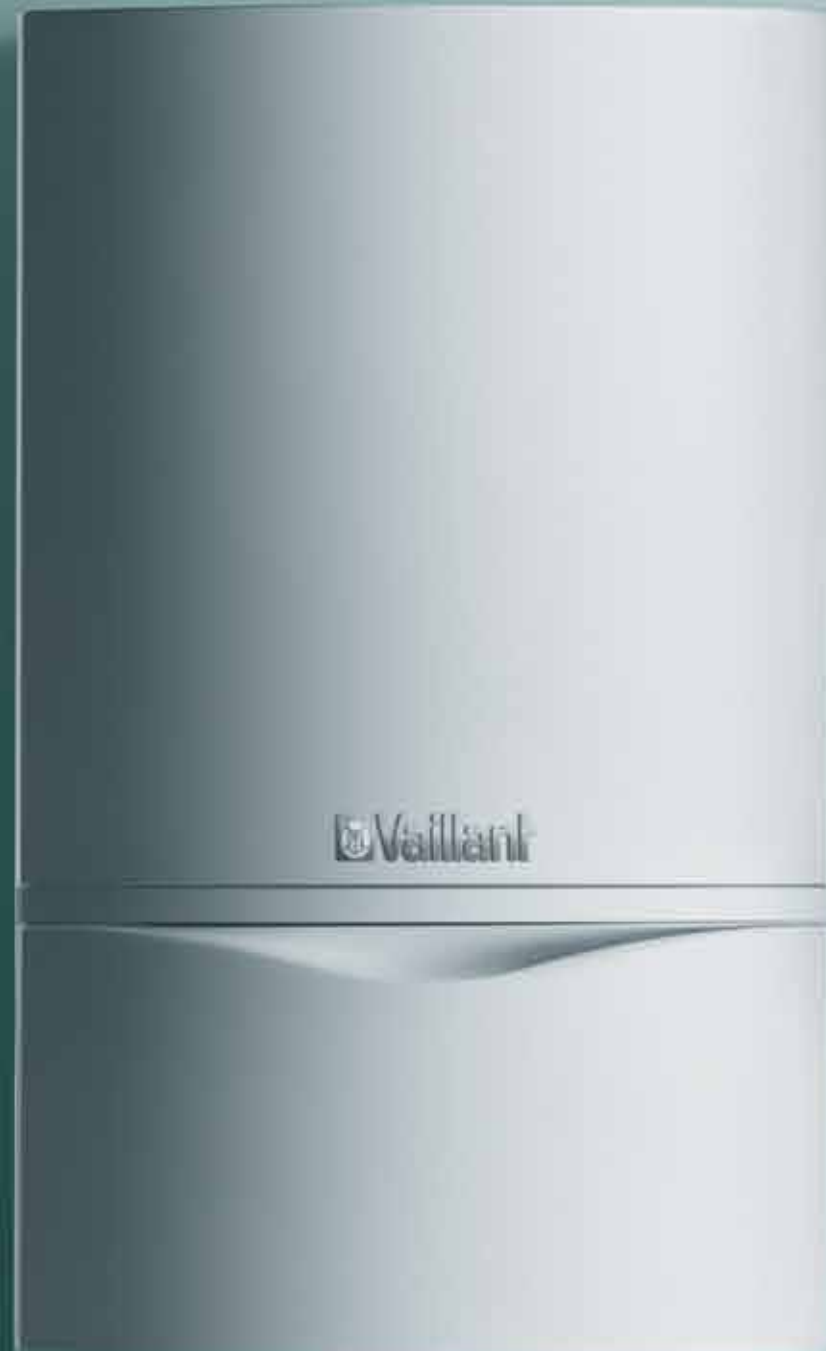# ecoTEC 46

High efficiency condensing gas system boilers

With a whole host of built-in features, installation and servicing of ecoTEC commercial boilers could not be more straightforward. Lightweight for its class, compact design, and a comprehensive range of flues, fittings and accessories means that ecoTEC boilers can be sited almost anywhere. For larger buildings, or buildings with more complex layouts, multiple boilers can be installed in cascade to provide a highly effective and extremely efficient heating system. They are configured to automatically optimise heat and hot water supply according to the demands on the system at any particular time.

