



# EVOMAX 2 CONDENSING BOILER

PRODUCT & FLUE GUIDE



[idealheating.com](https://www.idealheating.com)

     | welcome to our ideology



Ideal Heating is the UK’s market leader of high efficiency commercial heating solutions.

Operating from its Hull manufacturing plant and offices since 1906, Ideal is one of the few true British manufacturers left in the heating industry.

BRING BOILERS TO LIFE

Your phone or tablet can let you appreciate our Condensing Boiler range in a new dimension.

The Ideal Heating Eye app uses the latest Augmented Reality technology to project accurately scaled 3D renders into your surroundings.

The app is available for both Apple and Android devices; just search “Ideal Heating Eye”.

Over the coming pages, the icon below shows which boilers are featured in the app:



|       |   |
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Commercial/Industrial  
Heating Product of  
the Year 2020

# EVOMAX 2

30 - 150kW



DOWNLOAD  
THE APP

improved



# 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 120 kW for off mains installations.



Wall Hung



BIM



NOx  
Class 6



Flueing  
options

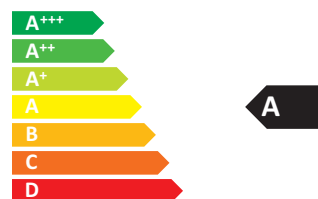


Cascade  
control

### FEATURES & BENEFITS

- **Free Commissioning**
- 5 year warranty\*
- 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



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

### DIMENSIONS & CLEARANCES

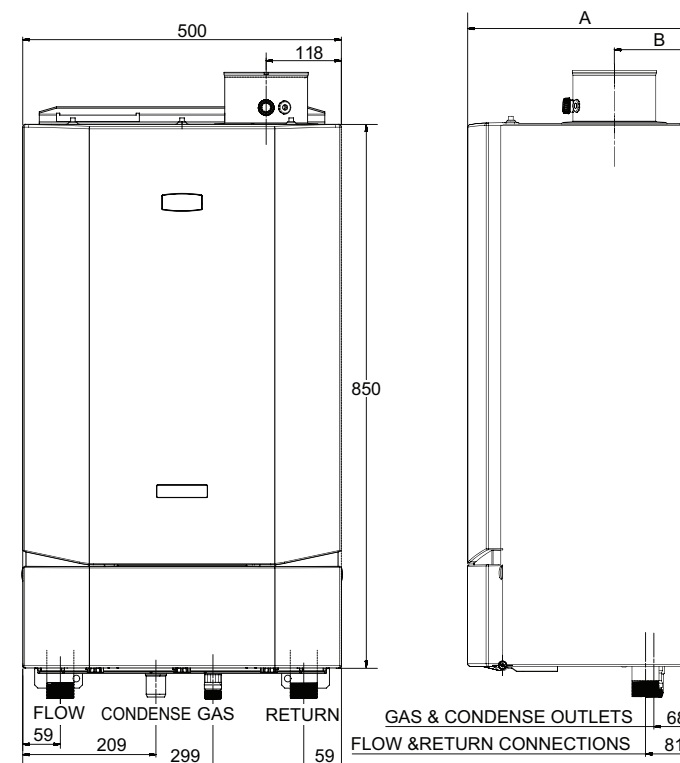
| BOILER         | DIM A | DIM B |
|----------------|-------|-------|
| 30, 40, 60, 80 | 360   | 130   |
| 100, 120       | 520   | 226   |
| 150            | 610   | 233   |

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)<br>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<br>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 <sub>2</sub> (±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 <sub>2</sub> = 0% (gross)<br>(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<br>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)<br>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 <sub>2</sub> (±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 <sub>2</sub> = 0% (gross)<br>(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<br>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 & 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 & 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 & 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.

|                     | FLOW RATE (L/MIN) |      |       |      |      | HYDRAULIC RESISTANCE (MBAR) |      |      |      |      |
|---------------------|-------------------|------|-------|------|------|-----------------------------|------|------|------|------|
| BOILER              | 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 & 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.

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.

**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.

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 IGEN 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



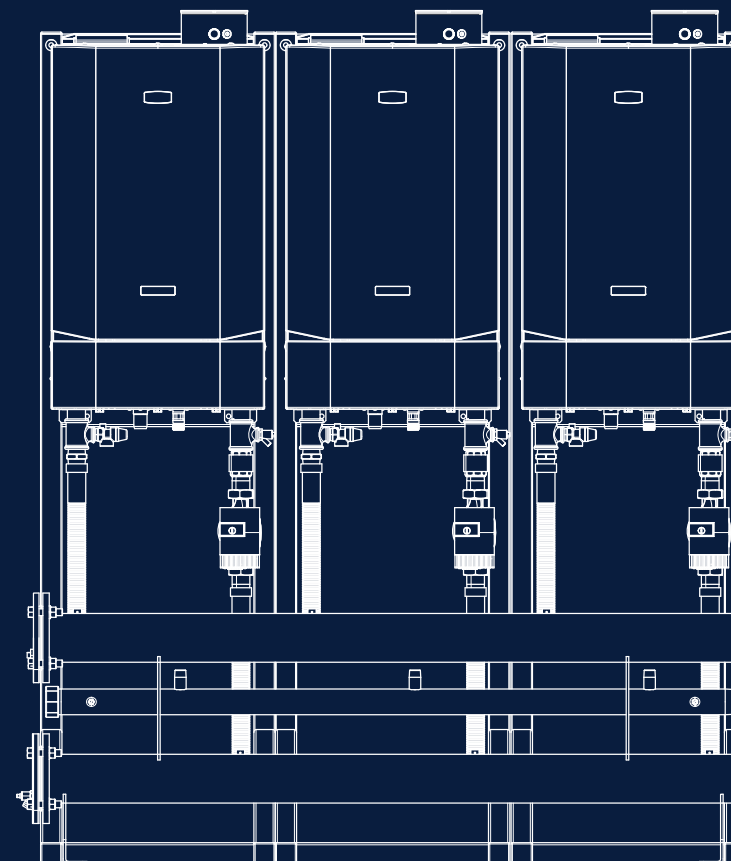
Cascade  
control



## EVOMAX 2 CASCADE

### Frame & 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.



#### 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, Magnetic 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](https://www.idealcommercialboilers.com/evomax2-cascade-configurator)

# EVOMAX 2

## Cascade Accessories

| CHOOSE A FRAME KIT   |
|--|
| <b>Standard Height</b><br>Up to 6 boilers<br>206970<br>1 frame required per boiler i.e. a 6 boiler cascade requires 6 frames |
| <b>Low Height Inline</b><br>Up to 4 boilers<br>Included with Low Height Header Kit   |

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

| CHOOSE A HEADER KIT  |
|--|
| <b>Standard Height Frame, Inline boilers</b>   |
| 2 boilers, 30 - 100kW (DN80) for PHEX & LLH<br>219542  |
| 2 boilers, 120 & 150kW (DN100) for PHEX & LLH<br>219547  |
| 3 boilers, 30 - 100kW (DN80) for PHEX & LLH<br>219543  |
| 3 boilers, 120 & 150kW (DN100) for PHEX & LLH<br>219548  |
| 4 boilers, 30 - 150kW (DN100) for PHEX & LLH<br>219549   |
| 5 boilers, 30 - 100kW (DN100) for PHEX & LLH<br>5 boilers, 120 & 150kW (DN100), PHEX<br>219545 |
| 5 boilers, 120 & 150kW (DN150) for LLH ONLY<br>219550  |
| 6 boilers, 30 - 150kW (DN100) for PHEX<br>6 boilers, 30 - 100kW (DN100) for LLH<br>219546      |
| 6 boilers, 120 & 150kW (DN150) for LLH ONLY<br>219551  |
| <b>Standard Height Frame, Back to Back boilers</b>   |
| 2 boilers, 30 - 150kW (DN80) for PHEX & LLH<br>219555  |
| 3 boilers, 30 - 150kW (DN80) for PHEX & LLH<br>219556  |
| 4 boilers, 30 - 150kW (DN100) for PHEX & LLH<br>219557   |
| 5 boilers, 30 - 150kW (DN100) for PHEX & LLH<br>219558   |
| 6 boilers, 30 - 150kW (DN100) for PHEX ONLY<br>222397  |
| 6 boilers, 30 - 150kW (DN150) for LLH ONLY<br>219559   |
| <b>Low Height Frame, Inline boiler</b>   |
| 1 boiler, 30 - 150kW for (DN50) for PHEX & LLH<br>221127                                       |
| 2 boilers, 30 - 150kW (DN65) for PHEX & LLH<br>221128  |
| 3 boilers, 30 - 150kW (DN80) for PHEX & LLH<br>221129  |
| 4 boilers, 30 - 150kW (DN100) for PHEX & LLH<br>219561   |

| CHOOSE HYDRAULIC SEPARATION                     |
|---|
| <b>Low Loss / Mixing Header</b>                 |
| DN50<br>209394                                  |
| DN65<br>209395                                  |
| DN80<br>219552                                  |
| DN100<br>219553                                 |
| DN150<br>219554                                 |
| <b>Magnetic Low Loss / Mixing Header (MLLH)</b> |
| DN50<br>222191                                  |
| DN65<br>222192                                  |
| DN80<br>222193                                  |
| DN100<br>222194                                 |
| <b>Plate Heat Exchanger</b>                     |
| Up to 60kW nominal output (DN50)<br>222219      |
| Up to 60kW nominal output (DN65)<br>222993      |
| Up to 60kW nominal output (DN80)<br>222220      |
| Up to 150kW nominal output (DN50)<br>222221     |
| Up to 150kW nominal output (DN65)<br>222994     |
| Up to 150kW nominal output (DN80)<br>222222     |
| Up to 300kW nominal output (DN65)<br>222223     |
| Up to 300kW nominal output (DN80)<br>222225     |
| Up to 300kW nominal output (DN100)<br>222995    |
| Up to 450kW nominal output (DN80)<br>222226     |
| Up to 450kW nominal output (DN100)<br>222996    |
| Up to 600kW nominal output (DN100)<br>222227    |
| Up to 750kW nominal output (DN100)<br>222228    |
| Up to 900kW nominal output (DN100)<br>222229    |

| CHOOSE PUMPS   |
|--|
| <b>Low Loss / Mixing Header Chosen</b>   |
| Grundfos UPML (M)LLH Pump Kit<br>222659  |
| <b>Plate Heat Exchanger Chosen</b>   |
| Grundfos UPMXXL PHEX Pump Kit<br>222660<br>1 pump required per boiler i.e. a 6 boiler cascade requires 6 pumps |
| <b>No Separation Chosen</b>  |
| Grundfos UPML Pump Kit<br>222659   |

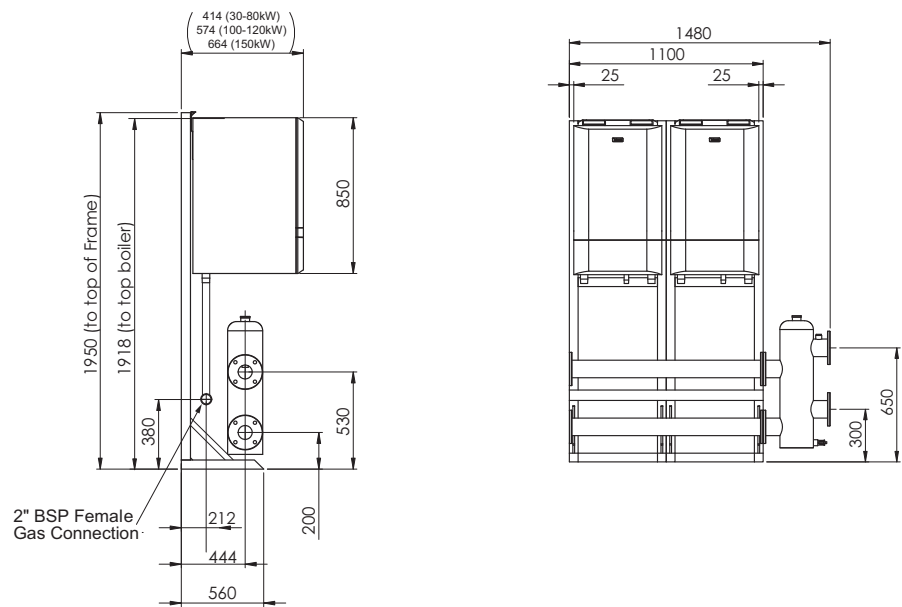
If using a Low Loss Header or Plate Heat Exchanger not from Ideal Heating, please use the pump recommended by the manufacturer

| CHOOSE INSULATION                                |
|--|
| <b>For Standard Height Header Kits</b>           |
| DN80/100 Starter Kit<br>222960                   |
| DN80/100 Continuation Kit<br>222961              |
| DN80/100 Joined Header Kit<br>222962             |
| <b>For Low Height Header Kits</b>                |
| DN50 Starter Kit<br>223032                       |
| DN65 Starter Kit<br>223035                       |
| DN65 Continuation Kit<br>223036                  |
| DN80/100 Starter Kit<br>223038                   |
| DN80/100 Continuation Kit<br>223039              |
| DN80/100 Joined Header Kit<br>223040             |
| <b>For Low Loss and Magnetic Low Loss Header</b> |
| DN50 (M)LLH Insulation Kit<br>222963             |
| DN65 (M)LLH Insulation Kit<br>222964             |
| DN80/100 (M)LLH Insulation Kit<br>222965         |
| <b>For Grundfos UPML (M)LLH Pump Kit</b>         |
| (M)LLH Pump Insulation Kit<br>222894             |



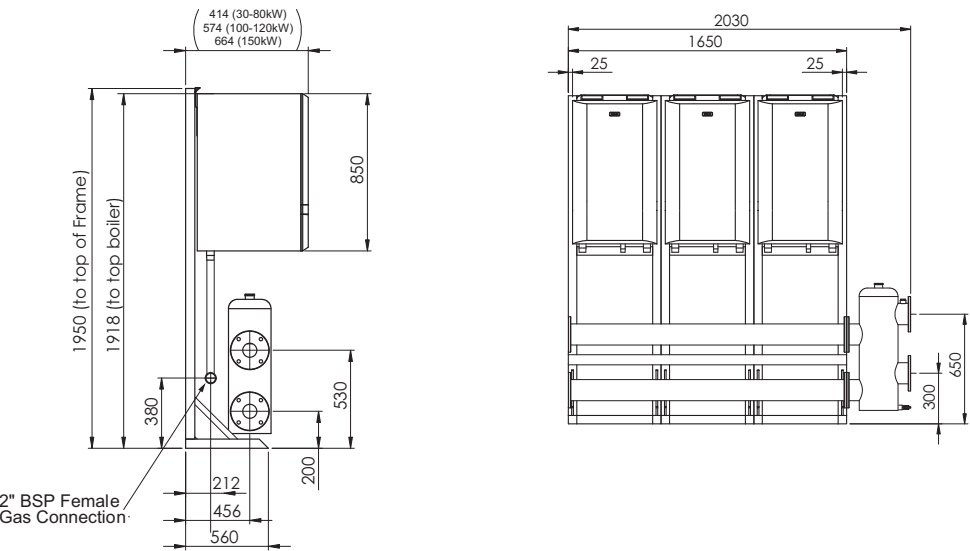
STANDARD HEIGHT INLINE CASCADES

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 & 150kW with PHEX or (M)LLH separation |

