



CONDENSING **COMMERCIAL** **BOILERS**

PRODUCT GUIDE



Ideal Commercial Heating is the **UK's market leader** of high efficiency commercial heating solutions.

Operating from our Hull manufacturing plant and offices since 1906, we are one of the few true British manufacturers left in the heating industry. All the years of experience we have of designing and manufacturing commercial boilers for the UK market has gone into today's condensing commercial boiler range. Whether a wall hung or floor standing solution is required, you will be specifying a product that comes with over 120 years of knowledge and skill, as standard.

GET A **QUOTE**
TODAY



SCAN
ME



2	Introduction
4 - 11	Evomax 2 30 - 150kW
12 - 31	Evomax 2 cascade
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Free
commissioning



British
built



Industry
trusted

EVOMAX 2

30 - 150kW



impro



EVOMAX®

covered

EVOMAX 2

30 - 150kW

Available in outputs of 30, 40, 60, 80, 100, 120 and 150kW, Evomax 2 is designed to ensure all installation requirements can be achieved. There is also an LPG Evomax range from 30 to 120kW for off mains installations.



Free commissioning



BIM



NOx
class 6



Flueing
options



Cascade
control

FEATURES AND BENEFITS

- Robust cast aluminium silicon alloy heat exchanger
- NOx <40mg/kWh (Class 6) for all natural gas models
- High 5:1 turndown
- Up to 99.6% full load efficiency
- Up to 110% part load efficiency
- Exactly the same compact footprint as Evomax, allowing for easy like for like replacement
- Dynamic control menu set up
- Cascade controls option
- Easy servicing; 3 sides removable
- Built in, serviceable flue Non-Return Valve
- Capable of operating at up to 30° ΔT



A

Applies to Evomax 2 30, 40 and 60kW models only.

DIMENSIONS AND CLEARANCES

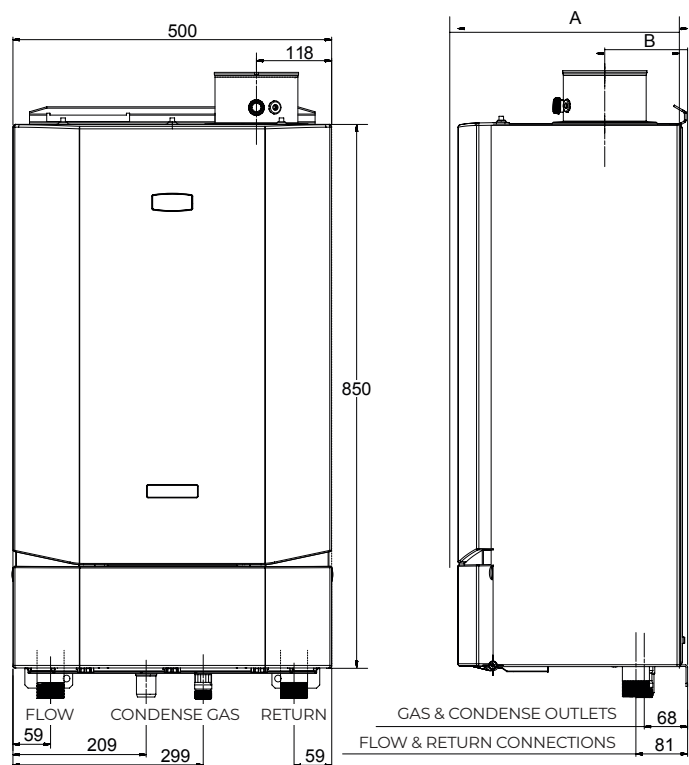
BOILER	DIM A	DIM B
30, 40, 60, 80	360	130
100, 120	520	226
150	610	233

All dimensions in mm

The following minimum clearances must be maintained for operation and servicing:



CLEARANCE BETWEEN MULTIPLE BOILER INSTALLATIONS: **25mm**



BOILER ASSEMBLY INTERNAL VIEW (40kW MODEL SHOWN)

KEY

1. Auto air vent
2. Burner fixings
3. Fan
4. Gas valve
5. Venturi
6. Flow thermistor
7. Ignitor unit
8. Electrode detection
9. Ignition electrode
10. Water pressure sensor

PERFORMANCE DATA

EVOMAX 2 30 - 150kW (Natural Gas)

MODEL			30	40	60	80	100	120	150
Boiler output (non-condensing) Mean 70°C	Max	kW	30	40	60	80	100	120	150
	Min	kW	6	8	12	16	20	24	30
Boiler output (condensing) Mean 40°C	Max	kW	31.5	42.0	63.5	84.4	103.9	124.7	158
	Min	kW	6.5	8.5	12.7	17.2	21.6	26.0	32.5
Boiler input max rate	Net	kW	30.4	40.5	60.8	82.0	102.4	122.9	153.7
	Gross	kW	33.7	44.9	67.4	90.9	113.6	136.4	170.5
Boiler input min rate	Net	kW	6.1	8.1	12.2	16.4	20.5	24.6	30.7
	Gross	kW	6.7	9.0	13.5	18.2	22.7	27.3	34.1
Gas rate	Max rate	m³/hr	3.2	4.3	6.4	8.7	10.8	13.0	16.2
Flue gas flow rate	Max Rate	m³/hr	41.30	54.05	80.65	110.10	140.50	173.33	210.70
CO ₂ (±0.5%)	Max Rate	%	9.76	10.20	9.40	9.30	9.40	9.62	9.44
	Min Rate	%	8.56	8.60	8.60	8.70	8.60	8.98	8.51
NOx with O ₂ = 0% (gross) (BS EN 15502-1)	Weighted	mg/kWh	34.1	33.2	35.2	34.9	34.8	33.9	35.7
Efficiency	Seasonal	%	96.7	96.2	96.4	97.2	96.7	96.6	96.7
	*SEDBUK 2009	%	89.6	89.3	89.4	n/a	n/a	n/a	n/a

EVOMAX 2 30 - 120kW (LPG)

MODEL			30P	40P	60P	80P	100P	120P
Boiler output (non-condensing) Mean 70°	Max	kW	30	40	60	80	100	120
	Min	kW	6	8	12	16	20	24
Boiler output (condensing) Mean 40°C	Max	kW	30.9	41.2	62.1	82.6	101.7	123.3
	Min	kW	6.4	8.3	12.4	16.8	21.3	25.7
Boiler input max rate	Net	kW	30.4	40.5	60.7	81.9	102.4	122.9
	Gross	kW	33	44	66	88.9	111.2	133.4
Boiler input min rate	Net	kW	6.1	8.1	12.0	16.2	20.5	24.6
	Gross	kW	6.6	8.8	13.1	17.5	22.2	26.7
Gas rate	Max rate	m³/hr	1.26	1.69	2.53	3.41	4.35	5.23
Flue gas flow rate	Max Rate	m³/hr	44.09	61.68	88.66	121.57	153.60	183.81
CO ₂ (±0.5%)	Max Rate	%	10.9	11.2	11.4	11.4	10.8	11.2
	Min Rate	%	10.3	9.7	10.2	10.8	10.1	10.1
NOx with O ₂ = 0% (gross) (BS EN 15502-1)	Weighted	mg/kWh	52.3	64.4	67.7	63.2	65.3	41.6
Efficiency	Seasonal	%	97.2	96.7	96.9	97.7	96.7	96.6
	*SEDBUK 2009	%	90.6	90.3	90.5	n/a	n/a	n/a
Operating temperature	Max	°C	85					

GENERAL DATA

EVOMAX 2 30 - 150kW (Natural Gas and LPG)

MODEL		30/30P	40/40P	60/60P	80/80P	100/100P	120/120P	150
Gas supply		2H - G20 - 20mbar / 3P - G31 - 37mbar						
Gas supply connection		G ¾"						
Flow connection		G1 ¼"						
Return connection		G1 ¼"						
Max pressure (sealed system)	Bar (psi)	6						
Maximum static head	m	61						
Electricity supply		230V - 50Hz						
Fuse rating	A	4.0						
Power consumption	W	81	138	82	149	187	243	240
Ip rating		IPX4D						
Nominal flue size (concentric)	mm	80/125*				100/150		
Condensate drain	mm	25						
Water content	l	3.0		5.0		7.0		9.2
Dry weight	Kg	47.5		57.5		73		81
Weighted sound power level	dBA	55.2	57.7	59	59.9	62	62	59

*Optional kit available on 60kW and 80kW models for 100/150mm flue

INCLUDED AS STANDARD

BOILER	EVOMAX 2
Remote indication (run and alarm)	✓
Hours run	✓
BMS (0-10v) operation	✓
Pump overrun	✓
Large backlit LCD controls, including 5 line plain text display	✓
Dynamic control menu set up	✓

OPTIONAL KITS

BOILER	EVOMAX 2
Multi boiler frame and header kits (see pages 16-19)	✓
Varican Module Master Kit	✓
Varican Module Slave Kit	✓
Extension Module Kit	✓
OPENTHERM Room Control Kit	✓
Room Sensor Kit	✓
Tank Sensor Kit	✓
Outside Sensor Kit	✓
Header Flow Tank Immersion Sensor Kit	✓
Header Flow Tank Strap On Sensor Kit	✓
Safety Interlock Kit	✓
0-10V Pump Control Kit	✓
Condensate pump	✓

SUGGESTED ENGINEERING SPECIFICATION

The Suggested Engineering Specification is wording designed for specifiers to copy and paste into their specifications to ensure inclusion of Ideal Heating commercial boilers.

OVERVIEW

The boilers must be fully automatically controlled, wall mounted, fanned, super-efficient condensing appliances utilising an aluminium silicon alloy heat exchanger and be suitable for connection to fully pumped open vented or sealed water systems.

CONTROLS

The condensing boilers must have connectivity for all common types of BMS integration including 0-10v, volt free and OpenTherm connections. Additional modules may be used for BACnet, LONWorks and MODBus gateways. Where no BMS is present a modulating sequencer must be available.

The boiler must be fully modulating with a 5:1 turndown ratio and include control features enabling set point adjustment, heating circuit control of one constant temperature and one DHW circuit or 2 constant temperature circuits, and safety lock out parameters including fault diagnosis for both boiler and external components such as sensors or pumps.

Boiler capabilities must include, with the use of external components, frost protection, weather or room compensation and system pump control.

FLUE

The condensing boilers must be suitable for use with a room sealed flue or open flue applications including C13, C33 and B23 classifications. The combined flue outlet and air inlet must be situated on the top of the boiler.

HYDRAULIC

The condensing boiler must be and be suitable for connection to fully pumped open vented or sealed water systems. All hydraulic connections including flow return and condensate drain must be located on the bottom of the boiler. Hydraulic connections must be uniform across the outputs available in the range to ensure ease of installation and maintenance in mixed output cascades. The boiler must have a maximum operating pressure of 6 bar and be suitable for heating and indirect hot water systems.

DIMENSIONS

The condensing boiler range must have a universal compact width and height across the range to ensure mixed output cascades maintain the same universal configuration. Maximum permitted wall area of 0.43m².

MOUNTING

The condensing boilers can be installed either on the wall or into a prefabricated floor mounted frame. Wall brackets must be located at the top of the boiler and visible from the front to aid installation.

EFFICIENCY

The condensing boilers are capable of high seasonal efficiencies with a minimum requirement of 96.2% and low NOx emissions no greater than 39.8mg/kWh for natural gas and 80mg/kWh for LPG.

30, 40 and 60kW models must have a Seasonal Space Heating Energy Efficiency of A.

APPROVALS

The boiler must be tested and certified to EN 483, EN 677, PREN 15420, BS EN 15502, BS EN 656, BS EN 55014-1 and BS EN 55014-2 for use with Natural Gas. Boilers are certified to meet the requirements of the EC Gas Appliance Directive, Boiler Efficiency Directive, EMC and Low Voltage Directive.

The manufacturer must be ISO 9001 accredited.

SPECIFICATION

- The 30kW boiler will be capable of flow rates for common systems using either 11°C, 15°C, 20°C or 25°C temperature differentials.
- The 40, 60 and 80kW boiler will be capable of flow rates for common systems using either 11°C, 15°C, 20°C, 25°C or 30°C temperature differentials.
- The 100kW boiler will be capable of flow rates for common systems using either 15°C, 20°C, 25°C or 30°C temperature differentials.
- The 120 and 150kW boiler will be capable of flow rates for common systems using either 20°C, 25°C or 30°C temperature differentials.

SOURCING

The condensing boiler must be manufactured or finally assembled in the United Kingdom.

CASCADE

The boiler must be configurable up to 6 boilers (max 900kW) in cascade using a prefabricated frame and header kit.

WARRANTY

The boiler must be available with a 5 year warranty.

SYSTEM TEMPERATURE DIFFERENTIALS

Flow rates for common systems using either 11°C, 15°C, 20°C, 25°C or 30°C temperature differentials are given in the table below.

BOILER	FLOW RATE (L/MIN)					HYDRAULIC RESISTANCE (MBAR)				
	11°C	15°C	20°C	25°C	30°C	11°C	15°C	20°C	25°C	30°C
Evomax 2 30 / 30P	39.1	28.7	21.5	17.9	N/A	425	225	127	89	N/A
Evomax 2 40 / 40P	52.1	38.2	28.7	23.9	19.1	875	405	225	163	100
Evomax 2 60 / 60P	78.2	57.3	43.0	35.9	28.7	435	180	83	57	30
Evomax 2 80 / 80P	104.2	76.4	57.3	47.8	38.2	750	420	180	125	70
Evomax 2 100 / 100P	N/A	95.6	71.7	59.8	47.8	N/A	315	134	97	60
Evomax 2 120 / 120P	N/A	N/A	86.0	71.7	57.3	N/A	N/A	218	149	80
Evomax 2 150	N/A	N/A	107.5	89.6	71.7	N/A	N/A	230	158	85

- 30kW boilers must operate with temperature differentials from 11°C to 25°C.
- 40, 60 and 80kW boilers must operate with temperature differentials from 11°C to 30°C.
- 100kW boilers must operate with temperature differentials from 15°C to 30°C.
- 120 and 150kW boilers must operate with temperature differentials from 20°C to 30°C.

CONTROL KITS

VARICAN MODULE MASTER and SLAVE KITS

Enables cascade control from Evomax 2 boiler controls

EXTENSION MODULE KIT

Capable of managing 2 mixing circuits. Multiple modules can be used

OPENTHERM ROOM CONTROL KIT

Timed control of central heating via OPENTHERM

ROOM SENSOR KIT

Used with Extension Module Kit for CH control

TANK SENSOR KIT

Provides DHW temperature control. Also for use with Extension Module Kit

OUTSIDE SENSOR KIT

Provides weather compensation directly or with Extension Module Kit

HEADER FLOW TANK IMMERSION SENSOR KIT

Ensures boiler provides correct temperature to water in header via immersed sensor

HEADER FLOW TANK STRAP ON SENSOR KIT

Ensures boiler provides correct temperature to water in header via external sensor

SAFETY INTERLOCK KIT

Provides boiler shut down via an external signal

FLUE SYSTEMS

A comprehensive range of flue kits are available from Ideal Heating including horizontal and vertical concentric and open flue options.

For horizontal flues: this is the distance from the flue outlet centre line on the boiler to the outside wall.

For vertical flue: this is the distance from the top of the boiler case to the aperture in the weather collar. If elbows are to be used, then the equivalent length of that fitting must be subtracted from the maximum flue extensions allowed for that flue option.

Note: Horizontal terminal resistance includes 1 x 90° elbow.

When installing Evomax 2 boilers with concentric flue (horizontally or vertically) the Ideal commercial flue system must be used.

The resistance of flue components, together with the maximum flue resistance each boiler can work against, may be used to calculate the total flue resistance of the system, and to determine if they are acceptable to run on the boiler. Multiple boilers may be installed with a common flue header.

The flue system should be designed and supplied by a specialist flue company. BS 6644 and IGEM UP10 provide guidance on design and the drainage of condensate from flue stack and headers. Condensate from a flue stack and header must be collected and drained before entering the boiler.

For Ventilation requirements, please refer to the Installation Manual.

EVOMAX 2 CASCADE

30 - 900kW



Cascade
control



EVOMAX 2 CASCADE



Frame and Header Kits

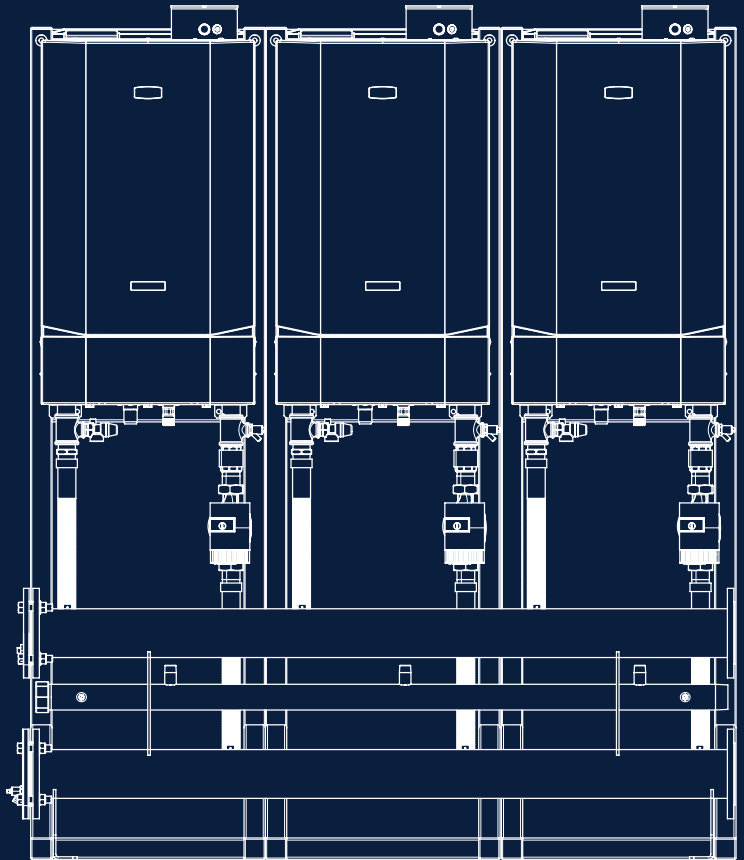
For installations requiring more output delivered in a flexible way, up to 6 Evomax 2 boilers can be installed in a cascade. An output of up to 900kW is possible with this modular option which is available in both Inline (Standard and Low Height) and Back to Back arrangements.

Our online Cascade Configurator makes sure you have everything you need for cascade arrangements. By answering some simple questions about the installation, the tool will list all the products needed for that cascade; download as a PDF or have it emailed directly to you for maximum convenience.

Scan the QR code below to use the tool.



SCAN
ME



CHOOSING WHAT YOU NEED IS STRAIGHTFORWARD:

Choose frames: select Standard or Low Height Frames, or mount on a wall

Choose a header: select an Inline or Back to Back configuration for the total number of boilers in the cascade

Choose hydraulic separation: select Plate Heat Exchanger, Magentic Low Loss Header or Low Loss Header

Choose pumps: select the relevant pump for your cascade

Choose insulation: select the insulation for a Header, Separation and Pumps

A few things to bear in mind:

- A Standard Height Inline or Back to Back cascade can be for up to 6 boilers
- A Low Height Inline cascade can be for up to 4 boilers
- 1 Standard Height Frame required for each boiler in the cascade
- 1 pump required for each boiler in the cascade

The wide range of options available are detailed on the pages overleaf. Alternatively, use our online Evomax 2 Cascade Configurator tool to compile a complete list of accessories for your cascade:

idealcommercialboilers.com/evomax2-cascade-configurator

EVOMAX 2

Cascade Accessories

CHOOSE A FRAME KIT

Standard Height

Up to 6 boilers
206970

1 frame required per boiler i.e. a 6 boiler cascade requires 6 frames

Low Height Inline

Up to 4 boilers
Included with Low Height Header Kit

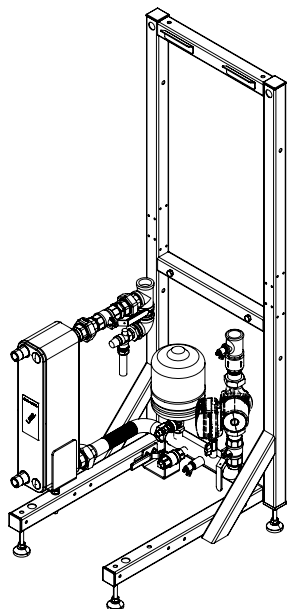
Boilers not included with Frame or Header Kits; please remember to add them to your order.

EVOMAX2 PHEX PACKAGE

234562

A complete package to allow installation of single boilers with hydraulic separation from the secondary system using a brazed plate stainless steel plate heat exchanger. The boiler side of the package includes expansion vessel, pressure gauge, pressure relief valve, filling point and drain connection. Suitable for all Evomax2 boiler models with standard operating temperatures of 85/65°C boiler side and 75/55°C secondary side. Please contact your local sales representative to discuss other operating temperature profiles.

A complete package requires an Evomax2 boiler and boiler pump to be added.



CHOOSE A HEADER KIT

Standard Height Frame, Inline boilers

2 boilers, 30 - 100kW (DN80) for PHEX & LLH
219542

2 boilers, 120 & 150kW (DN100) for PHEX & LLH
219547

3 boilers, 30 - 100kW (DN80) for w & LLH
219543

3 boilers, 120 & 150kW (DN100) for PHEX & LLH
219548

4 boilers, 30 - 150kW (DN100) for PHEX & LLH
219549

5 boilers, 30 - 100kW (DN100) for PHEX & LLH
5 boilers, 120 & 150kW (DN100), PHEX
219545

5 boilers, 120 & 150kW (DN150) for LLH ONLY
219550

6 boilers, 30 - 150kW (DN100) for PHEX
6 boilers, 30 - 100kW (DN100) for LLH
219546

6 boilers, 120 & 150kW (DN150) for LLH ONLY
219551

Standard Height Frame, Back to Back boilers

2 boilers, 30 - 150kW (DN80) for PHEX & LLH
219555

3 boilers, 30 - 150kW (DN80) for PHEX & LLH
219556

4 boilers, 30 - 150kW (DN100) for PHEX & LLH
219557

5 boilers, 30 - 150kW (DN100) for PHEX & LLH
219558

6 boilers, 30 - 150kW (DN100) for PHEX ONLY
222397

6 boilers, 30 - 150kW (DN150) for LLH ONLY
219559

Low Height Frame, Inline boiler

1 boiler, 30 - 150kW for (DN50) for PHEX & LLH
221127

2 boilers, 30 - 150kW (DN65) for PHEX & LLH
221128

3 boilers, 30 - 150kW (DN80) for PHEX & LLH
221129

4 boilers, 30 - 150kW (DN100) for PHEX & LLH
219561

Scan the QR code below to use the online tool.



EVOMAX 2
CASCADE
CONFIGURATOR

CHOOSE HYDRAULIC SEPARATION
Low Loss / Mixing Header
DN50 - 209394
DN65 - 209395
DN80 - 219552
DN100 - 219553
DN150 - 219554
Magnetic Low Loss / Mixing Header (MLLH)
DN50 - 222191
DN65 - 222192
DN80 - 222193
DN100 - 222194
Plate Heat Exchanger
Up to 60kW nominal output (DN50) 222219 Insulation Kit - 234443
Up to 60kW nominal output (DN65) 222993 Insulation Kit - 234443
Up to 60kW nominal output (DN80) 222220 Insulation Kit - 234444
Up to 150kW nominal output (DN50) 222221 Insulation Kit - 234445
Up to 150kW nominal output (DN65) 222994 Insulation Kit - 234445
Up to 150kW nominal output (DN80) 222222 Insulation Kit - 234446
Up to 300kW nominal output (DN65) 222223 Insulation Kit - 234447
Up to 300kW nominal output (DN80) 222225 Insulation Kit - 234447
Up to 300kW nominal output (DN100) 222995 Insulation Kit - 234448
Up to 450kW nominal output (DN80) 222226 Insulation Kit - 234449

Plate Heat Exchanger
Up to 450kW nominal output (DN100) 222996 Insulation Kit - 234449
Up to 600kW nominal output (DN100) 222227 Insulation Kit - 234450
Up to 750kW nominal output (DN100) 242216 Insulation Kit - 246284
Up to 900kW nominal output (DN100) 242217 Insulation Kit - 246285

CHOOSE PUMPS
Low Loss / Mixing Header Chosen
Grundfos UPM10L (M) LLH pump kit 222659
Plate Heat Exchanger Chosen*
Grundfos UPM20M PHEX pump kit 252584
No Separation Chosen
Grundfos UPM20M PHEX pump kit 252584

* Recommended for use on 150kW boiler models regardless of separation type.

If using a Low Loss Header or Plate Heat Exchanger not from Ideal Heating please contact your local Ideal Heating Commercial sales representative.

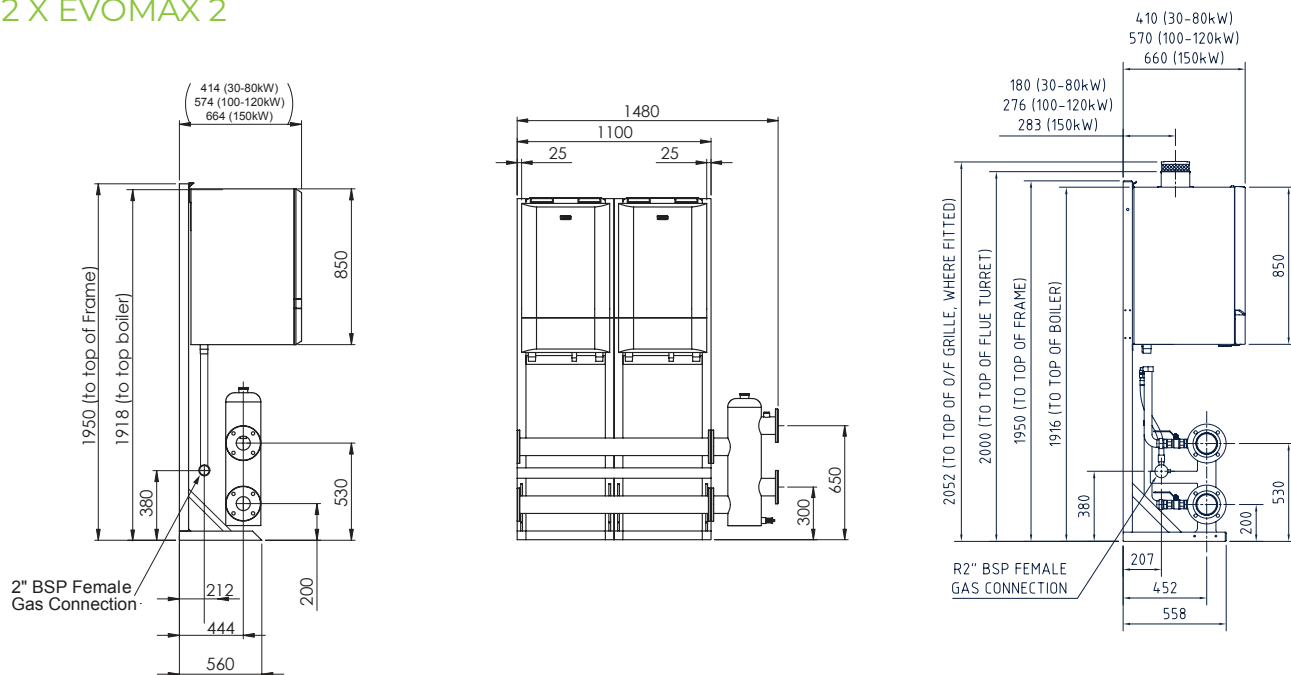
CHOOSE INSULATION
For Standard Height Header Kits
DN80/100 Starter Kit 222960
DN80/100 Continuation Kit 222961
DN80/100 Joined Header Kit 222962
For Low Height Header Kits
DN50 Starter Kit 223032
DN65 Starter Kit 223035
DN65 Continuation Kit 223036
DN80/100 Starter Kit 223038

For Low Height Header Kits
DN80/100 Continuation Kit 223039
DN80/100 Joined Header Kit 223040
For Low Loss and Magnetic Low Loss Header
DN50 (M)LLH Insulation Kit 222963
DN65 (M)LLH Insulation Kit 222964
DN80/100 (M)LLH Insulation Kit 222965
For Grundfos UPM10L (M)LLH Pump Kit
(M)LLH Pump Insulation Kit 222894

ADDITIONAL HYDRAULIC ACCESSORIES
Flexible Gas Pipe Standard Height for fitting Evomax 2 on Evomax rig 219563
Flexible Gas Pipe Low Height for fitting Evomax 2 on Evomax rig 219564
Flexible Gas Pipe Back to Back for fitting Evomax 2 on Evomax rig 219565
Pipe Connections to 1.5" Pump 219536
Butterfly valves for MLLH (2 pack) DN50 222123
Butterfly valves for MLLH (2 pack) DN65 222124
Butterfly valves for MLLH (2 pack) DN80 222125
Butterfly valves for MLLH (2 pack) DN100 222126
Pump Union Kit for using Grundfos pumps without Ideal Frame & Header kits 225544