- **Range**
  - heat output range (heating 50/30ºC) 12.9 - 46.4kW
  - heat output range (heating 80/60ºC) 12.3 - 44.1kW

- Push-fit flue system
- Full range of intelligent eBUS controls including weather compensators and multiple boiler management controls available

High performance

- High efficiency SEDBUK 2005 band 'A' rating
- Fully modulating low NOx burner and fan (Class 5)
- Heating output up to 46kW
- Stainless steel heat exchanger

Easy installation

- Case dimensions:
  - H800mm x W480mm x D450mm
- Connections:
  - 1 $^1/_4$" female BSP flow and return service valves
  - 1" female BSP gas service valve
  - Gas - 20mm with adapter for 1" (ecoTEC 46)
  - Pressure safety valve outlet - $^3/_4$" female BSP
  - Condensate - 19mm
  - Combined filling/emptying valve on return pipe
  - All major components built-in:
  - Condensate trap
  - Energy saving 2-stage frost protection
- 0 - 10v compatible for BEMS applications (via VR34 accessory)
- 8m head shunt pump
- Pressure sensor to monitor system pressure via diagnostics
- Flow sensor to monitor water flow through boiler
- Air separator with auto air vent and filter for bleeding system and filtering of fine particles

Flexible siting

- Flue lengths up to 18m horizontal or 21m vertical with 125mm flue
- Optional 125mm stainless façade kit available
- 3 bar PRV
- IP X 4D electrical safety rating
- No compartment ventilation needed*
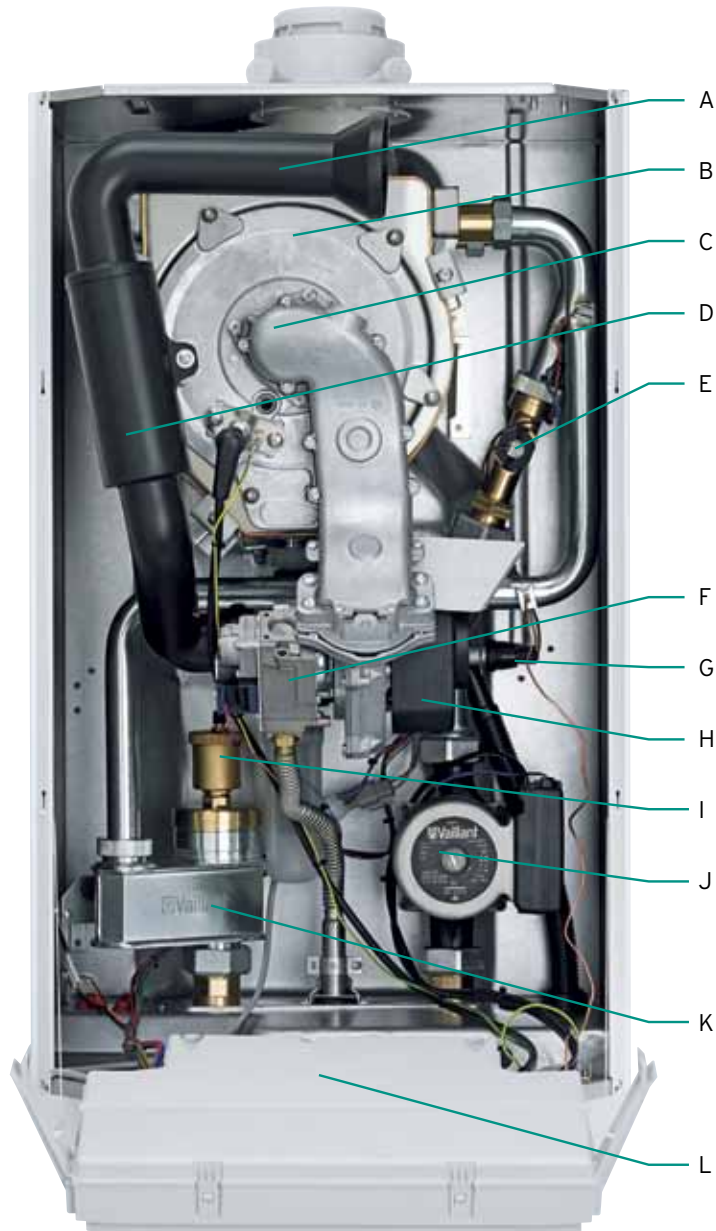
Easy service and repair

