

# PRODUCT CATALOG

# Gassero

technology for your comfort



ECO FRIENDLY

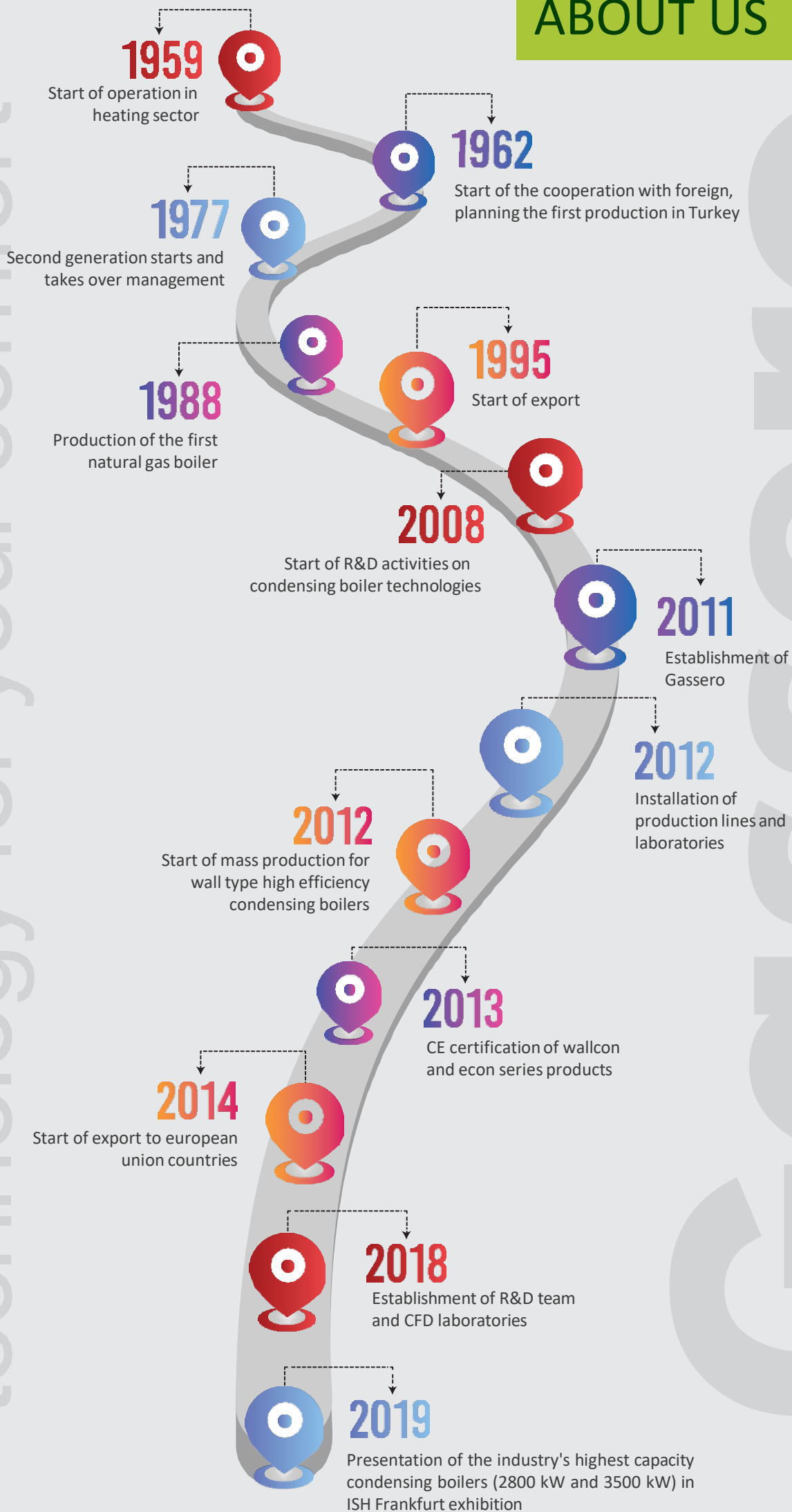
## HEAT PUMP

[www.gassero.com](http://www.gassero.com)

# ABOUT US

technology for your comfort

Gassero



## OUR BASIS VAULES

Our company, whose sales department completed many successful projects in both Turkey and abroad, continues developing innovative products with its R&D department.

### INNOVATIVE

Most of our investment is used in our R&D department for new projects.

### ENVIRONMENTALIST

We are aware, that the resources of our World are slowly dwindling. We design our products with this knowledge, and give priority to renewable energy solutions

### COMPETITIVE

We analyse the expectations of our sector and customers, and improve our designs and solutions according to these analysis.

### CUSTOMER ORIENTED

We work in order to fully satisfy our domestic and abroad customers needs.

### RELIABLE

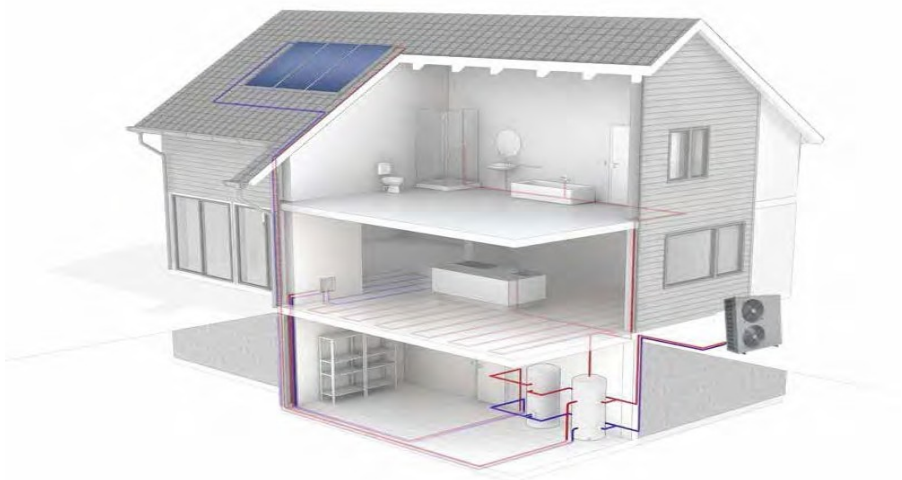
All of our products and solutions are subjected to meticulous design-manufacture-quality control procedures.

## OUR MISSION

To be a brand, which is preferred company by its customers with its respect to environment, no compromise on quality, and new its innovative team.

## OUR VISION

To be a global company in our sector, whose products are associated with QUALITY and RELIABILITY.



# Monoblock DC Inverter Heat Pump

GASSERO Air to Water DC Inverter Heat Pump is air conditioning system designed to supply heating/cooling and hot water requirements of the building. All models suitable for all mounting types and can be used with underfloor heating, radiators or fan coil systems. Also you can save space by small compact Monoblock design.

This series have more efficient and nature friendly design with a new generation R32 gas than old generation R410 series. While same system and capacity, although R410 needs 100 unit gas, R32 needs 71 unit gas.

	R410a	R32	Explanation
<b>Global warming potential</b>	2100	675	Equal to 1/ 3
<b>Gas amount in same system</b>	%100	%71	Less gas amount in same capacity



Working principle of the Gassero DC Inverter Heat Pump is based on the transferring the heat energy from one environment to another environment with an electric power.

The heat pump circuit starts with the liquid in evaporator turning to vapour form while passing with absorbing the heat of the environment, then R32 gas vapour is sent to system via compressor. The high temperature R32 vapour turn to liquid form with transferring the heat energy to water by condenser. R32 liquid that comes out the condender depressurize with expansion valve and heat pump circuit is end.



# Monoblock DC Inverter Heat Pump

## High Quality Components

### Control Panel with Smart WiFi Features

Ease of use with functional control panel.



### DC Inverter Compressor

Stable and efficient operation



### ErP Inverter Pump

A Class high efficient inverter water pump suitable for European ErP regulation can control working frequency according to the heat pump load. High precision water temperature control is provided with this features.



### Inverter Fan Motor Structure

DC Inverter fan can control the air volume high precisely, with this technology more energy saving and efficiency can be gain.



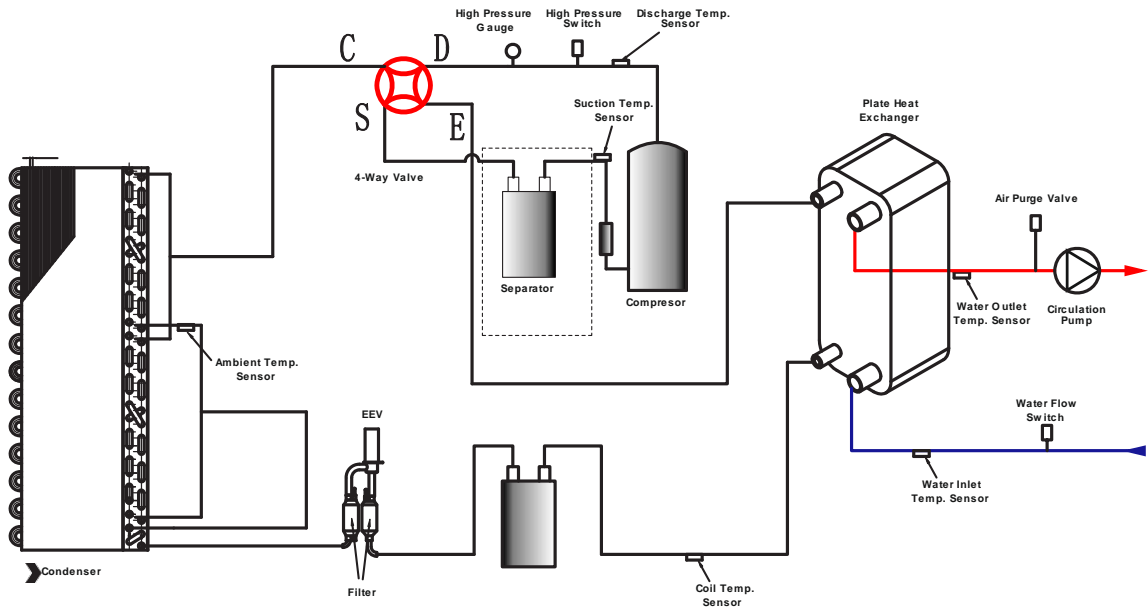
### Plate Heat Exchanger Special Structure

High efficient plate heat exchanger can transfer more heat energy with special louver fin structure than the normal flat fin heat exchanger, also it can makes more heat transfer with special copper form inside of pipe and this increases the heat pump efficiency.



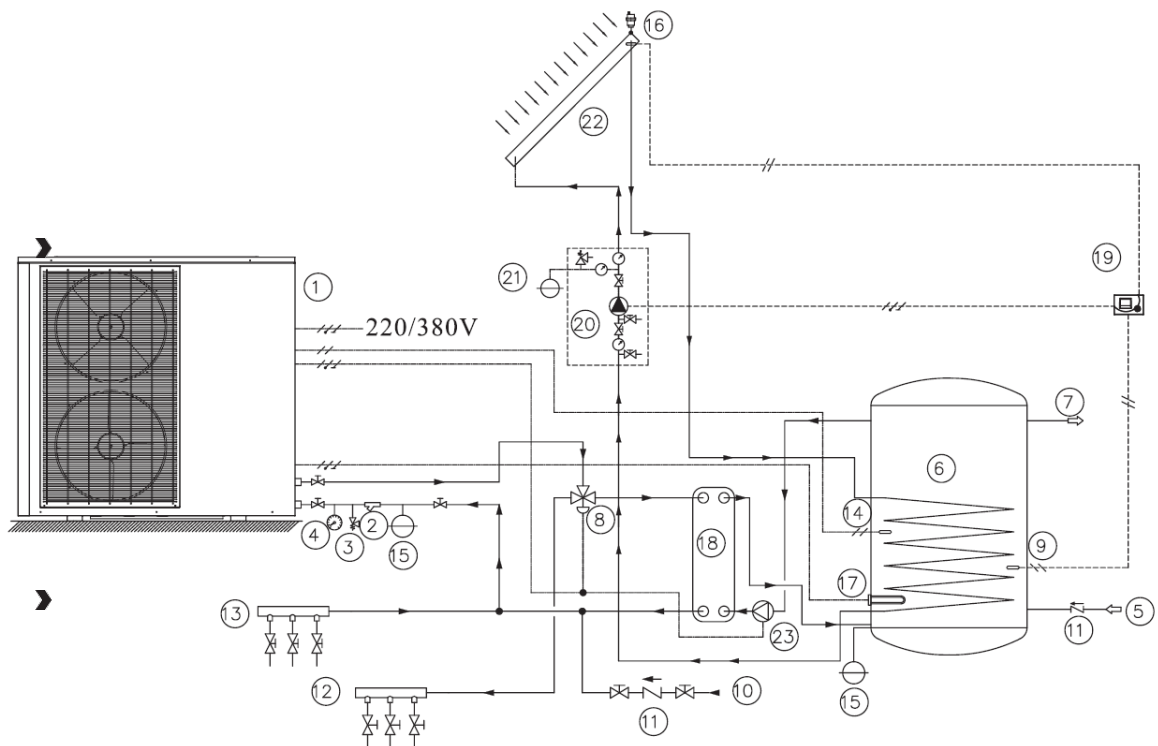
# Monoblock DC Inverter Heat Pump

## Working Principle



## Special Design, Precise Control, Maximum Comfort

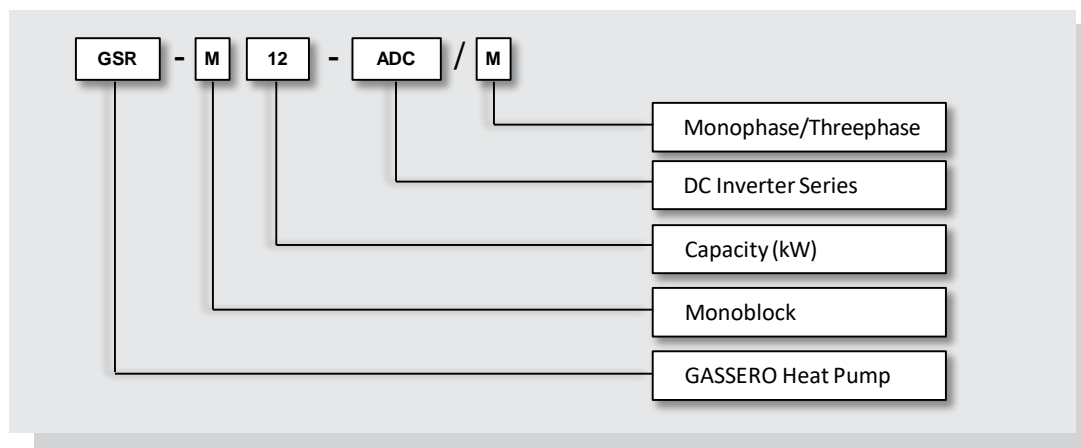
Gassero heat pump can work in systems as radiator, floor heating, fan coil and domestic hot water heating. Also can supply request of different users with integrating option to solar collector, extra heat source and etc. systems.



- |                          |   |                                   |                             |
|--------------------------|---|-----------------------------------|-----------------------------|
| 1 - Gassero Heat Pump    | 7 - "Tc" Probe                            | 14 - "Tw" Probe                   | 20 - Solar Group            |
| 2 - Filter               | 8 - "Th" Probe                            | 15 - Electrical Heater (Optional) | 21 - Solar Expansion Vessel |
| 3 - Safety Valve         | 10 - Water Inlet                          | 16 - Solar Probe                  | 22 - Solar Panel            |
| 4 - Water Pressure Gauge | 11 - One Way Valve                        | 17 - Electrical Heater (Optional) | 23 - Pump                   |
| 5 - Circulation Pump     | 12 - Supply Collector for Heating/Cooling | 18 - Plate Heat Exchanger         |                             |
| 6 - Buffer Tank          | 13 - Return Collector for Heating/Cooling | 19 - Solar Control Board          |                             |

# Monoblock DC Inverter Heat Pump

## Model Explanation



## Technical Information

Model		GSR-M6-ADC/M	GSR-M9-ADC/M	GSR-M12-ADC/M	GSR-M15-ADC/T	GSR-M19-ADC/T
<b>Power Supply</b>						
Power Supply / Refrigerant	V/Hz/Ph	220-240/50/1 - R32			380-420/50/3 - R32	
<b>Performance</b>						
Max. Heating Capacity (1)	kW	6.5	9.2	11.6	15.35	18.5
C.O.P (1)	W/W	4.61	4.38	4.3	4.78	4.47
Heating Capacity Min./Max.(1)	kW	3.5 / 6.5	4.3/9.2	5.5 / 11.6	6/15.35	9.2/18.5
Heating Power Input Min./Max.(1)	W	758 / 1410	927/2097	1107 / 2683	1222/3209	1834/4142
C.O.P Min./Max.(1)	W/W	4.5 / 4.7	4.38/4.71	4.3 / 4.9	4.78/5.06	4.47/5.01
Max. Heating Capacity(2)	kW	6	8.6	11.2	14.26	18.2
C.O.P (2)	W/W	3.46	3.37	3.45	3.64	3.6
Heating Capacity Min./Max.(2)	kW	3.15 / 6	3.9/8.6	4.9 / 11.2	5.6/14.26	8.5/18.2
Heating power input Min./Max.(2)	W	943 / 1732	1162/2550	1401 / 3263	1551/3913	2248/4998
C.O.P Min./Max.(2)	W/W	3.34 / 3.56	3.37/3.58	3.3 / 3.5	3.64/3.82	3.6/3.82
Max. Cooling Capacity (3)	kW	7.45	9.5	9.8	18.57	22.5
E.E.R (3)	W/W	4.05	4.23	3.9	3.78	3.58
Cooling Capacity Min./Max.(3)	kW	6.22/7.45	6.7/9.5	7.2/9.8	7.23/18.57	8.5/22.5
Cooling Power Input Min./Max.(3)	W	1400/1863	1679/2242	1791/2510	1334/4917	1660/6285
E.E.R Min./Max.(3)	W/W	4.05/4.45	4.0/4.6	4.0/3.8	3.78/5.42	3.58/5.12
Max. Cooling Capacity (4)	kW	4.5	7.2	8.5	13	16
E.E.R (4)	W/W	2.7	2.8	2.9	2.96	2.85
Cooling Capacity Min./Max.(4)	kW	3.5/4.5	4.9/7.2	4.9 / 8.5	4.46/13	5.5/16
Cooling Power Input Min./Max.(4)	W	1.33/1.68	1451/2366	1358 / 2987	2592/4390	2970/5510
E.E.R Min./Max.(4)	W/W	2.5/2.74	2.8/3.1	2.6 / 3.5	2.96/3.29	2.85/3.2
Workable Ambient Temperature Range	°C	-25~43				
Min. System Water Temperature (Heating / Cooling)	°C	20 / 7				
Min. Floor Area for installation, operation and storage	m <sup>2</sup>	7	17	28	56	58
Min. Area of Pipe-work	m <sup>2</sup>	7	17	28	56	58
Max. Operation High Pressure	MPa	4.2				
Max. Operation Low Pressure	MPa	1.2				
<b>Components</b>						
Compressor	Type - Quantity/System		Twin Rotary - 1	Twin Rotary - 1	Twin Rotary - 1	Twin Rotary - 1
Fan	Quantity		1	1	1	2
	Airflow	m <sup>3</sup> /h	2500	3150	3150	6200
	Rated power	W	34	45	45	90
Noise Level (sound power)	Indoor/Outdoor	dB(A)	44/52	44/53	44/52	44/59
Water Side Heat Exchanger	Type		Plate Heat Exchanger			
	Water Pressure Drop	kPa	26	26	26	26
	Piping Connection	Inch	G1"	G1"	G1"	G1-1/4"
<b>Hydraulics</b>						
Allowable Water Flow	Min./Rated./Max.	L/S	0.21/0.29/0.35	0.26/0.43/0.52	0.34/0.57/0.68	0.43/0.71/0.85
<b>Dimensions and Weight</b>						
Net Dimension(LxDxH)	Indoor Unit	mm	570x550x255	570x550x255	570x550x255	570x550x255
	Outdoor Unit	mm	1010x370x700	1165x370x845	1165x370x845	1085x390x1450
Net Weight	Indoor Unit	Kg	25	25	25	25
	Outdoor Unit	Kg	65	78	85	120

Note:

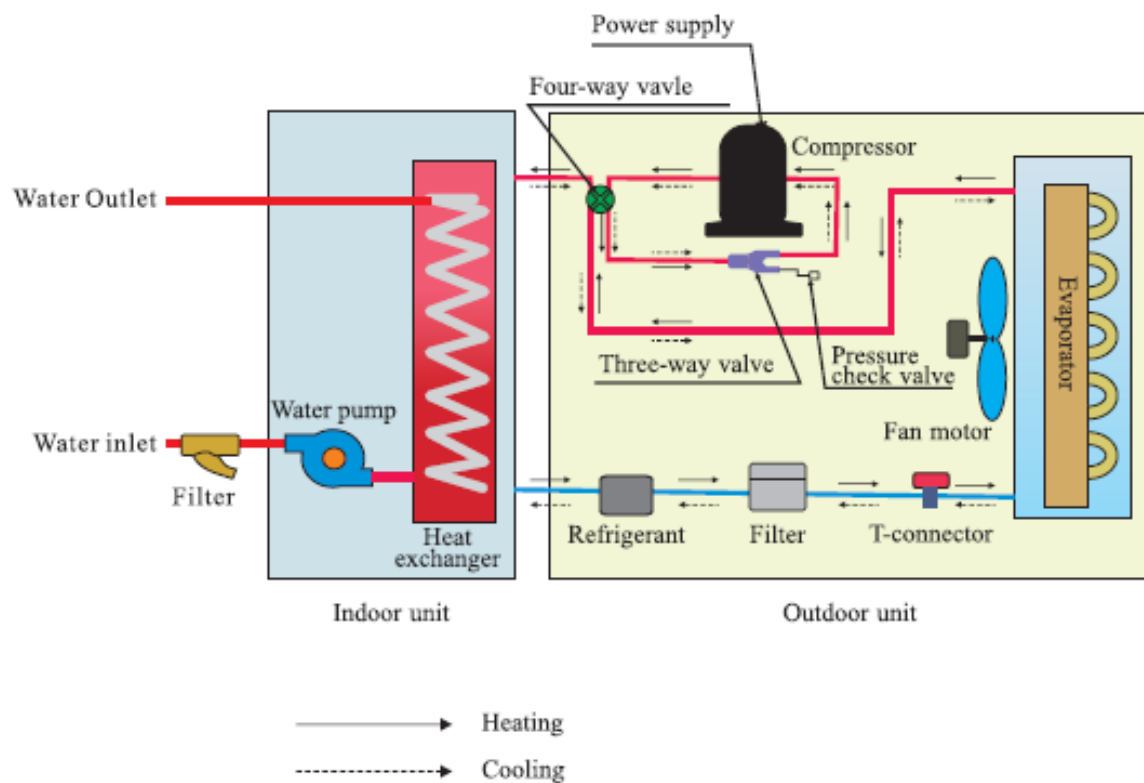
- (1) Heating condition: water inlet/outlet temperature: 30°C/35°C, Ambient temperature: DB 7°C/WB 6°C;
- (2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7°C/WB 6°C;
- (3) Cooling condition: water inlet/outlet temperature: 23°C/18°C, Ambient temperature: DB 35°C/WB 24°C;
- (4) Cooling condition: water inlet/outlet temperature: 12°C/7°C, Ambient temperature: DB 35°C/WB 24°C;
- (5) The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

# SPLIT DC Inverter Heat Pump

Gassero Air to Water DC Inverter Split Heat Pump is an air conditioning system designed to provide building heating/cooling and domestic hot water requirements. Also split structure gives more flexible installation advantage.



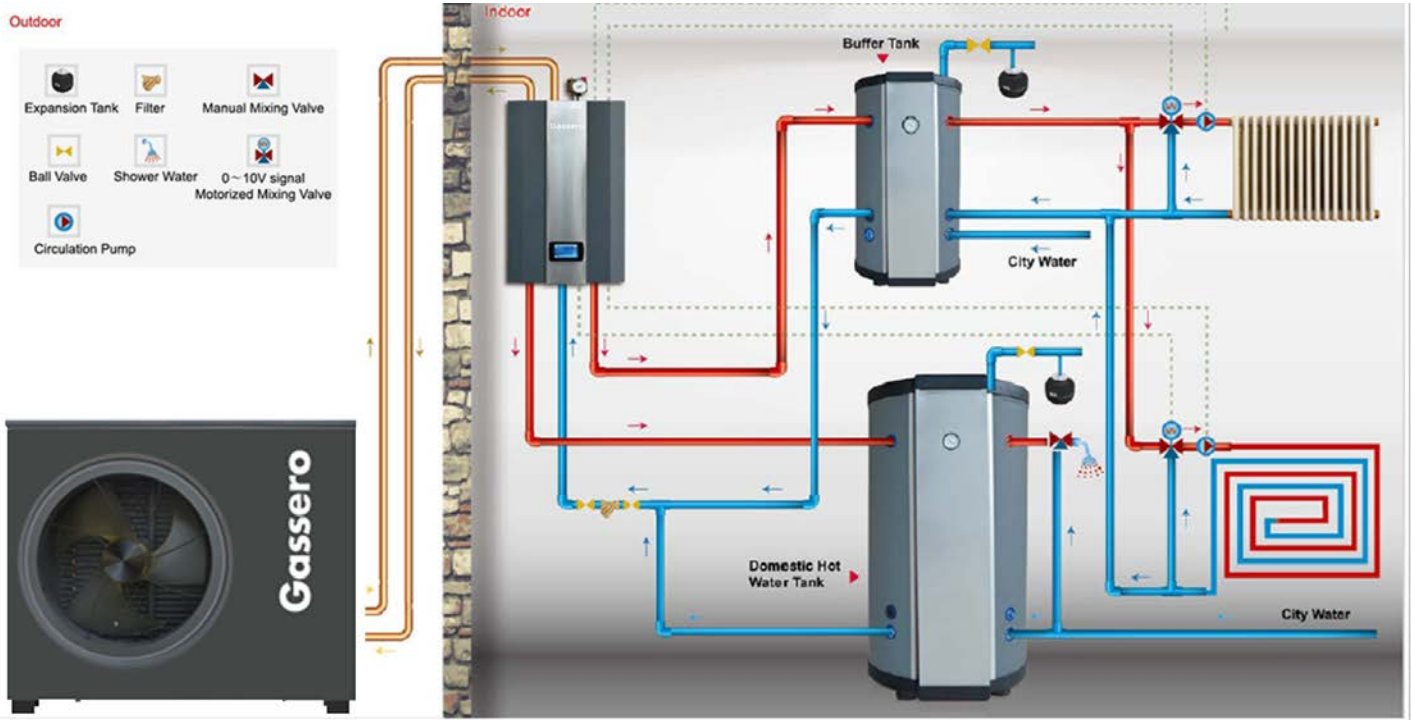
## Working Principle





# SPLIT DC Inverter Heat Pump

## Installation Scheme



# SPLIT DC Inverter Heat Pump

## Model Explanation

**Control Panel with Smart WiFi Features** 4,3" touchscreen display with user friendly interface and powerful functions. WiFi access and BMS integration option.



