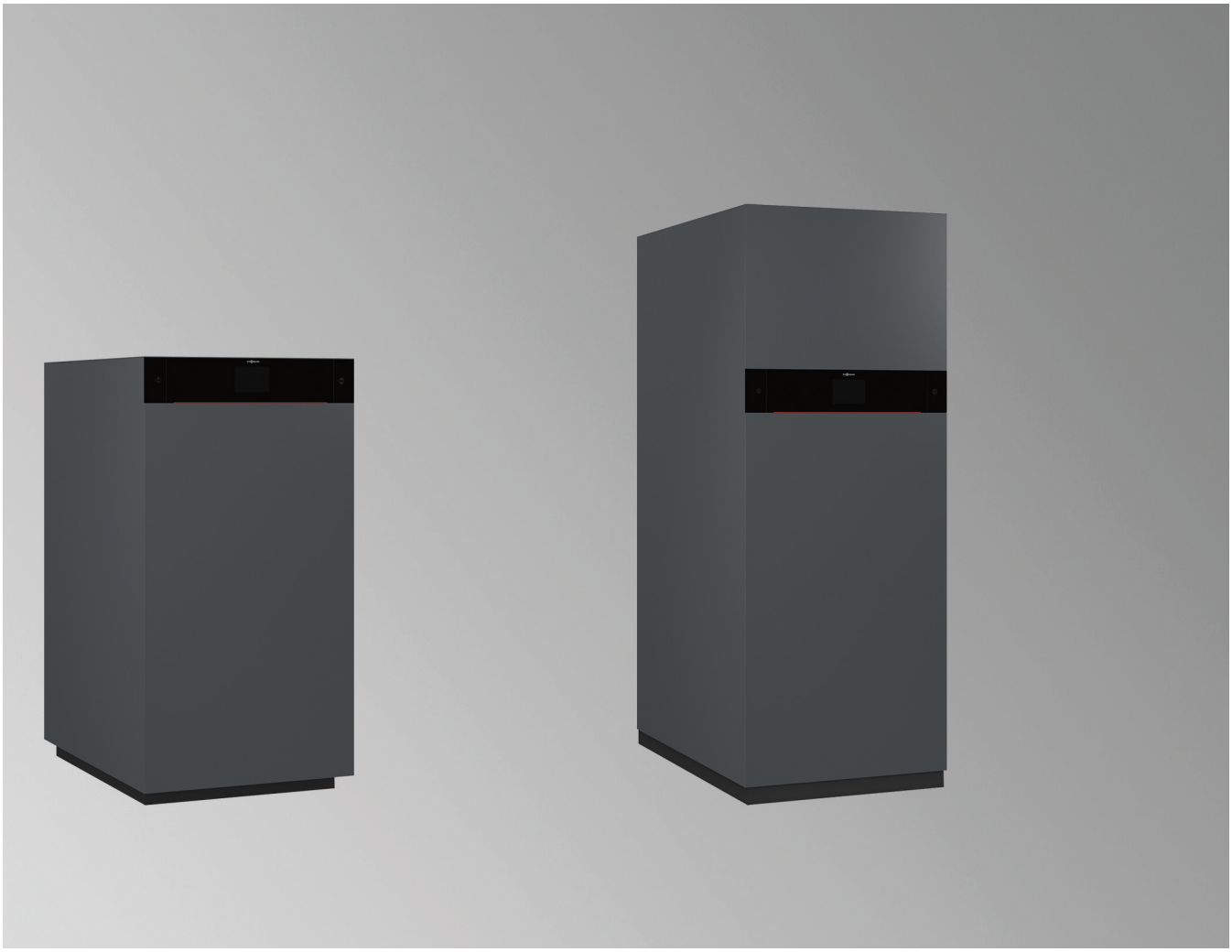
VIESMANN

VITOCROSSAL

Gas condensing boiler
80 to 640 kW

Datasheet

Part no. and prices: See pricelist

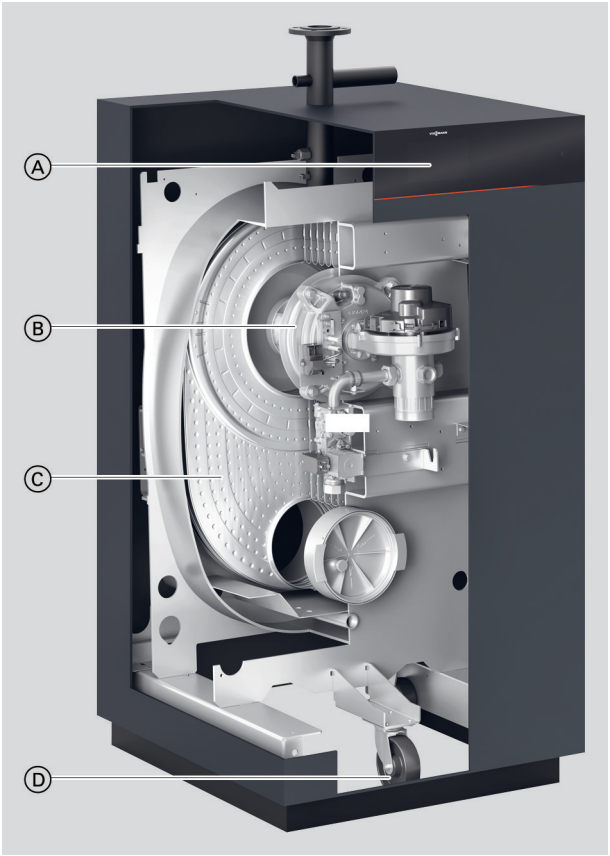


VITOCROSSAL 300 Type CI3

Gas condensing boiler for natural gas H/E, L and LPG P with an H_2 proportion of up to 20 % by vol. for open flue and room sealed operation (accessories)
With modulating MatriX cylinder burner with O2 combustion control

Benefits at a glance

- Condensing unit with MatriX cylinder burner with O_2 combustion control, 80 to 636 kW. Version up to 318 kW as single boiler with one burner; from 480 kW as twin boiler with 2 burners
- Boiler available as a fully wired and pre-assembled unit
- Standard seasonal efficiency [to DIN] up to 97.3 % (Hs) [gross cv]
- High operational reliability and a long service life due to corrosion-resistant Inox-Crossal heat exchanger made from stainless steel
- Low-wear operation due to extremely wide modulation range with the twin version, resulting in long burner runtimes and greatly reduced cycling
