

Datasheet

Part no. and prices: see pricelist



VITOROND 200 Type VD2

Low temperature oil/gas boiler
Three-pass boiler in cast sectional design
For operation with modulating boiler water temperature

Benefits at a glance

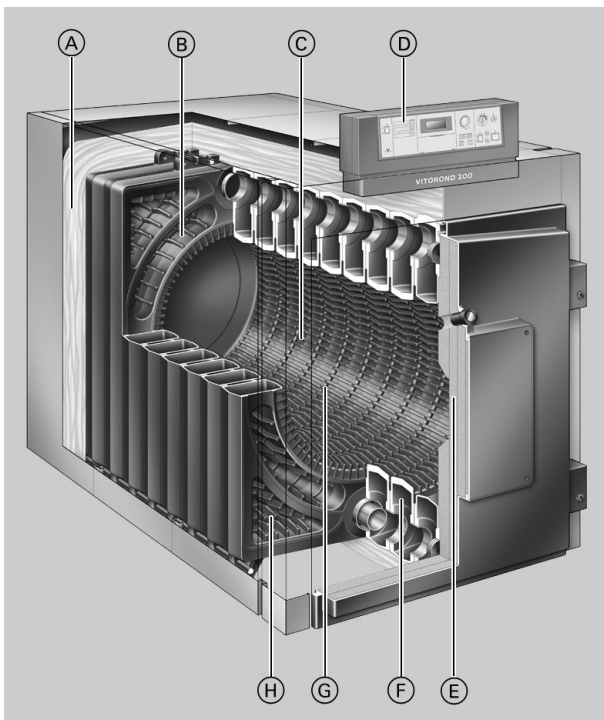
- Eutectoplex heating surface for high operational reliability and a long service life. The homogeneous structure of the special eutectic cast iron provides an even heat flux and prevents stress fractures.

The shape and geometry of the cast iron sections, the targeted water routing, and therefore even temperature distribution, further improve operational reliability.

- The sectional design and low weight of the individual sections ensure easy handling even in tight spaces.
- Three-pass boiler – for clean combustion with low nitrogen oxide emissions.
- Economical and environmentally responsible due to modulating boiler water temperature.

Standard seasonal efficiency [to DIN] for operation with fuel oil:
88 % (H_g) [gross cv] / 94 % (H_n) [net cv].

- Fast and straightforward assembly of individual cast sections due to double groove system and resilient seal for permanent hot gas tightness. The seal is held in place by a matching double groove system and is therefore not subject to any mechanical load.
- Fastfix assembly system for rapid and straightforward installation.
- Easy cleaning. A pivoting burner door makes the combustion chamber and hot gas flues easily accessible from the front.
- Economical and safe operation of the heating system is ensured by the digital Vitotronic control system with communication capability.
Standardised LON BUS for complete integration into building management systems. Optional integration into the Vitocontrol control panel.
- Can be combined with the hygienic Vitocell 100 DHW cylinder with Ceraprotect enamel coating or the Vitocell 300 in stainless steel.



- Ⓐ Highly effective thermal insulation
- Ⓑ Second hot gas flue
- Ⓒ Combustion chamber
- Ⓓ Vitotronic control unit – intelligent, easy to install, operate and maintain
- Ⓔ Thermal insulation on boiler door
- Ⓕ Wide water galleries
- Ⓖ Eutectoplex heating surface made from homogeneous special cast iron
- Ⓗ Third hot gas flue

