VIESMANN

VITOMAX 300-HW

Heating output 2.1 to 6.0 MW

Datasheet

Part no. and prices on request

VITOMAX 300-HW Type M92A

High pressure hot water boilers
Low NO_x version
For permissible flow temperatures up to 150 °C
For the combustion of fuel oil and gas
(approved for operation with fuel oil S (heavy fuel oil))
Compliant with the requirements of the Pressure Equipment Directive 97/23/EC and the TRD regulations, in conjunction with the [German] trade association agreements
Three-pass boiler
Permissible operating pressure 6, 10 and 16 bar

Specification - boiler general (for burner selection)

Note

All diagrams in this document are schematic diagrams.

Tab. 1a

Boiler size				1	2	3	4	5	6	7
Rated heating output[*1]										
- for natural gas/fuel oil EL			MW	2.10	2.50	3.00	3.50	4.20	5.00	6.00
Permissible combustion heating output										
- for natural gas/fuel oil EL			MW	2.28	2.72	3.26	3.80	4.57	5.44	6.52
				Combustion chamber dimensions						
Length										
- Flame tube length	a		mm	2510	2740	3000	3240	3540	3860	4220
- Reversing chamber depth	b		mm	500						
Diameter[*2]										
- Smooth pipe, internal diameter, min.	d1		∅mm	856	906	981	1031	1081	1131	1206
- Corrugated pipe, internal diameter	d1	16 bar	∅mm	—	—	—	1025	1075	1125	1200
- Corrugated pipe, average diameter	d2	16 bar	∅mm	—	—	—	1075	1125	1175	1250
				Burner connections						
- Max. flame head diameter	c		∅mm	520	520	590	590	590	718	718
- Minimum flame head length	e		mm	360						
				Flame tube volume						
- Flame tube (average)			m³	1.44	1.77	2.27	2.70	3.25	3.88	4.82
- Flame tube plus reversing chamber			m³	1.73	2.09	2.65	3.12	3.71	4.38	5.39

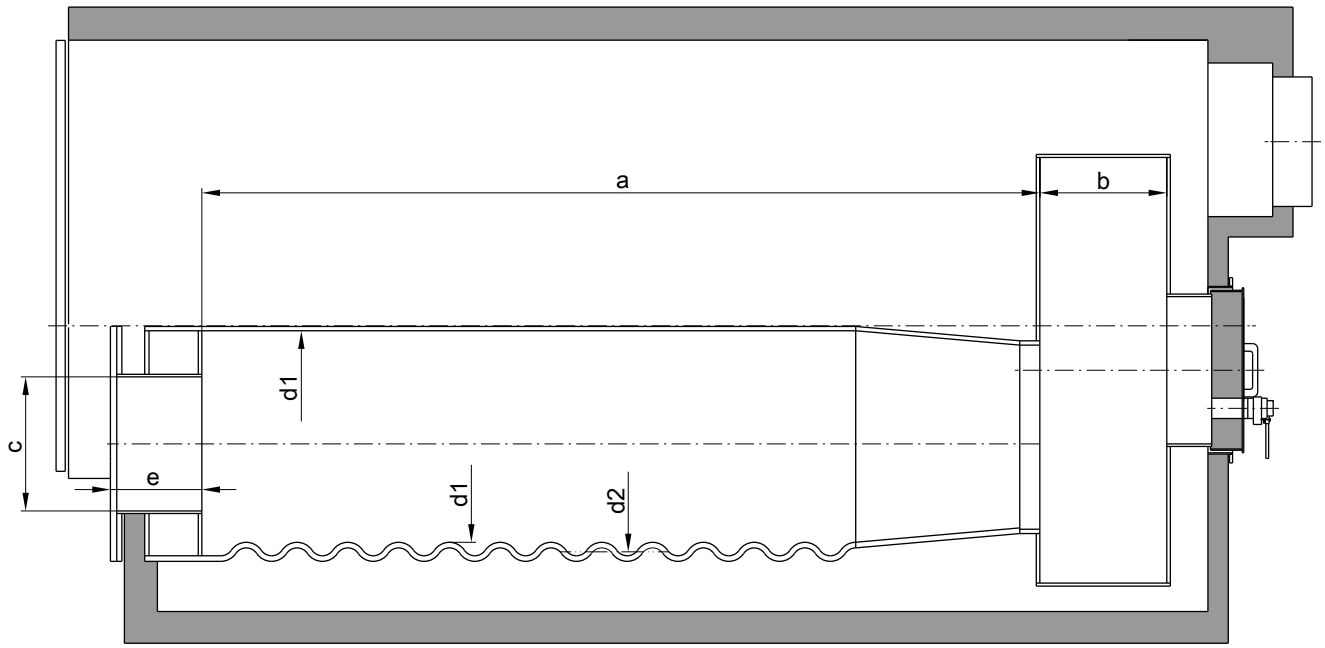


Fig. 1 - Boiler cross-section with flame tube

Tab. 1b - Pressure drop on the flue gas side

Boiler size		1	2	3	4	5	6	7
Max. flue gas pressure drop[*1]								
- for natural gas	mbar	7.0	8.1	9.3	9.9	11.2	12.4	14.6
- for fuel oil EL	mbar	6.3	7.4	8.4	9.0	10.1	11.2	13.2

