on)

Standard unit technical specifications

AQUA F

Fan

Centrifugal fan with plastic profiled blades, housed in aerodynamically shaped nozzles to increase efficiency and minimise noise level.

Evaporator

Large surface area finned coil evaporator that improves heat exchange and reduces possible defrosting for the benefit of seasonal efficiency.

Anode

Electronic anode for maximum protection and durability over time with minimum maintenance.
The unit is also equipped with a magnesium anode that protects against corrosion even in the event of a power failure or if the electronic anode breaks.

Condenser

Aluminium microchannel condenser wound around the storage tank which prevents the contamination of water due to leaking refrigerant.
The condenser is designed to maximise the contact area with the tank.

Compressor

ON/OFF rotary compressor with R-290 on vibration dampers to minimise vibration and noise transmission.

Safety thermostats

Manual reset safety thermostat (TCO: temperature cut off)

Modbus protocol

Allows serial connection to supervision systems, using Modbus as a communication protocol. It allows
access to the entire list of operation variables, controls and alarms.
The unit is compatible with CONTROL4 NRG.

TBH backup

1.5 kW electric heater that can be used as a back-up heater when the temperature drops below -7 °C and/or as an additional one in the case of high setpoint temperatures and especially cold air temperatures.

Tank

Steel storage tank for domestic water of 100 litres internally vitrified to completely isolate the water from the metal in order to avoid corrosion problems.

Insulation

Externally insulated with polyurethane (42 mm thick).

Appearance



SIZE 190 - 190S - 300 - 300S

General technical data

Size				190	300	190S	300S
Capacity and efficiency							
Tout 15/12 °C (DB/WB), Tw,in 15 °C Tw,out 45°C	Heating capacity		kW	1.261	1.595	1.237	1.573
	Total power input		kW	0.35	0.44	0.35	0.43
	COP			3.76	3.66	3.49	3.63
Tout 43/26 °C (DB/WB), Tw,in 10 °C Tw,out 60°C –› 190 Tw,out 60°C –› 300	Heating capacity		kW	1.953	2.415	1.923	2.391
	Total power input		kW	2.60	4.00	2.55	3.88
	COP			5.297	5.168	5.312	5.175
Electric heater			kW	1.64	1.64	1.64	1.64
Standard power supply			V	240~220V/50/1Hz			
DHW reheating time		1	h/min	5.07/304	6.03/362	5.26/316	6.1/366
DHW minimum temperature				15	15	15	15
DHW maximum temperature			°C	45	45	45	45
Sound pressure level (1m)		5	dB(A)	/	/	/	/
Sound power level (L_{WA})			dB(A)	55	56	55	56
ErP							
Clima Average (2)	Generator energy class			A+	A+	A+	A+
	Domestic hot water profile			L	XL	L	XL
	η_{wh}		%	117	125	117	125
	AEC annual consumption		kWh	874	1341	874	1341
	Daily consumption		kWh	4.13	6.24	4.13	6.24
	COP EN 16147			2.82	3.06	2.82	3.06
Climate Warmer (3)	Domestic hot water profile			L	XL	L	XL
	η_{wh}		%	139	142.9	139	142.9
	AEC annual consumption		kWh	736	1171	736	1171
	Daily consumption		kWh	3.48	5.45	3.48	5.45
	COP EN 16147			3.35	3.5	3.35	3.5
Clima Colder (4)	Domestic hot water profile			L	XL	L	XL
	η_{wh}		%	100.6	108.3	100.6	108.3
	AEC annual consumption		kWh	1017	1547	1017	1547
	Daily consumption		kWh	4.79	7.19	4.79	7.19
	COP EN 16147			2.43	2.65	2.43	2.65
Storage tank							
Domestic hot water storage volume				185	275	180	270
Storage tank material				Steel tank with vitreous enamel coating			
Insulating material				Polyurethane			
Heat loss			W/K	3			
Maximum operating pressure			bar	8.5	8.5	8.5	8.5
Insulation thickness			mm	43	46	43	46