- Built-in comprehensive boiler status/diagnostic display system
- Blue backlit display for easy reading
- Easy access to all components from the front
- Single electronic circuit board
- Flue gas analysis point

Quality and reliability

- Stainless steel heat exchanger
- Production to ISO 9001
- 2-year guarantee on boiler
- Commissioning service available

Key components

Key
A Air intake
B Heat exchanger
C Burner
D Silencer
E Flow switch
F Gas valve
G Pressure switch
H Fan
I Automatic air vent
J Pump
K Air separator
L Electronics/PCB
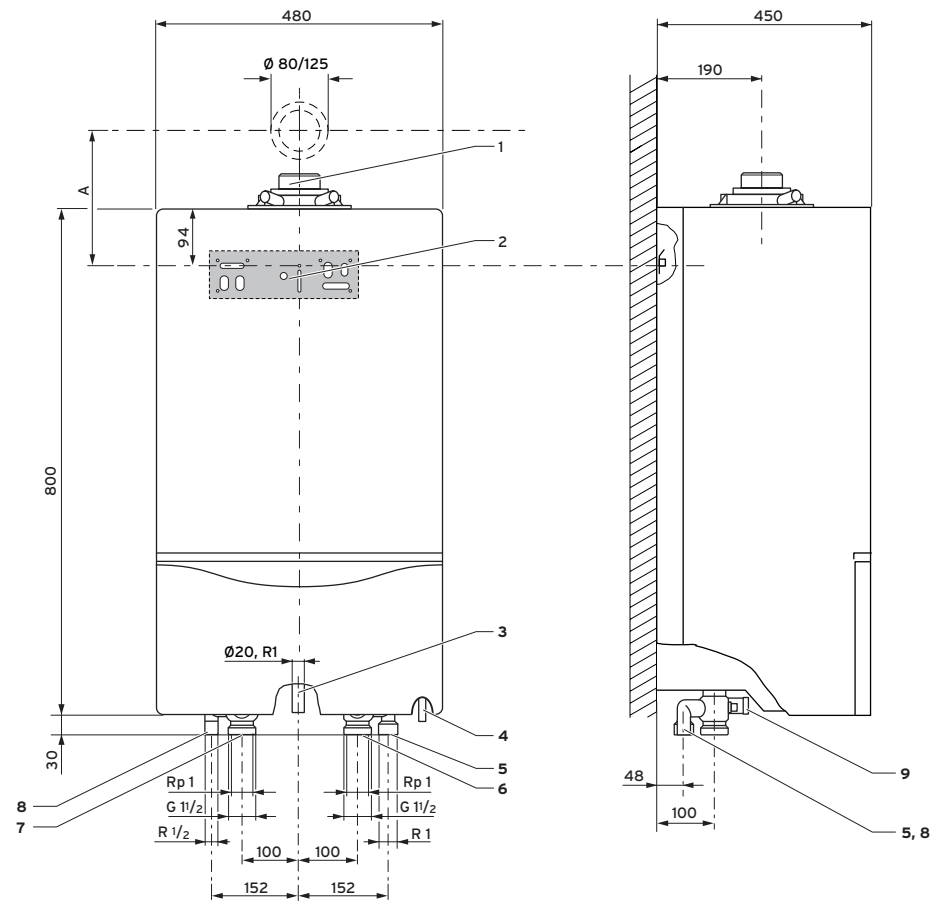
Service valves

Flow and return isolation valve

Gas isolation valve

All ecoTEC boilers are supplied with the above
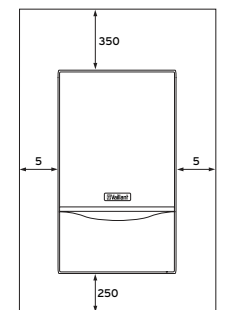
Connections and dimensions

Connection dimensions in mm

Key
1. Flue gas connection, 80/125mm diameter, dimension A (hanging bracket - centre of air/flue gas pipe) with 87° elbow: 253mm
2. Hanging bracket
3. Gas pipe, 20mm diameter, gas connection R1"
4. Connection for condensate drain pipework
5. Connection for expansion vessel
6. Connection for heating return
7. Connection for heating flow
8. Connection for expansion relief valve
9. Filling device (combined filling and emptying valve)