### Heating Curve

Adjust outlet water temperature based on ambient temperature automatically.

### Modbus

Easy to communicate with BMS for smart building.

### Two Mixing Circuit

Two mixing circuits control for different zones.

### WIFI Module

Connect online monitoring platform to check realtime running status, historical data, failure record and make the setting to heat pump remotely.

### Smart defrosting

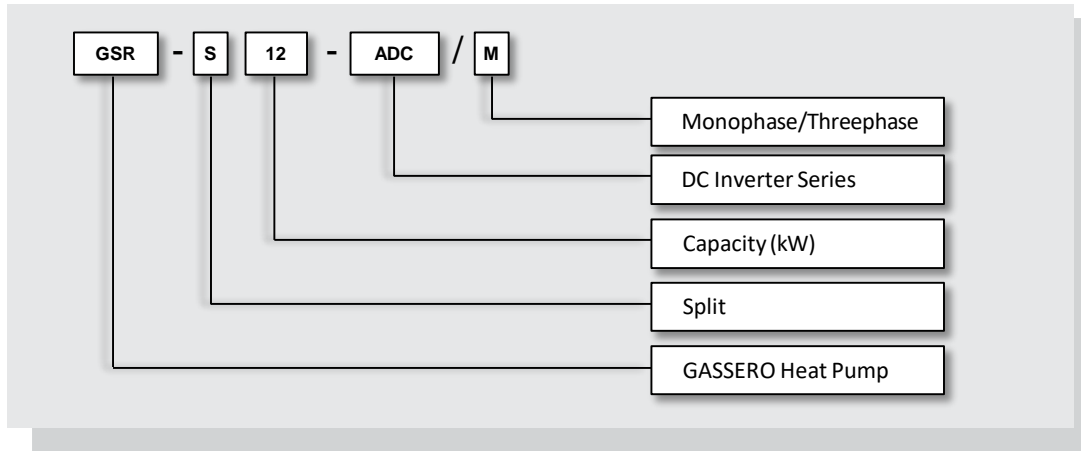
Smart defrosting based on status of environment and heat pump which benefits performance of heat pump effectively.

### Emergency Operation

Automatically or one button to start available backup heaters for emergency operation. always keep your house comfortable.

# SPLIT DC Inverter Heat Pump

## Model Explanation



## Technical Information

Model		GSR-S9-ADC/M	GSR-S12-ADC/M	GSR-S16-ADC/T	GSR-S19-ADC/T	
<b>Power Supply</b>						
Power Supply / Refrigerant	V/Hz/Ph	220-240/50/1 - R32		380-420/50/3 - R32		
<b>Performance</b>						
Max. Heating Capacity (1)	kW	9.2	11.6	15.35	18.5	
C.O.P (1)	W/W	4.38	4.3	4.78	4.47	
Heating Capacity Min./Max.(1)	kW	4.3/9.2	5.5 / 11.6	6/15.35	9.2/18.5	
Heating Power Input Min./Max.(1)	W	927/2097	1107 / 2683	1222/3209	1834/4142	
C.O.P Min./Max.(1)	W/W	4.38/4.71	4.3 / 4.9	4.78/5.06	4.47/5.01	
Max. Heating Capacity(2)	kW	8.6	11.2	14.26	18.2	
C.O.P (2)	W/W	3.37	3.45	3.64	3.6	
Heating Capacity Min./Max.(2)	kW	3.9/8.6	4.9 / 11.2	5.6/14.26	8.5/18.2	
Heating power input Min./Max.(2)	W	1162/2550	1401 / 3263	1551/3913	2248/4998	
C.O.P Min./Max.(2)	W/W	3.37/3.58	3.3 / 3.5	3.64/3.82	3.6/3.82	
Max. Cooling Capacity (3)	kW	9.5	9.8	18.57	22.5	
E.E.R (3)	W/W	4.23	3.9	3.78	3.58	
Cooling Capacity Min./Max.(3)	kW	6.7/9.5	7.2/9.8	7.23/18.57	8.5/22.5	
Cooling Power Input Min./Max.(3)	W	1679/2242	1791/2510	1334/4917	1660/6285	
E.E.R Min./Max.(3)	W/W	4.0/4.6	4.0/3.8	3.78/5.42	3.58/5.12	
Max. Cooling Capacity (4)	kW	7.2	8.5	13	16	
E.E.R (4)	W/W	2.8	2.9	2.96	2.85	
Cooling Capacity Min./Max.(4)	kW	4.9/7.2	4.9 / 8.5	4.46/13	5.5/16	
Cooling Power Input Min./Max.(4)	W	1451/2366	1358 / 2987	2592/4390	2970/5510	
E.E.R Min./Max.(4)	W/W	2.8/3.1	2.6 / 3.5	2.96/3.29	2.85/3.2	
Workable Ambient Temperature Range	°C	-25~43				
Min. System Water Temperature (Heating / Cooling)	°C					
Min. Floor Area for installation, operation and storage	m <sup>2</sup>	22	28	56	58	
Min. Area of Pipe-work	m <sup>2</sup>	22	28	56	58	
Max. Operation High Pressure	MPa					
Max. Operation Low Pressure	MPa					
<b>Components</b>						
Compressor	Type - Quantity/System	Twin Rotary - 1				
	Quantity	1	1	2	2	
Fan	Airflow	m <sup>3</sup> /h	3150	3150	6200	7000
	Rated power	W	45	45	90	120
Noise Level (sound power)	Indoor/Outdoor	dB(A)	44/53	44/52	44/59	44/61
Water Side Heat Exchanger	Type	Plate Heat Exchanger				
	Water Pressure Drop	kPa	26	26	26	26
	Piping Connection	Inch	G1"	G1"	G1-1/4"	G1-1/4"
<b>Hydraulics</b>						
Allowable Water Flow	Min./Rated./Max.	L/S	0.26/0.43/0.52	0.34/0.57/0.68	0.43/0.71/0.85	0.55/0.92/1.1
<b>Dimensions and Weight</b>						
Net Dimension(LxDxH)	Indoor Unit	mm	790x290x505	790x290x505	500x300x750	500x300x750
	Outdoor Unit	mm	1165x370x845	1165x370x845	1085x390x1450	1085x390x1450
Net Weight	Indoor Unit	Kg	39	39	44	46
	Outdoor Unit	Kg	75	79	120	130

Note:

(1) Heating condition: water inlet/outlet temperature: 30 °C/35°C, Ambient temperature: DB 7 °C /WB 6 °C

(2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7 °C /WB 6 °C

(3) Cooling condition: water inlet/outlet temperature: 23 °C/18°C, Ambient temperature: DB 35 °C /WB 24 °C

(4) Cooling condition: water inlet/outlet temperature: 12°C/7°C, Ambient temperature: DB 35 °C /WB 24 °C

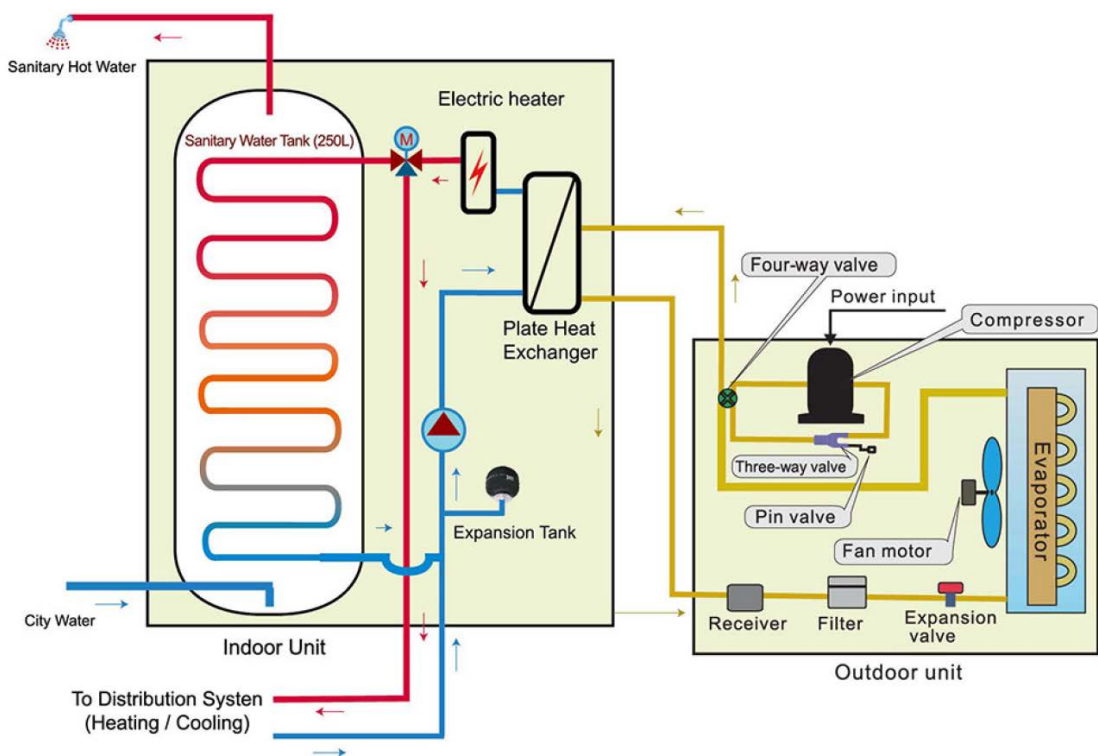
The specifications are subject to change without prior notice. For actual specifications of unit, please refer to the stickers on the unit.

# ALL IN ONE SYSTEM HEAT PUMP

All In One System are split systems combining a water tank in its indoor section. This structure minimizes the installation of a water tank in the house.



## Working Principle



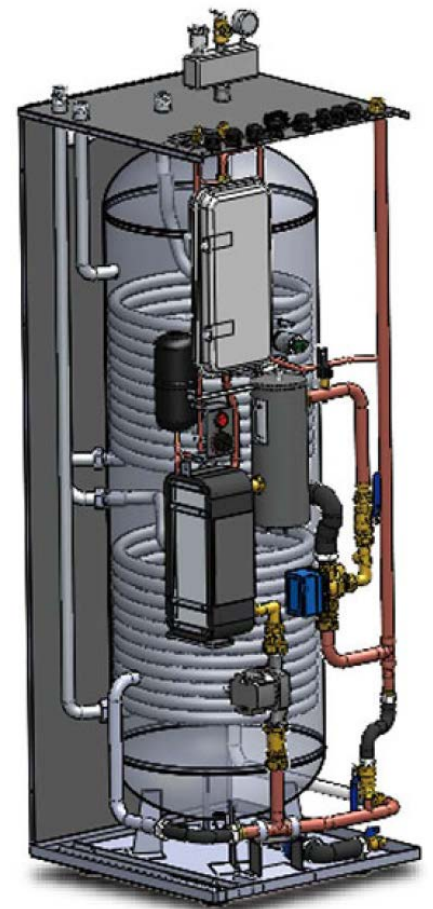
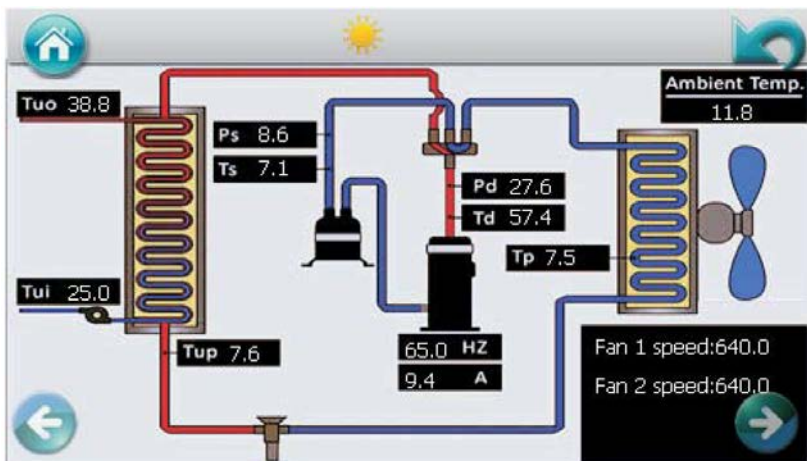
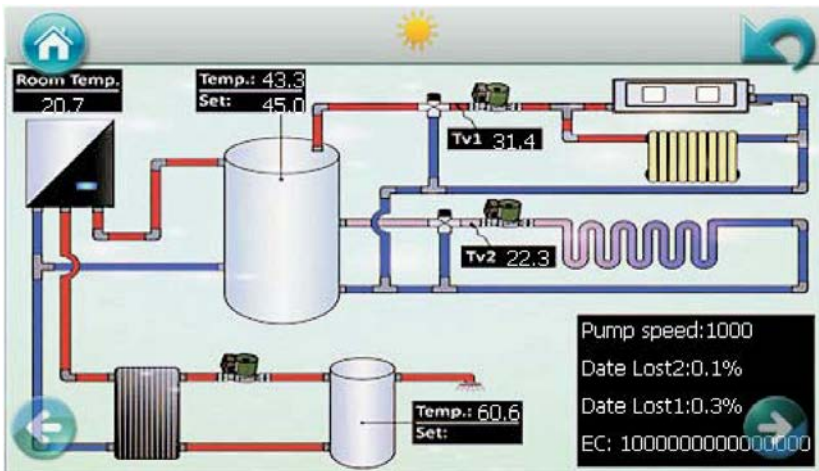
# ALL IN ONE SYSTEM HEAT PUMP

## Installation Scheme



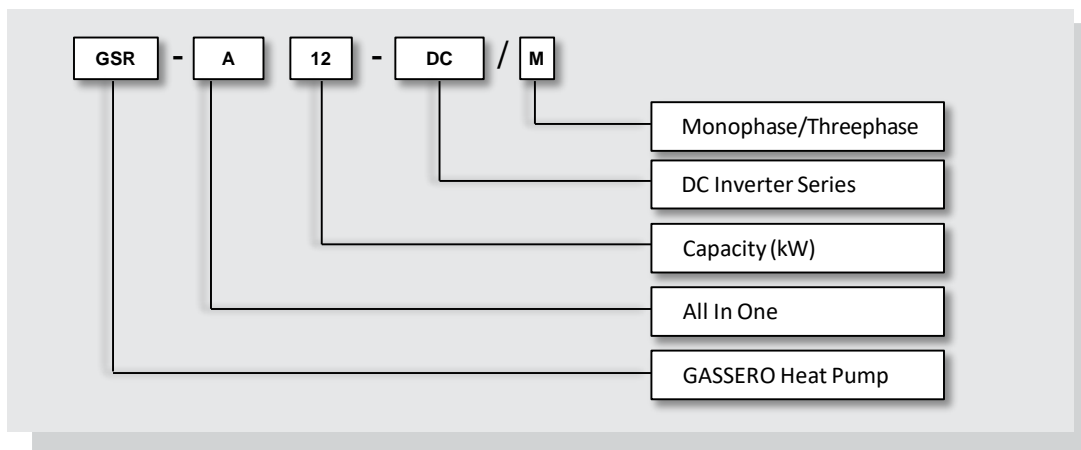
# ALL IN ONE SYSTEM HEAT PUMP

All In One Systems are split systems combining a water tank in its indoor section. This structure minimizes the installation of a water tank in the house.



# ALL IN ONE SYSTEM HEAT PUMP

## Model Explanation



## Technical Information

Model		GSR-A9-DC/M	GSR-A12-DC/M
<b>Power Supply</b>			
Power Supply / Refrigerant	V/Hz/Ph	220-240/50/1 - R32	
<b>Performance</b>			
Max. Heating Capacity (1)	kW	9.2	11.6
C.O.P (1)	W/W	4.38	4.3
Heating Capacity Min./Max.(1)	kW	4.3/9.2	5.5 / 11.6
Heating Power Input Min./Max.(1)	W	927/2097	1107 / 2683
C.O.P Min./Max.(1)	W/W	4.38/4.71	4.3 / 4.9
Max. Heating Capacity(2)	kW	8.6	11.2
C.O.P (2)	W/W	3.37	3.45
Heating Capacity Min./Max.(2)	kW	3.9/8.6	4.9 / 11.2
Heating power input Min./Max.(2)	W	1162/2550	1401 / 3263
C.O.P Min./Max.(2)	W/W	3.37/3.58	3.3 / 3.5
Max. Cooling Capacity (3)	kW	9.5	9.8
E.E.R (3)	W/W	4.23	3.9
Cooling Capacity Min./Max.(3)	kW	6.7/9.5	7.2/9.8
Cooling Power Input Min./Max.(3)	W	1679/2242	1791/2510
E.E.R Min./Max.(3)	W/W	4.0/4.6	4.0/3.8
Max. Cooling Capacity (4)	kW	7.2	8.5
E.E.R (4)	W/W	2.8	2.9
Cooling Capacity Min./Max.(4)	kW	4.9/7.2	4.9 / 8.5
Cooling Power Input Min./Max.(4)	W	1451/2366	1358 / 2987
E.E.R Min./Max.(4)	W/W	2.8/3.1	2.6 / 3.5
Workable Ambient Temperature Range	°C	-25~43	
Min. System Water Temperature (Heating / Cooling)	°C		
Min. Floor Area for installation, operation and storage	m <sup>2</sup>	17	28
Min. Area of Pipe-work	m <sup>2</sup>	17	28
Max. Operation High Pressure	MPa	4,2	
Max. Operation Low Pressure	MPa		
<b>Components</b>			
Compressor	Type - Quantity/System	Twin Rotary - 1	
	Quantity	1	1
Fan	Airflow	m <sup>3</sup> /h	3150
	Rated power	W	45
Noise Level (sound power)	Indoor/Outdoor	dB(A)	44/53
	Type	Plate Heat Exchanger	
Water Side Heat Exchanger	Water Pressure Drop	kPa	26
	Piping Connection	Inch	G1"
<b>Hydraulics</b>			
Allowable Water Flow	Min./Rated./Max.	L/S	0.26/0.43/0.52
			0.34/0.57/0.68
<b>Dimensions and Weight</b>			
Net Dimension(LxDxH)	Indoor Unit	mm	600x650x1720
	Outdoor Unit	mm	1165x370x845
Net Weight	Indoor Unit	Kg	121
	Outdoor Unit	Kg	77

Note:

(1) Heating condition: water inlet/outlet temperature: 30 °C/35°C, Ambient temperature: DB 7 °C /WB 6 °C

(2) Heating condition: water inlet/outlet temperature: 40°C/45°C, Ambient temperature: DB 7 °C /WB 6 °C

## COMMERCIAL HEAT PUMP (Heating/Cooling)

Hot/Cold water demand could be very high and costly for big facility such as hospitals, militaries, prisons, sports facility and this heating/cooling cost can effect up to %40.of the total expense. Gassero Commercial Heating Pump offers the best cost-effective solution for this places that require high capacity hot/cold water.



### Commercial Heat Pump (Heating/Cooling) Device Specification

#### ► Reliable, Long-lasting Devices

Gassero Heat Pump components are supplied by the most reliable and high tech company brand in all over the world.



World famous compressor brand



High efficient tube-shell condenser structure.  
(Working pressure up to 50Bar)



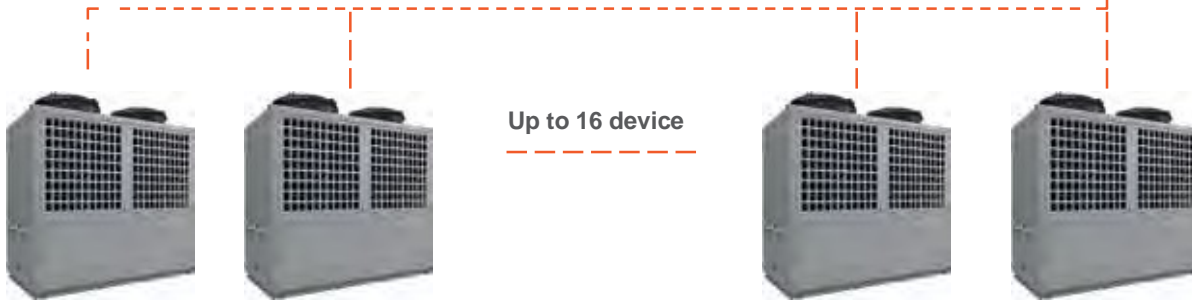
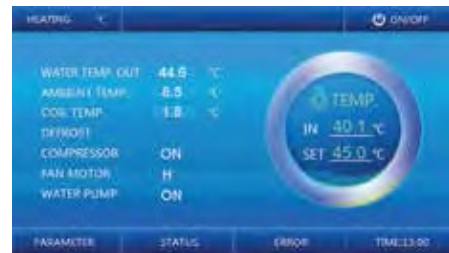
Axial fan with external motor  
(Aluminium Propeller)



# COMMERCIAL HEAT PUMP (Heating/Cooling)

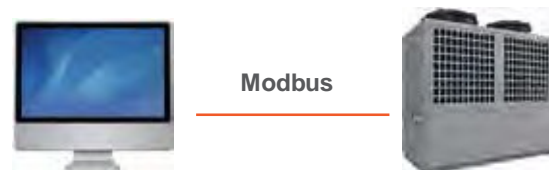
## ► Cascade Control Possibility

Control options up to 16 device with a colourful LCD touchpad control screen and through that provide solution for your all project.



## ► Modbus Protocol

Gassero Commercial Heat Pump (Heating/Cooling) is designed to be compatible with modbus protocol and also can be controlled via BMS system when necessary.



## ► Smart WiFi Control (Optional)

With a remote control possibility you can control your Commercial Heat Pump (Heating/Cooling) everywhere and everytime via your mobile phone. You could enjoy a warm bath after a long journey return with your remote control WiFi Features.



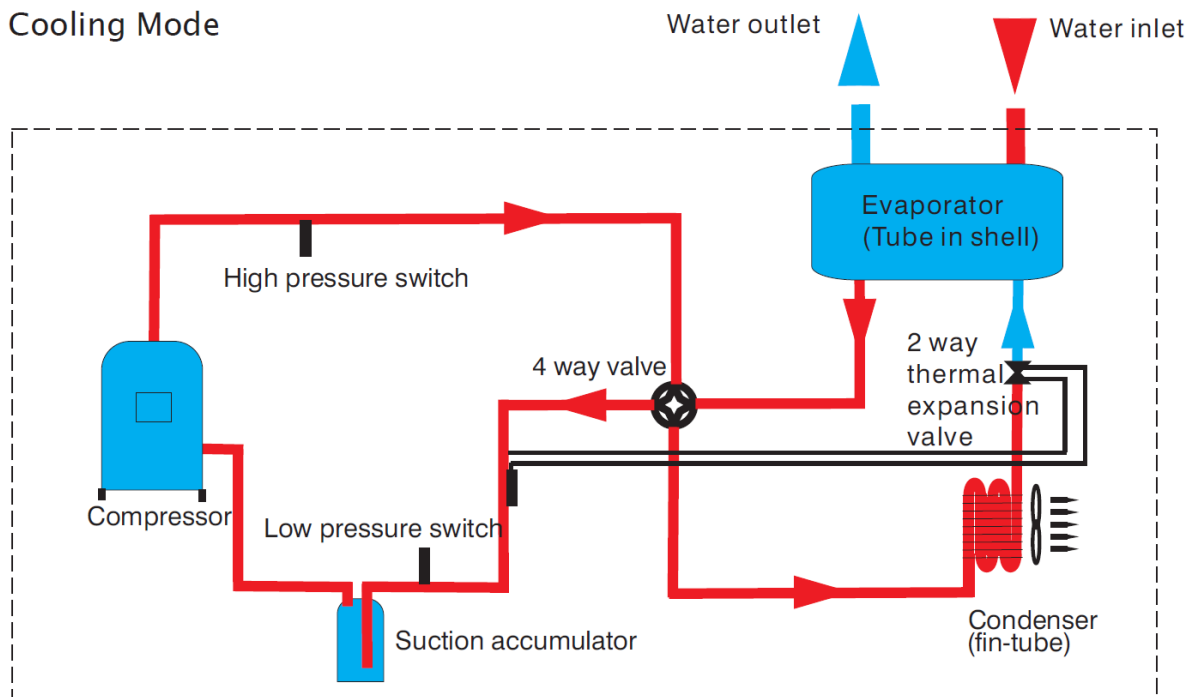
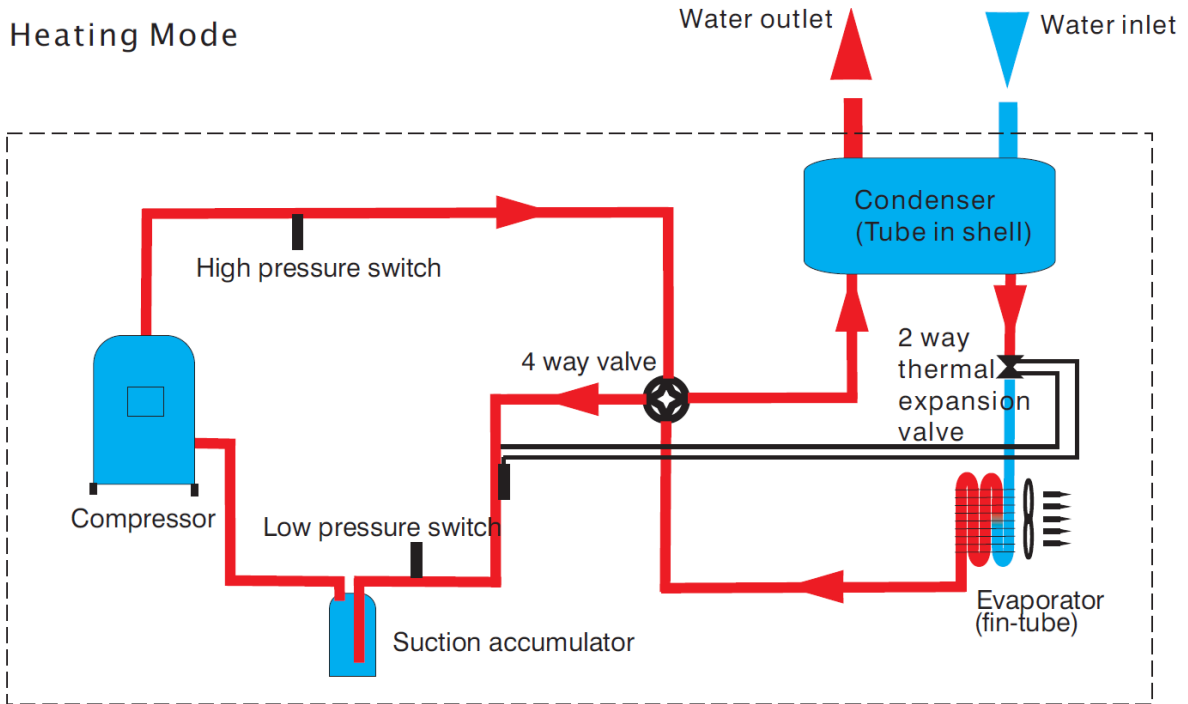
## ► High Energy Saving

Gassero commercial water heating pump is specifically suitable for place that requires high volume hot/cold water. It contributes to reducing your energy bill cost with using the ambient air efficiently than the regional heating systems such as electrical boiler, oil fired boiler and natural gas boiler.



