

Datasheet

Part no. and prices on request



VITOMAX 200-HW Type M74A

Oil/gas high pressure hot water boilers

Compliant with the requirements of the Pressure Equipment Directive 97/23/EC and the TRD regulations (up to 16.5 MW), in conjunction with the [German] trade association agreements.

Three-pass boiler

Permissible operating pressure 6, 10 and 16 bar

Specification

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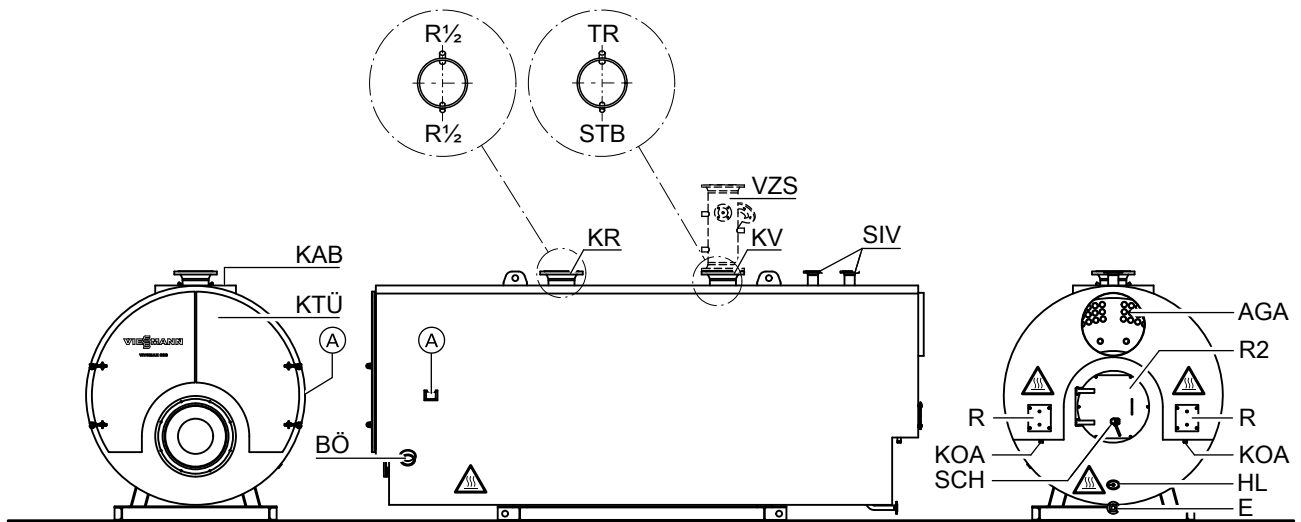
Boiler size		1	2	3	4	5
Permissible flow temperature 150 °C						
Combustion output natural gas	MW	8.70	10.87	13.04	15.43	17.93
Resistance on flue gas side, natural gas	mbar	11.3	11.8	15.7	14.2	15.4
Combustion output, fuel oil EL	MW	8.42	9.30	11.00	12.80	14.00
Resistance on flue gas side, fuel oil EL	mbar	10.2	9.0	9.9	8.5	8.0
Permissible flow temperature*1	°C	see page 7				
Permiss. operating pressure	bar	6, 10 or 16				
Transport dimensions (incl. packaging)						
Total length	m	6.60	7.10	7.65	8.15	8.70
Total width	m	2.70	2.90	3.00	3.25	3.50
Total height	m	3.10	3.30	3.45	3.70	4.00
Total weight*2						
Boiler with thermal insulation for permissible operating pressure						
	6 bar t	15.1	19.2	22.8	27.8	35.8
	10 bar t	17.7	22.7	24.8	31.4	39.8
	16 bar t	20.5	26.0	30.2	38.4	46.4
Content boiler water	m ³	15.3	18.7	22.2	26.6	33.8
Connections						
Connectors for boiler flow and return						
	6 and 10 bar PN 16 DN	250	300	350	350	400
	16 bar PN 25 DN	250	300	350	350	400
Safety valve connector						
	6 bar PN 16 DN	100	100	125	150	150
	10 bar PN 16 DN	80	80	100	100	125
	16 bar PN 40 DN	65	65	80	80	100
Drain connector						
	6 and 10 bar PN 16 DN	50	50	50	50	50
	16 bar PN 40 DN	50	50	50	50	50
Flue gas mass flow rate*3						
	Natural gas t/h	1,5225 x combustion output in MW				
	Fuel oil EL t/h	1.5 x combustion output in MW				
Flue gas connection						
	External Ø mm	710	810	860	960	1010
	Internal Ø mm	700	800	850	950	1000
Flue gas volume	m ³	10.5	13.4	16.5	21.5	27.5
CE designation		see page 7				