- MatriX cylinder burner with O_2 combustion control for reduced maintenance, improved efficiency, environmentally friendly operation and lower consumption costs. Modulation range down to 1:10
- 7-inch colour touchscreen with plain text and graphic display. One control platform for all applications, such as heating circuit and cascade control as well as DHW heating. For constant temperature or weather-compensated mode
- Clean combustion through self-calibrating, gas-adaptive combustion control (NOx category 6)
- Space saving and compact; integral castors and well fitted packaging make it ideal where access to the boiler room is difficult



Ⓐ Viessmann One Base programming unit
Ⓑ Modulating MatriX cylinder burner with self-calibrating O_2 sensor
Ⓒ Inox-Crossal heat exchanger made from stainless steel
Ⓓ Integral castors for easy transport

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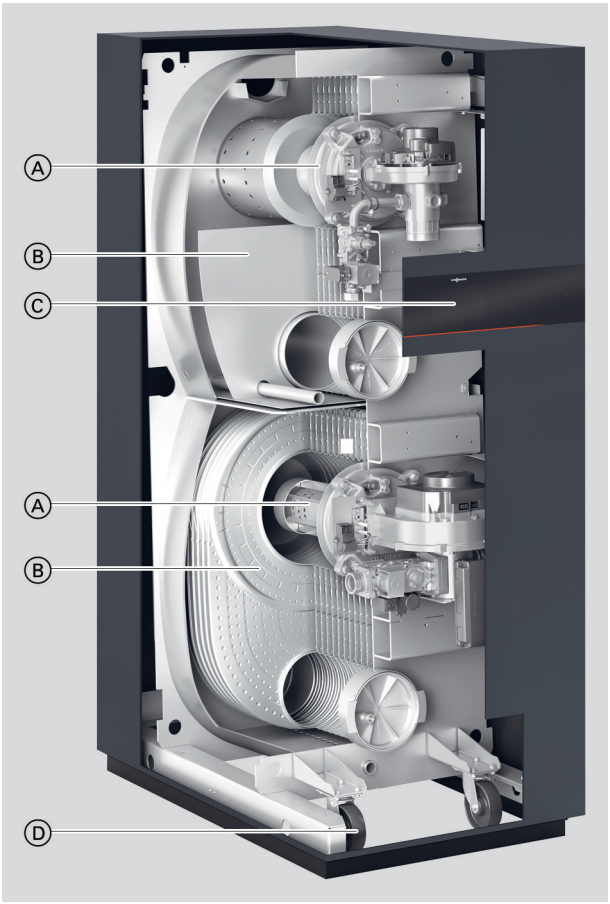
Benefits at a glance (cont.)



