



Heating



Hot water



Renewables

# Vaillant Commercial Systems have solutions for every specification





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Please note the information contained in this guide is for the use of competent and qualified heating engineers in the UK. We always recommend attending a training course provided by Vaillant to ensure complete knowledge of the appliance and/or accessories you are installing. The Vaillant Group does not warrant the accuracy or completeness of any of the information provided in this brochure. Should you require any clarification or further information, please speak with your Regional Business Manager or call our technical helpline. The Vaillant Group does not accept liability or responsibility resulting from the installer's failure to comply with the guides or otherwise. For more detailed information, please refer to the installation manual for each product you are using.



# About Vaillant



## The Vaillant Group

Vaillant UK is proud to be part of the worldwide heating and hot water corporation Vaillant Group, a family-owned business that was founded by Johann Vaillant in his workshop in Remscheid, Germany in 1874.

In 1894, Johann patented a new closed-system gas-fired bathroom boiler. Over the years, Johann's technical innovations continued and in 1924, he launched the world's first central heating boiler. Since these revolutionary inventions, Vaillant continues to drive the evolution of heating technologies, launching the first ever combi boiler in 1967, and the game changing aroTHERM plus in 2020.

Today, Vaillant is still setting the standard in the heating marketplace, developing market leading products that work seamlessly together, to provide a full systems solution. With a growing focus on developing products that use renewable energy, Vaillant became the first boiler manufacturer in the UK to launch a heat pump production line, which opened at their headquarters in Belper, 2022. This, together with the research and development of on-going hydrogen trials, marks a huge milestone for Vaillant in supporting the brand's mission to create a better climate, inside each home and the world around it.



### Product innovation

Vaillant offers a vast selection of products to cater for many applications. Our portfolio consists of large output wall-hung and floor-standing condensing commercial boilers with compatible cascade rigs and accessories to cater for simple and large scale projects.

Please note all Vaillant ecoTEC plus 48, 64, 80, 100 and 120kW boilers, and ecoCRAFT boiler systems will require appropriately sized expansion vessels to be fitted to accommodate thermal expansion of the system water. In addition, Vaillant requires the use of system separation by the use of a plate heat exchanger where any boiler or multiple smaller boilers have a total net output exceeding 70kW.

# ecoTEC plus 48 and 64kW

Wall-hung condensing boilers



## Overview

The ecoTEC plus 48 and 64kW compact sized range of boilers are a great solution for both light commercial and larger domestic projects that have tight, restrictive spaces. The 48kW output model weighs as little as 38kg.

The internal ducted rain collector prevents rain ingress from the flue system depositing in the boiler casing, which helps to protect the internal electronics within the boiler. The new gunmetal air separation device removes micro-air bubbles from within the water. Please note, a plate heat exchanger must be fitted when installing in cascade and the net output exceeds 70kW.

An additional 5-year guarantee can be purchased via Vaillant Advance, making the total guarantee 10-years for additional peace of mind.

## Features & benefits



### 5-year guarantee available

5-year guarantee comes as standard, with 2-years available on Vaillant rigs and accessories. Subject to conditions and registration within 30 days. Ability to now purchase an additional 5 years via Advance.



### High efficiency pump

The in-built ErP pump is able to match the high performance of the boiler.



### Lightweight with compact dimensions

For easy siting in tight places, the boilers have dimensions of 720mm high and 440mm wide with removable front and side panels for much easier access.



### Low NOx burner system

Levels as low as 31- and 29mg/kWh minimises environmental impact.



### Highly efficient stainless steel heat exchanger

Allows lower running costs for consumers whilst using the familiar, reliable, and robust heat exchanger design.



### Ability to cascade

Allows a number of boilers to be combined to achieve high system outputs with greater flexibility of use. These models are able to operate up to 4bar.



### ErP A+ rated

When installed with a class VI control, such as our VRC 700 or sensoCOMFORT (VRC 720).



### Can be converted for LPG out of the box

A perfect solution for off-gas areas.

NOTE: An appliance commissioning service is available. Speak to your Vaillant Regional Business Manager for more details.

## ecoTEC plus 48 and 64kW technical data

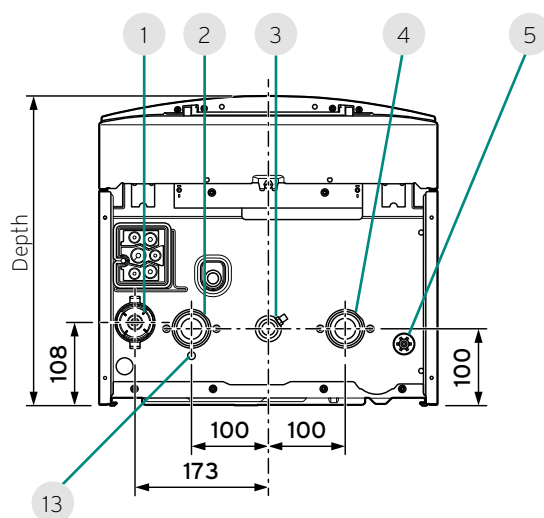
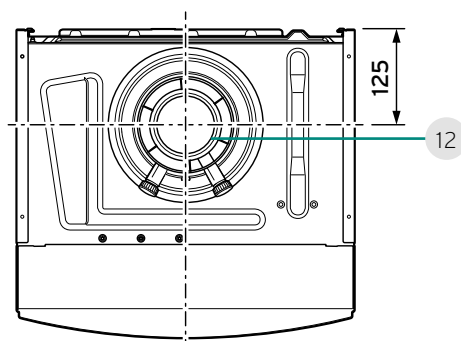
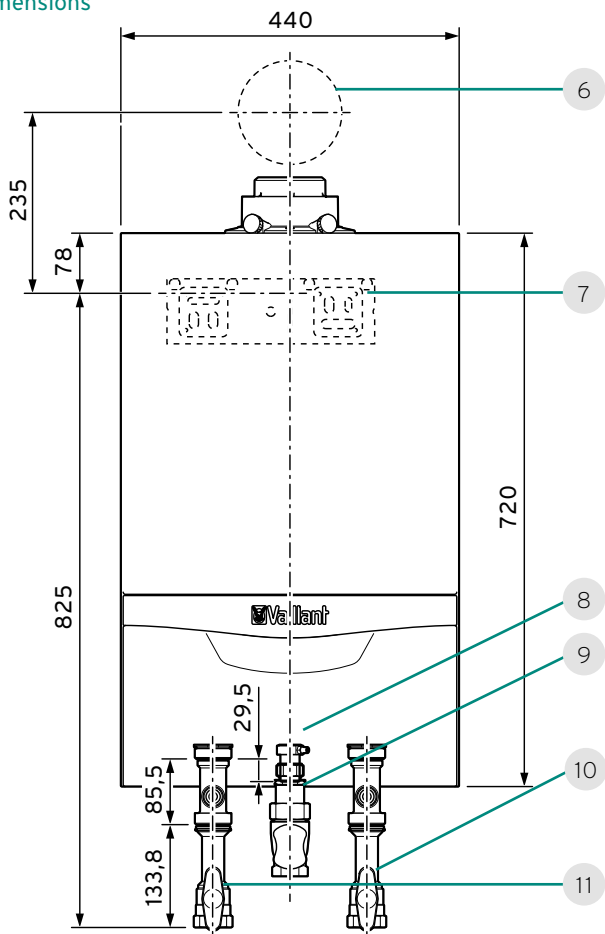
ecoTEC plus		Unit	48kW	64kW
Article number			0010021520	0010021521
Gas council number		G.C	41-694-28	41-694-29
Heat output range Natural gas G20 at 20mb	80/60	kW	7.8 - 44.1	11.0 - 58.7
	50/30	kW	8.7 - 48.0	12.2 - 63.5
Conversion to LPG G31 at 37mb (conversion instructions supplied, no parts needed)	80/60	kW	7.8 - 44.0	11.1 - 58.4
	50/30	kW	8.6 - 46.6	12.0 - 62.1
Maximum heat input (net)		kW	45.2	60
Modulation ratio - N:1		%	5.5 : 1 (18%)	5.2 : 1 (19%)
Energy-related Products (ErP rated)*			A+	
SAP winter/summer seasonal efficiency (%)		%	88.4/79.4	88.0/79.0
Energy-related products efficiency		%	94	94
Part L2 seasonal efficiency **	NG	%	96.3	96.7
Net efficiency 100%	80/60	%	98.2	98.2
Net efficiency 30%	40/30	%	109.5	109.5
Gas working pressure	NG	mbar	20	20
	LPG	mbar	37	37
Nominal gas consumption at 15 °C 1013mb	NG	m <sup>3</sup> /h	4.8	6.3
	LPG	kg/h	3.5	4.6
NOx class 6 - 0% oxygen - dry		mg/kWh	30.8	29.1
Minimum / maximum flow temperature		°C	30 / 80	
Nominal CH flow rate $\Delta t = 20$ K		l/hr	1900	2500
Pump head in DHW mode - minimum / maximum / default		mbar	100 / 400 / 200	100 / 400 / 200
Pump head in CH mode - minimum / maximum / default		mbar	100 / 400 / 200	100 / 400 / 200
Condensate (PH range 3.5 - 4.0)		l/h	5.0	6.9
Standby loss $\Delta t = 30$ K		W	25	32
Maximum power consumption ( $e_{l,max}$ )		W	162	250
Standby power consumption ( $P_{SB}$ )		W	2	
Supply voltage / frequency / current			230V / 50Hz / 3A	
IP rating			IP X4D	
Noise level - load EN 15036-1 re1pW		dB(A)	57	57
Dimensions (H x W x D)		mm	720 x 440 x 405	720 x 440 x 473
Dry weight (includes pump)		kg	38	48
Internal water capacity (PH range 6.5 - 8.5)		l	3.5	4.4
Concentric air flue duct		$\emptyset$ mm	80 / 125	
Connection size (B23p)		$\emptyset$ mm	80	
Flue certification for GB			C13, C33, C43, C53, C93, B23, B23p, B33, B53, B53p	
Maximum horizontal flue length		m	18	15
Maximum vertical flue length		m	21	18
Flue mass flow Qmax	NG	g/s	20.3	27.0
Minimum / maximum flue gas temperature		°C	40 / 78	
Fan pressure B23p in single		Pa	125	187
Maximum flue resistance in cascade		Pa	50	
Flow and return connections		BSP	1 ¼"	
Gas connection		BSP	1"	
Condensate connection pipe		$\emptyset$ mm	19 ID	
Pressure relief valve size		BSP	1"	
Minimum / maximum operating pressure (PRV rating - 4bar)		bar	0.8 / 3.5	
High efficiency pump (built-in)		EEl $\geq$ 0.23	UPMM 25-85	UPML 25-105

\* When installed with a class VI control.

\*\* In accordance with the non-domestic compliance guide 2013.

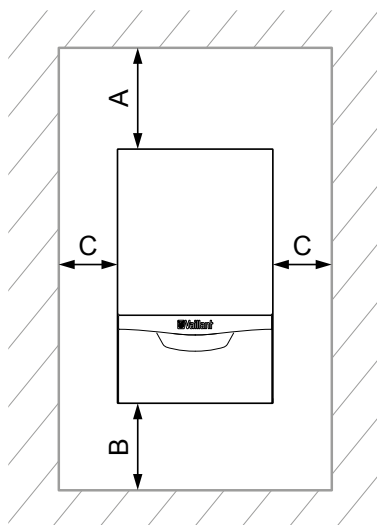
# ecoTEC plus 48 and 64kW technical data

## Dimensions



## Clearances

A minimum of 500mm clearance in front of the boiler is required to enable easy access for servicing. This may be provided by an accessible door.



A	B	C
≥ 275mm	≥ 180mm*	≥ 5mm

Dimensions	Model	mm
Depth	48kW	405
	64kW	473

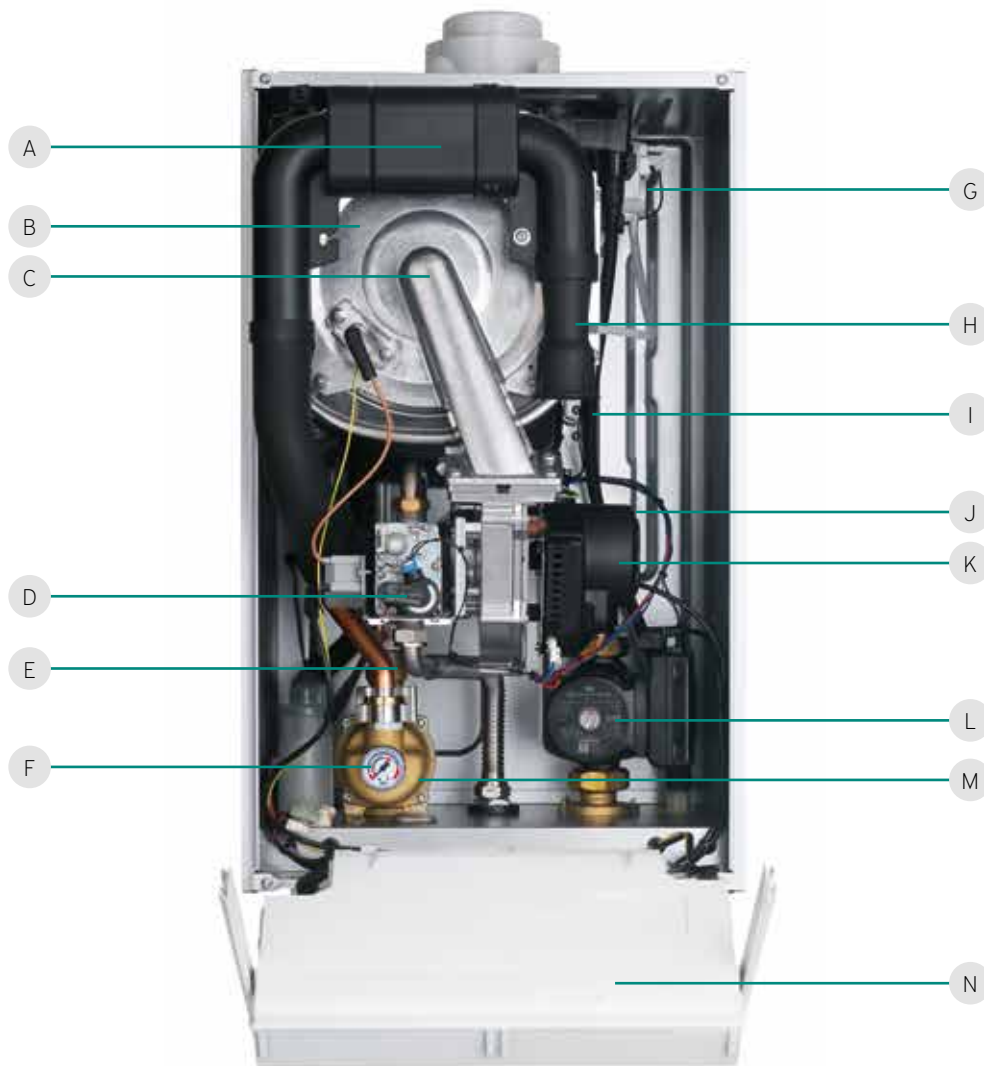
## Connections

Connections	Description
1	Condensate siphon
2	Heating flow connection
3	Gas connection
4	Heating return connection
5	Drain for the rainwater collecting device
6	Flue duct position
7	Wall hanging bracket
8	Gas pressure test point connection
9	Gas stopcock
10	Heating return stopcock
11	Heating flow stopcock
12	Air/flue pipe connection
13	Drain for the dynamic air separation system

NOTE: Additional height required if fitting the WH40/2 low-loss header below the boiler.



## ecoTEC plus 48 and 64kW key components



Key	Description
A	Silencer
B	Heat exchanger
C	Burner
D	Gas valve
E	Automatic air vent
F	Analogue manometer
G	Air pressure switch
H	Air intake
I	Rain discharge drain
J	Pressure sensor
K	Fan
L	High efficiency pump
M	Air separator
N	Electronics/PCB

### Service valves

All ecoTEC plus boilers are supplied with the following

Flow and return isolation valve



Gas isolation valve



Pressure relief valve



# ecoTEC plus 80, 100 and 120kW

Wall-hung condensing boilers



## Overview

Our larger ecoTEC plus boilers are available in 80, 100 and 120kW output models with the ability to cascade up to 960kW, making the perfect wall-to-wall solution for every commercial specification.

A full range of compatible flues and accessories are available to support a full system. Please note, a plate heat exchanger must be fitted.

## Features & benefits



### 5-year guarantee available

5-year guarantee comes as standard, with 2-years available on Vaillant rigs and accessories. Subject to conditions and registration within 30 days.



### High-quality stainless steel heat exchanger

Offers more resistance to oxidation, seizing, corrosion and are easily accessed for future maintenance.



### Energy saving two-stage frost protection and pressure sensor

Allows lower running costs for consumers whilst using the familiar, reliable, and robust heat exchanger design.



### Fully modulating low NOx burner

Lower NOx emissions are achieved minimising environmental impacts.



### Easy access for repairs and servicing

All components can be accessed from the front of the boiler, along with a single electronic circuit board and flue gas analysis point.



### 0-10V compatible

Suitable for BEMS applications when using VR 34 accessory.



### ErP A+ rated

When installed with a class VI control, such as our VRC 700.



### Can be converted for LPG by Vaillant Service\*

Suitable for both natural gas and LPG applications.

\* Conversion to LPG is a chargeable service.

NOTE: An appliance commissioning service is available. Speak to your Vaillant Regional Business Manager for more details.

## ecoTEC plus 80, 100 and 120kW technical data

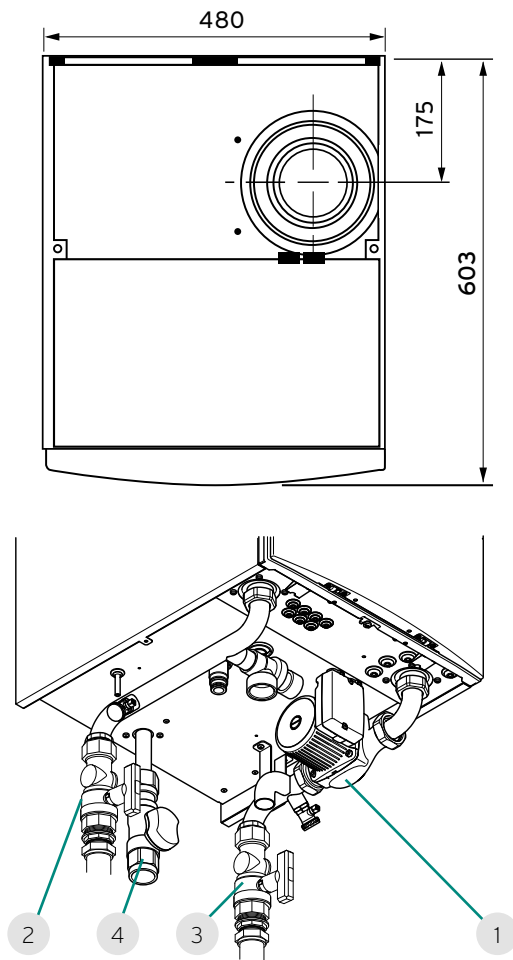
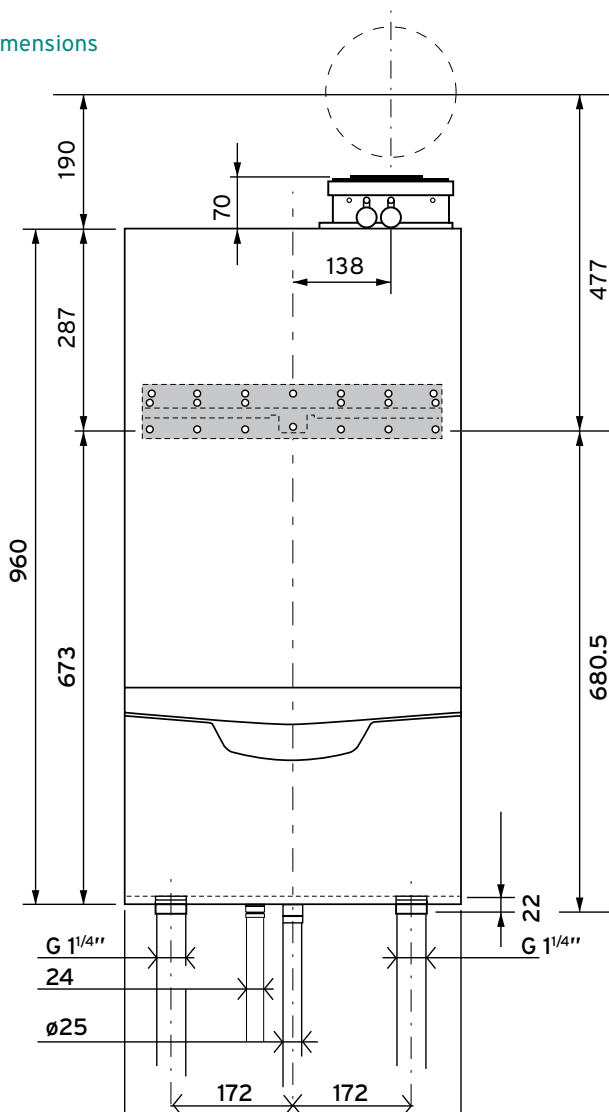
ecoTEC plus		Unit	80kW	100kW	120kW
Article number			0010010767	0010010780	0010010791
Gas council number		G.C	41-044-68	41-044-69	41-044-70
Heat output range Natural gas G20 at 20mb	80/60	kW	14.9 - 74.7	18.7 - 93.3	22.4 - 112.0
	50/30	kW	16.5 - 82.3	20.7 - 102.8	24.7 - 123.4
Conversion to LPG G31 at 37mb (conversion kit available from Vaillant)	80/60	kW	37.4 - 74.7	46.7 - 93.3	56.0 - 112.0
	50/30	kW	41.2 - 82.3	51.4 - 102.8	61.7 - 123.4
Maximum heat input (net)		kW	76.2	95.2	114.3
Modulation ratio - N:1		%	5 : 1 (20%)	5 : 1 (20%)	5 : 1 (20%)
Energy-related products (ErP rated)*			A		
Energy-related products efficiency		%	92	92	93
Part L2 seasonal efficiency **	NG	%	95.6	96.0	95.9
Net efficiency 100%	80/60	%	96.9	98.3	97.3
Net efficiency 30%	50/30	%	107.7	108.5	108.6
Gas working pressure	NG	mbar	20		
	LPG	mbar	37		
Nominal gas consumption at 15°C 1013mb	NG	m <sup>3</sup> /h	8.1	10.1	12.1
	LPG	kg/h	5.92	7.40	8.88
NOx class 6 - 0% oxygen - dry		mg/kWh	35	29	29
Minimum / maximum flow temperature		°C	35 / 85		
Nominal CH flow rate $\Delta t = 20$ K		l/hr	3440	4300	5160
Nominal CH flow rate $\Delta t = 11$ K Only via plate heat exchanger		l/hr	6190	7719	9247
Pump head without check valve		mbar	600	480	320
Pump head with check valve		mbar	520	400	240
Condensate (PH range 3.5 - 4.0)		l/h	12.8	16	19.2
Standby loss $\Delta t = 50$ K		%	< 2	< 2	< 2
Maximum power consumption (el <sub>max</sub> )		W	345	355	355
Standby power consumption		W	< 2	< 2	< 2
Supply voltage / frequency / current			230V / 50Hz / 4A		
IP rating			IP X4D		
Noise level - load EN 15036-1 dB(A) re1pW	Full		54.4	62.3	60.6
	Part		33.8	36.3	37.8
Dimensions (H x W x D)		mm	960 x 480 x 603		
Dry weight		kg	68	86	90
Internal water capacity (PH range 6.5 - 8.5)		l	17.0	23.7	22.5
Concentric air flue duct		mm	110 / 160		
Connection size (B23p)		mm	110	110	110
Flue certification for GB			C13, C33, C43, C53, C93, B23, B23p, B53, B53p		
Maximum horizontal flue length		m	22	20	11
Maximum vertical flue length		m	24	18	9
Flue mass flow Q <sub>max</sub>	NG	g/s	34.7	43.4	52.1
Minimum / maximum flue gas temperature		°C	40 / 85	40 / 85	40 / 85
Fan pressure B23p in single		Pa	150	200	200
Maximum flue resistance in cascade		Pa	50	50	50
Flow and return connections		BSP	1 ¼"	1 ¼"	1 ¼"
Gas connection		BSP	1"	1"	1"
Condensate connection pipe		Ø mm	19 ID / 24 OD		
Pressure relief valve size		BSP	1"		
Minimum / maximum operating pressure		bar	0.8 / 5.5		
High efficiency pump (available as an accessory)		EEl >= 0.23	0020175314 (required for each boiler)		

\* When installed with a class VI control.

\*\* In accordance with the non-domestic compliance guide 2013.

# ecoTEC plus 80, 100 and 120kW technical data

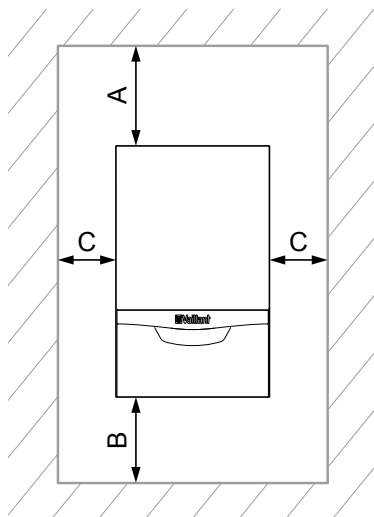
## Dimensions



All measurements are in millimeters unless stated otherwise.

## Clearances

A minimum of 500mm clearance in front of the boiler is required to enable easy access for servicing. This may be provided by an accessible door.