Boiler specification

Specification

Rated heating output	kW	320	380	440	500	560	630	700	780	860	950	1080
Rated heat input	kW	348	413	478	543	609	685	761	848	935	1033	1174
CE designation		see page 9										
Number of sections		9	10	11	12	13	14	15	16	17	18	19
Permiss. operating temperature	°C	95	95	95	95	95	95	95	95	95	95	95
Permiss. flow temperature	°C	110	110	110	110	110	110	110	110	110	110	110
(= safety temperature)												
Permiss. operating pressure	bar	6	6	6	6	6	6	6	6	6	6	6
	MPa	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Pressure drop on the hot gas side*1	mbar	1.5	2.0	2.4	2.8	3.0	2.6	3.4	4.6	5.7	5.5	7.0
	Pa	150	200	240	280	300	260	340	460	570	550	700
Boiler shell dimensions												
Length (dimension g)	mm	1450	1580	1710	1840	1970	2100	2230	2360	2490	2620	2750
Width (dim. b)	mm	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030
Height (dim. e)	mm	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
Section dimensions												
Front section with boiler door	mm	1150 x 1030 x 270										
Centre section	mm	1150 x 920 x 125										
Back section with flue gas collector	mm	1150 x 920 x 290										
Overall dimensions												
Total length (dim. f)	mm	1490	1620	1750	1880	2010	2140	2270	2400	2530	2660	2790
Total width (dim. a)	mm	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090	1090
Total height with control unit (dim. d)	mm	1480	1480	1480	1480	1480	1480	1480	1480	1480	1480	1480
Maintenance height (control unit) (dim. c)	mm	1660	1660	1660	1660	1660	1660	1660	1660	1660	1660	1660
Height of anti-vibration boiler supports (under load)	mm	37	37	37	37	37	37	37	37	37	37	37
Foundation												
Length	mm	1330	1460	1580	1710	1830	1960	2080	2210	2330	2460	2580
Width	mm	1100	1100	1100	1110	1100	1100	1100	1100	1100	1100	1100
Weight												
Front section with boiler door	kg	240	240	240	240	240	240	240	240	240	240	240
Centre section	kg	160	160	160	160	160	160	160	160	160	160	160
Back section with flue gas collector	kg	230	230	230	230	230	230	230	230	230	230	230
Boiler shell	kg	1700	1860	2020	2160	2330	2470	2630	2790	2950	3090	3250
Total weight	kg	1780	1950	2110	2260	2430	2580	2740	2910	3070	3220	3380
Boiler with thermal insulation and boiler control unit												
Boiler water content	litres	247	275	303	331	359	387	415	443	471	499	527
Boiler connections												
Boiler flow and return	PN 16 DN	100	100	100	100	100	100	100	100	100	100	100
Safety flow *2	PN 16 DN	65	65	65	65	65	65	65	65	65	65	65
Safety return *2	PN 16 DN	65	65	65	65	65	65	65	65	65	65	65
Drain	R	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾

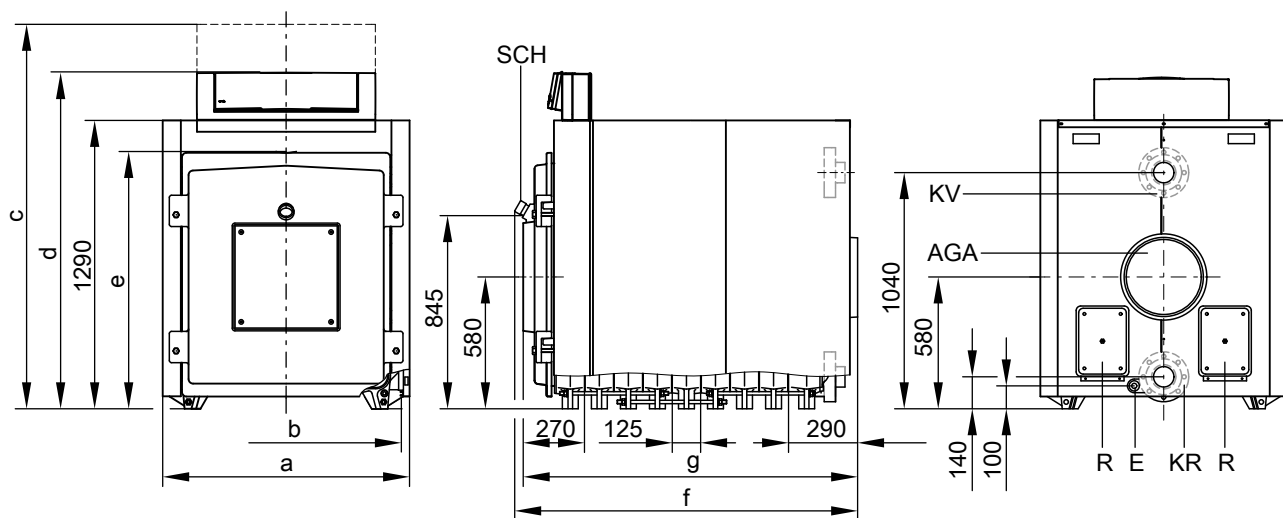
*1 The pressure drop on the hot gas side rises depending on the connection piece used on site.