*1 The maximum possible flow temperature is approx. 15 K below the permissible flow temperature (= safety temperature).

*2 Deviations of +10% are possible, subject to order.

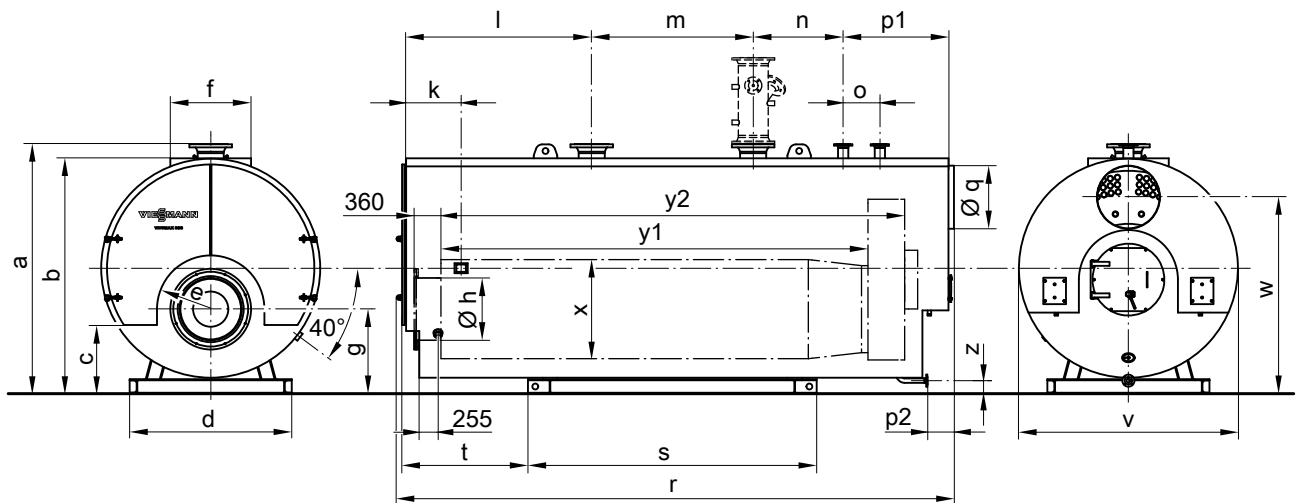
*3 Values for sizing the flue system to EN 13384 relative to 13% CO₂ for fuel oil EL and 10% CO₂ for natural gas. The flue gas temperature at a boiler water temperature of 80 °C is used to determine the size of the flue system and the application range of flue pipes with maximum permissible operating temperatures.

Specification (cont.)