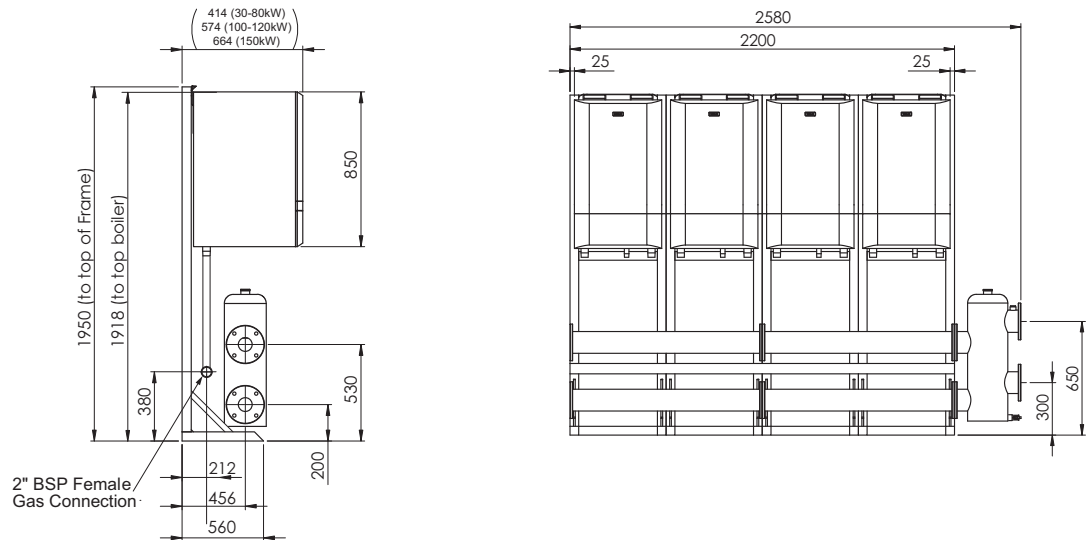
3 X EVOMAX 2



| 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 & 150kW with PHEX or (M)LLH separation |

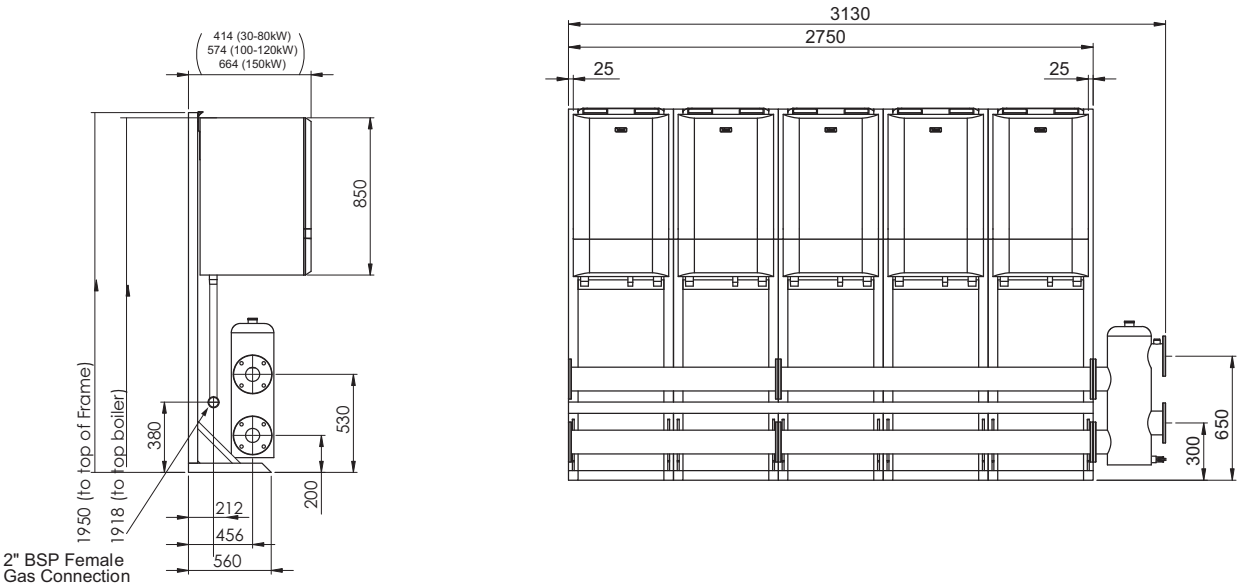
STANDARD HEIGHT INLINE CASCADES

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 |

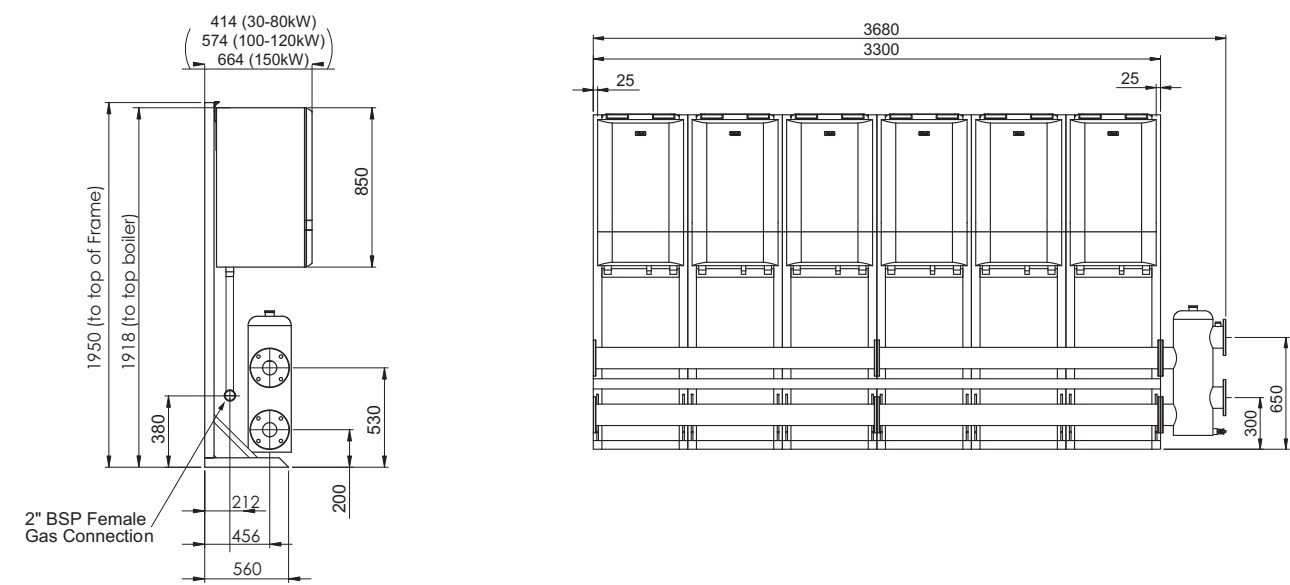
5 X EVOMAX 2



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

STANDARD HEIGHT INLINE CASCADES

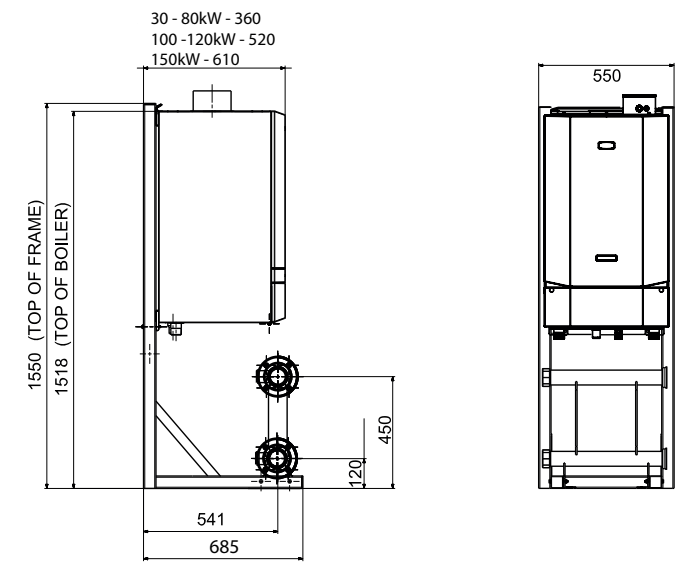
6 X EVOMAX 2



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

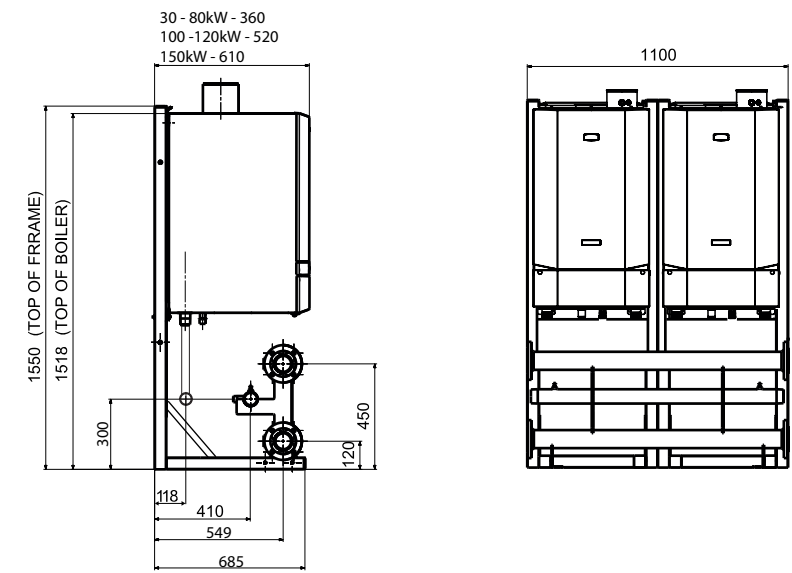
LOW HEIGHT INLINE CASCADES

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 |

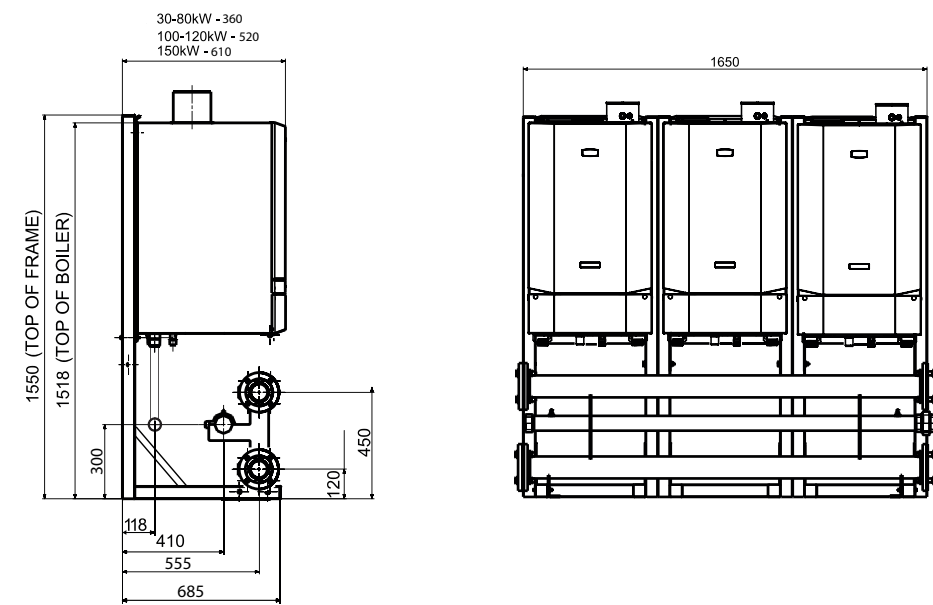
2 X EVOMAX 2



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

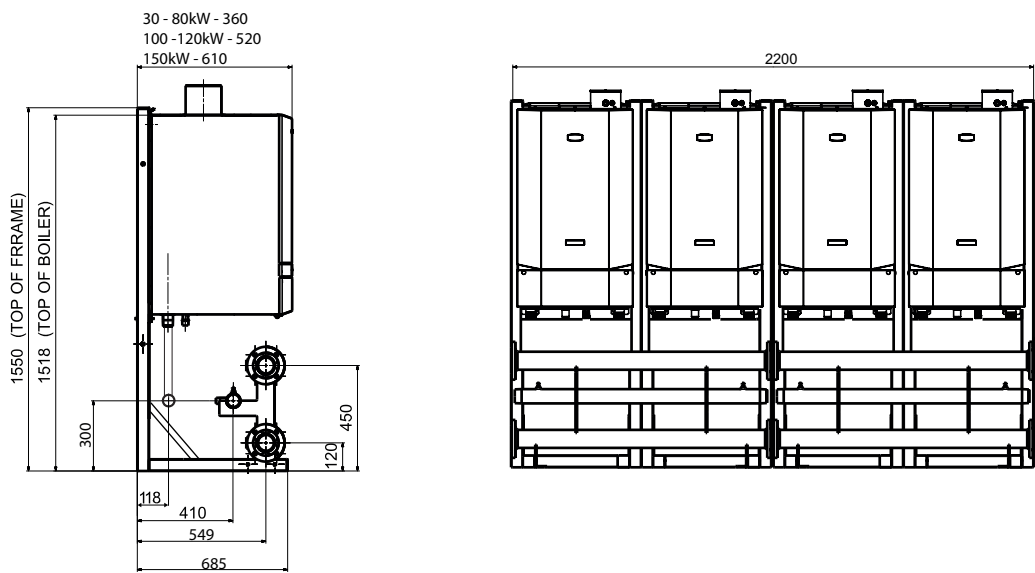
LOW HEIGHT INLINE CASCADES

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 |

HYDRAULIC SEPARATION

Ideal Heating offer various solutions to hydraulic separation

PLATE HEAT EXCHANGER



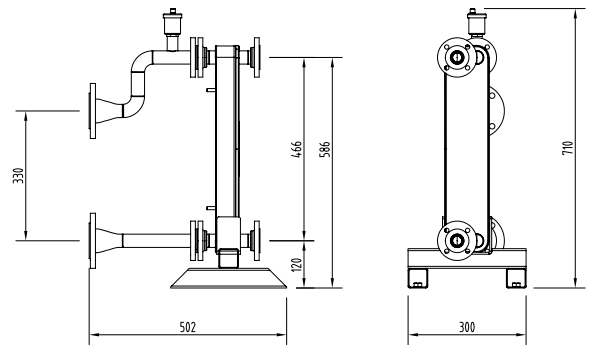
Covering outputs of 60, 150, 300, 450, 600, 750 and 900kW. Brazed Plate Heat Exchangers ensure optimum heat transfer efficiency and low resistance within a compact footprint. To be used with Ideal Heating Frame and Header kits.