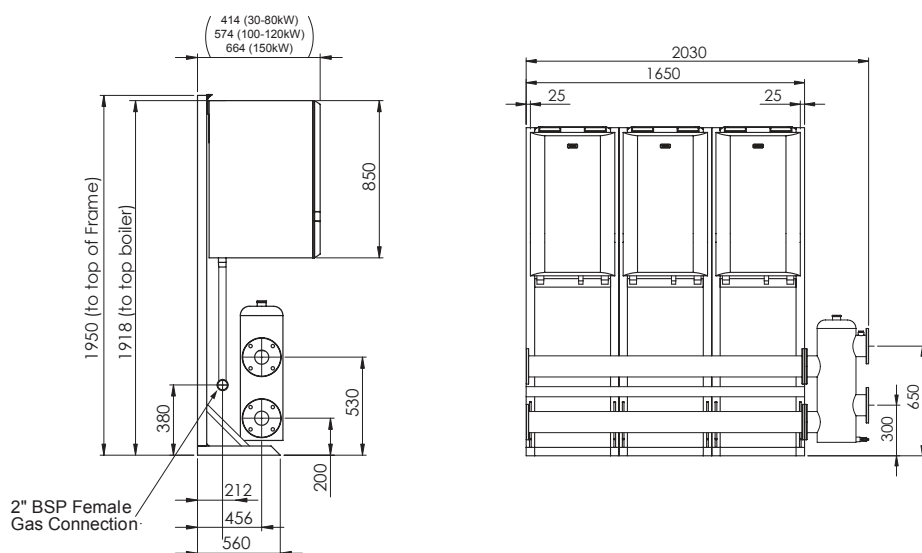
STANDARD HEIGHT INLINE CASCADES

2 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219542	DN80	2 x Evomax 2 boilers, 30 – 100kW with PHEX or (M)LLH separation
219547	DN100	2 x Evomax 2 boilers, 120 and 150kW with PHEX or (M)LLH separation

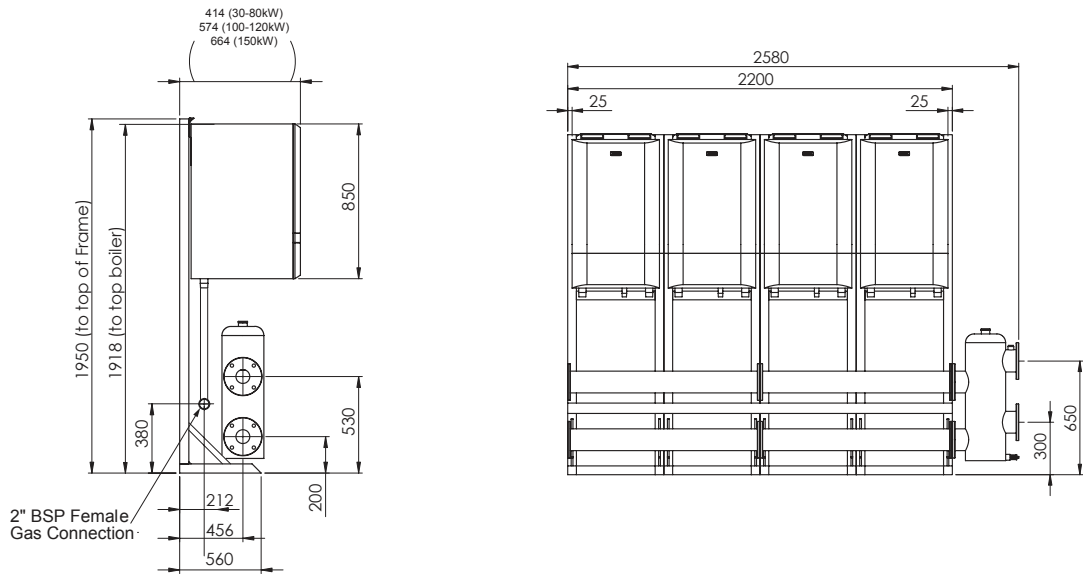
3 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219543	DN80	3 x Evomax 2 boilers, 30 – 100kW with PHEX or (M)LLH separation
219547	DN100	3 x Evomax 2 boilers, 120 and 150kW with PHEX or (M)LLH separation

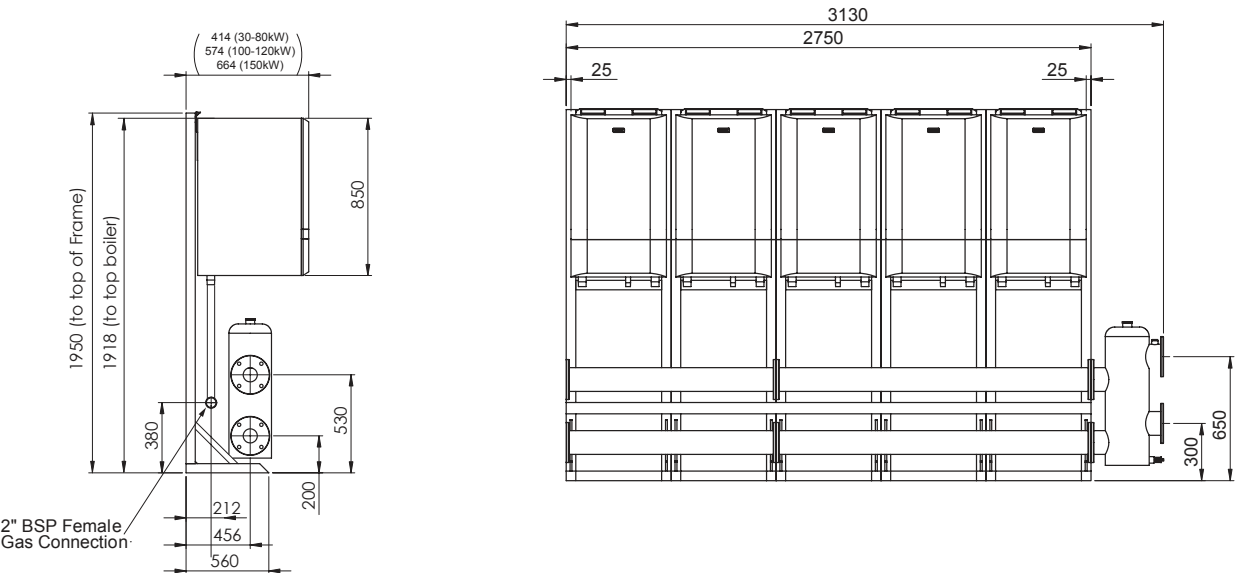
STANDARD HEIGHT INLINE CASCADES

4 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219549	DN100	4 x Evomax 2 boilers, 30 – 150kW with PHEX or (M)LLH separation

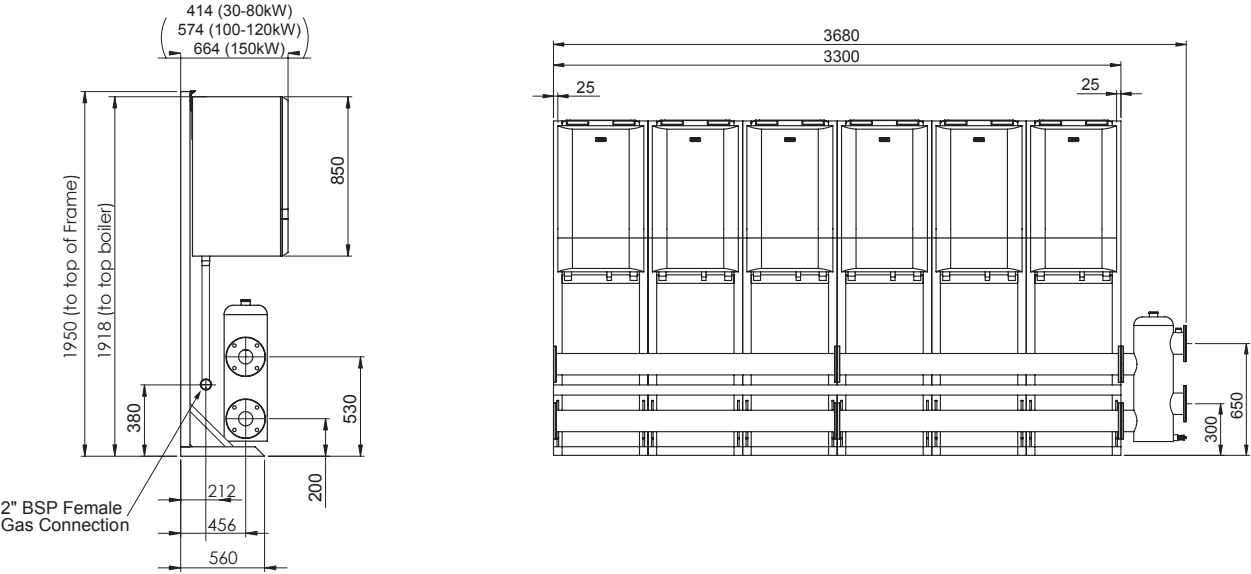
5 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219545	DN100	5 x Evomax 2 boilers, 30 – 150kW with PHEX separation 5 x Evomax 2 boilers, 30 – 100kW with (M)LLH separation
219547	DN150	5 x Evomax 2 boilers, 120 and 150kW with LLH separation

STANDARD HEIGHT INLINE CASCADES

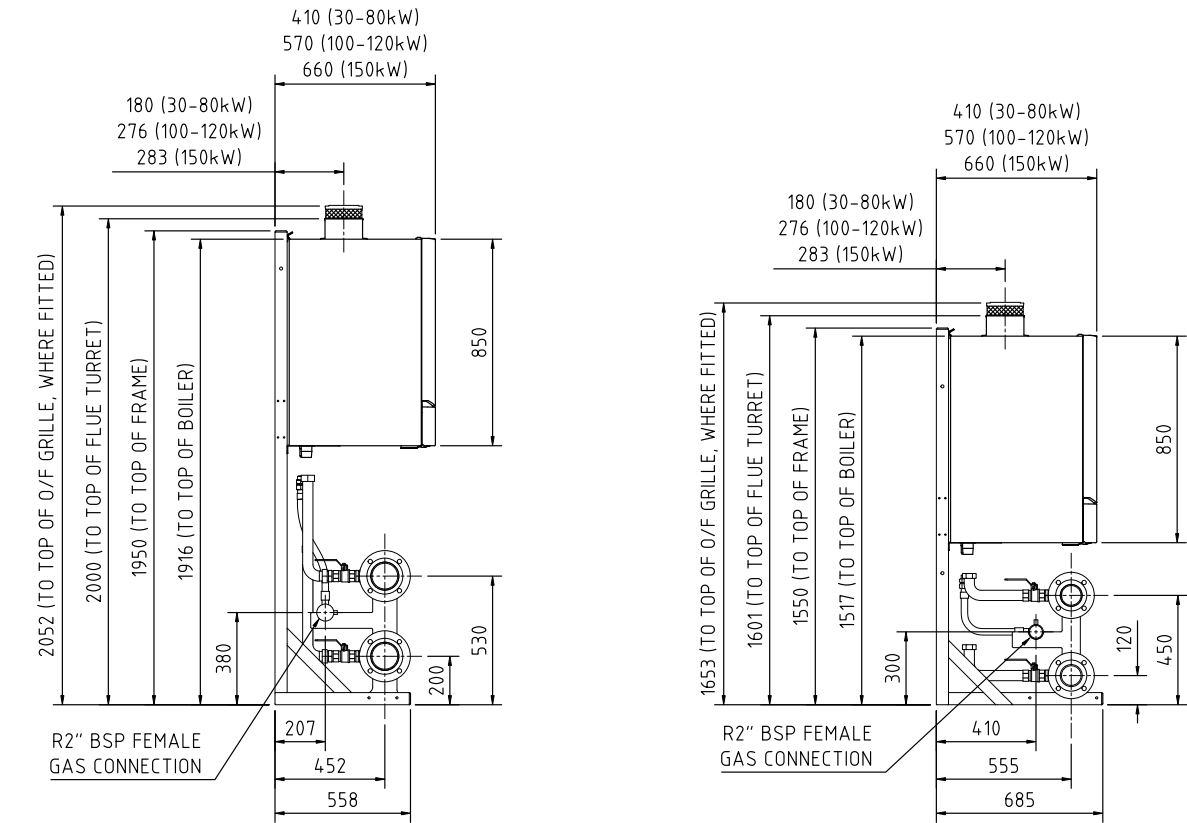
6 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219546	DN100	6 x Evomax 2 boilers, 30 – 150kW with PHEX separation 6 x Evomax 2 boilers, 30 – 100kW with (M)LLH separation
219551	DN150	6 x Evomax 2 boilers, 120 and 150kW with LLH separation

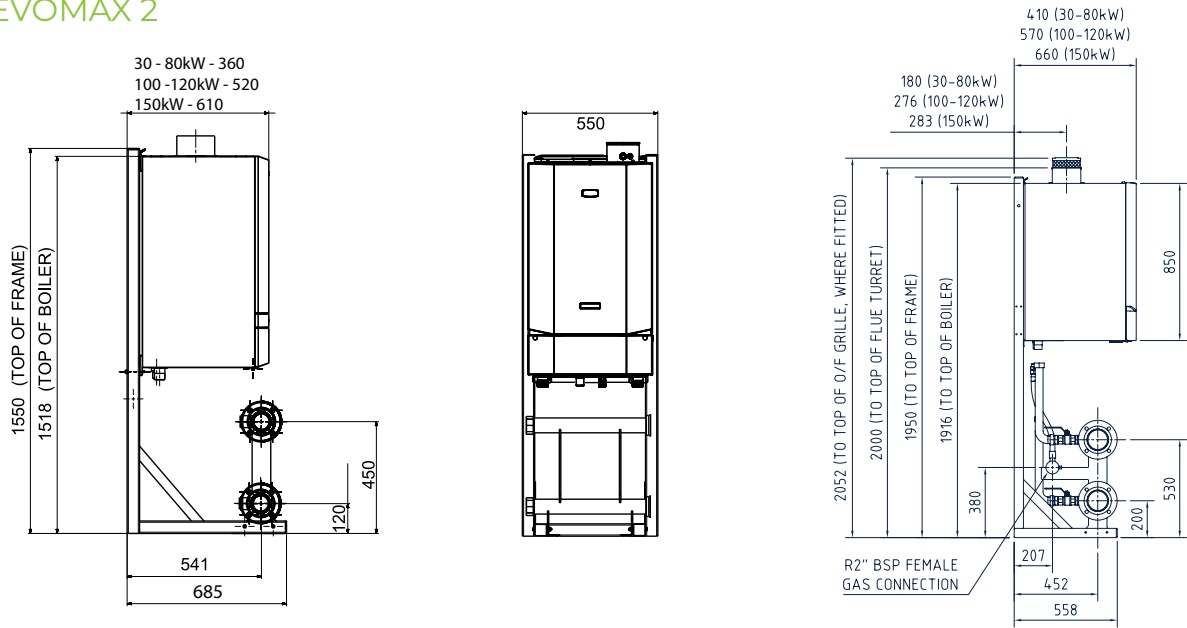
STANDARD HEIGHT

LOW HEIGHT



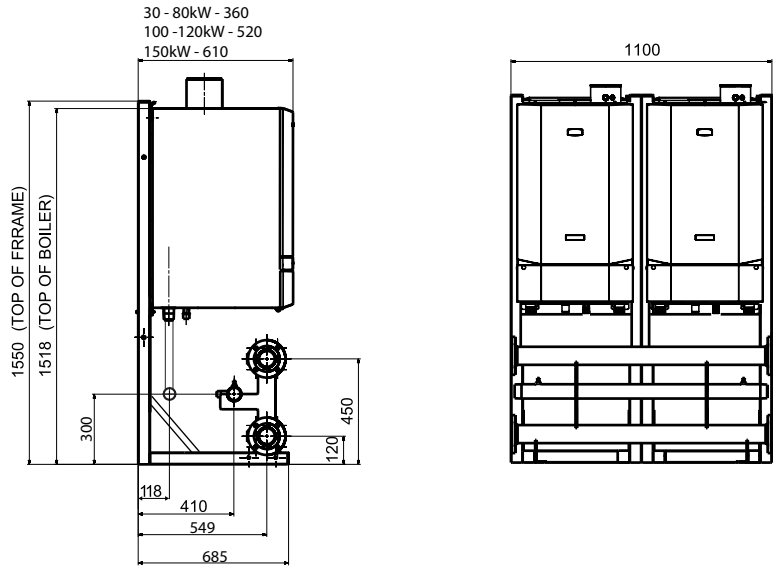
LOW HEIGHT INLINE CASCADES

1 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
221127	DN50	1 x Evomax 2 boilers, 30 – 150kW with PHEX or (M)LLH separation

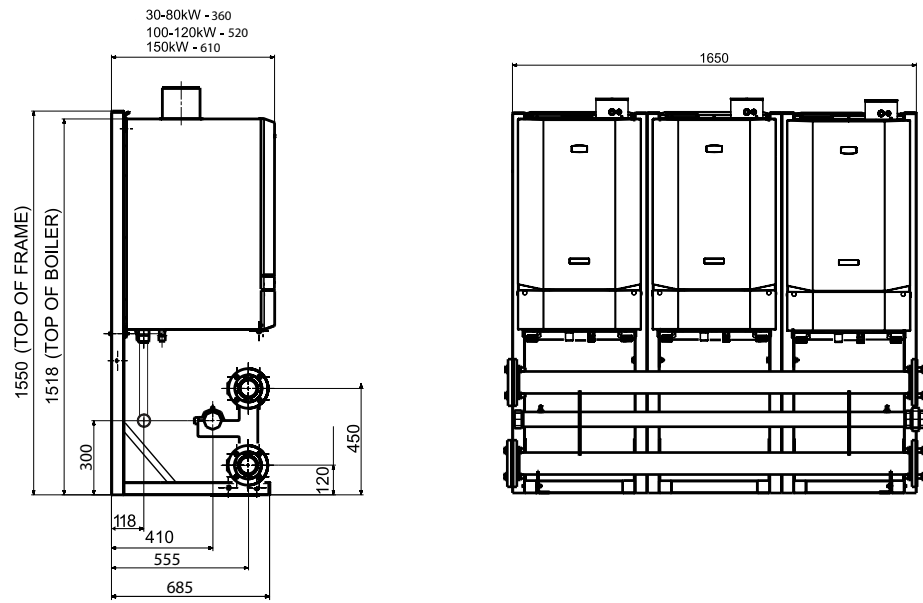
2 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
221128	DN65	2 x Evomax 2 boilers, 30 – 150kW with PHEX or (M)LLH separation

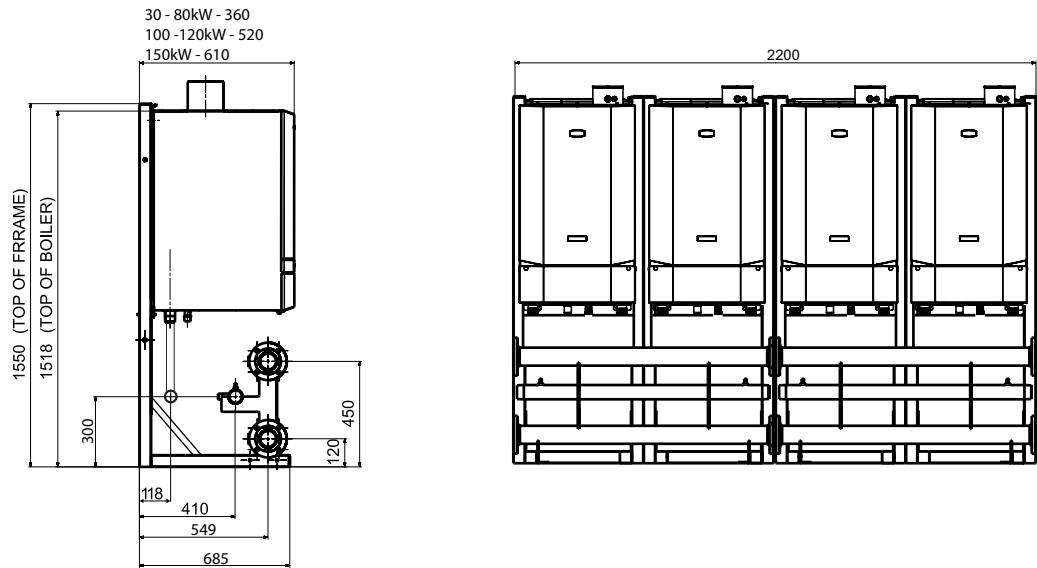
LOW HEIGHT INLINE CASCADES

3 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
221129	DN80	3 x Evomax 2 boilers, 30 – 150kW with PHEX or (M)LLH separation

4 X EVOMAX 2



UIN	DN FLANGE SIZE	SUITABLE FOR
219561	DN100	4 x Evomax 2 boilers, 30 – 150kW with PHEX or (M)LLH separation

Note: all flanges on boiler headers are PN6.

All cascade arrangements are designed around boiler operation with a temperature differential of 20°C. Please consult your local sales representative to confirm alternative operating conditions.

HYDRAULIC SEPARATION

Ideal Heating offer various solutions to hydraulic separation

PLATE HEAT EXCHANGER



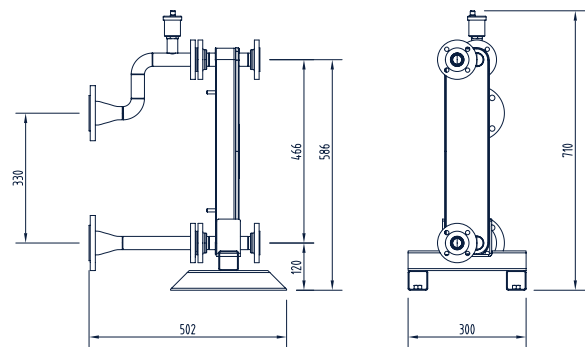
Covering outputs of 60, 150, 300, 450, 600, 750 and 900kW. Brazed Plate Heat Exchangers ensure optimum heat transfer efficiency and low resistance within a compact footprint. To be used with Ideal Heating Frame and Header kits.

FEATURES AND BENEFITS

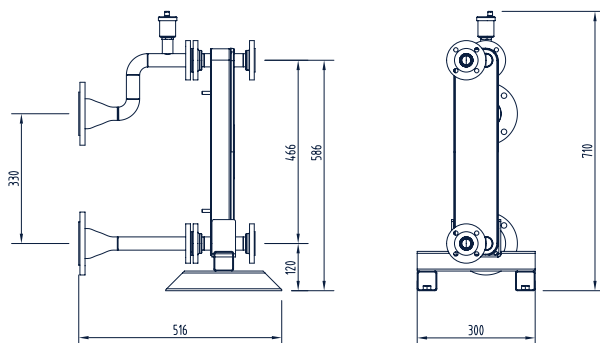
- Compact design
- No gaskets
- Low maintenance and self-cleaning
- All units are pressure tested
- To be used with Ideal Heating Frame and Header kits
- Ensures optimal heat transfer efficiency and pressure resistance
- Separates system water from the boiler
- Ensures the highest performance for longest possible service life

UP TO 60KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

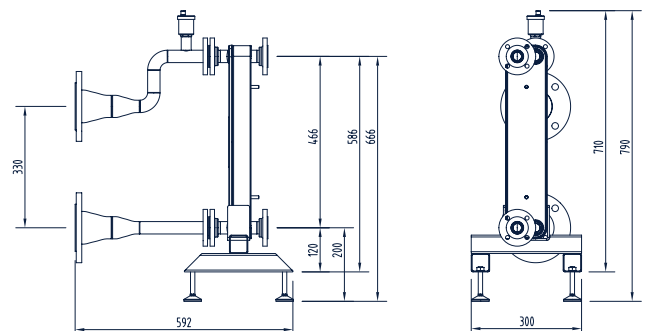
UIN	HEADER SIZE
222219	DN50
222993	DN65
222220	DN80



222219 DN50



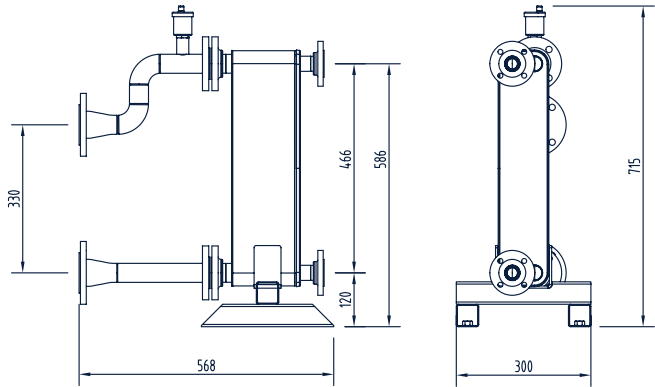
222993 DN65



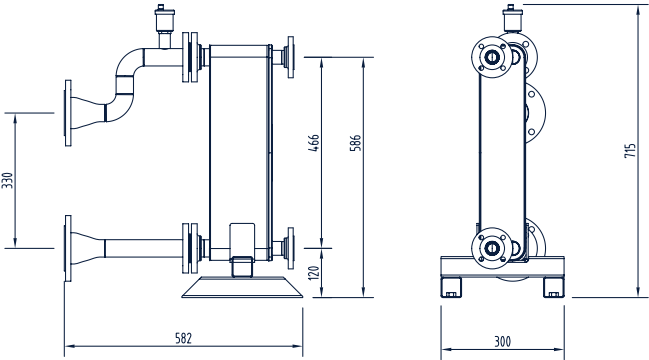
222220 DN80

UP TO 150KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

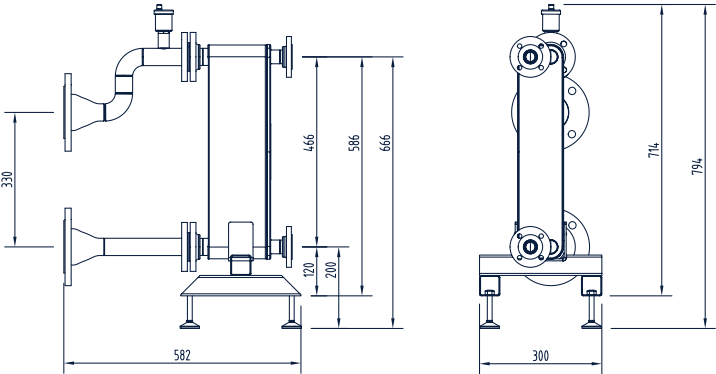
UIN	HEADER SIZE
222221	DN50
222994	DN65
222222	DN80



222221 DN50



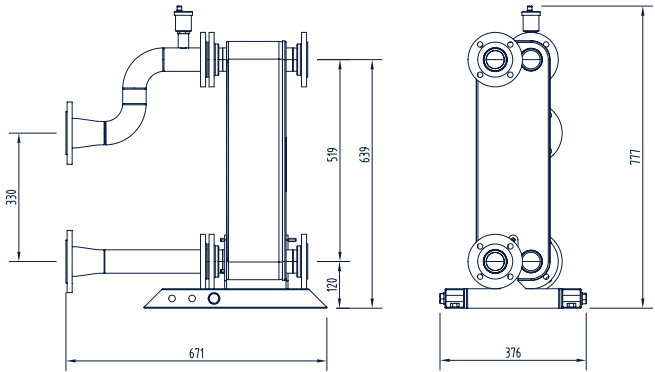
222222 DN80



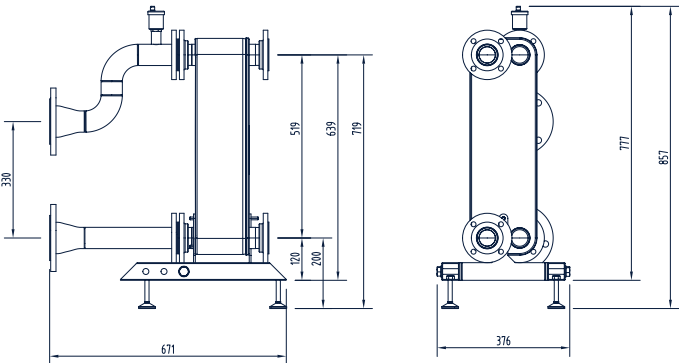
222994 DN65

UP TO 300KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

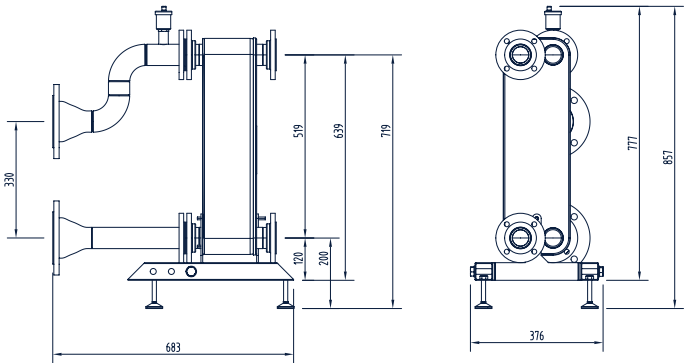
UIN	HEADER SIZE
222223	DN50
222225	DN80
222995	DN100