Caution - hot surface

(A) Type plate	KV Boiler flow
AGA Flue outlet	R Cleaning aperture
BÖ Inspection port	R2 Cleaning aperture
E Drain	SCH Inspection aperture
HL Hand hole (100 x 150)	SIV Safety valve connector
KAB Boiler cover	STB Fem. connection R $\frac{1}{2}$ for high limit safety cut-out
KOA Condensate drain (nipple R $\frac{1}{2}$)	TR Fem. connection R $\frac{1}{2}$ for thermostat
KR Boiler return	VZS Intermediate flow piece as accessory (required for ≥ 120 °C)
KTÜ Boiler door	



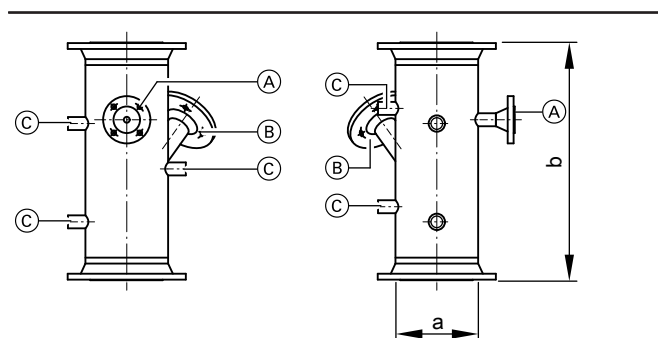
Specification (cont.)

Dimensions*4

Boiler size		1	2	3	4	5
Rated heating output	MW	8.0	10.0	12.0	14.2	16.5
a	mm	3090	3260	3405	3660	3975
b	mm	2895	3065	3210	3465	3780
c	mm	915	910	935	1015	1145
d	mm	2050	2140	2210	2450	2720
e	mm	625	660	725	800	875
f	mm	1000	1100	1100	1100	1200
g	mm	1052	1090	1154	1271	1442
h	∅ mm	718	718	818	918	1018
k	mm	710	750	750	790	830
l	mm	2145	2350	2530	2690	2855
m	mm	1900	2050	2200	2400	2650
n	mm	982	1167	1227	1337	1462
o	mm	–	–	–	–	–
p1	mm	1285	1285	1435	1485	1485
p2	mm	310	310	360	410	410
q (external)	∅ mm	710	810	860	960	1010
q (internal)	∅ mm	700	800	850	950	1000
r	mm	6516	7056	7596	8116	8656
s	mm	3435	3685	3935	4265	4635
t	mm	1430	1595	1715	1805	1910
u (width boiler saddle profile IPB)	mm	200	200	200	240	280
v	mm	2670	2840	2985	3200	3475
w	mm	2365	2550	2680	2930	3150
x (internal smooth tube 6 bar)	∅ mm	1145	1218	1316	1462	1608
x (internal smooth tube 10 bar)	∅ mm	1135	1208	–	–	–
x (internal/external corrugated tube 6 bar)	∅ mm	–	–	–	–	–
x (internal/external corrugated tube 10 bar)	∅ mm	–	–	1300/1400	1450/1550	1600/1700
x (internal/external corrugated tube 16 bar)	∅ mm	1125/1225	1200/1300	1275/1425	1425/1575	1565/1735
y1 (length excl. reversing chamber)	mm	4830	5330	5820	6250	6750
y2 (length incl. reversing chamber)	mm	5330	5830	6320	6750	7250
Approved length for flame	mm	5080	5580	6070	6500	7000
z	mm	180	180	180	220	260

Intermediate flow piece

(order separately)



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

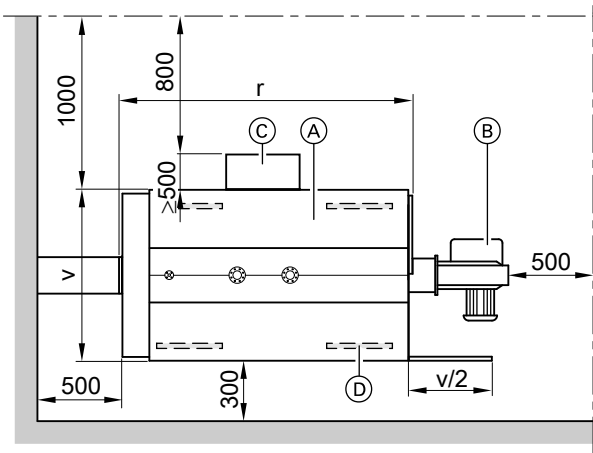
- (A) Connector DN 20 PN 40 for fitting assembly (pressure regulator, pressure limiter and pressure gauge)
- (B) Connector DN 50 PN 40 for electrode water level limiter
- (C) 5 female connections R ½ for thermometer, sampling valve and additional control equipment

*4 Nominal dimensions, subject to modification.