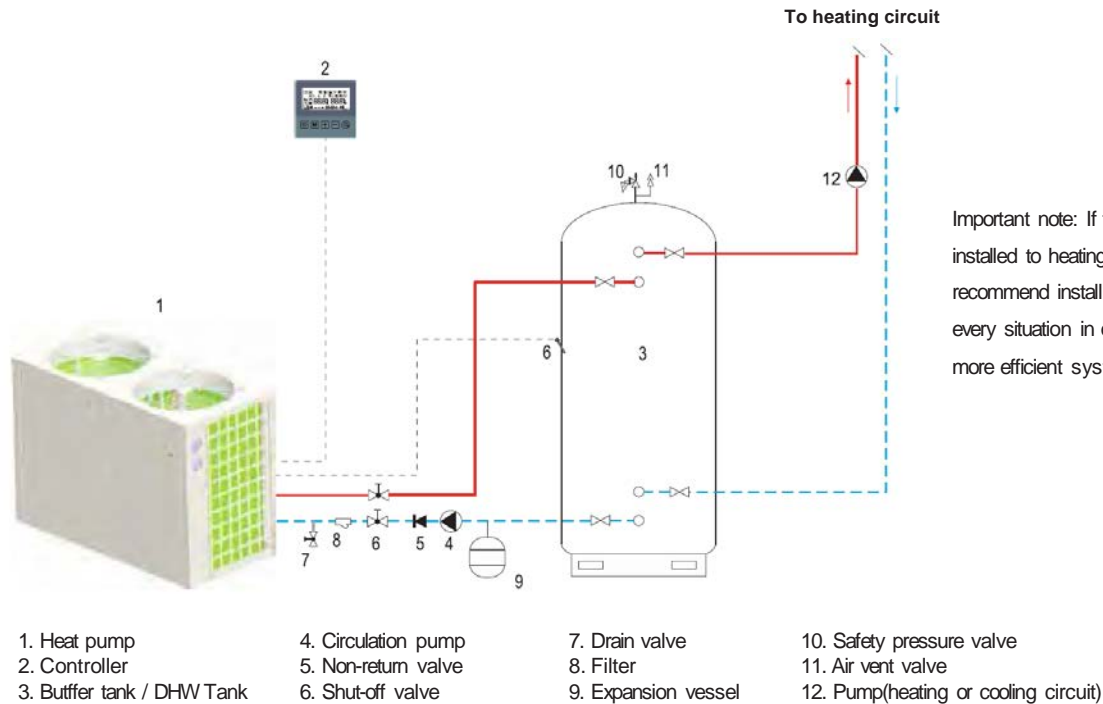
# COMMERCIAL HEAT PUMP (Heating/Cooling)

## Gassero Commercial Heating Pump Working Principle



# COMMERCIAL HEAT PUMP (Heating/Cooling)

## Installation Scheme



## Technical Information

### COMMERCIAL HEAT PUMP

CAPACITY SPECIFICATIONS	Unit	GSR-20-HC	GSR-30-HC	GSR-38-HC	GSR-45-HC	GSR-63-HC	GSR-70-HC EVI	GSR-140-HC EVI
Heating Capacity	kW	19.00	30.0	38.0	45.0	63.0	70.0	140.0
Input Power	kW	4.55	7.20	9.20	10.80	16.00	20.59	41.20
COP		4.18	4.17	4.13	4.17	3.94	3.40	3.40
Operating Current	A	7.83	12.00	15.84	18.60	27.50	35,50	71.00
Max. Input Power	kW	6.37	10.08	12.88	16.20	24.00	30,89	61.80
Max. Operating Current	A	10.97	18.36	22.18	27.89	42.00	53,25	106.50
Outlet Water Temp	°C	7~60	7~60	7~60	7~60	7~60	7~65	7~65
Operating Temperature Range	°C	-15~43	-15~43	-15~43	-15~43	-15~43	-25~43	-25~43
Hot Water Flow	L/h	408	645	817	967	1354	1612	3220
Refrigerant		R410a	R410a	R410a	R410a	R410a	R407C	R407C

### DEVICE SPECIFICATION

		Copper tube in shell	Copper tube in shell	Copper tube in shell	Copper tube in shell	Copper tube in shell	Copper tube in shell	Copper tube in shell
Condenser								
Compressor Quantity		1	2	2	2	3	2	4
Hydraulic Pressure Loss	kpa	50	55	55	55	55	65	70
Controller Type		LCD	LCD	LCD	LCD	LCD	LCD	LCD
IP Class		I/ IPX4	I/ IPX4	I/ IPX4	I/ IPX4	I/ IPX4	I/ IPX4	I/ IPX4

### CONNECTION SPECIFICATIONS

Water Inlet/Outlet Dimension	DN	25/25	40/40	40/40	40/40	50/50	50/50	65/65
Water Flow	m³/h	4.1	6.4	8.2	9.7	13.5	12.25	22.6
Power Supply	V/Ph/Hz	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50	380/3/50

### DEVICE SPECIFICATION

Sound Pressure Level (1m/4m/10m)	dB(A)	57	58	60	61	63	70	72
Dimension - Gross (LxWxH)	mm	840x750x1100	1525x805x1110	1525x805x1220	1525x805x1420	2250x865x1450	2130x1100x2150	2090x2290x2360
Dimension - Net (LxWxH)	mm	816x690x965	1450x730x955	1450x730x1064	1450x730x1266	2150x772x1291	2000x980x1960	2000x2160x2230
Weight (Net/Gross)	Kg	119/137	236/279	249/294	268/316	428/490	530/595	1120/1200

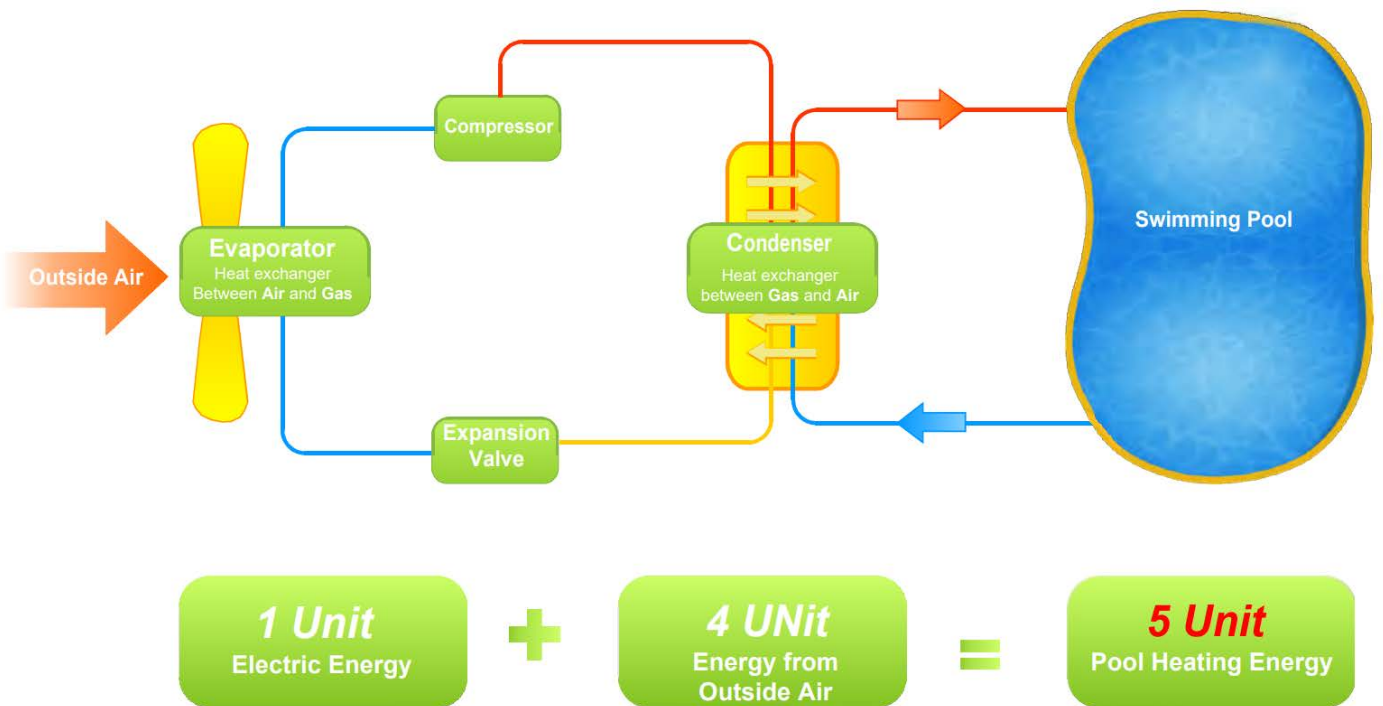
Measurement Conditions:  
Outside temperature : 20°C(DB)/15°C(WB), Water Inlet/Outlet Temperature 15/55°C

# Pool Heat Pump

Gassero Pool Heat Pump changes the pool water temperature with ambient air energy by using too less electric energy.  
With innovative technology, Gassero pool heat pump produce 5 times more energy than conventional electric heating device.



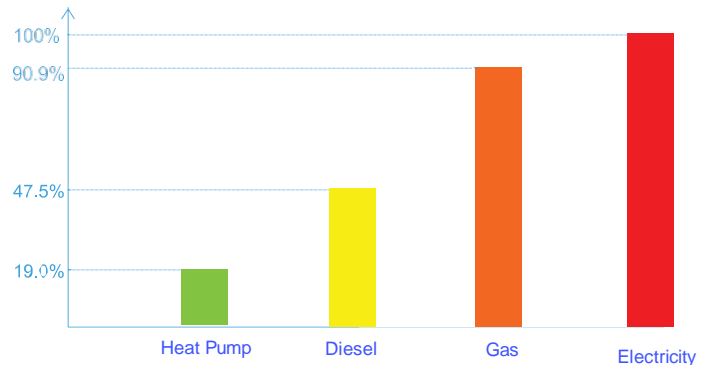
## Gassero Pool Heat Pump Working Principle



# Pool Heat Pump

## How much can you save?

Pool Heat Pump works high efficiently with latest technology and makes greatly reduce on electricity cost..



HEATING DEVICE	HEAT PUMP	GAS	DIESEL	ELECTRICITY
Calorific Value	860kcal/kWh	860kcal/kWh	10200 kcal/kWh	860kcal/kWh
Heating Load	9 kW	9 kW	9 kW	9 kW
Efficiency	500%	85%	85%	95%
Energy consumption per day (24h continuous running)	43,2 kWh	254,1 kWh	21,4 L	227,37 kWh

## GASSERO Pool Heat Pump Device Features

### Suitable For Humid Environment With Special Case Material

Pool Heat Pump usually used for high humid environment. With special composit body material pool heat pump body can resist the corrosion.

### Titanium Tube-Shell Condenser Structure

Special condenser structure can resist the chlorine of pool water. With that features you can condition pool water with not need any additional equipment and heat exchanger. Titanium pipe and plastic cover of the condenser protects the heat pump and can be use directly to the pool water without any concerns.



### Control Panel with Smart WiFi Features

With a remote control possibility you can control your Pool Heat Pump everywhere and everytime via your mobile phone. You could enjoy a warm bath after a long journey return with your remote control WiFi Features.



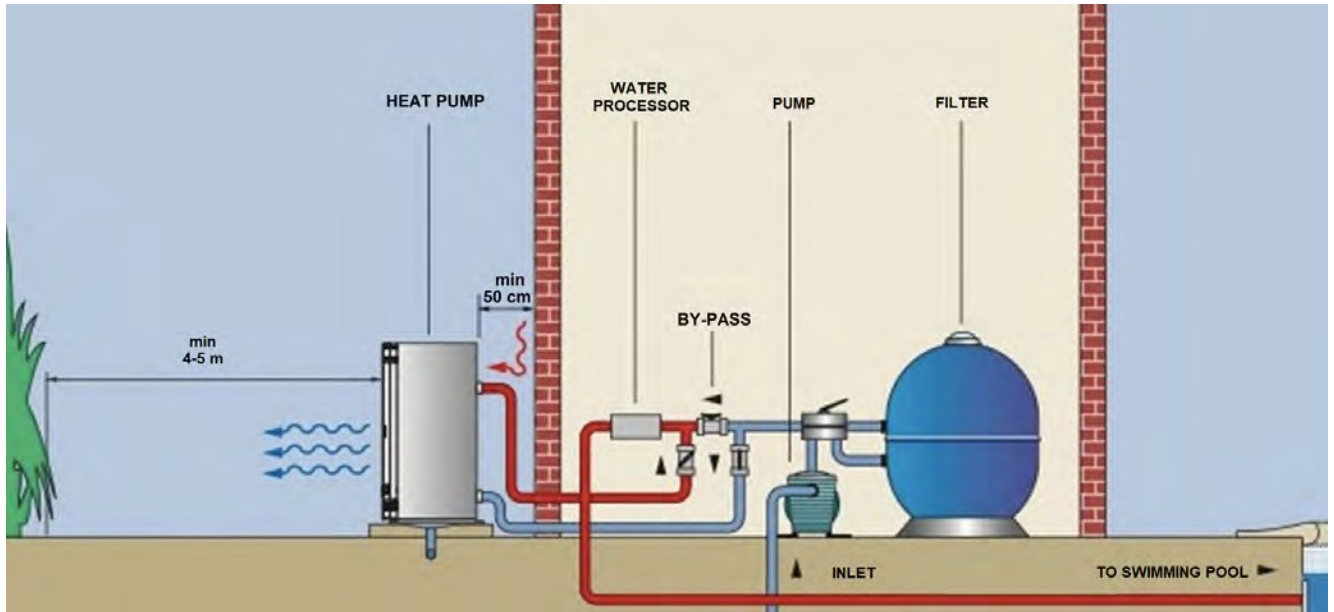
### Modbus Protocol

GASSERO Pool Heat Pump is designed to competible with modbus protocol and also can be controlled via BMS system when necessary.



# Pool Heat Pump

## Installation Scheme



## Technical Information

		POOL HEAT PUMP			
CAPACITY AND OPERATING SPECIFICATIONS	Unit	GSR-11-PL	GSR-13-PL	GSR-18-PL	GSR-26-PL
Heating Capacity	kW	11.0	13.5	18.0	26.3
Input Power	kW	1.93	2.18	2.61	4.75
Operating Current	A	9.78	10.43	12.50	8.39
COP		5.10	5.70	5.30	5.47
Max. Current	A	16.00	18.00	24.00	14.00
Setting temp. Range	°C	15~40	15~40	15~40	15~40
Hot Water Range Operating Temp Range	°C	-5~43	-5~43	-5~43	-5~43
Refrigerent		R410a	R410a	R410a	R410a
COMPONENT SPECIFICATION					
Condenser		Titanium	Titanium	Titanium	Titanium
Evaporator		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
Fan Motor Speed	RPM	900.00	900.00	850	800
Fan Motor Input Power	W	80.00	80.00	140	320
Controller Type		LCD	LCD	LCD	LCD
CONNECTION SPECIFICATIONS					
Water Inlet/Outlet Dimension		1.50	1.50	1.50	1.5
Hydraulic Connection	mm	PVC 50	PVC 50	PVC 50	PVC 50
Water Flow	m³/h	5.00	5.50	6.00	8
Power Supply	V/Ph/Hz	220~240V/1Ph/50Hz	220~240V/1Ph/50Hz	220~240V/1Ph/50Hz	380~420V/3Ph/50Hz
DEVICE SPECIFICATION					
Sound Pressure Level (1m/4m/10m)	dB(A)	52/40/32	52/40/32	52/40/32	55/44/34
Dimension - Gross (LxWxH)	mm	1135x390x750	1135x390x750	1250x505x825	840x750x1100
Dimension - Net (LxWxH)	mm	1012x306x613	1012x306x613	1116x425x686	752x691x959
Weight (Net/Gross)	Kg	68/78	105/120	115/130	124/146

Measurement Conditions;

Outside temperature : 24°C(DB)/19°C(WB), Water Inlet Temperature °C27

# Certificates



[www.gassero.com](http://www.gassero.com)

**Gassero**  
technology for your comfort

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Rev. 02 / 09.02.2023



# Gassero

technology for your comfort



ECO-FRIENDLY

## WALL MOUNT CONDENSING BOILERS

[www.gassero.com](http://www.gassero.com)

# Wall Mount Boilers

## Wallcon



Capacity (kW)								
42	50	67	70	80	90	115	125	150
●	●	●	●	●				

## Wallcon X-treme



Capacity (kW)								
42	50	67	70	80	90	115	125	150
						●	●	●

## Alucon



Capacity (kW)								
42	50	67	70	80	90	115	125	150
	●		●		●	●	●	●

# Wall Mount Boilers

## Wallcon

- › 42-80 kW capacity range,
- › Stainless Steel Heat Exchanger
- › Low NOx values
- › Low flue gas temperatures
- › Turndown ratio up to 15:100
- › Efficiency up to %107,2 according to EN 15502-1+A1
- › Suitable with B23, C13, C33, C43, C53, C63, C83 flue types

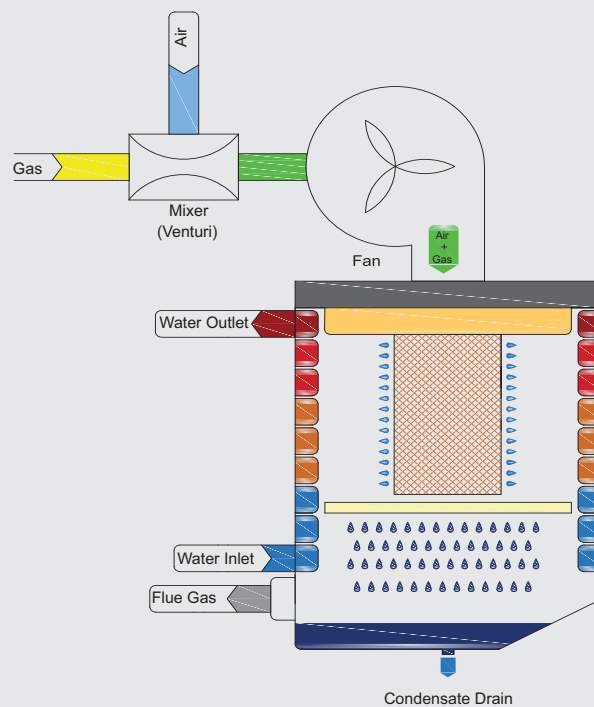
## Wallcon X-treme

- › 115-150 kW capacity range,
- › Stainless Steel Heat Exchanger
- › Low NOx values
- › Low flue gas temperatures
- › Turndown ratio up to 15:100
- › Efficiency up to %107,2 according to EN 15502-1+A1
- › Suitable with B23, C13, C33, C43, C53, C63, C83 flue types

## Alucon

- › 50-150 kW capacity range,
- › Aluminum heat exchanger
- › Low NOx values
- › Low flue gas temperatures
- › Turndown ratio up to 14:100
- › Efficiency up to %108,2 according to EN 15502-1+A1
- › Suitable B23, C13, C33, C43, C53, C63, C83 flue types

## Premix and Condensation Technology Explained



Condensation technology is an effective method for converting natural gas into beneficial energy by combustion. Hidden energy of hot flue gas in water vapor gain into the system and provides energy efficiency.

Condensing boilers are operate with low flue gas temperatures. Miixing of the air and gas used in the energy production to obtain an efficient combustion before get inside the combustion chamber is named as premix.

Premix systems provide lower emissions values (NOx-CO) after combustion.

# Wallcon & Wallcon X-treme

Wall Mount Condensing Boiler



- › 42-150 kW capacity range
- › Stainless steel heat exchanger
- › Low NOx values
- › Low flue gas temperatures
- › Turndown ratio up to 15:100
- › Integrated cascade management up to 16 boilers
- › Low noise level
- › Efficiency up to %107,2 according to EN 15502-1+A1
- › Integrated circulating pump
- › Energy class A
- › 6 Bar operation pressure

## Product Specifications



- › Efficient and durable heat exchanger
- › ErP circulating pump
- › Latest technology, low emission premix burner
- › High modulating and energy-efficient fan

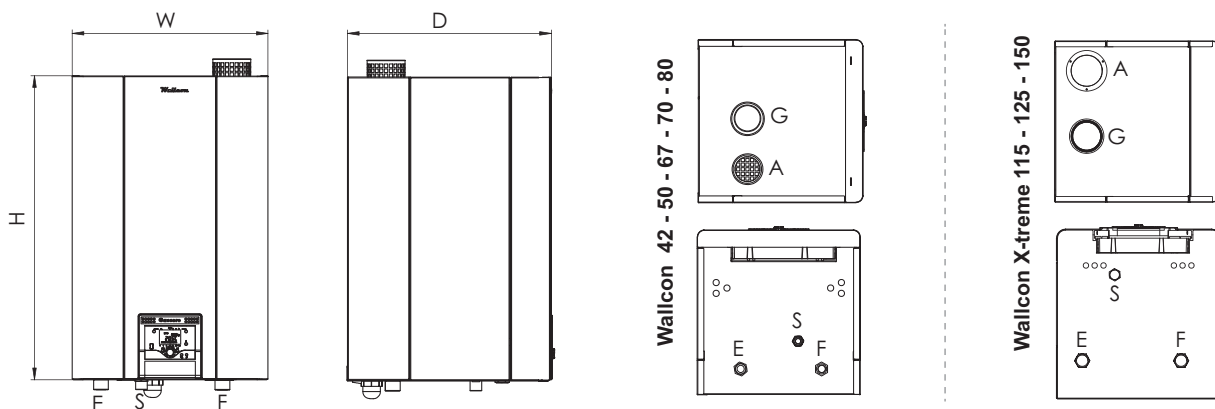
### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety
- Pump/valve protection
- Legionella protection for DHW tank
- Condensate blockage safety with siphon sensor
- Fan speed safety

# Wallcon & Wallcon X-treme

## Technical Specifications

	WALLCON						WALLCON X-TREME		
	WALLCON 42	WALLCON 50	WALLCON 67	WALLCON 70	WALLCON 80	WALLCON X-treme 115	WALLCON X-treme 125	WALLCON X-treme 150	
<b>Thermal Specifications for G20</b>									
Nominal heat input Qn	kW	7.2/39.4	8.4/48.0	11.2/63.0	11.2/66.0	11.2/76.0	27.00/108.50	17.00/121.00	21.9/143.00
Nominal heat output Pn (80/60°C)	kW	7.0/38.3	8.1/46.3	11.0/61.0	10.9/64.5	10.9/74.1	26.10/105.40	16.60/116.20	21.2/138.00
Nominal heat output Pnc (50/30°C)	kW	7.6/41.3	8.9/50.1	12.0/67.0	12.1/69.9	12.1/80.9	29.30/115.50	18.40/126.00	23.7/150.00
Heating efficiency pu.n (80/60°C)	%	96.30/97.37	95.62/97.40	98.02/97.62	97.31/97.72	97.31/97.61	97.31/97.26	95.27/97.09	96.49/97.68
Heating efficiency pu.n (50/30°C)	%	106.42/105.21	106.96/105.14	107.42/106.58	107.98/106.57	107.98/106.55	107.19/106.53	108.23/106.19	108.07/105.30
Partial load efficiency pu (36/30°C)	%	108,20	108,08	108,16	108,39	108,34	108,12	108,04	108,34
Turndown ratio	-	19-100	18-100	18-100	17-100	15-100	25-100	15-100	15-100
<b>Hydraulic Specifications</b>									
Working water pressure	bar	0.8/3.0	0.8/3.0	0.8/4.0	0.8/4.0	0.8/4.0	0.8/6.0	0.8/6.0	0.8/6.0
Water flow rate	m³/h	0.28/1.70	0.31/2.12	0.43/2.89	0.43/2.63	0.43/2.89	1.09/5.12	0.65/5.26	0.86/6.31
Pump delivery head	mWC	6.0	5.5	3.5	3.5	3.5	7.7	7.2	10.6
Max. operating temp.	°C	80	80	80	80	80	80	80	80
Limit thermostat shut off temp.	°C	95	95	95	95	95	105	105	105
Heat exchanger water volume	lt	2.74	2.74	3.52	3.52	3.52	8.2	8.2	9.7
Hydraulic loss	kPa	30	40	44	40	55	40	41	39
<b>Gas Specifications</b>									
Gas type*	-	G20	G20 / G30	G20 / G30	G20 / G30	G20 / G30	G20	G20/G30	G20/G30
<b>Combustion Specifications for G20</b>									
Gas supply pressure	mbar	20	20/30	20/30	20/30	20/30	20	20	20
Flue Type	-	B23/C13/C33/C43/C53/C63/C83							
Flue gas pressure	Pa	100	140	170	190	210	200	190	310
Combustion products mass flow rate	g/sn	3/17	4/21	5/28	5/28	5/30	12.00/47.00	8.00/49.00	9.00/60.00
Max flue length (C13/C33/C43/C53/C63/C83)	m	15	15	15	14	-	17	17	17
CO2 emission	%	8.90/9.10	9.00/9.30	9.03/9.25	9.20/9.10	9.20/9.40	8.60/9.10	9.10/9.10	9.35/9.78
CO emission	ppm	2/44	2/40	12/81	1/82	12/115	3.00/56.00	2.00/98.00	0.00/208.00
O2	%	5.00/4.70	5.50/5.50	4.97/4.37	4.90/5.00	4.90/4.50	5.60/4.70	4.70/4.70	4.33/3.45
Flue gas temp. (80/60C) (min/max)	°C	63.5/65.3	64.8/66.6	56.9/69.9	62.7/72.8	62.7/75.4	58.90/78.30	57.60/80.10	62.90/77.70
Flue gas temp. (50/30C) (min/max)	°C	40.4/42.1	43.4/46.5	35.1/47.7	39.6/51.8	39.6/54.6	33.60/40.60	32.10/42.20	38.10/65.80
Flue gas overheat temperature	°C	105	105	105	105	105	105	105	105
NOx class	-	6	6	6	6	6	6	6	6
NOx value	mg/kWh	42	25	21	21	22,8	24	35	37
Gas consumption**	m³/h	0.70/3.86	0.81/4.85	1.09/6.43	1.11/6.85	1.11/7.48	2.65/11.15	1.66/12.05	2.13/14.66
Integrated backdraught shutter	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Connection Specifications</b>									
Boiler water inlet/outlet diameter	DN	25/25	25/25	25/25	25/25	25/25	32/32	32/32	32/32
Air inlet/outlet diameter (B23)	mm	80/80	80/80	80/80	80/80	80/80	110/100	110/100	110/100
Air inlet/outlet diameter (C13/C33/C43/C53/C63/C83)	mm	125/80	125/80	125/80	125/80	125/80	150/100	150/100	150/100
Gas supply diameter	DN	20	20	20	20	20	25	25	25
<b>Electrical Specifications</b>									
Power supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Electrical consumption	W	120	130	190	180	204	350	360	461
<b>General Specifications</b>									
Exchanger type	-	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Energy efficiency class	-	A	A	A	A	A	A	A	A
Sound power level (Lwa)	dB(A)	53.5	55.5	63.0	70.0	71.1	58.5	60.4	61.7
Sound pressure level (from 1m distance)	dB(A)	45.52	47.52	55.02	65.1	66.1	50.52	52.42	53.72
Boiler dimensions (Width/Length/Height)	mm	485x490x612	485x490x612	485x490x612	485x540x612	485x540x612	557x580x865	557x580x865	557x580x865
Boiler weight (Net)	kg	46	46	50	50	50	86	86	95
<b>Packaging Specifications</b>									
Packing dimensions (Width/Length/Height)	mm	540x1010x570	540x1010x570	540x1010x570	540x1010x570	540x1010x570	650x1190x690	650x1190x690	650x1190x690
Boiler weight (Gross)	kg	53	53	57	57	57	93	93	102