222223 DN65



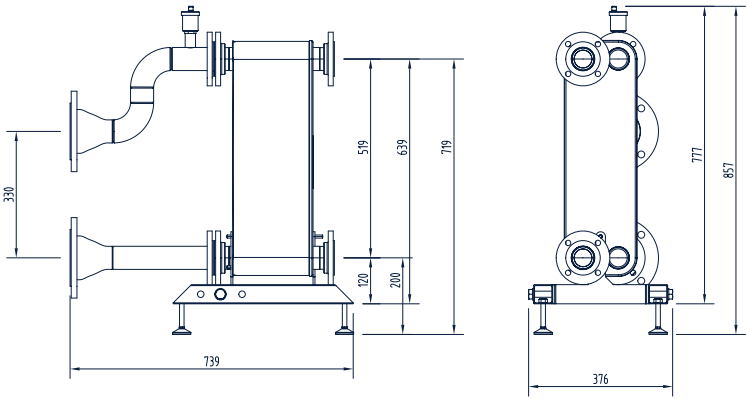
222225 DN80



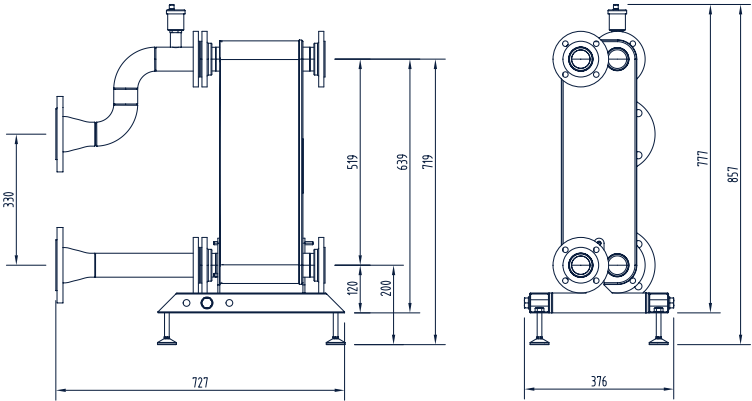
222995 DN100

UP TO 450KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

UIN	HEADER SIZE
222226	DN80
222996	DN100



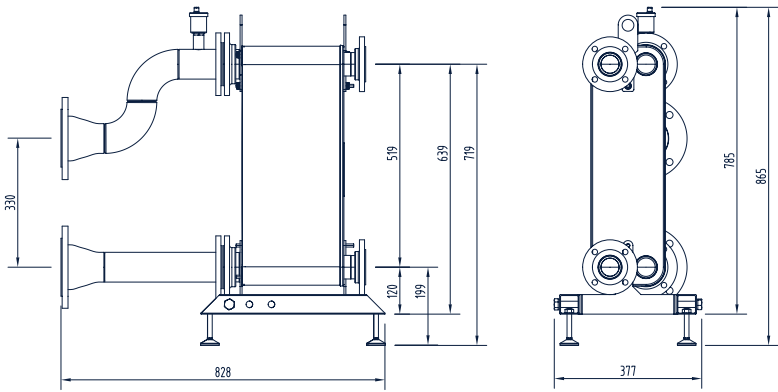
222226 DN80



222996 DN100

UP TO 600KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

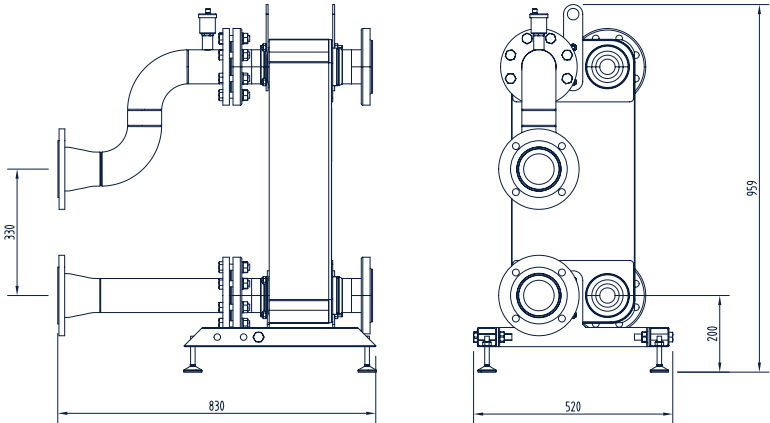
UIN	HEADER SIZE
222227	DN100



222227 DN100

UP TO 750KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

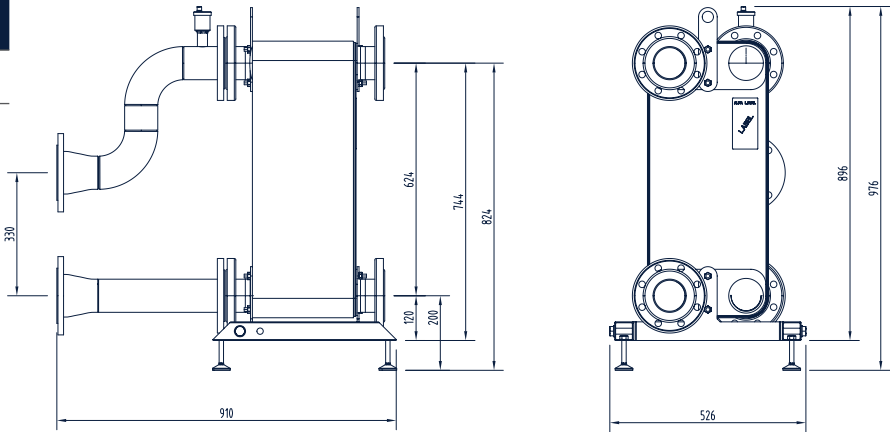
UIN	HEADER SIZE
242216	DN100



242216 DN100

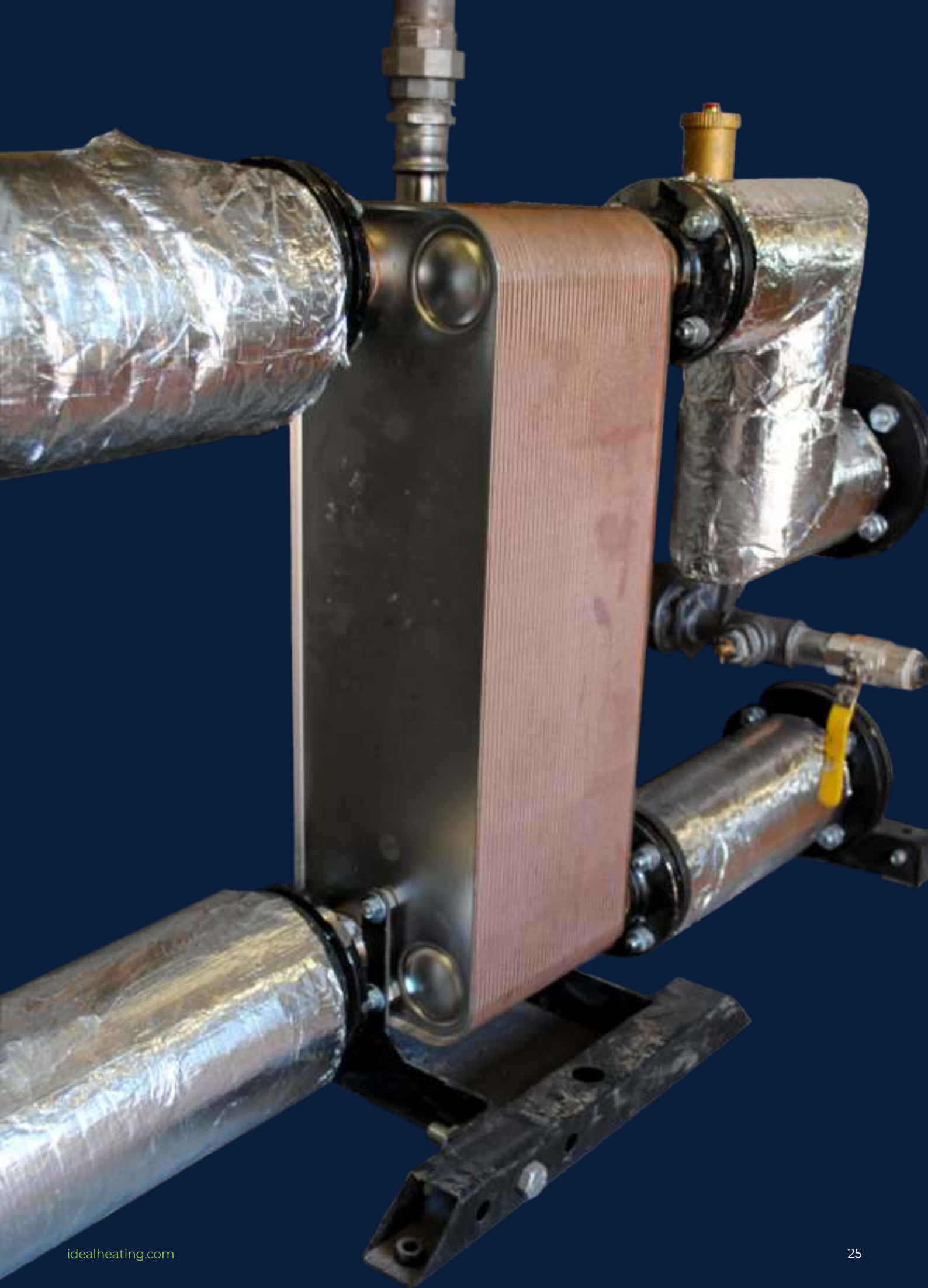
UP TO 900KW NOMINAL OUTPUT
PLATE HEAT EXCHANGER

UIN	HEADER SIZE
242217	DN150



242217 DN150

Note: refer to PHEX spec sheets for details of secondary flange sizes and PN ratings.



LOW LOSS HEADER AND MAGNETIC LOW LOSS HEADER

Providing an alternative approach to hydraulic separation, Low Loss Headers (LLH) are available in various sizes to suit the accompanying Header kits. There is also the option of a Magnetic Low Loss Header (MLLH), combining the benefits of a low loss header and a magnetic filter.

LOW LOSS HEADER

UIN	DN FLANGE SIZE
209394	DN50
209395	DN65
219552	DN80
219553	DN100
219554	DN150

Note: all low loss and magnetic low loss headers use PN6 flanges.

MAGNETIC LOW LOSS HEADER

UIN	DN FLANGE SIZE
222191	DN50
222192	DN65
222193	DN80
222194	DN100

PUMPS

To ensure your Evomax 2 Cascade works correctly, it is vital to fit the correct pumps. One pump is required per boiler in the Cascade.

SEPARATION CHOSEN	UIN	PUMP TYPE
(M)LLH	222659	Grundfos UPM10L (M) LLH pump kit
PHEX or none	252584	Grundfos UPM20M PHEX pump kit



UPM10 / UPM20M

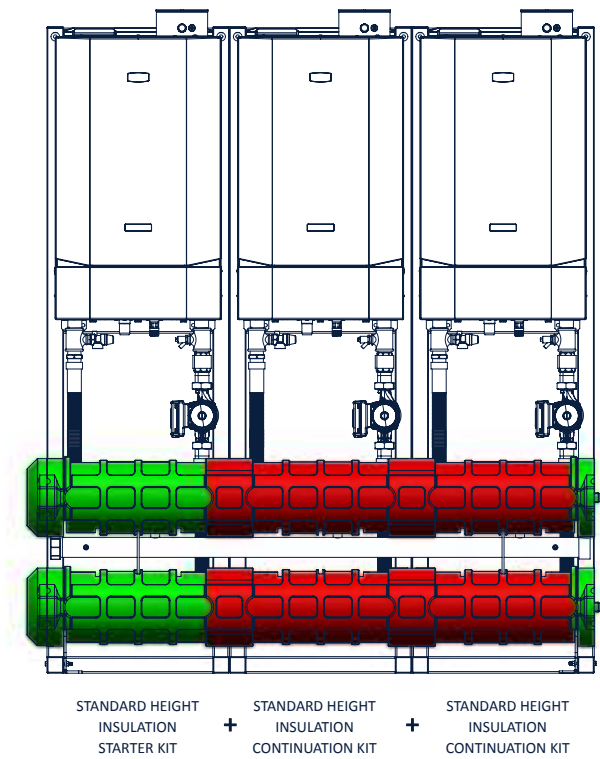
Note: pumps with screwed connections are G1.1/2" x 180mm.

INSULATION

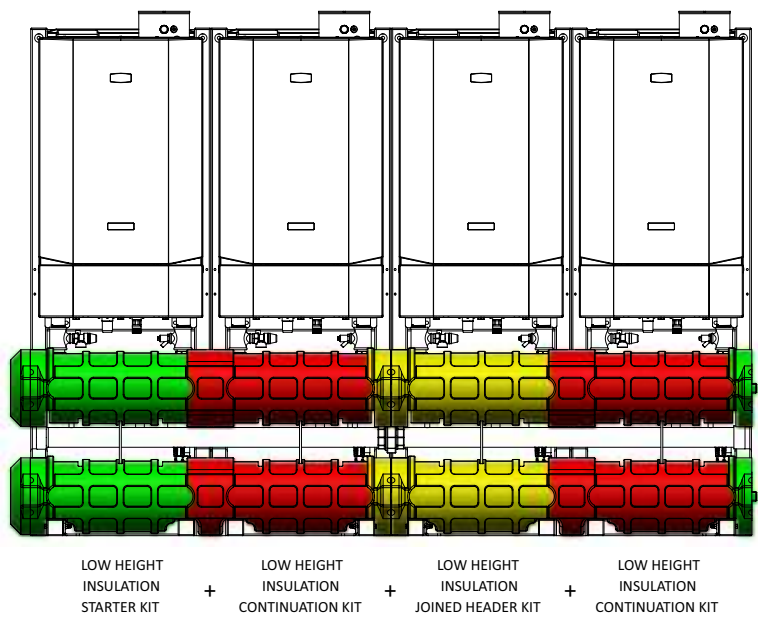
Header kits and Low Loss Headers can be insulated using our robust expanded polypropylene modular insulation range. Insulation is also available for 222659 Grundfos UPM10L (M) LLH pump kit.

The number of boilers in your Cascade will determine the type and number of kits required.

DN100 STANDARD HEIGHT IN-LINE HEADER



DN80 LOW HEIGHT 4 IN-LINE HEADER



INSULATION FOR STANDARD HEIGHT INLINE AND BACK TO BACK HEADER KITS

UIN	DESCRIPTION	2 BOILER CASCADE	3 BOILER CASCADE	4 BOILER CASCADE	5 BOILER CASCADE	6 BOILER CASCADE
222960	Standard Height Insulation Starter Kit	1	1	1	1	1
222961	Standard Height Insulation Continuation Kit	1	2	2	3	4
222962	Standard Height Insulation Joined Header Kit	-	-	1	1	1

INSULATION FOR LOW HEIGHT HEADER KITS

UIN	DESCRIPTION	1 BOILER CASCADE	2 BOILER CASCADE	3 BOILER CASCADE	4 BOILER CASCADE
223032	Standard Height Insulation Starter Kit DN50	1	-	-	-
223035	Standard Height Insulation Starter Kit DN65	-	1	-	-
223038	Standard Height Insulation Starter Kit DN80 and DN100	-	-	1	1
223036	Standard Height Insulation Continuation Kit DN65	-	1	-	-
223039	Standard Height Insulation Continuation Kit DN80 and DN100	-	-	1	1
223040	Standard Height Insulation Joined Header Kit DN80 and DN100	-	-	-	1

INSULATION FOR LOW LOSS HEADER AND MAGNETIC LOW LOSS HEADER

UIN	DESCRIPTION
222963	DN50 (M)LLH Insulation Kit
222964	DN65 (M)LLH Insulation Kit
222965	DN80/DN100 (M)LLH Insulation Kit

INSULATION FOR PUMPS

UIN	DESCRIPTION	1 BOILER CASCADE	2 BOILER CASCADE	3 BOILER CASCADE	4 BOILER CASCADE	5 BOILER CASCADE	6 BOILER CASCADE
223032	Grundfos UPML (M)LLH Insulation Kit	1	2	3	4	5	6



ideal

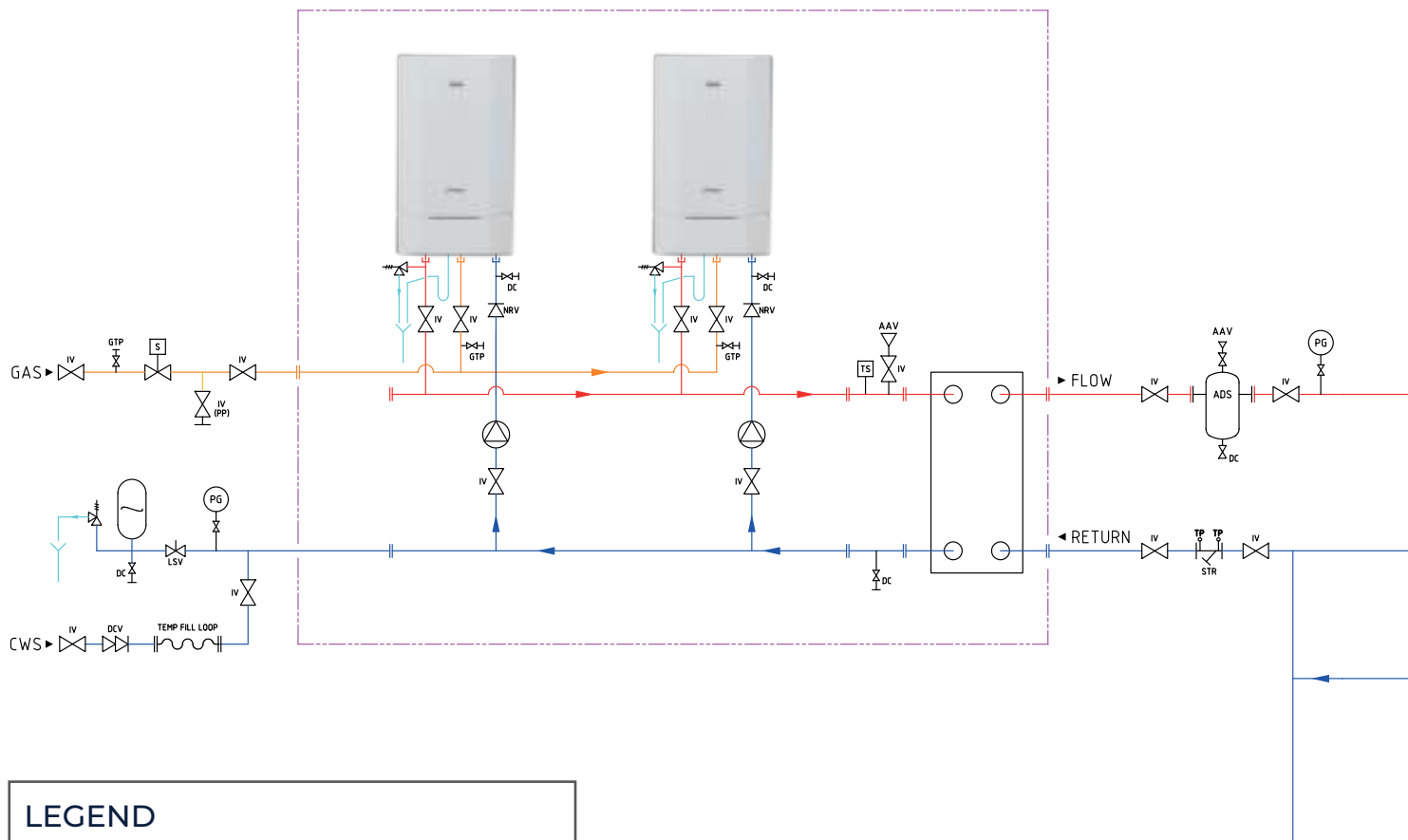
ideal

evortus 85

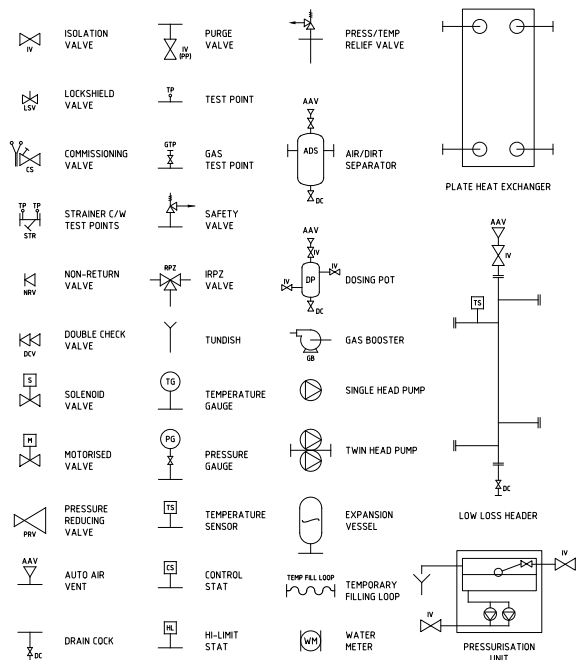
evortus 85

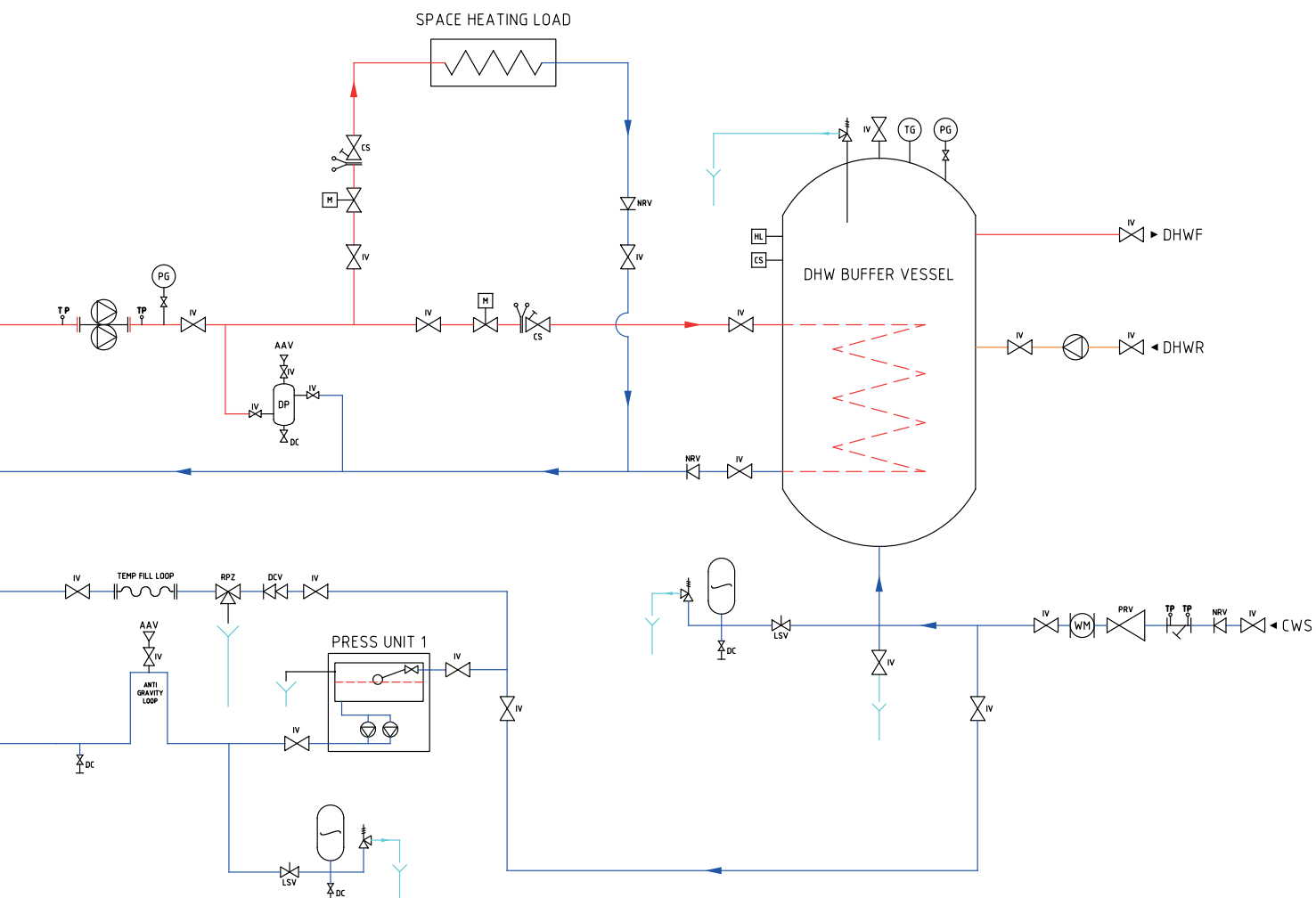
TYPICAL SYSTEM BOILER LAYOUT

EVOMAX 2 FRAME AND HEADER KIT C/W PLATE HEAT EXCHANGER



LEGEND





Note: this schematic is an illustration of a hydraulic arrangement for discussion and reference use only.

The schematic may not accurately describe the actual arrangement required in order for the system to operate correctly and additional components may be required. Under no circumstances should this be used as basis for procurement, production or installation.

IMAX XTRA 2

80 - 280kW



effici



cient

IMAX XTRA 2

80 - 280kW

The Imax Xtra 2 range of condensing boilers is offered in six models with outputs from 80 to 280kW. These floor standing boilers can be installed on their own or in a cascade of up to 4 boilers for output up to 1120kW output.



FEATURES AND BENEFITS

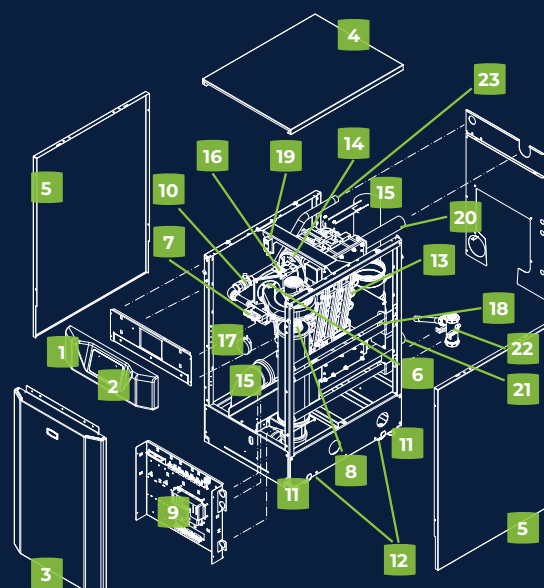
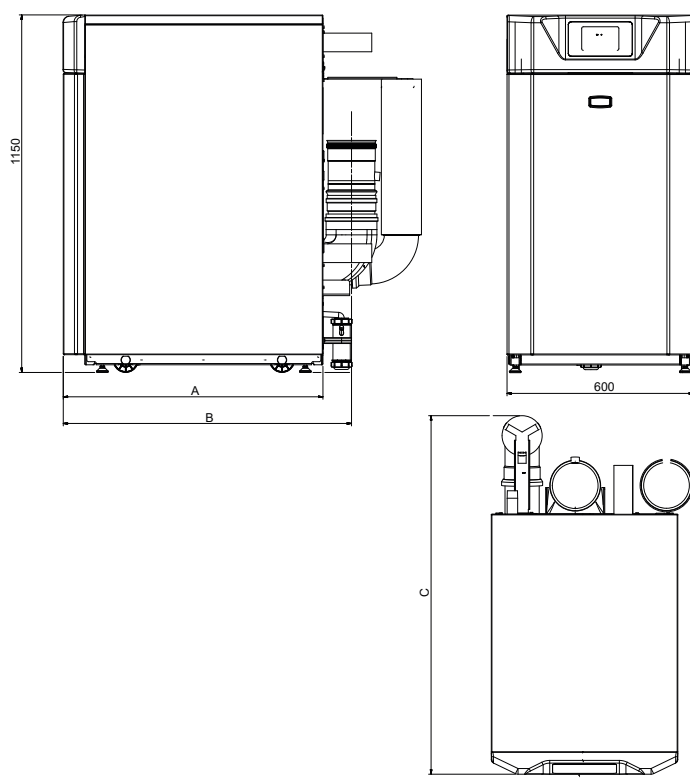
- Free commissioning
- 5 year heat exchanger warranty*
- Robust cast aluminium silicon alloy heat exchanger
- NOx <40mg/kWh (Class 6) when operating on natural gas
- Full colour touchscreen control
- High 5:1 turndown
- Up to 97.7% full load efficiency
- Up to 108.2% part load efficiency
- Cascade header kits and controls
- Compact size - small footprint and fits through standard doorways
- Fitted with wheels for easy installation
- Capable of operating at up to 30°C ΔT

DIMENSIONS AND CLEARANCES

BOILER	DIM A	DIM B	DIM C
80, 120, 160	835	927	796
200, 240, 280	1087	1204	1048

All dimensions in mm

The following minimum clearances must be maintained for operation and servicing:



BOILER ASSEMBLY EXPLODED VIEW (120kW MODEL SHOWN)

KEY

- | | |
|-------------------------|--------------------------|
| 1. Control fascia panel | 13. Heat exchanger |
| 2. HMI touchscreen | 14. Sightglass |
| 3. Casing front panel | 15. Air inlet |
| 4. Casing top panel | 16. Burner manifold |
| 5. Casing side panel | 17. Air pressure switch |
| 6. Fan | 18. Cable conduit |
| 7. Gas valve | 19. Ignition / detection |
| 8. Venturi | 20. Manifold - flow |
| 9. Control module | 21. Manifold - return |
| 10. Union gas cock | 22. Condensate traps |
| 11. Levelling feet | 23. Gas connection |
| 12. Wheels | |

PERFORMANCE DATA

IMAX XTRA 2 80 - 280kW

MODEL			80	120	160	200	240	280
Boiler output (non-condensing) Mean 70°C (80/60)	Max	kW	78.6	118.0	157.3	196.6	235.9	275.2
	Min	kW	23.3	23.3	29.1	43.1	47.0	51.0
Boiler output (condensing) Mean 40°C (50/30)	Max	kW	82.2	123.4	164.5	207.8	249.4	290.9
	Min	kW	25.8	25.8	32.3	47.3	51.6	55.9
Boiler input max rate	Net	kW	80	120	160	200	240	280
	Gross	kW	88.8	133.3	177.7	222.1	266.5	310.9
Boiler input min rate	Net	kW	24	24	30	44	48	52
	Gross	kW	26.6	26.6	33.3	48.9	53.3	57.7
Gas rate	Max rate	m³/hr	8.1	12.1	16.1	20.1	24.2	28.2
Approx. flue gas volume (@80°C)	Max rate	m³/hr	121	182	242	302	363	423
Max. flue resistance		Pa	100		150			
Flue gas CO ₂ G20/LNG	Max rate	%	9.5					
	Min rate	%	9.3					
NOx with O ₂ = 0% (BS EN 15502-1)	Weighted	mg/kWh	26		35	26		
		ppm	15		20	15		
Seasonal boiler efficiency	(Building Regs L2)	%	95.7					
Operating temperature	Max	°C	90					

GENERAL DATA

IMAX XTRA 2 80 - 280kW

MODEL		80	120	160	200	240	280
Gas supply		2H - G20 - 20mbar					
Gas supply connection		R1"					
Flow connection		R2"					
Return connection		R2"					
Hydraulic resistance ΔT 20 °C	mbar	80	85	90	95	100	105
Hydraulic resistance ΔT 30 °C	mbar	36	38	40	42	44	47
Max pressure (sealed system)	bar	6					
Maximum static head	m	61					
Boiler electricity supply		230V - 50Hz					
Boiler fuse rating		13A					
Power consumption (boiler only)	W	110	150	200	220	240	250
Flue size dia	mm	150			200		
Condensate drain	mm	21.5					
Boiler dry weight (unpacked)	kg	141.5	160.5	182.0	224.0	240.0	250.0
Water content	l	11.0	14.3	17.5	18.4	24.0	27.2
Weighted sound power level	dBA	<53		<60			

OPTIONAL KITS

BOILER	IMAX XTRA 2
Multi Boiler Frame and Header Kits	✓
Cascade Control Kit	✓
Siemens QAA55 Room Unit Kit	✓
Outside Sensor Kit	✓
Flow Sensor Immersion Kit	✓

BOILER	IMAX XTRA 2
Flow Sensor Strap On Kit	✓
Single Heating Circuit Kit	✓
Dual Heating Circuit Kit	✓
PWN to 10V Pump Converter Kit	✓
Condensate Pump Kit	✓

SUGGESTED ENGINEERING SPECIFICATION

The Suggested Engineering Specification is wording designed for specifiers to copy and paste into their specifications to ensure inclusion of Ideal Heating commercial boilers.