Required minimum gaps/assembly clearances
For the installation/assembly of the boiler as well as for carrying out future maintenance tasks, you need the minimum gaps and assembly clearances given above.
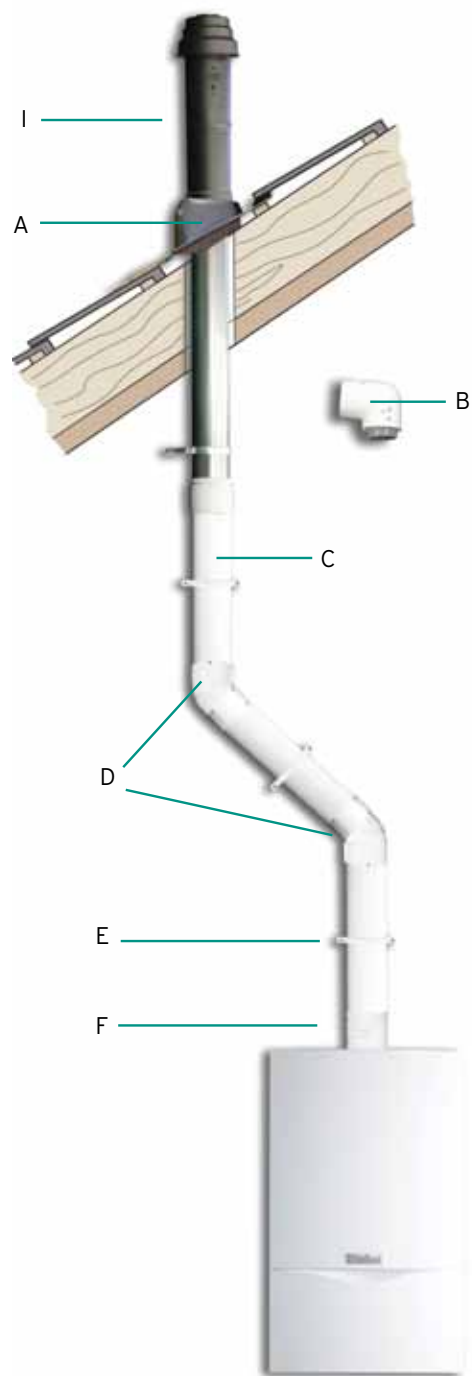
Technical specifications

ecoTEC		46
Article number		0010004139
Heat output range (heating 50/30ºC)	kW	12.9 - 46.4
Heat output range (heating 80/60ºC)	kW	12.3 - 44.1
Maximum heat input (net)	kW	45
SEDBUK 2005 rating		A
SEDBUK 2009 annual efficiency	%	89.1
Part L2 seasonal efficiency (natural gas)	%	95.8
Part L2 seasonal efficiency (LPG)	%	98.0
Net efficiency @ 100% load	%	98.4
Net efficiency @ 30% load	%	108.3
Inlet gas working pressure required (natural gas)	mbar	20
Inlet gas working pressure required (LPG)	mbar	37
NOx class		5
NOx levels	mg/kWh	36
CO_2 percentage (after 5 minutes full load +/- 1)	%	8.8
Maximum CO level	ppm	150
Gas rate (natural gas)	m^3/h	4.8
Gas rate (LPG)	kg/h	3.5
Water flow rate (when $\Delta T = 20K$)	l/h	1935
Available pump head (without check valve)	mbar	280
Available pump head (with check valve)	mbar	190
Pressure drop across the heat exchanger (at full load and 20K temperature difference)	mbar	350
Maximum flow temperature	ºC	85
Maximum operating primary pressure	bar	3
Minimum operating primary pressure	bar	0.8
Condensate volume (pH value: 3.0-4.0)	l/h	4.5
Electrical connection	V / Hz	230 / 50
Electrical power consumption min./max. (with integrated pump)	W	138 / 180
Electrical protection rating	-	IP X 4 D
Dimensions		
Height	mm	800
Width	mm	480
Depth	mm	450
Lift weight	kg	46
Water content	l	4.5
Flue		
Flue gas mass flow min./max	g/s	5.7 / 20.5
Flue gas temperature min./max.	ºC	40 / 70
Maximum length of concentric flue horizontal	m	18
Maximum length of concentric flue vertical	m	21
Connections		
Heating flow/return (isolation valve size)		1¼" female BSP
Gas isolation valve size		1" female BSP
Pressure safety valve outlet		¾" female BSP
Condensate drain	mm	19
Flue connection	mm	80/125