Size		190	300	190S	300S
Refrigeration circuit					
Type of compressor		Rotary	Rotary	Rotary	Rotary
Refrigerant gas		R290	R290	R290	R290
Quantity of refrigerant	kg	0.15	0.15	0.15	0.15
GWP	t	3	3	3	3
Tons of equivalent CO_2 *	$_{tCO2}$	0.00126	0.00126	0.00126	0.00126
Oil quantity	ml	140±10	170±10	140±10	170±10
Expansion valve type		Electronic expansion valve			
Fan					
Type of fan		Centrifugal	Centrifugal	Centrifugal	Centrifugal
Airflow	m^3/h	340	390	340	390
Available pressure	Pa	55	55	55	55
Integration					
Integration coil surface	m^2	-	-	0.84	0.84
Integration coil material		-	-	Enamel pipe	Enamel pipe
Maximum operating pressure	bar	-	-	3	3

1. Inlet water temperature 15°C, storage set 45°C, source air 15°C D.B/12°C W.B.
2. The product conforms with the European ErP Directives, which include Commission Delegated Regulation (EU) no. 812/2013, Commission Delegated Regulation no. 814/2013, Clima Average, Heat Pump Water Heater
3. The product conforms with the European ErP Directives, which include Commission Delegated Regulation (EU) no. 812/2013, Commission Delegated Regulation no. 814/2013, Clima Warmer, Heat Pump Water Heater
4. The product conforms with the European ErP Directives, which include Commission Delegated Regulation (EU) no. 812/2013, Commission Delegated Regulation no. 814/2013, Clima Colder, Heat Pump Water Heater
5. Data for fully ducted unit.

*Contains fluorinated greenhouse gases

General technical data

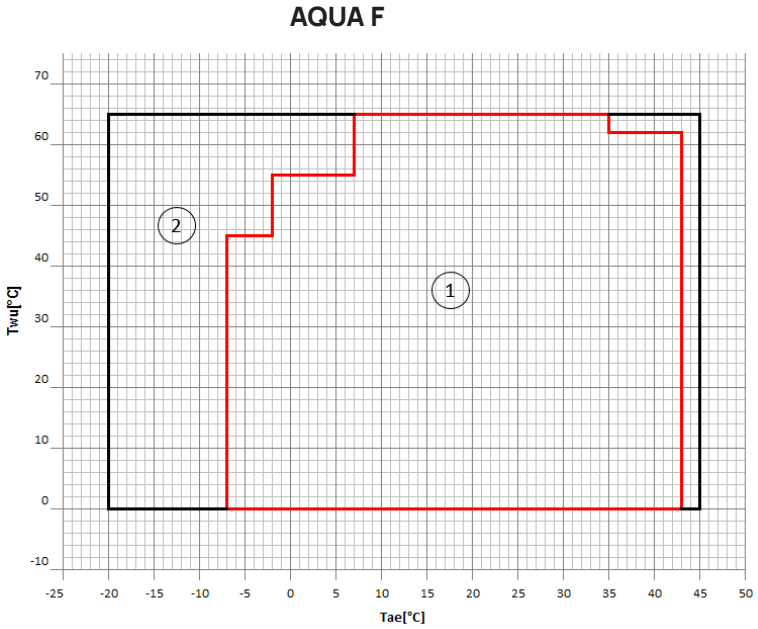
Electrical data

Size			190	190S	300	300S
Power supply	(1)	V	220~240V/1/50Hz			
F,L,A, - Absorbed current at maximum admissible conditions		A	2,3	3,2	2,3	3,2
F,L,I, - Full load power input (at max. admissible conditions)		kW	2,19	2,332	2,19	2,332
M,I,C, - Maximum inrush current		A	2,61+7,13	3,25+7,13	2,61+7,13	3,25+7,13

(1) 220-240/1/50 power supply
For supply voltages deviating from the standard, please consult Clivet's technical department
The units comply with the requirements of European standards CEI EN 60204 and CEI EN 603355

⚠ Caution: when defining the size, make sure all absorption values are compliant with current power supply contracts in the country of installation
Operating limits