FEATURES & BENEFITS

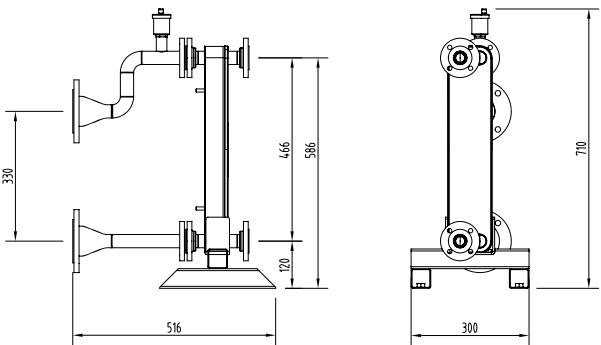
- Compact design
- No gaskets
- Low maintenance and self-cleaning
- All units are pressure tested
- To be used with Ideal Heating Frame and Header kits
- Ensures optimal heat transfer efficiency and pressure resistance
- Separates system water from the boiler
- Ensures the highest performance for longest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

UP TO 60KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

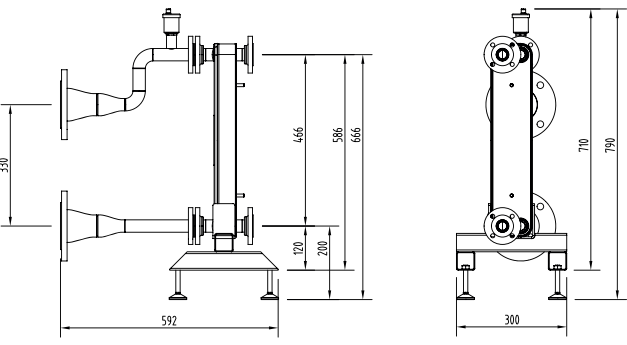
| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222219 | DN50           |
| 222993 | DN65           |
| 222220 | DN80           |



222219 DN50



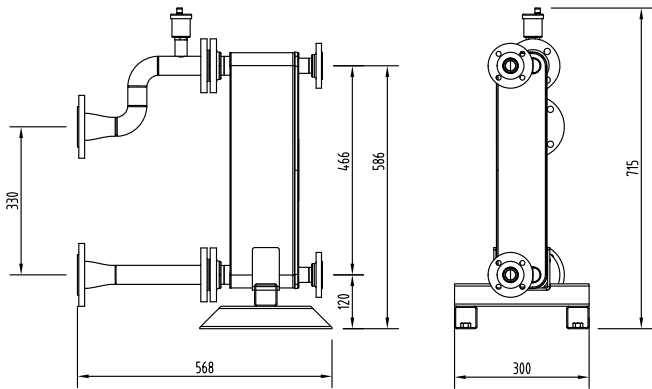
222993 DN65



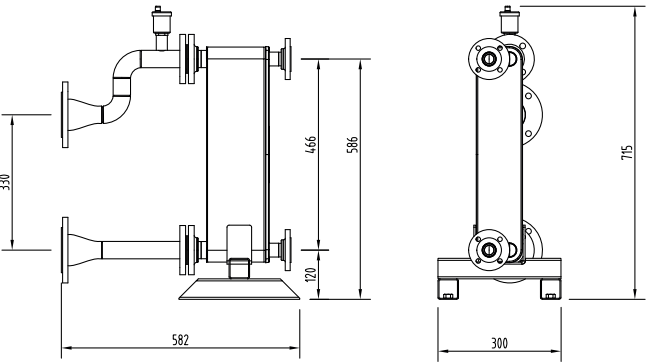
222220 DN80

UP TO 150KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

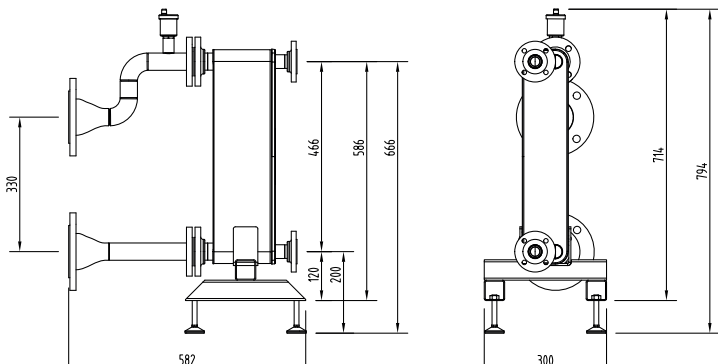
| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222221 | DN50           |
| 222994 | DN65           |
| 222222 | DN80           |



222221 DN50



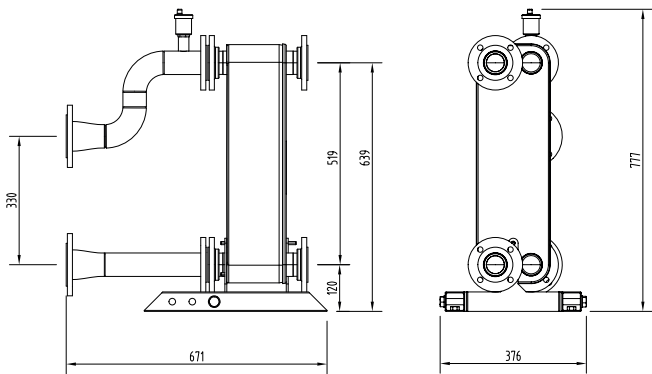
222222 DN80



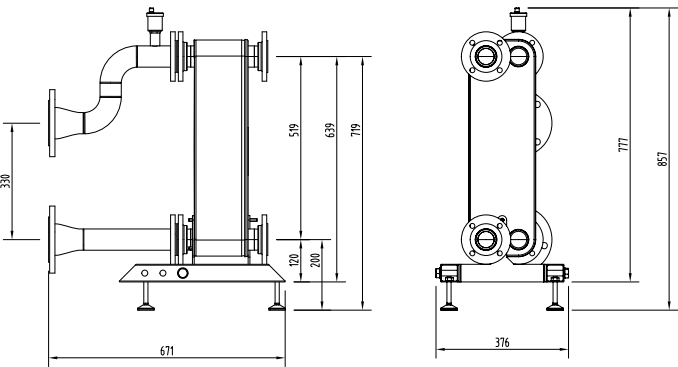
222994 DN65

UP TO 300KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

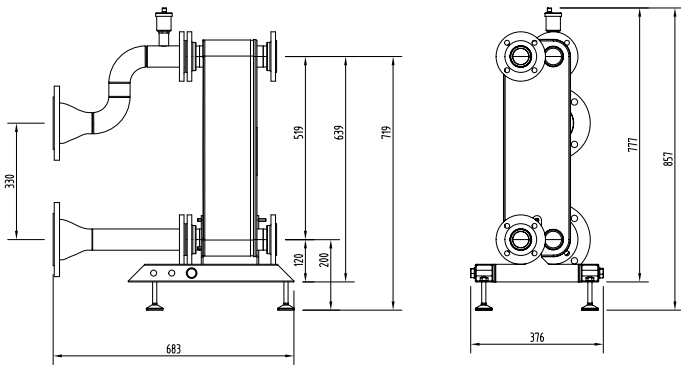
| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222223 | DN50           |
| 222225 | DN80           |
| 222995 | DN100          |



222223 DN65



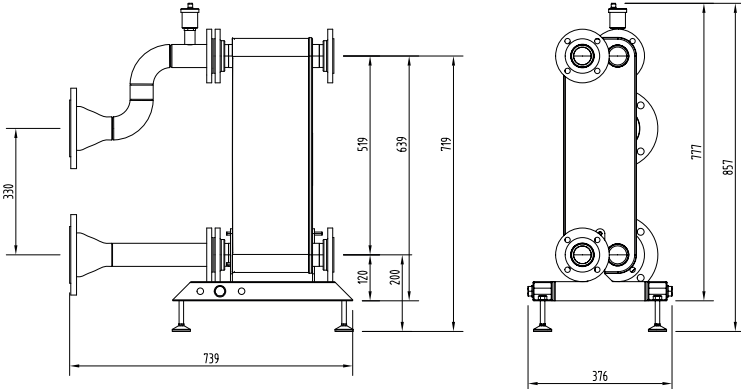
222225 DN80



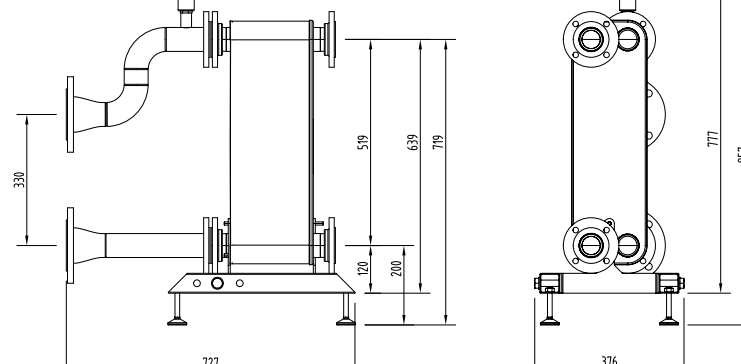
222995 DN100

UP TO 450KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222226 | DN80           |
| 222996 | DN100          |



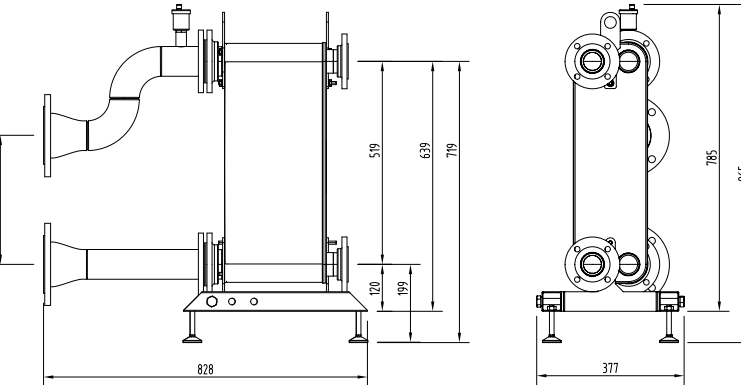
222226 DN80



222996 DN100

UP TO 600KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222227 | DN100          |

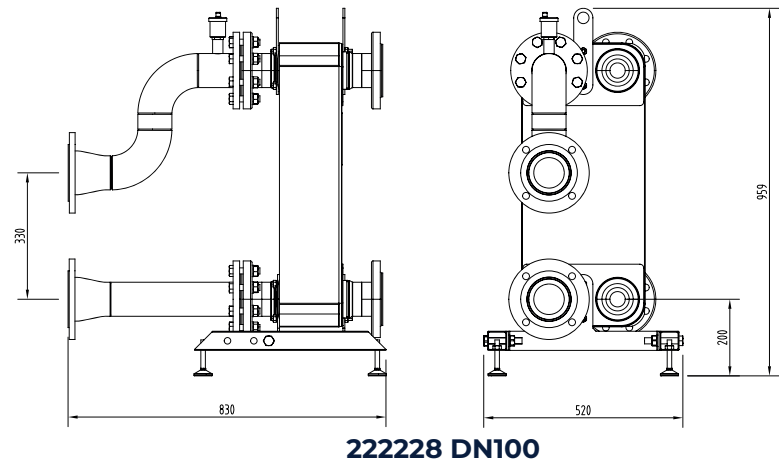


222227 DN100



UP TO 750KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

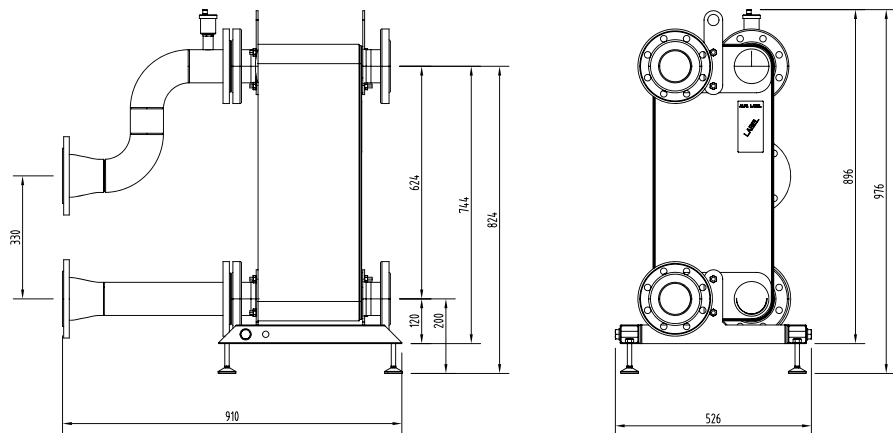
| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222228 | DN100          |



222228 DN100

UP TO 900KW NOMINAL OUTPUT  
PLATE HEAT EXCHANGER

| UIN    | DN FLANGE SIZE |
|--------|----------------|
| 222229 | DN100          |



222229 DN100





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          |

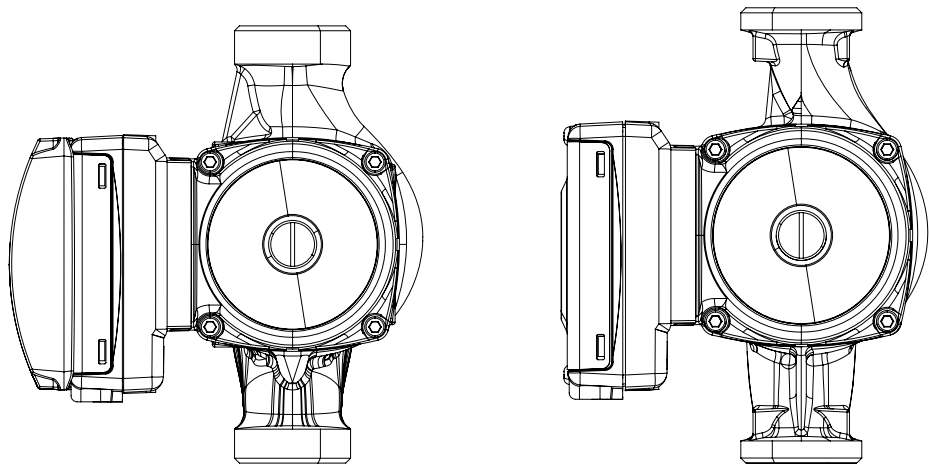
MAGNETIC LOW LOSS HEADER

| 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 or none    | 222659 | Grundfos UPML (M)LLH Pump Kit |
| PHEX              | 222660 | Grundfos UPMXXL PHEX Pump Kit |

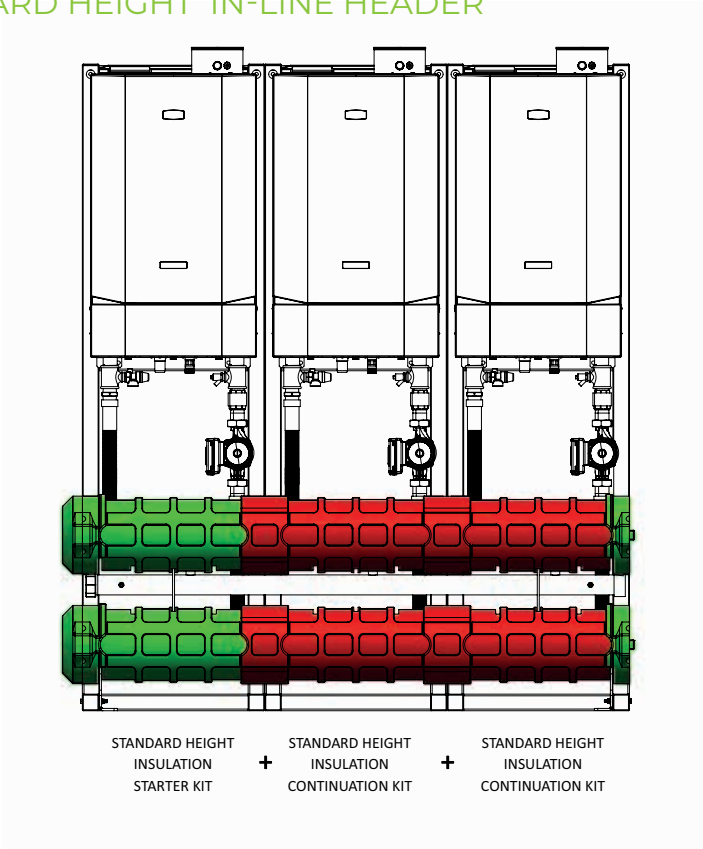


INSULATION

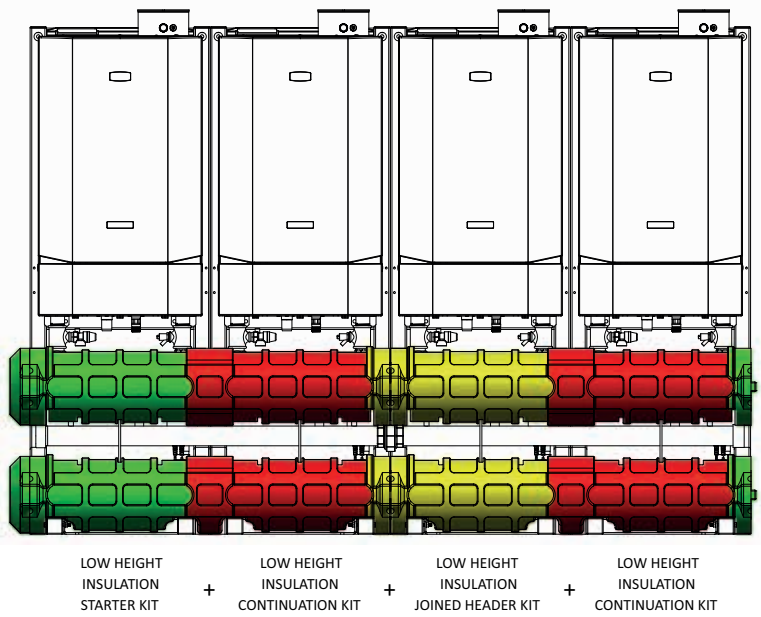
Header kits and Low Loss Headers can be insulated using our robust expanded polypropylene modular insulation range. Insulation is also available for 222659 Grundfos UPML (M)LLH Pump Kit.