A	B	C
≥ 350mm	≥ 400mm	≥ 5mm

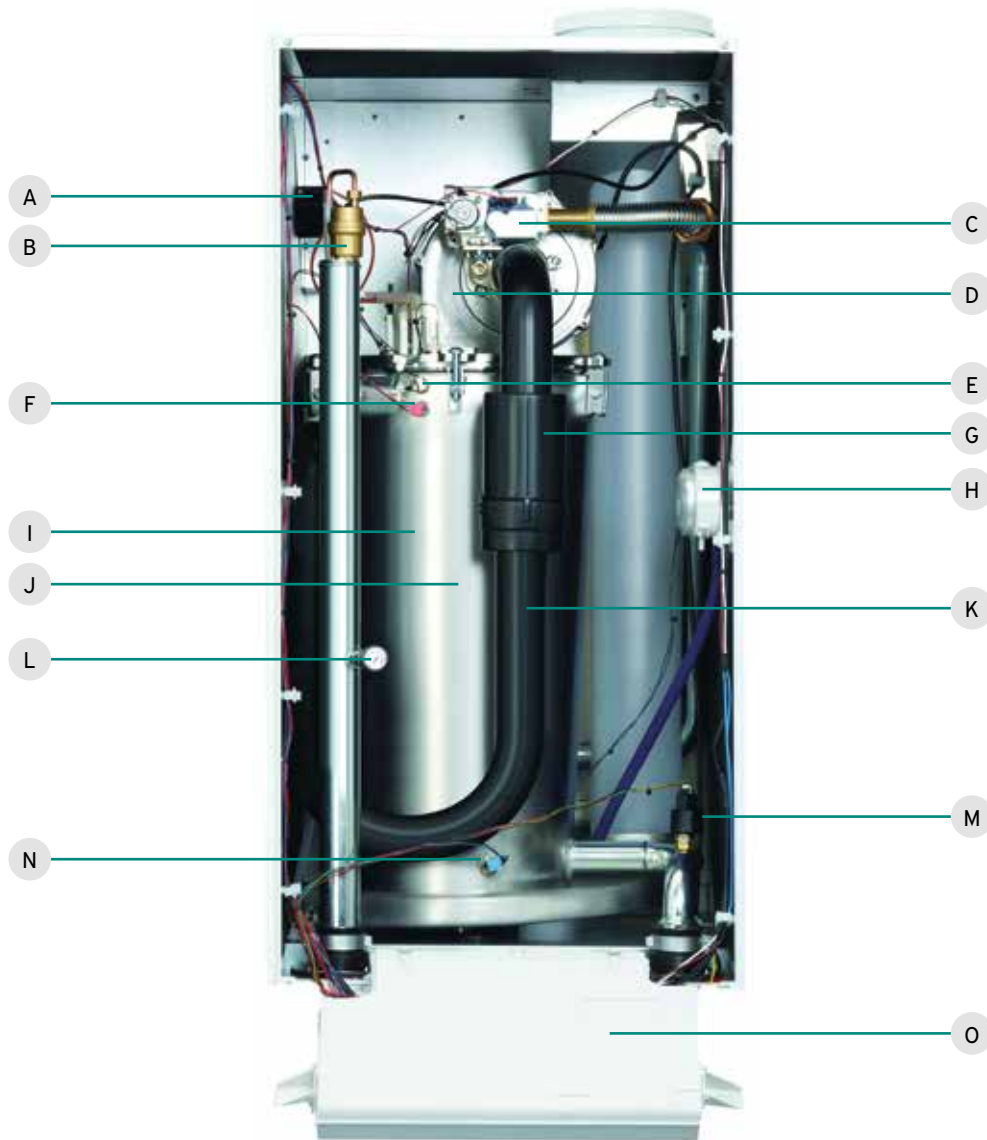
## Connections

Connections	Description
1	Pump group*
2	Heating flow
3	Heating return
4	Gas valve

\* Shown without insulation for clarity.

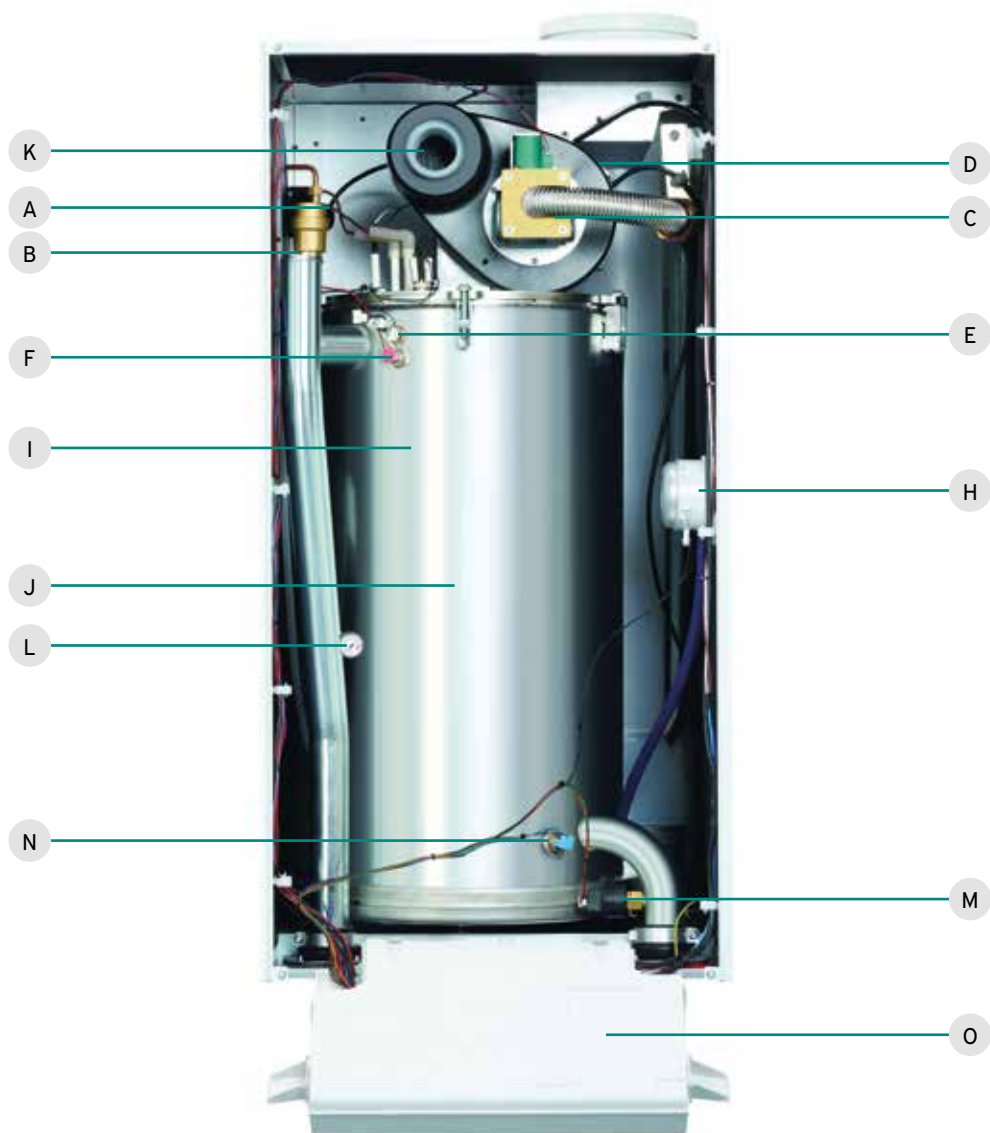


## ecoTEC plus 80kW key components



Key	Description
A	Ignition transformer
B	Automatic air vent
C	Gas valve
D	Fan
E	Flow STL
F	Flow NTC
G	Silencer
H	Flue gas pressure switch
I	Burner (inside heat exchanger)
J	Heat exchanger
K	Air intake
L	Pressure gauge
M	Water pressure sensor
N	Return NTC
O	Electronics/PCB

# ecoTEC plus 100 and 120kW key components



## Service valves

All ecoTEC plus 80, 100 and 120kW boilers are supplied with the following

Flow and return isolation valve



Gas isolation valve



Pressure relief valve



## Pump group

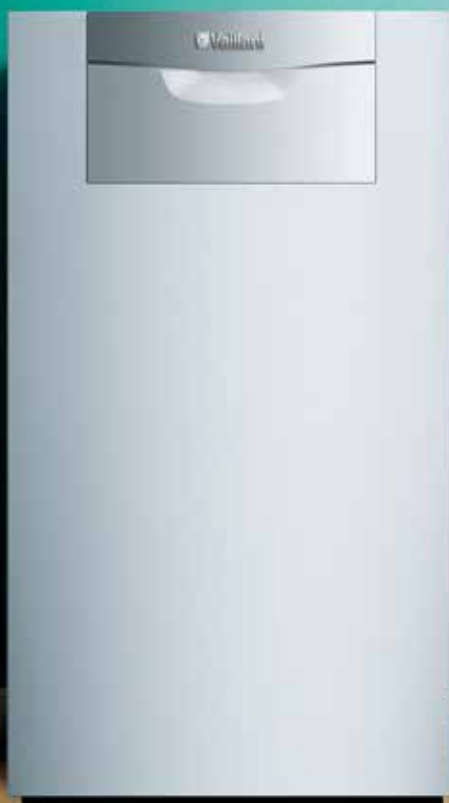


Description	Article number
Pump group, includes pump and insulation	0020175314

NOTE: Available as an accessory but must be used with all ecoTEC plus 80, 100 and 120kW.

# ecoCRAFT 80 - 280kW

## Floor-standing condensing boilers



### Overview

The ecoCRAFT range is available in 80, 120, 160, 200, 240 and 280kW output models and is suitable for use with natural gas only. ecoCRAFT is a floor standing boiler, which can be installed either as a standalone unit or in a cascade to meet your design requirements.

A plate heat exchanger must be fitted with all ecoCRAFT boilers, standalone and cascade installs. ecoCRAFT boilers are compatible with many third-party flues. Please contact a specialist flue manufacturer for suitable flue systems for these models of floor standing boilers.

### Features & benefits



#### 5-year guarantee available

5-year guarantee comes as standard, with 2-years available on Vaillant accessories. Subject to conditions and registration within 30 days.



#### Simple case assembly and removal

To ensure easy servicing and quick repairs.



#### Sectional heat exchanger with single pre-mix burner control

To achieve part load efficiencies as high as 108.4% (net).



#### Modulation ranges as wide as 17% to 100%

Closest load matching on the 160kW model to help drive down running costs.



#### NOx class 6 rating

Minimising environmental impact whilst maximising your building regulations rating.



#### ErP A+ rated

Higher efficiencies to help lower running costs when installed with a class VI control, such as our VRC 700 and sensoCOMFORT.



#### Plain text interface

Enables the install to be simple and easily completed from the front of the boiler.



#### Adjustable maximum flow temperature from 35°C to 85°C

To meet a range of requirements.

NOTE: An appliance commissioning service is available. Speak to your Vaillant Regional Business Manager for more details.

## ecoCRAFT 80, 120 and 160kW technical data

ecoCRAFT		Unit	80kW	120kW	160kW
Article number			0010014388	0010014389	0010014390
Heat output range Natural gas G20 at 20mb	80/60	kW	13.6 - 78.2	21.3 - 113.4	26.2 - 156.8
	50/30	kW	14.4 - 82.4	22.7 - 119.4	27.8 - 164.8
Maximum heat input (net)		kW	80	115.9	160
Modulation ratio - N:1			5.7 : 1 (17%)	5.3 : 1 (19%)	5.9 : 1 (17%)
Energy-related products (ErP rated)*			A		
Energy-related products efficiency		%	93		
Part L2 seasonal efficiency **	NG	%	95.85	95.85	95.85
Net efficiency 100%	80/60	%	97.8	97.8	97.8
Net efficiency 30%	50/30	%	108.4	108.4	108.4
Gas working pressure	NG	mbar	20		
Nominal gas consumption at 15°C 1013mb	NG	m³/h	8.5	12.3	16.9
NOx class 6 - 0% oxygen - dry		mg/kWh	≤ 40		
Minimum / maximum flow temperature		°C	35 / 85		
Nominal CH flow rate $\Delta t = 20$ K		l/h	3440	4990	6880
		l/s	0.96	1.39	1.91
Loss across heat exchanger		mbar	80	85	90
Pump head		mbar	550	410	210
Condensate (PH range 3.5 - 4.0)		l/h	13	20	27
Standby loss $\Delta t = 50$ K		%	< 4		
Maximum power consumption ( $e_{l,max}$ )		W	260	260	320
Standby power consumption		W	< 8		
Supply voltage / frequency / current			230V / 50Hz / 4A		
IP rating			IP 20		
Noise level - load EN 15036-1 dB(A) re1pW		Full	61.9	61	69.1
Dimensions (H x W x D)		mm	1285 x 695 x 1240		
Dry weight		kg	200	220	235
Internal water capacity (PH range 6.5 - 8.5)		l	5.74	8.07	10.4
Concentric air flue duct		mm	150 / 130		
Connection size (B23p)		mm	150		
Flue certification for GB			C33, C43, C53, C93, C63, C83, B23, B23p		
Maximum horizontal flue length		m	3		
Maximum vertical flue length	Ø 130mm	m	33		
	Ø 160mm	m	50		
	Ø 200mm	m	N/A		
Flue mass flow Qmax	NG	g/s	35.4	51.2	70.7
Minimum / maximum flue gas temperature		°C	60 / 70		
Fan pressure B23p in single		Pa	100	100	150
Maximum flue resistance in cascade			50		
Flow and return connections		BSP	2"		
Gas connection		BSP	1½"		
Condensate connection pipe		Ø mm	19 ID / 24 OD		
Minimum / maximum operating pressure		bar	5.5		
High efficiency pump (available as an accessory)		EEI ≥ 0.23	0020180027		

\* When installed with a class VI control.

\*\* In accordance with approved document L.



## ecoCRAFT 200, 240 and 280kW technical data

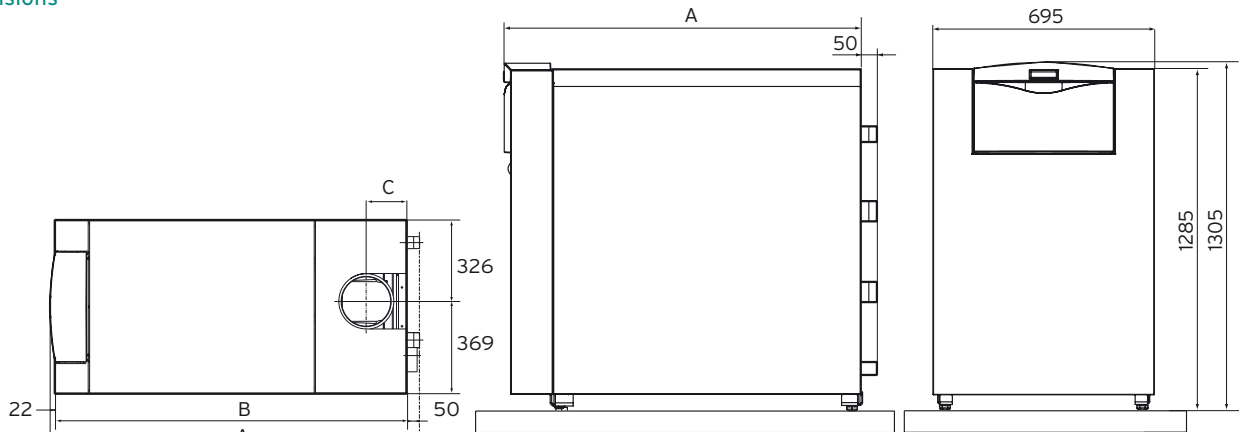
ecoCRAFT		Unit	200kW	240kW	280kW
Article number			0010014391	0010014392	0010014393
Heat output range Natural gas G20 at 20mb	80/60	kW	43.1 - 196.8	47.0 - 236.2	51.0 - 275.5
	50/30	kW	45.3 - 206.0	48.2 - 241.2	53.6 - 288.4
Maximum heat input (net)		kW	200	240	280
Modulation ratio - N:1			4.6 : 1 (22%)	5 : 1 (20%)	5.4 : 1 (19%)
Energy-related products (ErP rated)*			A		
Energy-related products efficiency		%	93		
Part L2 seasonal efficiency **	NG	%	95.81	95.81	96.2
Net efficiency 100%	80/60	%	98.4	98.4	98.4
Net efficiency 30%	50/30	%	108.2	108.2	108.2
Gas working pressure	NG	mbar	20		
Nominal gas consumption at 15 °C 1013mb	NG	m³/h	21.2	25.4	29.6
NOx class 6 - 0% oxygen - dry		mg/kWh	≤ 40		
Minimum / maximum flow temperature		°C	35 / 85		
Nominal CH flow rate Δ t = 20 K		l/h	8600	10330	12050
		l/s	2.39	2.87	3.35
Loss across heat exchanger		mbar	95	100	105
Pump head		mbar	610	500	320
Condensate (PH range 3.5 - 4.0)		l/h	34	40	47
Standby loss Δ t = 50 K		%	< 4		
Maximum power consumption		W	320		
Standby power consumption		W	< 8		
Supply voltage / frequency / current			230V / 50Hz / 4A		
IP rating			IP 20		
Noise level - load EN 15036-1 dB(A) re1pW		Full	68.5	69.8	74.8
Dimensions (H x W x D)		mm	1285 x 695 x 1550		
Dry weight		kg	275	295	310
Internal water capacity (PH range 6.5 - 8.5)		l	12.73	15.05	17.37
Concentric air flue duct		mm	200 / 130		
Connection size (B23p)		mm	200		
Flue certification for GB			C33, C43, C53, C93, C63, C83, B23, B23p		
Maximum horizontal flue length		m	3		
Maximum vertical flue length	Ø 130mm	m	N/A		
	Ø 160mm	m	N/A		
	Ø 200mm	m	50		
Flue mass flow Qmax	NG	g/s	88.4	106.1	123.8
Minimum / maximum flue gas temperature		°C	60 / 70		
Fan pressure B23p in single		Pa	150		
Maximum flue resistance in cascade			50		
Flow and return connections		BSP	2"		
Gas connection		BSP	1½"		
Condensate connection pipe		Ø mm	19 ID / 24 OD		
Minimum / maximum operating pressure		bar	6		
High efficiency pump (available as an accessory)		EEl ≥ 0.23	0020180028		

\* When installed with a class VI control.

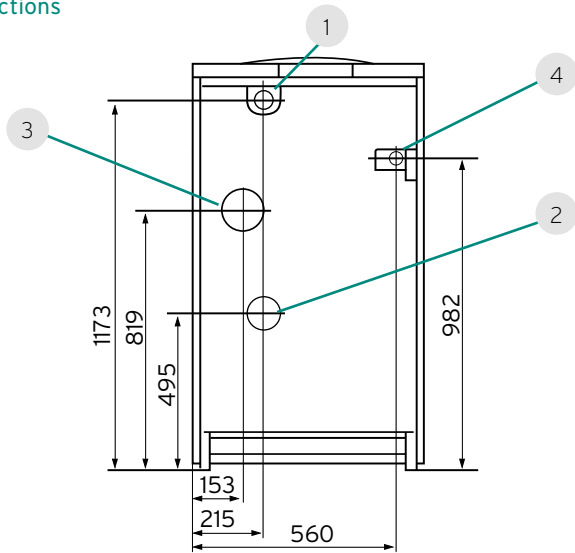
\*\* In accordance with approved document L.

# ecoCRAFT 80 - 280kW technical data

## Dimensions

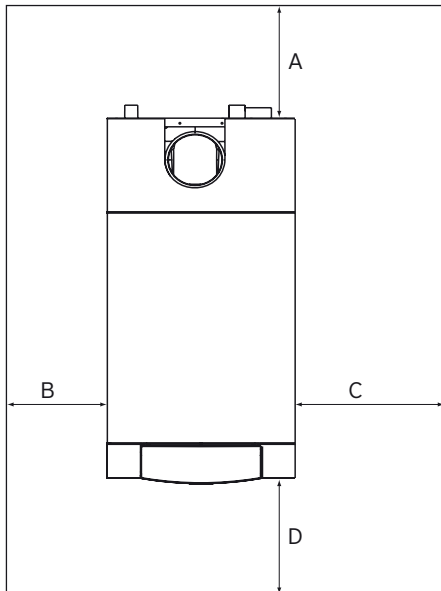


## Connections



Dimensions	ecoCRAFT 80 - 160kW	ecoCRAFT 200 - 280kW
A	1240mm	1550mm
B	1168mm	1478mm
C	165mm	200mm

Connections	Description
1	Flow connection
2	Return connection
3	Air inlet connector
4	Gas inlet connection



## Clearances

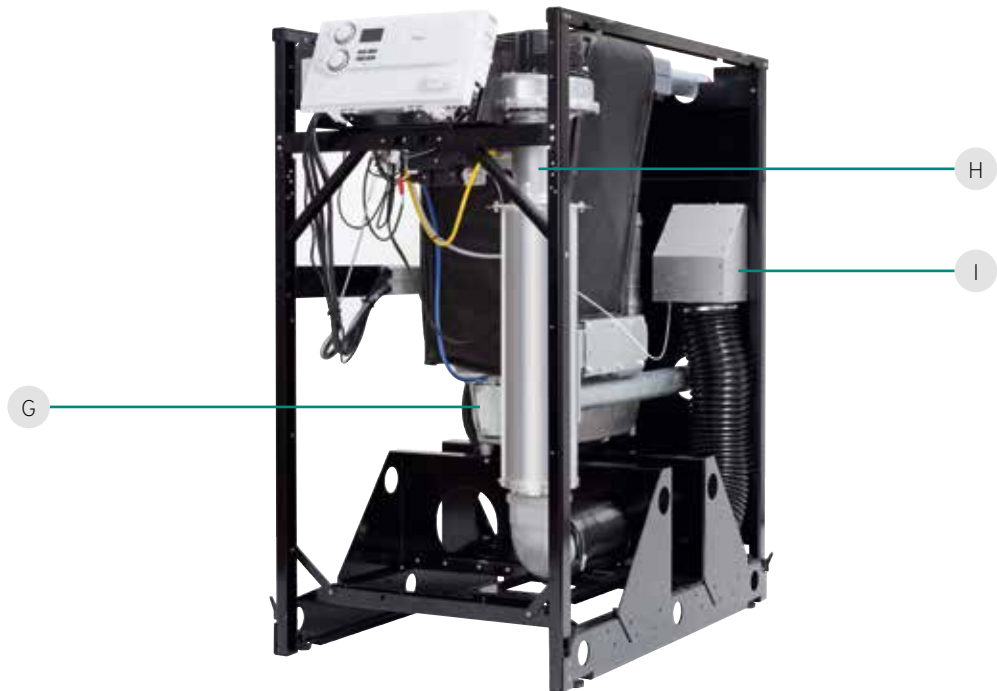
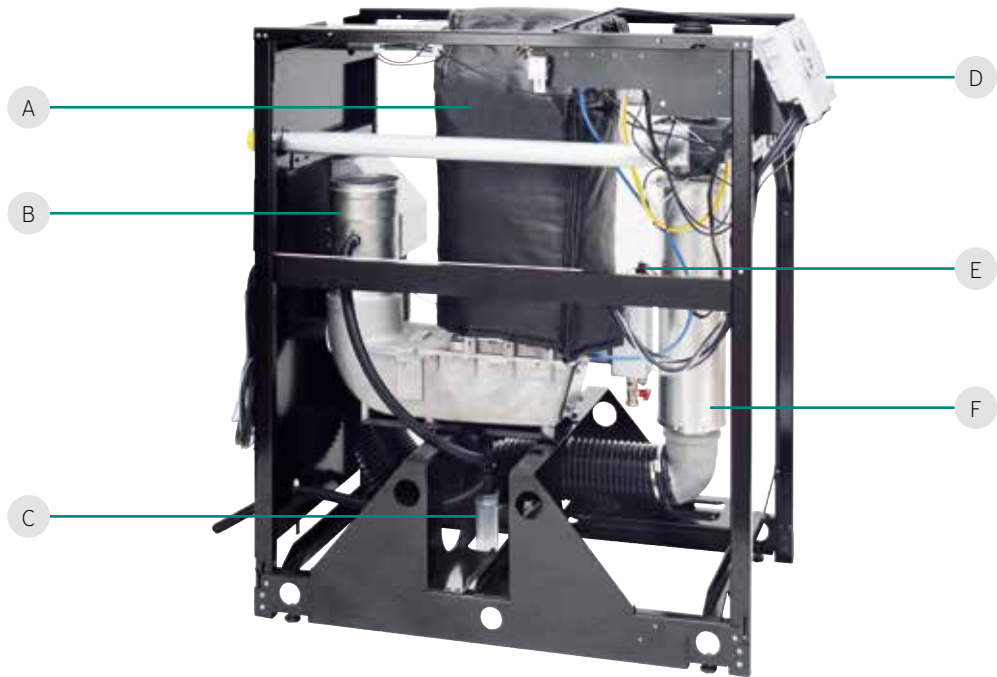
It's recommended that a minimum of 500mm clearance is provided in front of the boiler and side panels are removable with clearances to ensure easy access for servicing.

A	B	C	D
≥ 500mm	≥ 50mm	≥ 300mm	≥ 500mm

Recommended minimum distances for installation.

NOTE: Heights are approximate and can vary with foot adjustment (-5mm to +10mm).

ecoCRAFT 80 - 280kW key components



Key	Description
A	Insulated heat exchanger
B	Flue adapter
C	Condensate trap
D	Control box
E	Water pressure sensor
F	Air supply tube
G	Inspection cover
H	Venturi
I	Air inlet filter

# ecoTEC plus 48 and 64kW

## Single appliance flue accessories

### Overview

To complement the wide range of wall-hung boilers available, Vaillant offers a selection of flue system components that can be specified according to the requirements of the installation. Vaillant's proprietary components have been designed to perfectly match each model of boiler and should be used to ensure full compliance with the necessary certification for each installation.

The 80/125mm size is suitable for the ecoTEC plus 48 and 64kW vertical and horizontal terminals along with 87° and 45° elbows. For terminations requiring an outdoor run of flue pipe, Vaillant also supply a vertical facade flue system with the external components manufactured in stainless steel.

### Compatibility matrix

ecoTEC plus	48kW	64kW
Single boiler install	80/125mm concentric	
Multiple boilers on a cascade flue system	See page 48	

### Flue accessories

Description	Article number
Standard white finish horizontal concentric flue	303209
Horizontal terminal steel/stainless steel concentric flue inner for high rise applications	0010035777
Vertical flue terminal	303200
87° elbow (pack of 1)	303210
45° elbow (pack of 2)	303211
Air/flue duct extension (470mm)	303202
Air/flue duct extension (970mm)	303203
Air/flue duct extension (1970mm)	303205
952mm concentric flue extension steel outer / stainless steel inner*	0010035778
Sliding sleeve	303215
Flue support clips (pack of 5)	303616
Pitched roof adjustable roof tile	009076
Lead slate penetration seal for pitched roofs	303980
Flat roof penetration collar	009056

\* For high rise applications.

NOTE: Adequate provision must be made by the installer to allow removable access of flue components for repairs and servicing. If no means of access or removal is provided, responsibility lies with the flue provider.