Operating limits



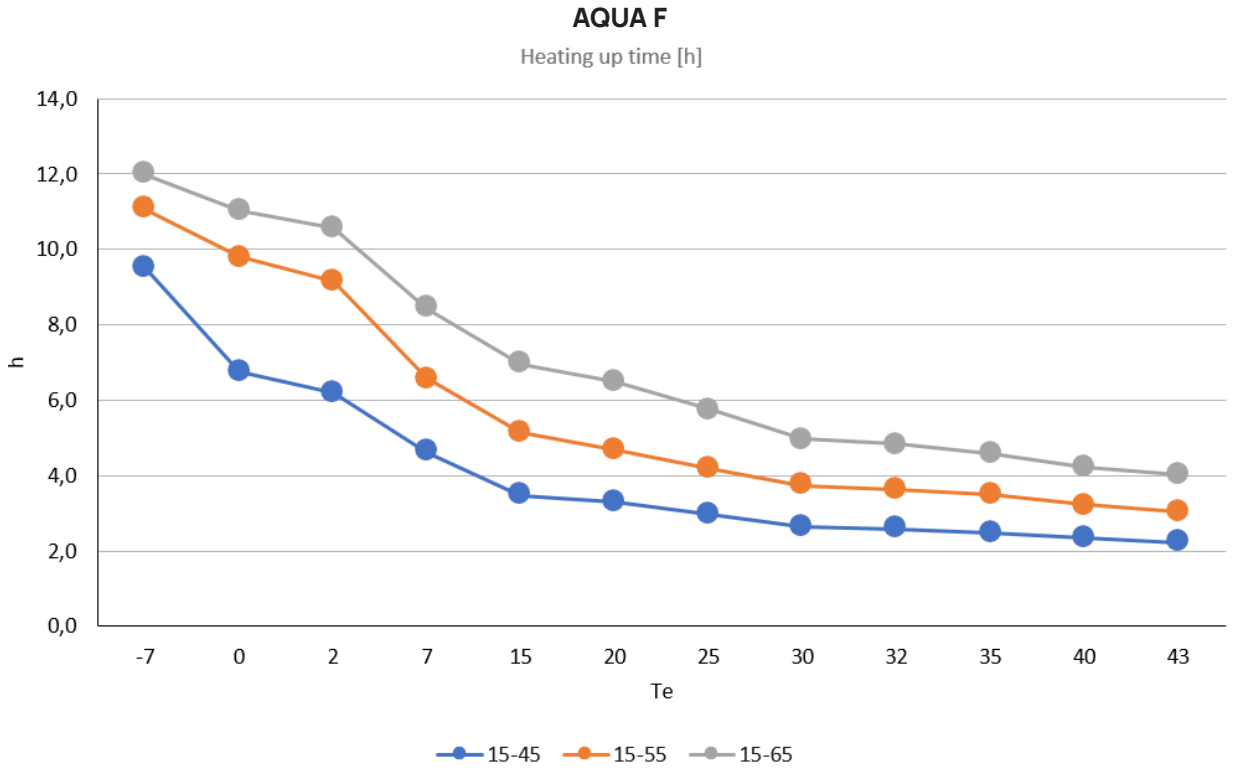
Twu [°C] = storage tank water temperature
Tae [°C] = exchanger inlet air temperature

1. Utilisation range of heat pump
2 Utilisation range of electric heater

Performance curves

The following curves are based on the results of dynamic performance tests. The inlet water temperature, which coincides with the initial instant temperature 0, is 15 °C. The different curves represent the time needed to heat the water with different temperature settings (45°C - 55°C - 65°C).