# Alucon

Wall Mount Condensing Boiler



- 50-150 kW capacity range
- Aluminum heat exchanger
- Low NOx values
- Low flue gas temperature
- Turndown ratio up to 14:100
- Cascade operation option up to 16 boilers
- Low noise level
- Efficiency up to %108,2 according to EN 15502-1+A1
- With external circulation pump
- Energy class A
- 6 Bar operation pressure



## Product Specifications



- High corrosion and lime resistance
- Circulation pump suitable with ErP regulation
- Low emission premix burner
- High modulating and energy-efficient fan

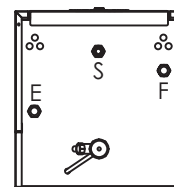
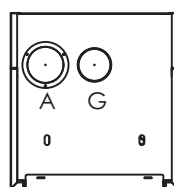
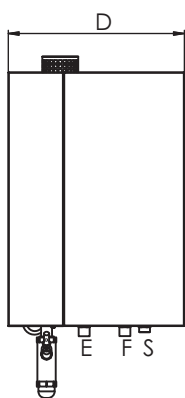
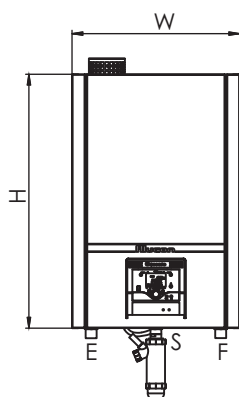
### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety
- Pump/valve protection
- Legionella protection for DHW tank
- Condensate blockage safety with siphon sensor
- Fan speed safety

# Alucon

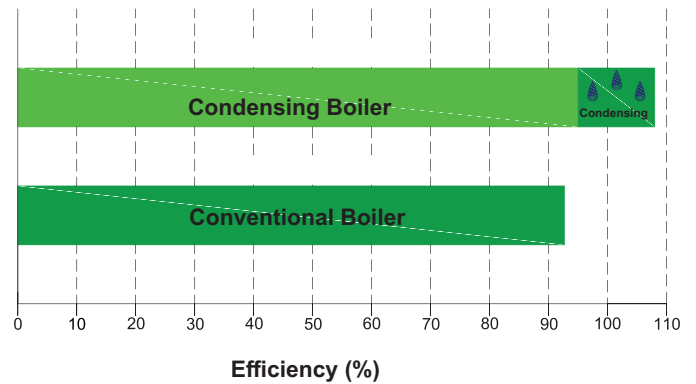
## Technical Specifications

		Alucon					
		50	70	90	115	125	150
<b>THERMAL SPECIFICATIONS</b>							
	<b>Unit</b>						
Nominal heat input (min/max)	kW	7,6/49,2	10,2/65,6	14,9/88,3	14,9/112,3	19,9/123,5	19,9/143,1
Nominal heat output (80/60°C) (min/max)	kW	7,3/47,8	9,9/63,4	14,3/86,3	14,3/109,5	19,2/120,8	19,2/139,8
Nominal heat output (50/30°C) (min/max)	kW	8,4/51,4	11,6/68,5	15,1/91,0	15,1/118,1	22,3/128,0	22,3/149,1
Heating efficiency (80/60°C) (min/max)	%	96,9/97,7	96,7/97,2	96,8/98,4	96,8/98,2	97,0/98,3	97,0/98,2
Heating efficiency (50/30°C) (min/max)	%	108,1/105,9	108,0/103,9	108,2/105,0	108,2/104,8	108,1/104,4	108,1/103,2
Partial load efficiency (36/30°C)	%	108,6	108,4	108,5	108,7	108,5	108,4
Turndown ratio		16:100	16:100	17:100	14:100	17:100	14:100
<b>HYDRAULIC SPECIFICATIONS</b>							
Operation water pressure (min/max)	bar	0,8/6,0	0,8/6,0	0,8/6,0	0,8/6,0	0,8/6,0	0,8/6,0
Exchanger water volume	lt	3,2	3,2	4,6	4,6	6,0	6,0
Water flow rate (min/max)	m³/h	0,4/2,2	0,5/3,0	0,7/3,8	0,7/4,8	1,0/5,4	1,0/6,2
Pump head	mWC	3	3	5	5	5,5	5,5
Max. operation temp.	°C	85	85	85	85	85	85
Limit shut off temp.	°C	95	95	95	95	95	95
<b>GAS AND COMBUSTION SPECIFICATIONS</b>							
Gas Type		G20	G20	G20	G20	G20	G20
Gas supply pressure (G20/G31)	mbar	20	20	20	20	20	20
Flue gas pressure	Pa	100	130	170	200	220	330
Combustion products flow rate (min/max)	g/sn	3,0/22,0	5,0/28,0	6,0/39,0	6,0/49,0	9,0/54,0	9,0/63,0
CO2 emission (min/max)	%	9,32/9,36	9,05/9,61	9,44/9,33	9,44/9,36	9,54/9,49	9,54/9,56
Flue gas temp. (80/60°C) (min/max)	°C	54,7/65,6	55,4/72,1	56,8/61,4	56,8/64,9	56,9/61,8	56,9/70,3
Flue gas temp. (50/30°C) (min/max)	°C	29,5/45,1	30,1/52,3	30,2/448,8	30,2/53,5	30,5/44,9	30,5/47,1
NOx class		6	6	6	6	6	6
NOx value	mg/kWh	37	28	39	43	46	44
Gas consumption (min/max)	m³/h	0,8/5,1	1,1/6,8	1,6/9,2	1,6/11,7	2,1/12,8	2,1/14,9
<b>INSTALLATION SPECIFICATIONS</b>							
Boiler water inlet(F) / outlet diameter (E)	DN	25/25	25/25	25/25	25/25	25/25	25/25
Fresh air (A) / flue gas diameter (G) (B23)	mm	80/100	80/100	110/100	110/100	110/100	110/100
Fresh air / waste gas diameter(Hermetic)	mm	150/100	150/100	150/100	150/100	150/100	
Gas supply diameter (S)	DN	20	20	25	25	25	25
<b>ELECTRICAL SPECIFICATIONS</b>							
Power supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Electrical consumption	W	52	97	116	203	212	313
<b>GENERAL SPECIFICATIONS</b>							
Energy efficiency class		A	A	A	A	A	A
Noise power level	dB(A)	57,2	66,2	58,8	61,3	66,4	69,3
Dimensions (WxDxH)	mm	510x540x770	510x540x770	510x540x770	510x540x770	600x540x770	600x540x770
Boiler weight	kg	69	69	79	79	91	91



# Advantages of Condensing Boilers

- ▶ Condensation technology approximately %15 more efficient when compared with conventional systems with heat recovery
- ▶ Provides reduced fuel consumption with low flue gas temperatures and efficient combustion technology,
- ▶ Provides high modulation operation and low energy consumption with energy efficient pump,
- ▶ Provides less pollutant emissions with reduced gas consumption.



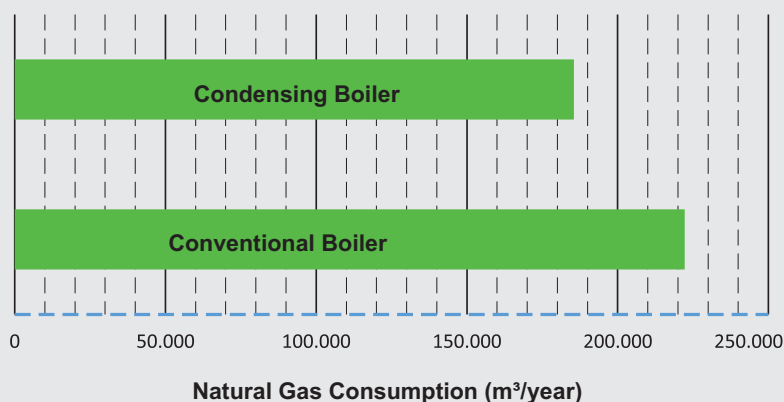
## Calculation Example:

Comparison of the natural gas consumption values between conventional and condensing boiler systems for a plant which needs 2.000.000 kcal/h and operating at 80 °C supply, 60 °C return water temperature is examined in the table below.

- Because of the conventional systems' modulation rates are lower, boiler thermal losses increase during pre-purge and post purge periods,
- Because of the conventional systems' modulation rates are lower, number of stop-starts will be more as a result of optimum time at low load decreases. It will cause increase on boiler thermal loss.
- Because of the conventional boilers are operated at higher flue temperatures, their efficiency values are lower.



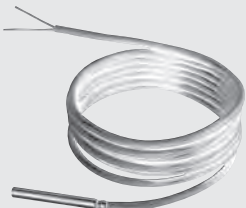


According to these reasons, conventional boilers' operation time on the same system is higher.

Calculation Example:	Unit	Conventional Boiler	Condensing Boiler
System Capacity	[kcal]	2000000	2000000
Boiler Efficiency (80-60 °C)		0.9	0.98
Natural Gas Calorific Value	[kcal/m <sup>3</sup> ]	8250.0	8250.0
Hourly Gas Consumption	[m <sup>3</sup> /h]	269.4	247.4
	[h]	5.5	5.0
Daily Working Hours	[m <sup>3</sup> ]	1481.5	1236.9
Daily Gas Consumption Difference	[m <sup>3</sup> ]	244.6	
Gas Consumption Difference (150 days)	[m <sup>3</sup> ]	36693.5	



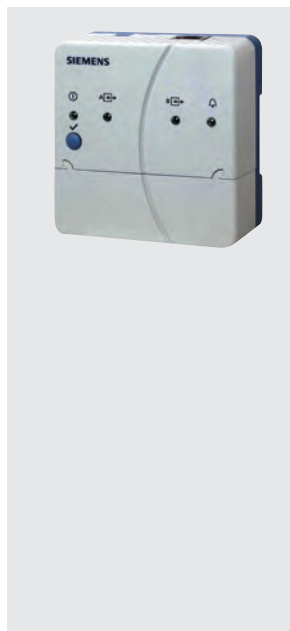


## Optional Accessories

Product Image	Product Name	Specifications
	<b>Outside Sensor</b>	Operates between -50 °C and 70 °C. Max. distance 120 m with 1.5 mm <sup>2</sup> cable. Tolerance ±1 K
	<b>Clamp Type Temperature Sensor</b>	Operates between -30 °C and 125 °C. Max. distance 120 m with 1.5 mm <sup>2</sup> cable. Tolerance ±0,5 K
	<b>Immersion Type Temperature Sensor</b>	Operates between 0 °C and 95 °C. Tolerance ±0,5 K.
	<b>External Zone Module</b>	Provides 3-way valve control function on temperature based zones. Requires additional relay and sensor connections.
	<b>Modbus Module</b>	Provides Building Management Systems (BMS) connection.

## Optional Accessories

### Websserver



- › Controlling and displaying possibility of the boiler system from anywhere via internet,
- › Time program adjustments (heating circuit, DHW, external zone time program)
- › Temperature adjustments of the heating circuits:  
Such as DHW, swimming pool, solar energy, accumulation tank,
- › Monitoring errors and error times in the system,
- › Sending error messages up to 4 users,
- › Checking cascade parameters,
- › Setting holiday mode for heating circuits,
- › Displaying maintenance periods and define the maintenance interval,
- › Operating modes adjustment (economy, comfort, holiday and automatic operation)

## Flue Lengths

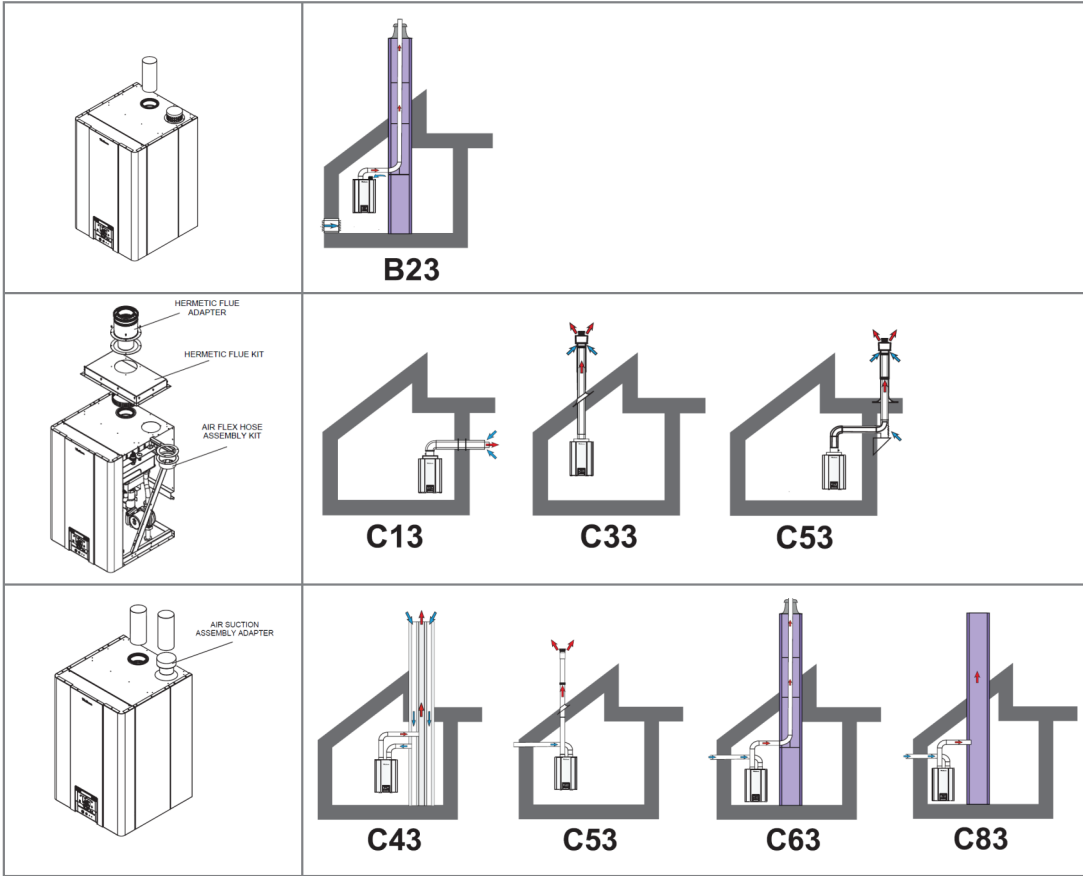
DESCRIPTION	UNIT	WALLCON					WALLCON X-TREME		
		42	50	67	70	80	115	125	150
B23	m	30	30	30	30	30	25	25	25
C13 - C33	m	15	15	15	14	-	20	18	17
C43 - C53 - C63 - C83	m	15	15	15	20	-	20	18	17

DESCRIPTION	UNIT	ALUCON					
		50	70	90	115	125	150
B23	m	25	25	25	25	22	22
C13 - C33	m	20	20	20	20	17	17
C43 - C53 - C63 - C83	m	20	20	20	20	17	17

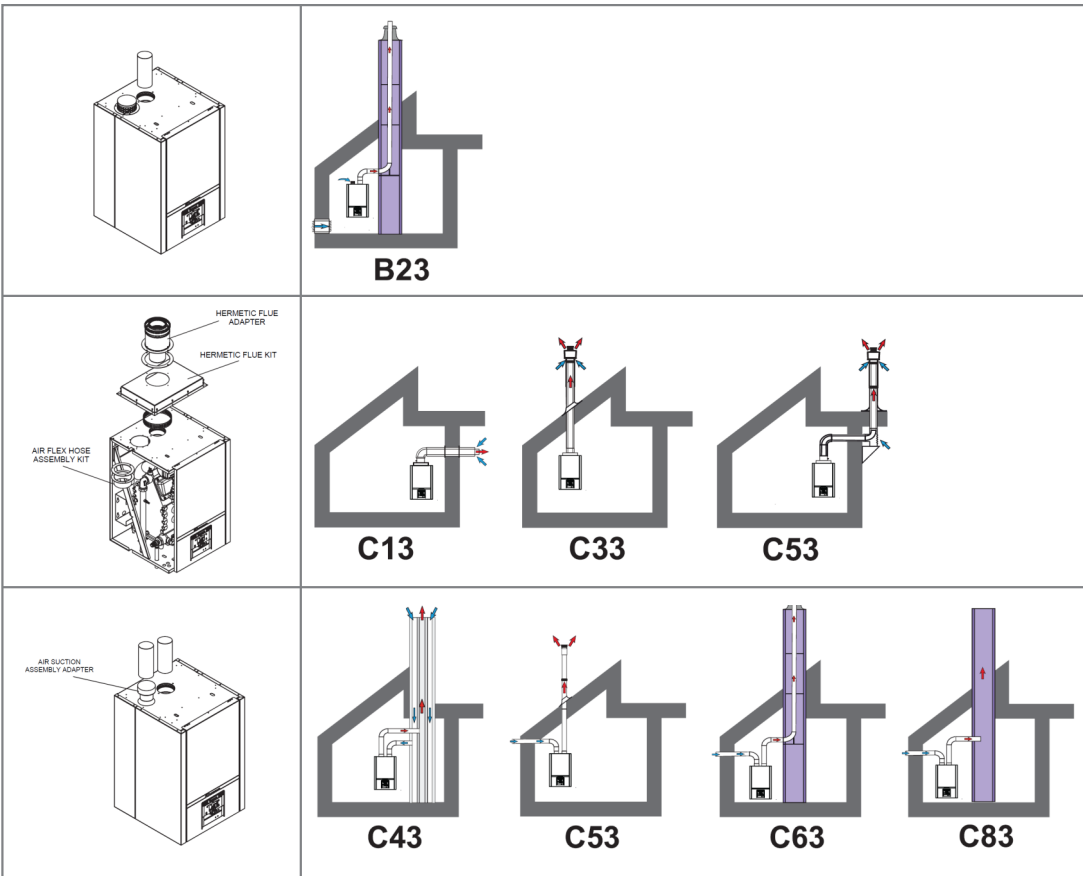
NOTE: EFFECT OF 90° ELBOWS ON TOTAL FLUE LENGTH IS 1 METER.

# Flue Application Details

## Wallcon & Wallcon X-treme Flue Applications

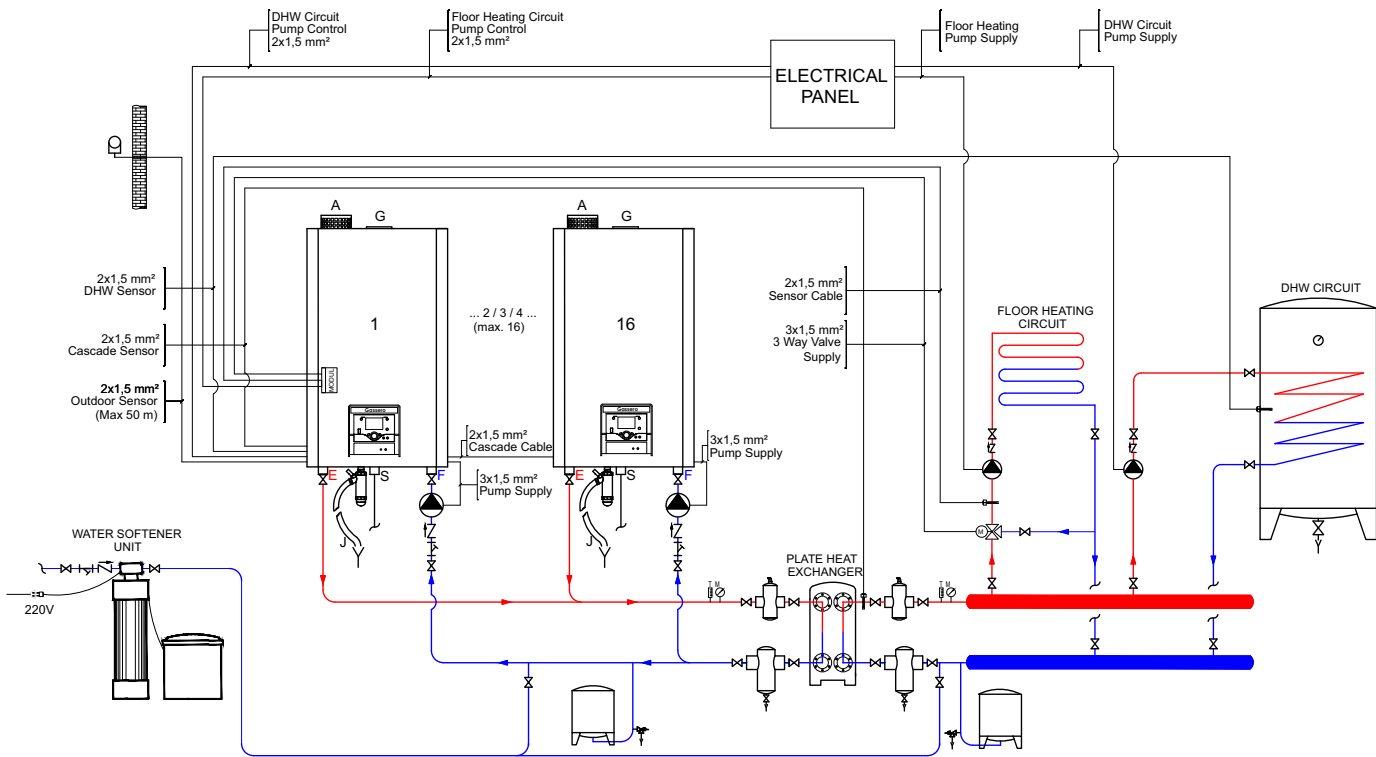


## Alucon Flue Applications

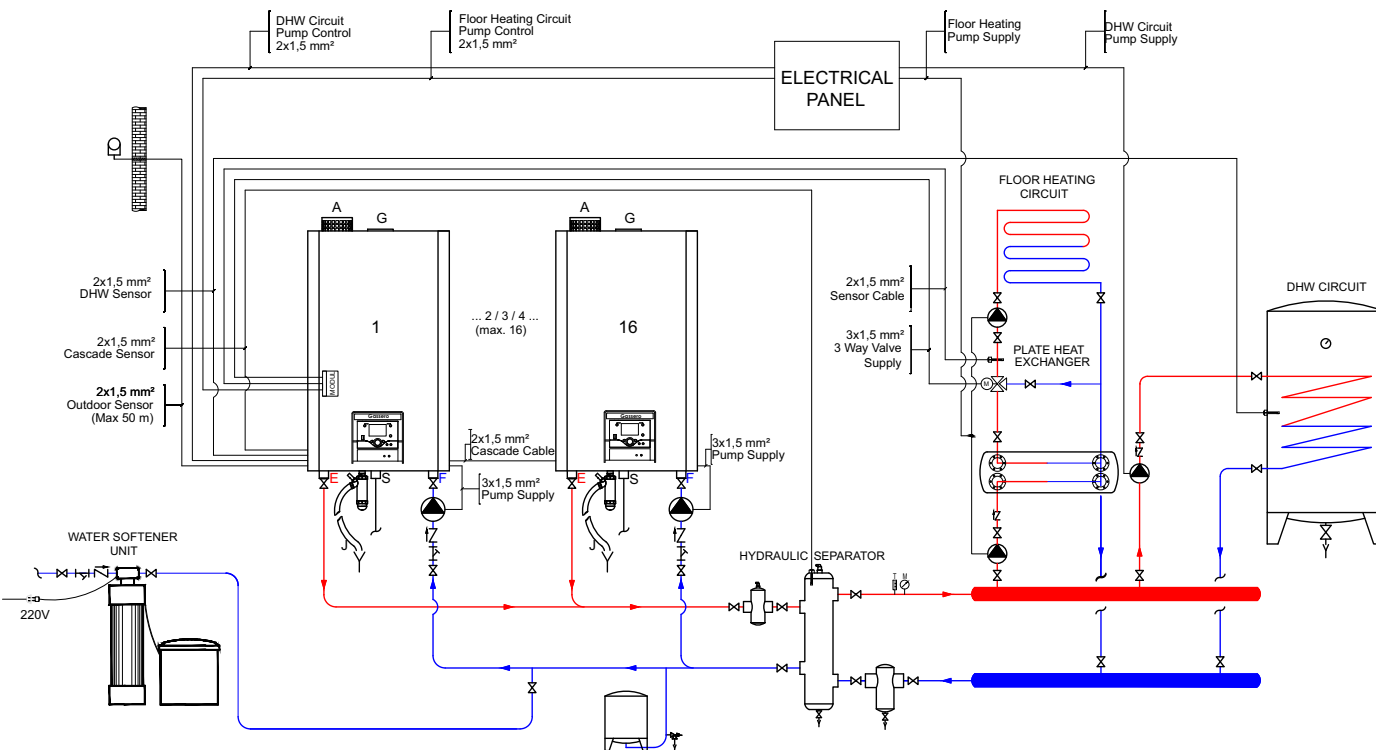


# Installation Schemas

## DHW + Floor Heating (Plate Heat Exchanger and 3 Way Valve)



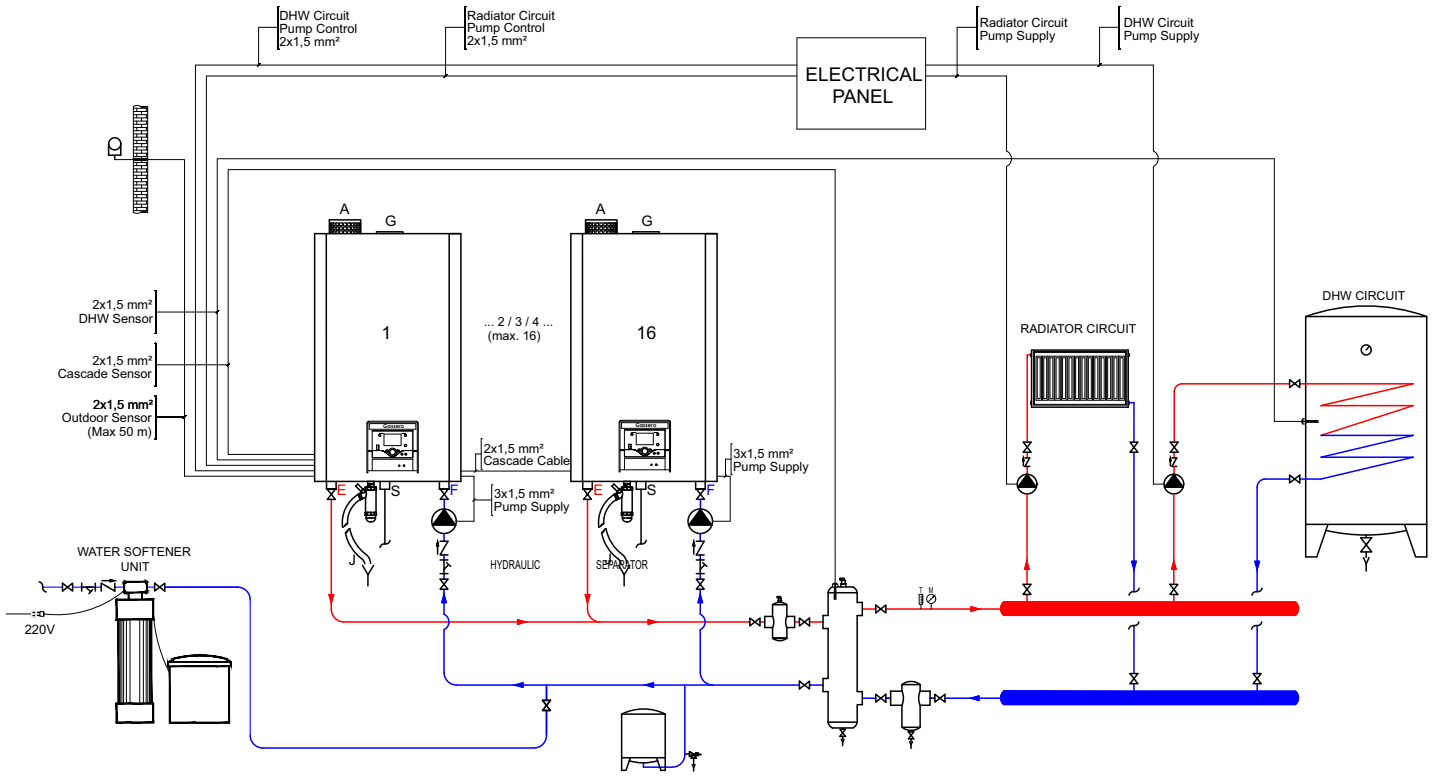
## DHW + Floor Heating (Hydraulic Separator, Plate Heat Exchanger and 3 Way Valve)