Ⓐ Modulating MatriX cylinder burner with self-calibrating O_2 sensor
Ⓑ Inox-Crossal heat exchanger made from stainless steel
Ⓒ Viessmann One Base programming unit
Ⓓ Integral castors for easy transport

Boiler specification

Vitocrossal 300	Type	CI3 80	CI3 115	CI3 160	CI3 240	CI3 320	CI3 480	CI3 560	CI3 640
Max. rated heating output									
P_{cond}: T_F/T_R = 50/30	kW	81.2	116.3	161.1	242.3	320.1	479.7	562.3	639.0
P_n: T_F/T_R = 80/60	kW	73.1	105.1	146.1	221.0	294.0	441.1	516.4	585.0
Max. rated heat input	kW	75	108	150	226	300	450	528	600
Product ID		CE-0085DO0445							
Burner	kW	160	160	160	300	300	1 x 160, 1 x 300	2 x 300	2 x 300
Permiss. operating temperature	°C	95							
Permiss. flow temperature (= safety temperature)	°C	110							
Max. permiss. operating pressure	bar	6							
	MPa	0.6							
Min. permiss. operating pressure *1	bar	1							
	MPa	0.1							
Test pressure	bar	7.8							
	MPa	0.78							
Power consumption									
– At rated heating output	W	119	244	299	384	482	783	625	975
– At partial load	W	46	51	58	64	72	133	191	221
Total dimensions incl. casing, boiler flow and return; excl. boiler flue connection									
Length	mm	1005	1005	1005	1212	1212	1430	1430	1430
Width	mm	750	750	750	750	750	750	750	750
Height	mm	1630	1630	1630	1630	1630	1998	1998	1998
Foundation dimensions									
Length	mm	850	850	850	1100	1100	1350	1350	1350
Width	mm	800	800	800	800	800	800	800	800
Height	mm	100	100	100	100	100	100	100	100
Weight									
Total unit weight, dry	kg	358	358	358	437	437	822	893	893
Water capacity	l	102	102	102	184	184	423	380	380
Connections									
Boiler flow		PN 6 DN 50			PN 6 DN 65		PN 6 DN 100		
Boiler return		PN 6 DN 50			PN 6 DN 65		PN 6 DN 100		
2nd boiler return		PN 6 DN 50					PN 6 DN 65		
Gas connection	R	1¼	1¼	1¼	1½	1½	2	2	2
Flue gas connection	mm	150	150	150	200	200	250	250	250
Safety connection	R	1¼	1¼	1¼	1¼	1¼	1½	1½	1½
Drain	R	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼
Trap with condensate drain	mm	32	32	32	32	32	32	32	32
Flue gas parameters *2									
Temperature (at a return temperature of 30 °C)									
– At rated heating output	°C	45	45	45	45	45	45	45	45
– At partial load	°C	35	35	35	35	35	35	35	35
Temperature (at a return temperature of 60 °C)	°C	65	65	65	65	65	65	65	65
Mass flow rate (for natural gas)									
– At rated heating output	kg/h	116	167	232	350	465	697	818	929
– At partial load	kg/h	23	23	23	46	46	23	46	46