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 & DN100       | -                | -                | 1                | 1                |
| 223036 | Standard Height Insulation Continuation Kit DN65          | -                | 1                | -                | -                |
| 223039 | Standard Height Insulation Continuation Kit DN80 & DN100  | -                | -                | 2                | 2                |
| 223040 | Standard Height Insulation Joined Header Kit DN80 & 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

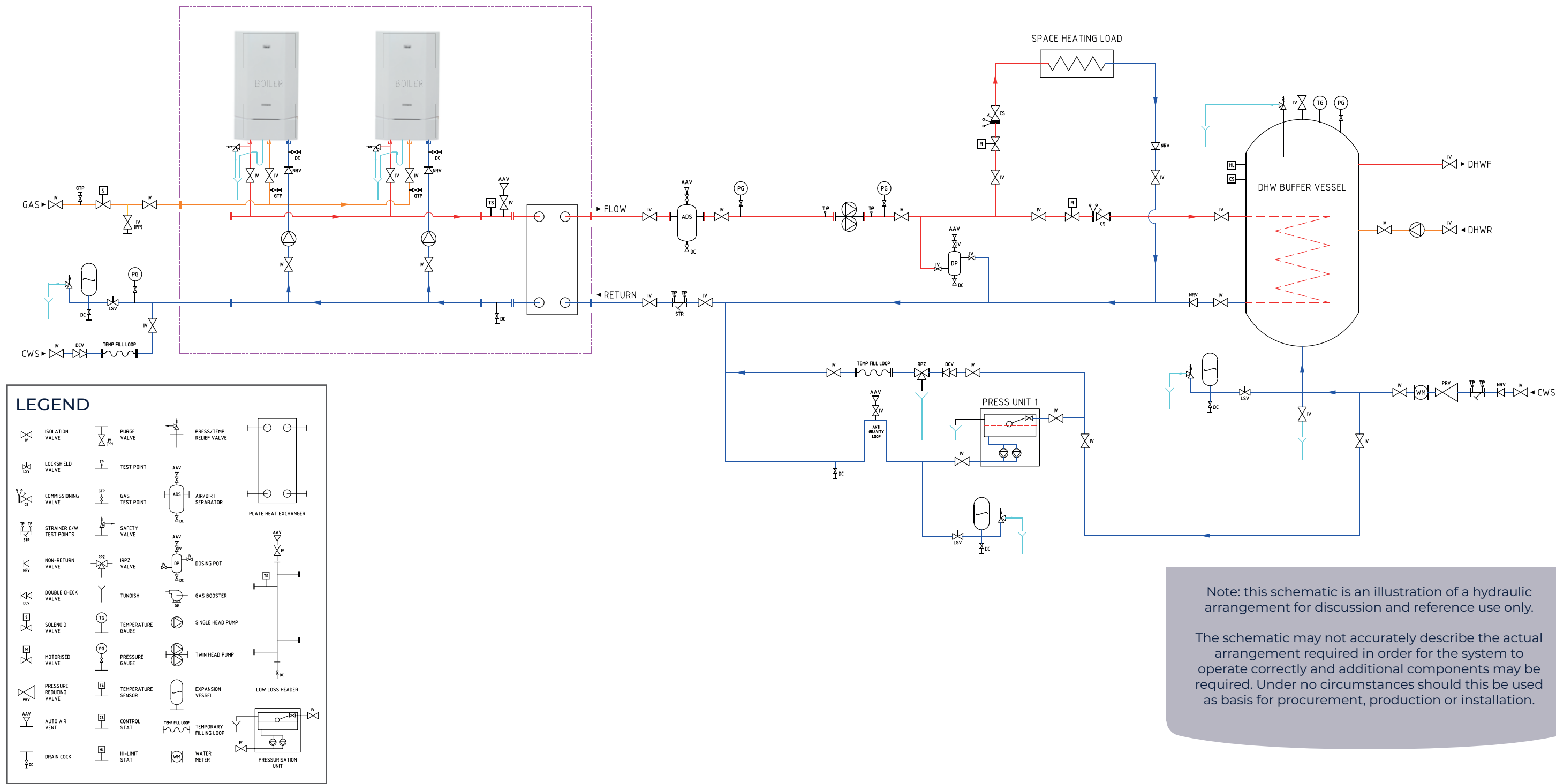
| UIN    | DESCRIPTION                         | 1 BOILER CASCADE | 2 BOILER CASCADE | 3 BOILER CASCADE | 4 BOILER CASCADE | 5 BOILER CASCADE | 6 BOILER CASCADE |
|--------|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|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



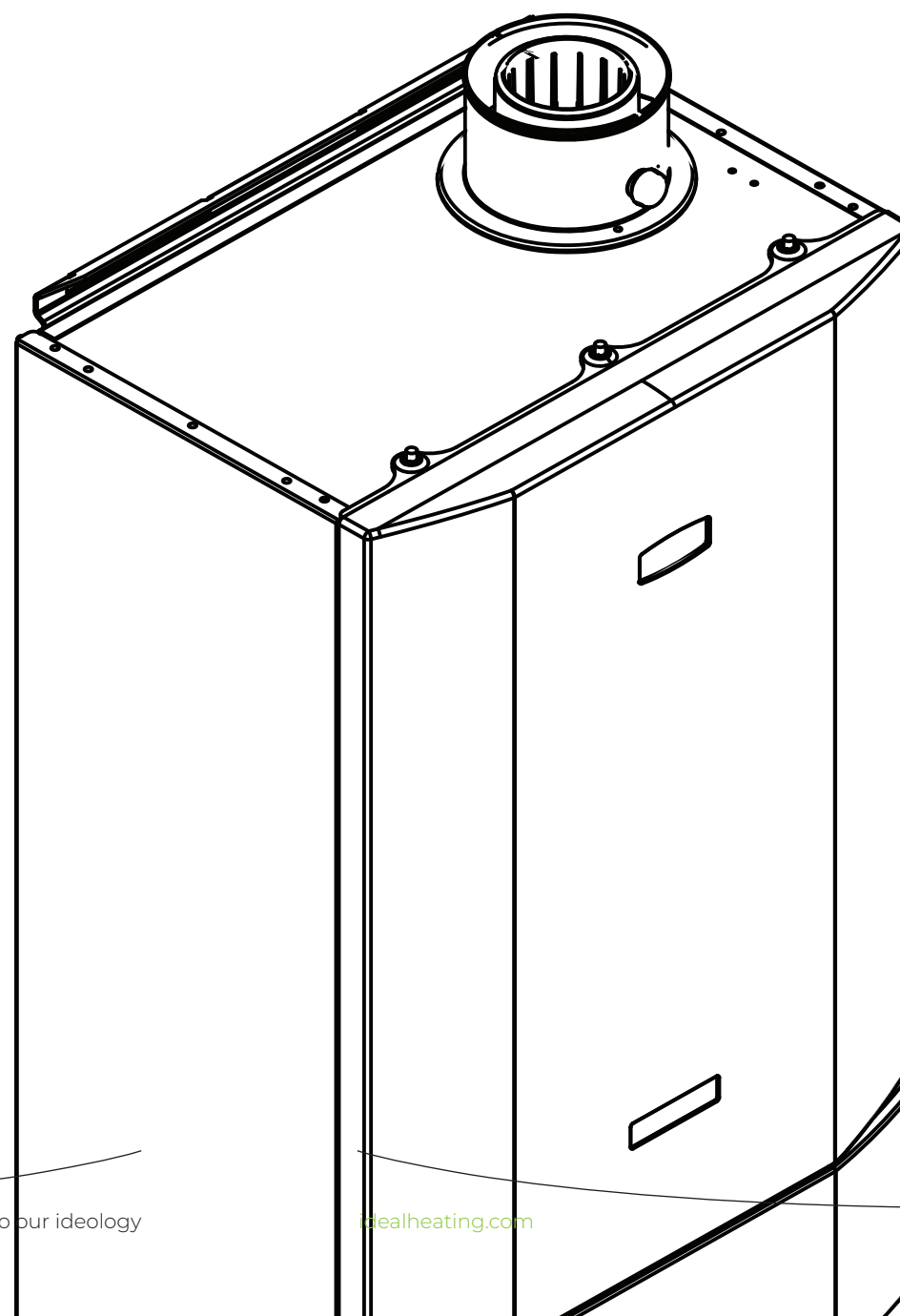
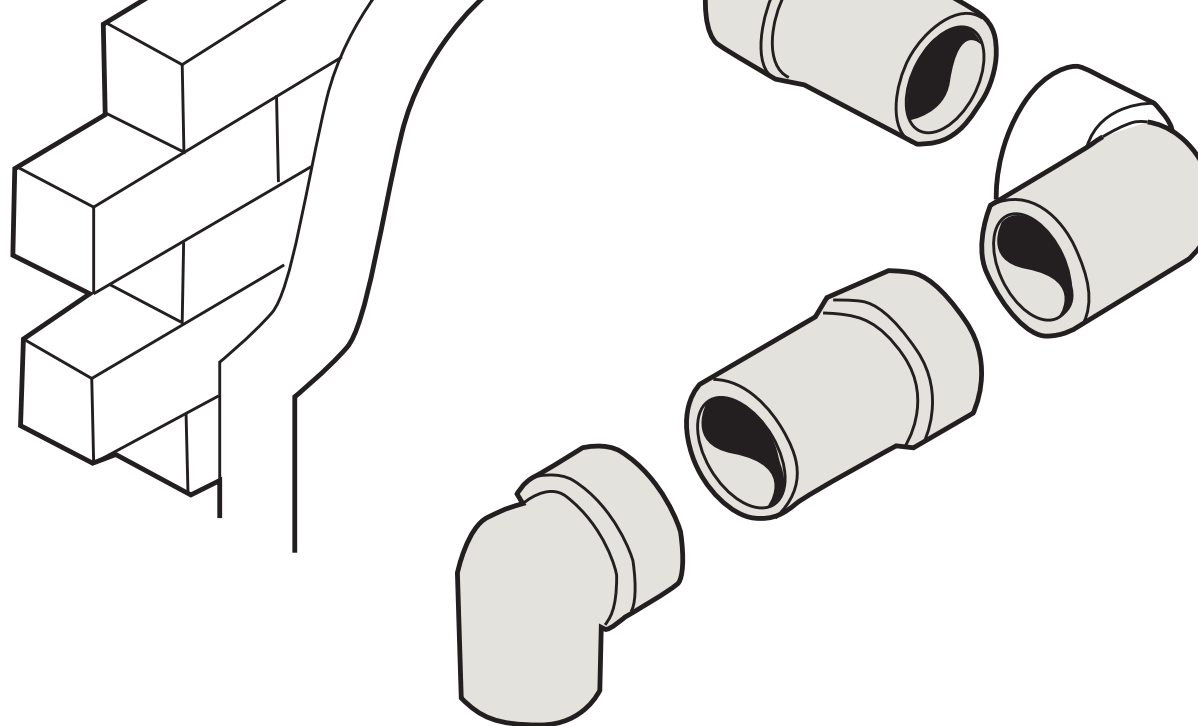
SYSTEM LAYOUT

TYPICAL SYSTEM BOILER LAYOUT

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



# EVOMAX 2 FLUE OPTIONS





# CONCENTRIC FLUE OPTIONS (C TYPE)

## HORIZONTAL WALL FLUE KIT

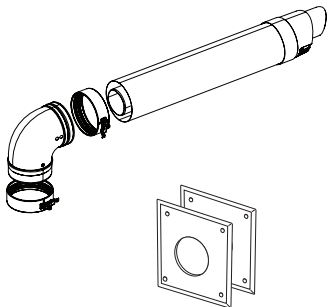
| EVOMAX 2 HORIZONTAL CONCENTRIC FLUE APPLICATION ~ MAXIMUM LENGTHS AND PRESSURE DIFFERENTIALS |        |        |        |         |          |          |     |
|--|--------|--------|--------|---------|----------|----------|-----|
| Model  | 30/30P | 40/40P | 60/60P | 80/80P  | 100/100P | 120/120P | 150 |
| Max flue length (m)  | 33     | 30     | 17.5   | 10      | 10       | 9        | 6   |
| Flue Size  | 80/125 |        |        | 100/150 |          |          |     |
| Wall flue kit No   | 220919 |        |        | 220921  |          |          |     |

- CONTENTS
- 90° elbow

• Locking collars (x2)

• Terminal

• Wall plates (x2)



| EVOMAX 2 60 & 80 HORIZONTAL CONCENTRIC FLUES OF LONGER LENGTHS (LARGER FLUE DIAMETER) |         |        |
|---|---------|--------|
| Model   | 60/60P  | 80/80P |
| Max flue length (m)   | 28      | 18     |
| Flue Size   | 100/150 |        |
| Wall flue kit No  | 220920  |        |

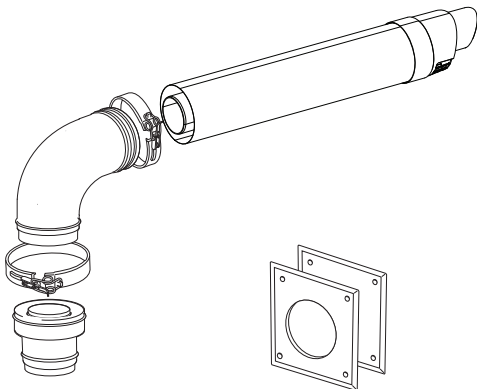
- CONTENTS
- Increaser

• Locking collars (x2)

• 90° elbow

• Wall plates (x2)

• Terminal



To comply with CE certification, Evomax boilers must be fitted with Ideal concentric flues (when using concentric flue type).