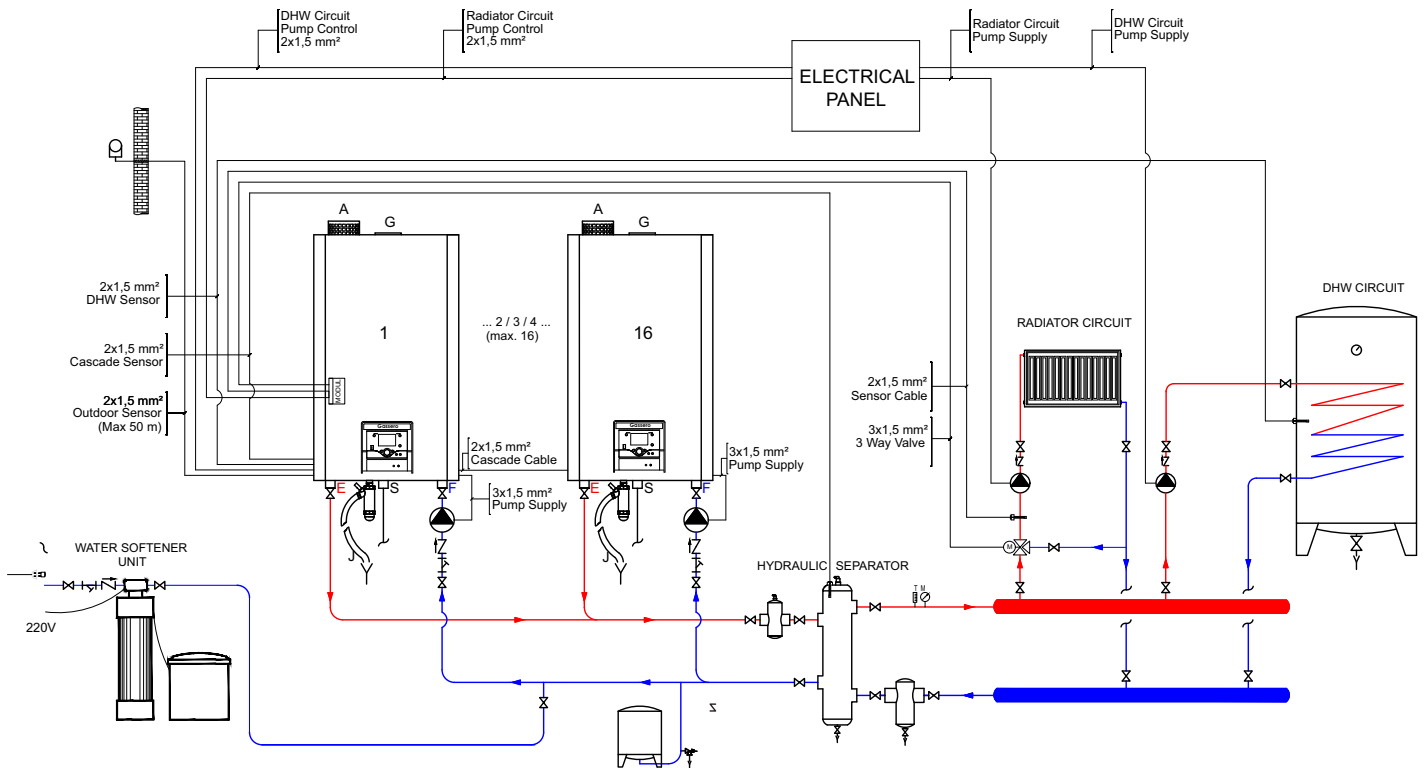
PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# Installation Schemas

## DHW + Radiator (Hydraulic Separator)



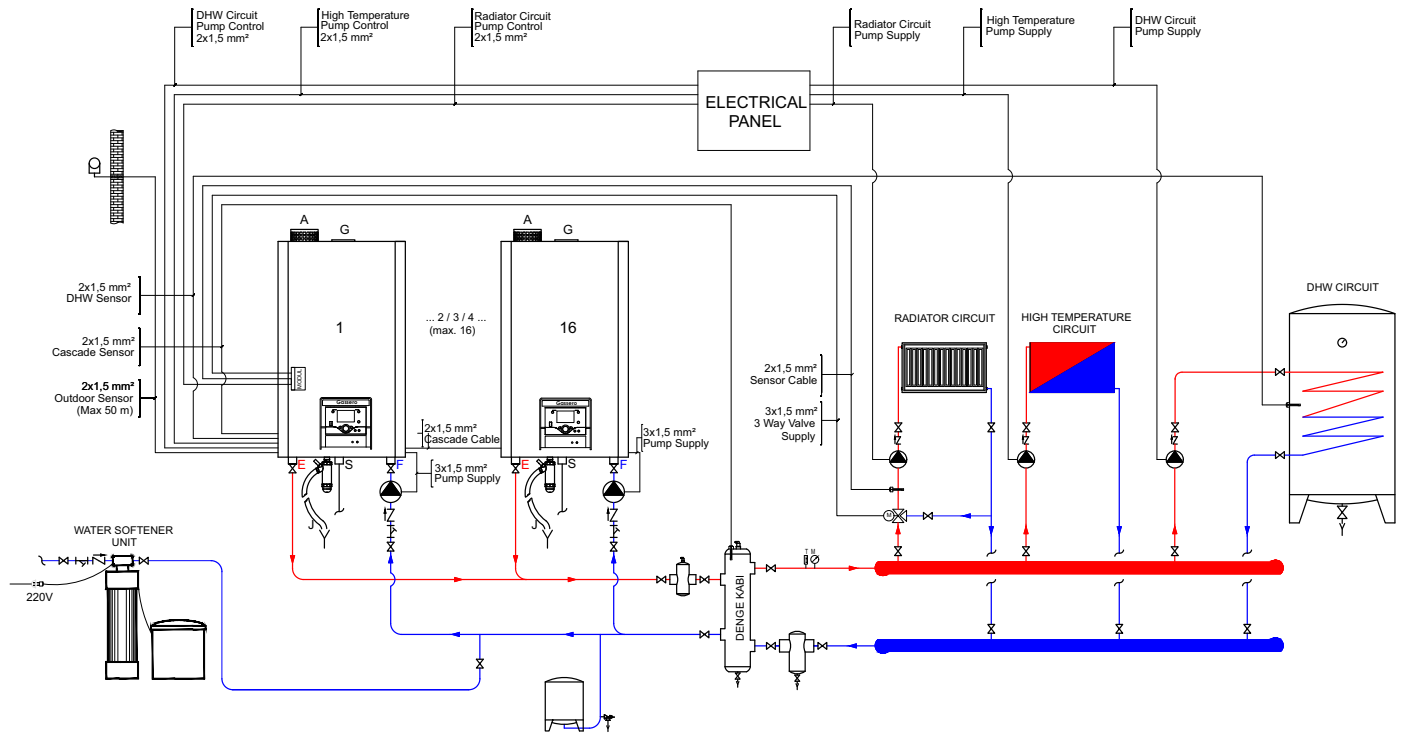
## DHW + Radiator (Hydraulic Separator and 3 Way Valve)



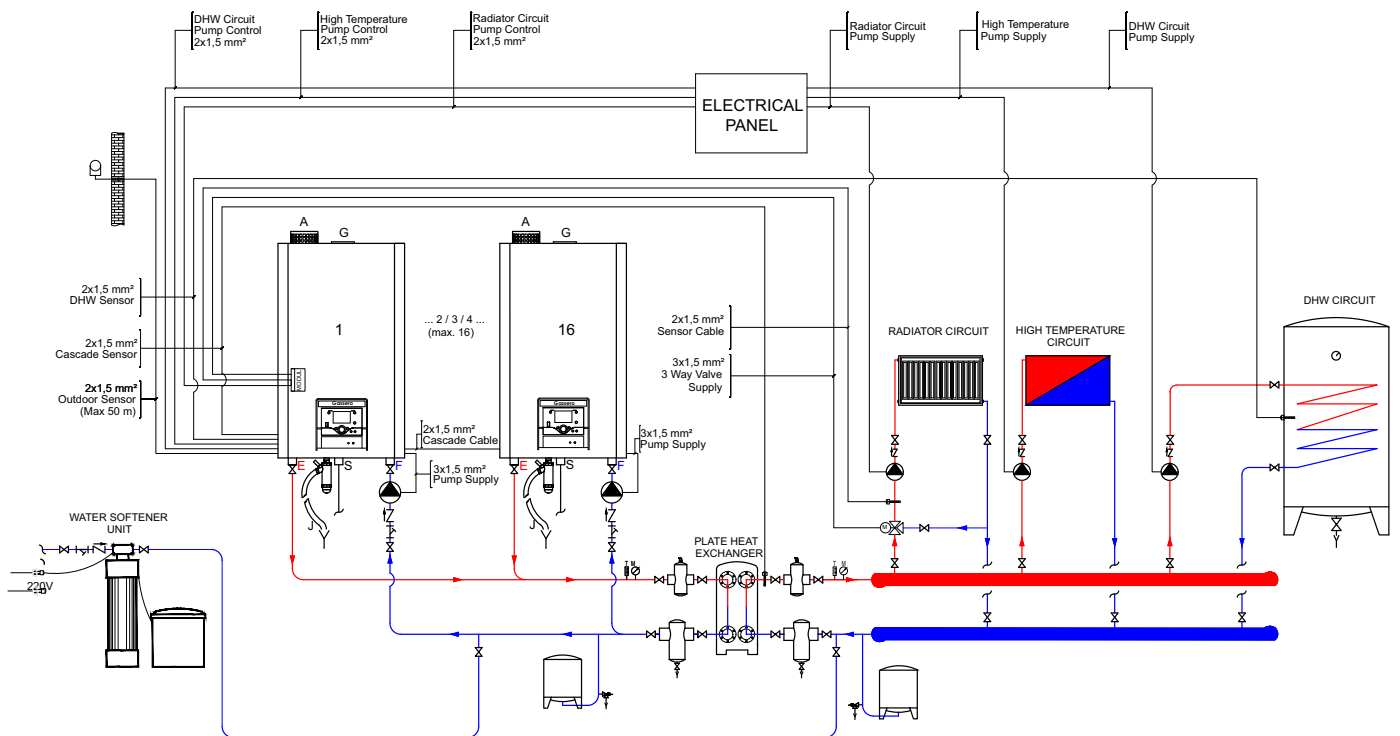
PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# Installation Schemas

## DHW + High Temperature Circuit + Radiator (Hydraulic Separator and 3 Way Valve)



## DHW + High Temperature Circuit + Radiator (Plate Heat Exchanger and 3 Way Valve)



PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# BOILER ROOM APPLICATION RECOMMENDATIONS

Gassero is strictly advising to use water softening unit before commissioning process for long term usage. Otherwise, system could harm because of undesirable substances.

It is highly recommended to use plate heat exchanger, if there is floor heating system on the heatingline.

The devices that are commissioned outside of the required conditions, could be out of warranty.

Water Condition Range					
Total Hardness °d	pH (Aluminium)	pH (Stainless)	Iron (Not Diluted)	Conductivity	Flushing
1	6,5-8,5	7,5-9,5	<10ppm	≤2000µS/cm	It is mandatory to comply with BSRIA 7593 (See: Gassero Flushing Process)

## WATER CONDITIONS

Nitrite protection should not be used in boilers with aluminum heat exchangers

As GASSERO, we recommend flushing in the system to prolong the life of system and boilers. No acid-based products should be used during flushing.

The water used in the installation have to be city-water. **Never use well-water**

The boiler have to be serviced annually. All this maintenance should be made by authorized service, water values and the water softening unit (resin, salt etc.) values should be measured and maintained by service

Depending on the water conditions specified in the table, the problems that may occur in the boiler heat exchanger could make out of warranty.

Assembly and installation should made according to Gassero sample schemes.

## HYDRAULIC

Boiler (primary) pump have to be selected to in accordance with the required pressure and flow rate.

The boiler (primary) pump have to be in the direction of the installation return line to the boiler.

The system operating pressure should match with the working pressure of boiler. Sales Engineers could give consultancy.

All heat exchanger manufacturers; recommends to use of plate exchanger instead of the hydraulic separator for separate the primary circuit and the secondary circuit.

Domestic waste system could be used for condensate water. In system with a total power of 200 KW and above, a neutralization tank must be used.

Boiler output and input diameters have to be strictly followed, other e quipment should be selected according to the this diameters. In order to install other equipment, the diameter of the boiler out should not be reduced.

It is mandatory to use a suitable diameter filter and check valve to the boiler return line pipe at each boiler turn.

Please contact our service department about detail of collector connection in installation of floor type boiler.

Additional zone control modules and sensors have to be requested if there are equipment such as three-way valves and boilers that must be checked on the heating collector. Please contact our Sales Engineer for more information.

Have to be used air separator and dirt separator with hydraulic separator.

In case the plate heat exchanger is used instead of the hydraulic separator as the system separator, expansion tank have to be placed in the primary circuit. If an automatic filling valve is used in the system, a water meter have to be used for following how much water is added to the system.

In cascade systems, the sensor housing must be placed on the hydraulic separator or on the secondary flow line. If the system is separated by a plate heat exchanger, place the sensor housing on the secondary circuit flow line.

## ELECTRIC AND FLUE

6A fuses have to be used for the power supply of the boilers. The electrical system must be grounded.

Chimney connections have to be made in accordance with the chimney types and regulations.

The flue gas analysis measuring probe (probe hole) have to be opened by the flue company for each boiler.

Boiler chimneys should be extended by a minimum 1 meter from the boiler flue outlet direction and then connected to the chimney collector without elbows or with elbows.

If the chimney connections passes over the boiler, the connections should be checked properly and water tightening should be provided. Water in the chimney due to leaks may cause the system out of warranty. Adequate ventilation should be provided for the boiler room.

## GAS AND OTHER

The operating pressure of the boilers in the natural gas installation is 21 Mbar. Therefore, it is necessary to use a regulator in the gas line. There should be a minimum distance of 1-2 meters between the regulator and the boiler gas flange. There should be discharge line after regulator for discharge of the excess air.

In order to control the gas pressures, the manometer must be fitted before and after the regulator.

Gassero boilers are manufactured for heating and domestic water. Not suitable for commercial or industrial purposes. **GASSERO shall not be held responsible for any problems arising out of the design purpose.**

[www.gassero.com](http://www.gassero.com)

**Gassero**  
technology for your comfort

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Rev. 05S / 20.02.2023



# Gassero

technology for your comfort



ECO-FRIENDLY

## FLOOR MOUNT CONDENSING BOILERS

[www.gassero.com](http://www.gassero.com)

# Floor Mount Boilers

● Green dots indicate single heat exchanger ● Blue dots indicate twin heat exchanger.

## Alubox X-treme

Capacity (kW)	
70	
115	
150	
170	
208	
210	
250	●
290	
300	●
335	
350	●
430	●
500	
530	
535	●
540	
640	●
660	
700LX	●
710	●
860	
880	●
1100	
1030	
1060	
1065	●
1160	
1315	●
1320	
1330	
1460	●
1550	●
1760	●
2060	
2200	
2630	●
2660	
2920	●
3100	●
3500	

## Alubox

Capacity (kW)	
70	●
115	●
150	●
170	
208	●
210	
250	
290	●
300	
335	
350	
430	
500	
530	
535	
540	●
640	
660	
700	●
710	
860	
880	
1100	●
1030	
1060	
1065	
1160	
1315	
1320	
1330	
1460	
1550	
1760	
2060	
2200	●
2630	
2660	
2920	
3100	
3500	●

## Ultrabox

Capacity (kW)	
70	
115	
150	
170	●
208	
210	●
250	●
290	
300	
335	●
350	
430	●
500	●
530	●
535	
540	
640	
660	
700	●
710	
860	●
880	
1100	
1030	●
1060	●
1065	
1160	●
1315	
1320	●
1330	●
1460	
1550	
1760	
2060	●
2200	
2630	
2660	●
2920	
3100	
3500	

## Superbox

Capacity (kW)	
70	
115	
150	●
170	
208	
210	
250	
290	
300	
335	
350	
430	
500	●
530	
535	
540	
640	
660	
700	
710	
860	
880	
1000	●
1030	
1060	
1065	
1160	
1315	
1320	
1330	
1460	
1550	
1760	
2060	
2200	
2630	
2660	
2920	
3100	
3500	

## Floor Mount Boilers

### Alubox X-treme

- › 250-3100 kW capacity range
- › Aluminum heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio up to 8:100
- › Efficiency up to %108,7 according to EN 15502-1+A1



### Alubox

- › 70-3500 kW capacity range
- › Aluminum heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio up to 14:100
- › Efficiency up to %108,2 according to EN 15502-1+A1



### Ultrabox

- › 170-2660 kW capacity range
- › Stainless steel heat exchanger
- › Low NOx value
- › Low flue gas temperatures
- › Turndown ratio Up to 4:100
- › Efficiency up to %108,1 according to EN 15502-1+A1



### Superbox

- › 150-1000 kW capacity range
- › Stainless steel heat exchanger
- › Low NOx
- › Low flue gas temperatures
- › Turndown ratio up to 3:100
- › Efficiency up to %109 according to EN 15502-1+A1



# Alubox X-treme

*Floor Mount Condensing Boiler*



- 250-3100 kW capacity range
- Low NOx value
- Low flue gas temperatures
- Aluminum heat exchanger
- Efficiency up to %108,7 according to EN 15502-1+A1
- Turndown ratio up to 8:100
- Cascade operation option up to 16 boilers
- Low noise level
- Energy class A
- 6 bar operation pressure



# Alubox X-treme



- ▶ High corrosion and lime resistance
- ▶ Latest technology, low emission premix burner
- ▶ High modulating and energy-efficient fan

**Smaller size,  
High capacity.**

#### **Safety Features:**

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and water pressure safety
- Pump/valve protection
- Legionella protection for DHW tank
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

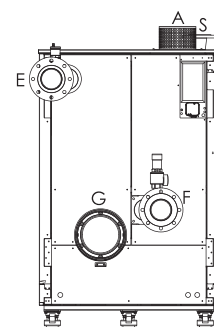
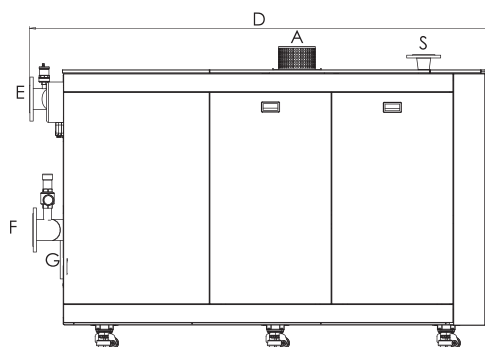
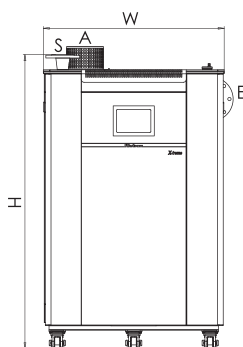
# Alubox X-treme

## Floor Mount Condensing Boiler

### Technical Specifications

		Alubox X-treme						
		250	300	350	430	535	640	700 LX
<b>THERMAL SPECIFICATIONS</b>								
	<b>UNIT</b>							
Nominal heat input (min/max)	kW	48,0/242,0	48,0/285,0	65,0/335,0	85,0/425,0	102,0/510,0	75,0/615,0	118,4/672,4
Nominal heat output (80/60°C) (min/max)	kW	46,8/237,0	46,8/279,5	63,7/328,3	82,5/416,0	99,9/499,8	73,8/601,4	111,9/650,4
Nominal heat output (50/30°C) (min/max)	kW	51,4/254,0	51,4/302,0	70,2/351,7	91,6/445,9	107,1/540,6	81,0/641,4	127,6/702,0
Heating efficiency (80/60°C) (min/max)	%	96,0/98,1	96,1/98,2	96,3/98,0	96,8/97,9	97,1/98,2	97,0/97,9	96,4/97,0
Heating efficiency (50/30°C) (min/max)	%	108,1/105,3	107,6/106,2	107,1/106,2	108,0/105,0	107,6/106,1	107,5/106,4	108,1/104,8
Partial load efficiency (36/30°C)	%	107,6	107,5	107,5	107,6	107,4	107,6	108,8
Turndown ratio		20:100	17:100	20:100	20:100	20:100	13:100	18:100
<b>HYDRAULIC SPECIFICATIONS</b>								
Operation water pressure (min/max)	bar	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6
Exchanger water volume	lt	23,0	23,0	36,2	43,7	51,1	58,8	81,7
Water flow rate (min/max)	m³/h	2,2/10,9	2,2/12,9	3,1/15,2	3,9/19,3	5,3/23,5	3,9/28,4	5,5/30,3
Pump head	mWC	5,9	6,6	5,4	6,0	6,2	6,2	5,9
Max. operation temp.	°C	90	90	90	90	90	90	90
<b>GAS AND COMBUSTION SPECIFICATIONS</b>								
Gas type		G20	G20	G20	G20	G20	G20	G20
Gas supply pressure (G20/G31)	mbar	20	20	20	20	20	20	20
Flue gas pressure	Pa	60	60	60	71	78	195	220
Combustion products flow rate (min/max)	g/sc	22/110	22/127	31/154	40/201	47/238	39/271	54/308
CO2 emission (min/max)	%	8,9/8,9	8,9/9,0	9,1/9,2	9,2/9,2	8,7/8,9	8,8/9,1	8,9/9,1
CO emission (min/maks)	ppm	7,0/23,0	7,0/28,0	2,0/70,0	2,0/89,0	3,0/47,0	8,0/90,0	0/74,0
Flue gas temp. (80/60°C) (min/max)	°C	56,1/69,2	55,8/71,8	57,8/68,7	59,0/69,0	57,7/69,5	58,1/67,9	60,2/73,5
Flue gas temp. (50/30°C) (min/max)	°C	31,4/45,6	31,4/47,9	30,7/45,4	31,2/46,1	29,7/47,6	31,0/44,9	31,6/48,3
NOx class		6	6	6	6	6	6	6
NOx value	mg/kWh	35	41	34	39	21	16	25
Gas consumption (min/max)	m³/h	4,9/25,5	4,8/30,1	6,9/35,2	8,8/44,6	10,8/53,9	8,5/64,5	12,1/70,1
<b>CONNECTION SPECIFICATIONS</b>								
Boiler water inlet (F) / outlet diameter (E)	DN	50/50	50/50	100/100	100/100	100/100	100/100	100/100
Fresh air (A) / flue gas diameter (G) (B23)	mm	100/200	100/200	125/250	200/250	200/250	200/250	200/250
Gas supply diameter (S)	DN	32	32	50	65	65	65	65
<b>ELECTRICAL SPECIFICATIONS</b>								
Power supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Electrical consumption	W	260	310	260	450	670	900	942
<b>GENERAL SPECIFICATIONS</b>								
Energy efficiency class		A	A	A	A	A	A	A
Noise power level	dB(A)	63,7	65,2	67,6	64,2	68,4	70,1	72,3
Dimensions (W/D/H)	mm	690x1460x1360	690x1460x1360	835x1220x1600	935x1420x1600	935x1705x1600	935x1705x1600	935x1745x1600
Boiler weight	kg	280	280	305	381	425	452	525

Single Hex

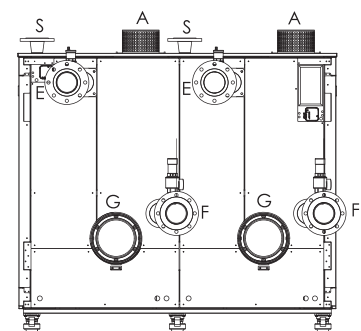
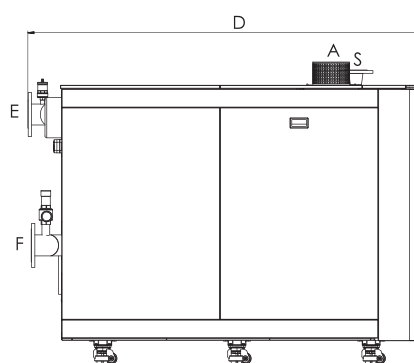
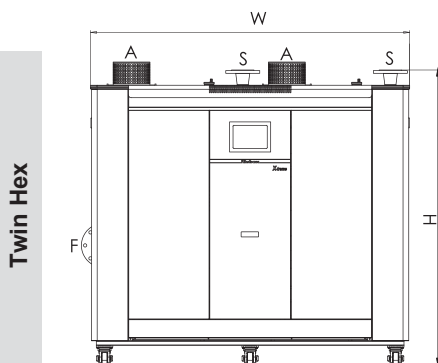


# Alubox X-treme

\*Twin hex are indicated in grey zone.