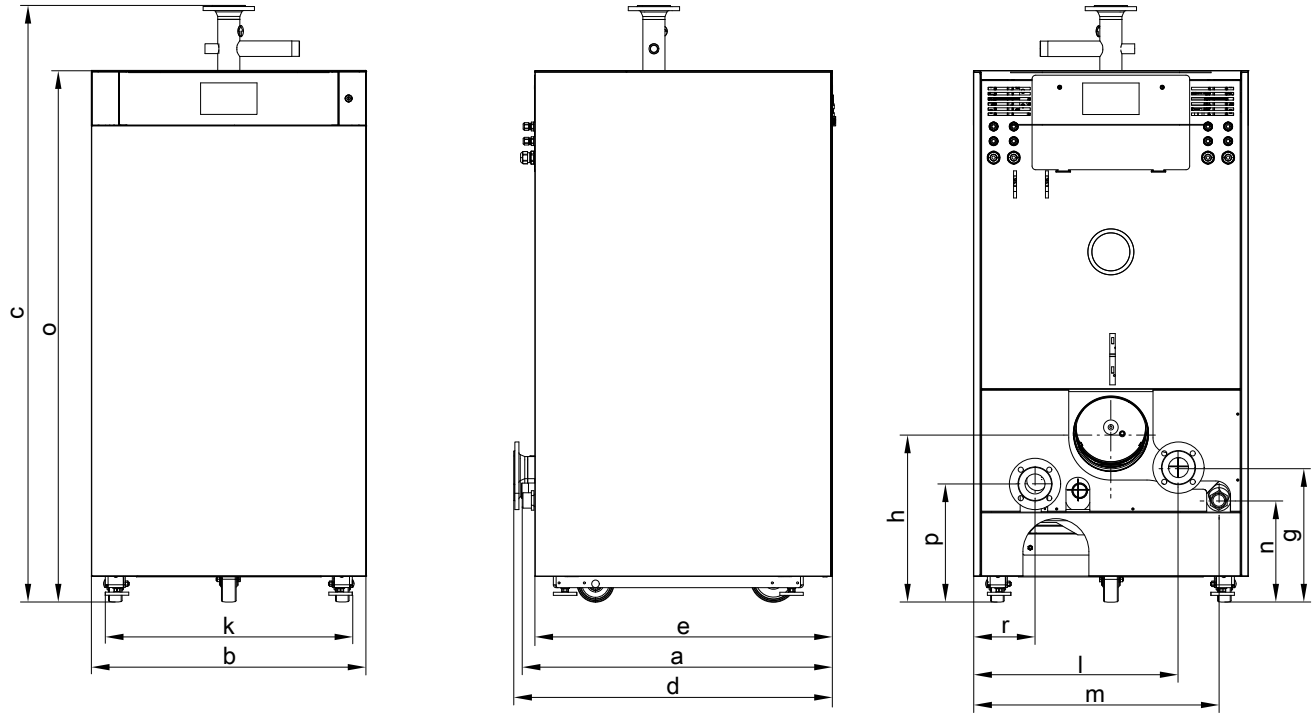
*1 *The minimum operating pressure is essential for safe operation.*

*2 *Values for calculating the size of the flue system to EN 13384, based on 10 % CO_2 for natural gas*
Flue gas temperatures measured as gross values at 20 °C combustion air temperature.
The details for partial load refer to an output of 30 % of rated heating output. If the partial load differs (subject to burner operating mode), calculate the flue gas mass flow rate accordingly.

Boiler specification (cont.)