## VERTICAL ROOF FLUE KIT

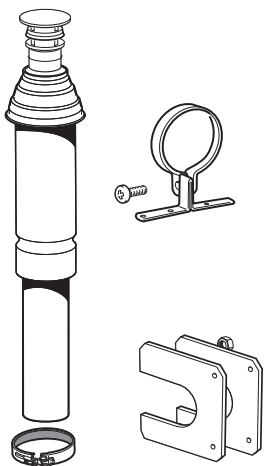
| EVOMAX 2 VERTICAL CONCENTRIC FLUE APPLICATION ~ MAXIMUM LENGTHS AND PRESSURE DIFFERENTIALS |        |        |        |         |          |          |     |
|--|--------|--------|--------|---------|----------|----------|-----|
| Model  | 30/30P | 40/40P | 60/60P | 80/80P  | 100/100P | 120/120P | 150 |
| Max flue length (m)  | 33     | 30     | 17.5   | 10      | 10       | 9        | 6   |
| Flue Size  | 80/125 |        |        | 100/150 |          |          |     |
| Wall flue kit No   | 220915 |        |        | 220918  |          |          |     |

- CONTENTS
- Terminal

• Finishing plates (x2)

• Locking Collar

• Bracket



| EVOMAX 2 60 & 80 VERTICAL CONCENTRIC FLUES OF LONGER LENGTH |         |        |
|---|---------|--------|
| Model   | 60/60P  | 80/80P |
| Max flue length (m)   | 28      | 18     |
| Flue Size   | 100/150 |        |
| Wall flue kit No  | 220916  |        |

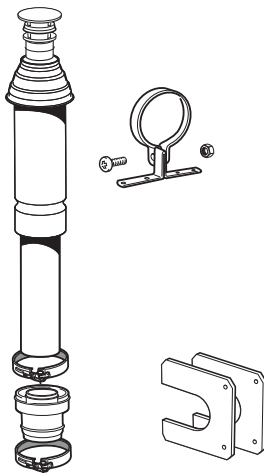
- CONTENTS
- Increaser

• Locking Collars (x2)

• Terminal

• Finishing plates (x2)

• Bracket



# OPEN FLUE OPTIONS (B TYPE)

| EVOMAX 2 VERTICAL CONCENTRIC FLUE APPLICATION ~ MAXIMUM LENGTHS AND PRESSURE DIFFERENTIALS |                          |        |        |                          |          |          |     |
|--|--------------------------|--------|--------|--------------------------|----------|----------|-----|
| Model  | 30/30P                   | 40/40P | 60/60P | 80/80P                   | 100/100P | 120/120P | 150 |
| Max flue length (m)  | 65                       | 70     | 25     | 15.3                     | 20       | 49       | 32  |
| Max flue press diff (Pa)   | 180                      | 227    | 146    | 312                      | 220      | 473      | 332 |
| Flue Size  | 80/125                   |        |        | 100/150                  |          |          |     |
| Wall flue kit No   | 221216 + 158771 + 158769 |        |        | 221218 + 158772 + 158770 |          |          |     |

- CONTENTS
- 221216 / 221218

158769 / 158770

158771 / 158772

• Air inlet grille\*

• Terminal

• Extension tube (x2)\*\*



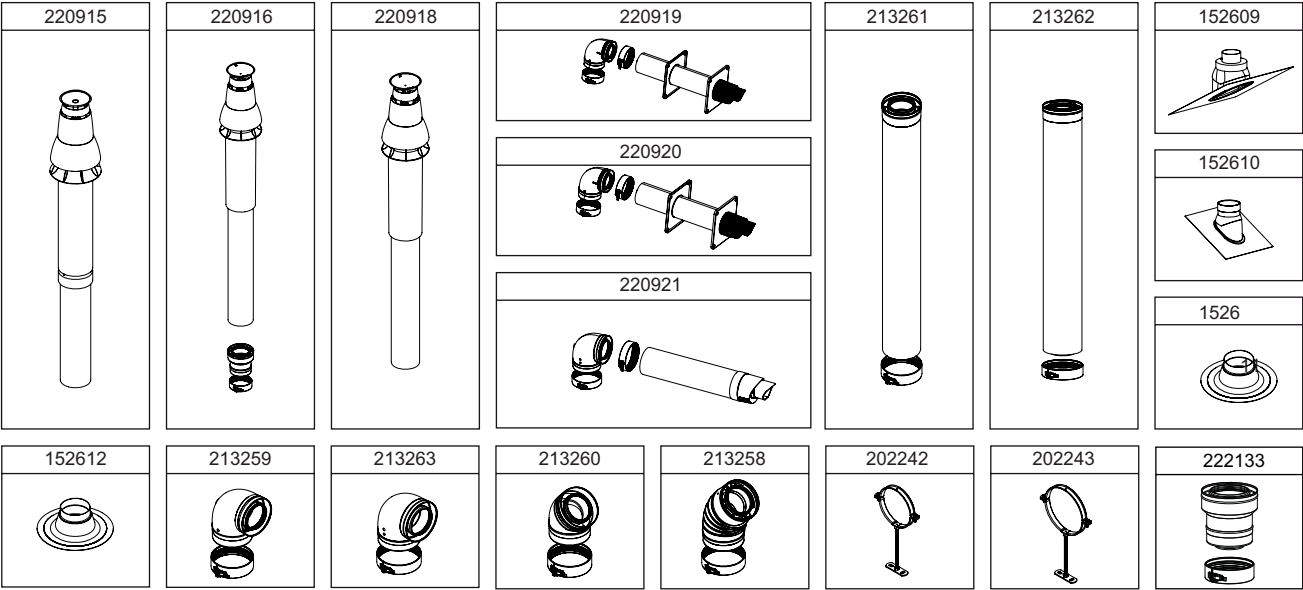
\* The air inlet grille must be fitted to all installations.  
\*\* At least 1 off extension tube MUST be used in the installation. This may be suitably cut to length if required.



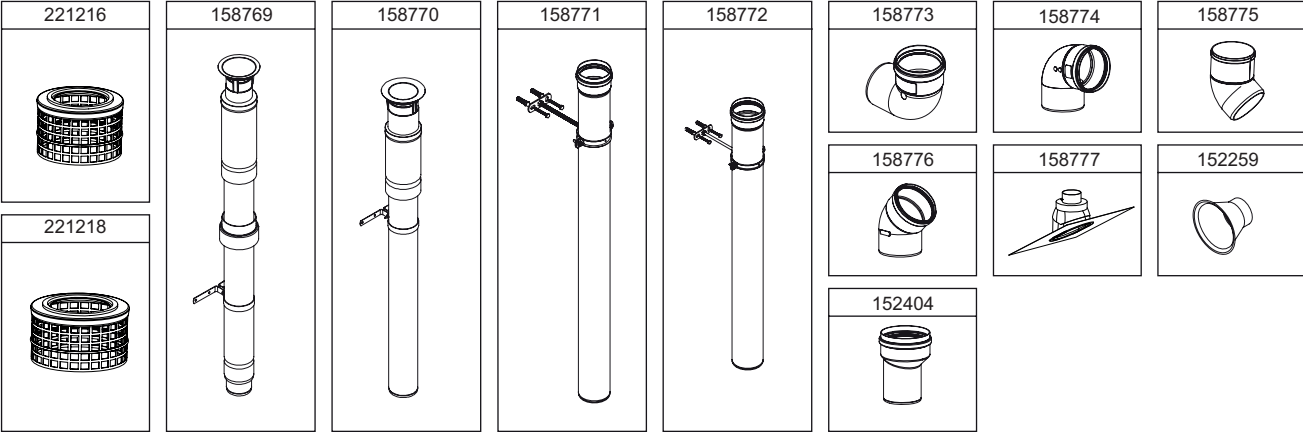
FLUE KIT ACCESSORIES

| FLUE KITS - CONCENTRIC                         | UIN    |
|--|--------|
| Vertical Roof Flue Kit 80/125 (30 - 80kW)      | 220915 |
| Vertical Roof Flue Kit 100/150 (60 & 80kW)     | 220916 |
| Vertical Roof Flue Kit 100/150 (100 - 150kW)   | 220918 |
| Horizontal Wall Flue Kit 80/125 (30 - 80kW)    | 220919 |
| Horizontal Wall Flue Kit 100/150 (60 & 80kW)   | 220920 |
| Horizontal Wall Flue Kit 100/150 (100 & 120kW) | 220921 |
| Extension Kit 80/125                           | 213261 |
| Extension Kit 100/150                          | 213262 |
| Pitched Weather Collar 80/125                  | 152609 |
| Pitched Weather Collar 100/150                 | 152610 |
| Flat Weather Collar 80/125                     | 152611 |
| Flat Weather Collar 100/150                    | 152612 |
| 90° Elbow 80/125 (single)                      | 213259 |
| 90° Elbow 100/150 (single)                     | 213263 |
| 90° Elbow 80/125 (Extended)                    | 222004 |
| 90° Elbow 100/150 (Extended)                   | 222005 |
| 45° Elbow 80/125 (single)                      | 213260 |
| 45° Elbow 100/150 (single)                     | 213258 |
| Wall Bracket 125mm                             | 202242 |
| Wall Bracket 150mm                             | 202243 |
| Expander 80/125 - 100/150                      | 222133 |
| FLUE KITS - OPEN FLUE                          | UIN    |
| Open Flue Kit 80                               | 221216 |
| Open Flue Kit 100                              | 221218 |
| Vertical Flue Terminal 80                      | 158769 |
| Vertical Flue Terminal 100                     | 158770 |
| Extension Pipes 80 (pair)                      | 158771 |
| Extension Pipes 100 (pair)                     | 158772 |
| 90° Elbow 80 (single)                          | 158773 |
| 90° Elbow 100 (single)                         | 158774 |
| 45° Elbow 80 (pair)                            | 158775 |
| 45° Elbow 100 (pair)                           | 158776 |
| Pitched Weather Collar 80 & 100                | 158779 |
| Flat Weather Collar 80 & 100                   | 152259 |
| Increaser 80-100                               | 152404 |

FLUE KITS - CONCENTRIC



FLUE KITS - OPEN FLUE



# FLUE RESISTANCES

## Flue Systems

For concentric flue systems with elbows fitted, use the table to correct the maximum flue extension capability. Alternatively use the table to design the flue system, deducting the individual resistance of components from the maximum pressure drop allowed in the flue for that boiler. The maximum pressure drop allowed in the flue is given below.

### PERMISSIBLE FLUE LENGTH

The maximum permissible flue lengths for each model are shown in Table 1 below, these lengths are inclusive of the terminal resistance. The value shown is the maximum available length for extension. The equivalent length of elbows is shown in Table 2.

TABLE 1

| MAX PERMISSIBLE EQUIVALENT FLUE LENGTH<br>(INC TERMINAL RESISTANCE) METRES |            |         |           |     |
|--|------------|---------|-----------|-----|
|  | CONCENTRIC |         | OPEN FLUE |     |
| Flue Size  | 80/125     | 100/150 | 80        | 100 |
| Model  |            |         |           |     |
| 30/30P   | 33         | -       | 65        | -   |
| 40/40P   | 30         | -       | 70        | -   |
| 60/60P   | 17.5       | 28      | 25        | -   |
| 80/80P   | 10         | 18      | 15.3      | -   |
| 100  | -          | 10      | -         | 20  |
| 120  | -          | 9       | -         | 49  |
| 150  | -          | 6       | -         | 32  |

TABLE 2

| EQUIVALENT LENGTH OF ELBOWS (METRES) |            |         |           |      |
|--------------------------------------|------------|---------|-----------|------|
|                                      | CONCENTRIC |         | OPEN FLUE |      |
| Size                                 | 80/125     | 100/150 | 80        | 100  |
| 45°                                  | 0.85       | 1.25    | 0.45      | 0.60 |
| 90°                                  | 1.6        | 1.9     | 1.0       | 1.0  |

| EXAMPLES OF FLUE LENGTH CALCULATION |           |   |        |                             |    |                         |                                 |
|-------------------------------------|-----------|---|--------|-----------------------------|----|-------------------------|---------------------------------|
| MODEL                               | FLUE TYPE | MAX PERMISSIBLE EQUIVALENT LENGTH (TABLE 1) | ELBOWS |                             |    |                         | MAX PERMISSIBLE STRAIGHT LENGTH |
|                                     |           |   | TYPE   | EQUIVALENT LENGTH (TABLE 2) | NO | TOTAL EQUIVALENT LENGTH |                                 |
| 60                                  | 80/125    | 17.5  | 90     | 1.6                         | 2  | 3.2                     | 14.3                            |
| 60                                  | 100/150   | 28  | 90     | 1.9                         | 2  | 3.8                     | 24.2                            |
| 80                                  | 80/125    | 10  | 90     | 1.6                         | 3  | 4.8                     | 5.2                             |
| 120                                 | 100/150   | 9   | 90     | 1.9                         | 4  | 7.6                     | 1.4                             |

FOR OWN BUILT OPEN FLUE USE THIS:

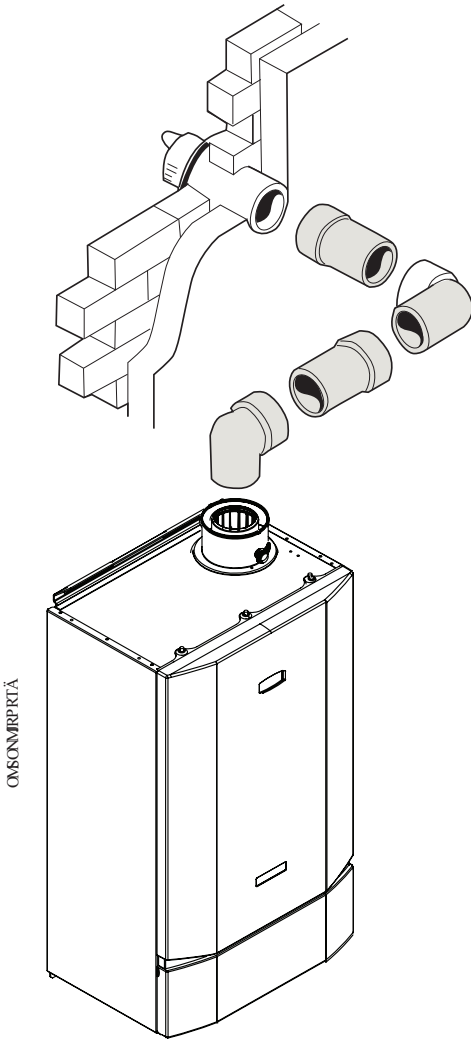
| MAXIMUM ALLOWABLE PRESSURE DIFF & FLUE LENGTH FLUES INCLUDING TERMINAL |           |                    |
|--|-----------|--------------------|
| MODEL  | FLUE SIZE | PRESSURE DIFF (Pa) |
| 30/30P   | 80/125    | 180                |
| 40/40P   | 80/125    | 227                |
| 60/60P   | 80/125    | 150                |
| 80/80P   | 80/125    | 312                |
| 100  | 100/150   | 220                |
| 120  | 100/150   | 473                |
| 150  | 100/150   | 332                |

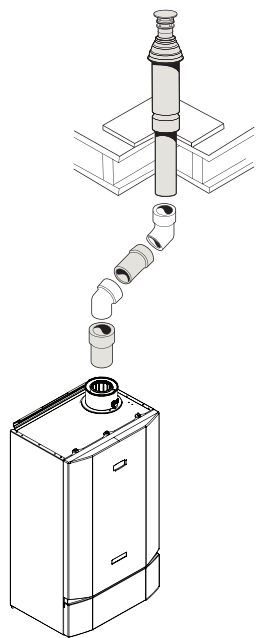
### EXAMPLES OF CALCULATING FLUE RESISTANCES/LENGTHS

#### EXAMPLE 1 (CONCENTRIC)

| HORIZONTAL FLUE FOR EVOMAX 2 40 |                 |
|---------------------------------|-----------------|
|                                 | Resistance (m)  |
| Flue size                       | 80/125          |
| Max permissible flue run        | 30              |
| 2 x 90° elbow                   | 2 x 1.6 = 3.2   |
| Total flue length available     | 30 - 3.2 = 26.8 |

Therefore this installation is acceptable as only a 2m run.