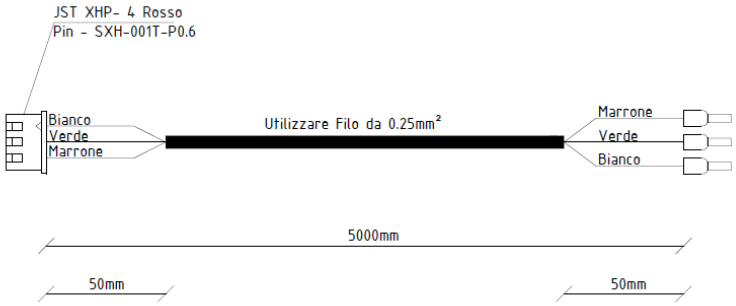
Heat UP



Accessories separately supplied

CCAX **Optional connection cable**

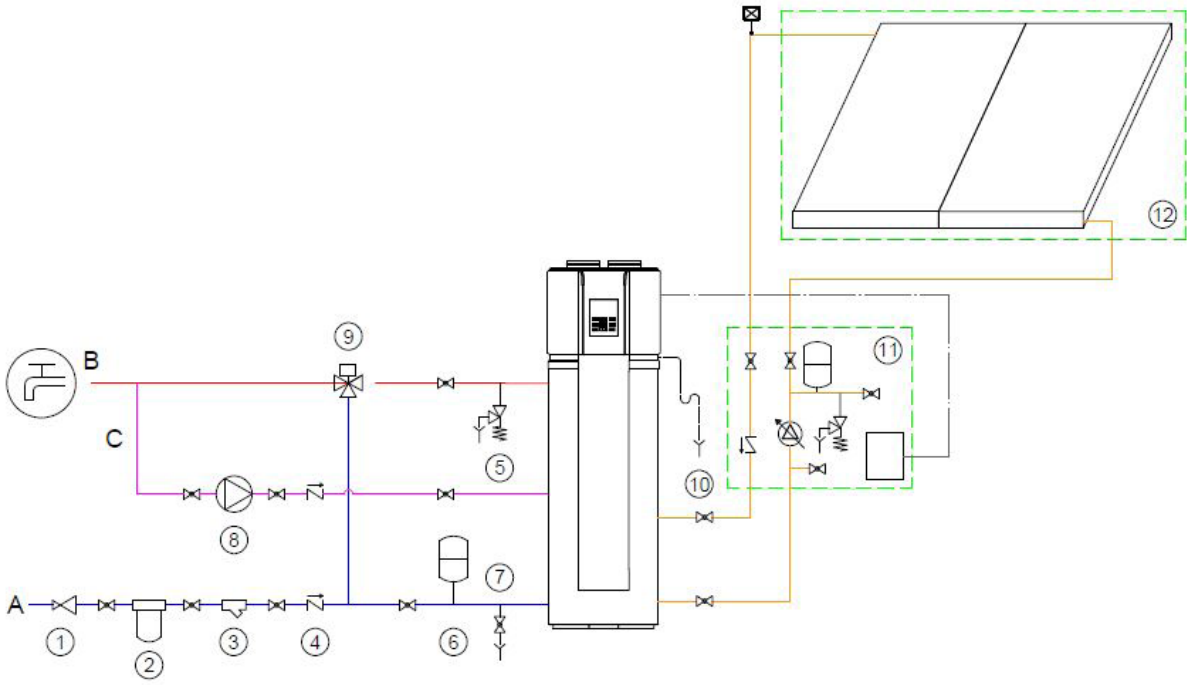
The accessory consists of a cable for connecting the unit to the others hydraulically managed in parallel.
One cable is required per unit.



Hydraulic connections

Below is an indicative diagram of the hydraulic connections of the AQUA F 100. The connection and design of the system must be carried out in accordance with national regulations in force.

Size 190 - 300 - 190S - 300S



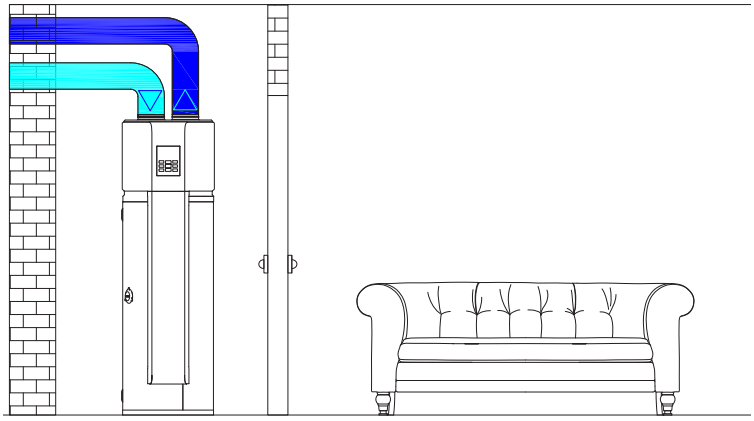
1. Pressure reducing valve
2. Water treatment devices (water softener, etc.)
3. Filter Y
4. Non-return valve
5. Domestic hot water safety valve with discharge
6. DHW expansion vessel
7. Storage drain
8. Hot water circulator (recirculation) with check valve
9. Mixing valve thermostatic
10. Condensate drain
11. Solar circulation unit (not supplied)
12. Solar panels (not supplied)