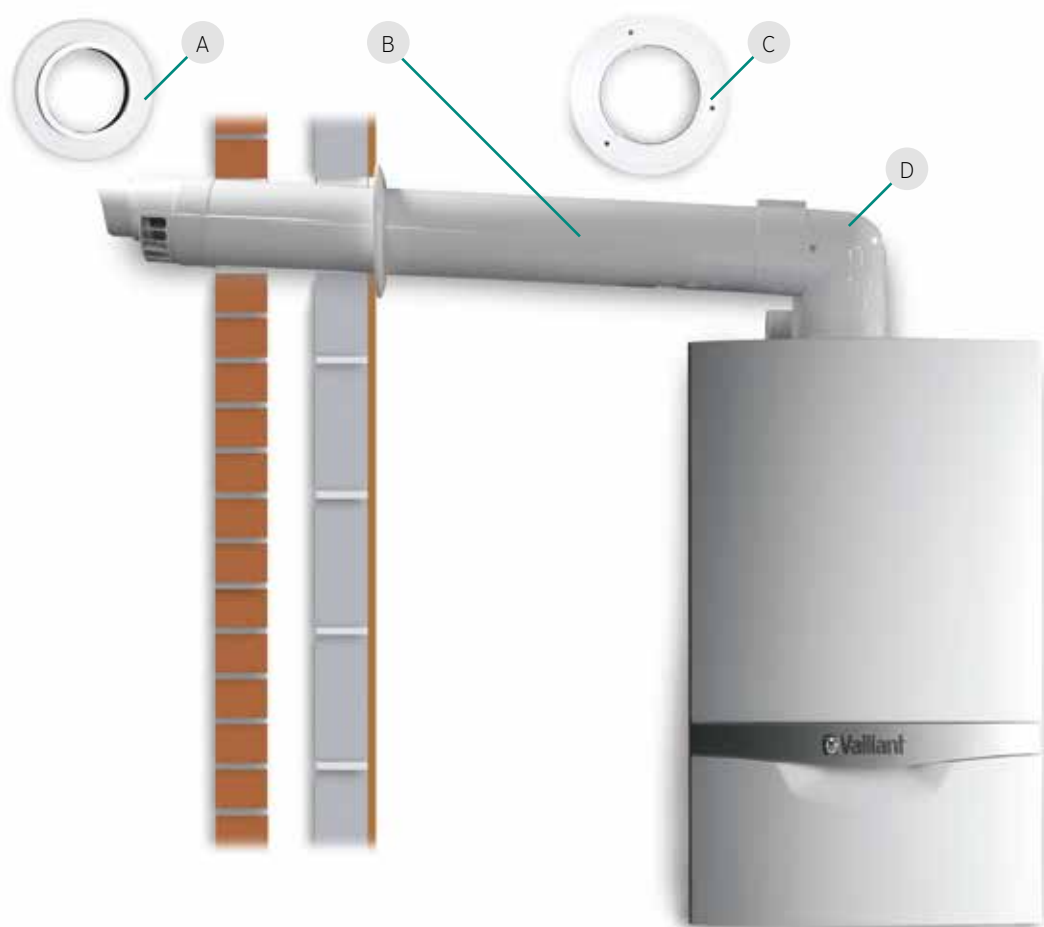
## Horizontal 80/125mm flue

### Maximum horizontal flue length

ecoTEC plus	48kW	64kW
Maximum permissible length of concentric flue	18.0m (includes 1 x 87° elbow)	15.0m (includes 1 x 87° elbow)

Maximum length of flue is reduced by 2.5m for each additional 87° elbow.

Maximum length of flue is reduced by 1.0m for each additional 45° elbow.

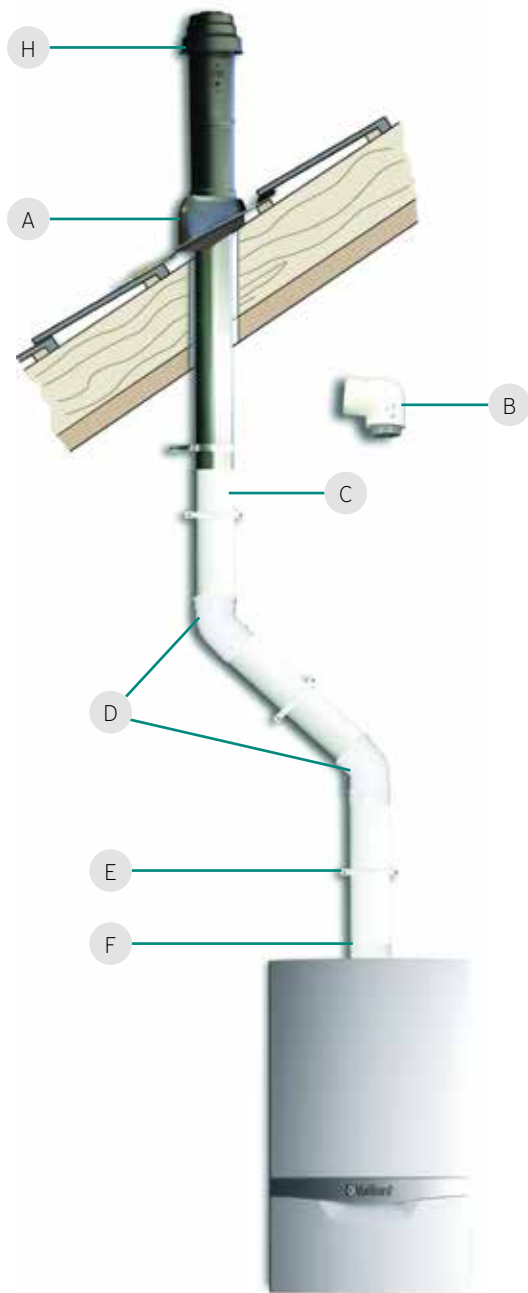


80/125mm concentric horizontal flue.

Key	80/125mm horizontal flue	Article number
A	Outer rosette	303209 010035777*
B	Terminal duct - 970mm to face of outer wall	
C	Inner rosette	
D	87° elbow	

\* For high rise applications.

## Vertical 80/125mm flue

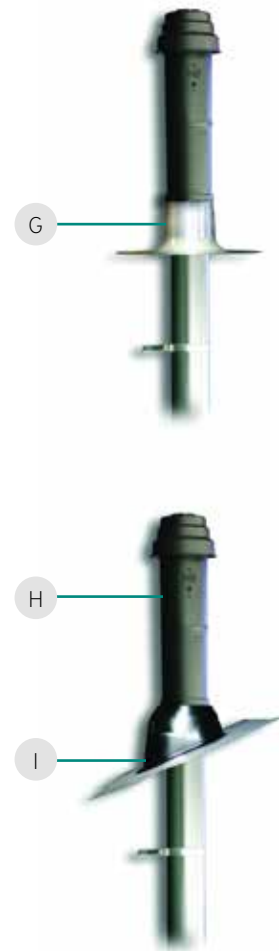


### Maximum vertical flue length

ecoTEC plus	48kW	64kW
Maximum permissible length of concentric flue	21.0m (excludes elbow)	18.0m (excludes elbow)

Maximum length of flue is reduced by 2.5m for each additional 87° elbow.

Maximum length of flue is reduced by 1.0m for each additional 45° elbow.



80/125mm concentric vertical flue

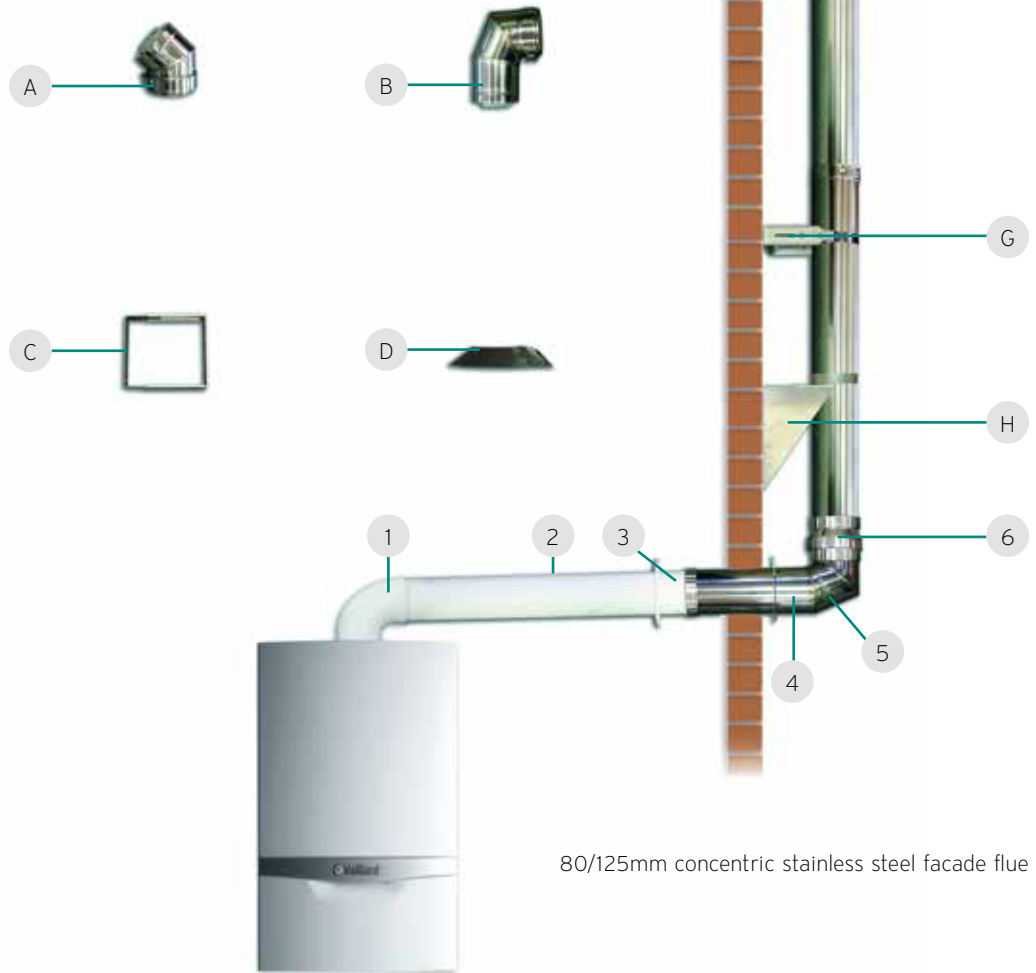
Key	125mm vertical flue	Article number
A	Pitched roof adjustable roof tile	009076
B	87° elbow (pack of 1)	303210
C	Air/flue duct extension (470mm)	303202
	Air/flue duct extension (970mm)	303203
	Air/flue duct extension (1970mm)	303205
D	45° elbow (pack of 2)	303211
E	Flue support clips (pack of 5)	303616
F	Sliding sleeve	303215
G	Flat roof penetration collar	009056
H	Vertical air/flue duct and terminal	303200
I	Lead slate penetration seal for pitched roofs	303980

# Stainless steel 80/125mm facade flue

## Maximum facade flue length

ecoTEC plus	48kW	64kW
Maximum permissible length of concentric flue gas pipe	22.0m (includes 3 x 87° elbows and support elbow)	22.0m (includes 3 x 87° elbows and support elbow)

Air intake piece must be positioned no further than 4m from the connection with the boiler.



80/125mm concentric stainless steel facade flue

Key	80/125mm facade flue	Article number
A	45° elbow (pack of 2)*	0020042757
B	87° elbow (pack of 1)*	0020042756
C	Fixing bracket extension	0020042752
D	Rain collar	0020042760
E	1.0m extension	0020042754
	0.5m extension	0020042753
	0.5m adjustable extension	0020042755
F	Fixing bracket	0020042751
G		
H	Adjustable wall support for heights over 4m	0020042749

Key	Facade basic connection set	Article number
1	87° elbow	0020042748 0010039735**
2	Transition piece	
3	Inner wall rosette	
4	Outer wall rosette	
5	Wall penetration elbow	
6	Air intake piece	
7	Bird guard terminal	

\* Can be used to terminate horizontally.  
 \*\* For high rise applications.

## Flue termination for outputs below 70kW

### Flue termination

When considering flue termination options, there are many factors to take into account, particularly with regards to clearances and discharge of condensate and combustion gases into the external atmosphere. Systems up to 70kW net must comply with British Standards, which recommends that all fanned flue terminals should be a minimum distance from any openings into a building. Also, consideration must be given to buildings directly opposite or adjacent to a flue termination. When siting a flue terminal, the products of combustion must not be discharged straight across a boundary and there are minimum distances for terminating beside a boundary. In all cases, the possibility of the plume of condensate touching building fabric or discharging where it may be considered a nuisance or where they may not freely disperse, must be avoided.

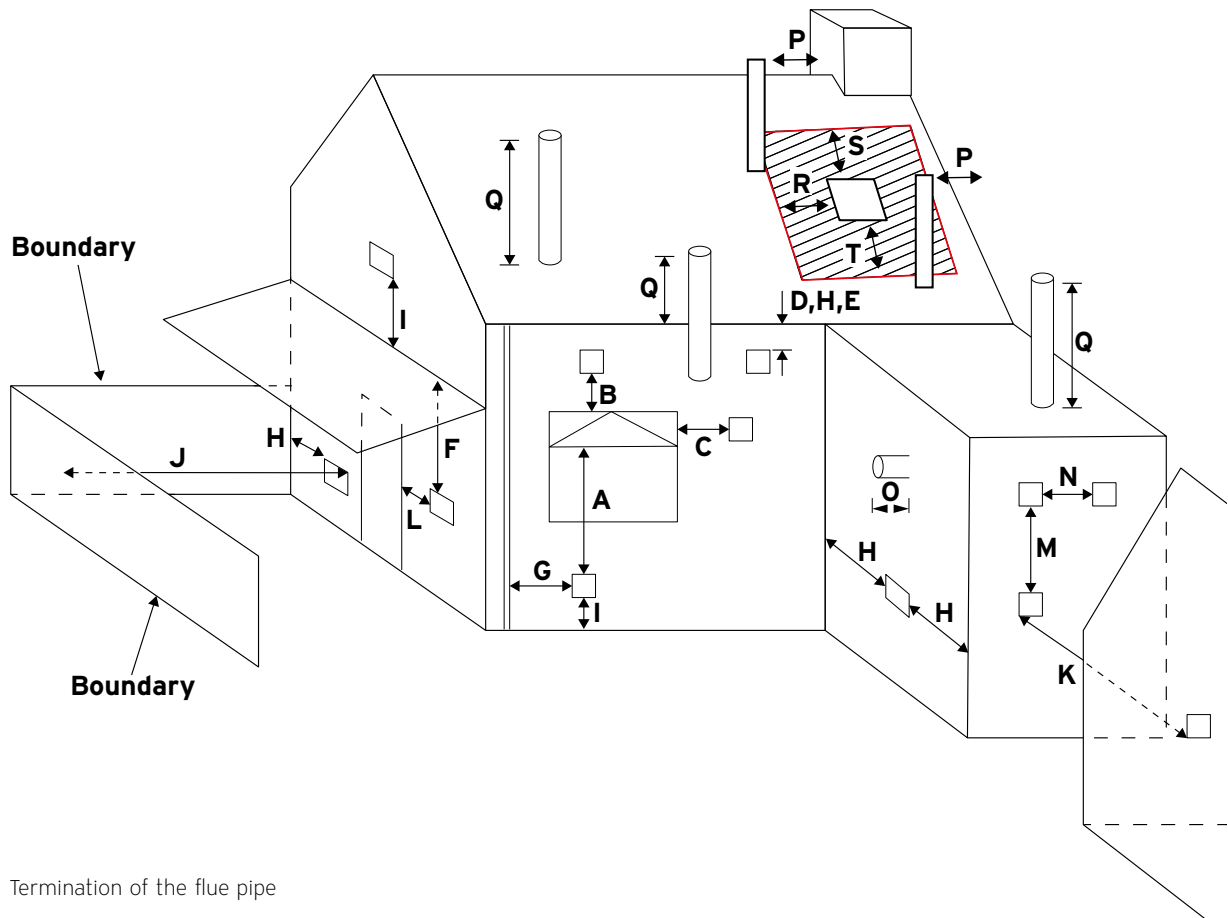
The following diagram and corresponding tables show the minimum clearance requirements for ecoTEC plus 48 and 64kW models.

Given the number of acts and regulations that are in force regarding the siting of flues, Vaillant always recommends that advice is sought from a flue specialist who can advise on the installation to ensure all national and local regulations and requirements are closely observed.

The most important acts and regulations that affect the installation of commercial gas boiler systems are:

- BS 5440-1
- IS813

All flue terminations must be positioned so that the flue products can discharge freely from the terminal for dispersal and cannot enter or re-enter a building. Also, it must be ensured that the products disperse in a way in which they do not come into contact with objects or building fabrics as these could be damaged by the condensate.



Termination of the flue pipe

NOTE: Where boilers are combined in cascade and the total installed net output exceeds 70kW then the current edition of the flue standard BS 6644 and IGE/UP/10 must be followed. See page 30 for more details.

Key	Location	Minimum dimensions (mm)
A	Directly below openings into the building i.e. windows or air bricks	300
B	Above openings into the building i.e. windows or air bricks	300
C	Horizontally to openings into the building i.e. windows or air bricks	300
D	Below gutters, soil pipes or drain pipes (consider extending out*)	75
E	Below eaves (if ventilated, extend out to prevent entry of products)	200
F	Below balconies or car port roofs	200
G	From vertical soil pipes or waste pipes and gutter downpipes	25
H	From internal or external corners or a boundary alongside the terminal	300
I	Above ground, roof or balcony level	300
J	From a surface facing a terminal	600
K	From a terminal facing a terminal	1200
L	From an opening under the car port leading into the building	1200
M	Vertical from a terminal on the same wall	1500
N	Horizontal from a terminal on the same wall	300
O	Air duct rosette to face of wall (the rosette must be always flush to the wall but the terminal can extend 500mm)*	0 (face of wall)
P	From nearby structure or neighbouring (taller) building**	300
Q	Above flat roof or intersection with pitched roof	300
R	Horizontal from opening roof lights and windows on pitched or flat roofs	600
S	Above an opening roof light or windows on pitched roofs	600
T	Below an opening roof light or windows on pitched roofs	2000

\* Ensure terminal is sealed to air duct to prevent water ingress.

\*\* Ensure products disperse freely and do not contact building surfaces.

NOTE: All flue terminations must be positioned such that the flue products can discharge freely from the terminal for dispersal and cannot enter or re-enter a building. Also, it must be ensured that the products disperse in a way that they do not come into contact with objects or building fabrics as these could be damaged by the condensate.

# ecoTEC plus 80, 100 and 120kW

## single appliance flue accessories

### Overview

Vaillant offer a range of flue system options for the ecoTEC plus 80, 100 and 120kW boilers, which utilise a 110/160mm concentric flue system. Standard concentric flue pipes can be purchased with a range of fittings to easily construct the appropriate flue system with either horizontal or vertical terminations. These flues comprise of a 160mm white coated steel outer air duct with a 110mm PP inner flue. A variety of stainless steel facade flues and additional accessories including brackets, rain collars, sleeves and terminals are also available to complement all flue system arrangements.

The single appliance flue range and accessories have been designed to cater for a range of project requirements and appliance locations to be used with maximum flue lengths.

### Compatibility matrix

ecoTEC plus	80kW	100kW	120kW
Single boiler install	110/160mm concentric		
Multiple boilers on a cascade flue system*	See page 40		

\* For B23 flue use PP flue and terminate via facade system.

### Flue accessories

Description	Article number
Vertical air/flue duct terminal (concentric black)	0020166853
Horizontal concentric flue terminal (stainless steel outer and PP inner)	0020166854
Horizontal concentric flue terminal (stainless steel outer and inner)**	0010035927
500mm concentric flue extension	0020106376
1000mm concentric flue extension	0020106377
2000mm concentric flue extension	0020106378
45° elbow (110/160mm PP)	0020106379
87° elbow (110/160mm PP)	0020106380
Fastening clamps (pack of 5) with screws & plugs (160mm)	0020106381
110/160mm flexible lead pitched roof seal	0020106409
110/160mm flat roof penetration collar	0020106411

\*\* For high rise applications.

NOTE: Adequate provision must be made by the installer to allow removable access of flue components for repairs and servicing. If no means of access or removal is provided, responsibility lies with the flue installer. Where boilers that exceed 70kW net output must refer to the current edition of the flue standard IGEM/UP/10. See page 30 for more details.



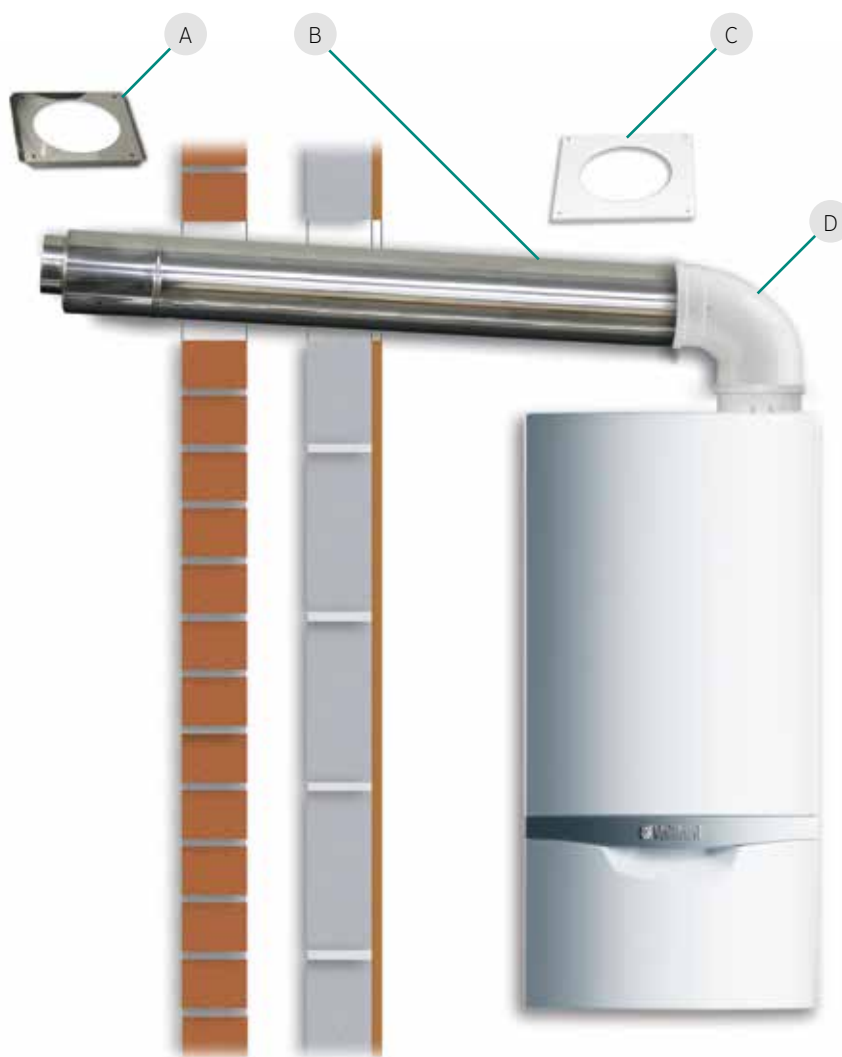
## Horizontal 110/160mm flue

### Maximum horizontal flue length

ecoTEC plus	80kW	100kW	120kW
Maximum permissible length of concentric flue	22.0m (includes 1 x 87° elbow)	18.0m (includes 1 x 87° elbow)	9.0m (includes 1 x 87° elbow)

Maximum length of flue is reduced by 1.5m for each additional 87° elbow.

Maximum length of flue is reduced by 1.0m for each additional 45° elbow.

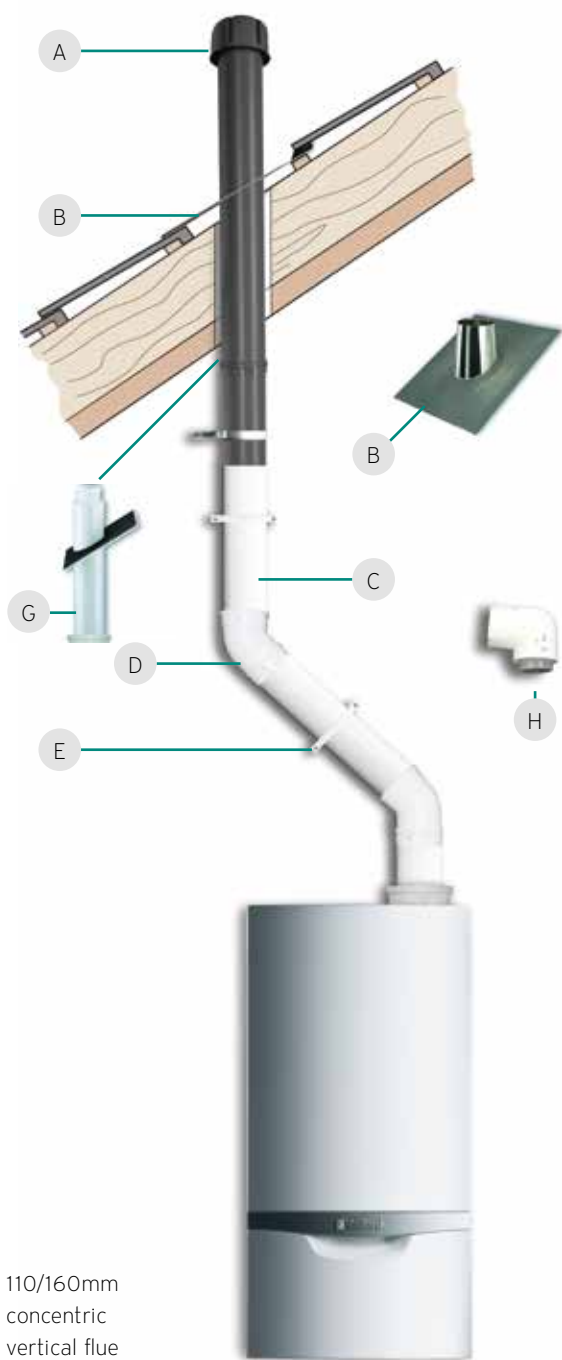


110/160mm concentric horizontal flue

Key	110/160mm horizontal flue	Article number
A	Outer rosette	0020166854
B	Terminal duct - 910mm to face of outer wall	
C	Inner rosette	
D	87° elbow	
E	Horizontal concentric flue terminal (stainless steel outer and inner)*	0010035927

\* For high rise applications.

## Vertical 110/160mm flue



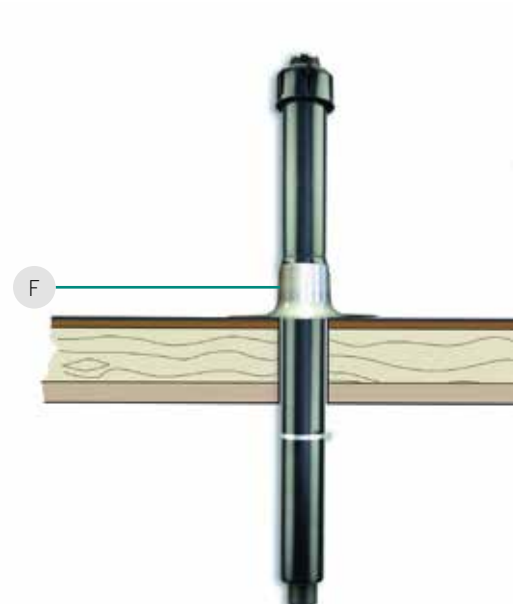
110/160mm concentric vertical flue

### Maximum vertical flue length

ecoTEC plus	80kW	100kW	120kW
Maximum permissible length of concentric flue	24.0m (includes 2 x 87° elbows)	20.0m (includes 2 x 87° elbows)	11.0m (includes 2 x 87° elbows)

Maximum length of flue is reduced by 1.5m for each additional 87° elbow.

