

## Datasheet

Part no. and prices on request

Not applicable for sizing the boiler; for this, see separate technical guide



### **VITOMAX 200-HW** Type M238

**Oil/gas high pressure hot water boiler**

Compliant with the requirements of the EC Pressure Equipment Directive and the TRD regulations

**Three-pass boiler**

**Permissible operating pressure 6 to 25 bar**

## Specification

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Boiler size		1	2	3	4	5	6	7	8
<b>Combustion output<sup>*1</sup></b> to EN 12953-3									
- for natural gas	MW	4.00	5.10	6.80	9.05	11.30	13.55	15.75	18.20
- for fuel oil EL	MW	4.00	5.10	6.80	8.90	9.80	11.00	12.80	14.00
<b>CE designation</b>		in accordance with the Pressure Equipment Directive							
<b>Perm. flow temperature<sup>*2</sup></b> (= safety temperature)									
for perm. operating pressure	6 bar °C				145				
	8 bar °C				155				
	10 bar °C				165				
	13 bar °C				175				
	16 bar °C				185				
	18 bar °C				190				
	20 bar °C				195				
	22 bar °C				200				
	25 bar °C				205				
<b>Boiler return temperature</b> (minimum value) <sup>*3</sup>	°C				65				
<b>Flue gas pressure drop</b>									
- for natural gas	mbar	12.0	11.5	13.5	9.1	10.6	11.7	13.3	15.8
- for fuel oil EL	mbar	12.0	11.5	13.5	8.8	7.8	7.5	8.5	9.0
<b>Shipping dimensions</b>									
Total length	m	5.2	5.7	6.4	7.2	7.7	8.3	8.8	9.3
Total width	m	2.6	2.7	2.8	3.1	3.3	3.4	3.6	3.8
Total height	m	2.9	3.1	3.2	3.5	3.6	3.8	4.0	4.2
<b>Total weight<sup>*4</sup></b>									
Boiler with thermal insulation									
for perm. operating pressure	6 bar t	9.1	11.1	14.0	19.1	22.8	28.1	32.0	38.0
	8 bar t	10.2	12.3	15.6	21.2	25.3	31.3	35.6	42.2
	10 bar t	11.2	13.5	17.1	23.3	27.9	34.4	39.2	46.4
	13 bar t	12.2	14.8	18.7	25.4	30.4	37.5	42.7	50.6
	16 bar t	13.2	16.0	20.2	27.5	32.9	40.6	46.3	54.9
	18 bar t	14.2	17.2	21.8	29.7	35.5	43.8	49.8	59.1
	20 bar t	15.2	18.5	23.4	31.8	38.0	46.9	53.4	–
	22 bar t	16.2	19.7	24.9	33.9	40.5	50.0	–	–
	25 bar t	17.3	20.9	26.5	36.0	–	–	–	–
<b>Contents</b> Boiler water	m <sup>3</sup>	10.5	12.8	16.0	22.0	26.0	30.0	35.0	40.0
<b>Boiler connections</b>									
Boiler flow and return <sup>*5</sup> at rated output <sup>*6</sup> and temperature spread	20 K DN	200	200	250	250	300	350	350	400
	30 K DN	150	150	200	200	250	250	300	300
	40 K DN	125	150	150	200	200	250	250	250
Safety valve connector for perm. operating pressure	6 bar PN 40 DN	65	65	80	100	100	100	125	150
	8 bar PN 40 DN	50	65	80	80	100	100	100	125
	10 bar PN 40 DN	50	65	65	80	80	100	100	100
	13 bar PN 40 DN	40	50	65	65	80	80	100	100
	16 bar PN 40 DN	40	50	50	65	65	80	80	80
	18 bar PN 40 DN	40	40	50	65	65	65	80	80
	20 bar PN 40 DN	40	40	50	50	65	65	80	–
	22 bar PN 40 DN	32	40	50	50	65	65	–	–
	25 bar PN 40 DN	32	40	40	50	–	–	–	–
<b>Flue gas mass flow rate</b>									
- for natural gas	kg/h	1.5225 x combustion output in kW							
- for fuel oil EL	kg/h	1.5 x combustion output in kW							
<b>Flue gas volume</b>	m <sup>3</sup>	5.8	7.4	9.8	13.9	17.1	21.4	26.7	33.1
<b>Flue outlet</b>	Ext. Ø mm	510	610	650	760	810	910	1010	1110
	Int. Ø mm	500	600	640	750	800	900	1000	1100

\*1 The maximum boiler output varies subject to the required emission values, the pressure stage and the fuel used. Check with the burner manufacturer.