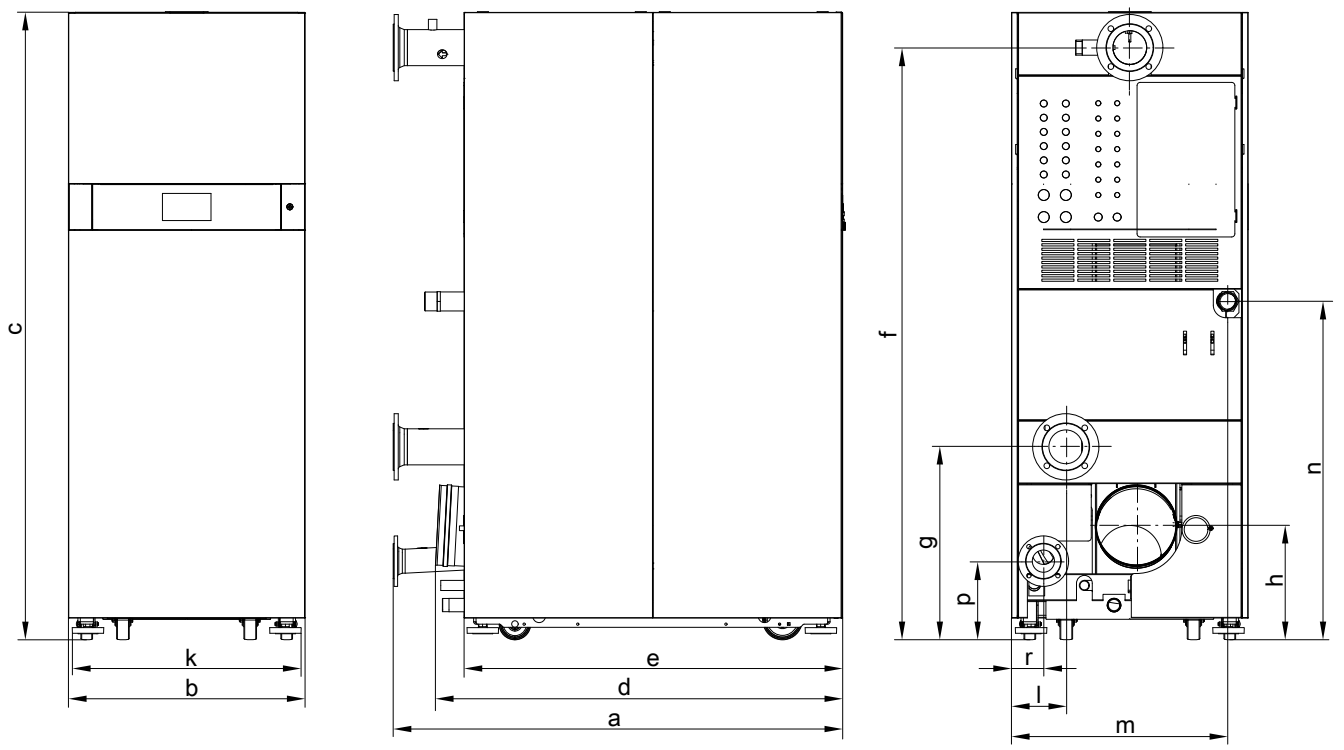
Vitocrossal 300	Type	CI3 80	CI3 115	CI3 160	CI3 240	CI3 320	CI3 480	CI3 560	CI3 640
Flue gas connection	mm	150	150	150	200	200	250	250	250
Available draught at the flue outlet (blank)	Pa	200							
Flue outlet	mbar	2							
Max. permissible overpressure in the header of the flue gas cascade*3	Pa	70							
	mbar	0.7							
NOx		NOx class 6, < 56 mg/kWh							

Boiler dimensions



*3 *In order to avoid mutual interference of the burners (operational reliability), the max. permissible draught in the header (connection pipe) must not be exceeded in overpressure cascade flue systems.*

Boiler specification (cont.)