*[*1] At a flow/return temperature of 80/60 °C*

*[*2] Product-dependent tolerances are not taken into consideration*

Specification - boiler

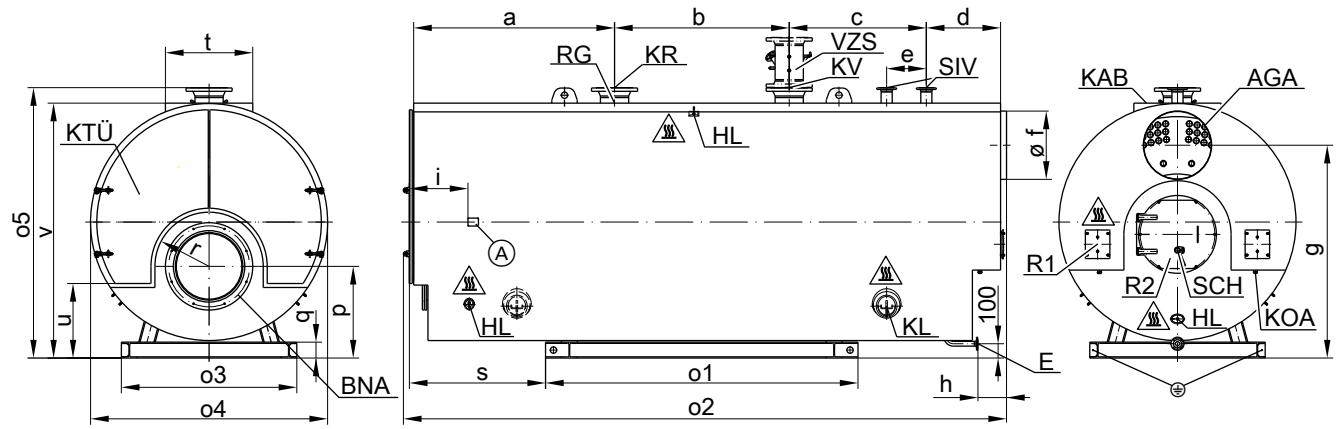


Fig. 2 - ⚠ Caution – hot surface!

Ⓐ Type plate
AGA Flue outlet
BNA Burner connection
E Drain DN 40 PN 40
HL Handhole - 100 mm x 150 mm
KAB Boiler cover
KL Headhole - 220 mm x 320 mm
KOA Condensate drain - R 1½ connector
KR Boiler return
KTÜ Boiler door
KV Boiler flow
R1 Cleaning aperture, flue gas collector
R2 Cleaning aperture, combustion chamber
RG Two female connections for additional control facilities - R ½
SCH Inspection port
SIV Safety valve connector
VZS Intermediate flow piece as an accessory (required for ≥ 120 °C)

Tab. 2 - Dimensions *3

Boiler size		1	2	3	4	5	6	7
a	mm	1295	1395	1485	1585	1680	1820	1940
b	mm	1100	1250	1350	1420	1400	1600	1700
c	mm	912	892	912	1002	1227	1237	1377
d	mm	533	533	583	583	633	633	633
e	mm	300	300	350	350	400	400	400
f*4 (internal)	∅mm	346	392	392	440	490	550	620
g	mm	1890	1960	2050	2130	2175	2235	2325
h	mm	208	208	208	208	258	258	258
i	mm	648	648	648	668	668	698	698
o1	mm	2070	2165	2295	2400	2685	2845	3010
o2	mm	3970	4200	4460	4720	5070	5420	5780
o3	mm	1320	1360	1410	1480	1590	1630	1670
o4	mm	2025	2100	2200	2325	2410	2485	2575
o5	mm	2375	2450	2550	2675	2760	2835	2925
p	mm	870	895	938	988	1012	1038	1075
q	mm	120	120	120	120	160	160	160
r	mm	425	450	488	538	544	588	625
s	mm	850	915	980	1070	1075	1185	1285
t	mm	900	900	900	1000	1000	1000	1000
u	mm	865	873	908	965	967	975	1000
v	mm	2225	2300	2400	2525	2610	2685	2775

*3 *Nominal dimensions, subject to modification.*

*4 *Internal diameter, for external diameter for size 1 to 3: + 8 mm From size 4: + 10 mm*

Specification - boiler (cont.)