*2 Connections on the boiler connection set (available as accessories).

Boiler specification (cont.)

Rated heating output	kW	320	380	440	500	560	630	700	780	860	950	1080
Flue gas parameters ^{*3}												
Temperature (at a boiler water temperature of 60 °C)												
– At rated heating output	°C	180	180	180	180	180	180	180	180	180	180	180
– At partial load	°C	130	130	130	130	130	130	130	130	130	130	130
Temperature (at a boiler water temperature of 80 °C)	°C	190	190	190	190	190	190	190	190	190	190	190
Mass flow rate (for fuel oil EL and natural gas)												
– At rated heating output	kg/h	536	637	736	838	938	1057	1174	1308	1442	1595	1810
– At partial load	kg/h	322	382	442	503	563	634	704	785	865	957	1086
Required draught	mbar/kPa	0	0	0	0	0	0	0	0	0	0	0
Flue outlet	Ø mm	300	300	300	300	300	300	300	300	300	300	300
Standard seasonal efficiency [to DIN]	%	88 (H ₂) [gross cv] / 94 (H ₁) [net cv]										
At heating system temperature 75/60 °C (for operation with fuel oil)												
Standby loss q _{B,70}	%	0.24	0.24	0.22	0.20	0.19	0.18	0.17	0.16	0.14	0.13	0.13

Dimensions



AGA Flue outlet
E Drain R ¼
KR Boiler return

KV Boiler flow
R Cleaning aperture
SCH Inspection port

^{*3} Values for calculating the size of the flue system to EN 13384, relative to 13 % CO₂ for fuel oil EL and 10 % CO₂ for natural gas.

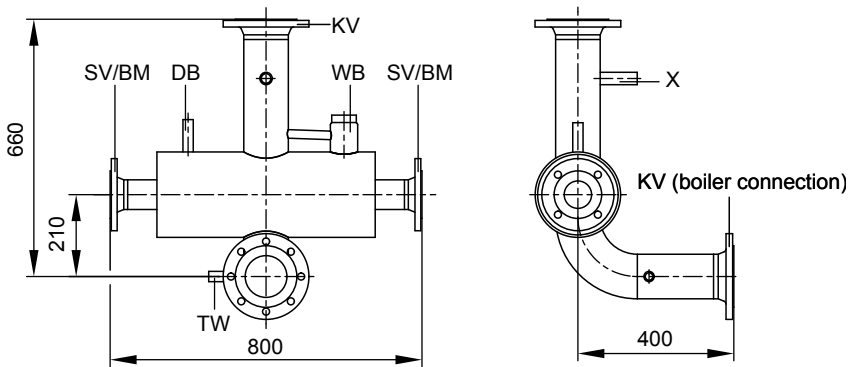
Flue gas temperatures as actual gross values at 20 °C combustion air temperature.

The details for partial load refer to an output of 60 % of the rated heating output. If the partial load differs from that stated above (subject to operating mode), calculate the flue gas mass flow rate accordingly.

Boiler specification (cont.)