Maximum length of flue is reduced by 1.0m for each additional 45° elbow.



Key	110/160mm vertical flue	Article number
A	Vertical flue duct and terminal (includes item G)	0020166853
B	Pitched roof flashing	0020106409
C	500mm extension	0020106376
	1000mm extension	0020106377
	2000mm extension	0020106378
D	45° elbow (pack of 2)	0020106379
E	Flue support clips (pack of 5)	0020106381
F	Flat roof penetration collar	0020106411
G	Internal decorative cover	Included with A
H	87° elbow (pack of 1)	0020106380

# Stainless steel 110/160mm facade flue



110/160mm concentric facade flue

## Maximum facade flue length

ecoTEC plus	80kW	100kW	120kW
<b>Internal flue length</b>			
Maximum permissible internal flue length	3m (includes 3 x 87° elbows only available in white plastic and support elbow)	3m (includes 1 x 87° elbow only available in white plastic and support elbow)	2m (includes 1 x 87° elbow only available in white plastic and support elbow)
Reduction to outer flue length for additional 87° internal elbows	5.3m	5.3m	5.3m
Reduction to outer flue length for additional 45° internal elbows	3.2m	3.2m	3.2m
Reduction to outer flue length for additional 1m extensions	3.2m	3.2m	3.2m
<b>External flue length</b>			
Maximum permissible external flue length	50m	50m	29m
Reduction to outer flue length for additional 45° external elbows	0.5m	0.5m	0.5m

Key	110/160mm stainless facade flue	Article number
1	Basic facade kit 110/160mm	0020166855
	Facade flue basic connection set full stainless steel*	0010035928
<b>Additional items</b>		
A	45° elbow	0020106405
B	External wall bracket (50 - 90mm)	0020106400
C	External wall bracket extension (50 - 90mm)	0020106401
D	Stainless pipe 500mm	0020106402
	Stainless pipe 1000mm	0020106403
E	Flue band - pipe clamp 160mm (1 required per extension and bend)	0020143394

\* Compliant with high rise applications.

## Flue termination for single installations above 70kW

### Flue termination

For the installation of boilers with a heat input more than 70kW net but less than 333kW net. Guidance should be taken from the current IGEM UP/10 installation of flued gas appliances in industrial and commercial premises. It is also important to refer to the risk assessment appendix within the document for guidance on suitable flue terminal locations.

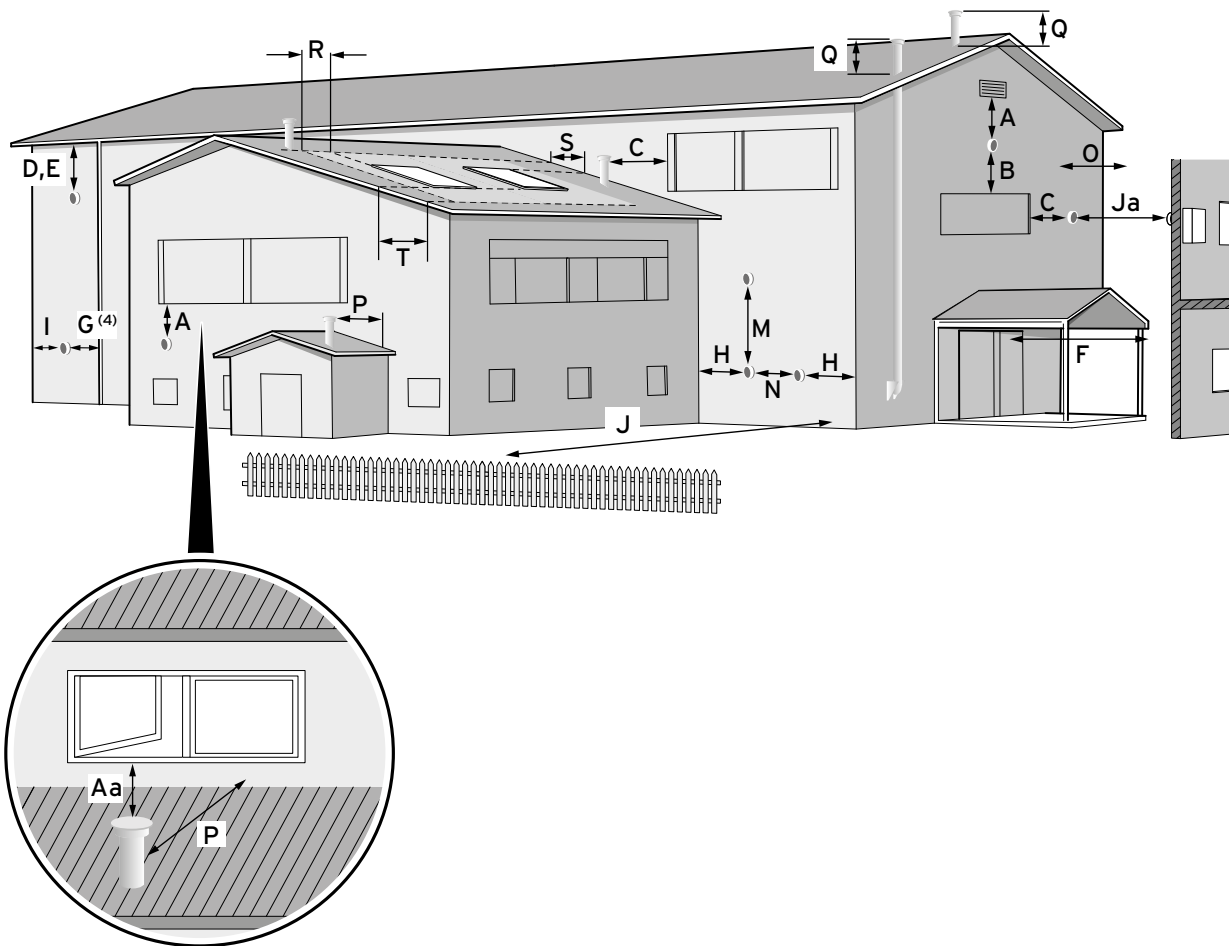
For installations above 333kW net input, refer to the “Clean Air Act,” as the discharge of flue products must comply with the stated and calculated distances above ground (see note 3).

It is essential to ensure that discharged flue products do not

create any hazard or nuisance to persons within the discharge area and do not come into contact with building surfaces or build-up within an area where they may re-enter a building.

The information below for guidance on single boiler concentric flues. All flue installations over 70kW must fully comply with;

- The current edition of IGEM/UP/10 (boilers or combinations of boiler exceeding 70kW net)
- IS813 and BS 6644
- The Clean Air Act (boilers or combinations of boiler exceeding 333kW net)



Termination of flue pipe

#### NOTES:

1. None of the above should discharge into a courtyard, light well, car port or enclosed environment.
2. Care should be taken to ensure that even if the installation complies with the minimum dimensions shown below, that all site conditions are taken into consideration to avoid the plume becoming a nuisance or causing wall staining.
3. The height and termination of flues will require approval from the local authority.

Key	Minimum clearances for concentric terminations	mm
<b>Horizontal (70kW and up to 120kW)</b>		
A	Directly below an opening, air brick, opening windows	2500
B	Above an opening, air brick, opening windows	900
C	Horizontal to an opening, air brick, opening windows	900
D (1,4,9)	Below gutter, drain/soil pipe (extending out to clear)	75
E (1,4,9)	Below eaves, adjacent to drain pipes	200*
F (6)	Below balcony or car port (should be extended to clear air)	25
G (4,9)	From a vertical drain pipes and soil pipes	50
H (7,9)	From internal/external corner	300
I (2,7)	To a boundary alongside the terminal/external corner	300
J	Facing a boundary or surface opposite	2200
J	From a terminal opposite facing the terminal	3000
M (7)	Vertical from a terminal	1500
N (7)	Horizontal from a terminal	300
O	Rosette to face of wall (can be extended up to 500mm*)	0
<b>Vertical flues 70kW up to 120kW</b>		
Aa (8,9)	Within 2000mm horizontally of an opening window	2500
C (3)	From adjacent opening window	1000
P (3,8,9)	From nearby structure or neighbouring (taller) building	300**
P (3,8,9)	From adjacent opening window (extended above opening)	1500
P (3,8,9)	From adjacent wall to flue	300
Q	Above flat roof or intersection with pitched roof	600
R (5)	Horizontal from opening windows on pitched or flat roofs	900
S (5)	Above an opening roof light or windows on pitched roofs	600
T	Below an opening roof light or windows on pitched roofs	2000

\* Terminal and wall entry must be sealed to prevent water ingress.

\*\* Products must disperse freely and not contact building surfaces.

- There should be no ventilation/opening in the eaves within 900mm of the terminal.
- These dimensions comply with the building regulations, but they may need to be increased to avoid wall staining and nuisance from plumbing depending on site conditions.
- It is recommended that an elbow termination is fitted to direct the plume away from the window.
- If the pipe is shielded from the heat, this dimension may be reduced to 25mm.
- The flue through the roof should not be located within the shaded area.
- It is recommended that the terminal should not be located below 2m in any occupied space.
- Terminals below 2m must be fitted with a suitable terminal guard and should be a minimum of 300mm above surface level.
- It is the installer's responsibility to carry out a suitable risk assessment to ensure the location of the terminal is safe and products can freely disperse without causing nuisance or harm to persons. Refer to IGEM/UP/10.
- All flue terminations must be positioned such that the flue products can discharge freely from the terminal for rapid dispersal and cannot enter or re-enter a building, whilst ensuring they do not come into contact with objects or building fabrics as these could be damaged by the condensate.

NOTE: Systems above 70kW must be designed and installed according to IGEM UP/10. Above 333kW net heat input the Clean Air Act must also be adhered to and system will need approval of local authority.

# Low-loss headers

for standalone installations



## Overview

Low-loss headers maintain the correct flow of water through the boiler and allow a constant temperature supply of water to reach multiple heating circuits downstream of the low-loss header connection. An example of this would be heating circuits that require different temperature and flow-rate requirements (e.g. underfloor heating and radiator circuits).

During operation, cooler return water from the heating circuits is mixed with water from the boiler in the low-loss header. A temperature sensor is used to monitor the temperature of the water supplied by the boiler.\* It is highly recommended that a suitable dirt filter is fitted in the return pipework between the low-loss header and the heating circuits as a precaution to prevent system dirt from entering the boiler.

Vaillant low-loss headers are only suitable for new clean systems up to 70kW net input with correctly inhibited water. Vaillant offers two freestanding low-loss headers for use with ecoTEC plus 48 or 64kW boilers, WH40 and WH95 along with an additional model - the WH40/2. WH40/2 is a compact low-loss header that can be mounted horizontally underneath the boiler, making it a great solution for restrictive spaces.

For information on plate heat exchangers, please see page 34.

## Features & benefits



### Consistent flow rate maintained within the boiler heating circuit

Optimal efficiency obtained for all flow rate requirements.



### EPP insulation supplied as standard

Minimises system heat loss and maintains plant room temperatures.



### Low-loss header with flow rates up to 8m<sup>3</sup>/h available

Ensures system water flow rate requirements can be met with minimal pressure losses.

\* A temperature sensor is only relevant when used with Vaillant controls.



## Low-loss headers for standalone installations under 70kW technical data

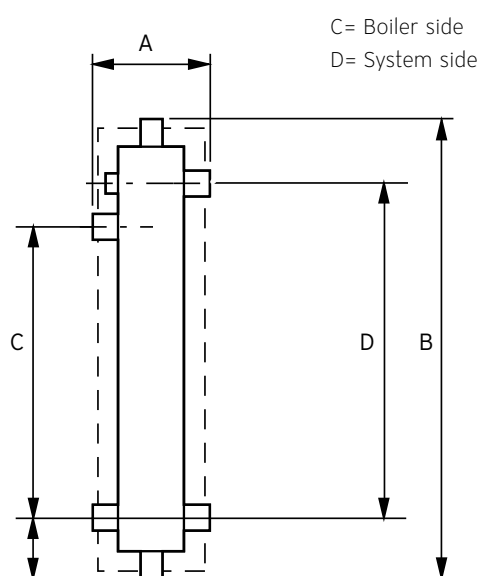


WH95, WH40



WH40/2

Technical data	Unit	WH40	WH40/2	WH95
Article number		306720	0020248932	306721
kW at 20K	kW	70	70	190
kW at 11K		40	40	102
Connections	BSP female	1 ¼"	1 ¼"	2"
Flow rates	m <sup>3</sup> /hr	3.5	3.5	8
	l/hr	3500	3500	8000
Pressure drop	mbar	1.4	1.4	7.4



Dimensions	Unit	WH40	WH40/2	WH95
A	mm	115	114	155
B	mm	500	342	750
C	mm	280	200	470
D	mm	340	260	540

# Plate heat exchangers

for standalone and cascade installations



## Overview

Manufactured to the highest of standards, a Vaillant plate heat exchanger is the ideal solution for installations that are impossible to guarantee system cleanliness and therefore water quality flowing through the boiler. It is mandatory to install a plate heat exchanger on ecoTEC plus 80, 100, 120kW, ecoCRAFT, and any single boiler installs or cascade systems over 70kW net.

The plate heat exchanger operates by separating the boiler water from the system water and is particularly beneficial for older applications where the systems cannot be pressurised. By separating the boiler from the system, the integrity of the boiler is maintained and it can operate as a pressurised system, whilst still allowing the boiler to supply heat to the existing open-vented system. However, care must be taken to ensure that the system water circulating through the plate is filtered and treated accordingly. Using a plate heat exchanger will not only protect the boiler, but also minimises possible down time and helps to maintain the boiler so that it operates at its highest efficiency throughout its life span.

See page 39 for pressure loss charts and information on flow rates.

## Features & benefits



### Compatible with all Vaillant boilers

Provides the complete system solution.



### Helps to maintain consistent flow rates

Prevents poor performance within the secondary circuits.



### Protects the boiler from harmful debris

improves boiler lifespan and maintains efficiency.



### Provides boiler protection when installing within an older sealed or open vented heating system

Prevents corrosive debris from older systems entering the boiler.



### Allows sealed system boilers to be installed on older open vented systems

Simplifies the installation on older, complicated systems.



### EPP insulation comes available as accessory

Minimises system heat loss and maintains plant room temperatures.

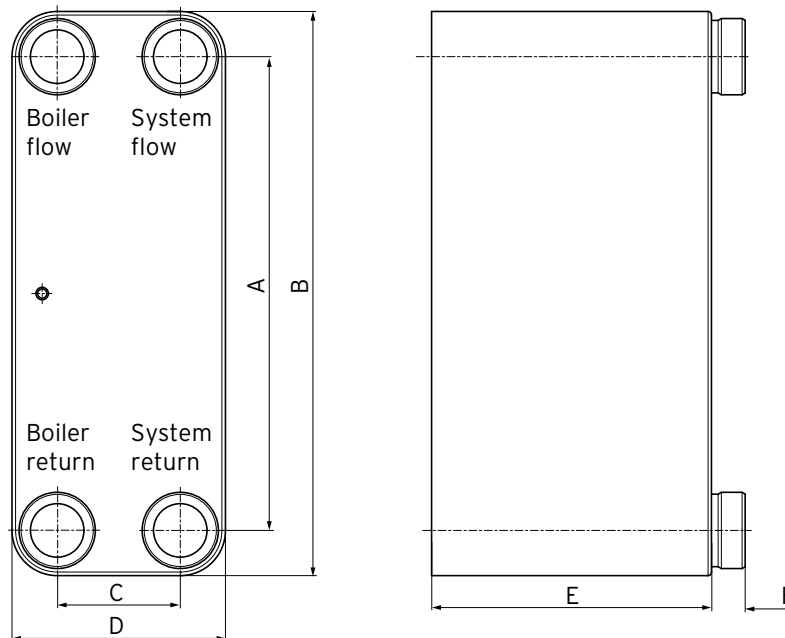
NOTE: System design of  $\Delta t$  20.

## Plate heat exchangers for standalone installations technical data

Description	Article number
Plate heat exchanger including insulation and connection set	0010025676
Bare plate heat exchanger (no insulation or connections)	0020137069
Flat faced connection set 1¼" (pack of 4) article number	0020248931
120kW insulation plate heat exchanger	0020248922

Technical data	Unit	PHE S 120-70
Output	kW	115
Connections	BSP male	1¼"
Flow rates	l/hr	5169
Pressure drop	mbar	108
Plate depth (distance between connections)	mm	186
Material		Stainless steel
Weight	kg	10.70
Plates		70
Volume (primary side)	litres	2.21
Volume (secondary side)	litres	2.28
Maximum operating pressure	MPa (bar)	3.0 (30)

### Dimensions



Model	Unit	A	B	C	D	E	F
PHE S 120-70	mm	281	335	73	124	166	20

## Plate heat exchangers for cascade installations technical data

### Plate heat exchangers for up to 720kW

Boiler models	Plate heat exchanger	kW
ecoTEC plus 48 / 64 / 80 / 100 / 120 models up to 120kW output. Not using Vaillant cascade hydraulics (1 - 1 1/4" BSP). See pages 34 and 35 for more information.	PHE S 120-70	120
ecoTEC plus 48 / 64 / 80 / 100 / 120 models 240 to 360kW output for each plate. When using Vaillant cascade hydraulics	PHE C 240-40	240
	PHE C 360-70	360
ecoTEC plus 80 / 100 / 120 models 480 to 720kW output for each plate. When using Vaillant cascade hydraulics	PHE C 480-90	480
	PHE C 600-120	600
	PHE C 720-170	720

### Plate heat exchangers technical specifications

	PHE C 240-40	PHE C 360-70	PHE C 480-90	PHE C 600-120	PHE C 720-170
Material					
Connection	Flange connection DN65 / PN6		Flange connection DN80 / PN6		
Weight (kg)	40.80	57.00	70.92	87.12	114.12
Plates	40	70	90	120	170
Volume in litres (primary side)	4.20	7.51	9.72	13.04	18.56
Volume in litres (secondary side)	4.42	7.74	9.95	13.26	18.79
Maximum operating pressure MPa (bar)	0.6 (6)				
<b>Insulated Plate Heat Exchanger Set</b>					
Article number	0010031891	0010031892	0010031893	0010031894	0010031895
Set	240kW Insulated Plate Heat Exchanger Set	360kW Insulated Plate Heat Exchanger Set	480kW Insulated Plate Heat Exchanger Set	600kW Insulated Plate Heat Exchanger Set	720kW Insulated Plate Heat Exchanger Set

## Dimensions - shown uninsulated

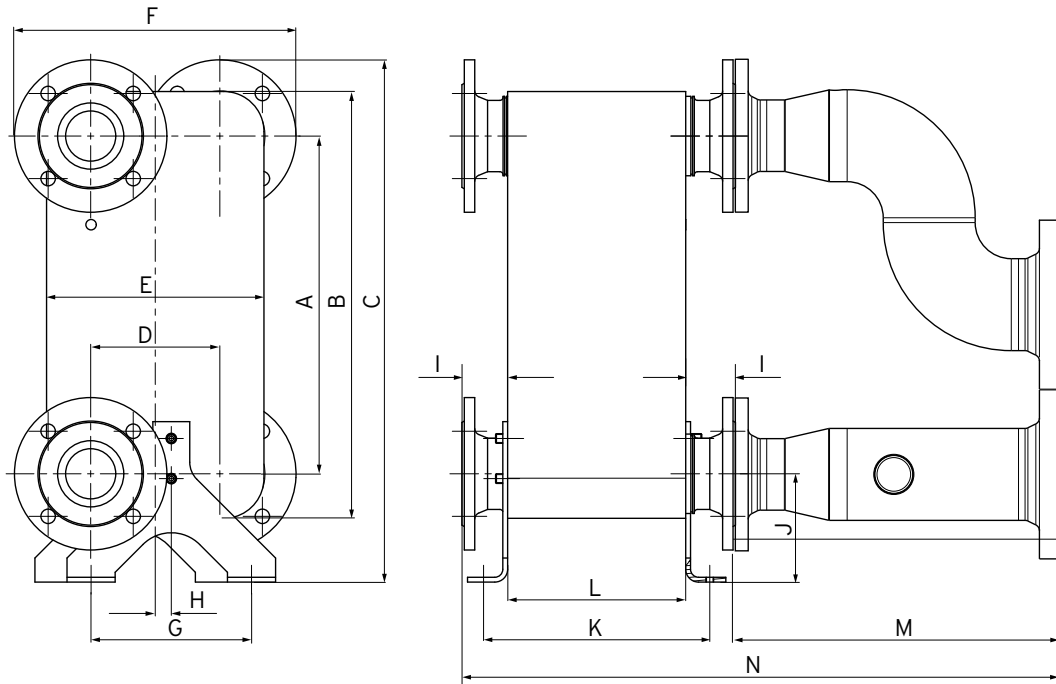


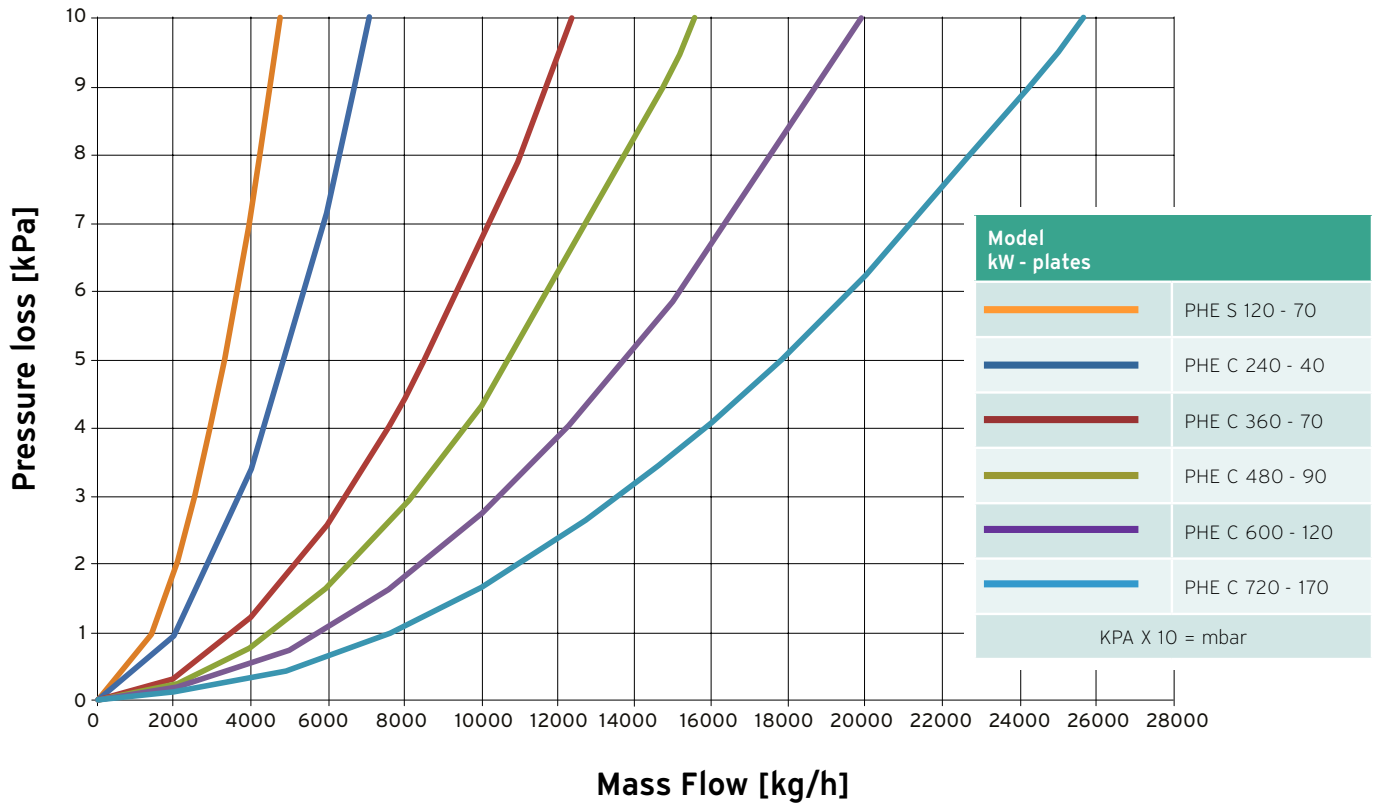
Plate Heat Exchanger Set	Unit	A	B	C	D	E	F	G	H	I	J	K	L	M	N
VCP2 PHE C240-40 excluding DN65 insulation 240kW d20	mm											175	105		677
VCP3 PHE C360-70 excluding DN65 insulation 360kW d20	mm			636			321			86		246	176		748
VCP4 PHE C480-90 excluding DN100 insulation 480kW d20	mm	421	532		161	271		200	20		135	292	222	400	794
VCP5 PHE C600-120 excluding DN100 insulation 600kW d20	mm			651			351			62		362	292		864
VCP6 PHE C720-170 excluding DN100 insulation 720kW d20	mm											479	409		981

## System flow rates at various $\Delta T$

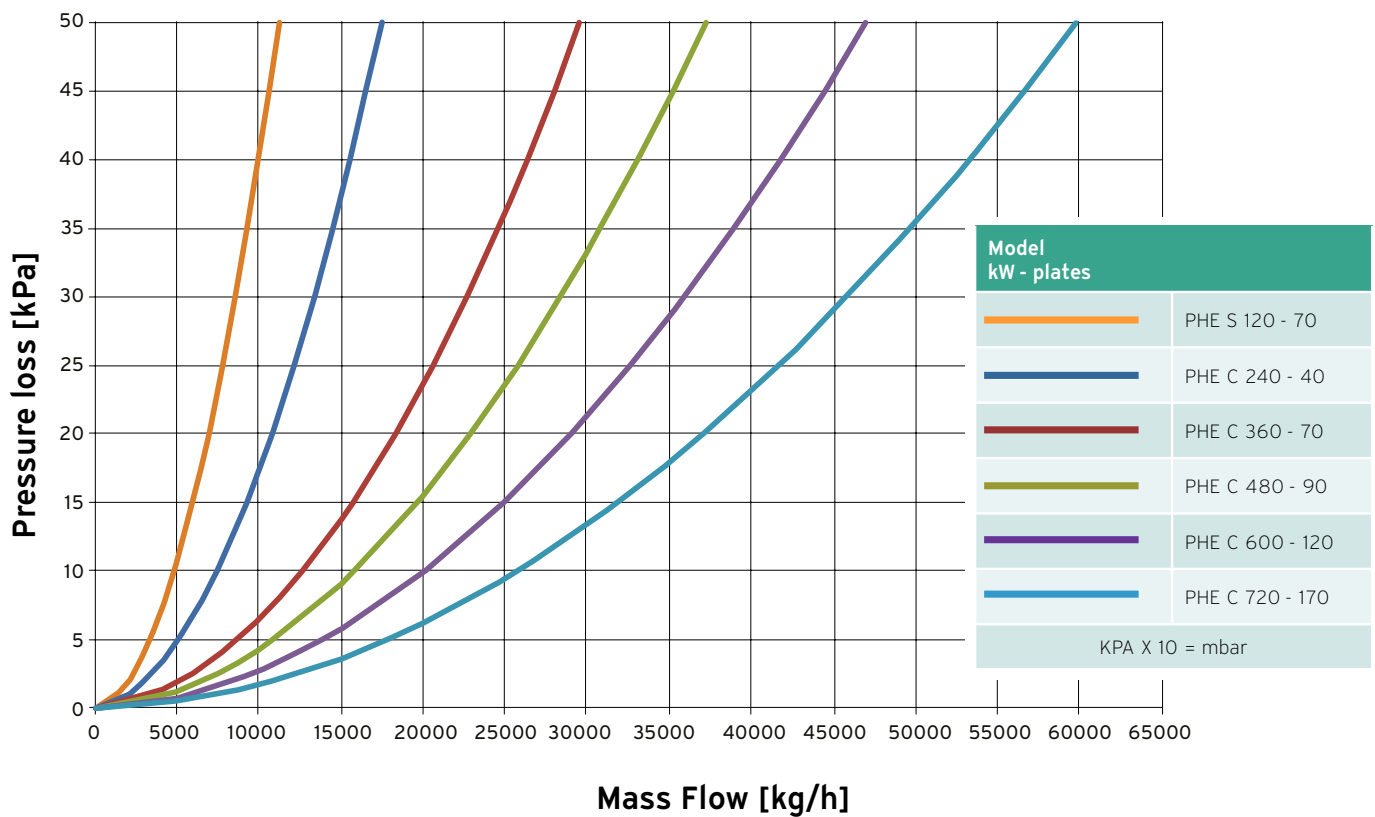
Model	Required $\Delta T$	Water flow volumes	
		l/hr	m <sup>3</sup> /hr
ecoTEC plus	K		
48	11	3547	3.547
64	11	4656	4.656
80	11	6258	6.258
100	11	7804	7.804
120	11	9349	9.349
48	15	2601	2.601
64	15	3414	3.414
80	15	4390	4.390
100	15	5474	5.474
120	15	6558	6.558
48	20	1951	1.951
64	20	2561	2.561
80	20	3442	3.442
100	20	4292	4.292
120	20	5142	5.142
48	23	1697	1.697
64	23	2227	2.227
80	23	2863	2.863
100	23	3570	3.570
120	23	4277	4.277
48	28	1394	1.394
64	28	1829	1.829
80	28	2352	2.352
100	28	2932	2.932
120	28	3513	3.513



### Flow rate and pressure loss chart - primary side



### Flow rate and pressure loss chart - secondary side



# Cascade rig systems



## Overview

Vaillant cascade rigs offer greater flexibility when designing and specifying commercial heating systems. Cascade rigs are an easily expandable modular system, which can provide up to 960kW of energy and can be configured to fit any plant room. They can accommodate from one to eight boilers in various configurations either inline, back-to-back, or around a corner, using any of our ecoTEC plus wall-hung commercial boilers, from 48kW to 120kW.