Intermediate flow piece (order separately)

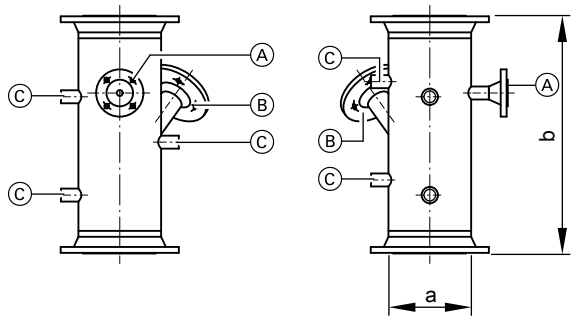


Fig. 3

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

Tab. 3

Boiler size		1	2	3	4	5	6	7
a	DN	125	150	200	250	300	350	400
b	mm	500	500	500	550	550	600	600

Tab. 4

Boiler size			1	2	3	4	5	6	7
Rated heating output[*1]		MW	2.10	2.50	3.00	3.50	4.20	5.00	6.00
Permissible combustion heating output		MW	2.28	2.72	3.26	3.80	4.57	5.44	6.52
CE designation			see page 7						
Permissible flow temperature[*5]		°C	150 °C						
Permissible operating pressure		bar	6, 10 or 16						
Shipping dimensions (incl. packaging)									
- Total length		m	4.17	4.40	4.66	4.92	5.27	5.62	5.98
- Total width		m	2.08	2.15	2.25	2.38	2.46	2.54	2.63
- Total height		m	2.40	2.48	2.58	2.70	2.79	2.86	2.95
Dry weight[*6]									
Boiler with thermal insulation									
for permissible operating pressure	6 bar	t	5.3	6.0	6.9	7.9	9.2	10.4	11.9
	10 bar	t	6.1	6.9	8.1	9.3	10.8	12.3	14.1
	16 bar	t	7.4	8.7	9.8	10.9	12.6	14.6	17.0
Boiler water content		m^3	5.1	5.8	6.8	8.1	9.3	10.5	12.0
Boiler connections									
			Boiler flow and return[*7]						
- for permissible operating pressure	6 and 10 bar	PN 16 DN	150	150	200	200	200	250	250
	16 bar	PN 25 DN	—	—	200	200	200	250	250
	16 bar	PN 40 DN	150	150	—	—	—	—	—
			Safety valve connector						
- for permissible operating pressure	6 bar	PN 40 DN	50	50	50	65[*8]	65[*8]	65[*8]	80
	10 bar	PN 40 DN	40	40	40	50	50	65[*8]	65[*8]
	16 bar	PN 40 DN	32	32	32	40	40	50	50
Drain		PN 40 DN	40						
Flue gas connection									
- Flue outlet (DIN 24154-T2)		DN	355	400	400	450	500	560	630
Flue gas mass flow rate									
- for natural gas		t/h	1.5225 x combustion output in MW						
- for fuel oil EL		t/h	1.5 x combustion output in MW						
Flue gas volume		m^3	3.43	4.01	4.85	5.98	7.06	8.25	9.73

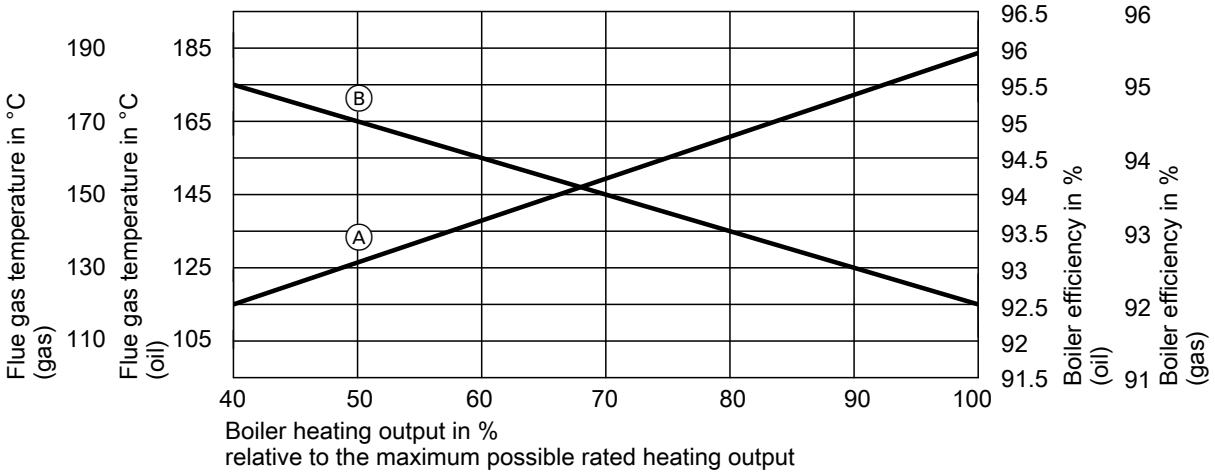
*[*1] At a flow/return temperature of 80/60 °C*
*[*5] The maximum achievable flow temperature is approx. 15 K below the permissible flow temperature (= safety temperature).*
*[*6] Deviations of 10 % are possible, subject to order.*
*[*7] With a spread of 20 K*
*[*8] 4-hole version*