## Alubox X-treme

710	880	1065	1315	1480	1550	*1760	*2630	*2920	*3100
134,6/685,6	132,9/849,4	159,5/1025	220,0/1261,0	250,0/1400,0	250,0/1490,0	132,9/1699	220/2522	250/2800	250/2980
129,6/669,2	124/824,5	152,9/999,9	212,0/1220,0	243,0/1360,0	243,0/1445,0	124/1649	212/2440	243/2720	243/2890
145,9/711,3	142,3/885,1	171,9/1065,5	235,0/1315,0	268,0/1460,0	268,0/1555,0	142,3/1770	235/2630	268/2920	268/3110
95,7/97,8	96,8/97,7	96,9/97,7	96,5/97,3	97,1/97,4	97,1/97,3	96,8/97,7	96,5/97,3	97,1/97,4	97,1/97,3
108,7/104,1	107,5/104,6	108,2/104,9	107,2/104,7	107,4/104,6	107,4/104,4	107,5/104,6	107,2/104,7	107,4/104,6	107,4/104,4
108,5	108,7	108,4	108,1	108,1	108,0	108,7	108,1	108,1	108,0
20:100	16:100	16:100	18:100	18:100	17:100	8:100	9:100	9:100	9:100
0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6
68,7	99,7	117,7	135,8	153,8	153,8	2x99,7	2x135,8	2x153,8	2x153,8
6,7/30,4	6,2/38,1	7,3/45,9	9,2/55,5	10,3/61,1	10,3/63,5	6,2/38,1	9,2/51,1	10,3/61,1	10,3/63,5
7,2	6,0	6,3	6,9	7,1	7,0	6,0	6,9	7,1	7,0
90	90	90	90	90	90	90	90	90	90
G20	G20	G20	G20	G20	G20	G20	G20	G20	G20
20	20	20	20	20	20	20	20	20	20
220	179	252	265	221	255	2x179	2x265	2x221	2x255
63/314	60/389	73/467	104/556	112/622	112/668	60/389	104/556	112/622	112/668
9,0/9,1	9,1/9,0	8,9/9,1	8,6/9,4	8,9/8,9	9,1/9,1	9,1/9,0	8,6/9,4	8,9/8,9	9,1/9,1
5,0/71,0	0/63,0	0/68,0	2,0/74,0	1,0/54,0	1,0/72,0	0/63,0	2,0/74,0	1,0/54,0	1,0/72,0
60,0/70,0	59,4/69,5	59,6/68,7	59,6/68,7	59,8/67,3	59,8/67,5	59,4/69,5	59,6/68,7	59,8/67,3	59,8/67,5
31,3/43,0	30,3/46,3	31,2/45,0	31,1/46,7	30,8/42,0	30,8/43,1	30,3/46,3	31,1/46,7	30,8/42,0	30,8/43,1
6	6	6	6	6	6	6	6	6	6
23	32	32	36	27	33	32	36	27	33
14,0/71,8	13,4/88,5	16,4/106,6	22,7/129,6	25,5/139,7	25,5/150,3	13,4/177	22,7/259,3	25,5/279,4	25,5/300,7
100/100	125/125	125/125	125/125	125/125	125/125	125/125	125/125	125/125	125/125
200/250	200/250	200/250	200/250	200/250	200/250	200/250	200/250	200/250	200/250
65	65	65	65	65	65	65	65	65	65
230/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50	400/50
880	1466	2213	3162	3726	4306	2932	6325	7451	8611
A	A	A	A	A	A	A	A	A	A
71,9	73,7	75,5	77,2	76,4	75,3	78,6	77,2	76,4	75,3
935x1745x1600	935x2140x1600	935x2140x1600	985x2730x1600	985x2730x1600	985x2730x1600	1738x2140x1600	1872x2680x1600	1872x2680x1600	1872x2680x1600
525	625	685	811	925	925	1120	1630	1700	1700



Twin Hex



# Alubox

*Floor Mount Condensing Boiler*



- ▶ 70-3500 kW capacity range
- ▶ Low NOx Value
- ▶ Low flue gas temperatures
- ▶ Aluminum heat exchanger
- ▶ Efficiency up to %108,2 according to EN 15502-1+A1
- ▶ Turndown ratio up to 14:100
- ▶ Cascade operation option up to 16 boilers's
- ▶ Low noise level
- ▶ Energy class A
- ▶ 6 bar working pressure







- ▶ High corrosion and lime resistance
- ▶ Latest technology, low emission premix burner
- ▶ High modulating and energy-efficient fan

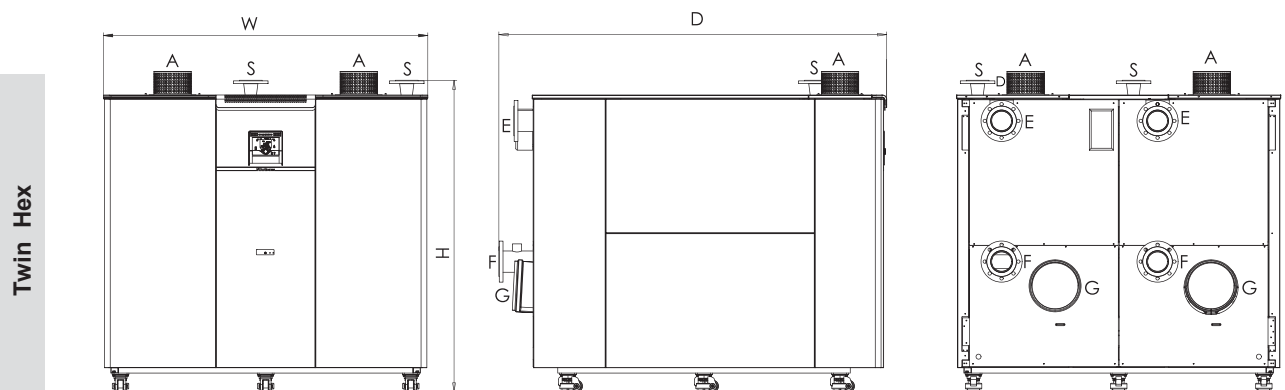
#### **Safety Features:**

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

**With low emission values,  
ECO friendly GASSERO.**

### Technical Specifications

		Alubox						
		70	115	150	208	290	540	700
<b>THERMAL SPECIFICATIONS</b>								
	<b>UNIT</b>							
Nominal heat input (min/max)	kW	10,2/65,6	14,9/112,3	19,9/143,1	35,7/197,3	48,1/277,4	81,9/517,0	101,4/661,0
Nominal heat output (80/60°C) (min/max)	kW	9,9/63,4	14,3/109,5	19,2/139,8	34,9/192,2	46,8/270,2	79,1/502,9	97,8/643,1
Nominal heat output (50/30°C) (min/max)	kW	11,6/68,5	15,1/118,1	22,3/149,1	36,7/207,7	50,0/286,5	84,7/539,2	107,8/708,4
Heating efficiency (80/60°C) (min/max)	%	96,7/97,2	96,8/98,2	97,0/98,2	97,7/97,4	97,2/97,4	96,6/97,3	96,5/97,3
Heating efficiency (50/30°C) (min/max)	%	108,0/103,9	108,2/104,8	108,1/103,2	103,1/103,8	105,4/103,6	105,0/104,0	107,0/107,4
Partial load efficiency (36/30°C)	%	108,4	108,71	108,4	107,2	107,1	106,7	108,6
Turndown ratio		16:100	14:100	14:100	18:100	18:100	16:100	16:100
<b>HYDRAULIC SPECIFICATIONS</b>								
Operation water pressure (min/max)	bar	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6
Exchanger water volume	lt	3,2	4,6	6	29,1	40,6	75,5	99,2
Water flow rate (min/max)	m³/h	0,6/3,8	0,6/4,5	0,8/6,2	1,6/8,9	2,0/12,4	3,4/23,6	4,4/30,1
Pump head	mWC	5,0	5,0	5,5	5,3	6,5	5,2	5,2
Max. operation temp.	°C	85	85	85	90	90	90	90
<b>GAS AND COMBUSTION SPECIFICATIONS</b>								
Gas type		G20	G20	G20	G20	G20	G20	G20
Gas supply pressure (G20/G31)	mbar	20	20	20	20	20	20	20
Flue gas pressure	Pa	130	200	330	160	160	150	150
Combustion products flow rate (min/max)	g/sc	5,0/28,0	6,0/49,0	9,0/63,0	16,5/69,3	22,5/119,6	38,0/235,1	47,0/292,4
CO2 emission (min/max)	%	9,1/9,6	9,4/9,4	9,5/9,6	8,8/9,1	9,0/9,4	8,9/9,1	8,9/9,4
CO emission (min/maks)	ppm	29/152	27/156	24/169	1/21	3/31	2/29	5/33
Flue gas temp. (80/60°C) (min/max)	°C	55,4/72,1	56,8/64,9	56,9/70,3	55,1/64,5	55,6/61,1	55,5/63,6	55,6/61,1
Flue gas temp. (50/30°C) (min/max)	°C	30,1/52,3	30,2/53,5	30,5/47,1	29/52,7	29/47,4	30,3/40,1	34,2/34,5
NOx class		6	6	6	6	6	6	6
NOx value	mg/kWh	28	43	44	32	63	36	51
Gas consumption (min/max)	m³/h	1,1/6,9	1,5/11,8	2,1/15,1	3,7/20,8	4,9/28,8	8,5/54,0	10,5/68,7
<b>CONNECTION SPECIFICATIONS</b>								
Boiler water inlet (F) / outlet diameter (E)	DN	25/25	25/25	25/25	50/50	50/50	80/80	80/80
Fresh air (A) / flue gas diameter (G) (B23)	mm	100/150	100/150	110/100	100/200	100/200	125/250	125/250
Gas supply diameter (S)	DN	20	25	25	32	32	65	65
<b>ELECTRICAL SPECIFICATIONS</b>								
Power supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Electrical consumption	W	116	203	313	450	510	1400	1620
<b>GENERAL SPECIFICATIONS</b>								
Energy efficiency class		A	A	A	A	A	A	A
Noise power level	dB(A)	66,2	61,3	69,3	62,1	64,3	66,5	71,2
Dimensions (W/D/H)	mm	640x575x1095	640x575x1095	640x575x1095	645x1420x1420	645x1420x1420	838x1731x1680	838x1731x1680
Boiler weight	kg	85	93	103	262	295	450	510



Twin Hex

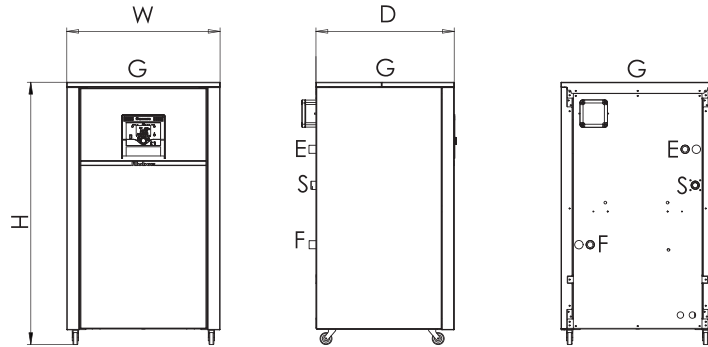
# Alubox

\*Twin hex are indicated in grey zone.

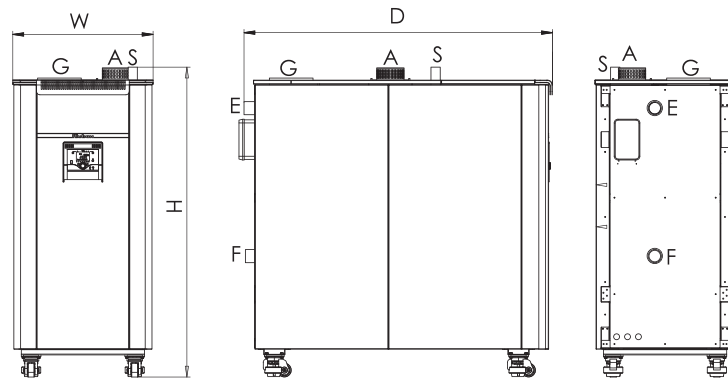
## Alubox

1100	*2200	3500
150,5/1029,6	301,0/2059,2	174,4/3303,8
146,0/1001,8	292/2003,6	166,8/3233,0
160,7/1007,6	321,4/2215,2	187,9/3405,0
97,0/97,3	97,0/97,3	96,6/97,9
107,1/107,0	107,1/107	108,2/103,3
108,0	108,0	108,8
15:100	7:100	5:100
0,8/6	0,8/6	0,8/6
155,1	2x155,1	493,5
6,4/46,9	6,4/93,6	8,0/139,4
5,4	2x5,4	5,4
90	90	90
G20	G20	G20
20	20	20
150	2x150	130
69,1/459,6	69,1/459,6	79,4/1462,4
9,0/9,3	9,0/9,3	8,8/9,0
6/44	6/44	6/44
61,9/64,6	61,9/64,6	54,7/65,9
29,4/33,8	29,4/33,8	29,4/33,8
6	6	6
46	46	39
15,6/107,6	15,6/215,2	20,6/335,6
100/100	100/100	200/200
200/250	200/250	200/400
65	65	80
400/50	400/50	400/50
2650	5300	9112
A	A	A
74,9	74,9	84,7
898x2079x1670	1738x2079x1670	1300x2985x2365
680	1378	2540

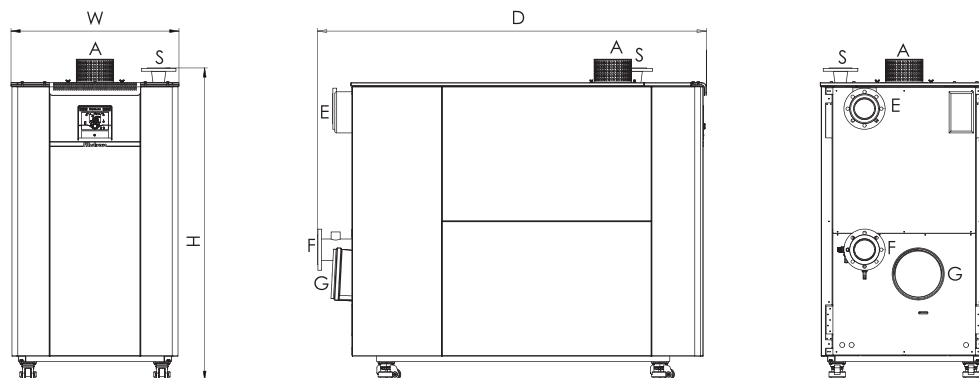
## Alubox 70-115-150



## Alubox 208-290



## Alubox 540-700-1100



# Ultrabox

*Floor Mount Condensing Boiler*



- ▶ 170-2660 kW capacity range
- ▶ Low CO emissions
- ▶ Low flue gas temperatures
- ▶ Stainless steel heat exchanger
- ▶ Efficiency up to %108,1 according to EN 15502-1+A1
- ▶ Turndown ratio up to 4:100
- ▶ Cascade operation option up to 16 boilers'
- ▶ Low NOx value
- ▶ Low noise level
- ▶ Energy class A
- ▶ 6 bar operation pressure



# Ultrabox



- ▶ High efficient and durable heat exchanger
- ▶ Latest technology, low emission premix burner
- ▶ High modulating and energy-efficient fan

#### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety system
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line

Advanced condensation technology,  
Low fuel consumption.

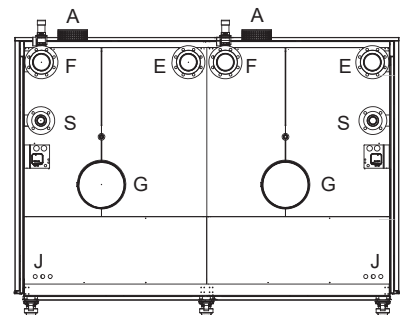
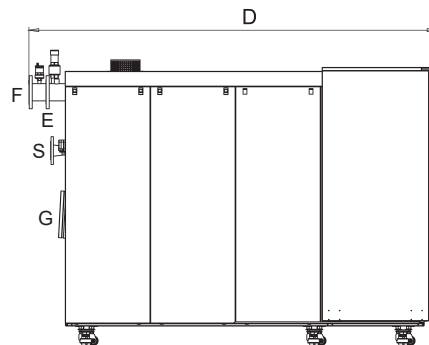
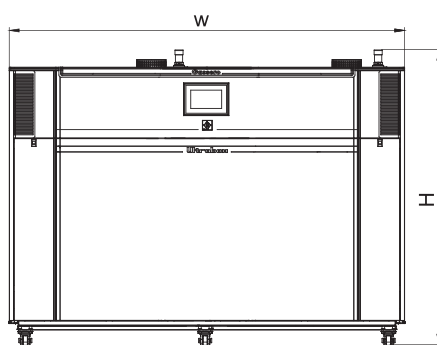
# Ultrabox

## Floor Mount Condensing Boiler

### Technical Specifications

		Ultrabox						
		170	210	250	335	430	500	530
<b>THERMAL SPECIFICATIONS</b>		<b>UNIT</b>						
Nominal heat input (min/max)	kW	23,0/158,5	23,0/197,0	23,0/235,5	41,8/311,5	41,8/405,5	60,0/470,0	60,0/500,0
Nominal heat output (80/60°C) (min/max)	kW	22,3/154,3	22,3/191,8	22,3/228,9	40,6/303,3	40,6/393,0	58,4/456,3	58,4/486,0
Nominal heat output (50/30°C) (min/max)	kW	24,7/170,0	24,7/210,0	24,7/250,0	45,0/334,1	45,0/430,0	64,8/501,3	64,8/535,0
Heating efficiency (80/60°C) (min/max)	%	97,2/97,4	97,2/97,4	97,2/97,2	97,3/97,4	97,3/97,1	97,4/97,1	97,4/97,3
Heating efficiency (50/30°C) (min/max)	%	107,5/107,3	107,5/106,7	107,5/106,2	107,9/107,3	107,9/106,1	108,1/107,1	108,1/107,2
Partial load efficiency (36/30°C)	%	108,1	108,1	108,1	108,4	108,3	108,0	108,5
Turndown ratio		15:100	12:100	12:100	14:100	11:100	13:100	12:100
<b>HYDRAULIC SPECIFICATIONS</b>								
Operation water pressure (min/max)	bar	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6
Exchanger water volume	lt	30,6	30,6	30,6	41,5	41,5	61,5	61,5
Water flow rate (min/max)	m³/h	1,0/7,4	1,0/9,1	1,0/10,6	1,8/14,3	1,8/18,3	2,6/21,7	2,6/22,8
Pump head	mWC	6,1	6,5	6,0	6,9	6,0	6,5	6,8
Max. operation temp.	°C	90	90	90	90	90	90	90
<b>GAS AND COMBUSTION SPECIFICATIONS</b>								
Gas type		G20	G20	G20	G20	G20	G20	G20
Gas supply pressure (G20/G31)	mbar	20	20	20	20	20	20	20
Flue gas pressure	Pa	90,2	90,2	90,2	187,3	187,3	209,9	209,9
Combustion products flow rate (min/max)	g/sc	12/77	12/95	12/112	24/142	24/207	40/230	40/235
CO2 emission (min/max)	%	8,6/8,8	8,6/8,7	8,6/8,7	8,7/8,5	8,7/8,8	8,9/8,7	8,9/9,2
CO emission (min/maks)	ppm	0/80	0/84	0/93	0/108	0/96	2/92	2/93
Flue gas temp. (80/60°C) (min/max)	°C	62,2/64,9	62,2/68,3	62,2/73,1	63,4/67,5	63,4/74,3	61,5/66,4	61,5/67,3
Flue gas temp. (50/30°C) (min/max)	°C	33,7/37,0	33,7/40,6	33,7/42,6	38,5/40,6	38,5/46,6	33,0/39,1	33,0/41,5
NOx class		6	6	6	6	6	6	6
NOx value	mg/kWh	34	34	34	35	33	24	24
Gas consumption (min/max)	m³/h	2,4/16,9	2,4/20,9	2,4/24,8	4,3/32,6	4,3/41,7	6,1/49,0	6,1/51,6
<b>CONNECTION SPECIFICATIONS</b>								
Boiler water inlet (F) / outlet diameter (E)	DN	50/50	50/50	50/50	65/65	65/65	65/65	65/65
Fresh air (A) / flue gas diameter (G) (B23)	mm	125/150	125/150	125/150	200/200	200/200	200/250	200/250
Gas supply diameter (S)	DN	32	32	32	65	65	65	65
<b>ELECTRICAL SPECIFICATIONS</b>								
Power supply	V/Hz	230/50	230/50	230/50	230/50	230/50	230/50	230/50
Electrical consumption	W	204	226	260	360	450	670	685
<b>GENERAL SPECIFICATIONS</b>								
Energy efficiency class		A	A	A	A	A	A	A
Noise power level	dB(A)	63,7	65,2	67,6	64,2	68,4	70,1	72,3
Dimensions (W/D/H)	mm	725x1160x950	725x1160x950	725x1160x950	960x1520x1072	960x1520x1072	960x1846x1072	960x1846x1072
Boiler weight	kg	180	260	260	270	451	451	461

Twin Hex



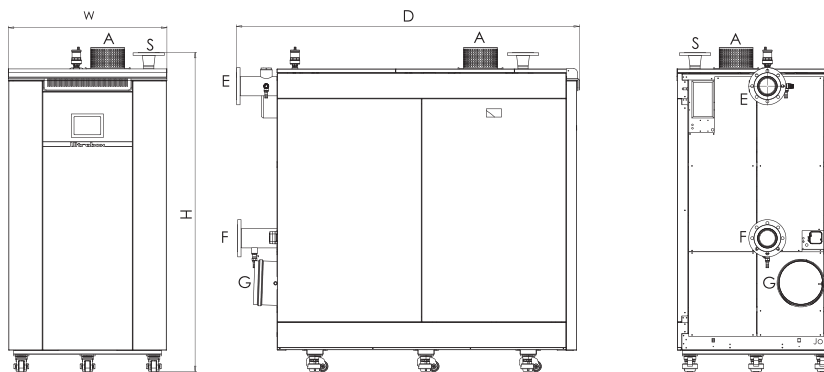
# Ultrabox

\*Twin hex are indicated in grey zone.