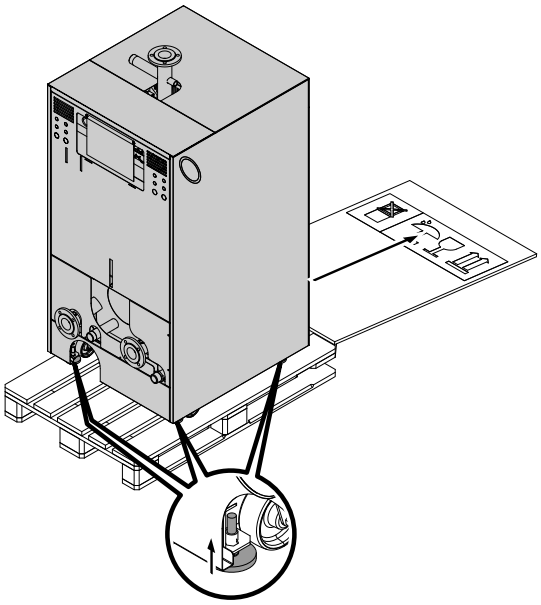


Dimensions

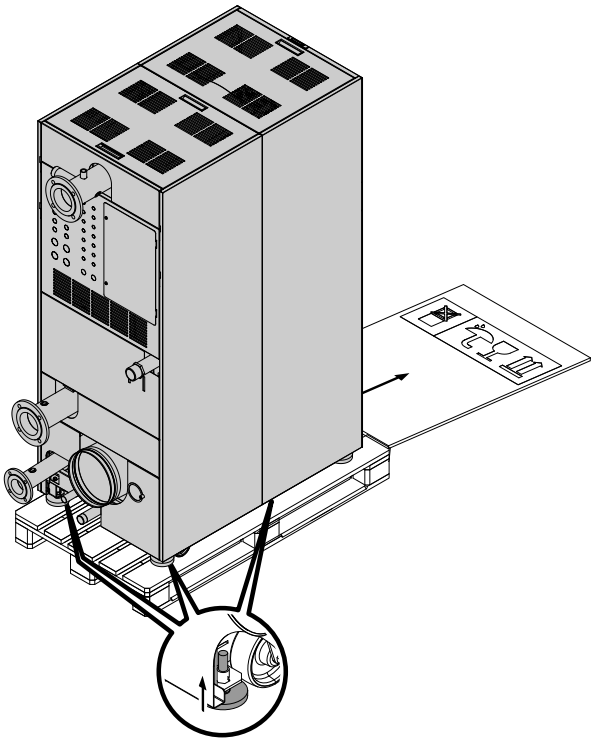
Type	CI3	80, 115, 160	240, 320	480, 560	640
a	mm	1005	1212	1430	1430
b	mm	750	750	750	750
c	mm	1630	1630	1998	1998
d	mm	1010	1238	1273	1273
e	mm	812	1040	1200	1200
f	mm	–	–	1877	1877
g	mm	367	355	611	611
h	mm	434	434	1072	1072
k	mm	674	674	726	726
l	mm	560	560	172	172
m	mm	669	670	686	682
n	mm	277	277	1072	1072
o	mm	1449	1449	–	–
p	mm	295	310	246	246
r	mm	168	168	101	101

Handling

The boiler is supplied as a unit. With the help of the castors, the unit can be rolled to the site without lifting equipment if it is to be installed at ground level.



Vitocrossal 300, type CI3, 80 to 320



Vitocrossal 300, type CI3, 480 to 640

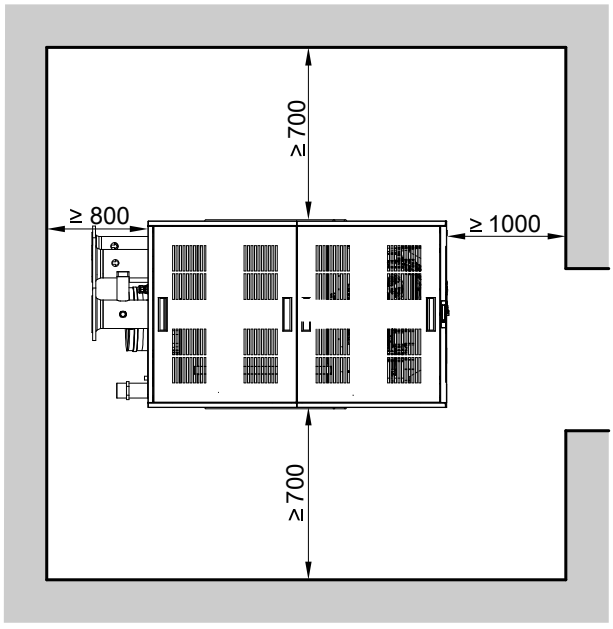
Alternative transport aids
Alternatively, the boiler can be moved by crane. To do this, remove the top panels and secure the crane ropes in the holes in the boiler.

Siting

Siting
- Prevent air contamination by halogenated hydrocarbons (e.g. as contained in sprays, paints, solvents and cleaning agents)
- Prevent very dusty conditions
- Prevent high levels of humidity
- Prevent frost and ensure good ventilation

Otherwise the system may suffer faults and damage.
In rooms where air contamination from halogenated hydrocarbons is to be expected, the boiler may only be operated in room sealed mode.