Specification (cont.)

Installation

Minimum clearances



Observe the stated dimensions to ensure easy installation and maintenance. Where space is tight, only the minimum clearances must be maintained. The clearances must be checked in accordance with the applicable regulations at the installation site, subject to the fitted equipment (accessories).

- (A) Select boiler
- (B) Burner
- (C) Regulating and control systems
- (D) Vibration-absorbing boiler supports

r and v Please see the dimensions tables of the corresponding boilers for these values.

Installation conditions

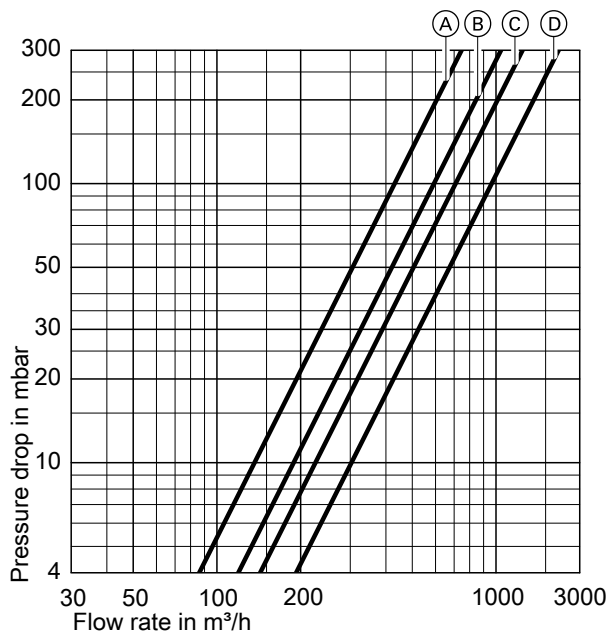
To avoid system faults and damage, hot water boilers should be installed in rooms that comply with TRD 403. Additionally observe the following conditions:

- In rooms where air contamination through **halogenated hydrocarbons** (e.g. as contained in sprays, paints, solvents and cleaning agents) may occur, install the boiler only if adequate measures can be taken to provide a supply of uncontaminated combustion air.
- Avoid very dusty conditions

- Avoid high levels of humidity
- Ensure it is free from the risk of frost and there is good ventilation
- Installation on a level surface.

Specification (cont.)