A - Aqueduct inlet
B - DHW
C - DHW recirculation

Aeraulic connections

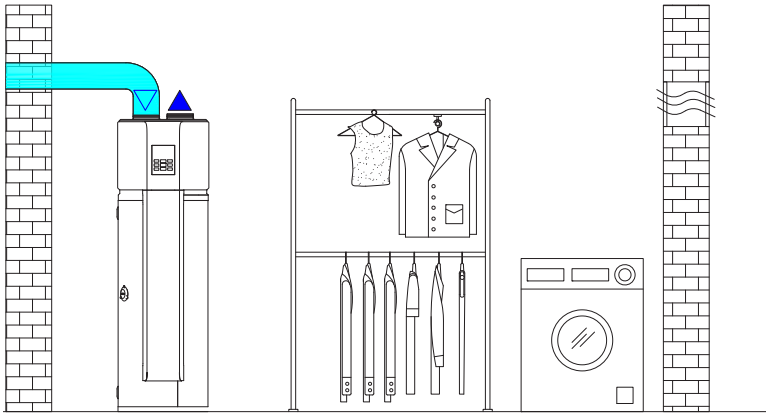
The unit must be installed inside the building, preferably in a technical room, laundry room or garage. However, it is always preferable to avoid installation in the vicinity of bedrooms or rooms to be kept sound insulated.
The unit must not be installed outdoors or in areas exposed to the elements.

DUCTED INTAKE AND EXHAUST (recommended)



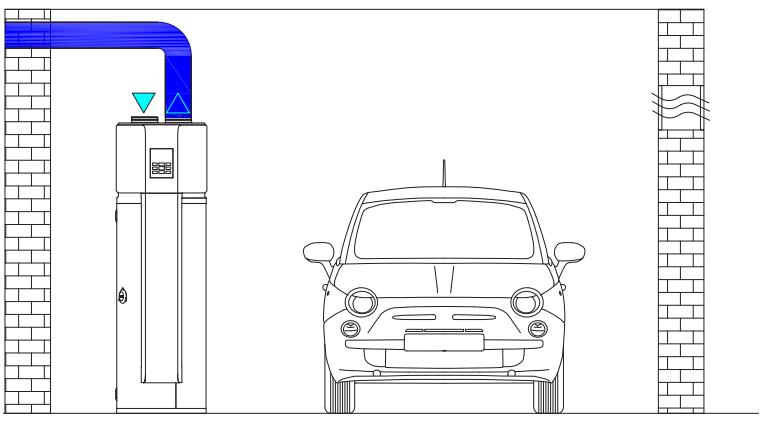
Ducting the intake and exhaust openings allows the unit to work with air drawn in from outside the home. Heat is extracted from this air and used as a source for the heat pump, after which the air is expelled out of the building. Operation of the unit therefore does not increase the thermal load. The ducting system must be sized correctly in relation to the useful pressure provided by the unit.

DUCTED (conditioned) INTAKE



Installation with ducted intake and free exhaust is recommended if you want to make use of the cold (5-10°C less than the intake air) and dehumidified air expelled from the unit to obtain a cooling effect. The unit should preferably be installed in a room that is not to be heated, as the unit releases cold air into the room which would lead to increased consumption for heating that room. The volume of the room in which the unit is installed must be more than 15 m^2, the flow of expelled air must be guaranteed and not be obstructed, and the ventilation openings must be sized accordingly.

DUCTED EXHAUST (conditioned)



In this particular configuration, the unit draws in air from the room in which it is installed, extracts the heat from it and then expels it outside the home. The unit must be installed in a room with appropriate openings to allow the proper flow of air to the unit, avoiding the risk of putting the room under pressure. The volume of the room in which the unit is installed must be more than 15 m^2.

Data for calculation UNI/TS 11300

Clivet S.p.A. declares that the data to use for the calculation, in line with UNI/TS 11300 part 4 of the generation performance of heat pumps it manufactures, are the ones reported in the following tables.
The data contained in this document may be updated by the manufacturer in the event of updates to the range without obligation of prior notice.

UNI/TS 11300 Part 4

AQUA F

DHW Data Capacity and COP full load			Te			
	Te	**Tm**	**7**	**15**	**20**	**35**
190	**Thermal bridge ΦH,HP out (W) Thermal bridge ΦH,HP out (W)**	55°C	1062	1178	1300	1815
	COP	55°C	2.863	3.181	3.485	5.032
190S	**Thermal bridge ΦH,HP out (W) Thermal bridge ΦH,HP out (W)**	55°C	1282	1535	1670	2275
	COP	55°C	2.735	3.325	3.561	5.032
300	**Thermal bridge ΦH,HP out (W) Thermal bridge ΦH,HP out (W)**	55°C	1041	1143	1250	1751
	COP	55°C	2.856	3.175	3.476	5.029
300S	**Thermal bridge ΦH,HP out (W) Thermal bridge ΦH,HP out (W)**	55°C	1262	1503	1620	2226
	COP	55°C	2.729	3.311	3.556	5.021