Boiler connection set (accessories)

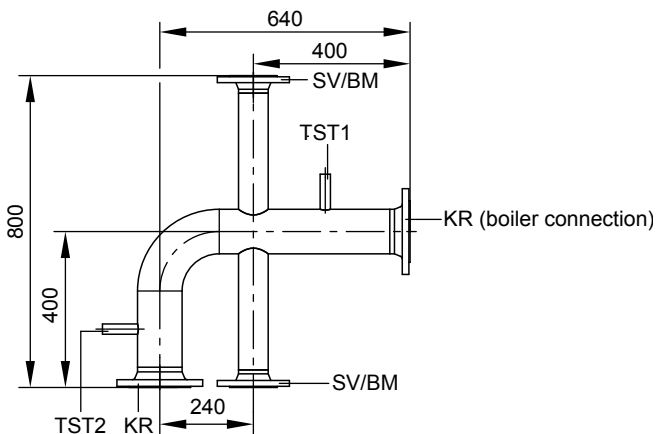
Comprising flow and return connection assemblies



Flow connection assembly

BM Connection PN 16 DN 65 for admixture
 DB Female connection R ½ for pressure limiter
 KV Connection PN 16 DN 100 for boiler flow
 SV Connection PN 16 DN 65 for safety flow (safety valve)

TW Female connection R ½ for additional temperature limiter
 WB Female connection R 2 for water level limiter
 X Female connection R ¾ for external connections



Return connection assembly (plan view)

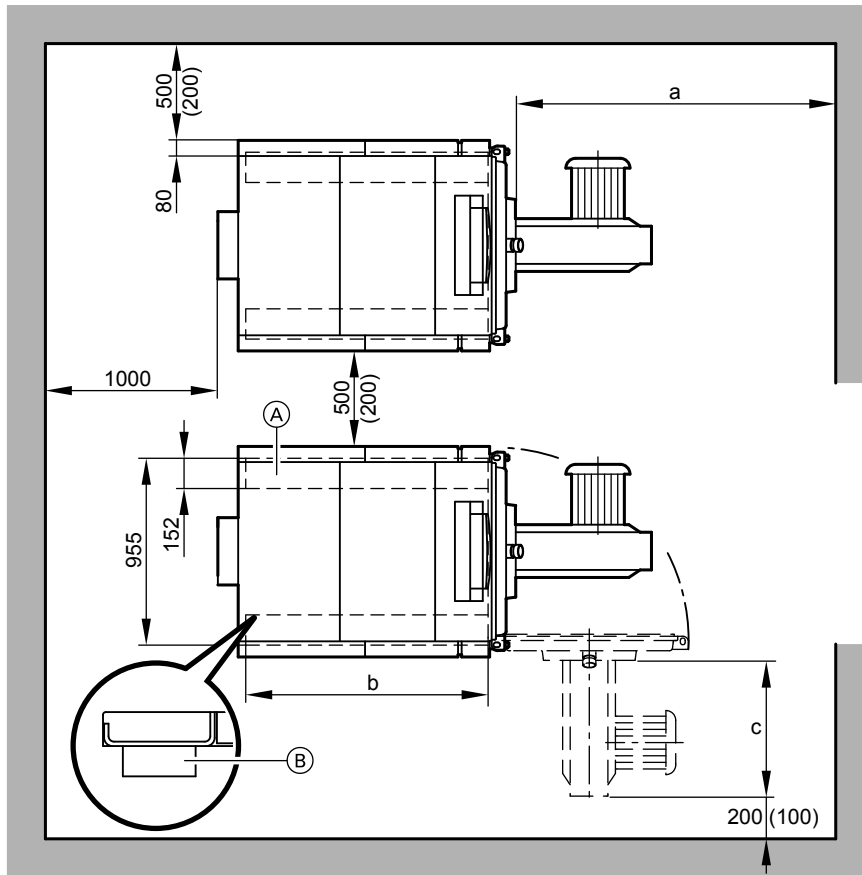
BM Connection PN 16 DN 65 for admixture
 KR Connection PN 16 DN 100 for boiler return
 SR Connection PN 16 DN 65 for safety return (diaphragm expansion vessel)

TST 1 Female connection R ½ for return temperature sensor or minimum temperature controller
 TST 2 Female connection R ½ for shunt pump temperature controller

Boiler specification (cont.)