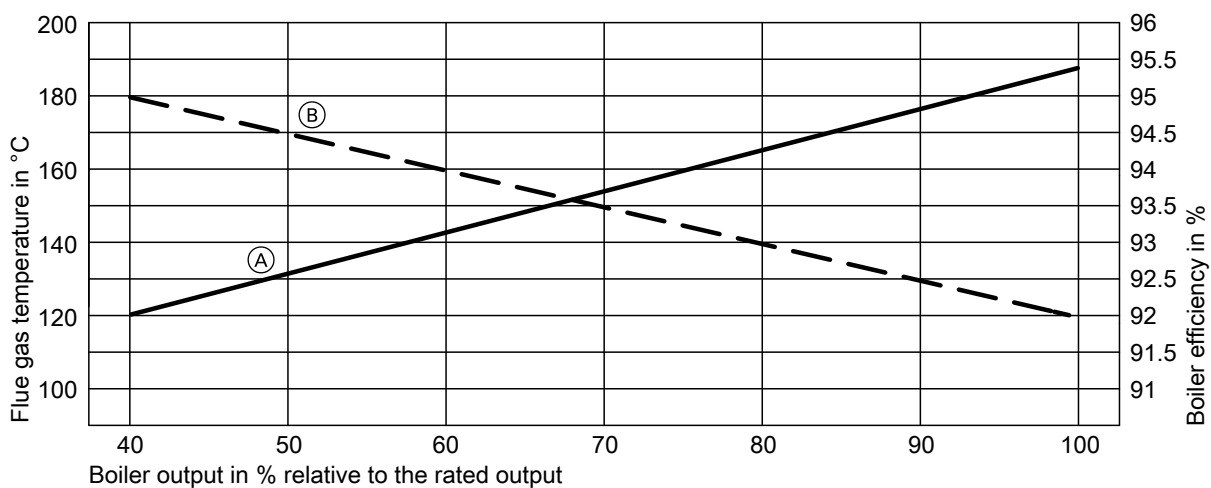
Pressure drop on the heating water side



- (A) Connectors for boiler flow and return DN 250
- (B) Connectors for boiler flow and return DN 300
- (C) Connectors for boiler flow and return DN 350
- (D) Connectors for boiler flow and return DN 400

Flue gas temperature and boiler efficiency

Subject to the boiler output at a boiler water temperature of 80/60 °C and a residual oxygen content in the flue gas of 3 %.



- (A) Flue gas temperature in °C
- (B) Boiler efficiency in %

Delivered condition

Boiler body with burner connection flange and burner plate supplied. With fitted boiler doors, fitted cleaning covers, fitted thermal insulation and fitted load-bearing boiler cover. Turbulator extractor (if turbulators are installed). Version with thermally insulated flue gas collector. Packaging.

Boiler accessories (optional)

- Flue gas/water heat exchanger
- Regulating and control systems
- Safety equipment
- Return temperature raising facility
- Pressure-maintaining device

Operating conditions

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

	Requirements
1. Heating water flow rate	None
2. Boiler return temperature (minimum value) ^{*5}	65 °C
3. Maximum spread	40 K
4. Two-stage burner operation	None
5. Modulating operation	None
6. Reduced mode and weekend setback	Lag boilers in multi boiler systems can be shut down

Design information

Installation of a suitable burner

The burner must be suitable for the respective rated output and the pressure drop on the hot gas side of the boiler (see burner manufacturer's specification).

The material of the burner head must be suitable for operating temperatures of at least 500 °C.

Burners with a special design, e.g. rotary atomisers, require consultation prior to ordering.

Pressure-jet oil burner

The burner must be tested and designated to EN 267.

Pressure-jet gas burner

The burner must be tested to EN 676 and CE-designated in accordance with Directive 90/396/EEC.

Burner adjustment

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

Burner connection

On request, the burner plate can be prepared at the factory. For this, please state the burner make and type when ordering. Otherwise, create the blast tube aperture and fixing holes on site in the dummy plate supplied.

Fuels

Oil: Fuel oil EL to DIN 51306.

Gas: Natural gas, town gas and LPG according to DVGW Code of Practice G 260/I and II or local regulations.

Alternative fuels on request.

Permissible flow temperatures

Hot water boilers for permissible flow temperatures (= safety temperatures)

- up to 145 °C at 6 bar, up to 150 °C at 10 bar and 16 bar

CE designation:

CE-0035 according to the Pressure Equipment Directive. Additional safety equipment is required for operation with a safety temperature of ≥ 120 °C.

According to the Health & Safety at Work Act [Germany], these boilers must be monitored. In accordance with the conformity assessment diagram no. 5 of the EU Pressure Equipment Directive, these boilers must be classified as category IV.

^{*5} The technical guide (system examples) contains a relevant system example for the installation of a return temperature raising facility.

Design information (cont.)

Assembly, installation and operation are subject to approval by the appropriate local authority [check local regulations]. The system must be tested prior to commissioning. Instead of an internal inspection, an external inspection is required every year, and a pressure test at least every 3 years.

The test must be carried out by an authorised body (e.g. TÜV [in Germany]).

Further information on design/engineering

See the technical guide to this boiler.

Approved quality

 CE designation according to current EC Directives.

Printed on environmentally friendly,
chlorine-free bleached paper



Subject to technical modifications.

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