\*2 The max. achievable flow temperature is approx. 15 K below the permissible flow temperature (= safety temperature).

\*3 During the combustion of fuel oil S according to DIN 51603-5 the average boiler temperature must be at least 90 °C.

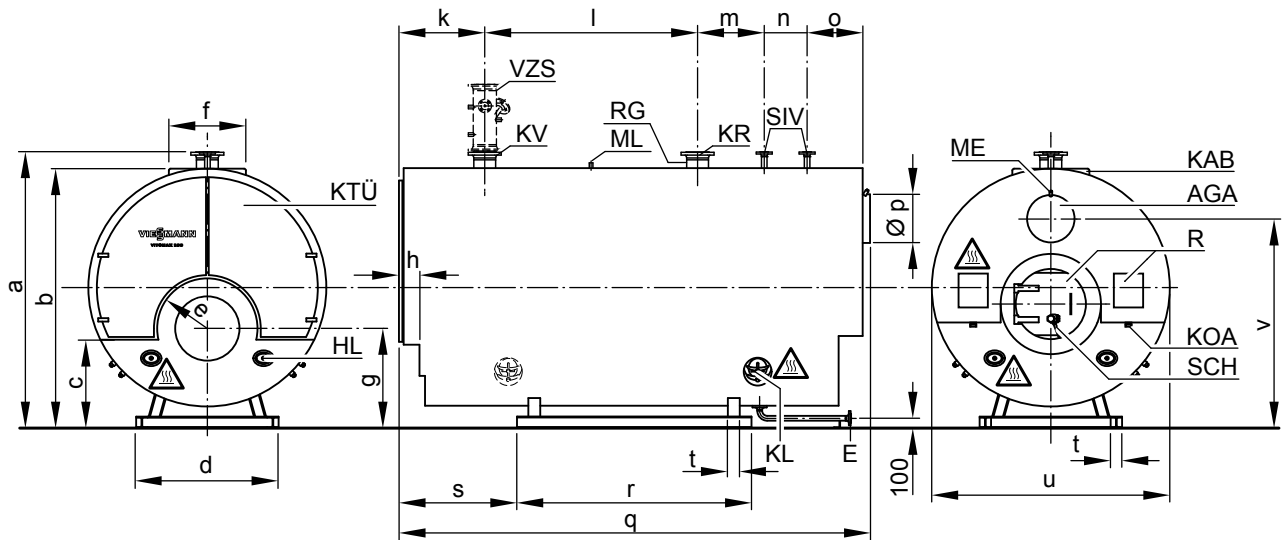
\*4 Variations are possible depending on the specific order.


\*5 For boilers up to 10 bar, the flange connections are PN 16; from 13 to 18 bar they are PN 25; and from 20 to 25 bar they are PN 40.

\*6 Alternative internal diameters are possible when the output is adjusted.

## Specification (cont.)

### Dimensions



 Caution - hot surface

AGA	Flue outlet	KV	Boiler flow
E	Connector DN 40 PN 40 for drain	ME	Female connection R ½
HL	Handhole	ML	Manhole
KAB	Boiler cover	R	Cleaning aperture
KL	Head hole	RG	2 female connections R ½ for additional control equipment
KOA	Condensate drain R 2	SCH	Inspection port
KR	Boiler return	SIV	Safety valve connector
KTÜ	Boiler door	VZS	Intermediate flow piece as accessory