Clearance dimensions



Clearance dimensions using the Vitocrossal 480 to 640 as an example

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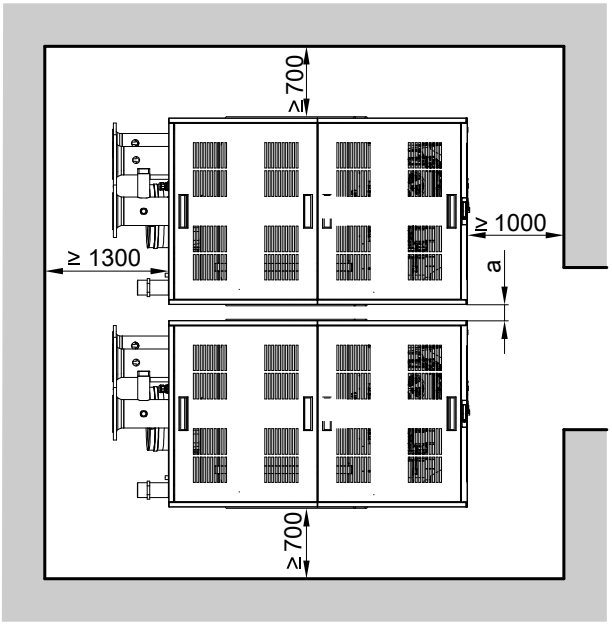
Boiler specification (cont.)



Clearance dimensions for 2 boilers 480 to 640 (two-boiler system)

Dimension a

Without accessories: Recommendation	mm	50
With flue gas header as accessory	mm	50 to 180
With hydraulic system pipework as accessory	mm	50

MatriX cylinder burner specification

Specification

Burner type		**160 kW**	**318 kW**
Product ID		See boiler	
Voltage	V	230	
Frequency	Hz	50	
Version		Modulating	
Dimensions			
Width a	mm	370	400
Length b	mm	485	735
Height c	mm	440	420
Weight Burner with gas solenoid valve without gas line	kg	11.3	16.1
Gas supply pressure G20/G25			
Nominal flow pressure of natural gas	mbar	20	
	kPa	2	
Min. flow pressure of natural gas	mbar	17	
	kPa	1.7	
Max. flow pressure of natural gas*4	mbar	25	
	kPa	2.5	
Gas connection	R	1¼	1½
Supply values relative to the max. load with			
– Natural gas E (G20) partial load/	m^3/h	1.7	3.3
full load		15.7	31.9
– Natural gas L (G25) partial load/	m^3/h	1.8	3.8
full load		17.6	35.5

*4 *A separate gas pressure governor is required for higher supply pressure.*

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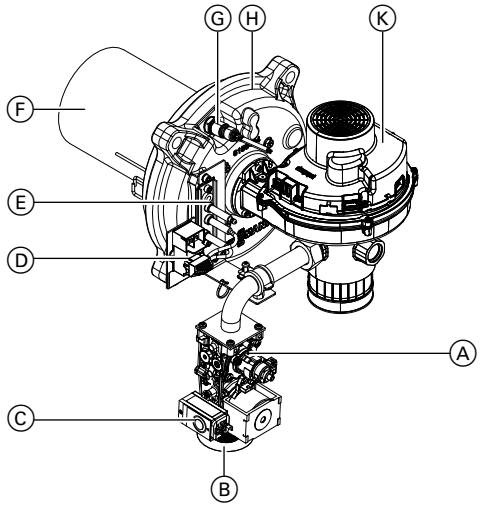
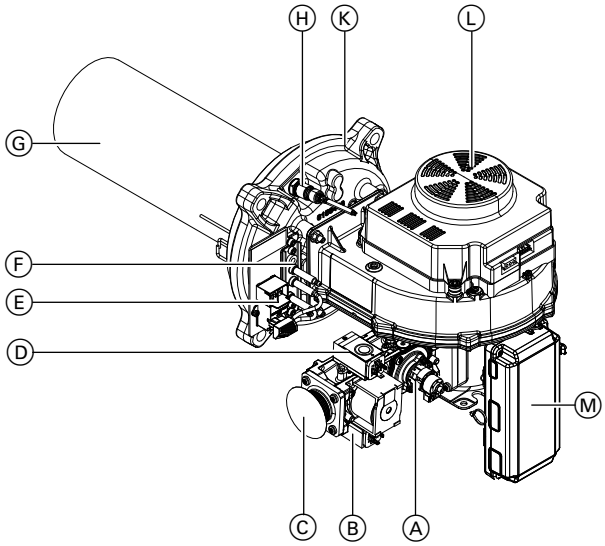
MatriX cylinder burner specification (cont.)