OVERVIEW

The boilers must be fully automatically controlled, floor standing, fanned, super-efficient condensing appliances utilising an aluminium silicon alloy heat exchanger and be suitable for connection to fully pumped open vented or sealed water systems.

CONTROLS

The condensing boilers must have connectivity for common types of BMS integration including 0-10V, switched live and OpenTherm connections. Where no BMS is present or where the BMS only provides a single control signal for multiple boilers, the boilers should provide cascade and sequencing functions through optional controls accessories.

The boiler must be fully modulating with a 5:1 turndown ratio and include control features enabling modulating boiler pump control, set point adjustment, heating circuit control of one constant temperature circuit, and safety lock out parameters including fault diagnosis for both boiler and external components such as sensors or pumps. Boiler capabilities must include, with the use of external components, up to two additional constant or variable temperature circuits, frost protection, weather or room compensation and modulating system pump control.

FLUE

The condensing boilers must be suitable for use with a room sealed flue or open flue applications including C13, C33 and B23 classifications. The flue outlet and air inlet must be situated at the rear of the boiler with the air inlet having a factory fitted filter element and the flue incorporating a condensate collector.

HYDRAULIC

The condensing boiler must be suitable for connection to fully pumped open vented or sealed water systems. All hydraulic connections including flow return and condensate drain must be located on the rear of the boiler. Hydraulic connections must be of uniform size across the outputs available in the range to ensure ease of installation and maintenance in mixed output cascades. The boiler must have a maximum operating pressure of 6 bar and be suitable for heating and indirect hot water systems.

CASCADE

The boiler must be configurable up to 4 boilers (max 1120kW) in cascade using a prefabricated header kit, to be hydraulically separated from systems using a range of Low Loss or Magnetic Low Headers or a range of Brazen Plate Heat Exchangers.

DIMENSIONS

The condensing boiler must fit within maximum permitted floor space of 0.48m² (80 – 160kW models) or 0.63m² (200 – 280kW models).

MOUNTING / POSITIONING

The condensing boilers will be floor standing and provide wheels or other integrated means to ease final positioning of the appliance.

EFFICIENCY

The condensing boilers are capable of high seasonal efficiencies with a minimum requirement of 95.7% and low NOx emissions no greater than 35mg/kWh.

APPROVALS

The boiler must be tested and certified to EN 483, EN 677, PREN 15420, BS EN 15502, BS EN 656, BS EN 55014-1 and BS EN 55014-2 for use with Natural Gas. Boilers are certified to meet the requirements of the EC Gas Appliance Directive, Boiler Efficiency Directive, EMC and Low Voltage Directive.

The manufacturer must be ISO 9001 accredited.

SPECIFICATION

The boiler will be capable of flow rates for common systems using 11°C to 30°C temperature differentials at maximum rate of fire.

SOURCING

The condensing boiler must be manufactured or finally assembled in the United Kingdom.

WARRANTY

The boiler must be available with a 2-year warranty, with the possibility to extend coverage on the heat exchanger to 5-years (TandCs apply).

SYSTEM TEMPERATURE DIFFERENTIALS

Flow rates for common systems using either 11°C, 20°C or 30°C temperature differentials are given in the table below.

	FLOW RATE (L/s)			HYDRAULIC RESISTANCE (MBAR)		
BOILER	11°C	20°C	30°C	11°C	20°C	30°C
Imax Xtra 2 80	1.78	0.98	0.65	264	80	36
Imax Xtra 2 120	2.68	1.47	0.98	281	85	38
Imax Xtra 2 160	3.57	1.96	1.31	297	90	40
Imax Xtra 2 200	4.51	2.48	1.65	314	95	42
Imax Xtra 2 240	5.42	2.98	1.98	330	100	44
Imax Xtra 2 280	6.32	3.47	2.31	347	105	47

CONTROL KITS

CASCADE CONTROL KIT

Enables cascade control from Imax Xtra 2 boiler controls

ROOM SENSOR KIT

For CH control

OUTSIDE SENSOR KIT

Provides weather compensation

HEADER FLOW TANK IMMERSION SENSOR KIT

Ensures boiler provides correct temperature to water in header via immersed sensor

HEADER FLOW TANK STRAP ON SENSOR KIT

Ensures boiler provides correct temperature to water in header via external sensor

SINGLE HEATING CIRCUIT KIT

Clip in kit adds an additional variable temperature circuit

DUAL HEATING CIRCUIT KIT

Clip in kit adds a two additional variable temperature circuits

PWM TO 10V PUMP CONVERTER KIT

Converts Imax Xtra 2's PWM signal to 0-10V to enable pump control. Included with 226432 Grundfos Magna3 40-80F Pump Kit and 226433 Grundfos Magna3 40-100F Pump Kit

IMAX XTRA 2 CASCADE

80 - 1120kW



Cascade
control



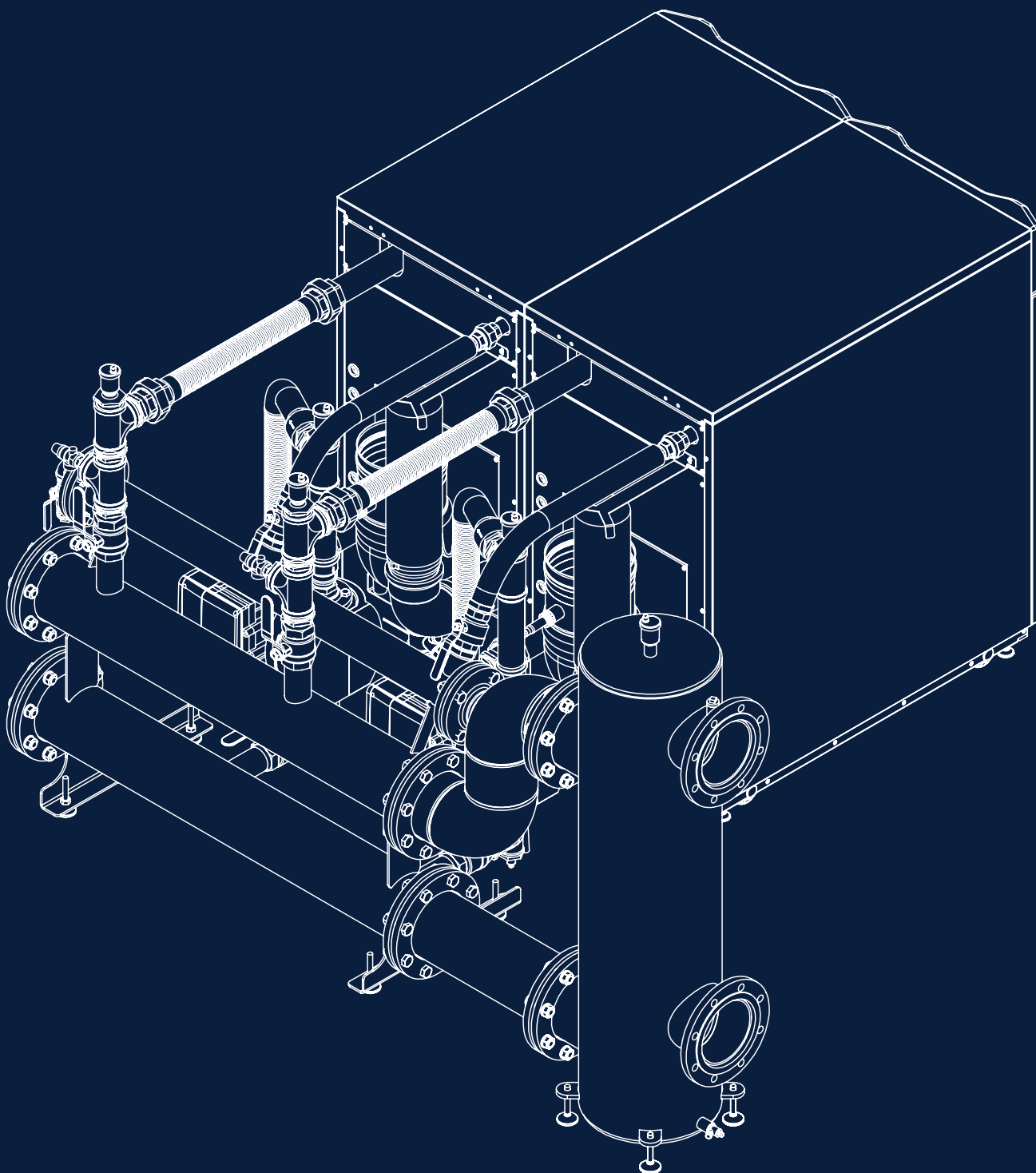
For installations requiring more output delivered in a flexible way, up to 4 Imax Xtra 2 boilers can be installed in a cascade. An output of up to 1120kW is possible with this modular option.

Our online **Cascade Configurator** makes sure you have everything you need for cascade arrangements. By answering some simple questions about the installation, the tool will list all the products needed for that cascade; download as a PDF or have it emailed directly to you for maximum convenience.

Scan the QR code below to use the online tool.



IMAX XTRA 2
**CASCADE
CONFIGURATOR**



CHOOSING WHAT YOU NEED IS STRAIGHTFORWARD:

Simply choose the number of boilers in your cascade and then select the hydraulic separation and pumps you require. Please note you will need 1 pump for each boiler in the cascade.

Our Header kits come with all the parts you need for an inline, side-by-side installation. If your installation requires a bespoke cascade, the individual parts can also be purchased.

idealcommercialboilers.com/imax-xtra2-cascade-configurator

IMAX XTRA 2

Cascade Accessories

CHOOSE A HEADER KIT
1 boiler, 80 - 160kW (DN80) 226397
1 boiler, 200 - 280kW (DN80) 226398
2 boilers, 80 - 160kW (DN80) 226399
2 boilers, 200 - 240kW (DN80) 226400
2 boilers, 280kW (DN100) 226401
3 boilers, 80 - 160kW (DN80) 226402
3 boilers, 200 - 240kW (DN100) 226403
3 boilers, 280kW (DN150) 226404
4 boilers, 80 - 120kW (DN80) 226405
4 boilers, 160kW (DN100) 226406
4 boilers, 200 - 280kW (DN150) 226407

Boilers not included with Header kits; please remember to add them to your order.

CHOOSE HYDRAULIC SEPARATION
Low Loss / Mixing Header
DN80 219552
DN100 219553
DN150 226426
Magnetic Low Loss / Mixing Header (MLLH)
DN80 222193
DN100 222194
Plate Heat Exchanger
Up to 150kW nominal output (DN80) 222222 Insulation Kit - 234446
Up to 300kW nominal output (DN80) 222225 Insulation Kit - 234447
Up to 450kW nominal output (DN80) 222226 Insulation Kit - 234449
Up to 450kW nominal output (DN100) 222996 Insulation Kit - 234449
Up to 600kW nominal output (DN100) 222227 Insulation Kit - 234450
Up to 750kW nominal output (DN100) 242216 Insulation Kit - 246284

Plate Heat Exchanger
Up to 750kW nominal output (DN150) 242218 Insulation Kit - 246286
Up to 900kW nominal output (DN150) 242219 Insulation Kit - 246287
Up to 1200kW nominal output (DN150) 242220 Insulation Kit - 246288

CHOOSE PUMPS
80 and 120kW boilers, all installations
Grundfos UPM10L (M) LLH pump kit 222659
160kW boilers, all installations
Grundfos UPM20M PHEX pump kit 252584
200 - 280kW boilers, (M)LLH chosen or no separation
Grundfos Magna3 40-80F Pump Kit 226432
200 - 280kW boilers, PHEX chosen
Grundfos Magna3 40-100F Pump Kit 226433

1 pump required per boiler.
i.e. a 4 boiler cascade requires 4 pumps.

If using a Low Loss Header or Plate Heat Exchanger not from Ideal Heating, please use the pump recommended by the separation manufacturer.

NG - LPG CONVERSION KITS	UIN
80kW NG to LPG Kit IMAX XTRA 2	226434
120kW NG to LPG Kit IMAX XTRA 2	226435
160kW NG to LPG Kit IMAX XTRA 2	226436
200kW NG to LPG Kit IMAX XTRA 2	226437
240kW NG to LPG Kit IMAX XTRA 2	226438

LPG - NG CONVERSION KITS	UIN
80kW LPG to NG Kit IMAX XTRA 2	230341
120kW LPG to NG Kit IMAX XTRA 2	230342
160kW LPG to NG Kit IMAX XTRA 2	230343
200kW LPG to NG Kit IMAX XTRA 2	230344
240kW LPG to NG Kit IMAX XTRA 2	230345

IMAX XTRA 2 HYDRAULIC ACCESSORIES
Headers
1 boiler, DN80, threaded pump 226409
1 boiler, DN80, flanged pump 226408
1 boiler, DN100, threaded pump 226413
1 boiler, DN100, flanged pump 226412
1 boiler, DN150, flanged pump 226416
2 boilers, DN80, threaded pump 226411
2 boilers, DN80, flanged pump 226410
2 boilers, DN100, threaded pump 226415
2 boilers, DN100, flanged pump 226414
2 boilers, DN150, flanged pump 226417
Spacer Spool Kits
DN80 Water, DN65 Gas 226418
DN100 Water, DN65 Gas 226419
DN150 Water, DN80 Gas 226420
Blind Flange Kit
DN150 Water, DN65 Gas 226420
DN100 Water, DN65 Gas 226422
DN150 Water, DN80 Gas 226423

OTHER CASCADE ACCESSORIES
Gas Header PN6 to PN16 Adaptor Spool Kits
DN65 Gas header PN6 to PN16 adaptor 227674
DN80 Gas header PN6 to PN16 adaptor 227675
LPG Gas Header Adaptor Kits
DN65 LPG Gas header reducing adaptor (2 pack) 226424
DN80 LPG Gas header reducing adaptor (2 pack) 226424
Butterfly Valves for Magnetic Low Loss Header
DN80 butterfly valves for MLLH (2 pack) 222125
DN100 butterfly valves for MLLH (2 pack) 222126

For installations requiring more output delivered in a flexible way, up to 4 Imax Xtra 2 boilers can be installed in a cascade. An output of up to 1120kW is possible with this modular option.

Our **Cascade Configurator** makes sure you have everything you need for cascade arrangements. By answering some simple questions about the installation, the tool will list all the products needed for that cascade; download as a PDF or have it emailed directly to you for maximum convenience.

Scan the QR code below to use the online tool.



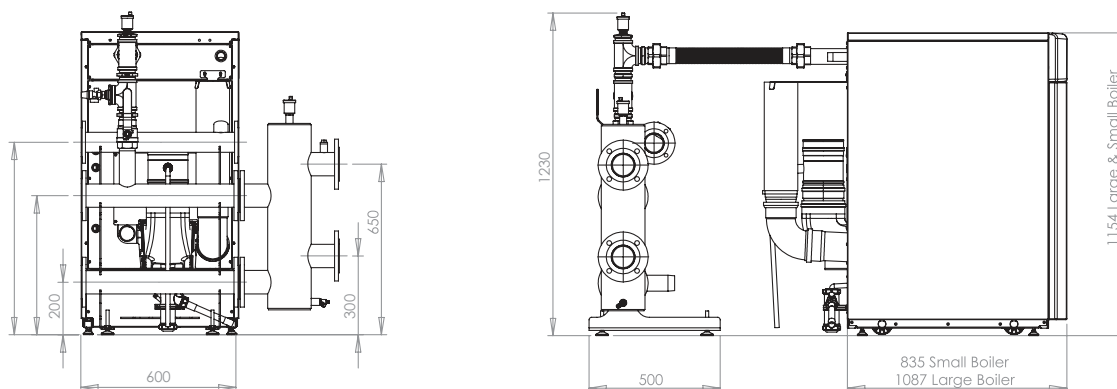
IMAX XTRA 2
**CASCADE
CONFIGURATOR**

FLUE DAMPER KITS	UIN
Ø150 Flue Damper	230522
Ø200 Flue Damper	230523

NOTE: When controlling boiler pumps directly from the boiler and including the flue damper the boiler pump must be controlled by a modulating signal from the boiler. Modulating pump control is available as standard with the pump kits offered by Ideal Heating. Where the installer provides their own pump to be controlled by the boiler it must be modulated by PWM from the boiler, or by 0-10V using the additional control accessory UIN 225391.

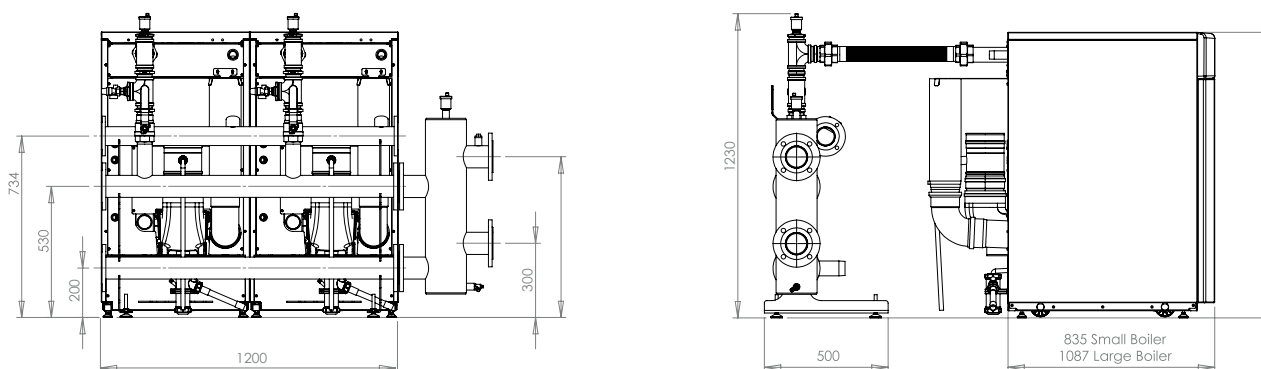
IMAX XTRA 2 CASCADES

1 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226397	DN80	1 x Imax Xtra 2 boiler, 80 - 160kW
226398	DN80	1 x Imax Xtra 2 boiler, 200 - 280kW

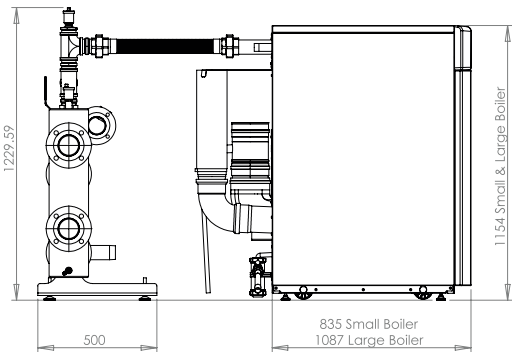
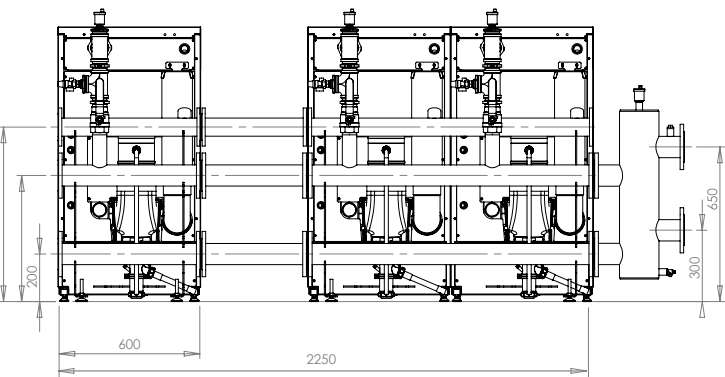
2 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226399	DN80	2 x Imax Xtra 2 boilers, 80 - 160kW
226400	DN100	2 x Imax Xtra 2 boilers, 200 - 240kW
226401	DN100	2 x Imax Xtra 2 boilers, 280kW

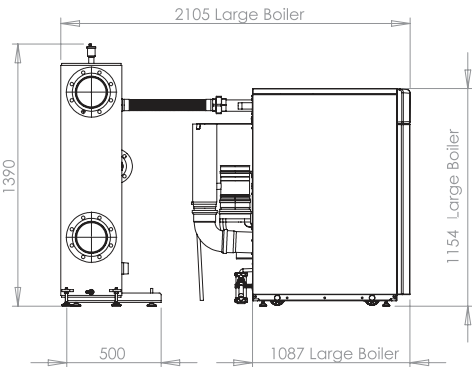
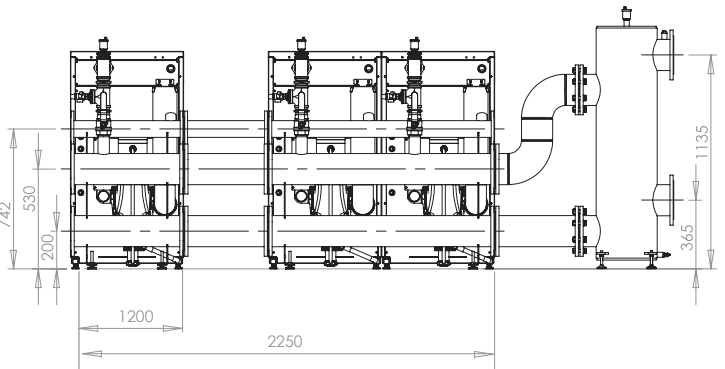
IMAX XTRA 2 CASCADES

3 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226402	DN80	3 x Imax Xtra 2 boilers, 80 - 160kW
226403	DN100	3 x Imax Xtra 2 boilers, 200 - 240kW

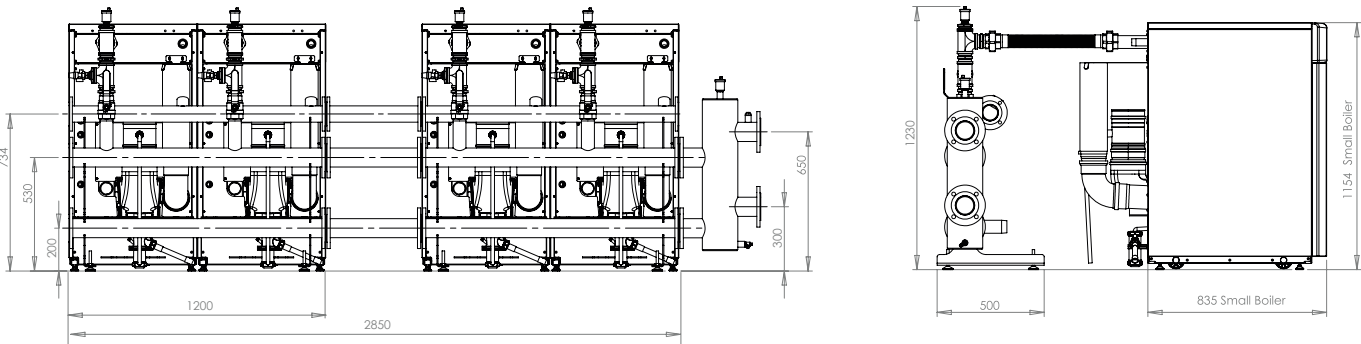
3 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226404	DN150	3 x Imax Xtra 2 boilers, 280kW

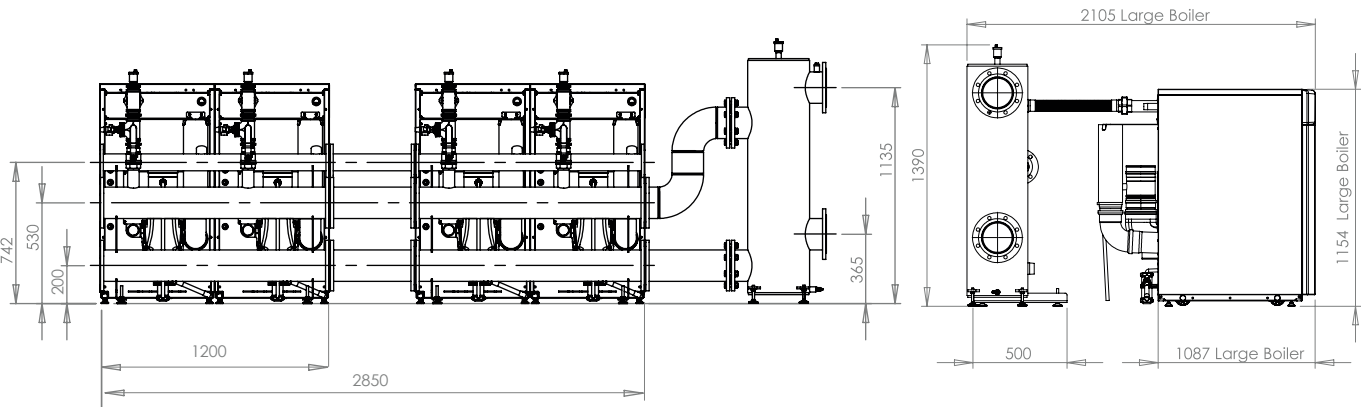
IMAX XTRA 2 CASCADES

4 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226405	DN80	4 x Imax Xtra 2 boilers, 80 - 120kW
226406	DN100	4 x Imax Xtra 2 boilers, 160kW

4 X IMAX XTRA 2



UIN	DN FLANGE SIZE	SUITABLE FOR
226407	DN150	4 x Imax Xtra 2 boilers, 200 - 280kW

Note: all flanges on boiler headers are PN6.

All cascade arrangements are designed around boiler operation with a temperature differential of 20°C. Please consult your local sales representative to confirm alternative operating conditions.

HYDRAULIC SEPARATION

Ideal Heating offer various solutions to hydraulic separation

PLATE HEAT EXCHANGER



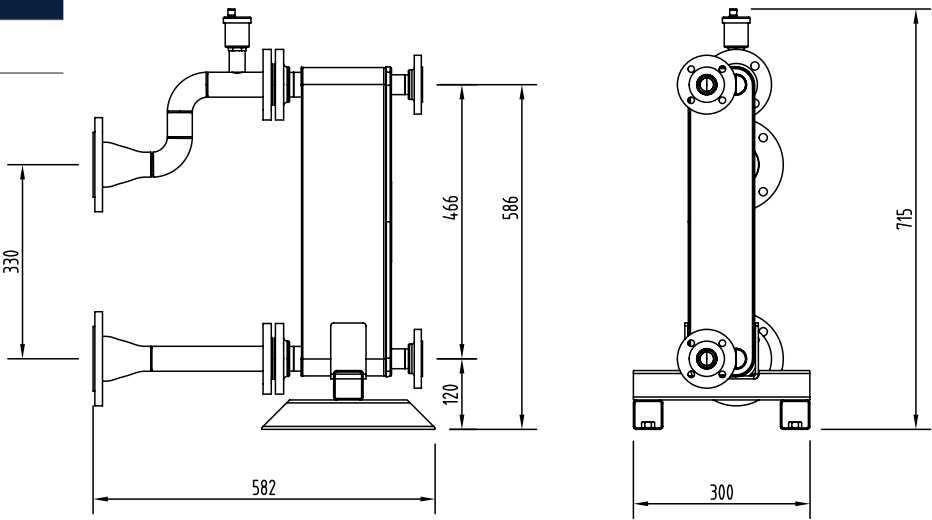
Covering outputs of 150, 300, 450, 600, 750, 900 and 1200kW. Brazed Plate Heat Exchangers ensure optimum heat transfer efficiency and low resistance within a compact footprint. To be used with Ideal Heating Header kits.