Terms and definitions
Supply temperature
Te = ambient air temperature

Wi-Fi function and control via App

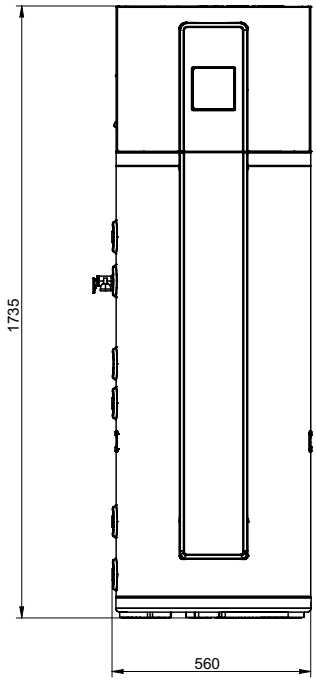
The CLIVET EYE App can be downloaded free of charge for iOS and Android. The user can perform the following operations remotely:

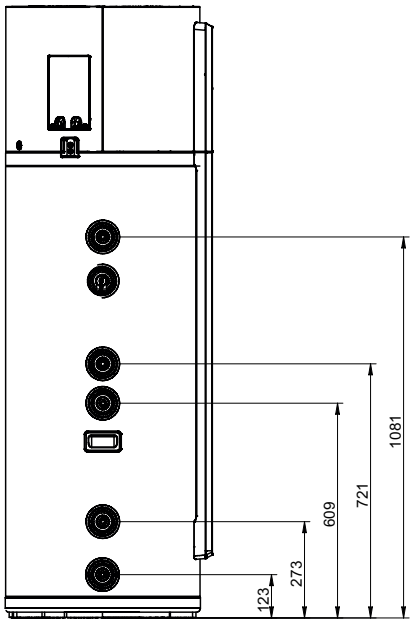
- Switch on/switch off the unit
- View and set the temperature of the tank
- Activate E-Heater mode for fast heating of DHW
- Set schedules (daily, weekly, holiday mode)
- Activate anti-legionella mode (Disinfect)

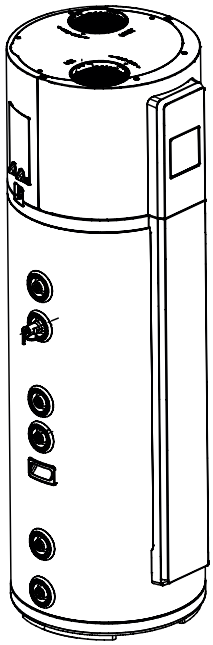
Dimensional drawings

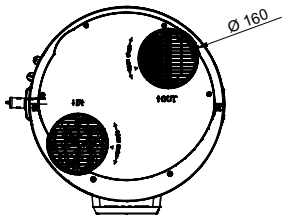
DSDH-P AQ 1 S 190

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DATA/DATE 20/01/2025







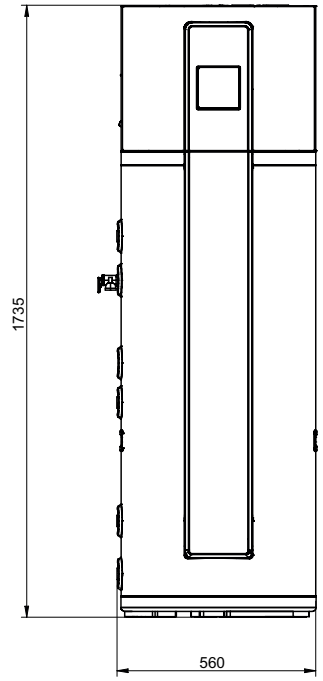


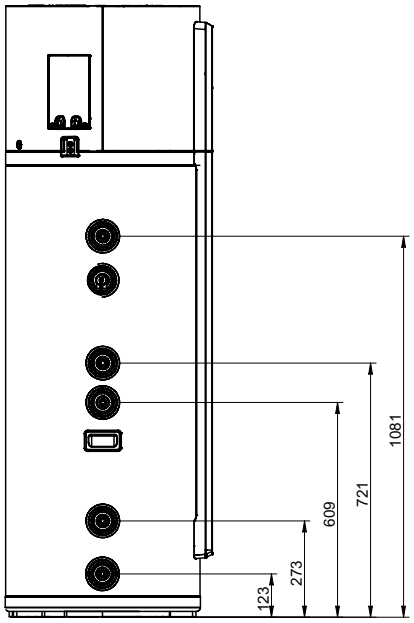
WEIGHT DISTRIBUTION		190
Operating weight	Kg	274
Shipping weight	Kg	109