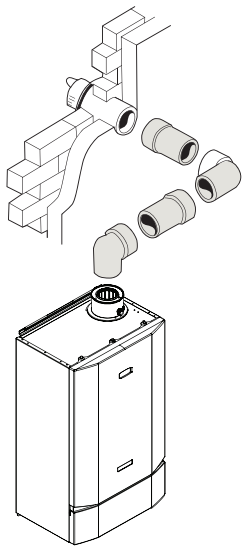
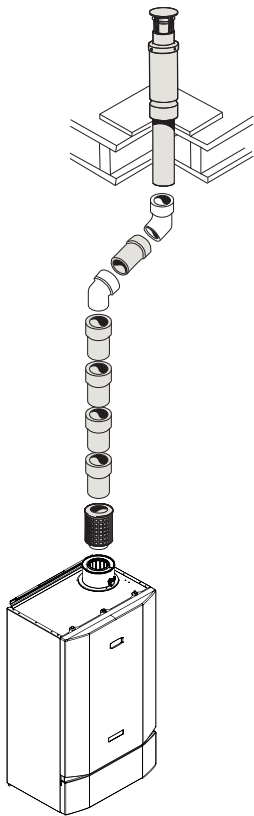


### EXAMPLE 2 (CONCENTRIC)

| VERTICAL FLUE FOR EVOMAX 2 80 |                |
|-------------------------------|----------------|
|                               | Resistance (m) |
| Flue Size                     | 80/125         |
| Max permissible flue run      | 10             |
| 2 x 45°                       | 2 x 0.85 = 1.7 |
| Total Flue Resistance         | 10 - 1.7 = 8.3 |

### EXAMPLE 3 (OPEN FLUE)

| OPEN FLUE FOR EVOMAX 2 30 |                 |
|---------------------------|-----------------|
|                           | Resistance (m)  |
| Flue Size                 | 80              |
| Max permissible flue run  | 65              |
| 2 x 45° elbow             | 2 x 0.45 = 0.9  |
| Total Flue Resistance     | 65 - 0.9 = 64.1 |

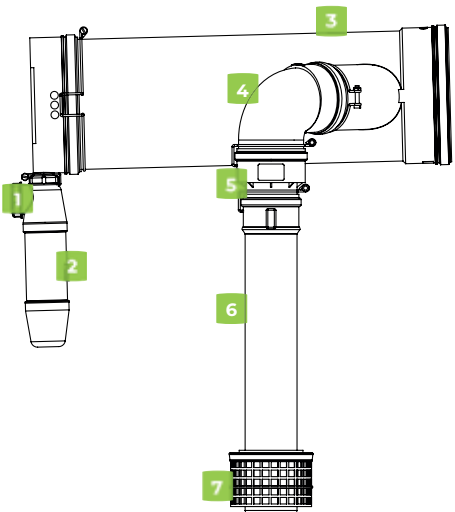


### EXAMPLE 4 (CONCENTRIC)

| HORIZONTAL FLUE FOR EVOMAX 2 120 |                |
|----------------------------------|----------------|
|                                  | Resistance (m) |
| Flue Size                        | 100/150        |
| Max permissible flue run         | 9              |
| 2 x 90° elbow                    | 2 x 1.9 = 3.8  |
| Total Flue Resistance            | 9 - 3.8 = 5.2  |

# MULTILINE CASCADE

The Multiline Flue Cascade is one of the latest additions to the flue accessory range from Ideal, designed specifically for the Evomax 2 range. Available for installations up to 600kW as both a starter kit and extension pack the Multiline system enables Evomax 2 boilers installed as open flue to be connected via a common flue header. This creates a single flue connection point for a flue specialist to design to knowing that the boiler installation is efficient and safe.



- Simple system ordering with a starter kit and extension kits
- Starter kit includes, appliance connection, non-return flue damper, condensate tee and trap and all clips to secure the flue
- Extension pack includes appliance connection, non-return flue damper, and all clips to secure the flue
- Available for both 80/125 & 100/150 flue adaptor applications
- For installations up to 600kW
- Type B23 flue
- Designed specifically to work efficiently with Evomax 2 boilers with commissioning simply completed by selecting Multiline flue from the installer set up menu
- The perfect addition for Evomax 2 installations using either the standard height or low frame and header kits

|   | PRODUCTS                                 | STARTER KIT                         | EXTENSION KIT                       |
|---|--|-------------------------------------|-------------------------------------|
| 1 | End Cap                                  | <input checked="" type="checkbox"/> |                                     |
| 2 | Siphon / Condensate trap                 | <input checked="" type="checkbox"/> |                                     |
| 3 | Collector Pipe (200 dia)                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4 | Elbow (90 x 100)                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 | Expander (80/125 flue adaptor kits only) | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6 | Flue Extension Tube (80 or 100)          | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7 | Air Intake Grill                         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

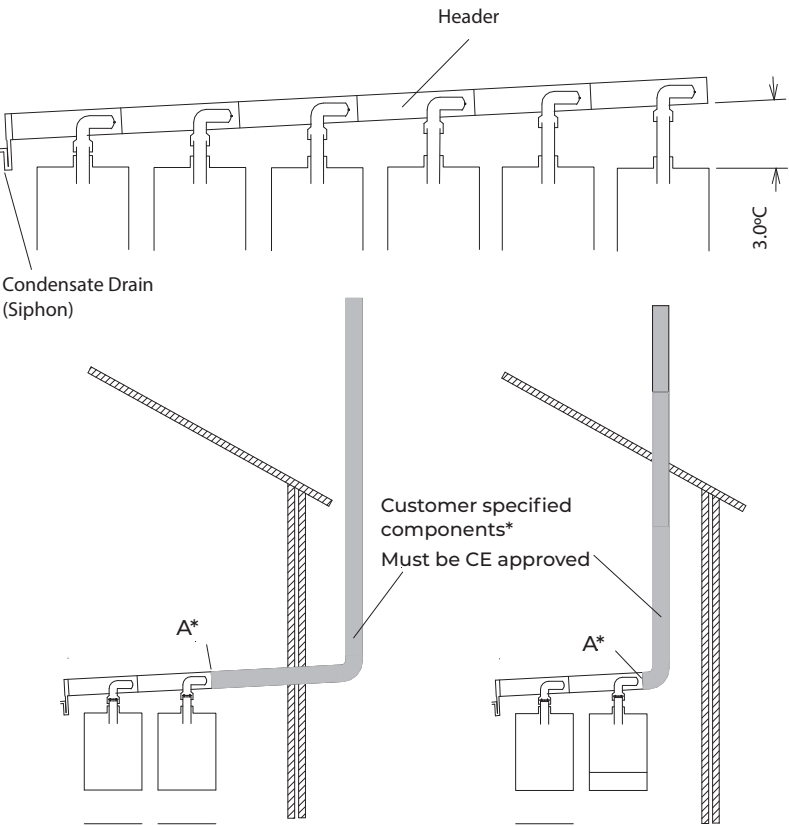
The Cascade flue system is supplied in two kits. A Starter Kit & an Extension Kit. Wire retaining clips are also provided to prevent movement of the tube connections due to expansion and contraction. These must be fitted to the ductwork to ensure safe operation of the system.

## OPERATION

### SYSTEM CONFIGURATIONS

| OPTION | GAS TYPE    | EVOMAX MODELS                                | MAX NUMBER OF BOILERS | MAX SYSTEM CAPACITY |
|--------|-------------|--|-----------------------|---------------------|
| 1      | Natural gas | Combinations of 100, 120, 150                | 6                     | 600kW               |
| 2      |             | Combinations that include a 30, 40, 60 or 80 | 6                     | 400kW               |
| 3      | Propane     | Combinations of 100P or 120P                 | 6                     | 600kW               |
| 4      |             | Combinations of 30P, 40P, 60P, 80P           | 6                     | 400kW               |

Flue height = 570mm from the top of the first boiler in the system.  
Increase the height 29mm for each adjacent boiler.



| UIN    | DESCRIPTION                    |
|--------|--------------------------------|
| 220925 | Multiline Starter Kit 80/125   |
| 220926 | Multiline Extension Kit 80/125 |
| 220927 | Multiline Starter Kit 100/150  |
| 220928 | Multiline Extension 100/150    |

**\*Multiline flue supplied to point A. Customers are to fabricate / supply B type flue system to termination point within flue resistance parameters.**

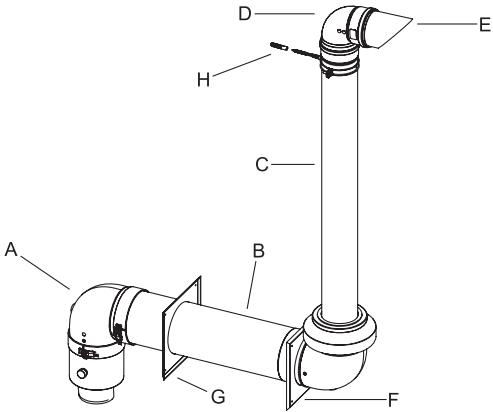
At the maximum system capacity the static pressure generated against the flue resistance at position [A] must not exceed the value Pmax quoted in the table below.

| EVOMAX 2 MODEL OUTPUT |      | CASCADE SYSTEM LIMITS   |   | COMBUSTION PRODUCTS DATA |                          |                 |
|-----------------------|------|-------------------------|---|--------------------------|--------------------------|-----------------|
| Model                 |      | Maximum System Capacity | Maximum Permissible Head-er Pressure 'A' (Static) | Max rate CO <sub>2</sub> | Min rate CO <sub>2</sub> | Temperature Max |
| Max                   | Min  | Hmax                    | Pmax  | ±0.5                     | ±0.5                     |                 |
| kW                    | kW   | kW                      | Pa  | %                        | %                        | C               |
| 30                    | 7.5  | 400                     | 40  | 9.7                      | 9.0                      | 72              |
| 40                    | 10   |                         |   |                          |                          |                 |
| 60                    | 15   |                         |   |                          |                          |                 |
| 80                    | 20   |                         |   |                          |                          |                 |
| 100                   | 25   | 600                     | 80  |                          |                          |                 |
| 120                   | 30   |                         |   |                          |                          |                 |
| 150                   | 37.5 |                         |   |                          |                          |                 |
| 30P                   | 7.5  | 400                     | 40  |                          |                          |                 |
| 40P                   | 10   |                         |   |                          |                          |                 |
| 60P                   | 15   |                         |   |                          |                          |                 |
| 80P                   | 20   |                         |   |                          |                          |                 |
| 100P                  | 25   | 600                     | 80  |                          |                          |                 |
| 120P                  | 30   |                         |   |                          |                          |                 |

# EVOMAX 2 PLUME KIT

The Evomax 2 Plume Kit is one of the latest additions to the flue accessory range from Ideal, designed specifically for the Evomax 2 range. Available for Evomax 2 boilers up to 150kW the Plume Kit can be used to relocate the flue terminal up to 10m.

- Suitable for all Evomax 2 up to 150kW
- Available for both 80/125 & 100/150 flue applications
- Plume kit offers terminal relocation up to 10m
- Includes standard appliance connector, horizontal flue kit, special rain collar, external plume kit 1m and terminal
- Offers neat solutions for awkward flue installations where the terminal requires relocation

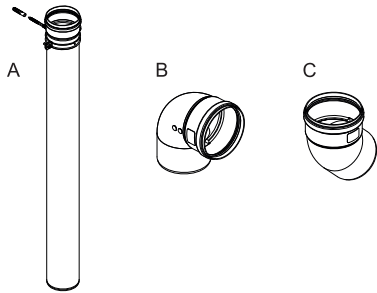


| PRODUCTS |  |
|----------|--|
| A        | Turret elbow   |
| B        | Flue terminal with rain cowl & air terminal assembly |
| C        | 1 Meter extension tube                               |
| D        | 90 degree elbow                                      |
| E        | Flue terminal end                                    |
| F        | External wall plate                                  |
| G        | Internal wall plate                                  |
| H        | Wall bracket   |

## OPERATION

### EVOMAX 2 PLUME KIT - PACKAGED OPTIONS

| UIN    | DESCRIPTION                            | DRAWING IDENTIFIER | COMPATIBLE WITH EVOMAX 2 30, 30P, 40, 40P, 60, 60P, 80, 80P | COMPATIBLE WITH EVOMAX 2 100, 100P, 120, 120P, 150 |
|--------|--|--------------------|---|--|
| 213274 | Plume kit 1m extension 80/125          | A                  | ✓   |  |
| 213272 | Plume kit 90 deg elbow 80/125          | B                  | ✓   |  |
| 213273 | Plume kit 45 deg elbows (pair) 80/125  | C                  | ✓   |  |
| 213277 | Plume kit 1m extension 100/150         | A                  | *   | ✓  |
| 213275 | Plume kit 90 deg elbow 100/150         | B                  | *   | ✓  |
| 213276 | Plume kit 45 deg elbows (pair) 100/150 | C                  | *   | ✓  |



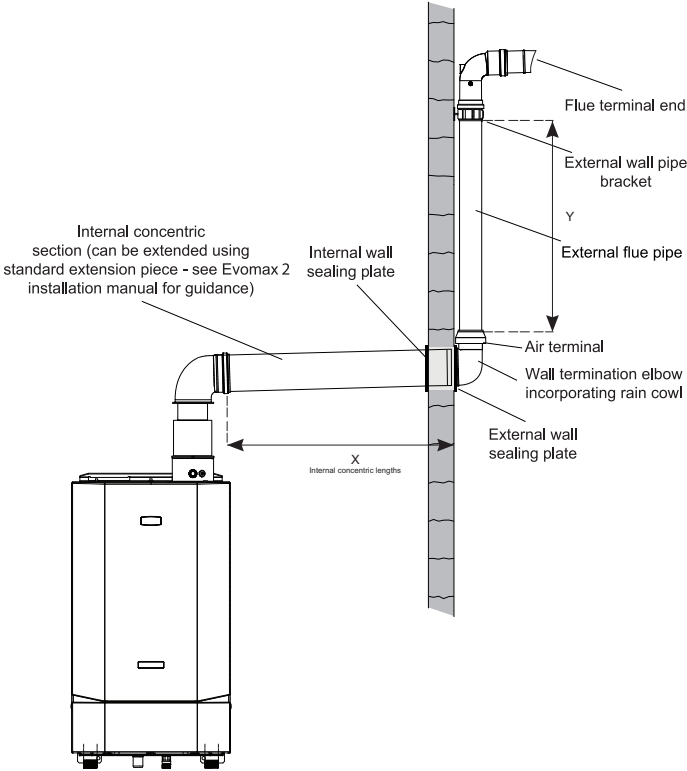
**\*Note:** The 100/150mm Plume Kit system can also be used on Evomax 2 80, 80P, 60 & 60P model variants if internal concentric wall horizontal flue adaptor is used (Part No. 158660). See Evomax 2 installation manual for details.

EVOMAX PLUME KIT - 80/125

| UIN    | DESCRIPTION                          |
|--------|--------------------------------------|
| 220922 | Plume kit 80/125                     |
| 213274 | Plume kit 1m extension 80/125        |
| 213272 | Plume kit 90 deg elbow 80/125        |
| 213273 | Plume Kit 45 deg elbow 80/125 (Pair) |

EVOMAX PLUME KIT - 100/150

| UIN    | DESCRIPTION                           |
|--------|---------------------------------------|
| 220923 | Plume kit 100/150                     |
| 213277 | Plume kit 1m extension 100/150        |
| 213275 | Plume kit 90 deg elbow 100/150        |
| 213276 | Plume kit 45 deg elbow 100/150 (Pair) |



| 80 / 125 DIA FLUE ~ MAXIMUM PERMISSIBLE FLUE LENGTHS (M) |        |        |        |        |
|--|--------|--------|--------|--------|
| Evomax 2 Model   | 30/30P | 40/40P | 60/60P | 80/80P |
| Y  | X      |        |        |        |
| 0.5  | 39.2   | 39.2   | 4.7    | 9.2    |
| 2.0  | 38.5   | 38.5   | 4.0    | 8.5    |
| 4.0  | 37.6   | 37.6   | 3.1    | 7.6    |
| 6.0  | 36.7   | 36.7   | 2.2    | 6.7    |
| 8.0  | 35.8   | 35.8   | 1.3    | 5.8    |
| 10.0   | 34.9   | 34.9   | 0.4    | 4.9    |

| 100 / 150 DIA FLUE ~ MAXIMUM PERMISSIBLE FLUE LENGTHS (M) |        |        |     |      |
|---|--------|--------|-----|------|
| Evomax 2 Model  | 60/60P | 80/80P | 100 | 120  |
| Y   | X      |        |     |      |
| 0.5   | 27.0   | 32.0   | 8.0 | 14.6 |
| 2.0   | 26.6   | 31.6   | 7.6 | 14.2 |
| 4.0   | 26.0   | 31.0   | 7.0 | 13.6 |
| 6.0   | 25.5   | 30.5   | 6.5 | 13.1 |
| 8.0   | 24.9   | 29.9   | 5.9 | 12.5 |
| 10.0  | 24.4   | 29.4   | 5.4 | 12.0 |

# FLUE TYPES

Before ventilation can be sized we need to identify the type of flue system.