FEATURES and BENEFITS

- Compact design
- No gaskets
- Low maintenance and self-cleaning
- All units are pressure tested
- To be used with Ideal Heating Header kits
- Ensures optimal heat transfer efficiency and pressure resistance
- Separates system water from the boiler
- Ensures the highest performance for longest possible service life

UP TO 150KW TOTAL NOMINAL PLATE HEAT EXCHANGER

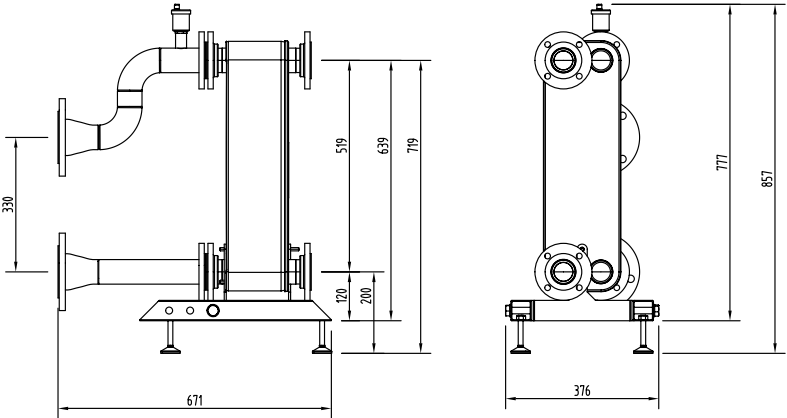
UIN	HEADER SIZE
222222	DN80



222222 DN80

UP TO 300KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

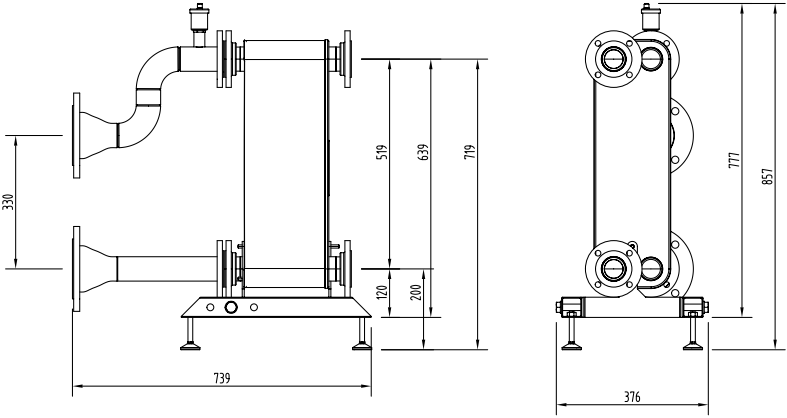
UIN	HEADER SIZE
222225	DN80



222225 DN80

UP TO 450KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

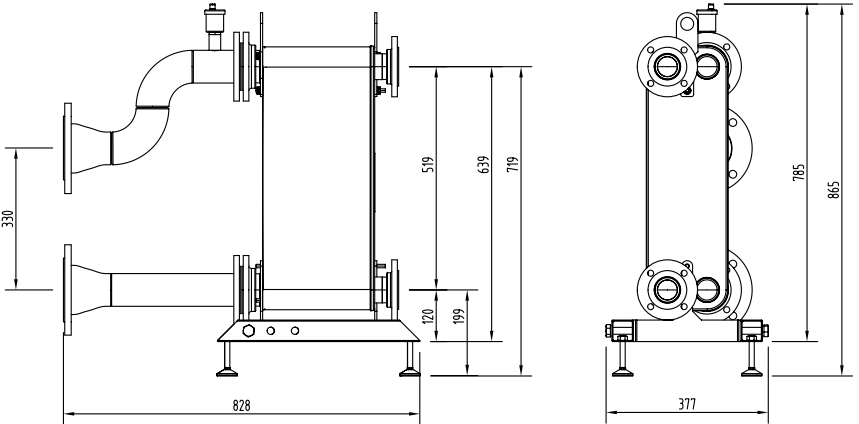
UIN	HEADER SIZE
222226	DN80



222226 DN80

UP TO 600KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

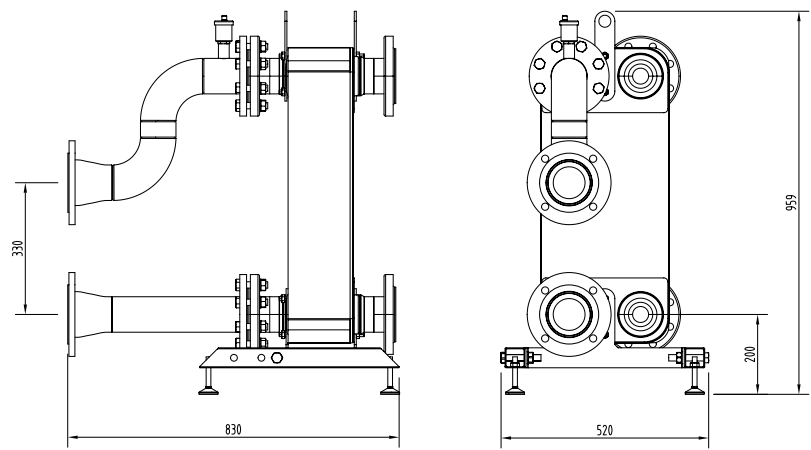
UIN	HEADER SIZE
222227	DN100



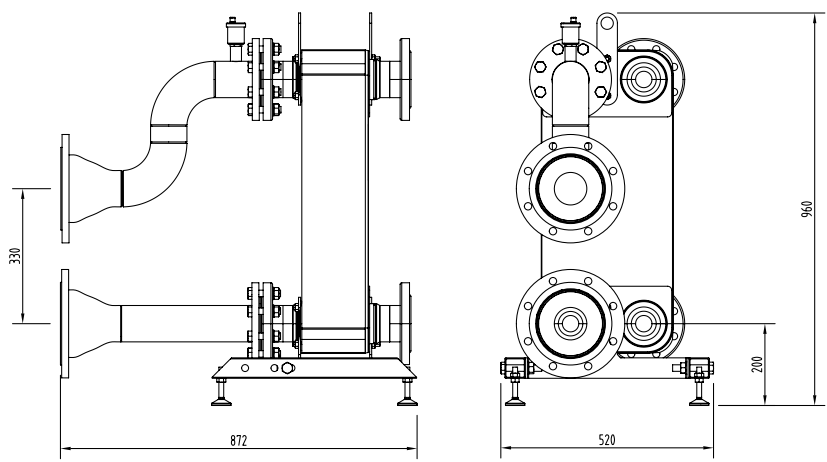
222227 DN100

UP TO 750KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

UIN	HEADER SIZE
242216	DN100
242218	DN150



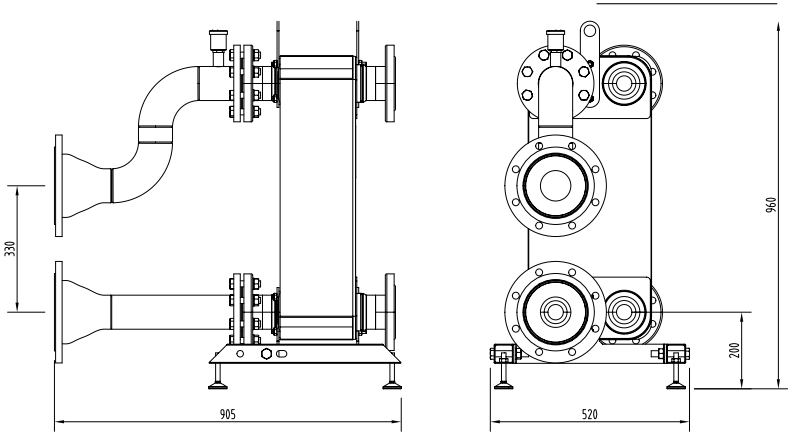
242216 DN100



242218 DN150

UP TO 900KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

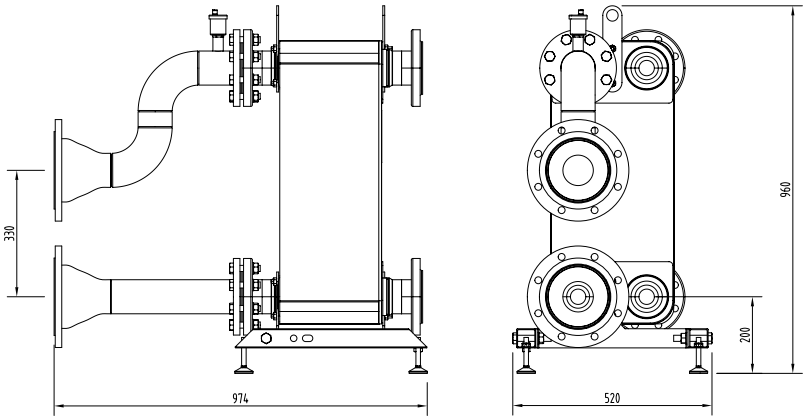
UIN	HEADER SIZE
242219	DN150



242219 DN150

UP TO 1200KW NOMINAL OUTPUT PLATE HEAT EXCHANGER

UIN	HEADER SIZE
242220	DN150



242220 DN150

Note: refer to PHEX spec sheets for details of secondary flange sizes and PN ratings.

LOW LOSS HEADER AND MAGNETIC LOW LOSS HEADER

Providing an alternative approach to hydraulic separation, Low Loss Headers (LLH) are available in various sizes to suit the accompanying Header kits. There is also the option of a Magnetic Low Loss Header (MLLH), combining the benefits of a low loss header and a magnetic filter.

LOW LOSS HEADER

UIN	DN FLANGE SIZE
219552	DN80
219553	DN100
226426	DN150

MAGNETIC LOW LOSS HEADER

UIN	DN FLANGE SIZE
222193	DN80
222194	DN100

PUMPS

To ensure your Imax Xtra 2 Cascade works correctly, it is vital to fit the correct pumps. One pump is required per boiler in the Cascade.

CHOOSE PUMPS
80 and 120kW boilers, all installations
Grundfos UPM10L (M) LLH pump kit 222659
160kW boilers, all installations
Grundfos UPM20M PHEX pump kit 252584
200 - 280kW boilers, (M)LLH chosen or no separation
Grundfos Magna3 40-80F Pump Kit 226432
200 - 280kW boilers, PHEX chosen
Grundfos Magna3 40-100F Pump Kit 226433

1 pump required per boiler.
i.e. a 4 boiler cascade requires 4 pumps.

If using a Low Loss Header or Plate Heat Exchanger not from Ideal Heating please contact your local Ideal Heating Commercial sales representative.



UPM10 / UPM20

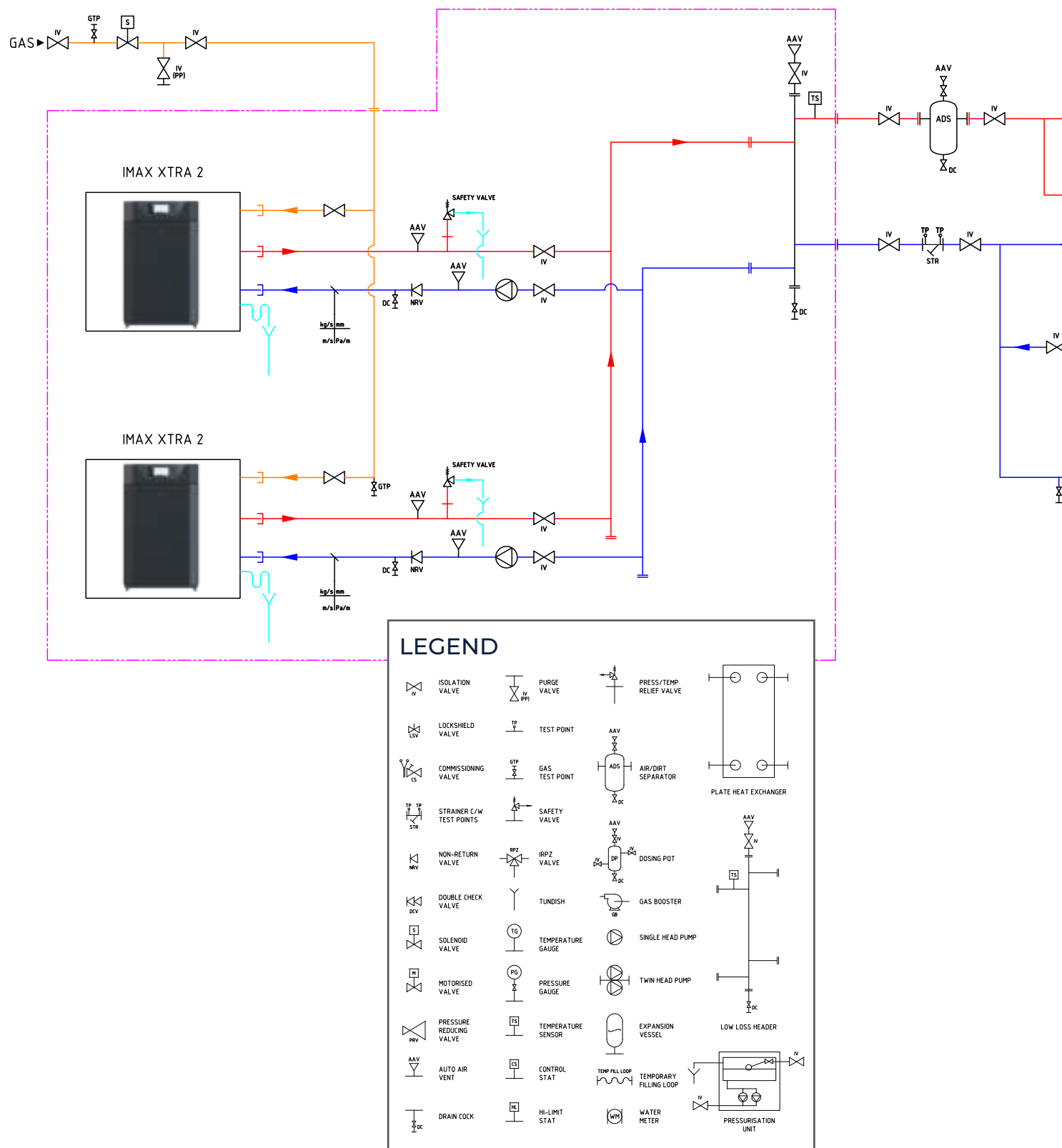


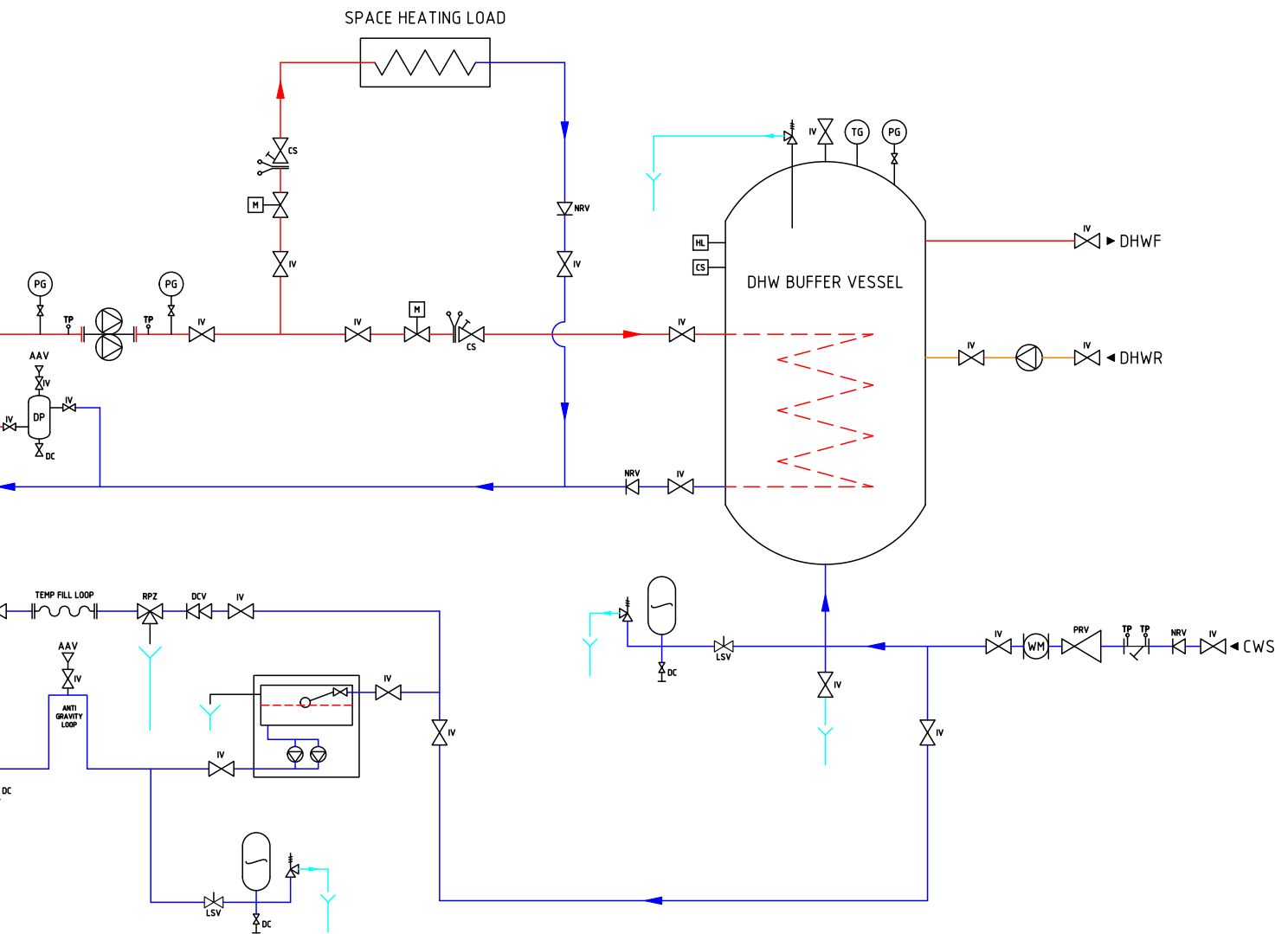
Magna 3

Note: pumps with screwed connections are G1.1/2" x 180mm. Pumps with flanged connections are DN40 x 220mm.

SYSTEM LAYOUT

TYPICAL SYSTEM BOILER LAYOUT





Note: this schematic is an illustration of a hydraulic arrangement for discussion and reference use only.

The schematic may not accurately describe the actual arrangement required in order for the system to operate correctly and additional components may be required. Under no circumstances should this be used as basis for procurement, production or installation.



ideal

perfor

IMAX XTRA EL

320 - 1240kW



manice

IMAX XTRA EL

320 - 1240kW



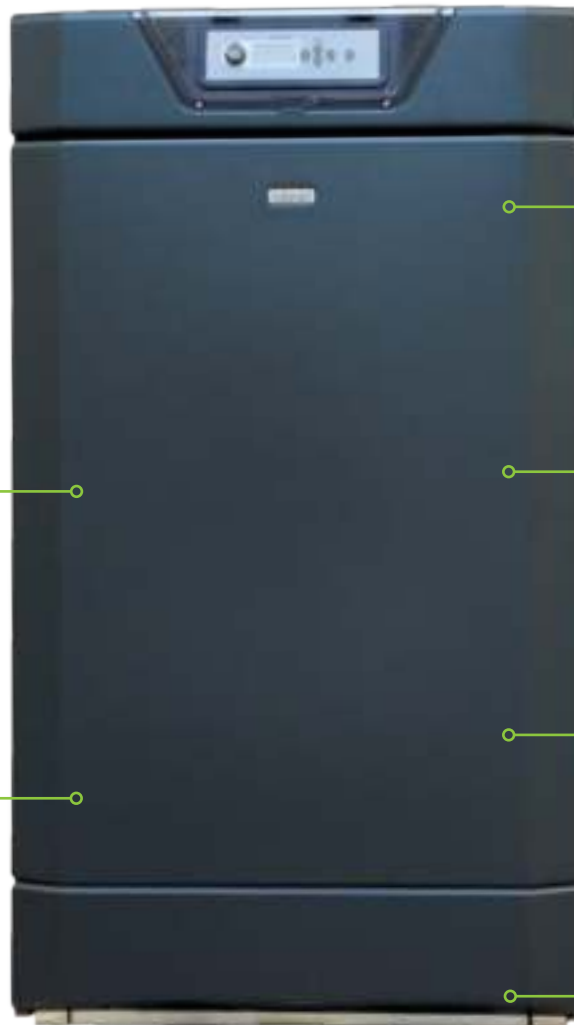
The Imax Xtra EL range of condensing boilers is available in 10 models with outputs from 320 to 1240kW. Suitable for floor standing applications in either single or multiple installations.



Free commissioning



Floor standing



NOx class 6



ErP compliant



Part L 2022



BIM

FEATURES AND BENEFITS

- Free commissioning
- 5 year heat exchanger warranty*
- Simple control interface with large backlit display
- Volt free contacts
- 0-10V BMS operation standard
- Robust aluminium silicon alloy heat exchanger
- Suitable for single or multiple installations
- Up to 109.8% part load at 30% output
- 2 year parts and labour warranty
- NOx <40mg/kWh (Class 6)
- Natural Gas
- ErP compliant (320 - 395kW)
- Building Regulation Part L2 compliant (470 - 1240kW)
- MCPD compliant (1090 - 1240kW)

DIMENSIONS AND CLEARANCES

BOILER	DIM A	DIM B	DIM C
320, 395, 470, 545, 620	835	1485	1685
715, 790, 940, 1090, 1240	1674	1485	1685

All dimensions in mm

The following minimum clearances must be maintained for operation and servicing:

↑

TOP: 700mm

→

RIGHT SIDE: 700mm

→

FRONT: 700mm

←

LEFT SIDE:
320 - 620KW: 150mm
715 - 1240KW: 700mm

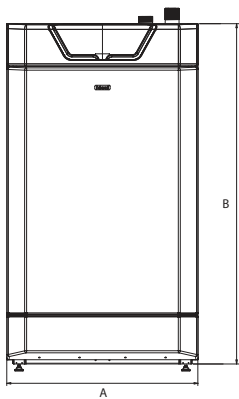
↓

REAR:
320 - 620KW: 150mm*
715 - 1240KW: 1000mm**

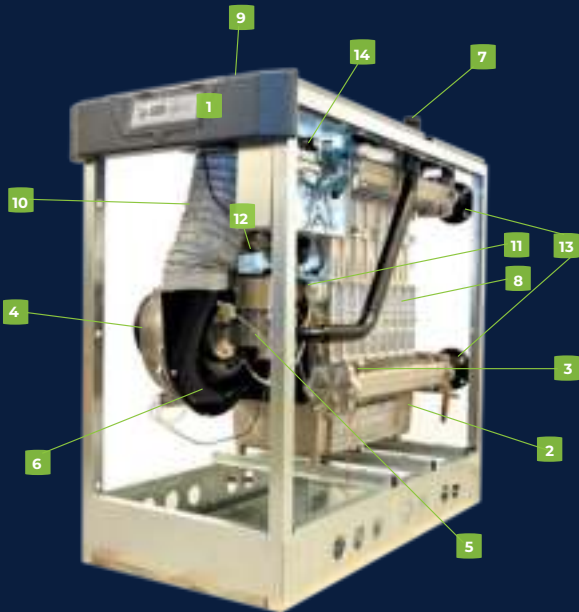
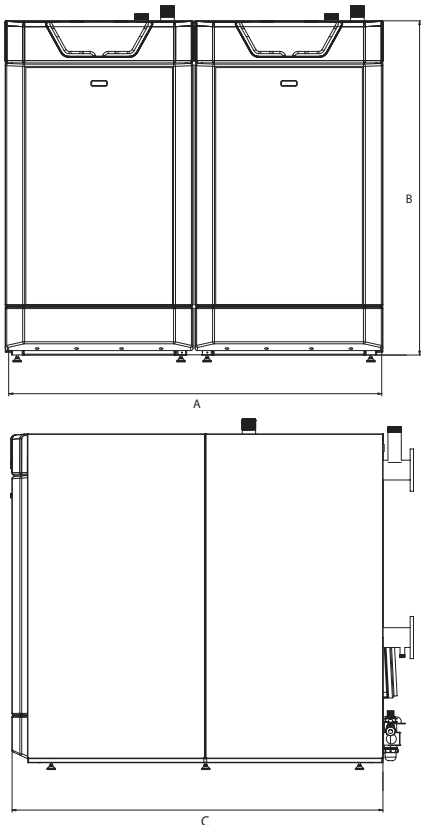
* From rear of flue

** From back of boiler

320 - 620kW



715 - 1240kW



BOILER ASSEMBLY

EXPLODED VIEW (620kW MODEL SHOWN)

KEY

- 1. Control module
- 2. External condensate trap
- 3. Water pressure switch
- 4. Fan
- 5. Gas valve
- 6. Whirlwind
- 7. Gas inlet
- 8. Heat exchanger
- 9. Air inlet
- 10. Burner manifold
- 11. Air pressure switches
- 12. Ignition / detection electrode
- 13. Manifold - flow - return
- 14. PCB

PERFORMANCE DATA

IMAX XTRA EL 320 - 1240kW

MODEL			320	395	470	545	620	715	790	940	1090	1240
Boiler output (non condensing) Mean 70°C	Max	kW	298.4	368.3	438.6	508.6	578.2	666.7	736.6	877.2	1017.2	1156.4
	Min	kW	58.9	72.6	85.2	100.7	114.9	131.5	145.2	170.4	201.4	229.8
Boiler output (condensing) Mean 40°C	Max	kW	323.1	399.5	475.8	552.7	628.9	722.6	799.0	951.6	1105.4	1257.8
	Min	kW	66.7	80.5	95.6	113.0	127.6	147.2	161.0	191.2	226.0	255.2
Boiler input max rate	Net	kW	304.8	376.2	447.6	519.0	590.0	681.0	752.4	895.2	1038.0	1180.0
	Gross	kW	338.3	417.5	496.8	576.0	654.8	755.8	835.0	993.6	1152.0	1309.6
Boiler input min rate	Net	kW	61.0	75.2	89.5	103.8	118.0	136.2	150.4	179.0	207.6	236.0
	Gross	kW	67.7	83.5	99.3	115.2	131.0	151.2	167.0	198.6	230.4	262.0
Gas rate	Max	m³/hr	32.2	39.8	47.4	54.9	62.2	72.0	79.6	94.8	109.8	124.4
Approx. flue gas volume (@80°C)	Max	m³/hr	472.6	583.3	694.0	804.7	914.8	1055.9	1166.6	1388.0	1609.4	1829.6
	Min	m³/hr	95.2	117.4	139.6	162.0	184.2	212.6	234.8	279.2	324.0	368.4
Approx. flue gas temps 50/30°C	Max	°C	43									
	Min	°C	31									
Approx. flue gas temps 80/60°C	Max	°C	63									
	Min	°C	50									
Max. flue resistance		Pa	100									
Flue gas CO ₂ G20/LNG	Max rate	%	9.5									
	Min rate	%	9.0									
Maximum flue temperature		°C	100									
NO _x with O ₂ = 0% (BS EN 15502-1)	Weighted	mg/kWh	39.1	38.6	35.8	38.7	38.0	39.1	38.6	35.8	38.7	38.0
	Class		6									
Boiler efficiency full load 80/60°C		%	97.9	97.9	98.0	98.0	98.0	97.9	97.9	98.0	98.0	98.0
Boiler efficiency part load		%	109.7	109.7	109.8	109.8	109.8	109.7	109.7	109.8	109.8	109.8
Boiler efficiency full load 50/30°C		%	106	106.2	106.3	106.5	106.6	106.1	106.2	106.3	106.5	106.6
Seasonal boiler efficiency (Building Regs L2)	Gross %		96.8	96.8	96.9	96.9	97.0	96.8	96.8	96.9	96.9	97.0
Operating temperature	Max	°C	90 for sealed system 80 for open vent systems									

GENERAL DATA

IMAX XTRA EL 320 - 1240kW

MODEL		320	395	470	545	620	715	790	940	1090	1240
Gas supply pressure	mbar	20									
Gas supply connection	R (in. BSP)	2"					2" x 2*				
Flow connection	R (in. BSP)	3" - DN80 - PN6*									
Return connection	R (in. BSP)	3" - DN80 - PN6*									
Hydraulic resistance @ΔT 20°C	mbar	98.0	96.0	94.0	93.0	92.0	102.9	100.8	98.7	97.65	96.6
Max system pressure	bar (psi)	6 (87)									
Boiler electrical supply		230v - 50Hz									
Boiler fuse rating	A	7					7 x 2				
Power consumption (boiler only)	W	610	592	670	625	770	1202	1184	1340	1250	1540
Air inlet	mm	200					200 x 2*				
Flue size diameter	mm	250					303			353	
Condensate drain	mm	21.5					21.5 x 2				
Boiler dry weight (unpacked)	kg	417	451	479	507	528	918	952	1008	1066	1106
Water content	l	47.3	53.3	59.3	65.3	75.3	94.6	106.6	118.6	130.6	150.6

*Optional headers not fitted

OPTIONAL KITS

BOILER	IMAX XTRA EL	IMAX XTRA EL DUAL
	320 - 620	715 - 1240
Modulating Sequencer Kit	✓	✓
DHW Tank Kit	✓	✓
Plant Room Sensor Kit	✓	✓
6 Zone Expansion Kit	✓	✓
Programmable Room Thermostat Kit for use with boiler and modulating Sequencer	✓	✓
Programmable Room Thermostat Kit (for use with boiler only)	✓	✓
Outside Sensor Kit	✓	✓
DHW Tank Sensor Kit	✓	✓
Safety Interlock Kit	✓	✓
Flow and return headers 5" connection		✓
Gas header 3" connection		✓
Dual air inlet		✓

BOILER	IMAX XTRA EL	IMAX XTRA EL DUAL
	320 - 620	715 - 1240
Pump Kit	✓	
LONWorks Gateway Kit	✓	✓
MODBus Gateway Kit	✓	✓
Remote Access Kit	✓	✓
Sealed System Services Flow Manifold Kit	✓	✓
Inlet Air Filter Kit	✓	✓
Condensate Pump Kit	✓	✓
Room Sealed Air Duct Kit	✓	✓
BACNet Gateway Kit	✓	✓

SUGGESTED ENGINEERING SPECIFICATION

The Suggested Engineering Specification is wording designed for specifiers to copy and paste into their specifications to ensure inclusion of Ideal Heating commercial boilers.