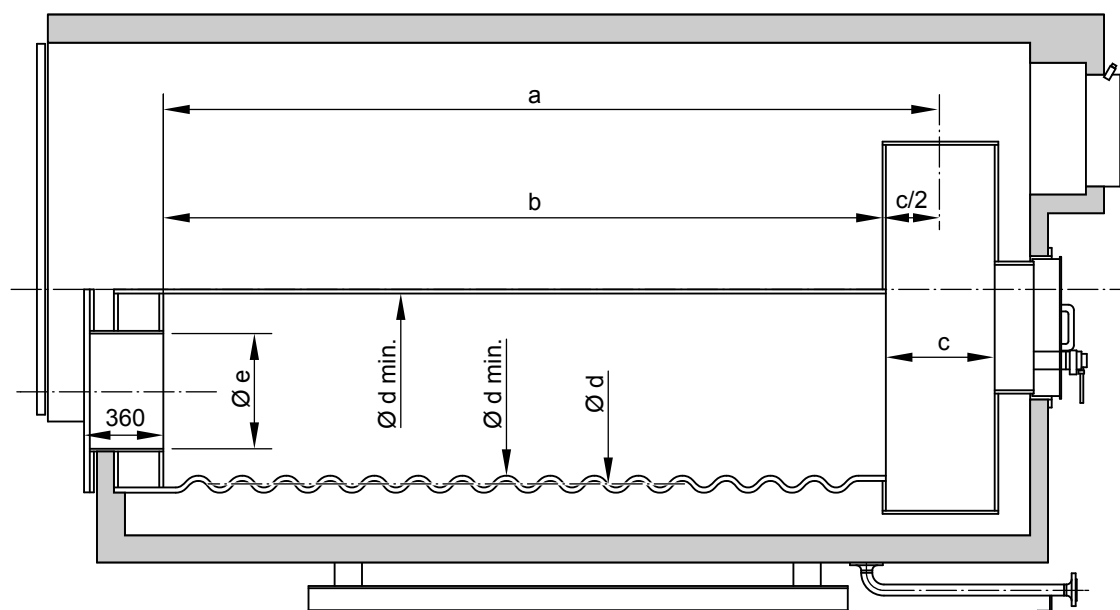
#### Dimensions\*7

Boiler size		1	2	3	4	5	6	7	8
a	mm	2900	3025	3175	3450	3600	3750	3975	4175
b	mm	2740	2865	3015	3290	3440	3590	3815	4015
c	mm	860	900	900	825	875	880	940	1055
d	mm	1500	1900	2100	2250	2300	2400	2750	2850
e	mm	475	515	565	595	640	690	765	840
f	mm	800	800	800	900	900	1000	1000	1100
g	mm	1010	1075	1125	1165	1200	1250	1375	1450
h	mm	220	225	245	265	275	285	295	305
k	mm	850	960	1080	1100	1110	1420	1430	1495
l	mm	2235	2285	2535	3135	3505	3535	3685	4035
m	mm	700	950	1200	1250	1280	1500	1800	1800
n	mm	450	450	450	450	500	500	500	550
o	mm	660	760	810	860	910	960	1060	1110
p	External Ø	510	610	650	760	810	910	1010	1110
p	Internal Ø	500	600	640	750	800	900	1000	1100
q	mm	4950	5460	6130	6850	7360	7970	8530	8990
r	mm	2450	2775	3195	3520	3770	4045	4510	4735
s	mm	1245	1320	1430	1615	1750	1895	1900	2020
t	mm (width of boiler support profile IPB)	120	160	200	200	200	200	280	280

## Specification (cont.)

Boiler size		1	2	3	4	5	6	7	8
u	mm	2500	2625	2775	3050	3200	3350	3525	3725
v	mm	2200	2320	2470	2740	2825	2985	3230	3375