**Type B** – Open flue: takes air from the plant room (adequate ventilation must be available).

**Type C** – Room sealed: takes air from outside

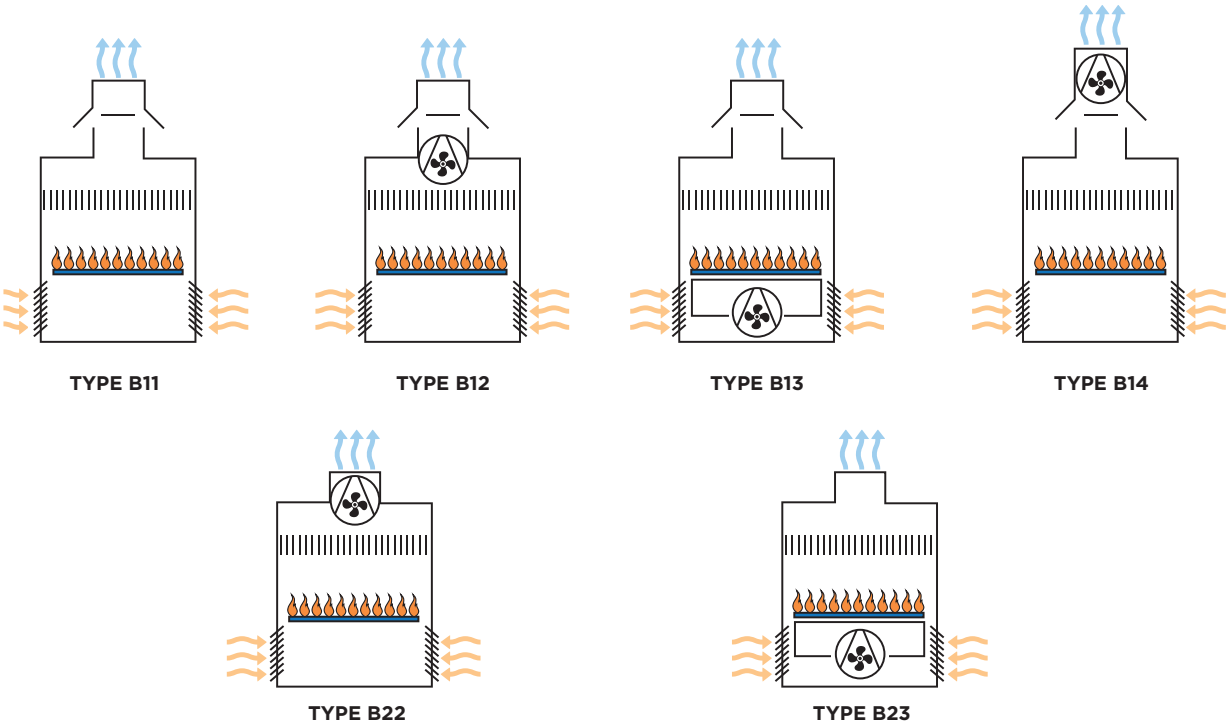
**We also need to know the classification of the room type.**

- Boiler house – a dedicated building for the installation of boilers and ancillary plant.
- Boiler room – a dedicated room within a building for the installation of boilers and ancillary plant.
- Enclosure – space in which a boiler(s) is installed, which is not large enough to permit access for work other than maintenance via external access.
- Plant room – a room in a building that houses plant and machinery.
- Open space – e.g. in a warehouse.

## CLASSIFICATION OF TYPE B FLUES

| Appliance type | Primary definition                      | Natural draught | Fan down stream of heat exchanger | Fan upstream of heat exchanger |
|----------------|---|-----------------|-----------------------------------|--------------------------------|
| B open flue    | B1- appliance with a draught diverter   | B11             | B12<br>B14*                       | B13                            |
|                | B2 – appliance without draught diverter | B21             | B22                               | B23                            |

\*Appliance fan also downstream of draught diverter

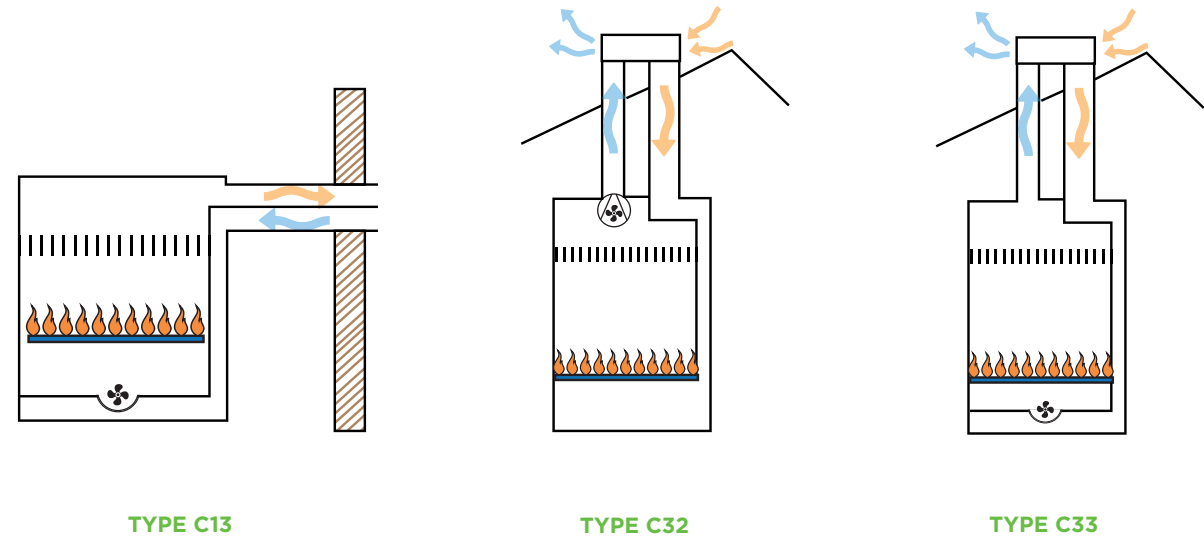




Where 2 or more gas fired boilers are connected to a common natural draught flue, the boilers must be installed in the same room and have the same type of burner system. A gas fired boiler and a solid fuel or biomass boiler must not discharge into the same flue. A gas fired boiler and a liquid fired fuel boiler can discharge into the same flue providing they are both installed in the same room and are force draught.

| Appliance type        | Primary definition  | Natural draught or fan draught |                                   |                                |
|-----------------------|---|--------------------------------|-----------------------------------|--------------------------------|
|                       |   | Natural draught                | Fan down stream of heat exchanger | Fan upstream of heat exchanger |
| C type<br>Room sealed | C1- appliances with a horizontal balanced flue/inlet air ducts to outside atmosphere.   | C11*                           | C12                               | C13*                           |
|                       | C2 – appliance flue connects to a common duct system for multi-appliance installations (the common duct system is part of the building) | C21                            | C22                               | C23                            |
|                       | C 3 - appliance with vertical balanced flue/ inlet air ducts to outside atmosphere.   | C31                            | C32*                              | C33*                           |
|                       | C4 – appliance with flue system that connects to a common duct system e.g. 'U' duct flue system.  | C41                            | C42                               | C43                            |
|                       | C5 – appliance with a non-balanced flue/ inlet air duct system.   | C51                            | C52                               | C53                            |
|                       | C6 – appliance sold without a flue system   | C61                            | C62                               | C63                            |
|                       | C7 – appliance connected to a vertical flue to outside atmosphere with the air ducts in the loft (vertex)                               | C71                            | C72                               | C73                            |
|                       | C8- appliance with a non-balanced flue system with an air supply from outside atmosphere and flued into a common duct system.           | C81                            | C82                               | C83                            |

\*Appliance fan also downstream of draught diverter



# GUIDE TO FLUE INSTALLATION & REGULATIONS

There are many different regulations relating to flues and ventilation. This document will not cover all of them but assist in obtaining information and guidance, and provide useful and practical information.

This guide looks at common standards used to determine the requirements for flue and ventilation installation requirements and should not be used as a sole reference for flue regulations. Please also remember to use the installation and service manual for specific guidance for each boiler and to refer to the relevant standards.

## COMMERCIAL BOILERS (70kW – 1.8MW)

|                                       |   |
|---------------------------------------|---|
| <b>BS6644</b>                         | 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). In IE refer to I.S. 820. |
| <b>IGEM UP10</b>                      | Installation of flued gas appliances in industrial and commercial premises.   |
| <b>Building Regs Part J</b>           | Combustion appliances and heat storage, gives advice on how to comply with Building Regulations.  |
| <b>Clean Air Act (1956 Amendment)</b> | A UK Parliament Act passed in response to London's Great Smog of 1952.  |

The Act introduced a number of measures to reduce air pollution, especially by introducing 'smoke control areas' in some towns and cities in which only smokeless fuels could be burned. By shifting homes' sources of heat towards cleaner coals, electricity, and gas, it reduced the amount of smoke pollution and sulphur dioxide from household fires. Reinforcing these changes, the Act also included measures to relocate power stations away from cities, and for the height of some chimneys to be increased.

The Act was an important milestone in the development of a legal framework to protect the environment. Although smog is no longer an issue, more recent editions of the Clean Air Act have maintained control of emissions and heights of flues.

WHEN SHOULD I USE COMMERCIAL FLUE REQUIREMENT LEGISLATION AND GUIDANCE?

BS5440 covers domestic installations up to 70kW net input, however if an appliance is to be installed in a factory location even if under 70kW then the commercial requirements of IGEM UP10 & BS6644 must be adopted. Similarly if a cascade boiler installation is fitted and the total input exceeds 70kW then the commercial flues and ventilation should be adopted.

WHAT IS GUIDANCE AND WHAT IS MANDATORY?

**British Standards** are a mandatory requirement. The approved documents offer guidance on how to comply and are not legally binding unless the manufacturer of the appliance stipulates them in the installation manual. It is prudent however to follow them because they would likely be used in a court of law as the minimum expected by a competent person to install a safe system.

**Building Regs** are a mandatory requirement as set out in Government legislation.

**IGEM Documents** offer guidance in the same way as British standards. However these have been set and adopted by a board of industry experts and represent current best practice and are aligned with National/International legislation and standards.

**Clean Air Act** – This is a mandatory requirement as set out in Government legislation.

**Gas Safety (Installation and Use) Regulations 1998** – These are mandatory and set out the requirements for safe installations.

CLEAN AIR ACT - THE FACTS

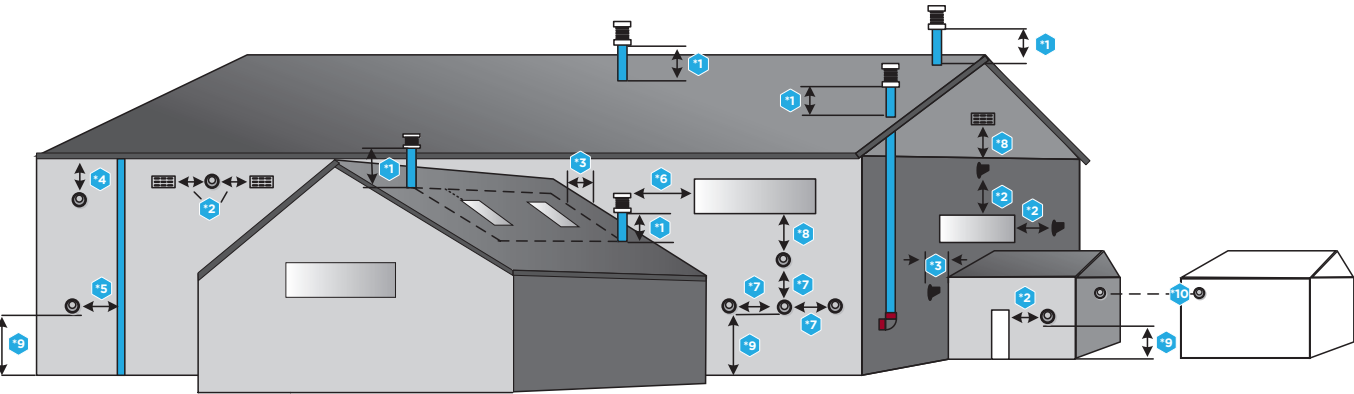
The Act applies to gas (and other fuels) fired appliance installations generally but with specific requirements for installations exceeding 333 kW net heat input including approval of the height of the chimney by the Local Authority. The essential requirements are that flue discharges are not to cause a nuisance to others or be a hazard to health.

In 1956 there was a clean air act memorandum that stated appliances with gross input of 150kW must terminate vertically. This has no foundation in law and was not written for modern high efficiency products. To this effect the current guidance suggests that all installations from 135kW net input that wish to terminate horizontally should be subject to a risk assessment which can be found in IGEM UP10.

All installations are subject to the clean air act requirements:-

- Installations below 333kW net heat input can terminate horizontally at low level subject to a risk assessment and complying with all other clearance distances as defined in IGEM UP10.
- Appliance inputs greater than 333kW net need prior approval from the Local Authority with position of flue termination agreed by them.
  - No terminal fitted to natural draught flues should be less than 170mm.
  - Terminal positions for fanned or natural draught flues shall be clear of obstructions and openings into buildings. Wall terminations shall be directed away from the building.
  - Vertical outlets must be the minimum required above the roof level.
  - Any horizontal outlet below 2m must be guarded and a minimum of 300mm above ground level.

TERMINATION POSITIONS APPLIANCES OVER 70KW NET INPUT



- Key to Diagram:**
- \*1 - Minimum termination height for ridged and flat roofs.
  - \*2 - Minimum horizontal termination distance from openings i.e. doorways, windows, ventilation grilles, etc.
  - \*3 - Minimum horizontal termination distance from adjacent walls or obstructions.
  - \*4 - Minimum distance to be 200 mm for fan assisted appliances, 300 mm for room sealed natural draught appliances, see IGEM UP10 .
  - \*5 - Minimum distance to be 150 mm, see IGEM UP10.
  - \*6 - Minimum termination distance from openings i.e. doorways, windows, ventilation grilles, etc.
  - \*7 - Minimum distance of centres of flue terminal, see manufacturer's instructions.
  - \*8 - Minimum distance below terminal or opening 2.5 m.
  - \*9 - Minimum 300mm above the ground. If less than 2m subject to a risk assesment (available from IGEM UP10).
  - \*10 - Opposing a terminal or flat surface.