OVERVIEW

The boilers must be fully automatically controlled, floor standing, fanned, super-efficient condensing appliances utilising an aluminium silicon alloy heat exchanger and be suitable for connection to fully pumped open vented or sealed water systems.

CONTROLS

The condensing boilers must have connectivity for all common types of BMS integration including 0-10v, volt free and OpenTherm connections. Additional modules may be used for BACnet, LONWorks and MODBus gateways. Where no BMS is present a modulating sequencer must be available.

The boiler must be fully modulating with a 5:1 turndown ratio and include control features enabling set point adjustment, heating circuit control of one constant temperature and one DHW circuit or 2 constant temperature circuits, and safety lock out parameters including fault diagnosis for both boiler and external components such as sensors or pumps.

Boiler capabilities must include, with the use of external components, frost protection, weather or room compensation and system pump control.

FLUE

The condensing boilers must be suitable for use with a room sealed flue or open flue applications including C13, C33 and B23 classifications. The flue outlet and air inlet must be situated at the rear of the boiler.

HYDRAULIC

The condensing boiler must be suitable for connection to fully pumped open vented or sealed water systems. All hydraulic connections including flow return and condensate drain must be located on the rear of the boiler. Hydraulic connections must be uniform across the outputs available in the range to ensure ease of installation and maintenance.

The boiler must have a maximum operating pressure of 6 bar and be suitable for heating and indirect hot water systems.

DIMENSIONS

The condensing boiler must fit within maximum permitted floor space of 1.41m² (320 – 620kW models) or 2.82m² (715 – 1240kW models).

MOUNTING / POSITIONING

The condensing boilers will be floor standing.

EFFICIENCY

The condensing boilers are capable of high seasonal efficiencies with a minimum requirement of 96.8% and low NOx emissions no greater than 38.7mg/kWh.

APPROVALS

The boilers must be tested and certified by BSI to EN 15502 for use with Natural Gas.

Boilers are certified to meet the requirements of the EC Gas Appliance Directive, Boiler Efficiency Directive, EMC and Low Voltage Directive.

The manufacturer must be ISO 9001 accredited.

SPECIFICATION

The boiler will be capable of flow rates for common systems using 11°C to 20°C temperature differentials.

SOURCING

The condensing boiler must be manufactured or finally assembled in the United Kingdom.

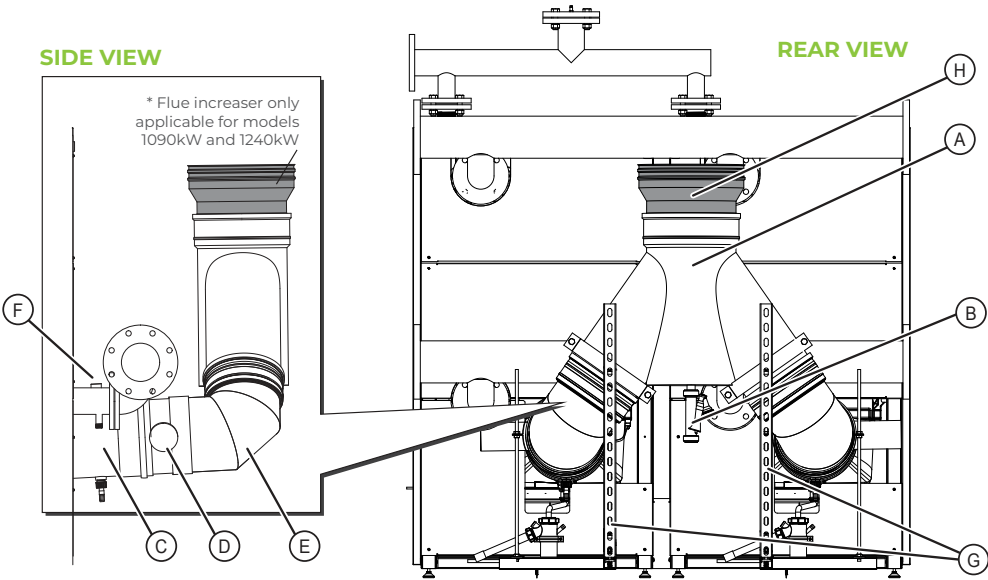
WARRANTY

The boiler must be available with a 2 year warranty.

FLUE COMPONENTS

KEY

- A Flue Manifold
- B Flue Condensate Drain Trap
- C Flue Adapter
- D Non Return Valve
- E Flue Elbow
- F Flue Sample Point
- G Flue Bracket Support
- H Flue Increaser



FEATURES

- 300mm diameter connection
- Supplied with Boiler
- Rear clearance of 1m from boiler required for installation
- Height of adapter at exit; 1192mm without flue increaser 1355mm with increaser
- Suitable for vertical or horizontal installations

See pages 84-87 for further system requirements

SYSTEM APPLICATION

Ideal Imax Xtra EL boilers are designed for central heating of commercial premises and also for supplying hot water via a calorifier or plate heat exchanger. They are suitable for fully pumped, open vented or pressurised systems and can be connected to heating and/or hot water systems.

They are not suitable for direct hot water supply or gravity heating/hot water systems.

BOILER	IMAX XTRA EL
Maximum static head:	61 metres (200 feet)
Maximum working pressure:	6 bar (87psi)

Maximum design flow temperature is 80°C open vented adjustable to 90°C for sealed system.

Pump overrun is provided as standard, and a period of 5 minutes must be allowed for in system design.

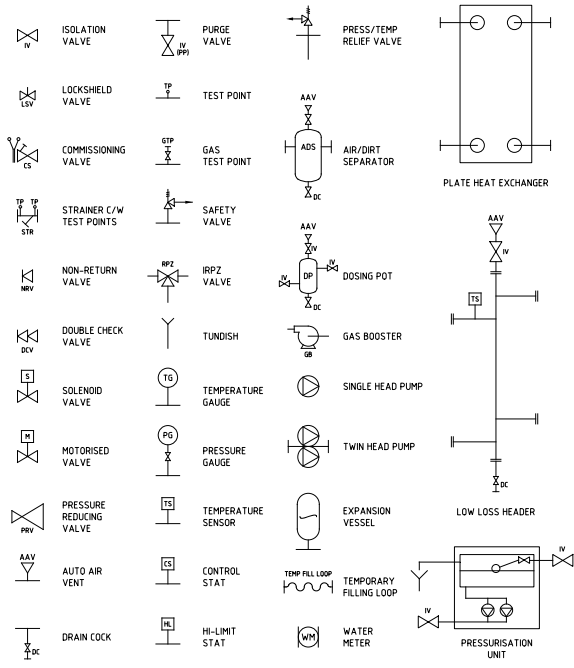
Frost protection is built into the boiler control, if the boiler sensor falls below 7°C, this will result in the appliance firing.

This will protect the boiler only, not exposed system elements.

TYPICAL SYSTEM BOILER LAYOUT

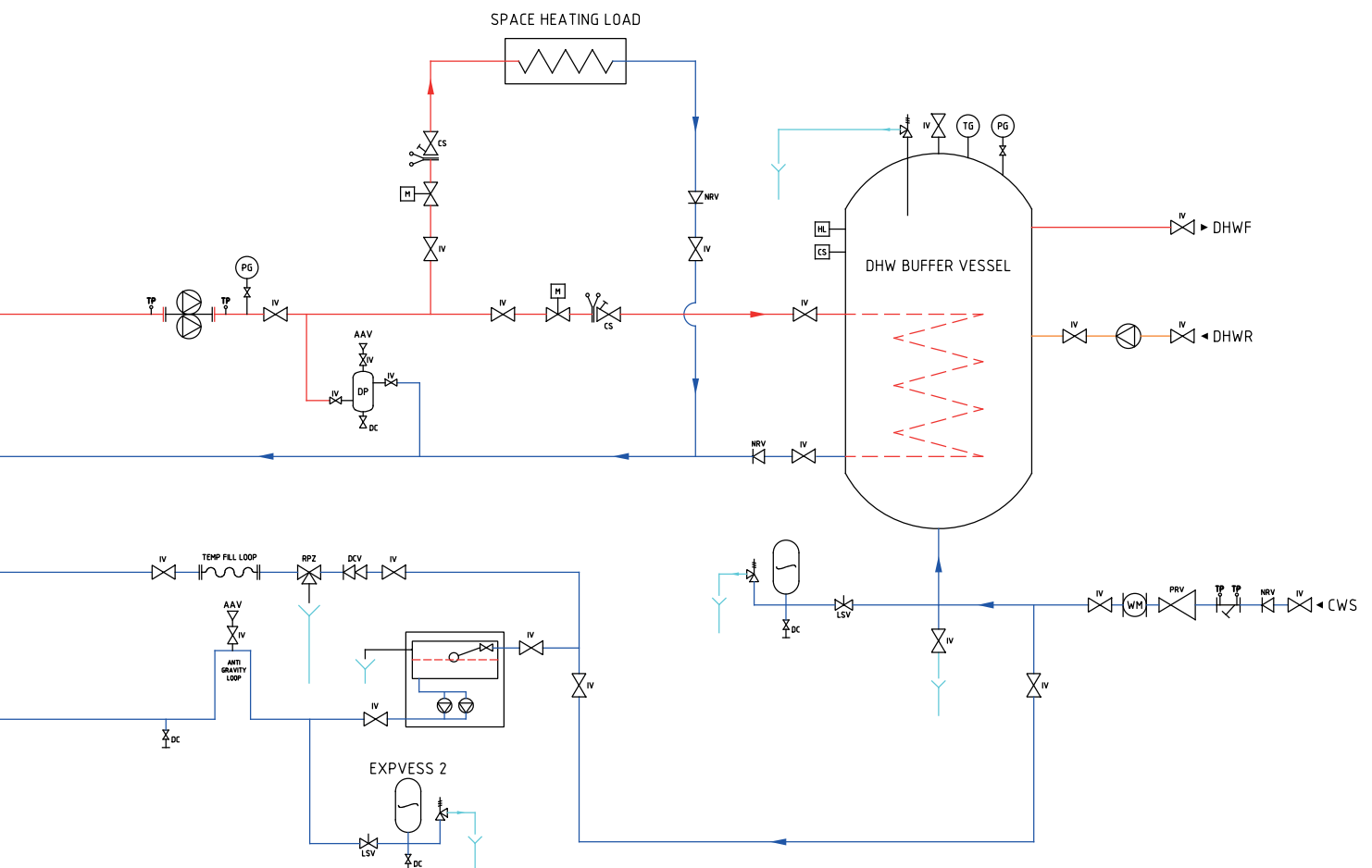


LEGEND



Note: this schematic is an illustration of a hydraulic arrangement for discussion and reference use only.

The schematic may not accurately describe the actual arrangement required in order for the system to operate correctly and additional components may be required. Under no circumstances should this be used as basis for procurement, production or installation.



EVOMOD

250 - 1000kW



mod





ultra

EVOMOD

250 - 1000kW



Available in 250, 500, 750 and 1000kW modules, the Evomod will achieve an output up to 1MW from a single unit solution together with a minimum footprint that enables the product to be installed where space is limited. Each module provides a maximum of 250kW heat output and will modulate down through a sophisticated control system.



Free commissioning



Floor standing



NOx class 6



ErP compliant



Part L 2022



BIM

FEATURES AND BENEFITS

- Free commissioning
- 5 year heat exchanger warranty*
- Modules up to 3 high stacking
- Stainless steel heat exchanger
- Built in module diagnostics, sequencing and remote indication
- Single flue outlet, system, gas and electrical connections
- Up to 20:1 turndown: 1MW boiler can modulate down to just 46.7kW
- Easy access for servicing
- Minimum footprint with easy site handling and standard doorway access allowing simplified plant replacement
- NOx <40mg/kWh (Class 5)
- 2 year parts and labour warranty
- Up to 108.5% net efficiency (fully condensing)
- Single boiler control for all module options
- ErP compliant (250kW)
- Building Regulation Part L2 compliant (500 - 1000kW)
- MCPD compliant (1000kW)

DIMENSIONS AND CLEARANCES

BOILER	DIM A	DIM B	DIM C
250	710	860	1339
500	710	1480	1339
750	710	2100	1339
1000	1428	1480	1339

All dimensions in mm

The following minimum clearances must be maintained for operation and servicing:

↑

TOP: 300mm

↔

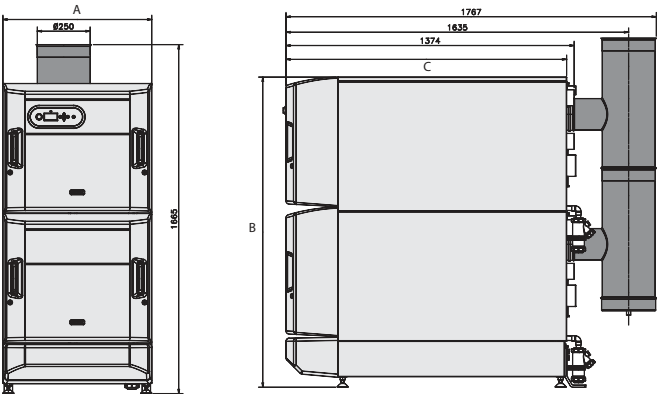
SIDES:
LH 400mm | RH 450mm

→

FRONT: 600mm

↓

REAR: 750mm



BOILER ASSEMBLY

EXPLODED VIEW
(500kW MODEL SHOWN)

KEY

- 1. Fan
- 2. Gas valve
- 3. Venturi
- 4. Mains connection box
- 5. Heat exchanger
- 6. Thermistor (flow)
- 7. Thermistor (return)
- 8. Condensate blockage pressure switch
- 9. Flue sampling point
- 10. Water pressure switch

PERFORMANCE DATA

EVOMOD 250 - 1000kW

MODEL			250	500	750	1000
Boiler output (non-condensing) Mean 70°C (80/60)	Max	kW	232.5	465	697.5	930
	Min	kW	46.7	46.7	46.7	46.7
Boiler output (condensing) Mean 40°C (50/30)	Max	kW	252.5	505	757.5	1010
	Min	kW	51.4	51.4	51.4	51.4
Boiler input max rate	Net	kW	238	476	714	952
	Gross	kW	264.1	523.2	792.3	1056.4
Boiler input min rate	Net	kW	47.6	47.6	47.6	47.6
	Gross	kW	52.8	52.8	52.8	52.8
Gas rate	Max rate	m³/hr	25.2	50.4	75.6	100.8
Approx. flue gas volume (@80°C)	Max rate i.e. Non-condensing	m³/hr	391	783	1174	1566
Max. flue resistance		Pa	105			
Flue gas CO ₂ G20/LNG	Max rate	%	9.1 ± 0.2			
	Min rate	%	8.4 ± 0.2			
NO _x with O ₂ = 0% (BS EN 15502-1)	Weighted	mg/kWh	39.7			
		ppm	22.5			
Seasonal boiler efficiency	(Building regs L2)	%	95.9			
Operating temperature	Max	°C	80			

INCLUDED AS STANDARD

BOILER	EVOMOD
Remote indication (run and alarm)	✓
Hours run	✓
BMS (0-10v) operation	✓
Pump overrun	✓
Large backlit LCD controls, including 5 line plain text display	✓

OPTIONAL KITS

BOILER	EVOMOD
Water and gas header assembly packaged	✓
Water and gas header assembly c/w valves packaged	✓
Water connection kit (250)*	✓
Air inlet collar	✓

* If you do not order the water and gas header assembly c/w valves packaged, you must order the water connection kit.

GENERAL DATA

EVOMOD 250 - 1000kW

MODEL		250	500	750	1000
Gas supply		2H - G20 - 20mbar			
Gas supply connection	R (in. BSP)	R1¼	R2	R2	R2½
Flow connection	R (in. BSP)	2½" PN16	5" PN16		
Return connection	R (in. BSP)	2½" PN16	5" PN16		
Hydraulic resistance Δ 20 °C	mbar	410			
Hydraulic resistance Δ 20 °C with optional water header pack	mbar	100	105	110	120
Max press (sealed system)	bar (psi)	6 (87)			
Maximum static head	m	61 (200)			
Boiler electricity supply		230V - 50Hz			
Boiler fuse rating		1 x 5A Internal	2 x 5A Internal	3 x 5A Internal	4 x 5A Internal
Power consumption (boiler only)	W	350	680	1020	1350
Air inlet (optional)	O/D mm	300			300 x 2
Flue size dia	mm	150	250		300
Condensate drain	mm	21.5	2 x 21.5	3 x 21.5	4 x 21.5
Boiler dry weight (unpacked)	Kg	229	420	611	845
Water content	l	14.8	29.6	44.4	59.2
IP rating		IP20			

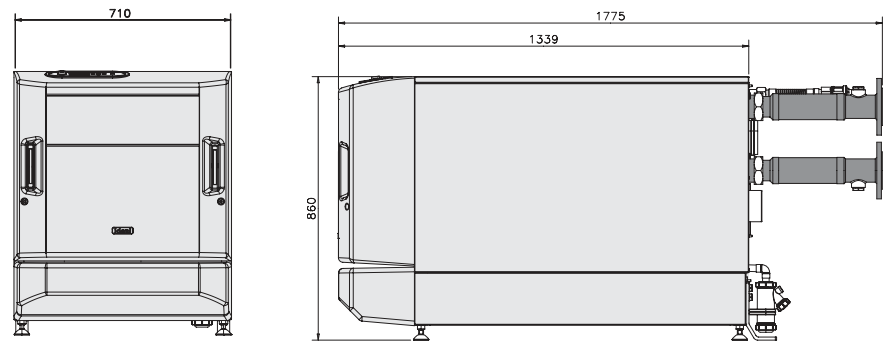
Electricity supply and Fuse rating for pumps etc. refer to manufacturer's instructions.

Note: natural gas consumption is calculated using a calorific value of 37.8MJ/m³ (1038Btu/ft³) gross or 34 MJ/m³ (910 Btu/ft³) net at 15 °C and 1013.25 mbar.

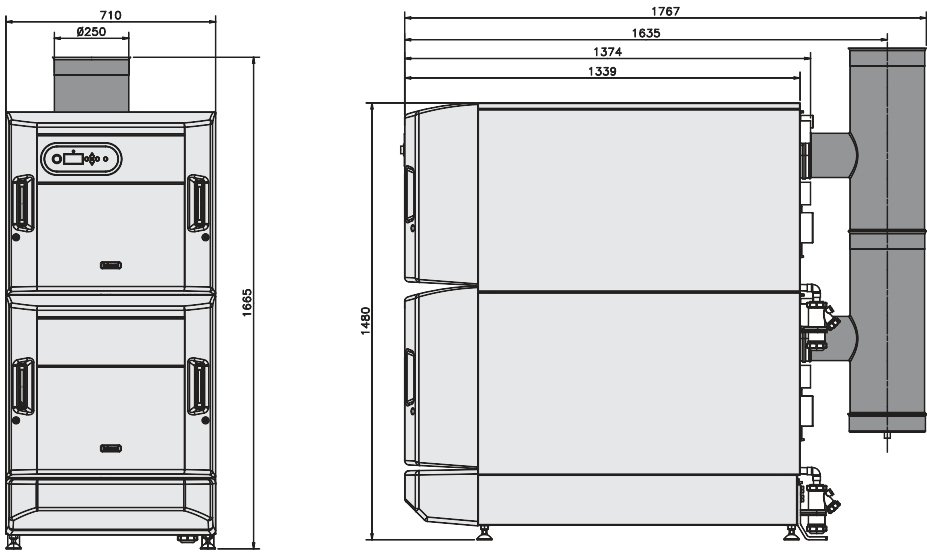
- a. For l/s divide the gross heat input (kW) by the gross C.V. of the gas (MJ/m³)
- b. For ft³/h divide the gross heat input (Btu/h) by the gross C.V. of the gas (Btu/ft³)
- c. For M³/h multiply L/S by 3.6.

DIMENSIONS

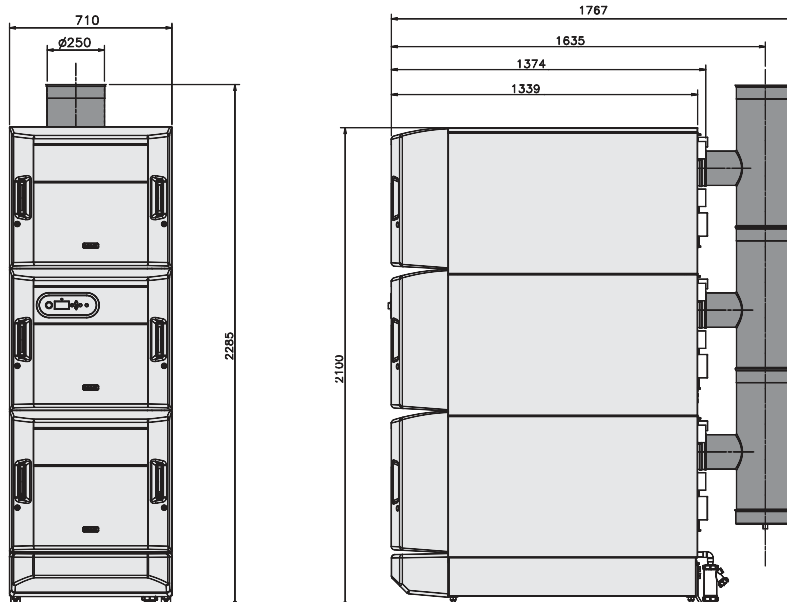
EVOMOD 250 - 1000kW



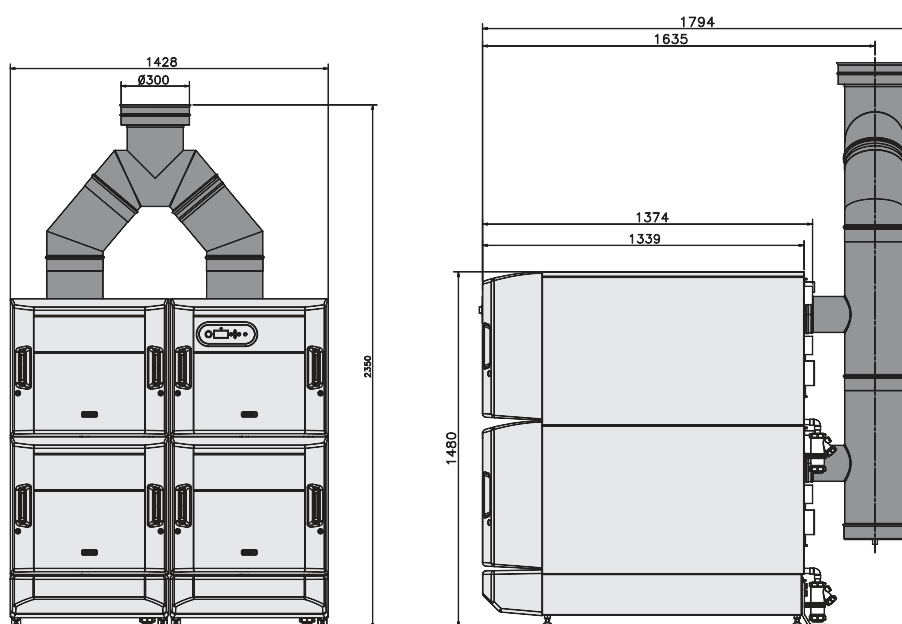
BOILER	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
EVOMOD 250kW	860	710	1339



BOILER	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
EVOMOD 500kW	1480	710	1339



BOILER	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
EVOMOD 750kW	2100	710	1339



BOILER	HEIGHT (mm)	WIDTH (mm)	DEPTH (mm)
EVOMOD 1000kW	1480	1428	1339

SUGGESTED ENGINEERING SPECIFICATION

The Suggested Engineering Specification is wording designed for specifiers to copy and paste into their specifications to ensure inclusion of Ideal Heating commercial boilers.

OVERVIEW

The boilers must be fully automatically controlled, floor standing, fanned, super-efficient condensing appliances utilising a stainless steel heat exchanger and be suitable for connection to fully pumped open vented or sealed water systems. The boilers must be modular in design with each module capable of delivering 250kW.

CONTROLS

The condensing boilers must have connectivity for common types of BMS integration including 0-10v and volt free connections. The boiler must be fully modulating with a 5:1 turndown ratio per 250kW module and include control features enabling set point adjustment, heating circuit control of one constant temperature and one DHW circuit or 2 constant temperature circuits, and safety lock out parameters including fault diagnosis for both boiler and external components such as sensors or pumps.

Boiler capabilities must include, with the use of external components, frost protection, weather or room compensation and system pump control.

FLUE

The condensing boilers must be suitable for use with a room sealed flue or open flue applications including C13, C33 and B23 classifications. The flue outlet and air inlet must be situated at the rear of the boiler.

HYDRAULIC

The condensing boiler must be suitable for connection to fully pumped open vented or sealed water systems. All hydraulic connections including flow return and condensate drain must be located on the rear of the boiler. Hydraulic connections must be uniform across the modules available in the range to ensure ease of installation and maintenance. The boiler must have a maximum operating pressure of 6 bar and be suitable for heating and indirect hot water systems.

DIMENSIONS

The condensing boiler must fit within maximum permitted floor space of 0.95m² (when installed 1 module wide) or 1.91m² (when installed 2 modules wide).

MOUNTING / POSITIONING

The condensing boilers will be floor standing.

EFFICIENCY

The condensing boilers are capable of high seasonal efficiencies with a minimum requirement of 95.9% and low NOx emissions no greater than 39.7mg/kWh.

APPROVALS

The boilers must be tested by BSI and conform to EN656, EN13856 and EN15417 for use with Natural Gas. Boilers are certified to meet the requirements of the EC Gas Appliance Directive, Boiler Efficiency Directive, EMC and Low Voltage Directive.

The manufacturer must be ISO 9001 accredited.

SPECIFICATION

The boiler will be capable of flow rates for common systems using 20°C temperature differentials.

SOURCING

The condensing boiler must be manufactured or finally assembled in the United Kingdom.

WARRANTY

The boiler must be available with a 2 year warranty.

SYSTEM APPLICATION

Ideal Evomod boilers are designed for central heating of commercial premises and also for supplying hot water via a calorifier or plate heat exchanger.

They are suitable for fully pumped, open vented or pressurised systems and can be connected to heating and/or hot water systems.

They are not suitable for direct hot water supply or gravity heating/hot water systems.

BOILER	EVOMOD
Maximum static head:	61 metres (200 feet)
Maximum working pressure:	6 bar (87psi)

Maximum design flow temperature is 80°C (180°F)

Pump overrun is provided as standard, and a period of 2 minutes must be allowed for in system design.

Frost protection is built into the boiler control, if the boiler sensor falls below 5°C, this will result in the appliance firing.

This will protect the boiler only, not exposed system elements.

RANGE PACKAGING

Evomod 250, 500, 750

The boiler is delivered on a wooden pallet with protective cardboard packing pieces at the front. The side panels and bottom side panels are contained within cardboard packs strapped to the sides of the boilers. The footer is contained in a cardboard box, strapped to the boiler, or placed on the flue header pallet. All condensate traps are individually boxed and stored within the footer box. A protective plastic wrap protects the contents of the pallet. The flue components are in a cardboard box on a separate pallet.

The optional water connection kit (250) comes in a separate box, the optional header kits (500, 750, 1000) come on a separate pallet.

Evomod 1000

This boiler comes packed as above except the boiler is split onto 2 pallets. The header assembly comes split across 2 pallets + a gas manifold.

LIST OF PACK CONTENTS:

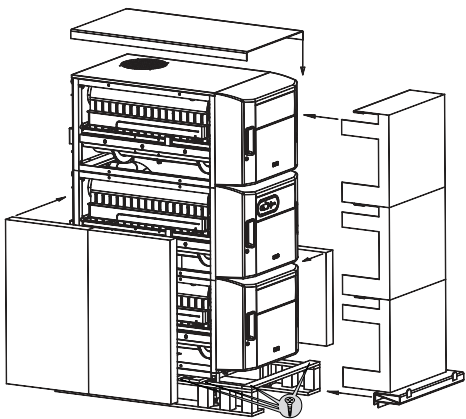
1. Boiler on pallet(s)
2. Side panel pack(s)
3. Footer pack(s)
inc. condensate traps
4. Flue components

To unpack the boiler:

- Remove the plastic wrap
- Unstrap and remove side panel boxes, store in a safe place
- Lift off footer box, store in a safe place

- Retrieve the condensate trap boxes from within the footer box, store in a safe place.
- Remove the protective cardboard packing from the front.
- Remove all screws from the wooden pallet and disassemble the pallet.