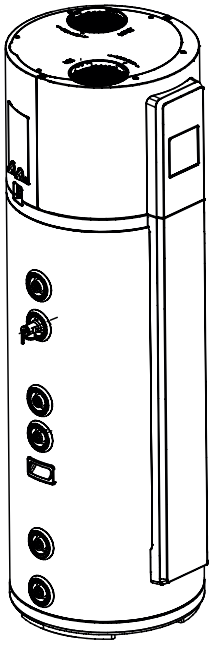
The presence of optional accessories may result in significant variation of the weights indicated

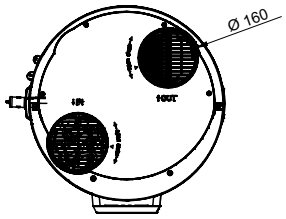
DSDH-P AQ 1 S 190S

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DATA/DATE 20/01/2025









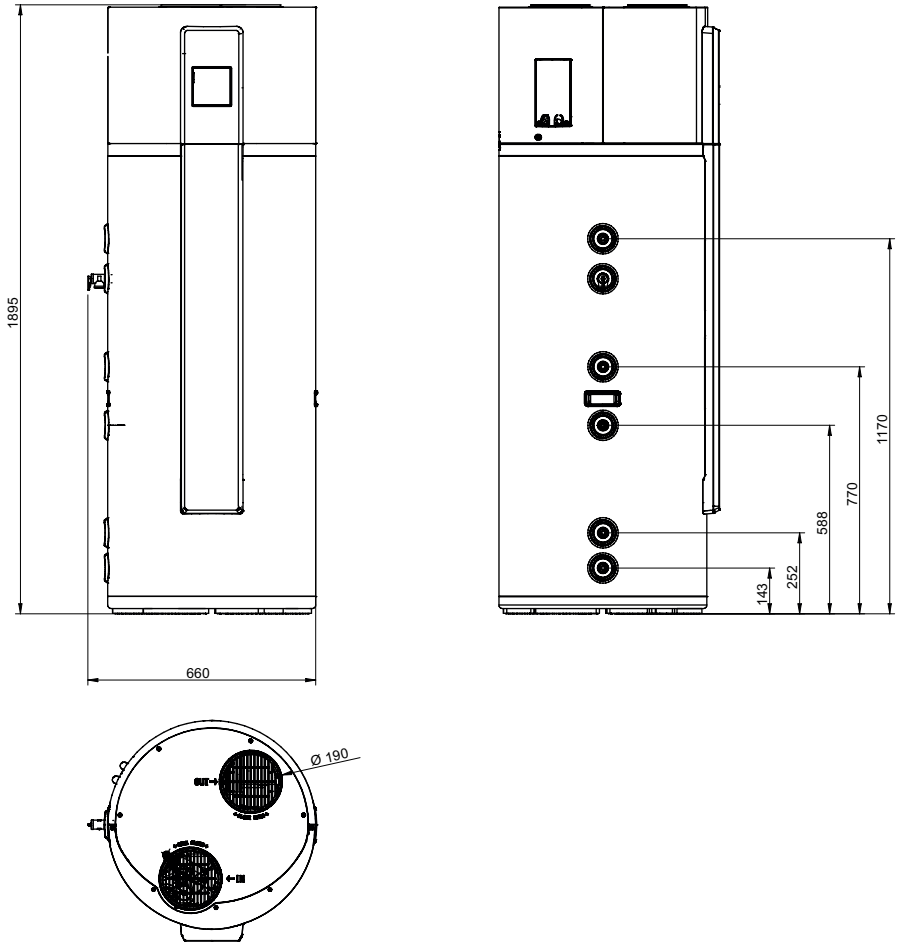
WEIGHT DISTRIBUTION		190S
Operating weight	Kg	285
Shipping weight	Kg	124

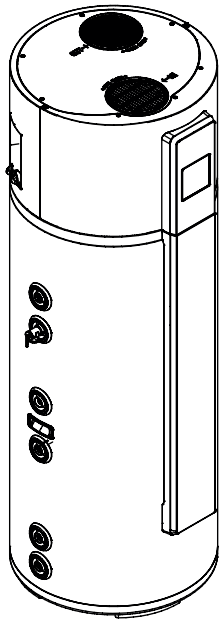
The presence of optional accessories may result in significant variation of the weights indicated