## Ultrabox

660	*860	1030	*1060	*1160	*1320	1330	*2060	*2660
60,0/620,0	41,8/811,0	95,0/956,0	60,0/1000,0	60,9/1090,0	60,0/1240,0	95,0/1235,0	95,0/1912,0	95,0/2470,0
58,4/602,0	40,6/786,0	92,2/932,2	58,4/972,0	58,4/1058,3	58,4/1204,0	92,2/1205,0	92,2/1864,0	92,2/2410,0
64,8/665,0	45,0/860,0	102,0/1030,0	64,8/1070,0	64,8/1166,3	64,8/1330,0	102,0/1333,0	102,0/2060,0	102,0/2666,0
97,4/97,2	97,3/97,1	97,1/97,5	97,4/97,3	97,4/97,4	97,4/97,2	97,1/97,6	97,1/97,5	97,1/97,6
108,1/107,4	107,9/106,1	108,0/107,8	108,1/107,2	108,1/107,4	108,1/107,4	107,3/108,1	108,0/107,8	107,3/108,1
108,5	108,3	108,1	108,5	108,5	108,5	108,3	108,1	108,3
10:100	6:100	10:100	6:100	6:100	5:100	8:100	5:100	4:100
0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6	0,8/6
61,5	2x41,5	130,9	2x61,5	2x61,5	2x61,5	130,9	2x130,9	2x130,9
2,6/28,9	1,8/18,3	3,9/44,1	2,6/22,8	2,6/50,6	2,6/28,9	3,9/56,6	3,9/44,1	3,9/56,6
6,7	2x6,0	8,5	2x8,7	2x6,7	2x6,7	9,1	2x8,5	2x9,1
90	90	90	90	90	90	90	90	90
G20	G20	G20	G20	G20	G20	G20	G20	G20
20	20	20	20	20	20	20	20	20
287,3	2x187,3	285,4	2x209,9	2x287,3	2x287,3	285,4	2x285,4	2x285,4
40/280	24/202	62/460	40/235	40/280	40/280	108/561	62/460	108/561
8,9/8,7	8,7/8,8	9,0/9,2	8,9/9,2	8,9/8,7	8,9/8,7	9,0/9,0	9,0/9,2	9,0/9,0
0/98	0/96	0/96	2/93	0/98	0/98	0/84	0/96	0/84
61,5/73,1	63,4/71,3	65,1/66,6	61,5/67,3	61,5/73,1	61,5/73,1	65,1/66,1	65,1/66,1	65,1/66,1
33,3/47,7	38,5/46,6	37,5/38,7	33,0/47,5	33,0/47,7	33,0/47,7	37,4/36,3	37,5/38,8	37,4/36,3
6	6	6	6	6	6	6	6	6
22	33	36	24	22	22	33	36	32,9
6,1/64,1	4,0/76,5	9,7/97,8	5,5/95,3	6,1/113,1	6,1/128,2	9,8/128,8	9,7/195,6	9,8/257,5
65/65	65/65	100/100	65/65	100/100	65/65	100/100	100/100	100/100
200/250	200/200	200/300	200/250	200/250	200/250	200/300	200/300	200/300
65	65	65	65	65	65	65	65	65
230/50	230/50	400/50	230/50	230/50	230/50	400/50	400/50	400/50
909	900	2213	1370	1670	1800	3170	4426	6340
A	A	A	A	A	A	A	A	A
71,9	68,4	77,2	72,3	73,7	73,7	75,3	77,2	75,3
960x1846x1072	1975x1625x1502	1184x2080x1385	1835x1840x1270	1835x1846x1270	1835x1840x1270	1184x2490x1385	1184x2080x1385	2235x2492x1588
471	942	897	962	970	982	925	1834	1890

Single Hex



# Superbox

## Floor Mount Condensing Boiler



- 150-1000 kW capacity range
- Low NOx value
- Low flue gas temperatures
- Stainless steel heat exchanger
- Up to %109 efficiency according to EN 15502-1+A1
- Up to 3:100 turndown ratio
- Cascade operation option up to 16 boilers
- Low noise level
- Energy class A
- 6 bar operation pressure

- High efficient and durable heat exchanger
- Latest technology, low emission premix burner
- High modulating and energy-efficient fan

### Safety Features:

- Frost protection
- Overheat protection
- Low and high water pressure safety
- Flue gas temperature and pressure safety system
- Pump/valve protection
- Legionella protection
- Condensate blockage safety with siphon sensor
- Fan speed safety
- Surface temperature safety
- High pressure switch for gas line





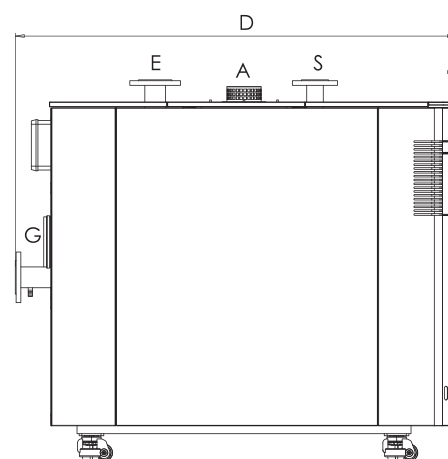
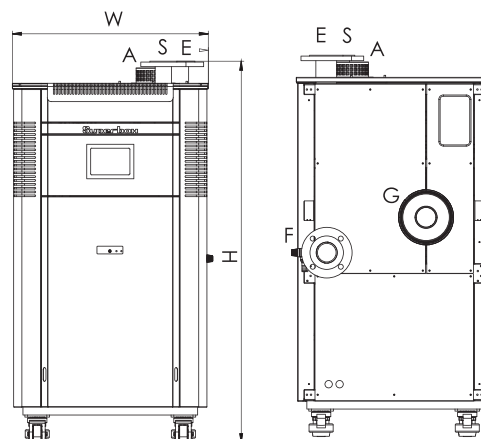
# Superbox

\* Twin hex are indicated in grey zone.

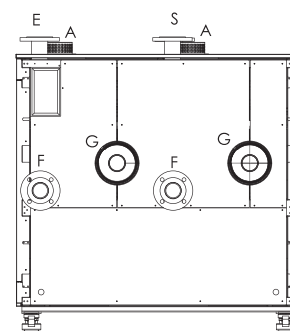
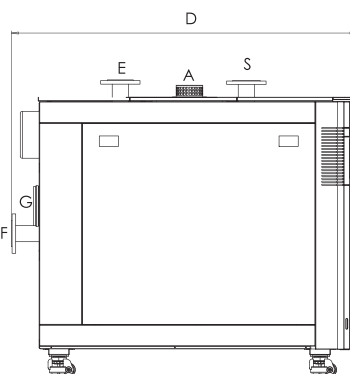
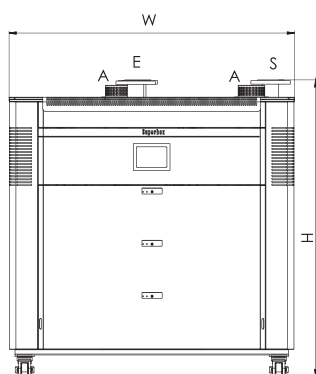
## Technical Specifications

	Superbox			
	150	500	*1000	
<b>THERMAL SPECIFICATIONS</b>				
<b>UNIT</b>				
Nominal heat input (min/max)	kW	21,0/143,0	27,2/498,5	27,2/996,9
Nominal heat output (80/60°C) (min/max)	kW	19,5/138,0	26,3/481,7	26,3/962,1
Nominal heat output (50/30°C) (min/max)	kW	22,7/150,0	29,1/527,4	29,1/1051,9
Heating efficiency (80/60°C) (min/max)	%	96,5/97,7	96,5/96,6	96,5/96,5
Heating efficiency (50/30°C) (min/max)	%	106,5/105,3	106,5/105,5	106,6/105,3
Partial load efficiency (36/30°C)	%	108,3	107,0	106,9
Turndown ratio		15:100	6:100	3:100
<b>HYDRAULIC SPECIFICATIONS</b>				
Operation water pressure (min/max)	bar	0,8/6	0,8/6	0,8/6
Exchanger water volume	lt	11,4	69,8	139,6
Water flow rate (min/max)	m³/h	0,9/6,3	1,1/21,4	1,1/42,8
Pump head	mWC	8,6	7,2	7,2
Max. operation temp.	°C	90	90	90
<b>GAS AND COMBUSTION SPECIFICATIONS</b>				
Gas type		G20	G20	G20
Gas supply pressure (G20/G31)	mbar	20	20	20
Flue gas pressure	Pa	310	100	100
Combustion products flow rate (min/max)	g/sc	9,7/67,3	12,6/226,7	12,6/226,7
CO <sub>2</sub> emission (min/max)	%	9,4/9,8	9,0/9,2	9,0/9,2
CO emission (min/maks)	ppm	0/208	3/105	5/122
Flue gas temp. (80/60°C) (min/max)	°C	62,9/77,7	59,8/80,3	59,7/80,5
Flue gas temp. (50/30°C) (min/max)	°C	38,1/65,8	30,6/43,2	30,6/43,9
NO <sub>x</sub> class		6	6	6
NO <sub>x</sub> value	mg/kWh	37	45	53
Gas consumption (min/max)	m³/h	2,1/14,7	2,8/51,8	2,8/103,6
<b>CONNECTION SPECIFICATIONS</b>				
Boiler water inlet (F) / outlet diameter (E)	DN	32/32	65/65	65/65
Fresh air (A) / flue gas diameter (G) (B23)	mm	110/100	100/180	100/180
Gas supply diameter (S)	DN	25	50	65
<b>ELECTRICAL SPECIFICATIONS</b>				
Power supply	V/Hz	230/50	230/50	230/50
Electrical consumption	W	461	900	1440
<b>GENERAL SPECIFICATIONS</b>				
Energy efficiency class		A	A	A
Noise power level	dB(A)	61,7	68,3	72,1
Dimensions (W/D/H)	mm	555x780x990	715x1610x1394	1340x1620x1390
Boiler weight	kg	110	522	1060

## Single Hex



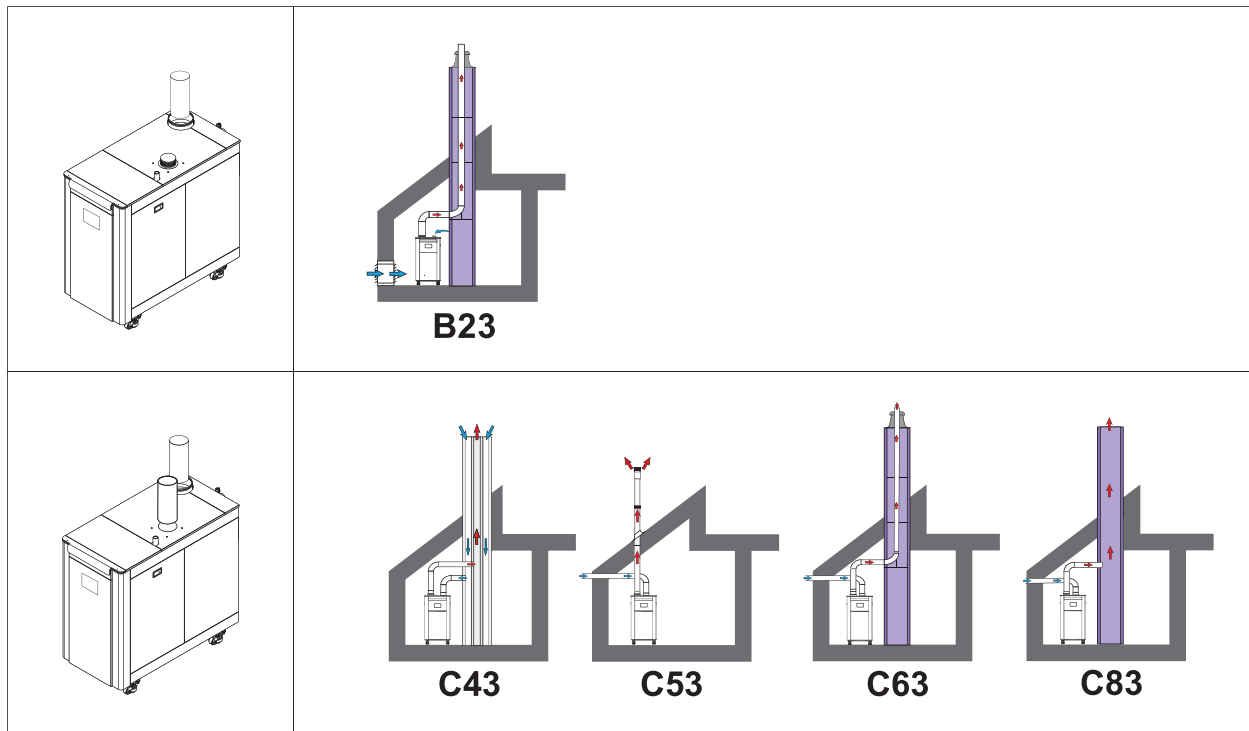
## Twin Hex



# Optional Accessories

Product Image	Product Name	Specifications
	<p><b>Outside Sensor</b></p>	<p>Operates between -50 °C and 70 °C.            Max. distance 120 m with 1.5 mm<sup>2</sup> cable.            Tolerance ±1 K</p>
	<p><b>Clamp Type Temperature Sensor</b></p>	<p>Operates between -30 °C and 125 °C.            Max. distance 120 m with 1.5 mm<sup>2</sup> cable.            Tolerance ±0,5 K</p>
	<p><b>Immersion Type Temperature Sensor</b></p>	<p>Operates between 0 °C and 95 °C.            Tolerance ±0,5 K.</p>
	<p><b>External Zone Module</b></p>	<p>Provides 3-way valve control function on temperature based zones. Requires additional relay and sensor connections.</p>
	<p><b>Modbus Module</b></p>	<p>Provides Building Management Systems (BMS) connection.</p>

## Flue Applications



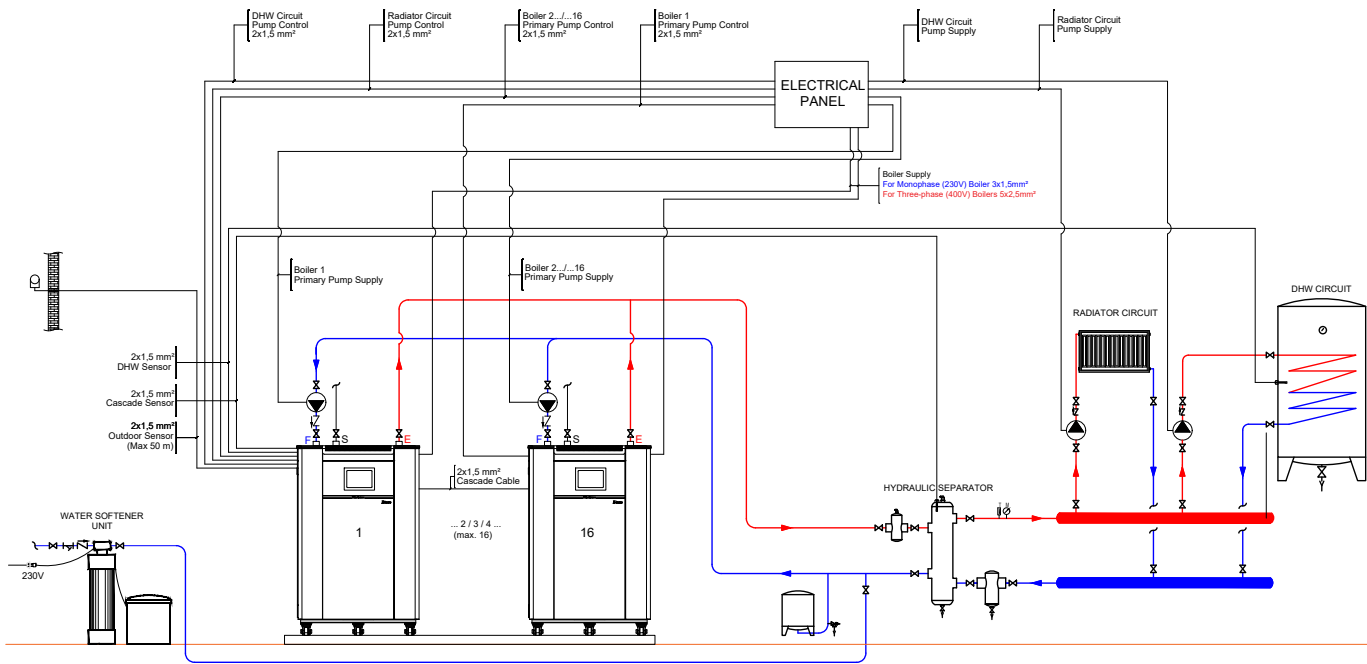
## IRIS Air Adjustment Damper



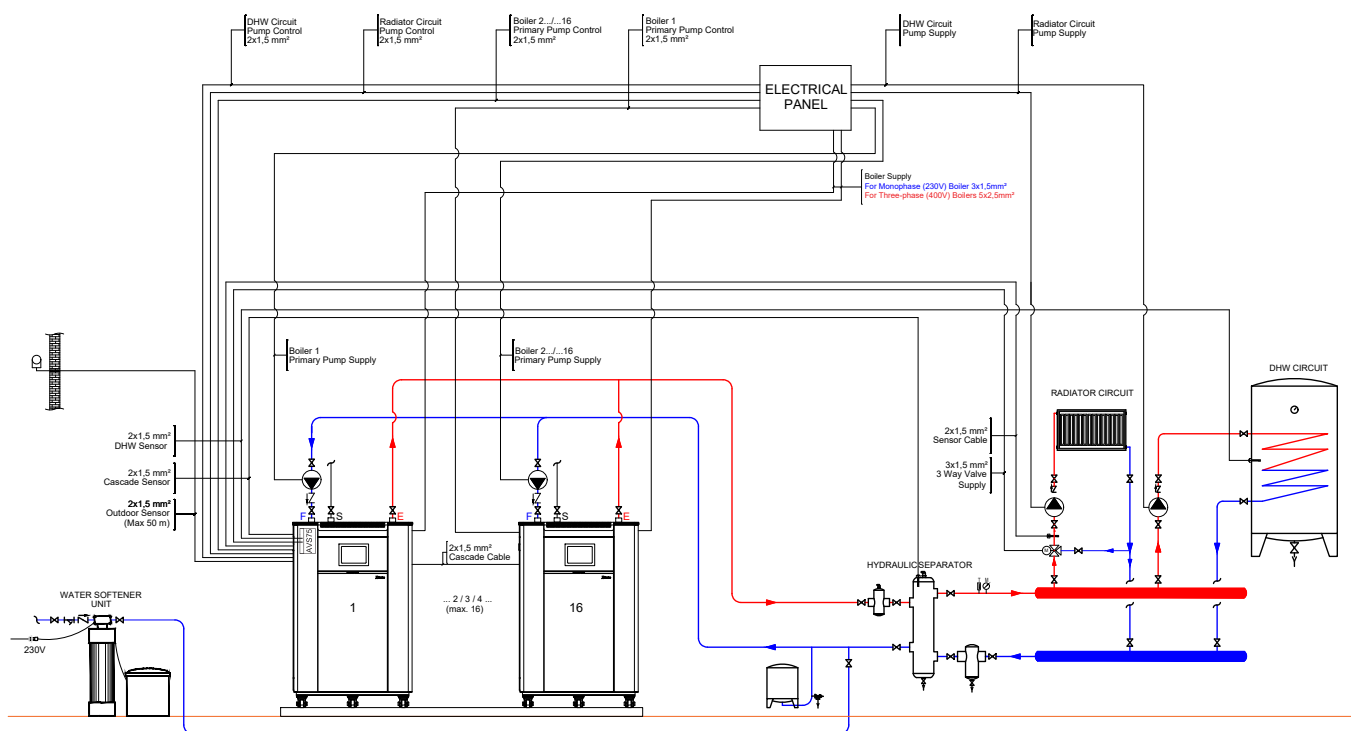
- Provides air adjustment option in radial air ducts.
- Manually controlled air damper can be adjusted at necessary air volume and fixed by the locking mechanism on it.
- Made of galvanized steel sheet.
- Ideal air flow adjustment and measuring equipment for radial air ducts.
- Provides an uniform air flow inside with adjustable iris diameter.
- Suitable for continuous use at -10 °C to +80 °C.

# Installation Schemas

## DHW + Radiator (Hydraulic Separator)



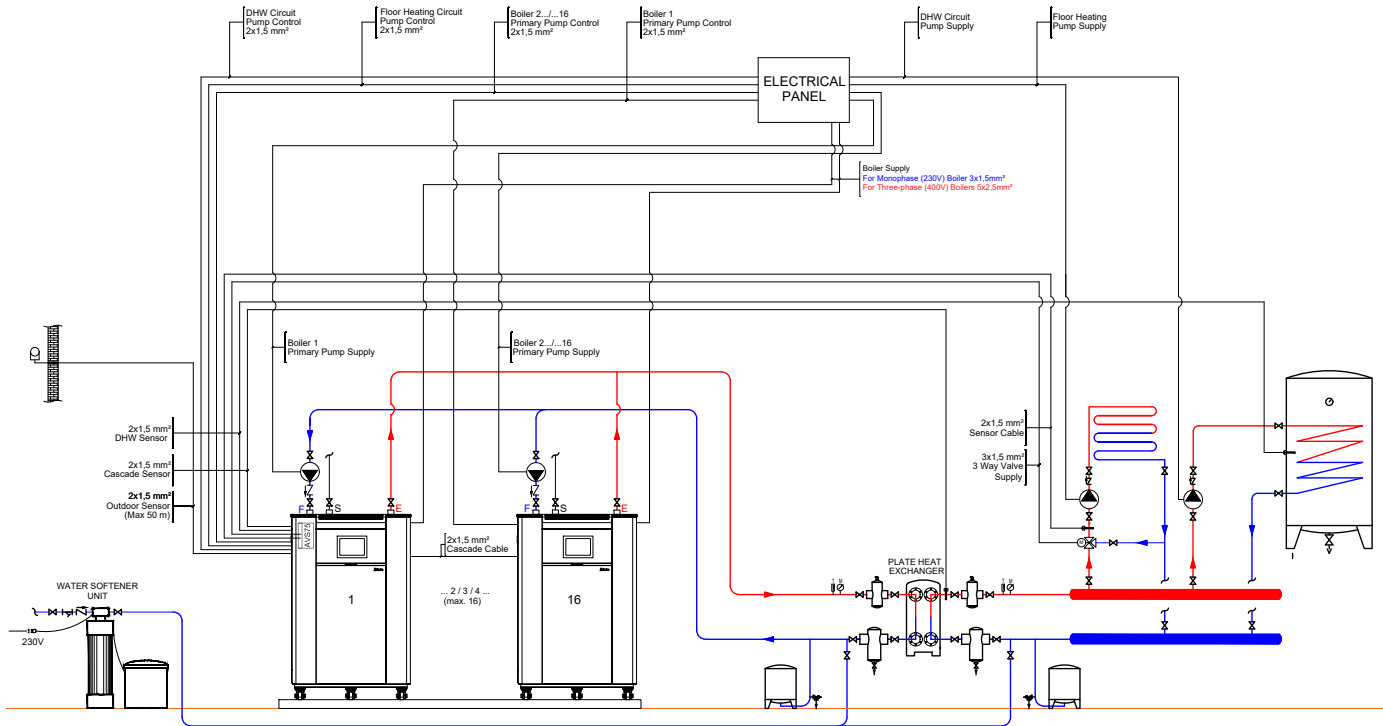
## DHW + Radiator (Hydraulic Separator and 3 Way Valve)



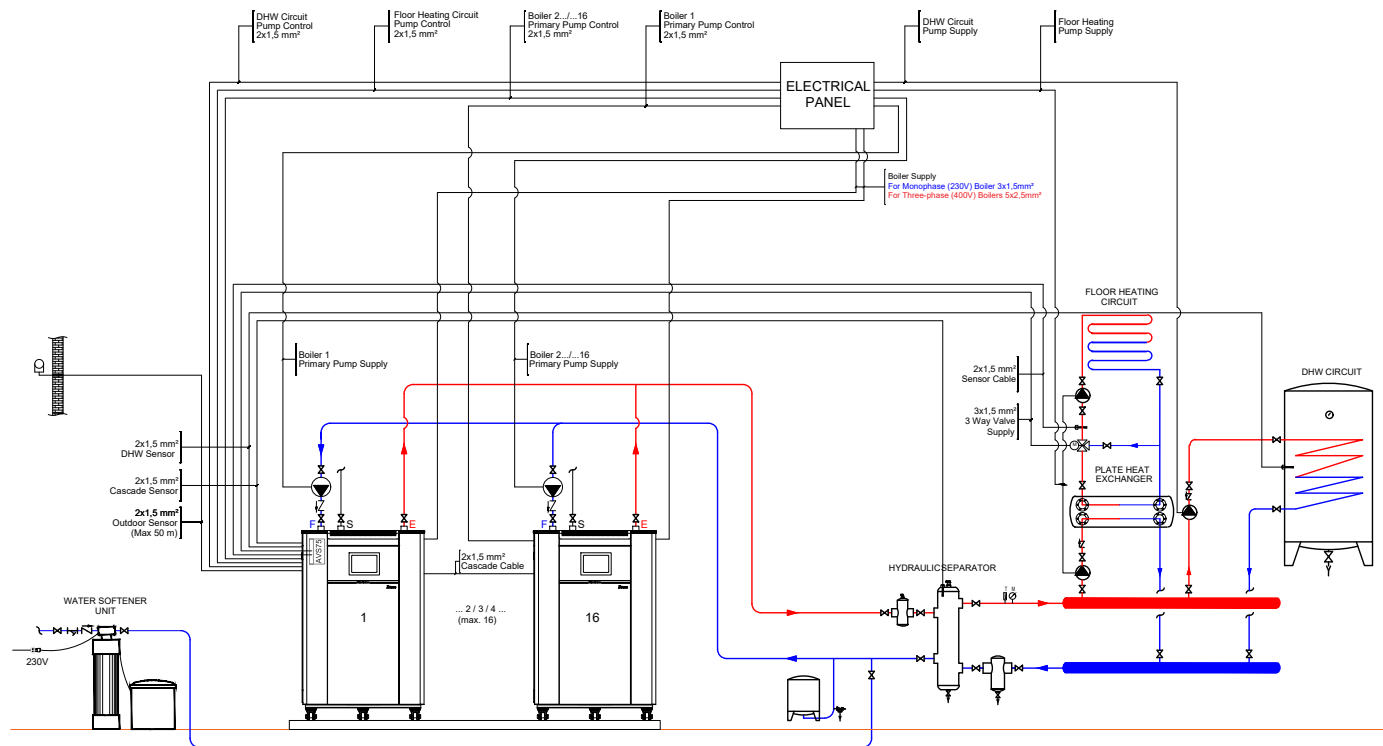
PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# Installation Schemas

## DHW + Floor Heating (Plate heat exchanger and 3 Way Valve)



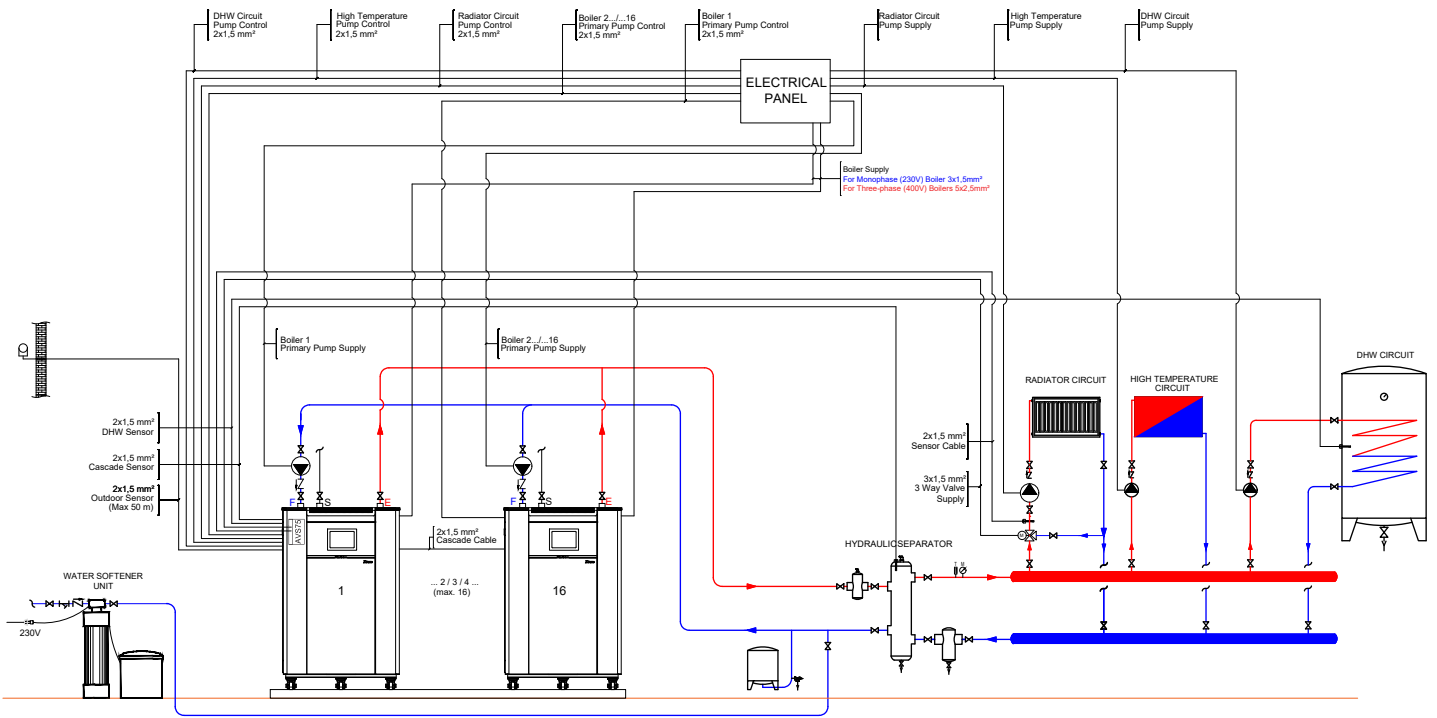
## DHW + Floor Heating (Hydraulic Separator, Plate Heat Exchanger and 3 Way Valve)