SEE IGEM 10 FOR FURTHER DETAILS

| 1, 3 & 6 Minimum Height of Termination Located on a roof  |       |       |       |       |       |       |       |       |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
|   | 70kW  | 80kW  | 100kW | 120kW | 150kW | 200kW | 240kW | 300kW |
| Natural Draught   | 600mm | 615mm | 645mm | 676mm | 722mm | 798mm | 859mm | 950mm |
| For other natural draught appliances use Distance = 1.5225 (net heat input kW) + 493.43                           |       |       |       |       |       |       |       |       |
| Fanned Draught  | 300mm | 327mm | 380mm | 433mm | 513mm | 646mm | 753mm | 913mm |
| For other fan draught appliances use Distance = 2.6644 (net heat input kW) +113.49                                |       |       |       |       |       |       |       |       |
| For all sloped roofs over 20 degree pitch the terminal must be 1.5m away  |       |       |       |       |       |       |       |       |
| If the flue termination is within 2.5m of an adjacent structure then these heights above the structure will apply |       |       |       |       |       |       |       |       |

| 2 Minimum Horizontal Termination To Openings Into Buildings (side or above)               |        |        |        |        |        |        |        |        |
|---|--------|--------|--------|--------|--------|--------|--------|--------|
|   | 70kW   | 80kW   | 100kW  | 120kW  | 150kW  | 200kW  | 240kW  | 300kW  |
| Open Flue and Fanned Draught  | 1500mm | 1600mm | 1790mm | 1975mm | 2265mm | 2740mm | 3120mm | 3690mm |
| For other open flue fan draught inputs use Distance = 9.5156 x (net heat input) + 833.91  |        |        |        |        |        |        |        |        |
| Room Sealed Fanned Draught  | 600mm  | 675mm  | 820mm  | 960mm  | 1180mm | 1540mm | 1830mm | 2265mm |
| For other room sealed fan draught inputs use Distance = 7.232 x (net heat input) + 93.708 |        |        |        |        |        |        |        |        |
| The minimum distance below in all cases is 2500mm   |        |        |        |        |        |        |        |        |

| 10 Room Sealed Fanned Draught Minimum Horizontal Termination To Opposing Walls/Terminals |        |        |        |        |        |        |        |        |
|--|--------|--------|--------|--------|--------|--------|--------|--------|
|  | 70kW   | 80kW   | 100kW  | 120kW  | 150kW  | 200kW  | 240kW  | 300kW  |
| Opposing Flat Surface  | 1000mm | 1231mm | 1694mm | 2156mm | 2850mm | 4006mm | 4931mm | 6319mm |
| For other inputs use Distance = 23.126 x (net heat input) – 618.84                       |        |        |        |        |        |        |        |        |
| Opposing Terminal  | 600mm  | 675mm  | 820mm  | 960mm  | 1180mm | 1540mm | 1830mm | 2265mm |
| For other inputs use Distance = 19.32 x (net heat input) + 647.59                        |        |        |        |        |        |        |        |        |

VENTILATION REQUIREMENTS OF COMMERCIAL BOILERS OVER 70KW NET INPUT

ROOM SEALED APPLIANCES, TYPE C IN PLANT ROOMS

| FLUE TYPE | VENTILATION DIRECT TO OUTSIDE AIR<br>(cm² per kW net heat input) |     |
|-----------|--|-----|
|           | HIGH   | LOW |
| (TYPE C)  | 2  | 2   |

OPEN FLUED APPLIANCES, TYPE B IN PLANT ROOMS (ADDITIONAL RECOMMENDATIONS)

| Natural Ventilation cm² kw (net) heat input for open flue boilers located in a boiler house  |                  |               |  |   |
|--|------------------|---------------|--|---|
|  | (A) Boiler House | (B) Enclosure | Summer usage* greater than 50% up to 75% | Summer usage* greater than 75% up to 100% |
| High   | 2                | 5             | +1                                       | +2  |
| Low  | 4                | 10            | +1                                       | +2  |
| *for boilers in use for more than 50% of the time during the summer months, additional ventilation needs to be added to those in columns A and B |                  |               |  |   |

OPEN FLUED APPLIANCES, TYPE C IN PLANT ROOMS (ADDITIONAL RECOMMENDATIONS)

| Natural Ventilation cm² kw (net) heat input for open flue boilers located in a boiler house  |                  |                             |                       |  |   |
|--|------------------|-----------------------------|-----------------------|--|---|
|  | (A) Boiler House | (B) Enclosure               |                       | Summer usage* greater than 50% up to 75% | Summer usage* greater than 75% up to 100% |
|  |                  | To a room or internal space | Direct to outside air |  |   |
| High   | 2                | 10                          | 5                     | +1                                       | +2  |
| Low  | 2                | 10                          | 5                     | +1                                       | +2  |
| *for boilers in use for more than 50% of the time during the summer months, additional ventilation needs to be added to those in columns A and B |                  |                             |                       |  |   |

For further information, please refer to:

- Manufacturer's instructions
- IGEN UP10
- BS6644

- High level ventilation openings shall be located as high as is reasonably practicable and preferably within 15% of the building height from the ceiling.
- Low level ventilation openings shall be within 1m of the floor for Natural Gas and within 250mm of the floor for LPG.
- For LPG it is preferable that low level ventilation openings are located at floor level.
- Ventilation to an internal space is not generally recommended unless a Risk Assessment has been completed.
- The air supplied for boiler room ventilation shall be such that the maximum temperature within the boiler house is:
  - 25 °C at floor level (or 100mm above floor level)
  - 32 °C at mid level (1.5 m above floor level)
  - 40 °C at ceiling level (or 100mm below ceiling level)

MECHANICAL VENTILATION

- Mechanical ventilation can be a combination of mechanical inlet and outlet or mechanical inlet and natural ventilation outlet.
- The fans shall be selected and controlled so as to not cause a negative pressure (relative to the outside atmosphere) developing in the boiler room.
- Interlocked to the gas appliance.

Minimum Quantity of Mechanical Ventilation

| Mechanical ventilation m³/hr per kW net heat input  |                         |   |   |  |
|---|-------------------------|---|---|--|
|   | (A) Min inlet air m³/hr | (B) Difference between inlet and extract air† m³/hr | Summer usage†† greater than 50% up to 75% | Summer usage†† greater than 75% up to 100% |
| Boiler(s) with draught diverter   | 2.8                     | 2.07 ±0.18  | +0.72                                     | +1.44                                      |
| Boiler(s) without draught diverter†††   | 2.6                     | 1.35 ±0.18  | +0.72                                     | +1.44                                      |
| †inlet air minus ventilation 2.8 - 2.07 = 0.73m³/hr<br>††For boilers in use for more than 50% of the time during the summer months, additional mechanical ventilation needs to be added to those columns A and B<br>††† with or without draught stabilisers |                         |   |   |  |

WATER TREATMENT

IMPORTANT

The application of any other treatment to this product may render the guarantee of Ideal Heating 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 MC1, 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 7593:2006 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**  
Forsyth Road, Sheerwater, Woking,  
Surrey GU21 5RZ  
Tel: +44 (0) 870 601 5000

**Sentinel Performance Solutions**  
7560 Daresbury Park  
Daresbury, Warrington  
Cheshire  
WA4 4BS  
Tel: 0800 389 4670  
www.sentinelprotects.com

**Scalemaster Water Treatment Products**  
Emerald Way, Stone, Staffordshire  
ST15 0SR  
Tel: 01785 811636

**Calmag Ltd.**  
Riverview Buildings  
Bradford Road, Riddlesden,  
Keighley, West Yorkshire  
BD20 5JH  
Tel: +44 (0) 1535 210 320

**Adey Innovation Ltd**  
Unit 2, St Modwen Park,  
Haresfield,  
Stonehouse GL10 3EX  
Tel: +44 (0) 1242 546700

DOMESTIC BOILERS (UP TO 70kW)

**BS5440** Flues and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases). Specification for the installation and maintenance of ventilation provision for gas appliances. In I.E refer to I.S. 813.

Flue Termination Position

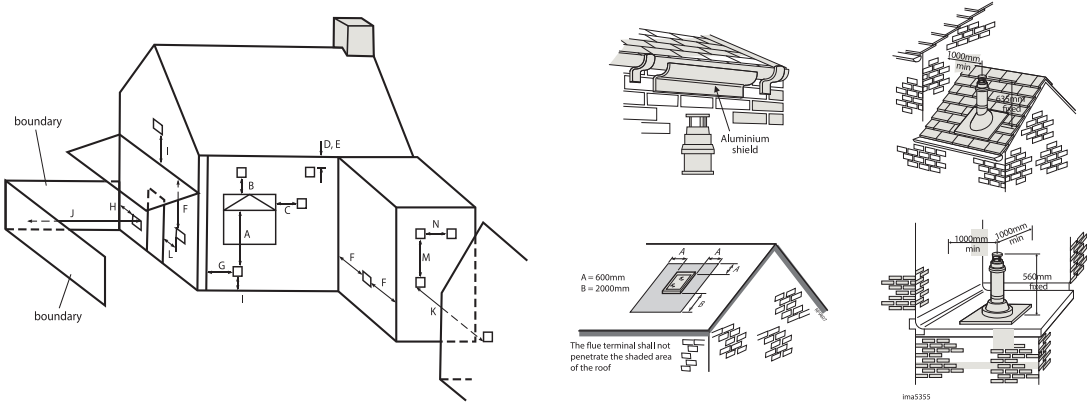
Due to the high efficiency of these boilers plumbing will occur. For this reason vertical termination is recommended, and in any case, terminal positions which could cause problems should where possible be avoided.

Particular care should be taken in the case of large multiple boiler installations, and complying with the requirements of the Clean Air Act. The information below is extracted from BS. 5440 Pt. 1 and is for boilers with heat inputs not exceeding 70kW nett, and the latest Building Regulation Part J. Detailed reference should still be made to these standards. In IE refer to I.S. 813:2002.

| CONCENTRIC WALL TERMINAL POSITIONS   | MINIMUM SPACING |
|--|-----------------|
| A. Below an opening (l)  | 300mm           |
| B. Above an opening (l)  | 300mm           |
| C. Horizontally to an opening (l)  | 300mm           |
| D. Below gutters, soil pipes or drain pipes                                    | 75mm            |
| E. Below eaves   | 200mm           |
| F. Below balcony or car port roof  | 200mm           |
| G. From a vertical drain pipe or soil pipe                                     | 150mm           |
| H. From an internal or external corner or to a boundary alongside the terminal | 300mm           |
| I. Above ground, roof or balcony level   | 300mm           |
| J. From a surface or a boundary facing the terminal                            | 600mm           |
| K. From a terminal facing the terminal   | 1200mm          |
| L. From an opening in the car port into the building                           | 1200mm          |
| M. Vertically from a terminal on the same wall                                 | 1500mm          |
| N. Horizontally from a terminal on the same wall                               | 300mm           |
| CONCENTRIC ROOF TERMINAL POSITIONS   |                 |
| Directly below an opening, air brick, windows, etc.                            | 300mm           |
| Below plastic/painted gutters  | 500mm*          |
| Below painted surface  | 500mm*          |
| Below eaves or balcony   | 500mm           |
| From wall  | 1000mm          |
| Below Velux window   | 2000mm          |
| Above or side of Velux window  | 600mm           |

\* May be reduced to 300mm if a shield fitted. (l) An opening here means an openable element, such as a openable window, or a fixed opening such as an air vent. However, in addition, the outlet should not be nearer than 150mm (fanned draught) to an opening into the building fabric formed for the purpose of accommodating a built in element, such as a window frame.

If the terminal is fitted less than 500 mm below plastic gutters, painted eaves or any other painted surface then an aluminium shield at least 1m long should be fitted to protect the surface. For positioning of open flue terminals reference should be made to BS5440 Pt. 1. In IE refer to I.S. 813:2002



Heat inputs in excess of 70kW nett.  
For boiler installations with total heat inputs in excess of 70kW nett, reference should be made to BS6644.  
In IE refer to I.S. 820:2000.

VENTILATION

The ventilation requirements of these boilers is dependant on the type of flue system used, and their heat input. All vents must be permanent with no means of closing, and positioned to avoid accidental obstruction by blocking or flooding.

EVOMAX 2 30/30P, 40/40P, 60/60P

Detail reference should be made to BS5440 Pt. 2. In IE refer to the current edition of I.S. 813.

The following notes are for general guidance only: If installed as a room sealed appliance in a room or internal space, then no purpose provided ventilation is required. If installed as an open flued appliance in a room or internal space then a permanent air vent is required. The sizes given below are for vents directly communicating with outside air. For other situations refer to BS5440 Pt. 2. In IE refer to the current edition of I.S. 813.

If installed in a compartment, then permanent air vents are required at high and low level. These vents may communicate direct to outside air, or to a room/internal space. If to a room/ internal space, it must itself be adequately ventilated as above.

EVOMAX 2 VENTILATION REQUIREMENTS (NOT EXCEEDING 70KW NET INPUT) WHEN INSTALLED IN A COMPARTMENT

| ROOM SEALED APPLICATION - MIN. VENT FREE AREA (CM²) |                             |     |     |                |     |     | OPEN FLUE APPLICATION - MIN. VENT FREE AREA (CM²) |     |      |                |     |     |
|---|-----------------------------|-----|-----|----------------|-----|-----|---|-----|------|----------------|-----|-----|
|   | TO A ROOM OR INTERNAL SPACE |     |     | TO OUTSIDE AIR |     |     | TO A ROOM OR INTERNAL SPACE                       |     |      | TO OUTSIDE AIR |     |     |
| Boiler Size   | 30                          | 40  | 60  | 30             | 40  | 60  | 30  | 40  | 60   | 30             | 40  | 60  |
| High Level  | 310                         | 410 | 610 | 155            | 205 | 305 | 310   | 410 | 610  | 155            | 205 | 305 |
| Low level   | 310                         | 410 | 610 | 155            | 205 | 305 | 620   | 820 | 1220 | 310            | 410 | 610 |

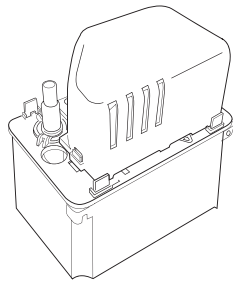
The temperature within the boiler room shall not exceed 25 °C within 100mm of the floor, 32 °C at mid height and 40 °C within 100mm of the ceiling.



# CONDENSATE PUMPS

The condensate pump is designed to collect and remove condensate and can be used with high efficiency condensing boilers.

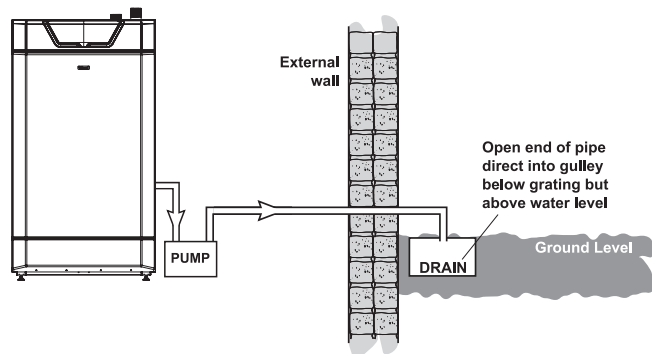
| TECHNICAL INFORMATION     |                            |
|---------------------------|----------------------------|
| Maximum flow rate         | 440 litres/hour            |
| Electrical supply         | 230V AC / 50-60 Hz 0.8amps |
| Alarm contact             | NC 4 Amps resistive        |
| Overheat protection       | 130 °C                     |
| Tank Capacity             | 2.0 Litres                 |
| Maximum vertical head     | 4.5m                       |
| Maximum horizontal length | 30m                        |



| IDEAL COMMERCIAL BOILERS - CONDENSATE PUMP COMPATIBILITY |            |
|--|------------|
| BOILER   | COMPATIBLE |
| EVOMAX 2 - 30 - 150kW                                    | ✓          |
| IMAX XTRA 2 - 80 - 280kW                                 | ✓          |
| IMAX XTRA EL - 320 - 1240kW                              | ✓          |
| EVOMOD - 250 - 1000kW                                    | ✓          |
| EVOJET - 150 - 1450kW                                    | ✓          |

## TYPICAL CONDENSATE SYSTEM

### TERMINATION TO DRAIN / GULLEY



SEE INSTALLATION MANUAL FOR FULL INSTRUCTIONS AND SYSTEM OPTIONS





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Fax: 0844 543 6181

### TECHNICAL

Tel: 01482 498376

Fax: 01482 498621

[commercial.services@idealheating.com](mailto:commercial.services@idealheating.com)

## NOTES

## NOTES



Sales:

**0844 543 6060**

Technical Help:

**01482 498376**

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

#### APPROVAL

These appliances are certified to G.A.D. 90/396 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).