Burner 160 kW

Ⓐ Gas solenoid valve
Ⓑ Gas connection pipe
Ⓒ Gas pressure switch
Ⓓ Ignition module
Ⓔ Ignition and ionisation electrode block with sight glass
Ⓕ Burner gauze assembly
Ⓖ Lambda probe
Ⓗ Burner door
Ⓚ Gas fan



Burner 318 kW

Ⓐ Gas solenoid valve with gas pressure switch 1
Ⓑ Gas pressure switch 1
Ⓒ Gas connection pipe
Ⓓ Gas pressure switch 2
Ⓔ Ignition module
Ⓕ Ignition and ionisation electrode block with sight glass
Ⓖ Burner gauze assembly
Ⓗ Lambda probe
Ⓚ Burner door
Ⓛ Gas fan
Ⓜ E-Box CAN, valve electronics

Delivered condition

- Assembled and factory-tested as a unit with integral castors and adjustable feet
- Delivery on transport pallet with ramp
- Boiler flue connection and trap enclosed.
- Technical documentation

Boiler accessories

For accessories, see pricelist.

Operating conditions

For water quality requirements, see technical guide.

	Requirements
1. Heating water flow rate	None
2. Boiler return temperature (minimum value)	None
3. Low end boiler water temperature	None
4. Low end boiler water temperature with frost protection	10 °C – ensured through the Viessmann control unit
5. Modulating burner operation	None
6. Reduced mode	None – total reduction is possible.
7. Weekend setback	None – total reduction is possible.
8. Minimum operating pressure	1 bar (0.1 MPa)

Design information

Siting for room sealed operation

As an appliance of type C_{13}, C_{33}, C_{53}, C_{63} (not BE), C_{93} (80 to 320 kW only) to TRGI 2008, the Vitocrossal can be sited for room sealed operation.

Siting for open flue operation

B_{23}, B_{23P}

For open flue combustion equipment with a total rated output in excess of 50 kW, the fresh ventilation is deemed to have been verified if the combustion equipment is located in areas which provide an aperture or duct leading outdoors.

The cross-section of the aperture must be at least 150 cm^2 and must be 2 cm^2 larger for each additional kW above 50 kW rated output.

Pipes must be sized to provide equivalent flow rates. The required cross-section may be split over a maximum of two apertures or pipes.

Neutralisation

During condensation, acidic condensate is formed with a pH value of between 3 and 4.

Condensate can be neutralised in a neutralising system with the aid of a neutralising medium.

For further information, see the technical guide and price sheet.

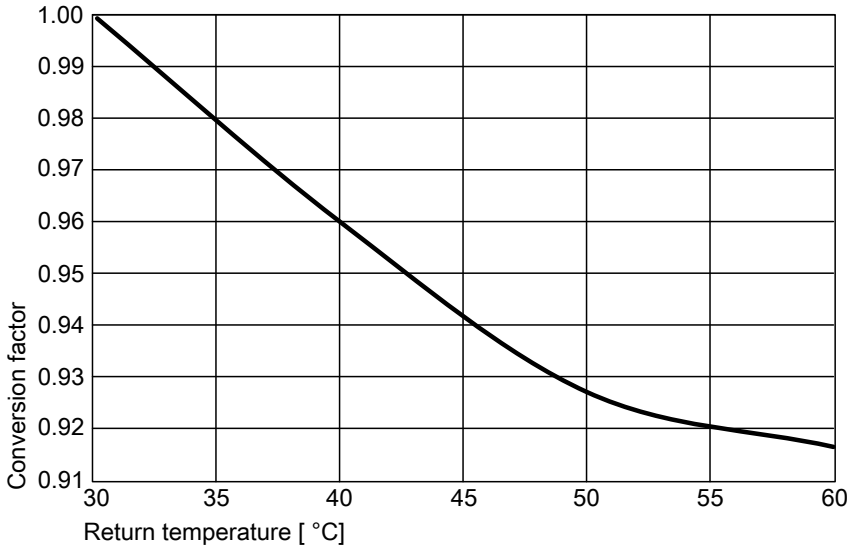
Burner adjustment

The MatriX cylinder burner is tested at operating temperature and preset at the factory, and is self-calibrating.

Design information (cont.)

Rated heating output

Rated heating output, conversion factors for various system design temperatures



Tested quality

CE designation according to current EC Directives

ÖVGW

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Subject to technical modifications.

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