## Specification for burner selection



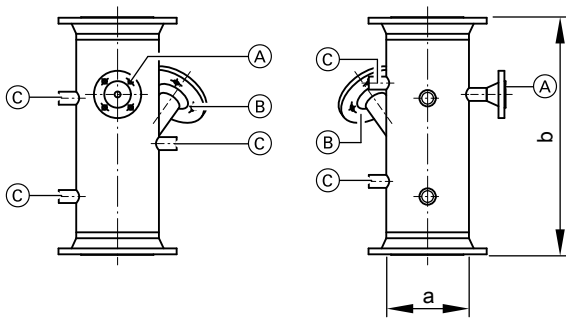
Boiler size		1	2	3	4	5	6	7	8		
		<b>Max. perm. combustion output to EN 12953-3</b>									
<b>Natural gas</b>	MW	4.00	5.10	6.80	9.05	11.30	13.55	15.75	18.20		
	Flue gas pressure drop	mbar	12.0	11.5	13.5	9.1	10.6	11.7	13.3	15.8	
<b>Fuel oil EL</b>	MW	4.00	5.10	6.80	8.90	9.80	11.00	12.80	14.00		
	Output portion	%	100	100	100	98.3	86.7	81.2	81.3	76.9	
	Flue gas pressure drop	mbar	12.0	11.5	13.5	8.8	7.8	7.5	8.5	9.0	
		<b>Combustion chamber dimensions</b>									
<b>Length</b>	– Approved for flames	Dimension a	mm	3550	3975	4575	5200	5700	6225	6675	7125
	– Flame tube	Dimension b	mm	3300	3700	4300	4900	5400	5900	6350	6800
	– Reversing chamber	Dimension c	mm	500	550	550	600	600	650	650	650
<b>Diameter*<sup>8</sup></b>	– Corrugated pipe, internal	Dimension d <sub>min</sub>	∅ mm	875	925	1025	1100	1175	1275	1425	1575
	– Corrugated pipe, average	Dimension d	∅ mm	925	1000	1100	1175	1250	1350	1500	1650
	– Smooth pipe, internal	Dimension d <sub>min</sub>	∅ mm	885	960	1060	1135	1210	1310	1460	–
		<b>Burner connection dimensions</b>									
<b>Minimum burner head length</b>	mm	360									
<b>Max. burner head diameter</b>	Dimension e	∅ mm	515	590	715	715	765	765	910	1015	
		<b>Combustion chamber volume</b>									
<b>Flame tube (corrugated pipe)</b>	m <sup>3</sup>	2.22	2.91	4.09	5.31	6.63	8.45	11.22	14.54		
<b>Flame tube and reversing chamber</b>	m <sup>3</sup>	2.55	3.34	4.61	5.96	7.36	9.38	12.37	15.93		

## Intermediate flow piece

(order separately)

\*<sup>8</sup> Details refer to the maximum depth of corrugations or the smallest internal diameter. The type of flame tube depends on the pressure stages employed. Product-dependent tolerances are not taken into consideration.

## Specification (cont.)

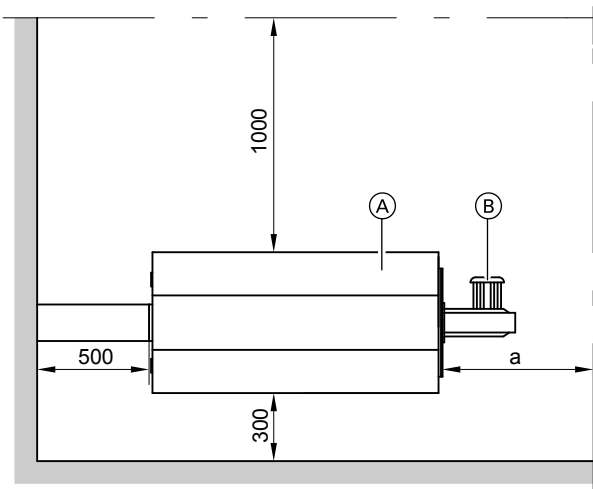


a	DN	125	150	200	250	300	350	400
b	mm	500	500	500	550	550	600	600

- (A) Connector DN 20 PN 40 for fitting assembly (pressure regulator, pressure limiter and pressure gauge)
- (B) Connector DN 50 PN 40 for electrode water level limiter
- (C) 5 female connections R ½ for thermometer, sampling valve and additional control equipment

## Installation

### Recommended clearances



Observe the stated dimensions to ensure easy installation and maintenance.

Clearances relate to the boiler.

The clearances must be checked in accordance with the applicable regulations at the installation site, subject to the fitted equipment (accessories).

- (A) Boiler
- (B) Burner

Boiler size		1	2	3	4	5	6	7	8
a	mm	3300	3700	4300	4900	5400	5900	6350	6800
a <sub>min.</sub>	mm	1400	1400	1500	1500	1700	1700	1900	2000

Dim. a: This clearance is recommended for boiler cleaning.

Dim. a<sub>min.</sub>: A greater minimum clearance may be required because of the burner dimensions.

### Installation conditions

Install hot water boilers in rooms that comply with TRD 403 [or local regulations].

- Avoid very dusty conditions
- Avoid high levels of humidity
- Prevent frost damage 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.

## Standard delivery

Boiler with fitted door and thermal insulation.

Sight glass and flame tube gasket are supplied inside the boiler.

## Standard delivery (cont.)

The burner plate is supplied separately.

Printed on environmentally friendly,  
chlorine-free bleached paper



Subject to technical modifications.

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