5774 488 GB

Specification - boiler (cont.)

Flue gas temperature and boiler efficiency

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



Dia. 1

Ⓐ Flue gas temperature in °C
Ⓑ Boiler efficiency in %

Specification - boiler, general

Recommended minimum clearances

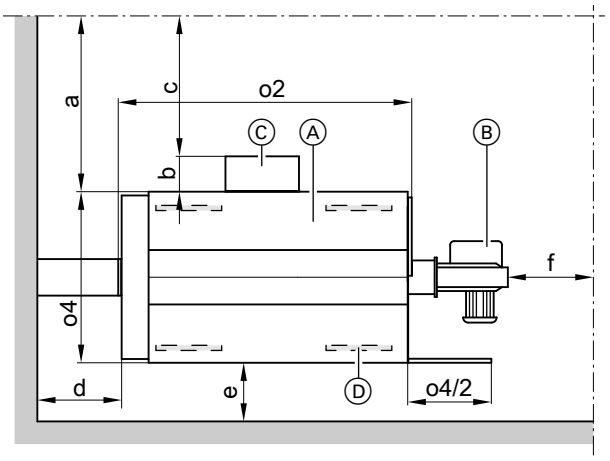


Fig. 4

Ⓐ Boiler
Ⓑ Burner
Ⓒ Regulating and control system
Ⓓ Anti-vibration boiler supports (option)
a Control panel not fitted
b Control panel depth
c Control panel fitted
d,e,f Remaining clearances
o2, o4 Max. length, max. width

Tab. 5

a/b/c	mm	≥1000/≥500/≥800
d/e/f*9	mm	≥500/≥300/≥500

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

Installation conditions

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

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.

Delivered condition

- Boiler shell with burner connection flange and burner plate supplied
- Fitted boiler doors
- Bolted down cleaning cover
- Fitted thermal insulation and thermally insulated flue gas collector
- Fitted load-bearing boiler cover
- Turbulators (if installed)
- Turbulator extractor (if turbulators are installed)
- Packaging

Boiler accessories (optional)

- Flue gas/water heat exchangers
- Regulating and control systems
- Safety equipment
- Burner
- Platform
- Intermediate flow piece as an accessory (required for ≥ 120 °C)
- Valves/fittings

*9 ***We recommend:*** *Leave one boiler length (o2) of space in front of the boiler door to extract the turbulators (if fitted) and for cleaning.*

Operating conditions

Note
For water quality requirements, see the operating and service instructions.

Tab. 6

		Requirements	
1.	Heating water flow rate	None	
2.	Boiler return temperature (minimum value)	Oil operation:	50 °C
		Gas operation:	55 °C
3.	Lower boiler water temperature	70 °C	
4.	Max. temperature spread*10	50 K	

Design information

Mounting a suitable burner

Note
See the burner manufacturer's specification.

- The burner must be suitable for the relevant rated heating output and the pressure drop on the hot gas side of the boiler.
- The material of the burner head must be suitable for operating temperatures of at least 500 °C.

Note
Burners with a special design, e.g. rotary atomisers, can hinder the opening of the cleaning doors. We therefore recommend checking with the factory that your burner is compatible.

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 2009/142/EC.

Burner connection
On request, the burner plate can be prepared at the factory. For this, please state the burner make and type when ordering if the burner is not to be provided by us. Otherwise, create the blast tube aperture and fixing holes on site in the blank plate supplied.

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

Fuels

Oil
- Fuel oil EL to DIN 51603 part 1.
- Fuel oil S or SA to DIN 51603 part 3, 5.
  When using fuel oil S or SA, different output data (rated heating output, flue gas temperature, efficiency) may result.

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.

Tested quality

CE designation according to current EC Directives.

*10 according to EN 12953

Subject to technical modifications.

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