Cascade rigs are suitable for a range of projects and can be particularly useful when modifying existing freestanding systems, especially when the walls of a project may not be suitable for the installation of wall-hung boilers.

For advice on system design, contact your local Vaillant Regional Business Manager and refer to the terms and conditions.

## Features & benefits



### Modular cascade rig design

Extremely adaptable and responsive system that is both fast and simple to assemble.



### Designed to work with Vaillant boiler modulation

Installed systems can operate from 13kW to 960kW to ensure system requirements are met at all times.



### Flexible designs to work with many different boiler specifications

Ensures each project has a suitable rig system.



### Supplied as complete sets

Whether the project requires an inline, back-to-back, or a corner rig system, everything will arrive on-site at the same time.



### Simple assembly can be carried out on-site

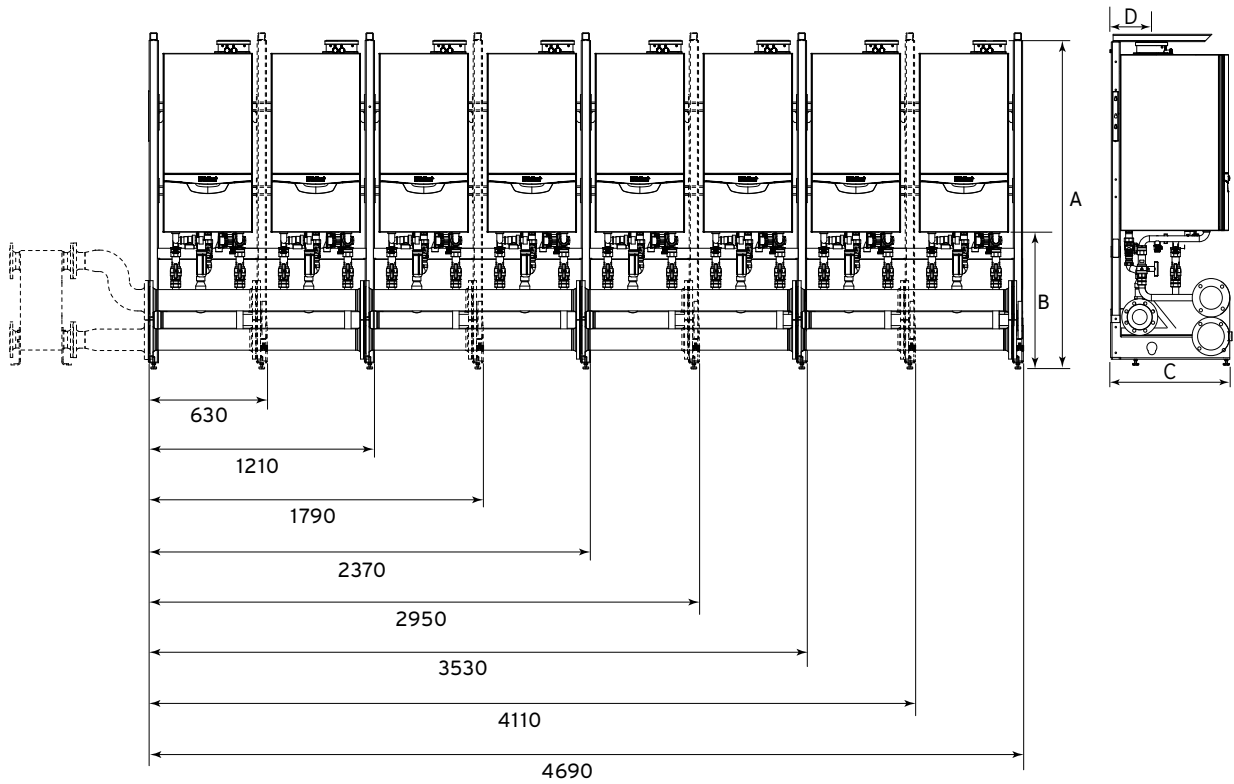
Each cascade rig set consists of a metal rig frame which is assembled on-site, along with associated boiler flow, return, hydraulic headers (DN65 or DN100), gas pipework (50mm or 80mm), and insulation. This can aid in manual handling on restrictive and difficult to access sites.

Scan to watch rig build video



# Inline cascade rigs

## Inline cascade rigs for 1 to 8 boilers dimensions



Key	ecoTEC plus 48kW	ecoTEC plus 64kW	ecoTEC plus 80kW	ecoTEC plus 100kW	ecoTEC plus 120kW
A	1650mm		1749mm		
B	882mm		720mm		
C	734mm including insulation (If rear feet required add 476mm)				
D	180mm (+/- 10mm)		230mm (+/- 10mm)		

### Clearances

600mm in front of each boiler for service access.

End cap insulation + 70mm.

Plate heat exchangers - dimensions according to model.

All dimensions +/- 20mm

## Inline cascade rigs for ecoTEC plus 48 and 64kW with DN65 hydraulics

### Compatibility matrix

Model	1 x boiler	2 x boiler	3 x boiler	4 x boiler
ecoTEC plus 48 and 64kW	VCR-461 0020201762	VCR-462 0020201763	VCR-463 0020201764	VCR-464 0020201765
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set			

### Pack contents

Cascade 1 x boiler inline	Cascade 2 x boiler inline	Cascade 3 x boiler inline	Cascade 4 x boiler inline
<b>VCR-461</b> <b>0020201762</b>	<b>VCR-462</b> <b>0020201763</b>	<b>VCR-463</b> <b>0020201764</b>	<b>VCR-464</b> <b>0020201765</b>
Cascade frame support 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151816	Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151816
Hydraulic block, start up module 0020151816	Frame support for 2 or 4 boilers 0020151814	Hydraulic block, start up module 0020151816	2 x frame support for 2 or 4 boilers 0020151814
Hydraulic block for 1 or 2 boilers 0020151818	Hydraulic block for 2 or 4 boilers 0020151820	Hydraulic block for 1 or 2 boilers 0020151818	2 x hydraulic block for 2 or 4 boilers 0020151820
Connector, pipe front 45 0020151823	2 x connector, pipe front 45 0020151823	Frame support for 2 or 4 boilers 0020151814	4 x connector, pipe front 45 0020151823
Fittings pack, gas front 45 0020151839	2 x fittings pack, gas front 45 0020151839	Hydraulic block for 2 or 4 boilers 0020151820	4 x fittings pack, gas front 45 0020151839
Gas pipe, DN50 for 1 or 2 boilers 0020107866	Gas pipe, DN50 for 2 or 4 boilers 0020107867	3 x connector, pipe front 45 0020107823	2 x gas pipe, DN50 for 2 or 4 boilers 0020107867
Flange (blank) gas DN50 0020151835	Flange (blank) gas DN50 0020151835	3 x fittings pack, gas front 45 0020151839	Flange (blank) gas DN50 0020151835
Heat insulation straight 0020151853	2 x heat insulation straight 0020151853	Gas pipe, DN50 for 1 or 2 boilers 0020107867	4 x heat insulation straight 0020151854
Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854	Gas pipe, DN50 for 2 or 4 boilers 0020107867	Heat insulation, end cap 0020151854
		Flange (blank) gas DN50 0020151835	
		3 x heat insulation straight 0020151853	
		Heat insulation, end cap 0020151854	

## Inline cascade rigs for ecoTEC plus 80, 100 and 120kW with DN65 hydraulics

### Compatibility matrix

Model	1 x boiler	2 x boiler	3 x boiler	4 x boiler
ecoTEC plus 80kW	VCR-51 0020175291	VCR-52 0020175292	VCR-53 0020175293	VCR-54 0020175294
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set			0010031892 - 360kW insulated plate heat exchanger set
ecoTEC plus 100kW	VCR-51 0020175291	VCR-52 0020175292	VCR-53 0020175293	#
Plate heat exchanger	VCP2 PHE - C 240-40 set		VCP3 PHE-C 360-70* set	#
ecoTEC plus 120kW	VCR-51 0020175291	VCR-52 0020175292	VCR-53 0020175293	#
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set		0010031892 - 360kW insulated plate heat exchanger set	#

# When cascading projects over 360kW please use DN100 rigs.

\* Check the required water flow volumes.

### Pack contents

Cascade 1 x boiler inline	Cascade 2 x boiler inline	Cascade 3 x boiler inline	Cascade 4 x boiler inline
<b>VCR-51 0020175291</b>	<b>VCR-52 0020175292</b>	<b>VCR-53 0020175293</b>	<b>VCR-54 0020175294</b>
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151816	Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151816
Hydraulic block, start up module 0020151816	Frame support for 2 or 4 boilers 0020151814	Hydraulic block, start up module 0020151816	2 x frame support for 2 or 4 boilers 0020151814
Hydraulic block, extension 1 or 2 boilers 0020151818	Hydraulic block for 2 or 4 boilers 0020151820	Hydraulic block, extension 1 or 2 boilers 0020151818	2 x hydraulic block for 2 or 4 boilers 0020151820
Connector, pipe front 80/100/120 0020151822	2 x connector, pipe front 80/100/120 0020151822	Frame support for 2 or 4 boilers 020151814	4 x connector, pipe front 80/100/120 0020151822
Fittings pack, gas front 80/100/120 0020151838	2 x fittings pack, gas front 80/100/120 0020151838	Hydraulic block, extension 2 or 4 boilers 0020151820	4 x fittings pack, gas front 80/100/120 0020151838
Gas pipe DN50 for 1 or 2 boilers 0020107866	Gas pipe DN50 for 2 or 4 boilers 0020107867	3 x connector, pipe front 80/100/120 0020151822	2 x gas pipe DN50 for 2 or 4 boilers 0020107867
Flange (blank) gas DN50 0020151835	Flange (blank) gas DN50 0020151835	3 x fittings pack, gas front 80/100/120 0020151838	Flange (blank) gas DN50 0020151835
Heat insulation straight 0020151853	2 x heat insulation straight 0020151853	Gas pipe DN50 for 1 or 2 boilers 0020107866	4 x heat insulation straight 0020151853
Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854	Gas pipe DN50 for 2 or 4 boilers 0020107867	Heat insulation, end cap 0020151854
		Flange (blank) gas DN50 0020151835	
		3 x heat insulation, hydraulic straight 0020151853	
		Heat insulation, end cap 0020151854	

NOTE: Dirt filtration and fully inhibited water quality must be maintained.

## Inline cascade rigs for ecoTEC plus 80, 100 and 120kW with DN100 hydraulics

### Compatibility matrix

Model	1 x boiler	2 x boiler	3 x boiler	4 x boiler	5 x boiler	6 x boiler	7 x boiler	8 x boiler
ecoTEC plus 80kW	VCR-101 0020175298	VCR-102 0020175299	VCR-103 0020175300	VCR-104 0020175301	VCR-105 0020175302	VCR-106 0020175303	VCR-107 0020175304	VCR-108 0020175305
Plate heat exchanger	VCP4 PHE - C 480-90 set 0010031893						VCP5 PHE - C 600-120 set	VCP6 PHE - C 720-170 set
ecoTEC plus 100kW	VCR-101 0020175298	VCR-102 0020175299	VCR-103 0020175300	VCR-104 0020175301	VCR-105 0020175302	VCR-106 0020175303	VCR-107 0020175304	VCR-108 0020175305
Plate heat exchanger	VCP4 PHE - C 480-90 set				VCP5 PHE - C 600-120 set		VCP6 PHE - C 720-170 set	#
ecoTEC plus 120kW	VCR-101 0020175298	VCR-102 0020175299	VCR-103 0020175300	VCR-104 0020175301	VCR-105 0020175302	VCR-106 0020175303	VCR-107 0020175304	VCR-108 0020175305
Plate heat exchanger	0010031893 - 480kW insulated plate heat exchanger set				0010031894 600kW insulated plate heat ex- changer set	0010031895 720kW insulated plate heat ex- changer set	#	#

# Contact your local Vaillant Regional Business Manager.

### Pack contents

Cascade 1 x boiler inline	Cascade 2 x boiler inline	Cascade 3 x boiler inline	Cascade 4 x boiler inline
<b>VCR-101 0020175298</b>	<b>VCR-102 0020175299</b>	<b>VCR-103 0020175300</b>	<b>VCR-104 0020175301</b>
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Frame support for 2 or 4 boilers 0020151817	Frame support for 2 or 4 boilers 0020151813	2 x frame support for 2 or 4 boilers 0020151814
Hydraulic block, start up module 0020151817	Hydraulic block, start up module 0020151814	Hydraulic block, start up module 0020151817	Hydraulic block, start up module 0020151817
Hydraulic block for 1 or 2 boilers 0020151819	Hydraulic block for 2 or 4 boilers 0020151821	Hydraulic block, extension 2 or 4 boilers 0020151819	2 x hydraulic block for 2 or 4 boilers 0020151821
Connector, pipe front 80/100/120 0020151822	2 x connector, pipe front 80/100/120 0020151822	Frame support for 1 or 2 boilers 0020151814	4 x connector, pipe front 80/100/120 0020151822
Fittings pack, gas front 80/100/120 0020151838	2 x fittings pack, gas front 80/100/120 0020151838	Hydraulic block for 1 or 2 boilers 0020151821	4 x fittings pack, gas front 80/100/120 0020151838
Gas pipe DN80 connection 1 or 2 boilers 0020107869	Gas pipe DN80 for 2 or 4 boilers 0020107870	3 x connector, pipe front 80/100/120 0020151822	2 x gas pipe DN80 for 2 or 4 boilers 0020107870
Flange (blank) gas DN80 0020151836	Flange (blank) gas DN80 0020151836	3 x fittings pack, gas front 80/100/120 0020151838	Flange (blank) gas DN80 0020151836
Heat insulation straight 0020151853	2 x heat insulation straight 0020151853	Gas pipe DN80 connection 1 or 2 boilers 0020107869	Heat insulation straight 0020151853
Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854	Gas pipe DN80 connection 2 or 4 boilers 0020107870	Heat insulation, end cap 0020151854
		Flange (blank) gas DN80 0020151836	
		3 x heat insulation straight 0020151853	
		Heat insulation, end cap 0020151854	

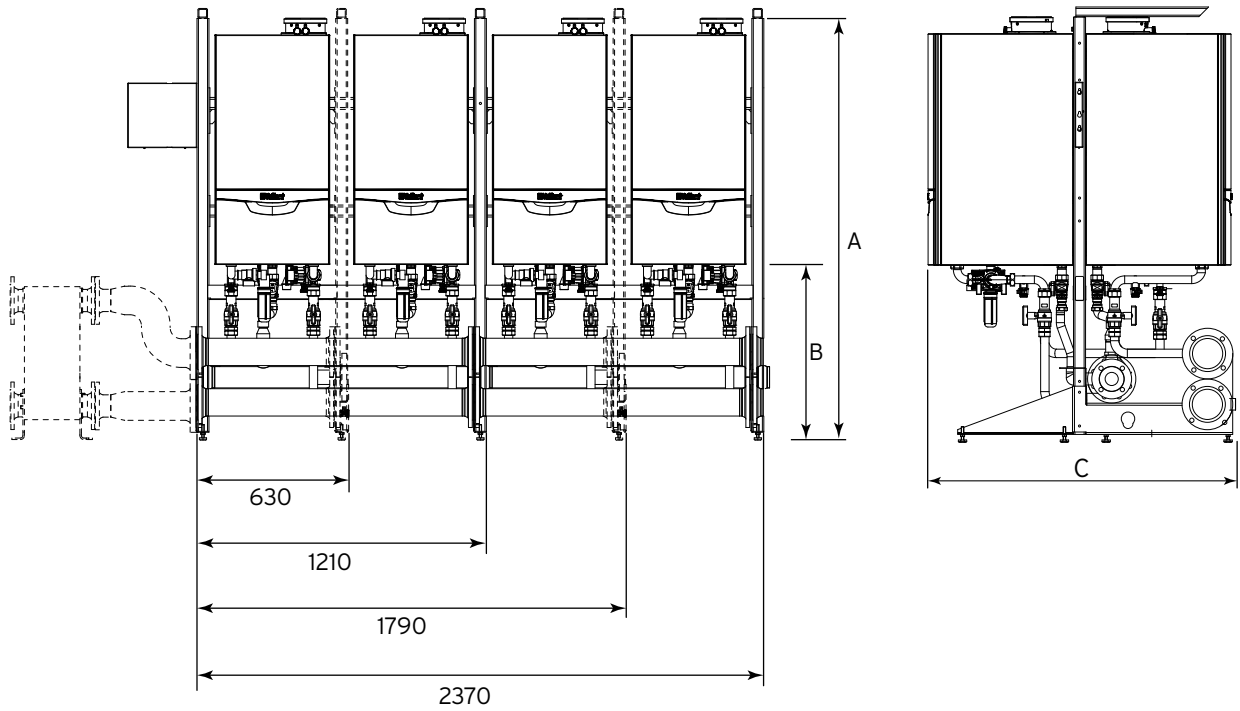


## Inline cascade rigs for ecoTEC plus 80, 100 and 120kW with DN100 hydraulics

### Pack contents continued

Cascade 5 x boiler inline	Cascade 6 x boiler inline	Cascade 7 x boiler inline	Cascade 8 x boiler inline
<b>VCR-105</b> <b>0020175302</b>	<b>VCR-106</b> <b>0020175303</b>	<b>VCR-107</b> <b>0020175304</b>	<b>VCR-108</b> <b>0020175305</b>
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151817	Frame support for 1 or 2 boilers 0020151813	Hydraulic block, start up module 0020151817
Hydraulic block, start up module 0020151817	3 x frame support for 2 or 4 boilers 0020151814	Hydraulic block, start up module 0020151817	4 x frame support for 2 or 4 boilers 0020151814
Hydraulic block for 1 or 2 boilers 0020151819	3 x hydraulic block for 2 or 4 boilers 0020151821	Hydraulic block, extension 1 or 2 boilers 0020151819	4 x hydraulic block for 2 or 4 boilers 0020151821
2 x frame support for 2 or 4 boilers 0020151814	6 x connector, pipe front 80/100/120 0020151822	3 x frame support for 1 or 2 boilers 0020151814	8 x connector, pipe front 80/100/120 0020151822
2 x hydraulic block for 2 or 4 boilers 0020151821	6 x fittings pack, gas front 80/100/120 0020151838	3 x hydraulic block for 1 or 2 boilers 0020151821	8 x fittings pack, gas front 80/100/120 0020151838
5 x connector, pipe front 80/100/120 0020151822	3 x gas pipe DN80 for 2 or 4 boilers 0020107870	7 x connector, pipe front 80/100/120 0020151822	4 x gas pipe DN80 for 2 or 4 boilers 0020107870
5 x fittings pack, gas front 80/100/120 0020151838	Flange (blank) gas DN80 0020151836	7 x fittings pack, gas front 80/100/120 0020151838	Flange (blank) gas DN80 0020151836
Gas pipe DN80 connection 1 or 2 boilers 0020107869	6 x heat insulation straight 0020151853	Gas pipe DN80 connection 1 or 2 boilers 0020107869	8 x heat insulation straight 0020151853
2 x gas pipe DN80 connection 2 or 4 boilers 0020107870	Heat insulation, end cap 0020151854	3 x gas pipe DN80 connection 2 or 4 boilers 0020107870	Heat insulation, end cap 0020151854
Flange (blank) gas DN80 0020151836		Flange (blank) gas DN80 0020151836	
5 x heat insulation straight 0020151853		7 x heat insulation straight 0020151853	
Heat insulation, end cap 0020151854		Heat insulation, end cap 0020151854	

## Back-to-back rigs



Key	ecoTEC plus 48kW	ecoTEC plus 64kW	ecoTEC plus 80kW	ecoTEC plus 100kW	ecoTEC plus 120kW
A	1650mm			1749mm	
B	882mm			720mm	
C	1332mm including insulation				

### Clearances

600mm in front of each boiler for service access.

End cap insulation + 70mm.

Low-loss header or plate heat exchangers - dimensions according to model.

All dimensions +/- 20mm.

## Back-to-back rigs for ecoTEC plus 48 and 64kW with DN65 hydraulics

### Compatibility matrix

Model	2 x boiler	3 x boiler	4 x boiler
ecoTEC plus 48 and 64kW	VCBB-462 0020201766	-	VCBB-464 0020201767
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set	-	0010031891 - 240kW insulated plate heat exchanger set.

### Pack contents

Cascade 2 x boiler back-to-back		Cascade 4 x boiler back-to-back	
VCBB-462 0020201766	Article number	VCBB-464 0020201767	Article number
Frame support cascade	0020151805	Frame support cascade	0020151805
Frame support for 1 or 2 boilers	0020151813	Hydraulic block, start up module	0020151814
Hydraulic block, start up module	0020151816	Frame support for 2 or 4 boilers	0020151816
Hydraulic block for 1 or 2 boilers	0020151818	Hydraulic block for 2 or 4 boilers	0020151820
Connector, pipe front 45	0020151823	2 x connector, pipe front 45	0020151823
Fittings pack, gas front 45	0020151839	2 x fittings pack, gas front 45	0020151839
Fittings pack, gas back 45	0020151825	2 x fittings pack, gas back 45	0020151825
Connector, pipe back 45	0020151845	2 x connector, pipe back 45	0020151845
Gas pipe, DN50 for 1 or 2 boilers	0020107866	Gas pipe, DN50 for 2 or 4 boilers	0020107867
Flange (blank) gas DN50	0020151835	Flange (blank) gas DN50	0020151835
Heat insulation straight	0020151853	2 x heat insulation straight	0020151853
Heat insulation, end cap	0020151854	Heat insulation, end cap	0020151854
Feet pair B	0020151815	Feet pair B	0020151815

## Back-to-back rigs for ecoTEC plus 80, 100 and 120kW with DN65 hydraulics

### Compatibility matrix

Model	2 x boiler	3 x boiler	4 x boiler
ecoTEC plus 80kW	VCBB-52 0020175315	VCBB-53 0020175296	VCBB-54 0020175297
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set	0010031891 - 240kW insulated plate heat exchanger set	0010031892 - 360kW insulated plate heat exchanger set
ecoTEC plus 100kW	VCBB-52 0020175295	VCBB-53 0020175296	*
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set	0010031892 - 360kW insulated plate heat exchanger set	*
ecoTEC plus 120kW	VCBB-52 0020175295	VCBB-53 0020175296	*
Plate heat exchanger	0010031891 - 240kW insulated plate heat exchanger set	0010031892 - 360kW insulated plate heat exchanger set	*

\* When cascading projects over 360kW please use DN100 rigs.