Dimensional drawings

DSDH-P AQ 1 S 300

DAADS0003
DATA/DATE 20/01/2025



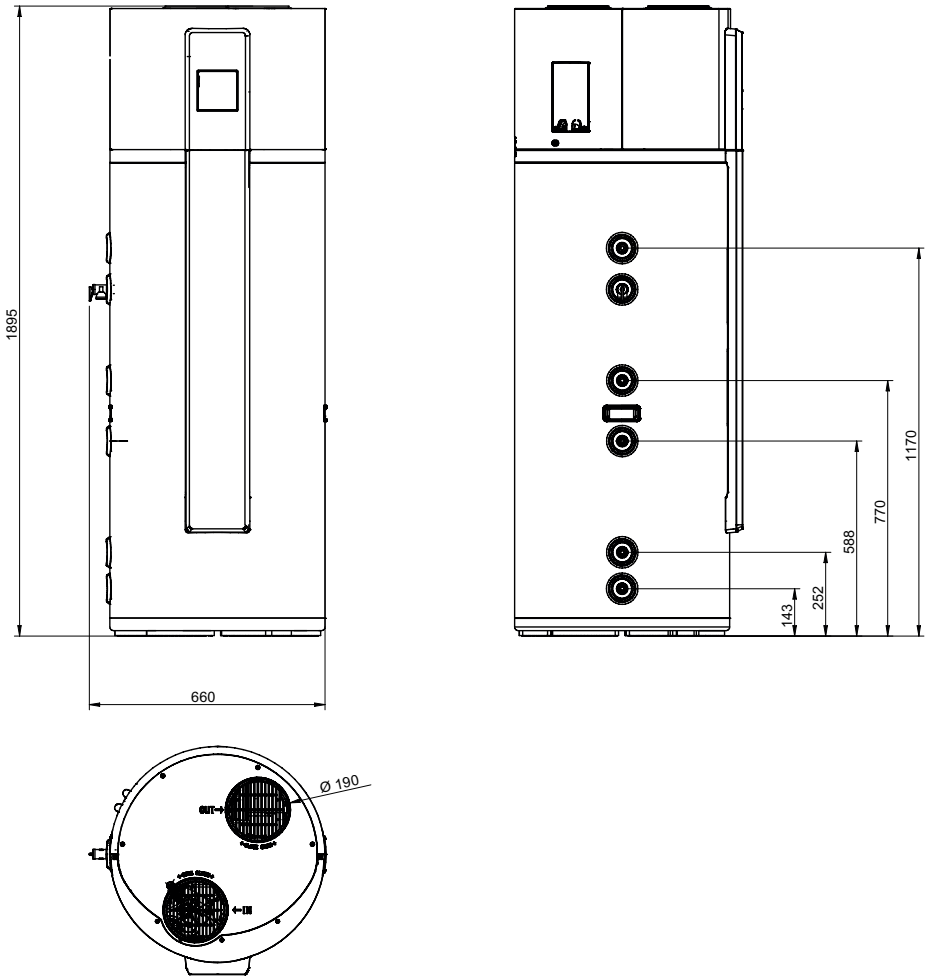


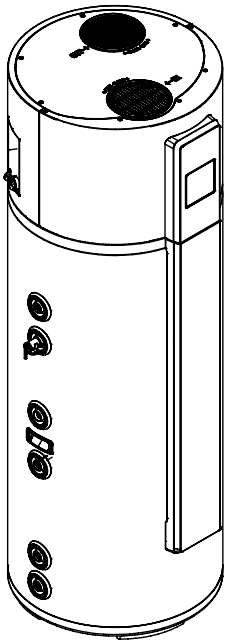
WEIGHT DISTRIBUTION		300
Operating weight	Kg	396
Shipping weight	Kg	148

The presence of optional accessories may result in significant variation of the weights indicated

DSDH-P AQ 1 S 300S

DAADS0004
DATA/DATE 20/01/2025





WEIGHT DISTRIBUTION		190S
Operating weight	Kg	407
Shipping weight	Kg	162

The presence of optional accessories may result in significant variation of the weights indicated

Da oltre 35 anni offriamo soluzioni per il comfort sostenibile e il benessere dell'individuo e dell'ambiente

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