A full commissioning service is available at an extra charge.



TYPICAL SYSTEM BOILER LAYOUT





adap

EVOJET

150 - 3000kW



Pressure
Jet



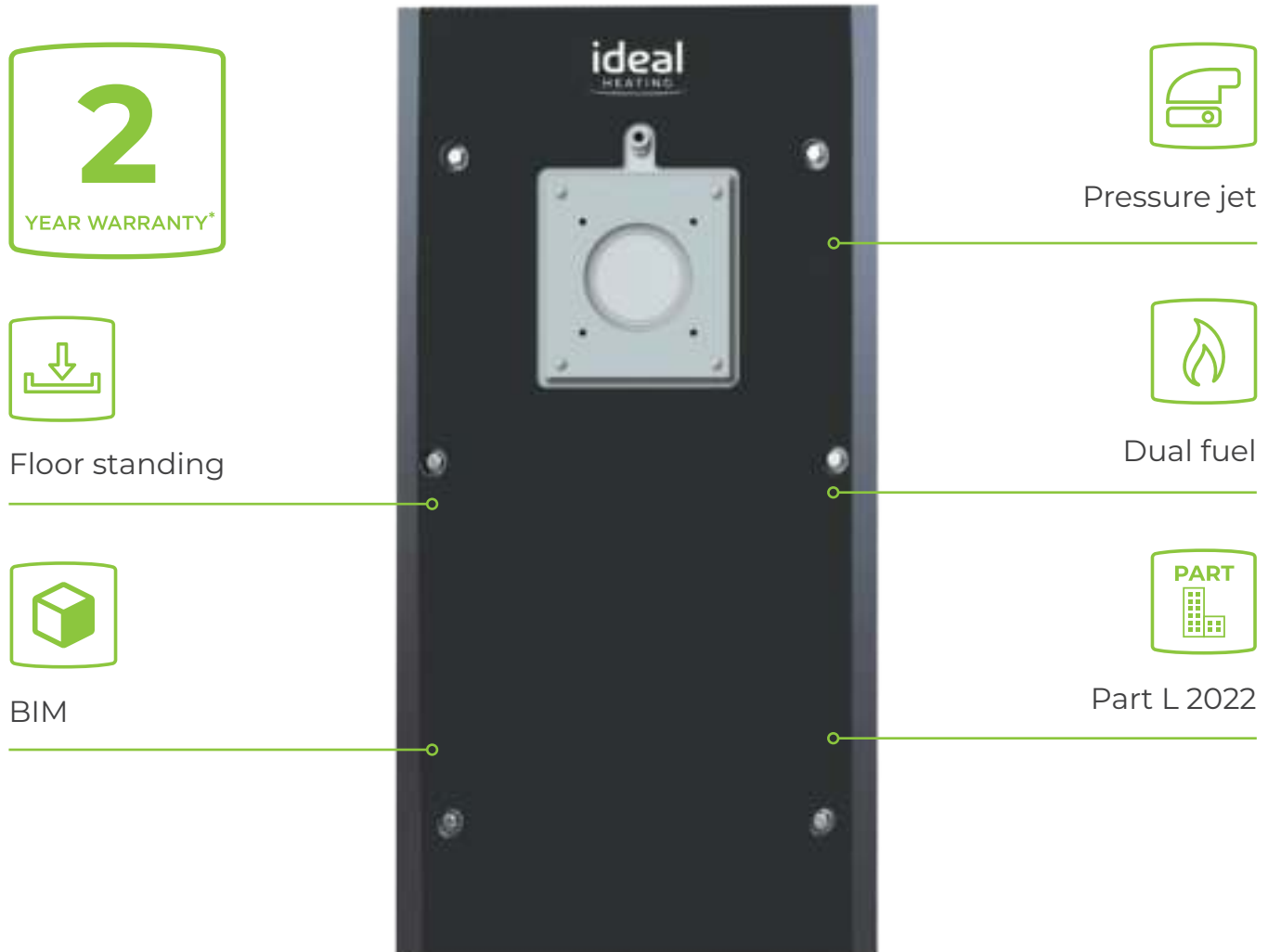
Dual
Fuel

table

EVOJET

150 - 3000kW

Ideal for larger systems and heat networks - space saving alternative to larger cascades of multiple smaller boilers. The Evojet range of condensing pressure jet and blown gas boilers is made up of 14 models with outputs from 150 to 3000kW. Floor standing and suitable for applications in either single or multiple configurations.



FEATURES AND BENEFITS

- Up to 109.3% part load efficiency
- Designed to operate up to 40°C ΔT providing minimum flow rates are achieved
- Dedicated low temp return
- Stainless steel heat exchanger
- Triple flue pass for high operating efficiencies
- Multiple burner options available
- Modulation via 0-10 volt BMS, or RWF controller
- 4 new models: 1750kW, 2100kW, 2600kW and 3000kW
- 14 models in total with outputs from 150kW to 3000kW
- Floor standing for applications in either single or multiple configurations

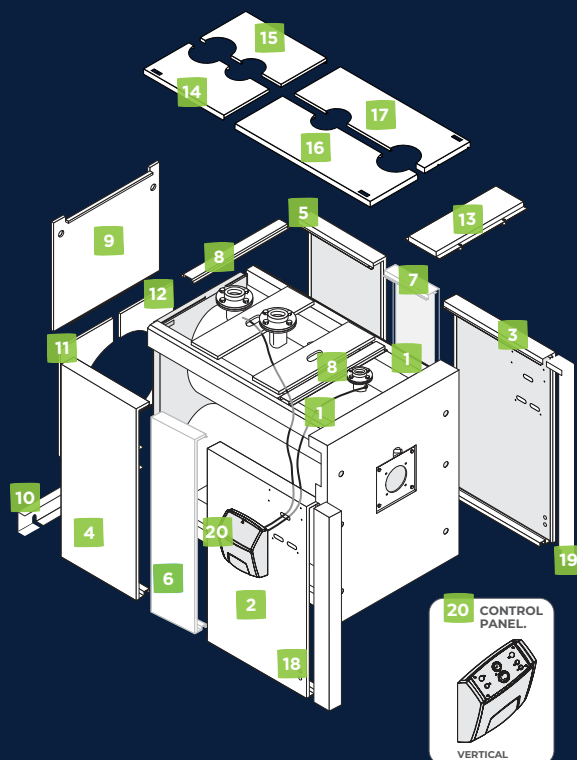
DIMENSIONS AND CLEARANCES

BOILER	DIM A	DIM B	DIM C
150	740	1455	1315
210	740	1455	1315
270	850	1630	1450
350	850	1830	1450
450	900	2035	1630
600	900	2235	1630
800	1060	2560	1910
1000	1060	2810	1910
1250	1180	3010	2030
1450	1225	3080	2180
1750	1800	3620	1945
2100	1800	4020	1945
2600	1900	4425	2128
3000	2000	4615	2170

All dimensions in mm

The following minimum clearances must be maintained for operation and servicing:

- ➔ FRONT: **MINIMUM, BURNER LENGTH + 600**
RECOMMENDED ≥ BOILER LENGTH (FOR CLEANING)
- ↔ SIDES: **MINIMUM, 300 (150 - 1250KW), 600 (1450KW) & 1500 (1750 - 3000KW)**
RECOMMENDED, 1000 (150 - 1450KW), 1500 (1750 - 3000KW)
- ↓ REAR: **1000mm**
- ↑ TOP: **≥ 1000mm**



BOILER ASSEMBLY

EXPLODED VIEW

KEY

- | | |
|-------------------------|-----------------------|
| 1. Boiler frame | 11. Bottom rear panel |
| 2. Side panel | 12. Bottom rear panel |
| 3. Side panel | 13. Front top panel |
| 4. Rear panel | 14. Top panel |
| 5. Rear panel | 15. Top panel |
| 6. Central side panel | 16. Top panel |
| 7. Central side panel | 17. Top panel |
| 8. Top cross beams | 18. Front trim panel |
| 9. Top rear panel | 19. Front trim panel |
| 10. Bottom rear bracket | 20. Control panel |

PERFORMANCE DATA

EVOJET 150 - 3000kW (GAS)

MODEL			150	210	270	350	450	600	800	1000	1250	1450	1750	2100	2600	3000
Output power (80/60)	Max	kW	146.6	205.2	264.3	343.7	441.9	589.2	785.6	982.0	1227.5	1423.9	1718.5	2062.2	2553.2	2946.0
	Min	kW	108.2	147.1	207.8	264.2	342.2	439.7	586.0	781.0	976.0	1219.7	1424.0	1721.2	2065.3	2556.8
Output power (50/30)	Max	kW	160.5	224.7	288.9	374.5	481.5	642.0	856.0	1070.0	1337.5	1551.5	1863.8	2236.5	2769.0	3195.0
Efficiency Pn (80/60)	Max	%	97.7	97.7	97.9	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2
	Min	%	97.5	97.7	98.2	98.3	97.5	97.5	97.5	97.5	97.5	97.5	98.3	98.3	98.3	98.3
Efficiency Pn (50/30)	Max	%	107										107.5	107.5	107.5	107.5
Efficiency part load		%	108.5	109.3	109.2	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7	108.7
Losses from stack for sensible heat (Q _{max})		%	1.7	1.7	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.5
Losses from casing with burner on		%	0.3	0.3	0.5	1.0	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3

*Depends on return temperature (30-60°C)

**At Pn max and output T = 80°C, return T = 60°C and CO₂ = 10.3%

GENERAL DATA

EVOJET 150 - 3000kW (GAS)

MODEL		150	210	270	350	450	600	800	1000	1250	1450	1750	2100	2600	3000
Fuel		GAS (Natural Gas and LPG compatible)													
Constant pressure drop	%	<1										<0.2			
Flue gas temperature (ΔT)	°C	< 45+75*													
Flue gas mass flow rate (Q max)**	kg/sec	0.07	0.09	0.12	0.15	0.20	0.26	0.33	0.43	0.54	0.63	0.75	0.93	1.14	1.32
Furnace pressure	mbar	2.0	2.7	3.2	4.6	5.0	5.5	5.7	6.3	6.8	7.4	8.4	9.6	11.5	11.6
Furnace volume	dm³	172	172	241	279	442	496	753	845	1037	1249	1593.0	1810.0	2270.0	2632.5
Total volume of flue gas side	dm³	272	292	413	482	737	860	1290	1454	1763	2097	2525	3040	3830	4440
Heat exchanger surface area	m²	8.20	10.40	13.00	16.30	21.80	28.80	39.60	46.50	56.20	62.28	77.7	93.2	115.7	136.0
Volumetric heat load (Q max)	kW/m³	872	1221	1120	1254	1018	1210	1062	1183	1205	1161	1098.6	1160.2	1145.4	1139.6
Specific heat load	kW/m²	18.0	19.9	20.4	20.9	20.1	20.3	18.5	21.0	21.7	22.6	22.5	22.5	22.5	22.1
Maximum condensate production	l/h	18.4	27.4	31.9	40.9	52.2	73.8	88.0	111.4	132.7	159.5	173	203	256	301
Maximum working pressure	bar	6													
Maximum admissible temperature	°C	110										100			
Maximum working temperature	°C	95										90			
Pressure drop ΔT 10°C	mbar	43.2	36.0	54.0	46.4	33.8	30.2	128.7	121.5	100.4	150.1	40	78	56	75
Pressure drop ΔT 20°C	mbar	11.3	10.2	16.3	13.4	9.0	8.5	28.7	30.6	28.4	36.3	16	31	21	20
Water capacity	l	323	360	495	555	743	770	1320	1395	1825	1900	3060	3330	4700	5560
Weight of boiler	kg	510	530	677	753	1095	1250	1870	2085	2515	3050	4365*	4750*	5820*	6750*
Weight of panelling	kg	50	50	60	70	90	120	140	160	215	230				

PERFORMANCE DATA

EVOJET 150 - 3000kW (OIL)

MODEL			210	270	350	450	600	800	1000	1250	1450	1750	2100	2600	3000
Output power (80/60)	Max	kW	203.7	263.8	343.7	441.9	589.2	785.6	982.0	1227.5	1423.9	1718.5	2062.2	2553.2	2946.0
	Min	kW	147.1	207.8	264.2	342.2	439.7	586.0	781.0	976.0	1219.7	1424.0	1721.2	2065.3	2556.8
Efficiency Pn (80/60)	Max	%	97.0	97.7	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2	98.2
	Min	%	97.4	98.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	98.3	98.3	98.3	98.3
Losses from stack for sensible heat (Qmax)		%	1.7	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.5	1.5
Losses from casing with burner on		%	0.3	0.5	1.0	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3

*At Pn max and output T = 80°C, return T = 60°C and CO₂ = 10.3%

GENERAL DATA

EVOJET 150 - 3000kW (OIL)

MODEL		210	270	350	450	600	800	1000	1250	1450	1750	2100	2600	3000
Fuel		Low Sulphur Oil												
Constant pressure drop	%	<1									<0.2			
Flue gas temperature (ΔT)	°C	75.0												
Flue gas mass flow rate (Q max)*	kg/sec	0.09	0.12	0.15	0.20	0.26	0.33	0.43	0.54	0.63	0.75	0.93	1.14	1.32
Furnace pressure	mbar	2.7	3.2	4.6	5.0	5.5	5.7	6.3	6.8	7.4	8.4	9.6	11.5	11.6
Furnace volume	dm³	172	241	279	442	496	753	845	1037	1249	1593.0	1810.0	2270.0	2632.5
Total volume of flue gas side	dm³	292	413	482	737	860	1290	1454	1763	2097	2525	3040	3830	4440
Heat exchanger surface area	m²	10.40	13.00	16.30	21.80	28.80	39.60	46.50	56.20	62.28	77.7	93.2	115.7	136.0
Volumetric heat load (Q max)	kW/m³	1221	1120	1254	1018	1210	1062	1183	1205	1161	1098.6	1160.2	1145.4	1139.6
Specific heat load	kW/m²	19.9	20.4	20.9	20.1	20.3	18.5	21.0	21.7	22.6	22.5	22.5	22.5	22.1
Maximum working pressure	bar	6												
Maximum admissible temperature	°C	110									100			
Maximum working temperature	°C	95									90			
Pressure drop ΔT 10°C	mbar	36.0	54.0	46.4	33.8	30.2	128.7	121.5	100.4	150.1	40	78	56	70
Pressure drop ΔT 20°C	mbar	10.2	16.3	13.4	9.0	8.5	28.7	30.6	28.4	36.3	16	31	21	18
Water capacity	l	360	495	555	743	770	1320	1395	1825	1900	3060	3330	4700	5560
Weight of boiler	kg	530	677	753	1095	1250	1870	2085	2515	3050	4365*	4750*	5820*	6750*

*weight of boiler and panelling complete

SUGGESTED ENGINEERING SPECIFICATION

The Suggested Engineering Specification is wording designed for specifiers to copy and paste into their specifications to ensure inclusion of Ideal Heating commercial boilers.

OVERVIEW

The boiler must fully automatically controlled, floor standing condensing boiler with a triple flue pass stainless steel heat exchanger. While they are designed primarily for central heating purposes, in conjunction with a suitable storage cylinder they can also be used to produce domestic hot water on fully pumped sealed water systems.

All parts that come into contact with the combustion gases are made from titanium stabilised stainless steel to ensure maximum resistance to the corrosive action of acid condensation.

The boiler must incorporate two return water connections to facilitate multiple applications e.g. CH and DHW and enables the optimum operating efficiency to be achieved.

The boilers must be designed to operate with **Natural Gas, LPG or Oil** (delete as required) using pressure-jet or premixed burners. The burner specification will enable the choice of Two Stage / Fully Modulating and Low NOx operation.

CONTROLS

The boiler control options must be selected at the time of purchase:

- Two Stage Burner
- Modulating Burner
- BMS (Boiler Management System) 0-10V
- Oil and Dual Fuel

The boiler must include control features enabling set point adjustment, heating circuit control of one constant temperature, one variable temperature and one DHW circuit and safety lock out parameters including fault diagnosis for both boiler and external components such as sensors or pumps.

Boiler capabilities must include, with the use of external components, frost protection, weather or room compensation and system pump control.

FLUE

The condensing boilers must be suitable for use with an open flued application in B23 configuration. The B23P configuration can only be used with a premix gas burner.

HYDRAULIC

The condensing boiler must be suitable for connection to fully pumped sealed water systems. All hydraulic connections including flow return and condensate drain must be located on the bottom or rear of the boiler. The boiler must have a maximum operating pressure of 6 bar and be suitable for heating and indirect hot water systems.

DIMENSIONS

The condensing boiler must fit within maximum permitted floor space of 0.97m² (150 and 210kW models)/1.23m² (270 and 350kW models)/1.47m² (450 and 900kW models)/2.03m² (800 and 1000kW models)/2.40m² (1250kW model)/2.67m² (1450kW model)/6.34m² (1750kW model)/7.04m² (2100kW model)/8.19m² (2700kW model)/9.00m² (3000kW model).

MOUNTING / POSITIONING

The condensing boilers will be floor standing.

EFFICIENCY

The condensing boilers are capable of high seasonal efficiencies with a minimum requirement of 95.9% and low NOx emissions no greater than 39.7mg/kWh.

APPROVALS

The manufacturer must be ISO 9001 accredited.

SPECIFICATION

The boiler must be capable of the below flow rates:

WARRANTY

The boiler must be available with a 2 year warranty.

BOILER MODEL	MIN FLOW (L/H)
150	1,700
210	2,400
270	3,100
350	4,000
450	5,100
600	6,800
800	9,100
1000	11,400
1250	14,200
1450	16,500
1750	20,400
2100	24,500
2600	30,400
3000	35,000

PLACE OF INSTALLATION

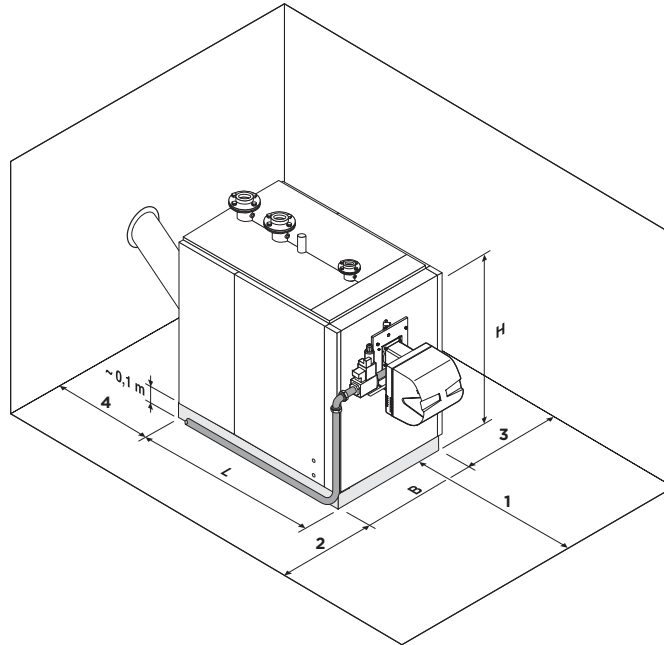
Evojet steel boilers must be installed in a dedicated boiler room, with adequately sized vents, in compliance with BS 6644.

If at all possible, the boiler should be installed on a raised base to stop the burner fan sucking up dust and to facilitate installation of a condensate drain system.

The boiler condensate drain must be located above the height of the lid of the system's condensate neutraliser if fitted.

The gas supply pipe must be installed in such a way that the boiler's panelling can be removed and the front door opened without having to remove the burner.

CLEARANCES



DESCRIPTION	BOILER MODEL													
	150	210	270	350	450	600	800	1000	1250	1450	1750	2100	2600	3000
B - width (mm)	750	750	850	850	900	900	1000	1000	1200	1250	1800	1800	1900	2000
L - depth (mm)	1350	1350	1620	1820	1930	2140	2400	2700	2920	3100	3620	4020	4425	4615
H - overall height (boiler + base) (mm)	1420	1420	1540	1540	1700	1700	2010	2010	2130	2280	1945	1945	2128	2170
1 - front clearance (mm) *	1350	1350	1620	1820	1930	2140	2400	2700	2920	3100	Burner Length + 600mm	Burner Length + 600mm	Burner Length + 600mm	Burner Length + 600mm
2 - left clearance min (mm)**	300	300	300	300	300	300	300	300	300	600	1500	1500	1500	1500
3 - right clearance min (mm)**	300	300	300	300	300	300	300	300	300	600	1500	1500	1500	1500
4 - rear clearance (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

* Front clearance can be reduced dependent on the burner used and consideration for turbulator removal

**For further guidance on clearances refer to the installation manual

NB top clearance for all models $\geq 1000\text{mm}$

EVOJET TEMPERATURE CONTROL

The standard Evojet boiler controller is suitable for controlling the temperature using a single jet burner.

The control panel must be installed on one of the boiler side panels in the vertical orientation.

CONTROL PANEL FEATURES INCLUDE:

- Robust ABS housing
- Thermometer
- Overheat lockout / reset button
- Burner lockout indicator
- Compatible with modulating burner controls utilising 0-10 volt BMS
- Compatible with modulating burner controls utilising RWF option



SYSTEM APPLICATION

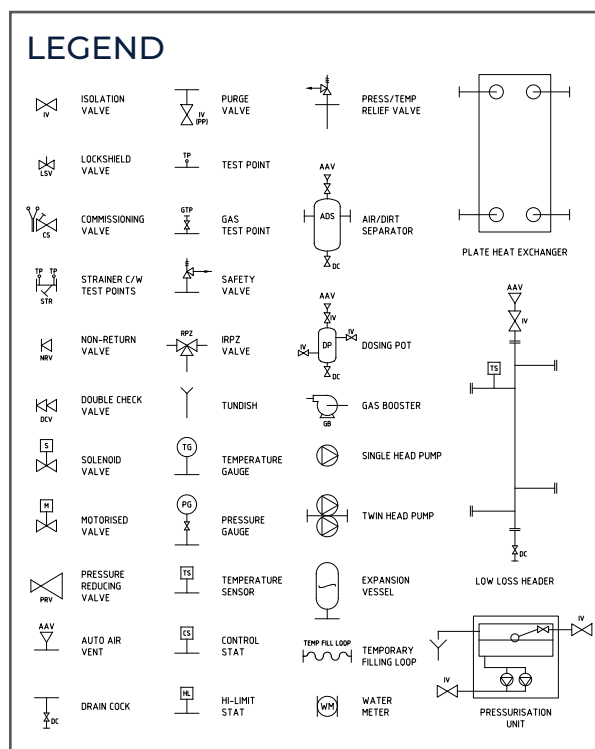
Ideal Evojet boilers are designed for central heating of commercial premises and also for supplying hot water via a calorifier or plate heat exchanger. They are suitable for fully pumped, pressurised systems and can be connected to heating and/or hot water systems.

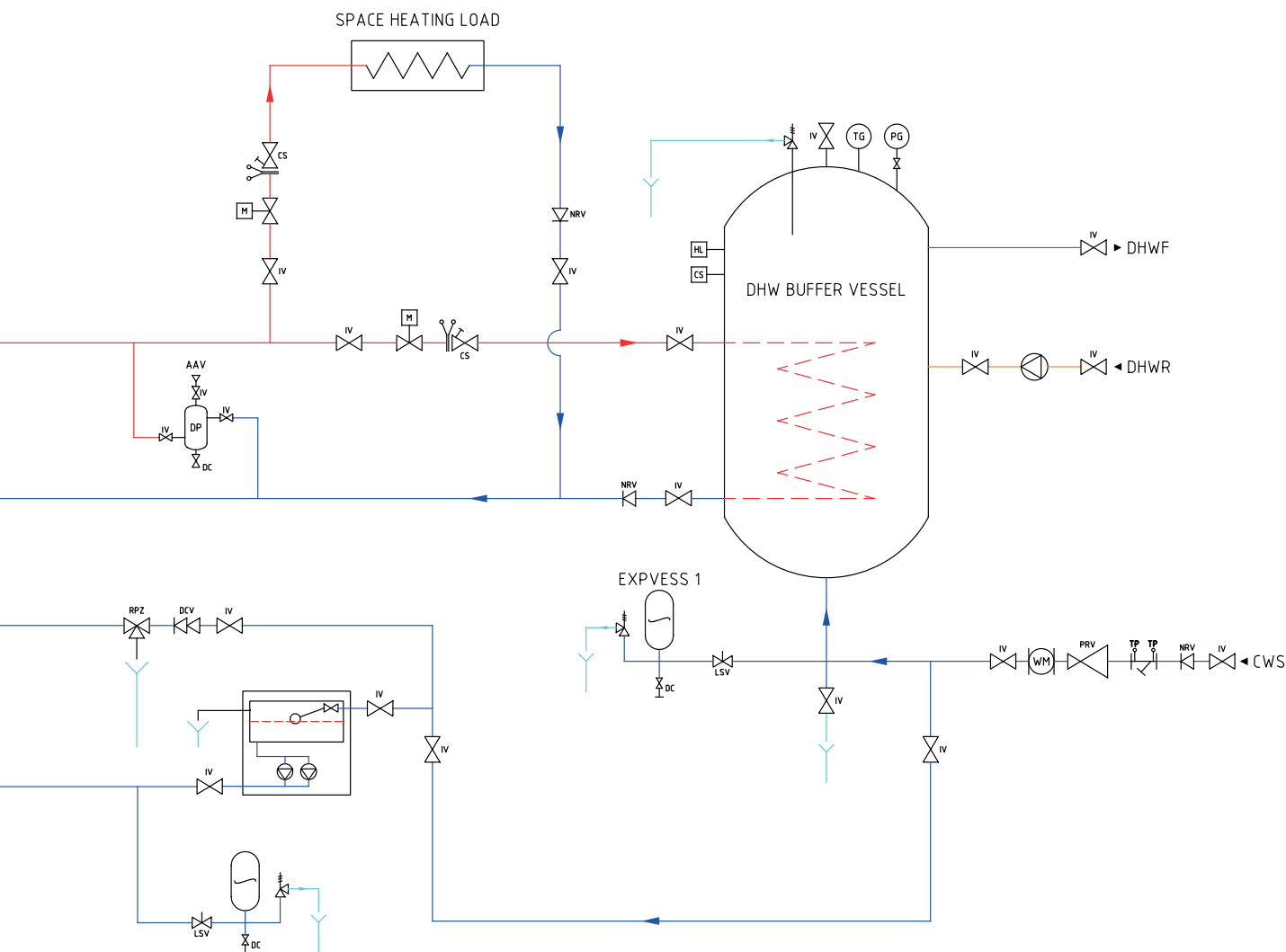
They are not suitable for open vented, direct hot water supply or gravity heating/hot water systems.