### Pack contents

Cascade 2 x boiler back-to-back	Cascade 3 x boiler back-to-back	Cascade 4 x boiler back-to-back
<b>VCBB-52 0020175295</b>	<b>VCBB-53 0020175296</b>	<b>VCBB-54 0020175297</b>
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Support for 2 or 4 boilers 0020151814	Support for 2 or 4 boilers 0020151814
Hydraulic block, start up module 0020151816	Hydraulic block, start up module 0020151816	Hydraulic block, start up module 0020151816
Hydraulic block for 1 or 2 boilers 0020151818	Hydraulic block for 2 or 4 boilers 0020151820	Hydraulic block for 2 or 4 boilers 0020151820
Connector, pipe front 80/100/120 0020151822	2 x connector, pipe front 80/100/120 0020151822	2 x connector, pipe front 80/100/120 0020151822
Fittings pack, gas front 80/100/120 0020151838	2 x fittings pack, gas front 80/100/120 0020151838	2 x fittings pack, gas front 80/100/120 0020151838
Fittings pack, gas back 80/100/120 0020151844	Fittings pack, gas back 80/100/120 0020151844	2 x fittings pack, gas back 80/100/120 0020151844
Connector, pipe back 80/100/120 0020151824	Connector, pipe back 80/100/120 0020151824	2 x connector, pipe back 80/100/120 0020151824
Gas pipe DN50 for 1 or 2 boilers 0020107866	Gas pipe DN50 for 2 or 4 boilers 0020107867	Gas pipe DN5 for 2 or 4 boilers 0020107867
Flange (blank) gas DN50 0020151835	Flange (blank) gas DN50 0020151835	Flange (blank) gas DN50 0020151835
Heat insulation straight 0020151853	2 x heat insulation straight 0020151853	2 x heat insulation straight 0020151853
Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854
Feet pair B 0020151815	Feet pair B 0020151815	Feet pair B 0020151815

## Back-to-back rigs for ecoTEC plus 80, 100 and 120kW with DN100 hydraulics

### Compatibility matrix

Model	2 x boiler	4 x boiler	6 x boiler	8 x boiler
ecoTEC plus 80kW	VBB-102 0020175306	VBB-104 0020175307	VBB-106 0020175308	VBB-108 0020175309
Plate heat exchanger	0010031893 - 480kW insulated plate heat exchanger set			0010031895 - 720kW insulated plate heat exchanger set
ecoTEC plus 100kW	VBB-102 0020175306	VBB-106 0020175308	VBB-108 0020175309	VBB-108 0020175309
Plate heat exchanger	0010031893 - 480kW insulated plate heat exchanger set		0010031894 - 600kW insulated plate heat exchanger set	#
ecoTEC plus 120kW	VBB-102 0020175306	VBB-104 0020175307	VBB-106 0020175308	VBB-108 0020175309
Plate heat exchanger	0010031893 - 480kW insulated plate heat exchanger set		0010031895 - 720kW insulated plate heat exchanger set	#

# Contact your local Vaillant Regional Business Manager.

### Pack contents

Cascade 2 x boiler back-to-back	Cascade 4 x boiler back-to-back	Cascade 6 x boiler back-to-back	Cascade 8 x boiler back-to-back
<b>VBB-102 0020175306</b>	<b>VBB-104 0020175307</b>	<b>VBB-106 0020175308</b>	<b>VBB-108 0020175309</b>
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support for 1 or 2 boilers 0020151813	Support for 2 or 4 boilers 0020151814	Support for 1 or 2 boilers 0020151813	2 x support for 2 or 4 boilers 0020151814
Hydraulic block, start up module 0020151817	Hydraulic block, start up module 0020151817	Hydraulic block, start up module 0020151817	Hydraulic block, start up modules 0020151817
Hydraulic block for 1 or 2 boilers 0020151819	Hydraulic block for 2 or 4 boilers 0020151821	Frame support for 2 or 4 boilers 0020151814	2 x hydraulic block for 2 or 4 boilers 0020151821
Connector, pipe front 80/100/120 0020151822	2 x connector, pipe front 80/100/120 0020151822	Hydraulic block for 1 or 2 modules 0020151819	4 x connector, pipe front 80/100/120 0020151822
Fittings pack, gas front 80/100/120 0020151838	2 x fittings pack, gas front 80/100/120 0020151838	Hydraulic block for 2 or 4 boilers 0020151821	4 x fittings pack, gas front 80/100/120 0020151838
Fittings pack, gas back 80/100/120 0020151844	2 x fittings pack, gas back 80/100/120 0020151844	3 x connector, pipe front 80/100/120 0020151822	4 x fittings pack, gas back 80/100/120 0020151844
Connector, pipe back 80/100/120 0020151824	2 x connector, pipe back 80/100/120 0020151824	3 x fittings pack, gas front 80/100/120 0020151838	4 x connector, pipe back 80/100/120 0020151824
Gas pipe DN80 for 1 or 2 boilers 0020107869	Gas pipe DN80 for 2 or 4 boilers 0020107870	3 x fittings pack, gas back 80/100/120 0020151844	2 x gas pipe DN80 for 2 or 4 boilers 0020107870
Flange (blank) gas DN80 0020151836	Flange (blank) gas DN80 0020151836	3 x connector, pipe back 80/100/120 - 0020151824	Flange (blank) gas DN80 0020151836
Heat insulation straight 0020151853	2 x heat insulation straight 0020151853	Gas pipe DN80 for 2 or 4 boilers 0020107870	4 x heat insulation straight 0020151853
Heat insulation, end cap 0020151854	Heat insulation, end cap 0020151854	Flange (blank) gas DN80 0020151836	Heat insulation, end cap 0020151854
Feet pair B 0020151815	Feet pair B 0020151815	Heat insulation straight 0020151853	2 x feet pair B 0020151815
		Feet pair B - 0020151815	
		Heat insulation, end cap 0020151854	

## Cascade rigs around corner systems adapters



### Contents\*

Pipe elbows DN100 flow and return	0020151834
Pipe elbow DN80/PN16 gas	0020151837

\* Insulation is no longer available.

## Cascade rigs without hydraulics



Model	Article number	Dimensions mm		
		H	W	D
VCR x 1	0020175287	1750	630	540 (allow 480mm behind if rear feet are to be fitted)
VCR x 2	0020175288		1210	
VCR x 3	0020175289		1790	
VCR x 4	0020175290		2370	

### Pack contents

Cascade 1 x boiler inline (no hydraulic)	Cascade 2 x boiler inline (no hydraulic)	Cascade 3 x boiler inline (no hydraulic)	Cascade 4 x boiler inline (no hydraulic)
VCR x 1 0020175287	VCR x 2 0020175288	VCR x 3 0020175289	VCR x 4 0020175290
Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805	Frame support cascade 0020151805
Frame support with extension for 1 inline 0020151813	Frame support with extension for 2 inline 0020151814	Frame support with extension for 1 inline 0020151813	2 x frame support with extension for 2 inline 0020151814
Feet pair 0020151815	Feet pair 0020151815	Frame support with extension for 2 inline 0020151814	2 x feet pair 0020151815
		2 x feet pair 0020151815	

NOTE: Boilers can be mounted back-to-back doubling the number of boilers that each rig can support. Additional feet can be fitted at the rear of the frames when free standing (applies to all Vaillant cascade rigs).

# Cascade flue systems



## Overview

When specifying and installing a cascade rig system, it is important that the system accessories and components offer the same level of versatility and compatibility. The extensive selection of flue accessories enable systems to be designed in a variety of configurations: inline, around a corner and back-to-back and perfectly compliment the cascade rig range. The flue accessories portfolio also enables installers and specifiers to choose whether a system can exit to the left or the right of the rig, depending on the space available.

All flue installations must comply with the current Gas Safety (Installation and Use) regulations. Vaillant strongly recommends advice should be sought from a specialist flue installation company to ensure that each installation fulfils all pertinent national and local regulations, codes and standards.

NOTE: For all systems above 70kW, flue systems must be designed and installed according to IGEM UP/10 and BS 6644. Above 333kW net heat input the Clean Air Act must be adhered to and system will need approval of local authority.



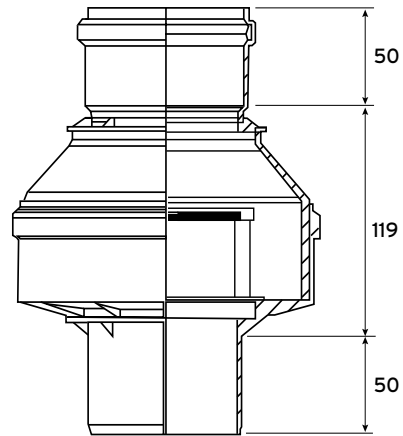
## Flue gas non-return valves for ecoTEC plus 48 and 64kW

### ecoTEC 48 and 64kW non-return valves

When the ecoTEC plus 48 and 64W boilers are installed in any cascade formation, it is vital that a flue gas non-return flap valve is fitted to each boiler, to ensure that gas does not re-enter the boiler. The only circumstances where a non-return flap is not necessary is if the chimney is designed to EN 13384-2 and the natural draught is greater than the pressure losses. A mechanical 80mm non-return flap valve is available as an accessory for third party flues working in conjunction with the ecoTEC plus 48 and 64kW boilers.

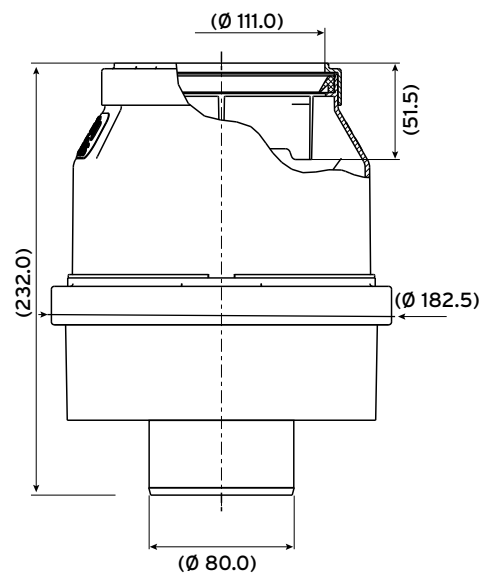
When connecting the ecoTEC plus 48 and 64kW boilers to Vaillant's 80/110mm cascade flueing accessories, a non-return flap valve adapter is required. An adapter without NRV is also available.

### 80/80mm NRV for connection to third party flues



Model	Article number
80/80mm	303960

### 80/110mm NRV for connection to Vaillant cascade flue systems



Model	Article number
80/110mm	002025899

## Flue gas non-return valves for ecoTEC plus 80, 100 and 120kW

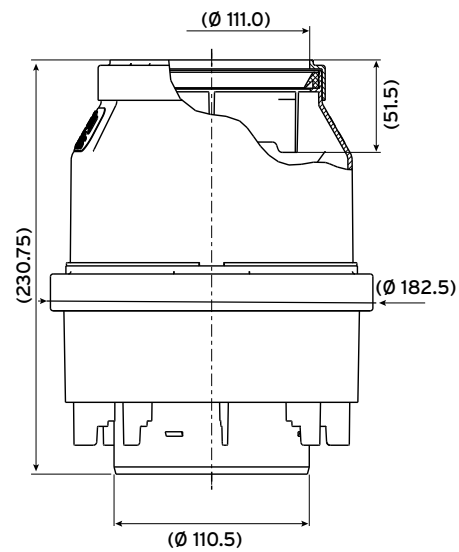
### ecoTEC plus 80, 100 and 120kW non-return valves

When installing ecoTEC plus 80, 100 and 120kW in cascade, a flue non-return flap valve will need to be fitted as part of the installation. The 110mm mechanical flue non-return flap valve or the shorter motorised non-return flap valve are easily installed on top of each boiler prior to connecting the flue header. When dealing with plantrooms with restricted heights, the motorised non-return flap valve kit has a lower profile and can be specified in place of the mechanical flap valve, however, these should not be mixed within an array. The motorised flap valve comes supplied with VR 40 multi-functional 2-in-7 module. See page 53 for installation details.

Flue systems for high-output cascades may require guidance from a specialist flue company to ensure that a system is designed and sized correctly in accordance with all relevant regulations, codes and standards. For systems over 70kW, the current edition of the IGEM/UP/10 guide and BS 6644 should be followed and for larger systems over 333kW net, the Clean Air Act and any local council approvals that may be required should be followed.

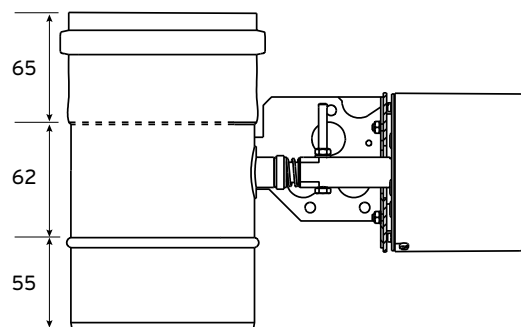
The IGEM/UP/10 risk assessment can be used to determine the most suitable position for larger flue system termination positions.

110mm/110mm mechanical NRV



Model	Article number
110/110mm mechanical	0020207200

110mm/110mm motorised NRV



Model	Article number
110/110mm motorised	0020177845

## Cascade flue headers for inline rigs

When ecoTEC plus boilers are fitted and flued in cascade formation, a flue gas non-return flap valve should be fitted to each boiler to ensure that flue gas products cannot re-enter and escape via other boilers, which may not be running. See pages 53 and 54 for non-return flap valve options.

### Requirements for cascade flue with an NRV

Maximum cascade flue length with NRV						
Number of boilers	Diameter (mm)	Entire flue length (m)				
		ecoTEC plus 48kW	ecoTEC plus 64kW	ecoTEC plus 80kW	ecoTEC plus 100kW	ecoTEC plus 120kW
2	160	2 - 50	2 - 50	2 - 50	2 - 50	2 - 50
3	160	2 - 50	2 - 50	2 - 50	N/A	N/A
	200	N/A	N/A	N/A	2 - 50	2 - 50
4	160	2 - 50	2 - 35	N/A	N/A	N/A
	200	N/A	2 - 50	2 - 50	2 - 50	N/A
	250	N/A	N/A	N/A	N/A	2 - 50
5	160	2 - 33	N/A	N/A	N/A	N/A
	200	2 - 50	2 - 50	N/A	N/A	N/A
	250	N/A	N/A	2 - 50	2 - 50	2 - 50
6	200	2 - 50	2 - 50	N/A	N/A	N/A
	250	N/A	N/A	2 - 50	2 - 50	2 - 50

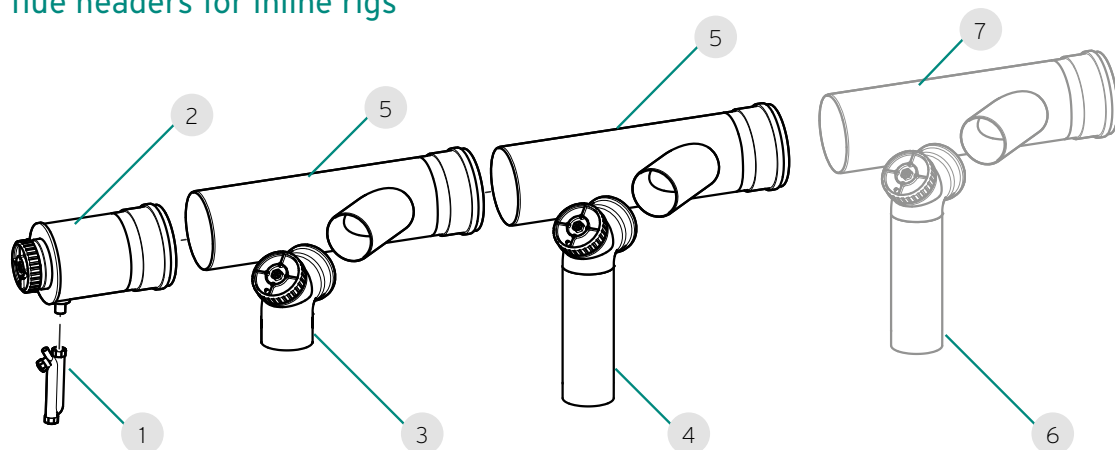
The only circumstances where a flue non-return flap may not be necessary is where the chimney is designed to EN 13384-2, and the natural draught is greater than the pressure losses. For these bespoke systems the flue design engineer must provide certification of flue suitability to be affixed within the plant room before first ignition of the boilers.

Vaillant requires that the flue design is such that each individual boiler's flue enters the flue header at the side and angled into the header, so that the output from each appliance will assist the flow of flue products towards the flue termination. The header then needs only one condensate disposal connection at the low point of the flue header. Thus, preventing any single boiler from being the exit route for high volumes of condensate from the flue system.

Individual disconnection of any single boiler should be provided to allow for future maintenance works without intervention of specialist services.

Vaillant offers mechanical 80/80mm as well as 80/110mm flap valves for use with the ecoTEC plus 48 and 64kW models as well as either mechanical or electrical 110mm flaps for the ecoTEC plus 80, 100 and 120kW models.

## Cascade flue headers for inline rigs



Key	Basic connection set - in-line
1	Siphon (1 piece)
2	Terminal with condensate discharge
3	Inspection elbow, 110mm (W) x 140mm (H)
4	Inspection elbow, 110mm (W) x 390mm (H)
5	Flue pipe with oblique entry (2 pieces)

Key	Expansion set - additional boilers in-line
6	Inspection elbow, 110mm (W) x 390mm (H)
7	Flue pipe with oblique entry (1 piece)

NOTE: Increase length of the 110mm diameter pipe, (item 4) by at least 33mm longer than item 3 to achieve at least 3° fall.

## Inline flue kits

Basic connection set - inline	Article number
160mm / 225mm up to 240kW	0020106412
200mm / 300mm up to 400kW	0020106428
250mm / 350mm over 400kW - 720kW	0020106553

Expansion set - additional boilers inline	Article number
160mm / 225mm up to 240kW	0020106413
200mm / 300mm up to 400kW	0020106429
250mm / 350mm over 400kW - 720kW	0020106554

Accessories	Article number
Bracket for cascade flue header	0020107879

Cascade flue header bracket requirements - inline cascades							
Number of boilers (maximum 720kW)	2	3	4	5	6	7	8
Number of brackets required	2	3	3	4	4	5	5

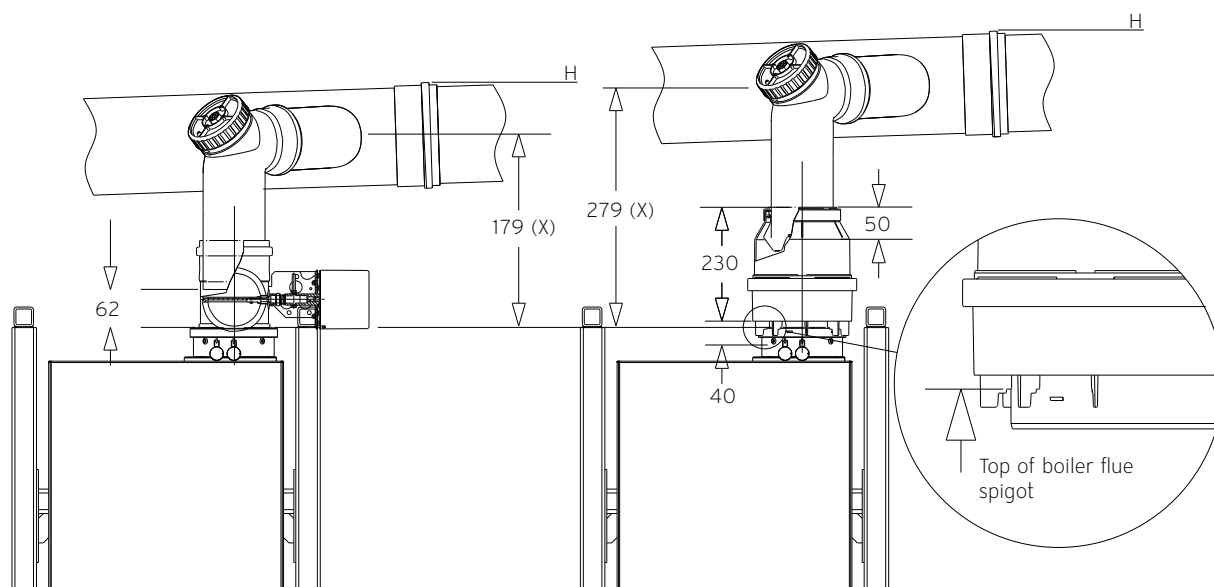
## Cascade flue headers for inline rigs

For inline flue systems, the cascade flue and header must be installed with a minimum fall back to the boilers of 3° (50mm per metre); this means that the 110mm pipe from each boiler needs to increase in length by a minimum of 33mm.

### ecoTEC plus 80, 100 and 120kW

Motorised flap 110/110mm  
0020177845

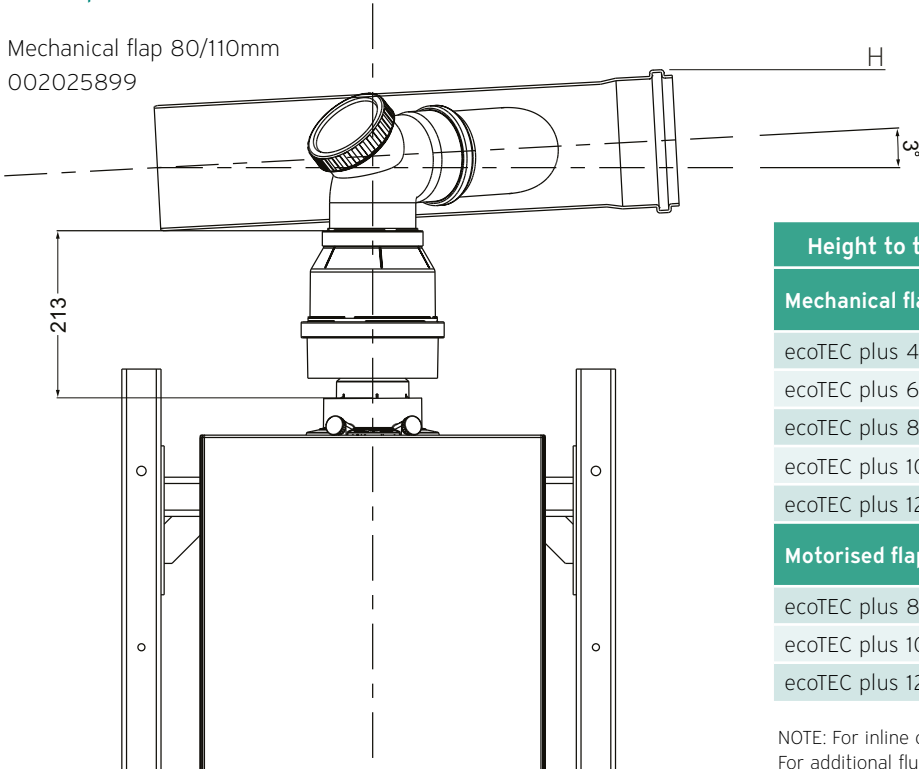
Mechanical flap 110/110mm  
0020207200



X is the minimum height of the first boiler flue. When fitted with the shortest 87° 110mm elbow and the electrical flap, this is 300mm. The mechanical flap is 100mm taller. This height will increase with each additional boiler to create the required 3° (50mm per metre) fall.

ecoTEC plus 48 and 64kW - 160mm header

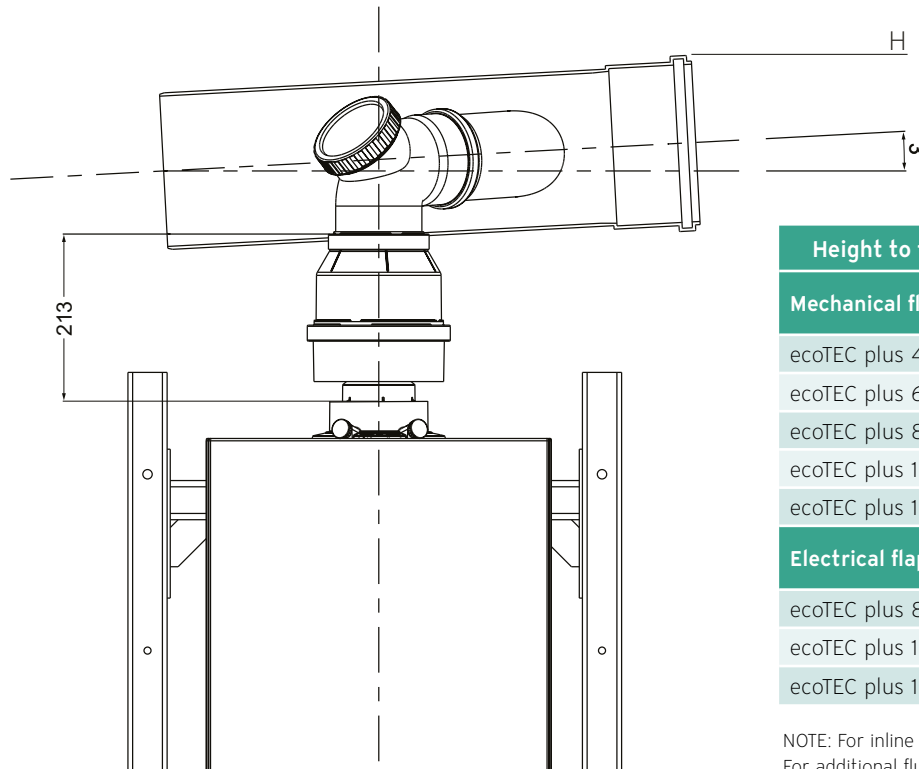
Mechanical flap 80/110mm  
002025899



Height to top of flue header from floor (H)	
Mechanical flap	Header 160mm
ecoTEC plus 48kW	2040
ecoTEC plus 64kW	2040
ecoTEC plus 80kW	2120
ecoTEC plus 100kW	2120
ecoTEC plus 120kW	2120
Motorised flap	Header 160mm
ecoTEC plus 80kW	2065
ecoTEC plus 100kW	2065
ecoTEC plus 120kW	2065

NOTE: For inline cascade formations add 30mm per boiler.  
For additional flue sections add 50mm per metre.