Siting

Minimum clearances



- (A) Plinth (accessory)
 (B) Anti-vibration boiler supports

Rated heating output	kW	320	380	440	500	560	630	700	780	860	950	1080
a	mm	1660	1790	1920	2050	2180	2310	2440	2570	2700	2830	2960
b	mm	1240	1490	1740	1990	2240	2490					
c	mm	Installed burner length										

Observe the specified clearances to ensure easy installation and maintenance. Where space is tight, only the minimum clearances (dimensions in brackets) need to be maintained. In the delivered condition, the boiler door opens to the left. The hinge pins can be repositioned so that the door swings open to the right.

Siting conditions

- 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 through **halogenated hydrocarbons** may occur, install the boiler only if adequate measures can be taken to provide a supply of uncontaminated combustion air.

Burner installation

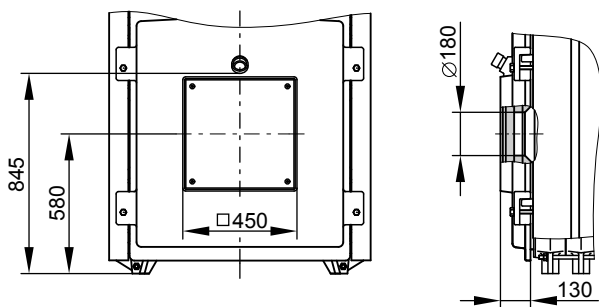
The burner must be fitted to the burner plate; mounting it directly onto the boiler door without a burner plate is not possible. Drill the burner plate supplied on site in accordance with the burner dimensions.

Note

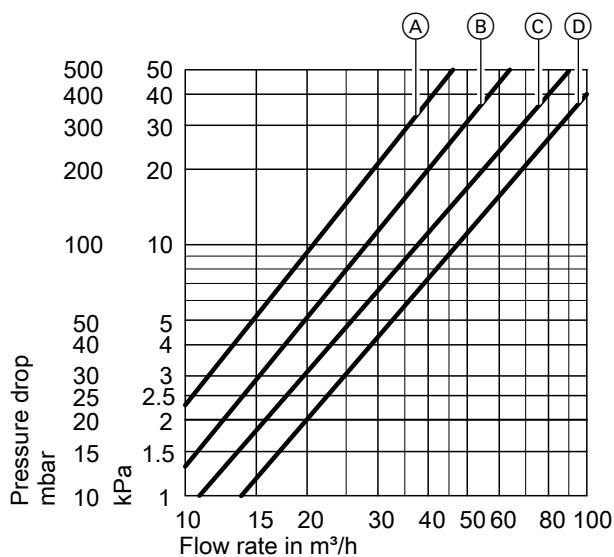
Minimum blast tube length 125 mm. For flame tubes with a diameter of 180 to 360 mm the aperture in the boiler door can be enlarged.

Burner plates may be factory fitted on request (chargeable option). If this is required, state the burner make and type when ordering. The flame tube must protrude from the thermal insulation of the boiler door.

Boiler specification (cont.)



Pressure drop on the heating water side



The Vitorond 200 is only suitable for fully pumped hot water heating systems.

- Ⓐ 320 to 440 kW
- Ⓑ 500 to 630 kW
- Ⓒ 700 to 860 kW
- Ⓓ 950 to 1080 kW

Boiler delivered condition

Boiler shell in individual sections on pallets.

The boiler door is fitted to the front section. The flue outlet with attached cleaning covers, the mating flanges and gaskets are fitted to the back section.