BOILER	EVOJET
Maximum static head:	61 metres
Minimum static head:	10 metres
Maximum working pressure:	6 bar
Minimum working pressure:	1 bar
Maximum design flow temperature:	90 °C



TYPICAL SYSTEM BOILER LAYOUT

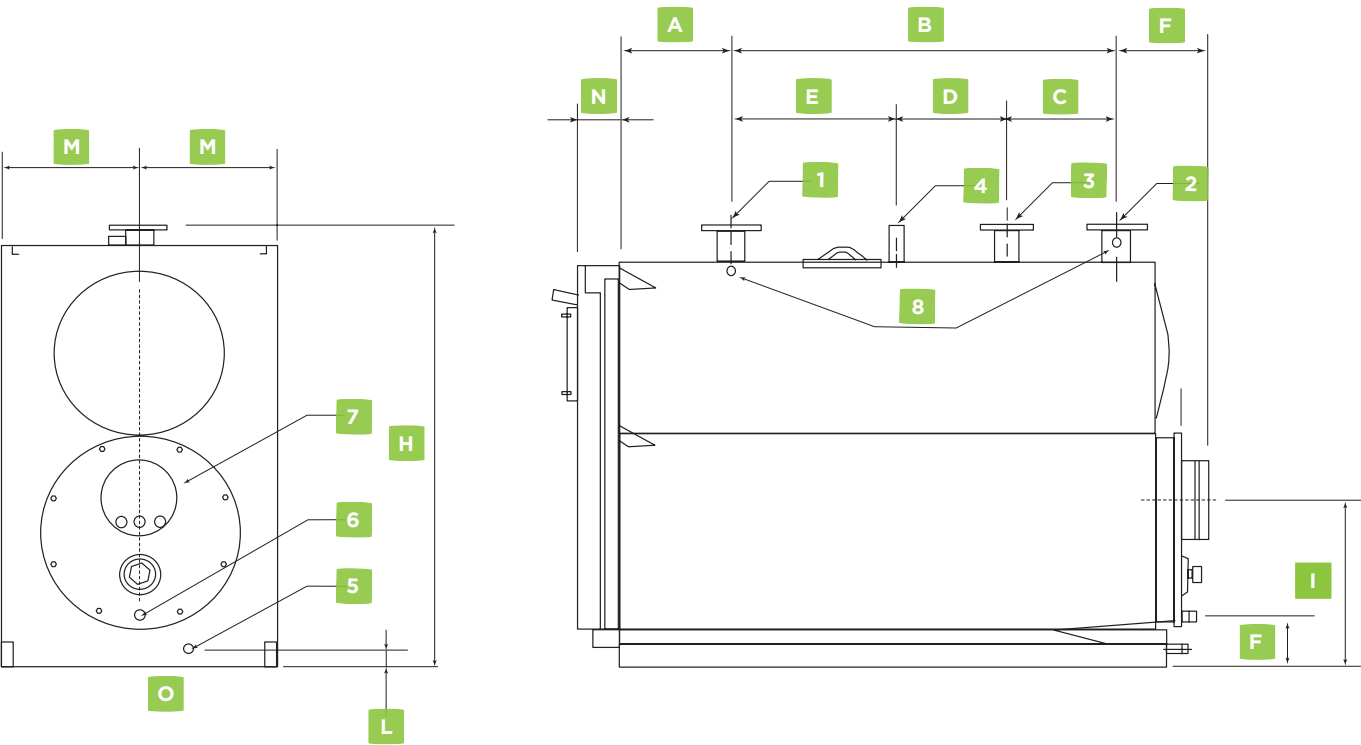




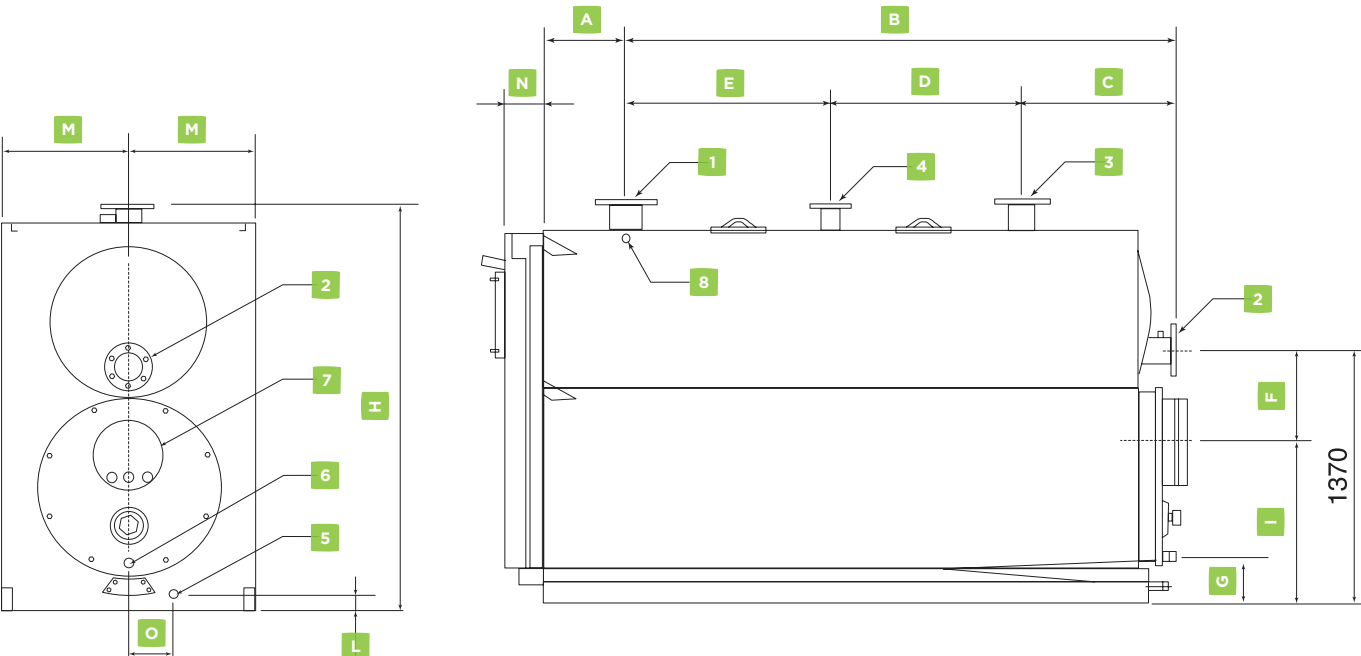
Note: this schematic is an illustration of a hydraulic arrangement for discussion and reference use only.

The schematic may not accurately describe the actual arrangement required in order for the system to operate correctly and additional components may be required. Under no circumstances should this be used as basis for procurement, production or installation.

EVOJET 150 - 1250 MODELS:



EVOJET 1450 MODEL:



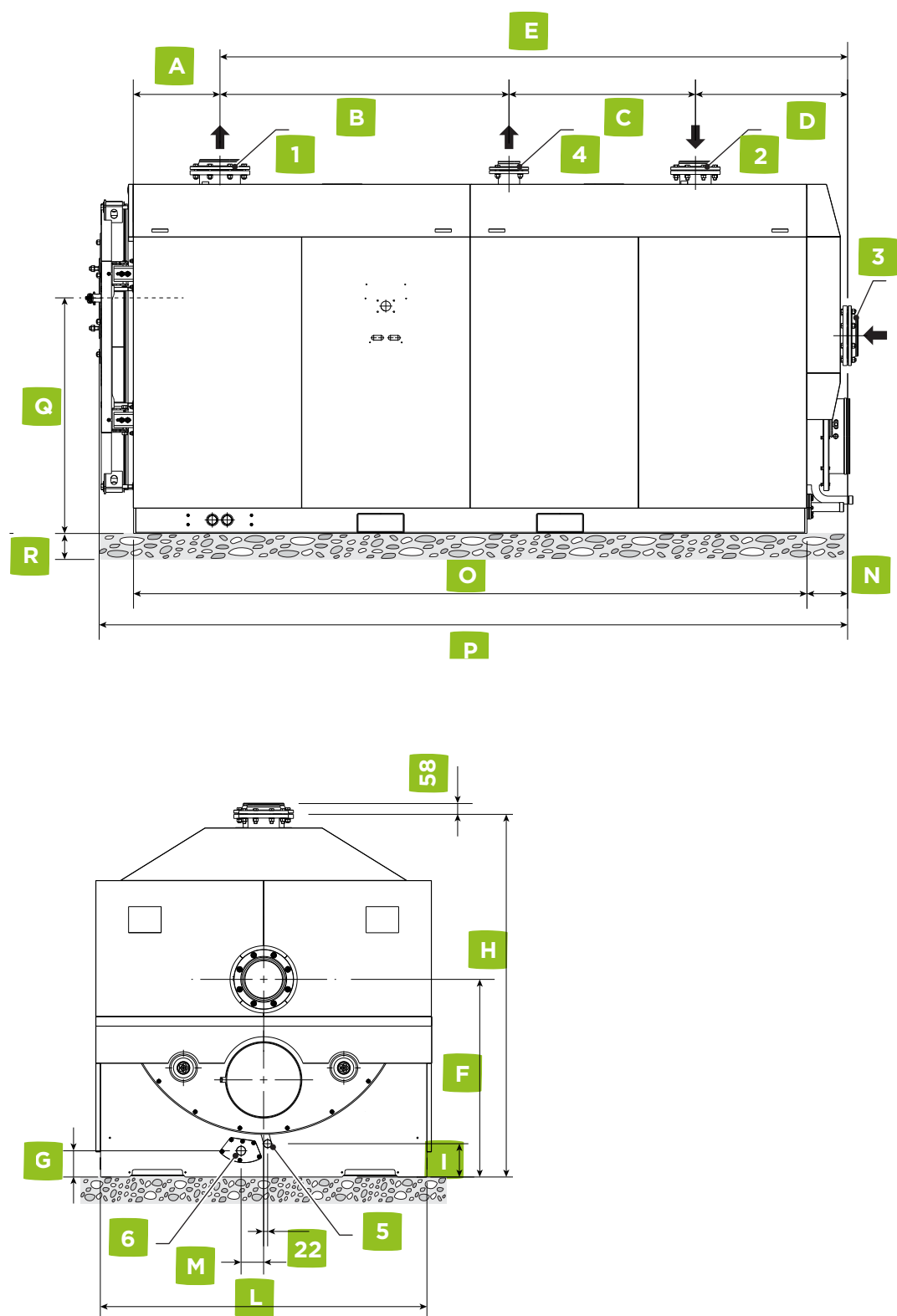
SYSTEM CONNECTIONS

Evojet boilers are designed and made for use in central heating installations, but can also be used for domestic hot water production if connected to suitable sub-systems. Water fittings are as specified in the following table:

DESCRIPTION	BOILER MODEL										
	150	210	270	350	450	600	800	1000	1250	1450	
1 - Heating flow*	65	65	65	80	100	100	125	125	150	150	DN
2 - Heating return 1 (low temperature)*	65	65	65	80	100	100	125	125	150	150	DN
3 - Heating return 2 (high temperature)*	50	50	50	65	80	80	80	80	100	100	DN
4 - Safety device fitting	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/2	1" 1/2	80	80	80	80	Ø" - DN
5 - Boiler drain fitting	1"	1"	1"	1"	1"	1"	1" 1/4	1" 1/4	1" 1/4	1" 1/4	Ø"
6 - Condensate drain fitting	1"	1"	1"	1"	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	1" 1/4	Ø" - DN
7 - Flue gas exhaust fitting	200	200	250	250	300	300	350	350	400	450	Ø" mm
8 - Instrument bulb/probe sockets	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	n° x Ø"
A - Distance from burner head to heating flow outlet	300	300	300	315	311	311	410	410	430	440	mm
B - Distance from heating flow outlet to return 1	885	885	1050	1235	1400	1600	1800	2050	2200	2585	mm
C - Distance between heating returns 1 and 2	200	200	300	250	250	300	350	350	350	735	mm
D - Distance between heating return 2 and safety device fitting	285	285	300	450	600	700	750	850	850	850	mm
E - Distance between heating flow outlet and safety device fitting	400	400	450	535	550	600	700	855	1000	1000	mm
F - Distance between heating return 1 and flue gas outlet	200	200	225	225	270	270	325	325	345	560	mm
G - Height of condensate drain	160	160	165	165	215	215	195	195	225	235	mm
H - Height of boiler flanges	1340	1340	1450	1450	1630	1630	1910	1910	2030	2180	mm
I - Height of flue gas outlet	405	405	545	545	645	645	680	680	720	805	mm
L - Height of boiler drain fitting	60	60	55	55	75	75	95	95	105	85	mm
M - Boiler centreline	345	345	375	375	395	395	475	475	535	565	mm
N - Distance from burner head to door	110	110	120	120	125	125	125	125	140	150	mm
O - Distance from boiler drain fitting	132	132	137	137	125	125	175	175	180	180	mm

*All flanged connections are PN6 according to EN 1092-1

EVOJET 1750 - 3000 MODELS:



SYSTEM CONNECTIONS

Evojet boilers are designed and made for use in central heating installations, but can also be used for domestic hot water production if connected to suitable sub-systems. Water fittings are as specified in the following table:

DESCRIPTION	BOILER MODEL				
	1750	2100	2600	3000	
1 - System delivery*	150	200	200	200	DN - PN6
2 - 2nd return (high temperature)*	100	150	150	150	DN - PN6
3 - 1st return (low temperature)*	150	200	200	200	DN - PN6
4 - Safety valve drain	80	100	100	100	DN - PN6
5 - Condensate drain	1 1/4"	1 1/4"	1 1/4"	1 1/4"	Ø"
6 - Boiler drain	1 1/2"	1 1/2"	1 1/2"	1 1/2"	Ø"
7 - Flue gas exhaust fitting	200	200	250	250	Ø" mm
8 - Instrument bulb/probe sockets	3 x 1/2"	3 x 1/2"	3 x 1/2"	3 x 1/2"	n° x Ø"
A - Distance from burner head to heating flow outlet	465	465	465	465	mm
B - Distance between heating flow outlet and safety device fitting	1348	1550	1850	1850	mm
C - Distance between safety device fitting and heating return 2	950	1000	1050	1250	mm
D - Distance between heating returns 2 and 1	665	815	880	860	mm
E - Distance from heating flow outlet to return 1	2963	3365	3780	3960	mm
F - Height of heating return 1	1060	1060	1150	1210	mm
G - Height of boiler drain	140	140	114	114	mm
H - Height of boiler flanges	1945	1945	2070	2170	mm
I - Height of condensate drain	180	180	170	163	mm
L - Width of boiler base frame	1750	1750	1850	1950	mm
M - Distance to boiler drain fitting	120	120	115	115	mm
N - Distance to boiler return 1 flange	215	215	220	220	mm
O - Length of boiler base frame	3212	3612	4024	4206	mm
P - Overall length of boiler	3620	4020	4425	4605	mm
Q - Burner axis	1060	1060	1150	1210	mm
R - Plinth height	100	100	100	100	mm

UNIVERSAL SYSTEM REQUIREMENTS OF COMMERCIAL CONDENSING BOILER RANGE

OPEN SYSTEMS - (EXCLUDING EVOJET)

The system should be vented directly off the boiler flow pipe, as close to the boiler as possible. The cold feed entry should be inverted and MUST be positioned between the pump and the vent, and not more than 150mm (6") away from the vent connection.

There should be a minimum height, 500mm (20") of open vent above the cistern water level. The vertical distance between the highest point of the system and the feed/expansion cistern water level MUST not be less than **DIM A**.

The information provided is based on the following assumptions:

The boiler is at the highest point of the circulation system. Systems designed to raise above the flow tappings will, of course, automatically require a minimum static head higher than shown.

The position of the open vent/safety pipe above the expansion cistern water level is given as a guide only. The final position will depend upon particular characteristics of the system. Pumping over of water into the expansion cistern should be avoided.

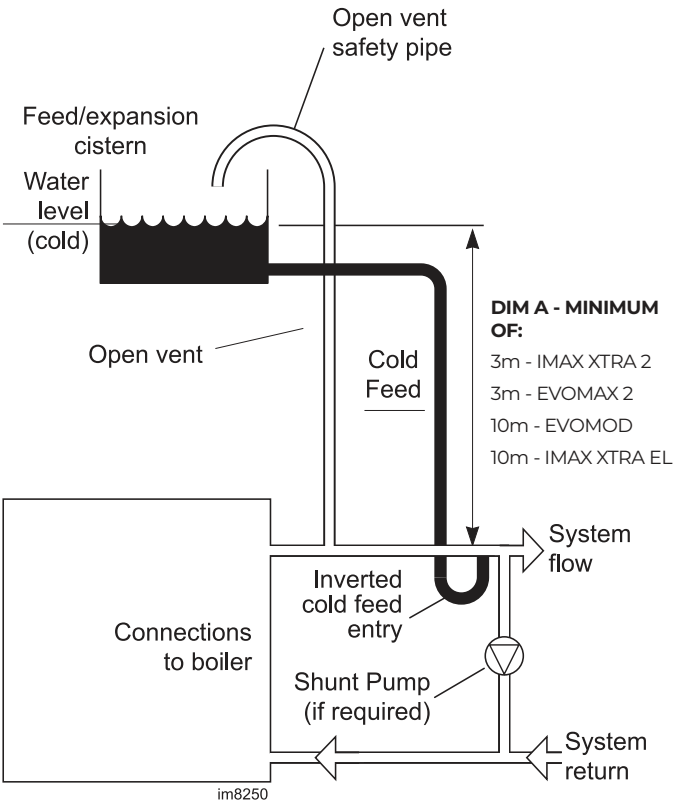
COLD FEED/OPEN VENT

The independent cold feed and the open vent must comply with BS 6644 and be of the following minimum size:

BOILER OUTPUT (KW)	COLD FEED	OPEN VENT
60 - 150	1" (25mm)	1¼" (32mm)
151 - 300	1¼" (32mm)	1½" (38mm)
301 - 600	1½" (38mm)	2" (50mm)
601>	2" (50mm)	$A=3.5 \times Q_r$

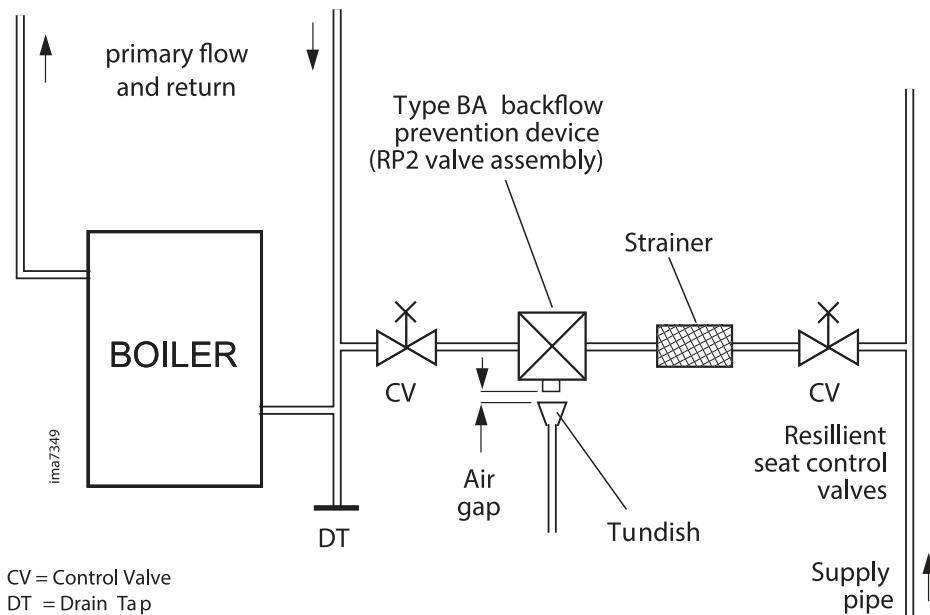
The minimum cross-sectional area of the venting pipe(s), A (in mm²) shall be determined using the equation shown here.

Where: Q_r is the rated heat output (kW)



SEALED SYSTEMS

Note: The method of filling, refilling, topping up or flushing sealed primary hot water circuit from the mains for a non-domestic property is shown below.



EVOMAX 2 - 30 - 150kW

GENERAL

- A.** The information and guidance given above is not intended to override any requirements of these publications or the requirements of the local authority, gas or water undertakings.
- B.** The installation should be capable of working with flow temperatures of up to 90°C and a temperature differential of up to 20°C.
- C.** All components of the system, including the heat exchanger of the indirect cylinder, must be suitable for a working pressure of 4 bar/58 psi and temperature of 110°C. Care should be taken in making all connections so that the risk of leakage is minimised.
- D.** The boiler is fitted with an automatic air vent, located in the left top side of the interior. This air vent must never be shut off, as this could result in dry firing of the boiler and subsequent damage to the heat exchanger.

SAFETY VALVE

A spring loaded safety valve complying with the relevant requirements of BS EN ISO 4126-1 must be fitted in the flow pipe as close to the boiler as possible and with no intervening valve or restriction. The valve should have the following features:

- A.** A non-adjustable preset lift pressure not exceeding 4 bar /58 psi
- B.** A manual testing device.
- C.** Provision for connection of a discharge pipe. The valve or discharge pipe should be positioned so that the discharge of water or steam is visible, but will not cause hazard to user or plant.

PRESSURE GAUGE

A pressure gauge covering at least the range 0-4bar must be fitted to the system. The gauge should be easily seen from the filling point and should preferably be connected at the same point as the expansion vessel.

EXPANSION VESSEL

Expansion vessels used must comply with BS EN 13831 Connection to the system must not incorporate an isolating valve.

FLOOR STANDING BOILERS

Particular reference should be made to:

- BS 6644:2011 Specification for the installation and maintenance of gas-fired hot water boilers of rated inputs between 70 kW (net) and 1.8 MW (net) (2nd and 3rd family gases), BSI Standards Publication, November 2011
- INDG436 Safe management of industrial steam and hot water boilers, Health and Safety Executive, October 2011
- BG02 Guidance on Safe Operation of Hot Water Boilers, The Combustion Engineering Association and Safety Assessment Federation, May 2019

The information and guidance given below is not intended to override any requirements of either of the above publications or the requirements of the local authority, gas or water undertakings.

In general commercial closed pressurised systems are provided with either manual or automatic water make up. In both instances it will be necessary to fit automatic controls intended to protect the boiler, circulating system and ancillary equipment by shutting down the boiler plant if a potentially hazardous situation should arise.

Examples of such situations are low water level and operating pressure or excessive pressure within the system. Depending on circumstances, controls will need to be either manual or automatic reset. In the event of a shutdown both visual and audible alarms may be necessary.

Expansion vessels used must comply with BS EN 13831:2007 and must be sized on the basis of the total system volume and initial charge pressure.

Initial minimum charge pressure should not be less than detailed in the chart below and must take account of the static head and specification of the pressurising equipment.

BOILER RANGE	INITIAL MINIMUM CHARGE PRESSURE
Imax Xtra and Imax Xtra 2	0.5 bar / 7.2psi
Imax Xtra EL	1.2 bar / 15.0psi
Evomod	1.0 bar / 14.7 psi
Evojet	0.5 bar / 7.2psi

When make up water is not provided automatically it will be necessary to fit controls which shut down the plant in the event of the maximum system pressure approaching to within 0.35bar / 5psi of the safety valve setting.

Other British Standards applicable to commercial sealed systems are:

BS 6880-2

BS EN 13076

BS EN 13077

BE EN 14451

BS EN 1567

VENTILATION

OPEN FLUED APPLICATION

Safe, efficient, and trouble-free operation of conventionally flued gas boilers is vitally dependent on the provision of an adequate supply of fresh air to the room in which the appliance is installed.

Ventilation by grilles communicating directly with the outside air is required at both high and low levels. The minimum free areas of these grilles must be in accordance with BS 6644 or IGE UP10. The use of an extractor fan in the same room as the boiler (or in an adjacent room in communication) can, in certain conditions, adversely affect the safe operation of the boiler. Where such a fan is already fitted, or if an extractor fan is likely to be installed at a later date, then the advice of the gas supplier should be obtained.

BS 6644 - Inputs greater than 70kW (net)

TOTAL GROSS INPUT RATING OF BOILERS	POSITION OF AIR VENTS	AIR VENT AREAS* (CM ²) (AIR DIRECT FROM OUTSIDE)	
		Boiler room	Enclosure
70kW to 1.8MW	High level	2	5
70kW to 1.8MW	Low level	4	10

*Required area is cm² per kW of net input. Note: where a boiler installation is to operate in summer months (e.g. DHW) additional ventilation requirements are stated. If operating for more than 50% of time refer to BS 6644.

BALANCED FLUE APPLICATIONS

Room sealed installations require no air from the boiler house for combustion as this is drawn direct from the outside atmosphere.

However, air may be required to ventilate the boiler house and remove any excess heat generated by the boiler (2cm² free area per kW net heat input at both high and low level BS 6644).

Imax Xtra boilers have an air inlet connection which may be used with proprietary ducting if required.

A separate flue connection is still required.

WATER TREATMENT

IMPORTANT

The application of any other treatment to this product may render the guarantee of Ideal Boilers Limited Invalid.

Ideal Heating recommend Water Treatment in accordance with the Benchmark Guidance Notes on Water Treatment in Central Heating Systems.

If water treatment is used Ideal Heating recommend only the use of Scalemaster Gold 100, Fernox, MB-1, Adey MCI, Sentinel-X100, CALMAG CM100 inhibitors and associated water treatment products, which must be used in accordance with the manufacturers' instructions.

NOTES

1. It is most important that the correct concentration of the water treatment products is maintained in accordance with the manufacturers' instructions.
2. If the boiler is installed in an existing system any unsuitable additives MUST be removed by thorough cleansing. BS 7593 details the steps necessary to clean a domestic heating system.
3. In hard water areas, treatment to prevent lime scale may be necessary - however the use of artificially softened water is NOT permitted.
4. Under no circumstances should the boiler be fired before the system has been thoroughly flushed.

For further information contact:

Fernox Alent plc

Tel: +44 (0) 870 601 5000
fernox.com

Sentinel Performance Solutions

Tel: 0800 389 4670
sentinelprotects.com

Scalemaster Water Treatment Products

Tel: 01785 811636
scalemaster.co.uk

Calmag Ltd.

Tel: +44 (0) 1535 210 320
calmagltd.com

Adey Innovation Ltd

Tel: +44 (0) 1242 546700
adey.com

COMMERCIAL RANGE OVERVIEW

CONDENSING BOILERS



EVOMAX 2

- The UK's number one wall-mounted commercial boiler
- Wall hung
- Aluminium alloy heat exchanger
- 30 - 150kW
- 30 - 120kW LPG
- Cascades up to 6 boilers for outputs up to 900kW



IMAX XTRA 2

- Floor standing
- Aluminium alloy heat exchanger
- 80 - 280kW
- Cascade up to 4 boilers for 1120kW output



IMAX XTRA EL

- Floor standing
- Aluminium alloy heat exchanger
- 320 - 1240kW
- Available in 10 models for single or multiple installations



EVOMOD

- Floor standing
- Stainless steel heat exchanger
- Modular
- 250-1000kW
- Up to 1MW output from a single unit, ideal for smaller spaces



EVOJET

- Floor standing
- Stainless steel heat exchanger
- 150 - 3000kW
- Condensing Pressure Jet
- Natural Gas, LPG, Oil or Dual Fuel
- 2 year warranty



POD

HEAT INTERFACE UNIT BY IDEAL HEATING

MADE WITH EVERYONE IN MIND

Created with our years of experience in creating domestic boilers, POD combines the efficiency available from an HIU with the simplicity of use expected from a boiler. Available in Indirect and Direct models, there is a variant for every heat network.

POD has been designed to look and work like a domestic boiler. It features a straightforward user interface and is easy to control via its OpenTherm compatibility. Also like a domestic boiler, it will fit in a kitchen cupboard.





HEAT NETWORKS AND HEAT INTERFACE UNITS: A ROUTE TO DECARBONISATION

The need to reduce harmful greenhouse gas emissions is recognised across the world in response to global climate change. With the UK target to achieve Net Zero greenhouse gas emissions by 2050, both government and customers are focused on a greener future.

There will not be one single technology to enable the UK to achieve its Net Zero target and a diverse range of solutions to decarbonise heat must be considered. These solutions must not only deliver reduced carbon emissions but do so in a way that affords stakeholders the least disruption as possible.

Heat networks, also known as district heating, are one of those solutions. They are energy agnostic; there are many options for the fuel that can be used in the energy centre, from natural gas to renewables and waste heat from other buildings or processes.

An energy centre creates hot water that is then shared via a distribution network. Heat Interface Units (HIUs) act as a conduit to take the energy from the distribution network into each dwelling. Heat networks can be as large as a whole city or as small as a block of flats but all reduce energy consumption and emissions.

TRAINING AND AFTERSALES SUPPORT

WE ARE COMMITTED TO DELIVERING THE HIGHEST LEVEL OF CUSTOMER SERVICE. WITH MORE THAN 100 YEARS' EXPERIENCE IN THE HEATING INDUSTRY WE ARE TRUSTED BY CUSTOMERS ACROSS THE UK.

Dedicated support and years of experience

Ideal Heating lead the way in commercial applications, by ensuring our heating products stay at the forefront of technology, delivering both high efficiency solutions and low running costs, in line with the key market trends and legislation.

At the centre of this trust is the support and unrivalled heating experience

provided by our dedicated technical and service engineering team.

The UK contact centre is open 364 days a year, with calls answered directly in person by fully trained members of staff. They can assist with enquiries or help to diagnose and resolve queries over the telephone. Engineer visits are also available for complex projects.

Get skilled with our expertise?

All Ideal Heating engineers have years of expertise across the full range of heating solutions and are fully trained to the highest possible standards, including all being Gas Safe registered.

The only UK Heating manufacturer accredited to deliver in-house F-Gas training and accreditations**, We are registered members of Refcom Elite.

Our training managers:

Your training manager has extensive experience and qualifications that span across the heating and gas industries.

Working closely alongside our product managers, research and development departments and national network of service engineers, they will provide insights and technical information unavailable elsewhere.

We also invest in developing their training techniques and skills so that you benefit from the best possible training experience. Our courses utilise modern training techniques to help you best retain knowledge, build skills and enjoy the experience.

Investment in state-of-the-art training centres

Ideal Heating commercial customers are further supported with the availability of high-level training. Delivered at state-of-the-art Centres of Excellence, including new flagship training venues in Hull, Leeds and Luton.

The training team also operate from a further 15 locations in the UK, backed-up by our unique mobile roadshow events our full-time expert training managers offer a wide range of comprehensive courses, which can be customised for individual installation and servicing companies.

TRAINING LOCATIONS

Our training centres are accredited for BPEC and City and Guilds.

Since 2012 we have invested over £10m on providing free or low-cost training to heating installers across the UK and Ireland.



SUPPORT



DESIGN AND TECHNICAL SUPPORT

Commercial Technical Help Line:

01482 498376

commercial.services@idealheating.com



TRAINING

01482 498660

enquiries@expert-academy.co.uk



SALES SUPPORT

Contact your local sales manager, visit:
idealcommercialboilers.com/contact-us

03330 040 393

Calls cost no more than calls to geographic numbers (01 or 02) and will be included in any inclusive minutes you have with your telephone service provider.

E: commercial@idealheating.com



BIM

BIM objects will be available to download at:

idealcommercialboilers.com/bim

NOTES

NOTES



Sales:

03330 040 393

Calls cost no more than calls to geographic numbers (01 or 02) and will be included in any inclusive minutes you have with your telephone service provider.

commercial@idealheating.com

Technical Help:

01482 498376

group.commercial@groupe-atlantic.co.uk

PO Box 103, National Avenue
Kingston upon Hull, East Yorkshire
HU5 4JN, United Kingdom

APPROVAL

These appliances are certified to G.A.R. 2016/426 and B.E.D. 92/42 Safety and Performance Directives for gas boilers. Ideal Heating pursues a policy of continuous improvement in design and performance of its products and reserves the right to vary specification without notice. Statutory rights of the consumer are not affected.



PLEASE NOTE:

The information in this brochure was correct at the time of going to print. Ideal Heating reserve the right to make any modifications to product specifications or any other details, without prior notification. For further clarification, please enquire in writing to the head office address (address above).