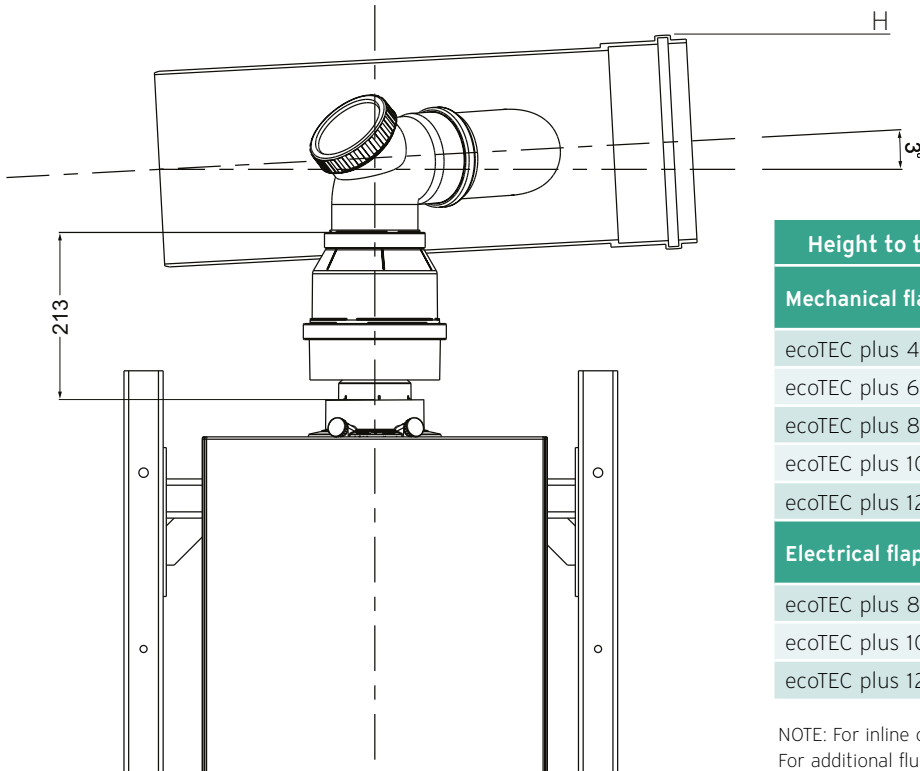
ecoTEC plus 48 and 64kW - 200mm header



Height to top of flue header from floor (H)	
Mechanical flap	Header 200mm
ecoTEC plus 48kW	2060
ecoTEC plus 64kW	2060
ecoTEC plus 80kW	2142
ecoTEC plus 100kW	2142
ecoTEC plus 120kW	2142
Electrical flap	Header 200mm
ecoTEC plus 80kW	2085
ecoTEC plus 100kW	2085
ecoTEC plus 120kW	2085

NOTE: For inline cascade formations add 30mm per boiler.  
For additional flue sections add 50mm per metre.

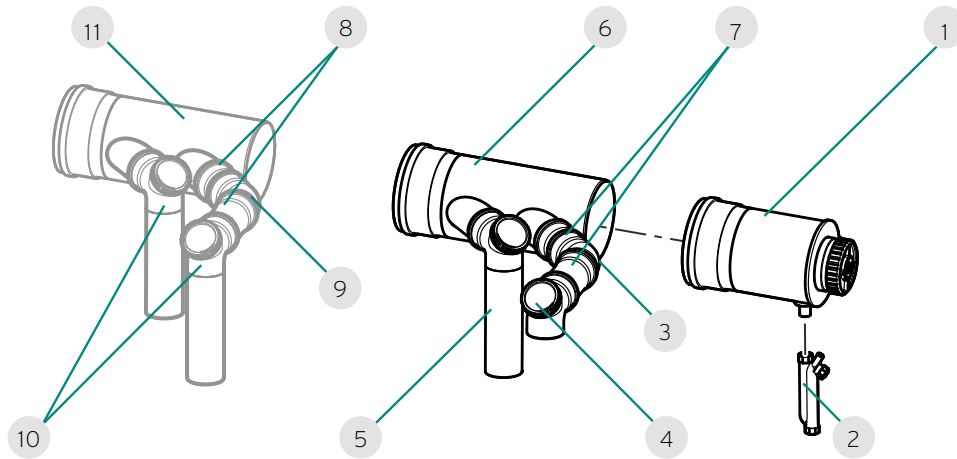
ecoTEC plus 48 and 64kW - 250mm header



Height to top of flue header from floor (H)	
Mechanical flap	Header 250mm
ecoTEC plus 48kW	2085
ecoTEC plus 64kW	2085
ecoTEC plus 80kW	2165
ecoTEC plus 100kW	2165
ecoTEC plus 120kW	2165
Electrical flap	Header 250mm
ecoTEC plus 80kW	2110
ecoTEC plus 100kW	2110
ecoTEC plus 120kW	2110

NOTE: For inline cascade formations add 30mm per boiler. For additional flue sections add 50mm per metre.

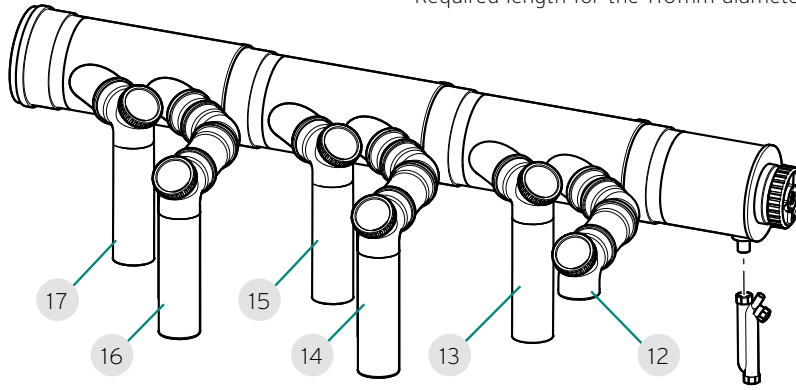
Cascade flue headers for back-to-back rigs



Key	Basic connection set - back-to-back
1	Terminal with condensate discharge
2	Siphon (1 piece)
3	45° elbow, 110mm diameter
4	Inspection elbow, 110mm (W) x 140mm (H)
5	Inspection elbow, 110mm (W) x 390mm (H)
6	Flue pipe with two oblique entries
7	Flue pipe, 110mm x 250mm (L)

Key	Expansion set - boilers back-to-back
8	Flue pipe, 110mm x 250mm (L)
9	45° elbow, 110mm diameter
10	Inspection elbow, 110mm (W) x 390mm (H)
11	Flue pipe with two oblique entries

Required length for the 110mm diameter flue pipes



12 has the shortest elbow with length A. The other inspection elbow lengths are indicated in the following table.

Key	Length of flue pipe (mm)
12	A
13	A + 62
14	A + 30
15	A + 92
16	A + 61
17	A + 123

Length differences for 110mm diameter flue pipes.

## Cascade flue headers for back-to-back rigs

### Back-to-back flue kits

Basic connection set - back-to-back	Article number
160mm / 225mm up to 240kW	0020106414
200mm / 300mm up to 400kW	0020106430
250mm / 350mm over 400kW - 720kW	0020106555

Expansion set - additional boilers back-to-back	Article number
160mm / 225mm up to 240kW	0020106415
200mm / 300mm up to 400kW	0020106431
250mm / 350mm over 400kW - 720kW	0020106556

NOTE: For odd number boilers using back to back rigs e.g. 3, a single inline expansion set should be used instead of an additional back to back expansion set.

Cascade flue header bracket requirements - back-to-back cascades							
Number of boilers Maximum 720kW	2	3	4	5	6	7	8
Number of brackets required	2	2	2	3	3	3	3

## Cascade flue accessories

### Internal flue pipe 110mm PP - boiler to header (if required)

Description	Article number
500mm extension	0020106384
1000mm extension	0020106385
2000mm extension	0020106386
45° elbow (pack of 1)	0020106391
Fastening clamps (pack of 5)	0020106395

### Internal flue pipe 160mm PP - header to flue system (if required)

Description	Article number
Cascade flue 500mm extension	0020095545
Cascade flue 1000mm extension	0020095546
Cascade flue 2000mm extension	0020095547
Cascade flue 87° elbow (pack of 1)	0020095552
Cascade flue 45° elbow (pack of 1)	0020095556
Flue clips (including 400mm stud)	0020151162

### Internal flue pipe 200mm PP - header to flue system (if required)

Description	Article number
Cascade flue 500mm extension	0020095549
Cascade flue 1000mm extension	0020095550
Cascade flue 2000mm extension	0020095551
Cascade flue 87° elbow (pack of 1)	0020095553
Cascade flue 45° elbow (pack of 1)	0020095557
Flue clips (including 400mm stud)	0020151163

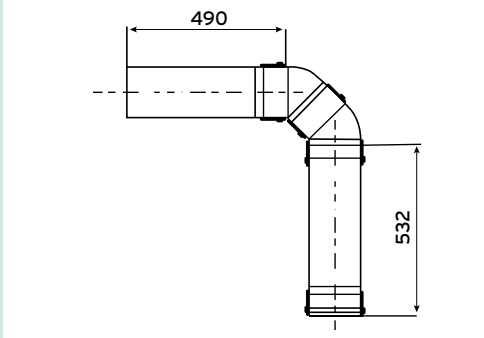
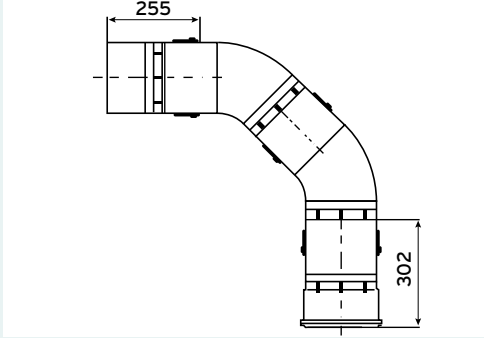
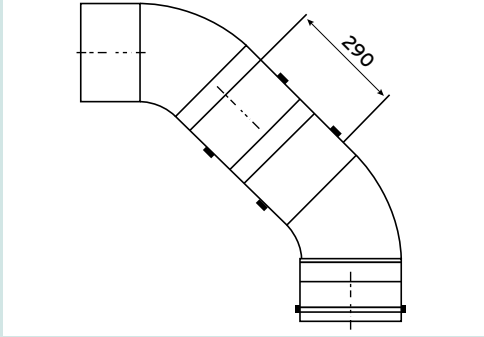
### Internal flue pipe 250mm PP - header to flue system (if required)

Description	Article number
Cascade flue 500mm extension (250mm diameter) - PP	0020145507
Cascade flue 1000mm extension	0020106566
Cascade flue 2000mm extension	0020106567
Cascade flue 87° elbow (pack of 1)	0020106563
Cascade flue 45° elbow (pack of 1)	0020106564
Flue clips (including 400mm stud)	0020151164



## Corner cascade flues

Once the output of a cascade system has been ascertained, the specification of the internal and external flue requirements can be determined. Vaillant supplies a variety of diameters in its flue components range, including all appropriate fixings, tiles, collars and pipes. It is vital that the diameter of the flue components is correctly matched to the outputs required. Please refer to the flue table to ensure correct components are selected to complete the flue to the necessary dimensions.

Diameter	Components	Geometry
160mm Up to 240kW	<p>2 x 45° elbow Article number: 0020095556</p> <p>1 x 500mm extension Article number: 0020095545</p> <p>1 x 1000mm extension Article number: 0020095546</p>	
200mm Up to 400kW	<p>2 x 45° elbow Article number: 0020095557</p> <p>2 x 500mm extension Article number: 0020095545</p>	
250mm Up to 720kW	<p>2 x 45° elbow Article number: 0020106564</p> <p>1 x 500mm extension Article number: 0020145507</p>	

## External cascade facades

Once the output of a cascade system has been ascertained, the specification of the internal and external flue requirements can be determined. Vaillant can supply a range of flue components including pipe and fittings in sizes up to 250mm for internal use and 350mm stainless steel for outer facade pipe.

These, along with additional accessories such as fixing brackets, flat roof and pitched roof weather ring collars, enable a complete cascade flue system to be ordered for your project. It is vital that the diameter of the flue components is correctly matched to the outputs required.

Key	Stainless steel facade flue up to 240kW 160mm PP / 225mm Stainless steel	Article number
A	Bird Protection grid DN160	0020230630
B	Terminal - 160mm / 225mm	0020095583
C	Vertical through roof section 225mm	0020095581
D	Roof tile 225mm 25-35°	0020130600
E	Collar for flat roof 160mm	0020095587
F	Bend 45°	0020095544
G	Extension 500mm	0020095577
	Extension 1000mm	0020095579
H	Wall bracket (stainless steel) 160mm	0020095575
J	Pipe clamp 225mm (one per extension)	0020095540
K	Support kit 160mm / 225mm facade	0020095573

Key	Stainless steel facade flue up to 400kW 200mm PP / 300mm Stainless steel	Article number
A	Bird protection grid DN200	0020228943
B	Terminal 200/300mm	0020095584
C	Vertical through roof section 300mm	0020095582
D	Roof tile 300mm - 25-35°	0020130602
E	Collar for flat roof	0020095588
F	Elbow 45°	0020095548
G	Extension 500mm	0020095578
	Extension 1000mm	0020095580
H	Wall bracket (stainless steel)	0020095576
J	Pipe clamp 300mm (one per extension)	0020095536
K	Support set 200/300mm facade	0020095574

Key	Stainless steel facade flue up to 720kW 250mm PP / 350mm Stainless steel	Article number
A	Bird protection grid DN250	0020231158
B	Terminal - 250 / 350mm	0020108008
C	Vertical through roof section 350mm	0020108007
D	Roof tile 350mm - 25-35°	0020145573
E	Collar for flat roof	0020108013
F	Elbow 45°	0020108009
G	Extension 500mm	0020108005
	Extension 1000mm	0020108006
H	Wall bracket (stainless steel)	0020106559
J	Pipe clamp 350mm (one per extension)	0020108011
K	Support kit 250/350mm facade	0020106434



Concentric stainless steel facade flue

NOTE: When going through a wall to outside use a 500mm stainless steel extension which acts as a sleeve to connect onto support kit elbow.

# Large capacity uniSTOR cylinders



## Overview

To support the range of commercial heating systems, Vaillant have two large capacity cylinders and a complete range of accessories available. The 500 and 800 litre uniSTOR cylinders have impressive coil sizes of 4.7m<sup>2</sup> and 7m<sup>2</sup> which are manufactured using high grade stainless steel and pass the highest Vaillant standards and quality control requirements. The large diameter, smooth bore coil technology provides quiet operation, whilst reducing build-up of scale and aids in long-term efficiency through automatic descaling.

Both cylinders can also be cascaded to generate higher requirements for hot water. Vaillant's dedicated commercial and technical support teams can advise on any project for additional support and peace of mind.

## Features & benefits



### Single guarantee for all components

Complete peace of mind from one manufacturer. All cylinders have a 25 year warranty on the tank and 2 years on everything else supplied



### Unvented cylinder kit, expansion vessel and sensor available

Complete system solution offering available whilst meeting all building regulations.



### Global Warming Potential (GWP) less than 5 and ozone depletion of 0

Insulation designed around environmental requirements.



### In-built lifting eye

Easy to move over any terrain.



### Secondary return

Accommodates complex and larger dwellings.



### Factory fitted T&P valve

Ensures safety requirements meet regulations.



### Large 7.5kW single phase immersion available

Emergency backup in case of main heat source failure (optional for 800 litre, 500 litre has a 5kW immersion fitted as standard), providing both installer and specifier with maximum flexibility during design and installation.



### Inspection port included

Meets requirements of many commercial specifications (800 litre only).

## Large capacity uniSTOR cylinders technical specification

Technical data	Unit	500 litre uniSTOR	500 litre uniSTOR twin coil	800 litre uniSTOR
Article number		0010019228	010019234	0010019229
Total tank capacity	l	541.4	541.4	784.0
Actual capacity (without coil volume)	l	512.0	510.4	740.0
Hot water capacity / draw off*	l	460.0	Upper coil: 248 Lower coil: 438	635.0
Standby losses	kWh/24h	2.5	2.57	3.0
Energy-related Products	band	C	C	C
Heat exchanger volume	l	29.0	23.0	44.0
Heat exchanger volume solar circuit		-	8.0	-
Heat exchanger surface	m <sup>2</sup>	4.7	2.3 upper 1.0 lower	7.0
Primary flow rate	l/h	1800	900	1800
Maximum operating DHW temperature	°C	85	85	85
Maximum operating heat circuit temperature	°C	95	95	95
Maximum operating solar circuit temperature	°C	-	99	-
Reheat times	mins	28.6	Upper coil: 19.75 Lower coil: 69.75	26.17
Quantity of temperature sensor tubes	qty	2	2 + 1	2
Size of expansion vessel	l	50**	50	80**
Immersion heater rating	kW	5.0	5.0	7.5
Immersion heater cable size	mm	4.0	4.0	6.0
Immersion heater current	A	32	23	40
Global warming potential	GWP	<5	<5	<5

\* Calculation from test EN 12897.

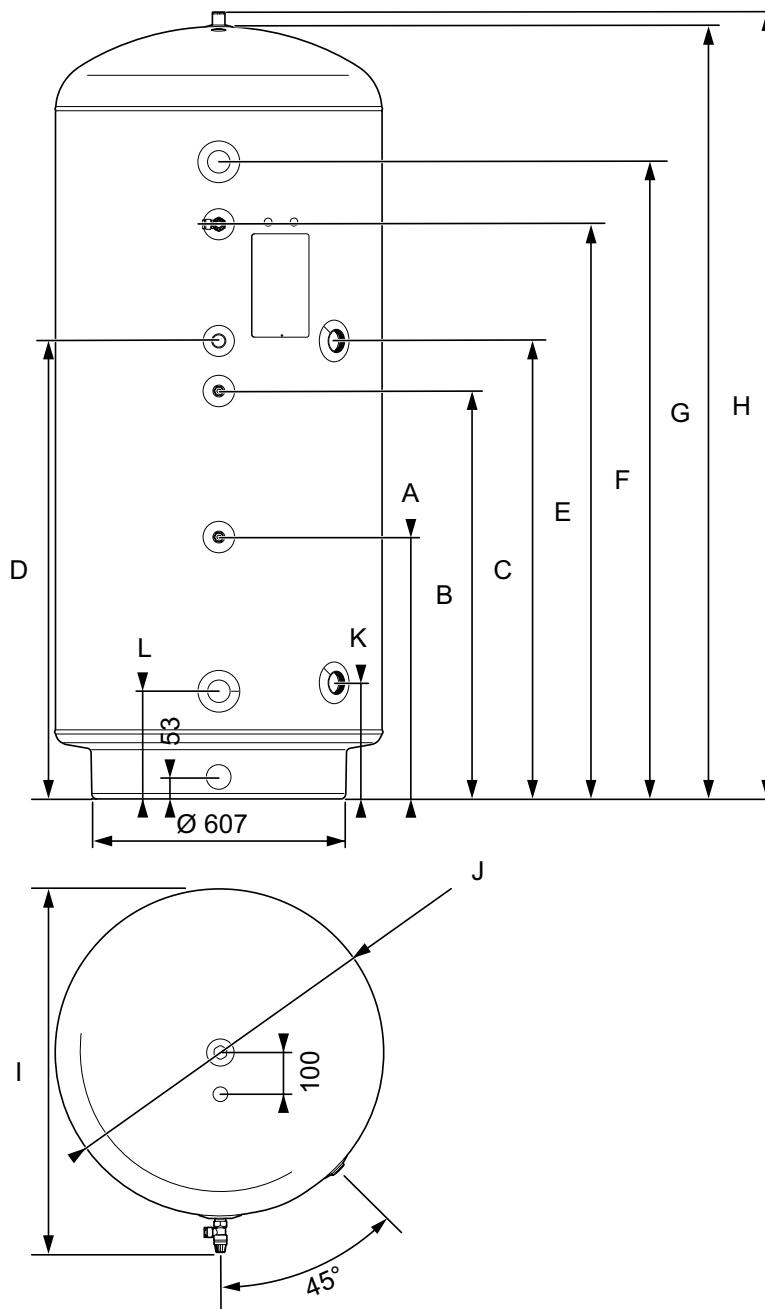
\*\* Supplied as an accessory.

Dimensions	Unit	500 litre uniSTOR	500 litre uniSTOR twin coil	800 litre uniSTOR
Outer diameter with insulation	mm	785	785	986
Height with insulation	mm	1919	1919	1908
Net weight empty cylinder	kg	140	145	231
Weight of filled cylinder	kg	690	686.4	1015
Insulation thickness	mm	65	65	100

Connections	Unit	500 litre uniSTOR	500 litre uniSTOR twin coil	800 litre uniSTOR
Primary heat exchanger flow and return connections	BSP female	1 ½"	1 ½"	1 ½"
Cold and hot water connections	BSP female	1 ½"	1 ½"	1 ½"
Temperature sensor sleeve diameter	mm	8	8	8
Immersion heater boss diameter	BSP female	1 ¼"	1 ¼"	1 ¼"

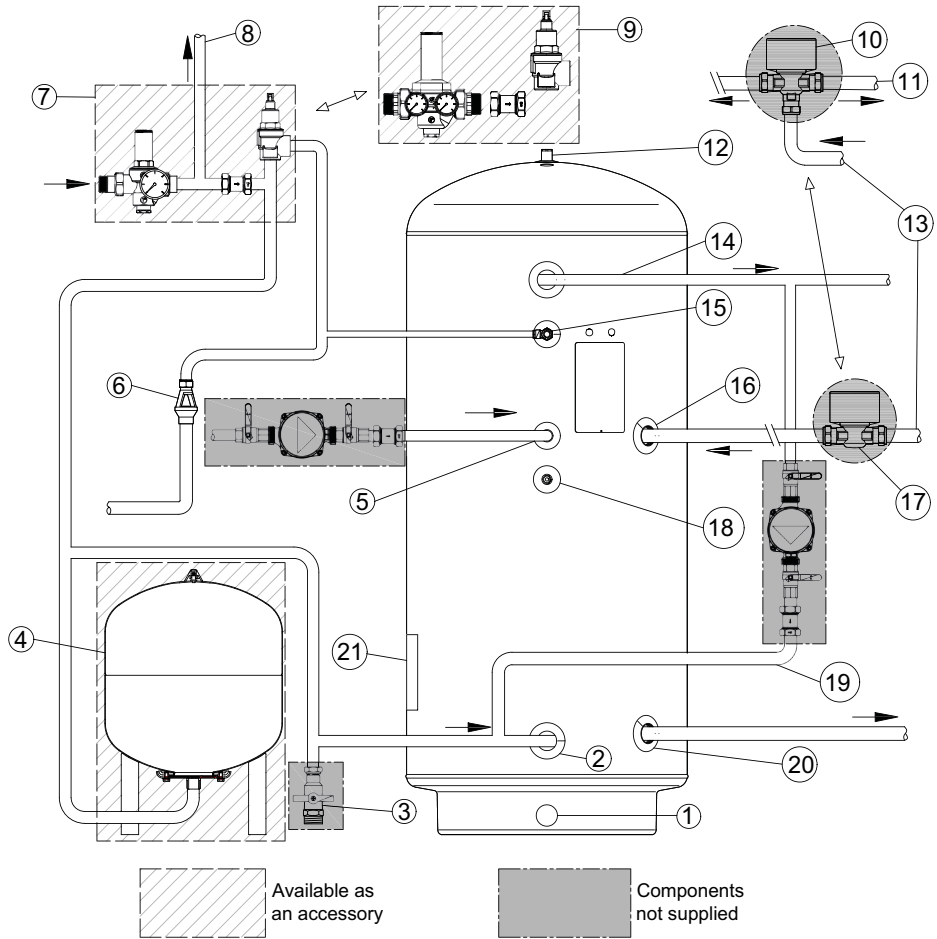
# Large capacity uniSTOR cylinders

## Dimensions



uniSTOR	Unit	A	B	C	D	E	F	G	H	I	J	K	L
500 litre	mm	649	979	1,099	1,099	1,379	1,529	1,843	1,919	872	785	279	259
800 litre		745	1,180	1,130	1,280	1,381	1,480	1,871	1,908	1,071	986	310	310

Connections



Item	Description
1	Cylinder drain
2	Cold water inlet
3	System drain valve (not supplied)
4	Expansion vessel
5	Secondary circulation (not supplied)
6	Tundish
7	Safety group (available as an accessory)
8	Balanced cold water
9	2" Safety group supplied with additional pressure gauge
10	Heat pump connection method: three-way motorised diverter valve (not supplied)
11	Heating circuit heating flow
12	Non-removable lifting eye (manual vent behind lifting eye)
13	Heating flow from heat source
14	Domestic hot water outlet
15	Temperature-pressure relief valve
16	Cylinder heating flow
17	Boiler connection method: motorised valve (not supplied)
18	Temperature sensor pocket
19	Legionella protection loop (not supplied)
20	Cylinder heating return
21	Inspection hatch (800 litre only)

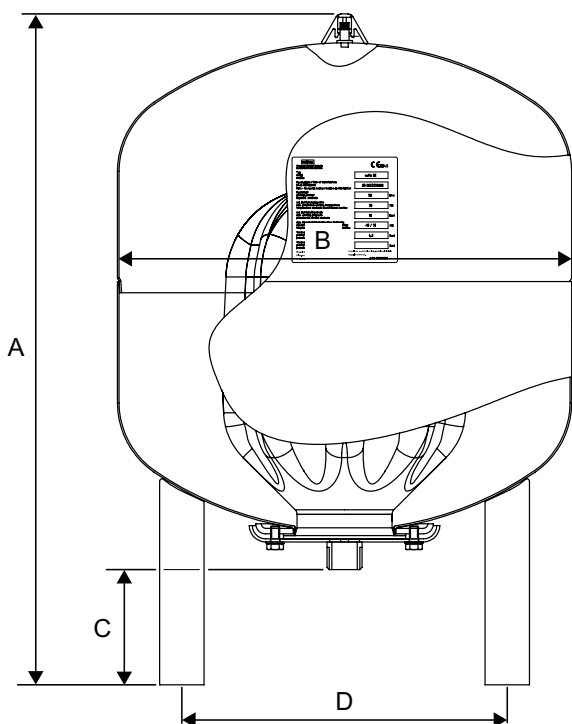
NOTE: Items included with large capacity uniSTOR cylinders are documentation and tundish. Unvented cylinder kits and expansion vessels are available in a range of sizes as an accessory. Items highlighted (not supplied) are available from merchants. Please speak to your Regional Business Manager for further information.

## uniSTOR cylinders accessories

Description	Article number
Immersion heater 7.5kW (800 litre uniSTOR only)*	0020235671
Thermostat (Must be used with immersion heater 0020235671)	0020236130
Unvented cylinder kit 1"	0020235964
Unvented cylinder kit 1¼"	0020235965
Unvented cylinder kit 1½"	0020235966
Unvented cylinder kit 2"	0020235967
Expansion vessel 50 litre (for uniSTOR 500 litre)	0020229941
Expansion vessel 80 litre (for uniSTOR 800 litre)	0020229942

\* Thermostat must be used with immersion heater (article number 0020236130)

### Expansion vessel dimensions



Dimensions	Unit	50 litre expansion vessel	80 litre expansion vessel
A = Height	mm	604	729
B = Diameter		409	480
C = Connection height		104	152
D = Feet span c/c		293	351

# allSTOR buffer cylinders



## Overview

The Vaillant range of allSTOR buffer cylinders complements our range of commercial boilers. They allow them to operate efficiently, ensure continuous supply even in off periods, and extend the running times of the boilers.

The range consists of six cylinders, ranging from 300 to 2,000 litres. They can be cascaded for even greater capacities and flexibility.

## Features & benefits



**Extended range of buffers up to, 2000 litres**  
Compatible with all heat sources and meet the requirements for domestic and commercial systems.



**Clip on insulation**  
Easier and lighter to handle in smaller sections and giving greater flexibility during installation.