- 3 Boxes with thermal insulation and cleaning brush
- 1 Bag containing the technical documentation for the boiler
- 1 Box with boiler control unit and bag containing the technical documentation for the boiler control unit

- 1 Burner plate
- 1 Coding card
- 1 Pallet with boiler accessories comprising sight glass, sensor well, anchor rods, connectors, packing cords, adhesive, linseed oil graphite, turbulators (320 to 860 kW) and manifold

Control unit versions

For single boiler systems:

- **Vitotronic 100** (type GC1B)
Boiler control unit for constant boiler water temperature
- **Vitotronic 200** (type GW1B)
Weather-compensated boiler control unit
- **Vitotronic 300** (type GW2B)
Weather-compensated boiler and heating circuit control unit for up to 2 heating circuits with mixers

- **Vitotronic 200-H** (type HK1B or HK3B)
Weather-compensated heating circuit control unit for 1 or up to 3 heating circuits with mixers
- **Vitocontrol control panel**

Boiler delivered condition (cont.)

For multi boiler systems (up to 4 boilers):

- **Vitotronic 100** (type GC1B) and **LON module** with **Vitotronic 300-K** (type MW1B)
For weather-compensated cascade control of up to 4 boilers and control of up to 2 heating circuits with mixers.

(The first boiler is delivered with the standard control equipment for the multi boiler system.)

- **Vitotronic 100** (type GC1B) and **LON module** for every additional boiler in the multi boiler system
- **Vitotronic 200-H** and **LON module** (type HK1B or HK3B) for 1 or up to 3 heating circuits with mixers
- **Vitocontrol control panel**

Design information

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions as well as the details in the datasheet. It is only designed for the heating up of heating water.

Every other use will be deemed to be inappropriate. Any resulting losses are excluded from the manufacturer's liability.

Any usage beyond this must be approved by the manufacturer for the individual case.

Commercial or industrial usage for a purpose other than the heating up of heating water shall be deemed inappropriate.

Intended use also includes the adherence to maintenance and inspection intervals.

Intended use presupposes that a fixed installation in conjunction with permissible components designed for this purpose has been carried out.

Boiler accessories

See pricelist.

Operating conditions

For water quality requirements, see the technical guide to this boiler.

Operation with burner load	Requirements	
	≥ 60 %	< 60 %
1. Heating water flow rate ^{*4}	30 % at rated heating output	
2. Boiler return temperature (minimum value) ^{*4}	– Oil operation 40 °C – Gas operation 53 °C	– Oil operation 53 °C – Gas operation 53 °C
3. Lower boiler water temperature	– Oil operation 50 °C – Gas operation 60 °C	– Oil operation 60 °C – Gas operation 65 °C
4. Two-stage burner operation	Stage 1; 60 % of rated heating output	No minimum load required
5. Modulating burner operation	Between 60 and 100 % of rated heating output	No minimum load required
6. Reduced mode	Single boiler systems and lead boiler of multi boiler systems – Operation with lower boiler water temperature Lag boilers of multi boiler systems – are shut down	
7. Weekend setback	As per reduced mode	

Notes

Mounting a suitable burner

Delivery without burner.
Suitable pressure-jet oil/gas burners are available from Weishaupt or ELCO and should be ordered separately (see pricelist). Delivery direct from Weishaupt or ELCO.
The burner head material must be suitable for operating temperatures of at least 500 °C.

Pressure-jet oil burner

The burner must be tested and designated in accordance with EN 267.

Pressure-jet gas burner

The burner must be tested to EN 676 and be identified with the CE designation in accordance with Directive 90/396/EEC.

Burner adjustment

Adjust the oil or gas throughput of the burner to suit the rated boiler heating output.

^{*4} Suitable system examples for the installation of a shunt pump or return temperature raising facility can be found in the technical guide "System examples".

Notes (cont.)

Permissible flow temperatures

Hot water boiler for permissible flow temperatures (= safety temperatures) up to 110 °C

CE designation:

CE-0085 AS 0002 (up to 380 kW) in accordance with the Efficiency Directive

and

CE-0085 compliant with the Gas Appliances Directive

The maximum achievable flow temperature is approx. 15 K below the safety temperature.

Note

For more information on design/engineering, see the technical guide to this boiler.

Tested quality



CE designation according to current EC directives.



ÖVGW Quality Mark pursuant to quality symbol regulation 1942 DRGBI. I for gas and water equipment.

Subject to technical modifications.

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