Flue accessories

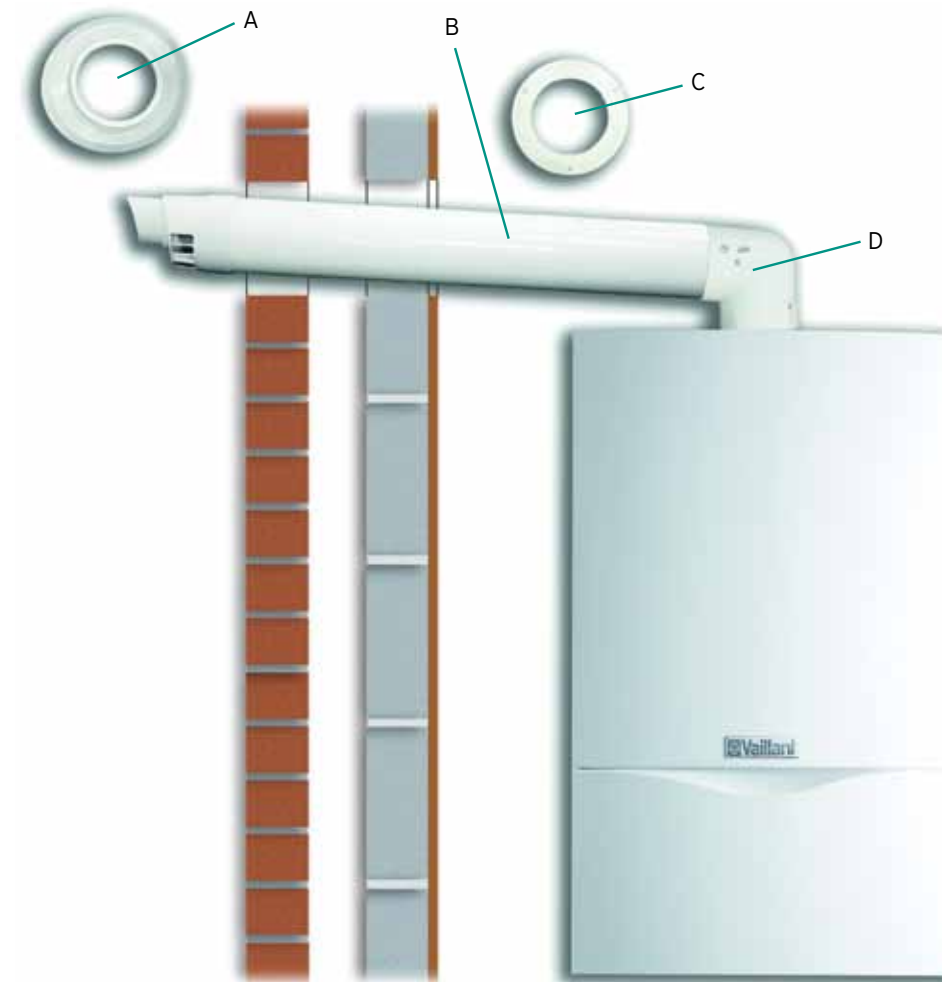|	ecoTEC
	46
Max. permissible length of concentric flue	21.0m without elbow
	Maximum length of flue is reduced by 2.5m for each additional 87° elbow
	Maximum length of flue is reduced by 1.0m for each additional 45° elbow

Key

A Adjustable roof tile for pitched roofs (009076)

B 87° elbow (303210)

C Flue extension pieces:
470mm extension (303202)
970mm extension (303203)
1970mm extension (303205)

D 45° elbow (2 of) (303211)

E Flue support clips - pack of 5 (303616)

F Sliding sleeve (303215)

G Flat roof penetration collar (009056)

H Vertical flue duct & terminal (303200)

I Lead slate penetration seal for pitched roofs (303980)

80/125mm concentric horizontal flue

Key
A - D Horizontal flue terminal (303209)

	ecoTEC
	46
Max. permissible length of concentric flue	18.0m plus 1 elbow, 87°
	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