**High levels of insulation**  
Minimised heat loss achieving ErP B rating.



**Buffers can be installed in cascade**  
Greater capacity to cater for larger projects.



**Up to eight connections**  
When used with the VR 10 sensor for additional heat sources.



**Inline connections**  
Simple and neat installation.



allSTOR heat pump buffer cylinders

Description	Article number	ErP rating A+ to F
allSTOR plus VPS 300 litre (3 bar rated)	0010015130	B
allSTOR plus VPS 500 litre (3 bar rated)	0010015131	B
allSTOR plus VPS 800 litre (6 bar rated)	0010039300	B
allSTOR plus VPS 1,000 litre (6 bar rated)	0010039301	B
allSTOR plus VPS 1,500 litre (6 bar rated)	0010039302	B
allSTOR plus VPS 2,000 litre (6 bar rated)	0010039303	B

# System control



## VRC 700

The wired VRC 700 and wireless VRC 700f control allows your customer to take control of their heating and hot water and is designed to work harmoniously with all current Vaillant products.

The VRC 700 control can control up to nine heating circuits and the wireless VRC 700f can control up to three heating circuits. By using weather and load compensation technology, the VRC 700(f) ensures your customers appliances are working to their peak performance, always maintaining optimum efficiency.



## sensocomfort

sensocomfort is Vaillant's latest control for multi-zone heating systems to ensure appliances work to their peak performance to maintain optimum efficiency. With the ability to cascade up to seven boilers or heat pumps, the sensoCOMFORT is perfect for larger domestic or commercial properties.

Designed to operate with more complex systems, multiple heating zones, underfloor heating and low carbon technologies, sensoCOMFORT uses triVAL technology to automatically choose the most efficient and cost-effective solution for heating and hot water.

The installation of the sensoCOMFORT has been designed to be as easy as possible, with guided commissioning that detects eBUS components of the system automatically and proposes pre-defined settings.



**myVAILLANT app**  
**Smart heating for your customers**

Manage appliances directly or set routines easily. myVAILLANT app offers advanced comfort while keeping energy consumption and costs under control when the system is installed with a Vaillant internet gateway such as the myVAILLANT connect. myVAILLANT shows full consumption stats so anyone can see if there is potential for saving even more energy.

**Taking comfort to a new level**

The myVAILLANT app makes controlling Vaillant appliances smarter, faster, more intuitive and more technologically advanced than ever before.

**myVAILLANT Pro**  
**Remotely monitor connected systems**

If a Vaillant gateway has been installed, the system can be added to your myVAILLANT Pro account. Remotely access and amend data points, view fault history and check spare parts and literature on the app or desktop site.

Description	Article number
sensoCOMFORT	0010036819
sensoCOMFORT RF	0010036820
VRC 700	0020236291
VRC 700f	0020259829
myVAILLANT connect with VRA 42	0010038367

# Controls and electrical accessories



**VR 34 0-10V adapter**

The VR 34 is a 0-10V coupler for ecoTEC plus and ecoCRAFT, which transfers a voltage input from the BEMS equipment into a temperature set point for the boiler. The VR 34 also has a 24V fault signal output. In the event of a boiler failure, this will remain active until the fault is cleared and the boiler reset. The VR 34 also has an LED to indicate operation.

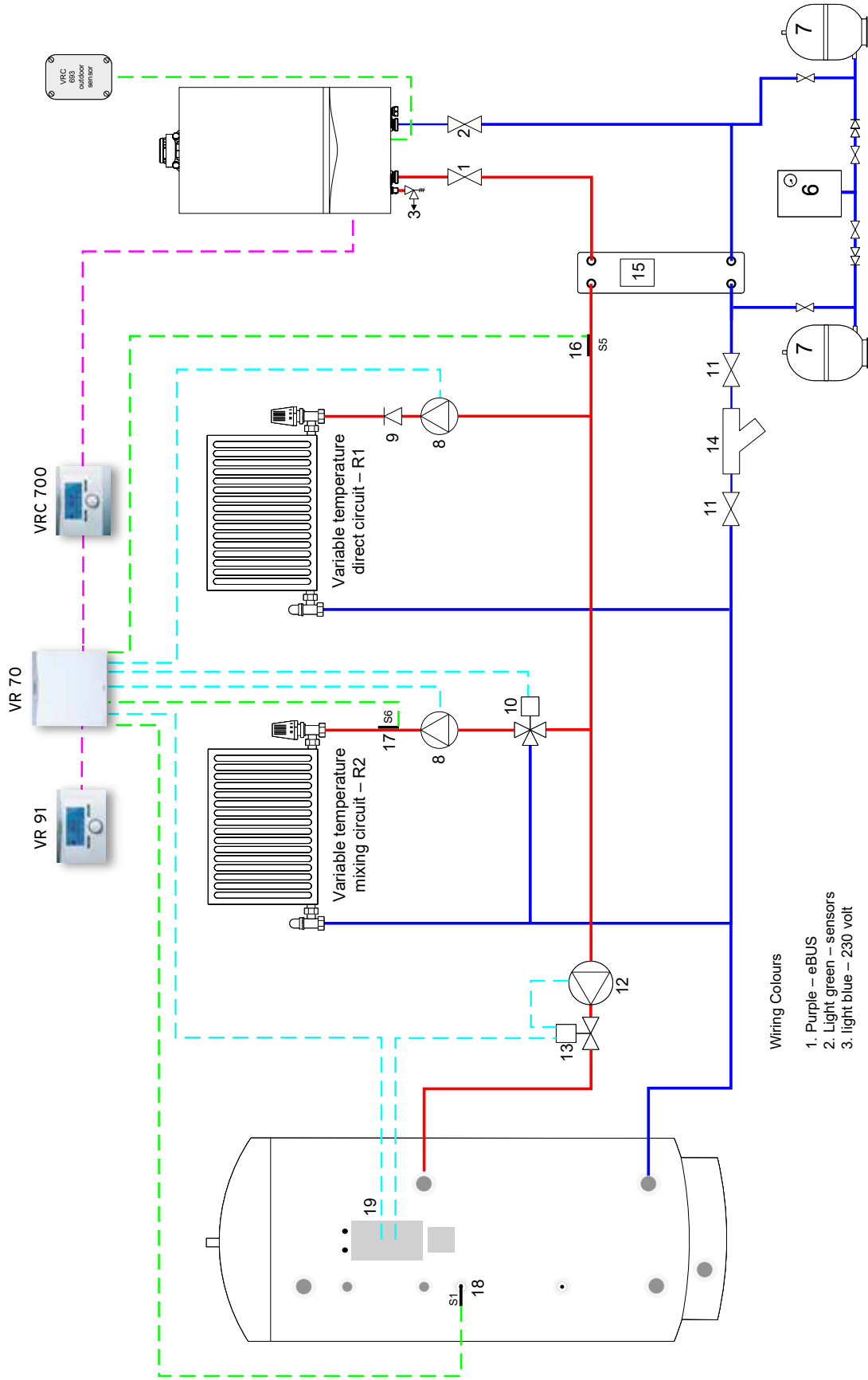


**VR 36 240V 3-4-5 converter**

The VR 36 is a 230V switching interface card for use with ecoTEC plus 80, 100 and 120kW boilers only and with third party controls - for example, standard on/off controls.

\* Vaillant internet gateway required.

# ecoTEC plus 48 to 120 - schematic



### Wiring Colours

- 1. Purple – eBUS
- 2. Light green – sensors
- 3. light blue – 230 volt

### Key

- 1. Boiler flow isolation valve (supplied only with ecoTEC)
- 2. Boiler return isolation valve (supplied only with ecoTEC)
- 3. Boiler safety valve (supplied only with ecoTEC)
- 4. Boiler shunt pump (supplied only with ecoTEC)
- 5. Single check valve
- 6. Pressurisation unit (not supplied by Vaillant)
- 7. Expansion vessel (available as an accessory)
- 8. Heating pumps
- 9. System check valve
- 10. Heating circuit mixing valve

### Key

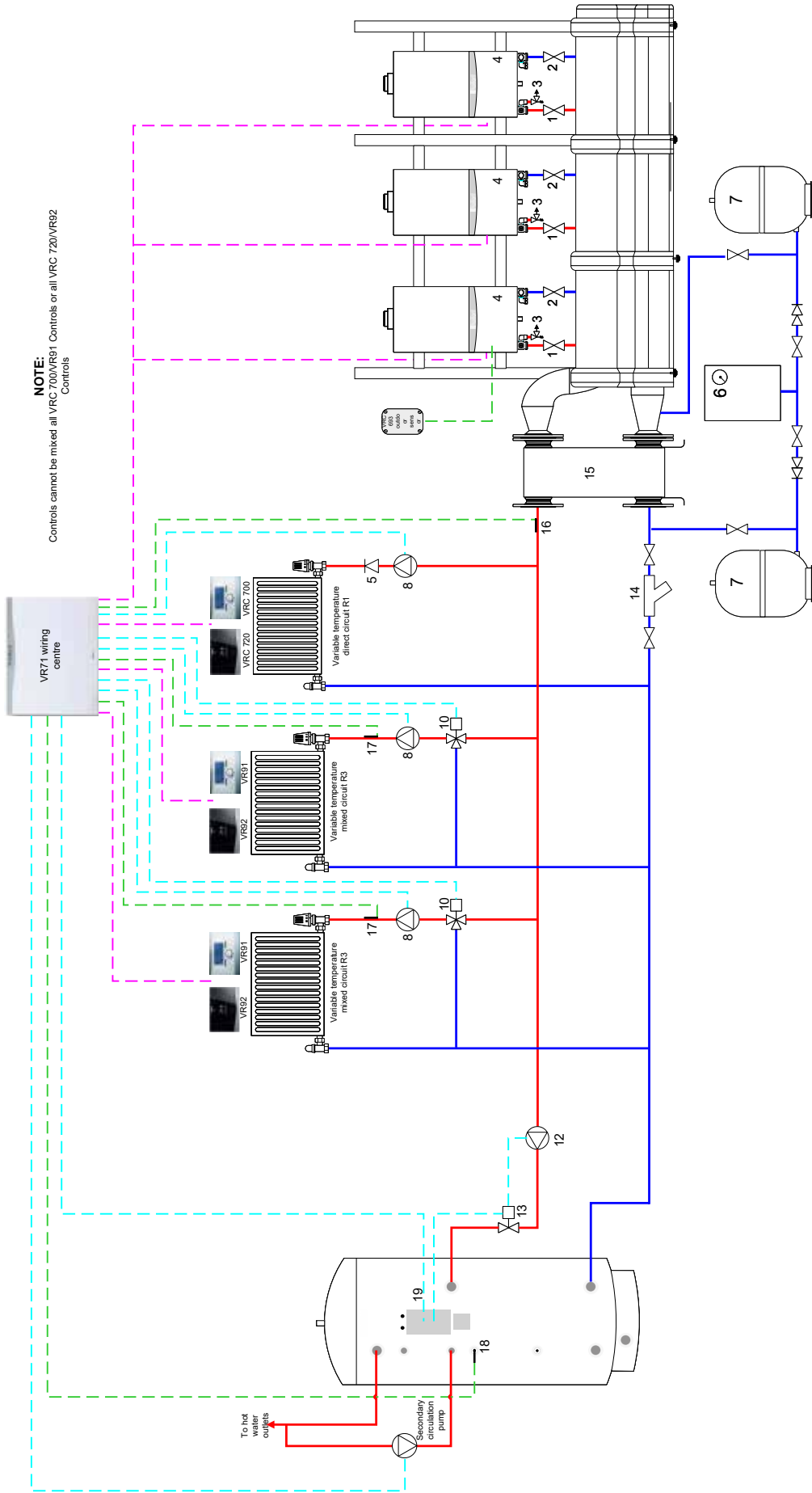
- 11. Service valves (not supplied by Vaillant)
- 12. Cylinder primary pump
- 13. Cylinder motorised valve (not supplied by Vaillant)
- 14. Dirt separator or strainer (not supplied by Vaillant)
- 15. Low loss plate heat exchanger (available as an accessory)
- 16. System flow VR 10 sensor (available as accessory)
- 17. Heating circuit VR 10 sensor (supplied with VR70 wiring centre)
- 18. Cylinder VR 10 sensor (supplied with VR70 wiring centre)
- 19. Cylinder high limit thermostat (supplied only with UNISTOR cylinder)

Note: Items are not supplied by Vaillant unless stated





# ecoTEC plus 48 to 120 - schematic



**NOTE:**  
Controls cannot be mixed all VRC 700/VR91 Controls or all VRC 720/VR92 Controls

**Key**

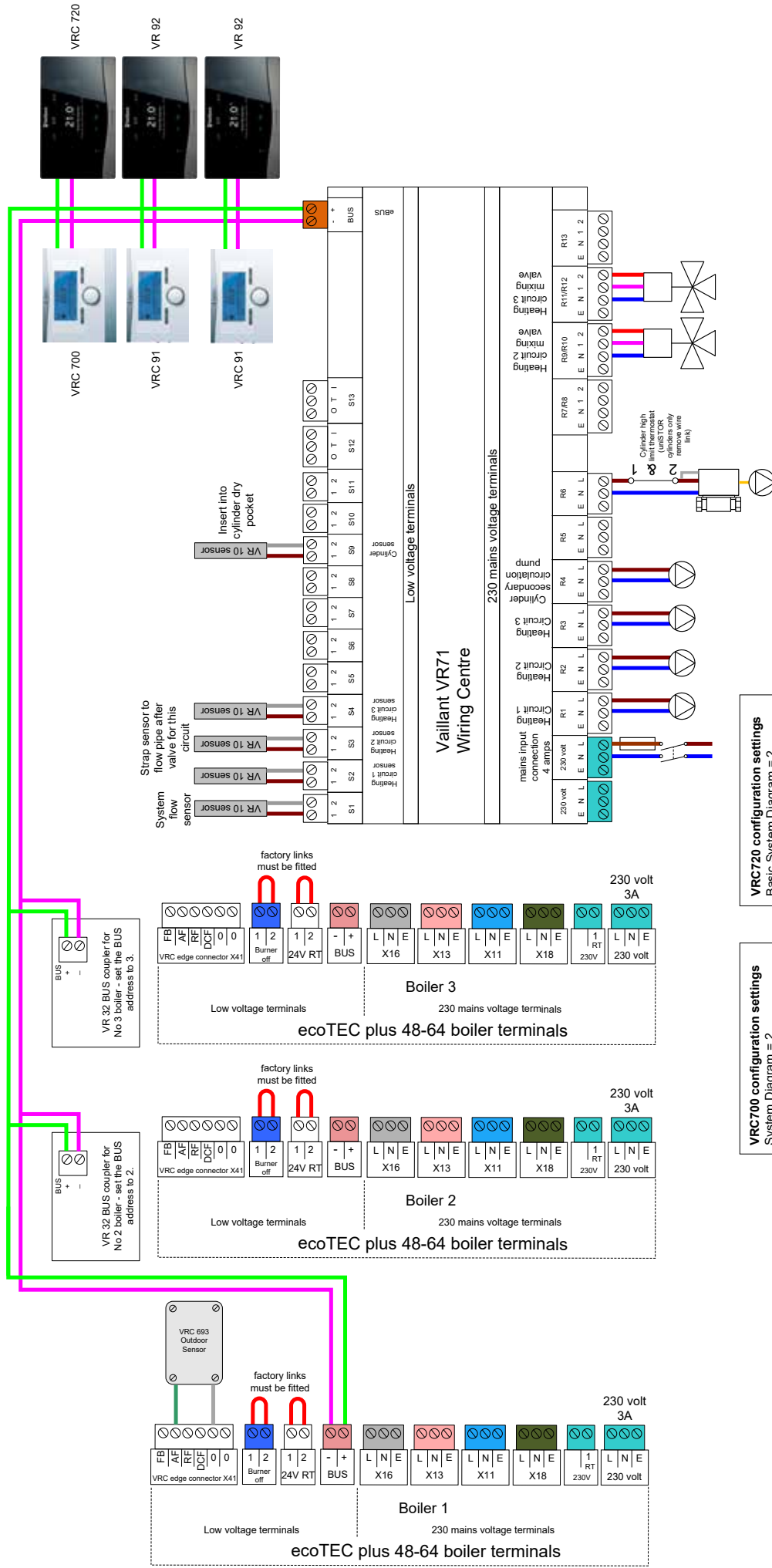
- 1. Boiler flow isolation valve (supplied only with ecoTEC)
- 2. Boiler return isolation valve (supplied only with ecoTEC)
- 3. Boiler safety valve (supplied only with ecoTEC)
- 4. Boiler shunt pump (supplied only with ecoTEC (internal))
- 5. Single check valve
- 6. Pressurisation unit
- 7. Expansion vessel
- 8. Heating pumps
- 9. System check valve
- 10. Heating circuit mixing valve
- 11. Auto-bypass valve
- 12. Cylinder primary pump
- 13. Cylinder motorised valve
- 14. Dirt separator or strainer
- 15. Plate heat exchanger (available as an accessory)
- 16. Plate heat exchanger, VR 10 sensor (supplied with VRC 71)
- 17. Heating circuit VR 10 sensor (supplied with VR 71)
- 18. Cylinder VR 10 sensor (supplied with VR 71)
- 19. Cylinder high limit thermostat (supplied with uniSTOR cylinder)

Note: items are not supplied by Vaillant unless stated

**Wiring Colours**

- 1. Purple – eBUS
- 2. Light green – sensors
- 3. light blue – 230 volt

# ecoTEC plus 48 and 64 - wiring diagram



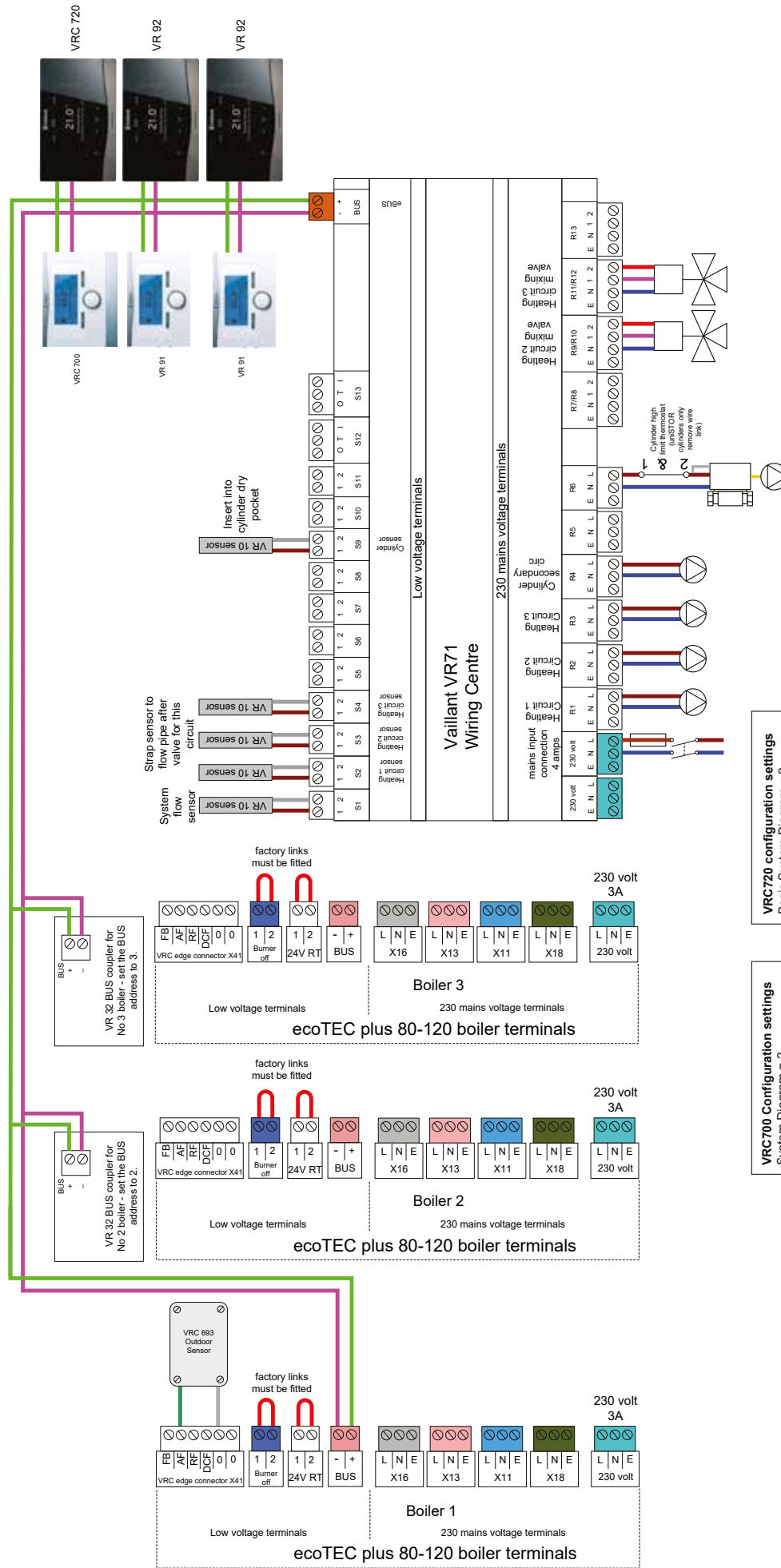
**VRC720 configuration settings**  
 Basic System Diagram = 2  
 FMS Configuration VR71 = 3  
 FMS MO circulation pump  
 Circuit Type = Heating 1,2&3  
 Room Temp Mod = Expanded  
 Zone 1,  
 =Activated: Yes  
 Zone assignment: Control  
 Zone 2,  
 =Activated: Yes  
 Zone assignment: Rem. contr. 1  
 Zone 3,  
 =Activated: Yes  
 Zone assignment: Rem. contr. 2

**VRC700 configuration settings**  
 System Diagram = 2  
 Configuration VR71 = 3  
 MA VR71 = Circ Pump  
 Heating 1, 2 & 3  
 Room Temp Mod = Thermostat  
 Zone 1  
 Zone assignment = VRC700  
 Zone 2  
 Zone assignment = VR91 address 1  
 Zone 3  
 Zone assignment = VR91 address 2

**NOTE:** Controls cannot be mixed, all VRC 700/VR91 Controls or all VRC 720/VR92 Controls



# ecoTEC plus 80, 100 and 120 - wiring diagram



**VRC720 configuration settings**  
 Basic System Diagram = 2  
 FM5 Configuration VR71 = 3  
 FM5 MO circulation pump  
 Circuit Type: Heating 1,2&3  
 Room Temp Mod = Expanded  
 Zone 1, =Activated: Yes  
 Zone assignment: Control  
 Zone 2, =Activated: Yes  
 Zone assignment: Rem. contr. 1  
 Zone 3, =Activated: Yes  
 Zone assignment: Rem. contr. 2

**VRC700 Configuration settings**  
 System Diagram = 2  
 Configuration VR71 = 3  
 MA VR71 = Circ Pump  
 Heating 1, 2 & 3  
 Room Temp Mod = Thermostat  
 Zone 1, Zone assignment = VRC700  
 Zone 2, Zone assignment = VR91 address 1  
 Zone 3, Zone assignment = VR91 address 2

**NOTE:** Controls cannot be mixed, all VRC 700/VR91 Controls or all VRC 720/VR92 Controls

# Industry leading training for industry leading engineers



## Training

At Vaillant, we pride ourselves on being at the forefront of technology and sharing our expertise. That's why, we offer a wide range of training courses to help support our installers and their businesses. Whether you're looking for online, practical or accredited courses, we can help find the right training journey for you.

## Why train with us?



### Nationwide training facilities

We have 8 training facilities across the UK, all of which are equipped with industry-leading products to support your learning.



### 341 years of expertise

The training team have hundreds of years combined expertise between them, so you can rest assured that you're learning from the best in the business.



### Hands-on learning

We strive to deliver a practical approach to training, with live boilers and heat pump installations for you to work on at every one of our centres of excellence.



### Courses for all skill levels

We provide training for all skill levels, from apprentices right through to experienced engineers.



### Loyalty rewards

Earn Advance rewards such as cashback, credits and exclusive invites to events when you train with us.



### Ongoing support

Our training team are committed to sharing knowledge, experience and content to support you throughout your Vaillant training journey.

Scan to learn more about our training courses



# Service and spares support



## Spares and support, year after year

Vaillant is committed to responsible spares provision and provides spares for a minimum of 15 years after production ceases. We have a nationwide network of genuine spares stockists and a dedicated spare parts team to help you identify the parts you require.

Vaillant has even developed an app that helps identify spare parts to make ordering easier. Simply search for Vaillant on Google Play or the App Store.

## Service you can count on

At Vaillant UK, we invest as much of our resources into our service and support as we do in creating our outstanding heating solutions. So you can rest assured that when you choose a Vaillant product, you will be supported by the best service in the industry. Vaillant has specialist teams available to support installers and end-users with all enquiries. We pride ourselves on the efficiency of our service departments, supported by online tools that allow our customers to book appointments for our services for added convenience.

Vaillant has over 250 service engineers. This includes the largest specialist fleet of renewable and commercial systems engineers in the UK. With phone operators available 364 days a year, service and support from Vaillant UK is never far away.

# Contacts

## Sales enquires

Vaillant sells its products through plumbing and heating merchants in the UK. For further information, contact your local Vaillant Regional Business Manager.

Phone: **0345 602 0262**

## Training

For information on training centres and courses in your area.

Phone: **0345 601 8885**

Email: [training@vaillant.co.uk](mailto:training@vaillant.co.uk)

## Service

For service information in your area.

Phone: **0207 022 0927**

Email: [commercial@vaillant.co.uk](mailto:commercial@vaillant.co.uk)

## Technical enquiries

If you have a technical query, you can contact us by phone or email.

Phone: **0330 102 8570**

Email: [technical@vaillant.co.uk](mailto:technical@vaillant.co.uk)

## Advance support line

There's a Regional Business Manager near you to support your business, along with dedicated Advance support lines.

Call us: **0330 678 0878** or

Email us: [advance-support@vaillant.co.uk](mailto:advance-support@vaillant.co.uk)

## General enquiries

If you are unsure of who you need to speak to or you have a general enquiry, our friendly reception staff will happily point you in the right direction.

Phone: **0345 602 2922**

## System Sales and Design

At Vaillant, our expert System Sales and Design (SSAD) team provides installers with comprehensive heating system design support on their projects.

Phone: **0330 123 1767**

mail us: [systemdesignuk@vaillant.com](mailto:systemdesignuk@vaillant.com)

## Multi-Build Design Team

Email: [vaillant-design@vaillant.co.uk](mailto:vaillant-design@vaillant.co.uk)



Heating



Hot water



Renewables

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[www.vaillant.co.uk/for-installers](http://www.vaillant.co.uk/for-installers)

[info@vaillant.co.uk](mailto:info@vaillant.co.uk)

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