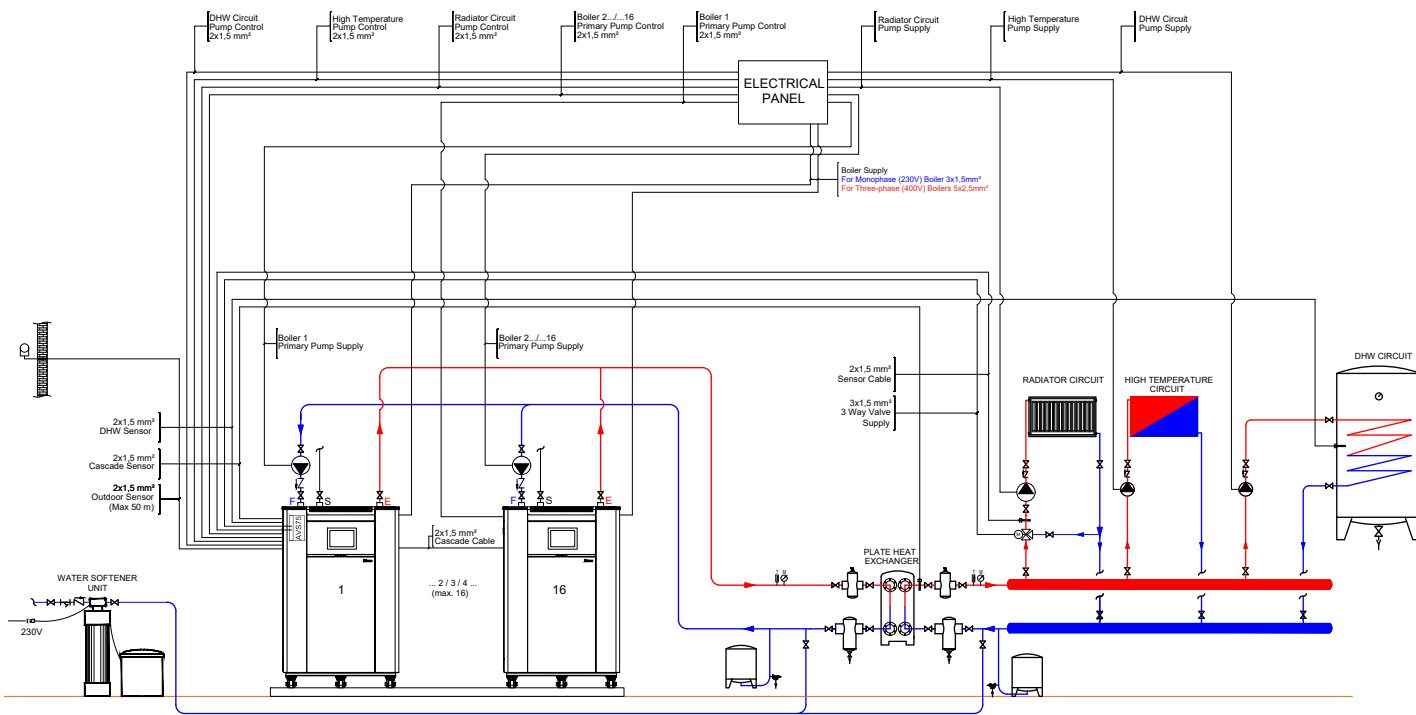
PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# Installation Schemas

## DHW + High Temperature Circuit + Radiator (Hydraulic Separator and 3 Way Valve)



## DHW + High Temperature Circuit + Radiator (Plate Heat Exchanger and 3 Way Valve)



PUMP	VALVE	NON-RETURN VALVE	STRAINER	TEMPERATURE SENSOR	OUTDOOR SENSOR	AIR RELIEF VALVE	THERMOMETER	MANOMETER	SAFETY VALVE	DRAIN	AIR SEPARATOR	DIRT SEPARATOR	EXPANSION VESSEL

# BOILER ROOM APPLICATION RECOMMENDATIONS

**Gassero** is strictly advising to use water softening unit before commissioning process for long term usage. Otherwise, system could harm because of undesirable substances.

It is highly recommended to use plate heat exchanger, if there is floor heating system on the heating line.

The devices that are commissioned outside of the required conditions, could be out of warranty.

## Water Condition Range

Total Hardness °d	pH (Aluminium)	pH (Stainless)	Iron (Not Diluted)	Conductivity	Flushing
1	6,5-8,5	7,5-9,5	<10ppm	≤2000µS/cm	It is mandatory to comply with BSRIA 7593 (See: Gassero Flushing Process)

### WATER CONDITIONS

Nitrite protection should not be used in boilers with aluminum heat exchangers

As GASSERO, we recommend flushing in the system to prolong the life of system and boilers. No acid-based products should be used during flushing.

The water used in the installation have to be city-water. **Never use well-water**

The boiler have to be serviced annually. All this maintenance should be made by authorized service, water values and the water softening unit (resin, salt etc.) values should be measured and maintained by service

Depending on the water conditions specified in the table, the problems that may occur in the boiler heat exchanger could make out of warranty.

Assembly and installation should made according to Gassero sample schemes.

### HYDRAULIC

Boiler (primary) pump have to be selected to in accordance with the required pressure and flow rate.

The boiler (primary) pump have to be in the direction of the installation return line to the boiler.

The system operating pressure should match with the working pressure of boiler. Sales Engineers could give consultancy.

All heat exchanger manufacturers; recommends to use of plate exchanger instead of the hydraulic separator for separate the primary circuit and the secondary circuit.

Domestic waste system could be used for condensate water. In system with a total power of 200 KW and above, a neutralization tank must be used.

Boiler output and input diameters have to be strictly followed, other equipment should be selected according to the this diameters. In order to install other equipment, the diameter of the boiler out should not be reduced.

It is mandatory to use a suitable diameter filter and check valve to the boiler return line pipe at each boiler turn.

Please contact our service department about detail of collector connection in installation of floor mount boiler.

Additional zone control modules and sensors have to be requested if there are equipment such as three-way valves and boilers that must be checked on the heating collector. Please contact our Sales Engineer for more information.

Have to be used air separator and dirt separator with hydraulic separator.

In case the plate heat exchanger is used instead of the hydraulic separator as the system separator, expansion tank have to be placed in the primary circuit. If an automatic filling valve is used in the system, a water meter have to be used for following how much water is added to the system.

In cascade systems, the sensor housing must be placed on the hydraulic separator or on the secondary flow line. If the system is separated by a plate heat exchanger, place the sensor housing on the secondary circuit flow line.

### ELECTRIC AND FLUE

6A fuses have to be used for the power supply of the boilers. The electrical system must be grounded.

Chimney connections have to be made in accordance with the chimney types and regulations.

The flue gas analysis measuring probe (probe hole) have to be opened by the flue company for each boiler.

Boiler chimneys should be extended by a minimum 1 meter from the boiler flue outlet direction and then connected to the chimney collector without elbows or with elbows.

If the chimney connections passes over the boiler, the connections should be checked properly and water tightening should be provided. Water in the chimney due to leaks may cause the system out of warranty. Adequate ventilation should be provided for the boiler room.

### GAS AND OTHER

The operating pressure of the boilers in the natural gas installation is 21 Mbar. Therefore, it is necessary to use a regulator in the gas line. There should be a minimum distance of 1-2 meters between the regulator and the boiler gas flange. There should be discharge line after regulator for discharge of the excess air.

In order to control the gas pressures, the manometer must be fitted before and after the regulator.

Gassero boilers are manufactured for heating and domestic water. Not suitable for commercial or industrial purposes. **GASSERO shall not be held responsible for any problems arising out of the design purpose.**

[www.gassero.com](http://www.gassero.com)

**Gassero**  
technology for your comfort

**Gassero Isı Teknolojileri Glb" @X"**  
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T: +90 (216) 394 09 85



Rev. 03 / 17.05.2022



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ENVIRONMENT-FRIENDLY

# ULTRABOX CONDENSING COMMERCIAL GAS BOILERS

UP TO 97% THERMAL EFFICIENCY  
STAINLESS STEEL HEAT EXCHANGER  
USER FRIENDLY TOUCHSCREEN INTERFACE

Ultrabox 800-1250-1500-2000



✔ **High efficient solutions**

Gassero Ultrabox boiler series have efficiency of up to 97%. Thanks to lower fuel consumption and lower heating costs, condensing boilers have short return on investment and reducing heating costs up to 20% in comparison with conventional boilers. High turn down ration prevents short cycling and temperature overshoot.

✔ **Simplified serviceability**

Gassero Ultrabox boilers and heat exchangers are designed to provide ease of access for simplified and quick maintenance allowing one-man serviceability. Being installer's best friend, Gaassero Ultrabox boilers allow easy maintenance, and cleaning providing quick and cost effective solution.

✔ **Control system with smart touchscreen**

High resolution colour touchscreen display provides clear visual monitoring and programming of system parameters. Boilers can be connected to Building Management Systems via ModBus or optional BACnet translator.

✔ **Wide range of venting choices**

Gassero boilers offer 6" and 8" vent choices with up to 150 feet length using either PVC, CPVC Polypropylene or AL29-4C stainless steel vent pipe.

USAGE AREAS



Buildings and Residence



Hotels and Hospitals



Schools



Business Centers

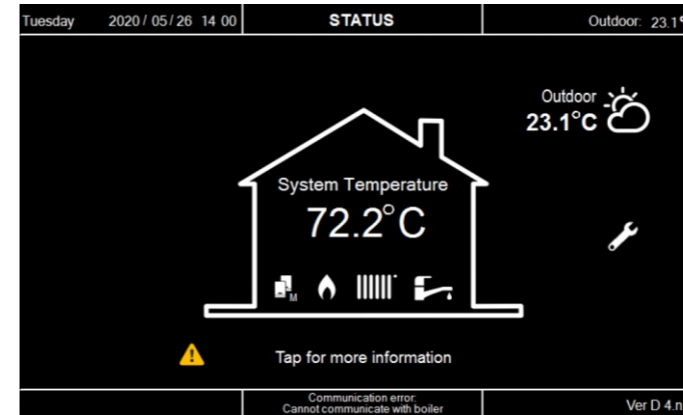


Restaurants



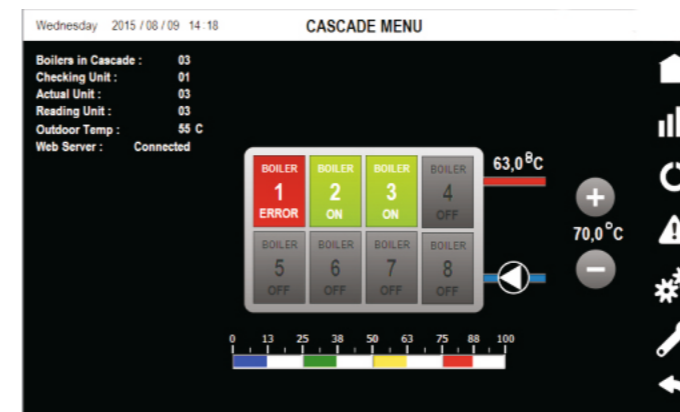
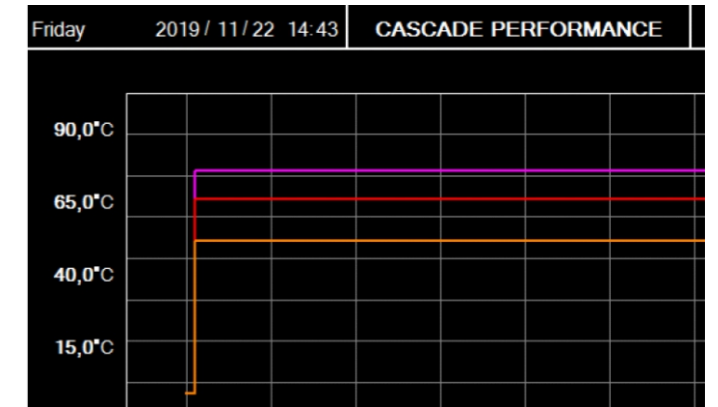
Gyms

TOUCHSCREEN DISPLAY

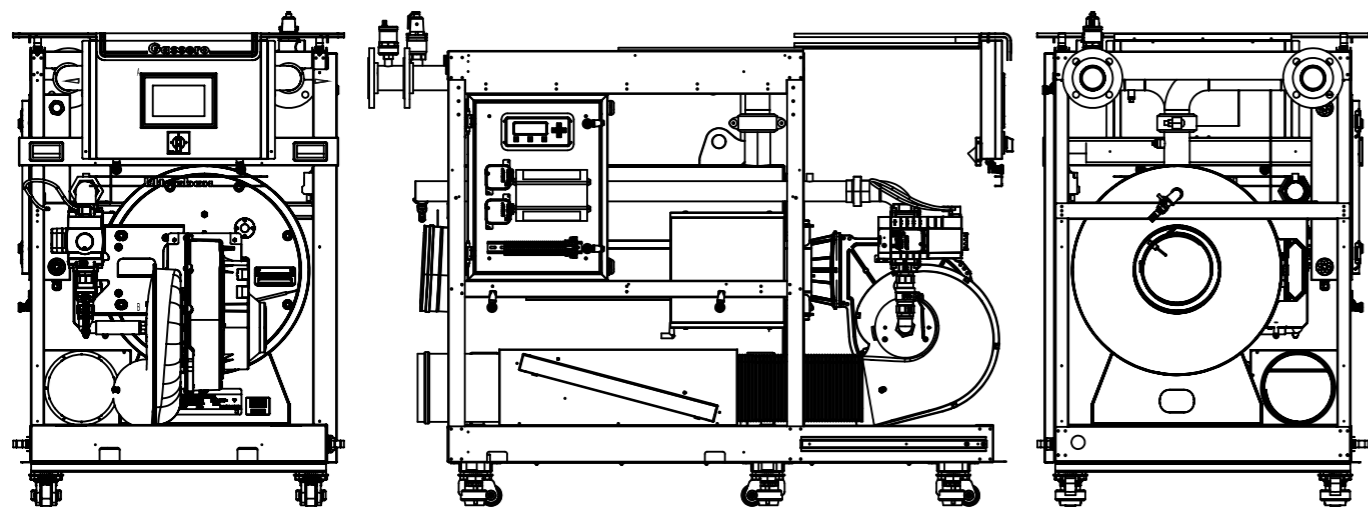
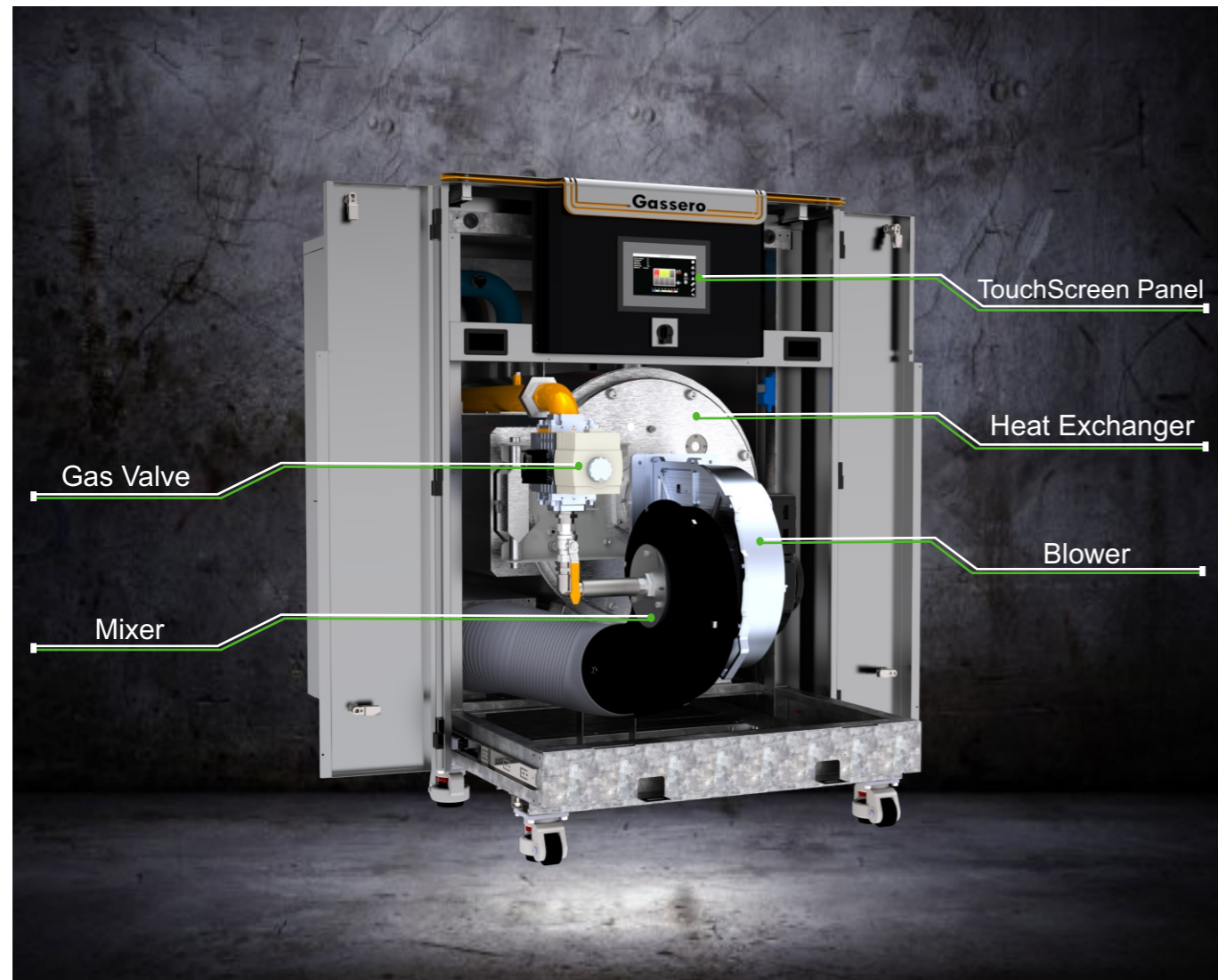


Gassero's advanced and user-friendly touchscreen interface allows easy access to boiler state, quick and easy adjustments of temperature setpoints, operation times, heating zone management, pump settings, and performance graphs.

Easy access to boiler operation, temperature graphs and error logs.

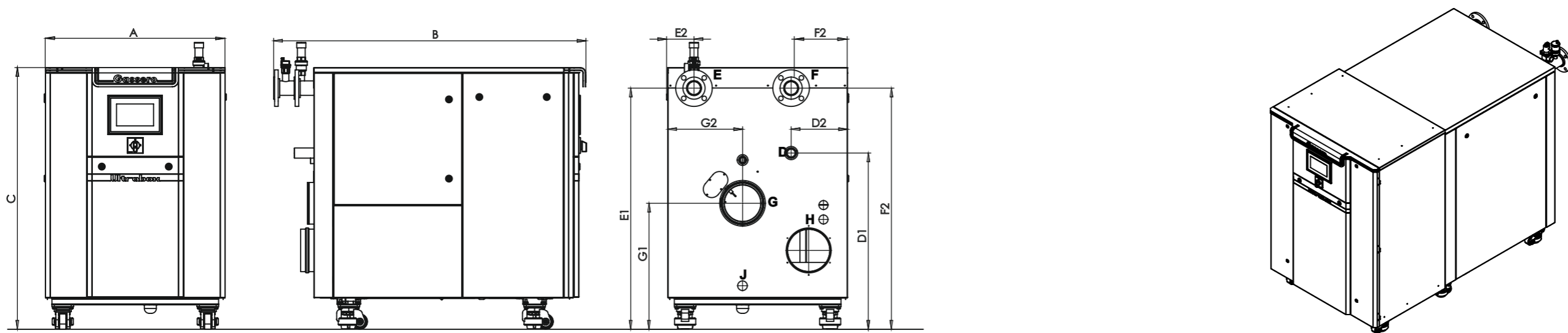


Easy access to cascade management module, monitoring of cascade operation or each individual boiler and access to fault history.



	Units	Ultrabox 800	Ultrabox 1250	Ultrabox 1500	Ultrabox 2000
<b>Boiler Type</b>	-	Condensing (H/HLW), Indoor			
<b>Heat Exchanger</b>	-	Stainless Steel			
<b>Operation Type (Air-Fuel)</b>	-	Pneumatic			
<b>Max Input Rate</b>	Mbtu/hr	824,74	1288,66	1546,39	2061,86
	kW	241,72	377,68	453,22	604,3
<b>Min Input Rate</b>	Mbtu/hr	91,64	143,18	171,82	229,1
	kW	26,86	41,96	50,36	67,15
<b>Max Output Rate</b>	Mbtu/hr	800,00	1250,00	1500,00	2000,00
	kW	234,47	366,35	439,62	586,17
<b>Min Output Rate</b>	Mbtu/hr	88,89	138,89	166,67	222,22
	kW	26,05	40,71	48,85	65,13
<b>Thermal Efficiency</b>	%	97,00	97,00	97,00	97,00
<b>Turndown Ratio</b>	-	9:1	9:1	9:1	9:1
<b>Water Flow at Max Power ( Δ36°F/20°C)</b>	GPM	45,33	70,85	85,12	113,33
	m <sup>3</sup> /h	10,30	16,09	19,33	25,74
<b>Hydraulic Pressure Drop at Max Power ( Δ36°F/20°C)</b>	Ft. Head	5,0	7,5	8,0	8,2
	m	1,5	2,3	2,4	2,5
<b>Boiler Water Volume</b>	Gallons	6,6	11,0	12,9	19,8
	l	24,8	41,5	48,9	74,8
<b>Max Allowable Water Pressure</b>	PSI	160			
	bar	11			
<b>Safety Relief Valve Pressure (Standart)</b>	PSI	75			
	bar	5,17			
<b>Limit Thermostat Temperature</b>	°F	203			
	°C	95			
<b>Max Operating Temperature</b>	°F	185			
	°C	85			
<b>Operating Conditions</b>	-	14-122 °F ambient temperature, 90% relative humidity			
<b>Fuel Type</b>	-	Natural Gas, Propane			
<b>Natural Gas Pressure min/max</b>	Inch W.C	4/14			
	mbar	10/35			
<b>Propane Pressure min/max</b>	Inch W.C	4/14			
	mbar	10/35			
<b>Flue Type</b>	-	Sealed Combustion Direct Vent, Category IV			
<b>Allowed Flue Vent Materials</b>	-	CPVC, PVC, PP, Stainless steel			
<b>Electrical Supply</b>	-	120 V 60 Hz			208/3PH WYE 60 Hz
<b>Flue Gas Outlet</b>	inches	6	8	8	8
	mm	150	200	200	200
<b>Combustion Air Inlet</b>	inches	6	8	8	8
	mm	150	200	200	200
<b>Packaged Width</b>	inches	38,2	47,6	47,6	47,6
	mm	970	1210	1210	1210
<b>Packaged Depth</b>	inches	59,4	71,3	76,4	84,3
	mm	1510	1810	1940	2140
<b>Packaged Height</b>	inches	61,8	73,6	73,6	73,6
	mm	1570	1870	1870	1870

	ULRTABOX 800		ULRTABOX 1250		ULRTABOX 1500		ULRTABOX 2000	
	MILLIMETER	INCHES	MILLIMETER	INCHES	MILLIMETER	INCHES	MILLIMETER	INCHES
<b>A</b> (Width)	748mm	29.44"	990mm	38.97 "	990mm	38.97 "	990mm	38.97 "
<b>B</b> (Length)	1300mm	51.18"	1630mm	64.17"	1750mm	68.89"	1955mm	76.96"
<b>C</b> (Height)	1090mm	42.91"	1410mm	55.51"	1410mm	55.51"	1410mm	55.51"
<b>D</b> (Gas inlet)	NPT 2"	NPT 2"	NPT 2"	NPT 2"	NPT 2"	NPT 2"	NPT 2"	NPT 2"
<b>D1</b>	735mm	28.93"	940mm	37"	940mm	37"	940mm	37"
<b>D2</b>	235mm	9.25"	220mm	8.66"	220mm	8.66"	220mm	8.66"
<b>E</b> (Water outlet conn.)	2"LB150 FLAN.	2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.
<b>E1</b>	1005mm	39.56"	1275mm	50.19"	1275mm	50.19"	1275mm	50.19"
<b>E2</b>	115mm	4.52"	165mm	6.49"	165mm	6.49"	165mm	6.49"
<b>F</b> (Water inlet conn.)	2"LB150 FLAN.	2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.	2 1/2"LB150 FLAN.
<b>F1</b>	1005mm	39.56"	1275mm	50.19"	1275mm	50.19"	1275mm	50.19"
<b>F2</b>	240mm	9.44"	165mm	6.49"	165mm	6.49"	165mm	6.49"
<b>G</b> (Flue diameter)	Ø150mm	6"	Ø200mm	8"	Ø200mm	8"	Ø200mm	8"
<b>G1</b>	525mm	20.66"	708mm	27.87"	708mm	27.87"	708mm	27.87"
<b>G2</b>	312mm	12.28"	416mm	16.45"	416mm	16.45"	416mm	16.45"
<b>H</b> (Air intake)	Ø150mm	6"	Ø200mm	8"	Ø200mm	8"	Ø200mm	8"
<b>H1</b> (Air filter size)	280x300x20mm	11.02"x11.81"x0.78"	292x595x45mm	11.49"x23.42"x1.77"	292x595x45mm	11.49"x23.42"x1.77"	292x595x45mm	11.49"x23.42"x1.77"
<b>J</b> (Condensate drain)	Ø40	1.57"	Ø40	1.57"	Ø40	1.57"	Ø40	1.57"



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ENVIRONMENT-FRIENDLY



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