VIESMANN

VITOMAX 200-HS

Steam output 0.5 to 4.0 t/h

Datasheet

VITOMAX 200-HS Type M73A

High pressure steam boiler
Certified in accordance with Pressure Equipment Directive 97/23/EC
Available with or without economiser
Suitable for the combustion of fuel oil and gas
Permissible operating pressure 6 to 25 bar

5822 534 GB 6/2013

General specification for burner selection

Note

All diagrams are schematic.

Tab. 1

Boiler size			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Permiss. steam output[*1] at 102 °C feed-water temperature		t/h	0.5	0.7	1.0	1.3	1.65	2.0	2.5	3.2	4.0
Length			**Combustion chamber dimensions**								
- Flame tube length	a	mm	1350	1500	1710	1910	2130	2325	2535	2850	3185
- Reversing chamber	b	mm	250								
Diameter											
- Smooth pipe, internal min.	d1	∅ mm	468	508	549	582	620	653	696	746	791
- Corrugated pipe, internal	d1	∅ mm	—	—	—	—	—	—	—	740	785
– Corrugated pipe, average	d2	∅ mm	—	—	—	—	—	—	—	790	835
Smooth pipe application limit		bar	25	25	25	25	25	25	25	22	20
			Burner connections								
Max. flame head diameter	c	∅ mm	240	240	290	290	320	320	370	420	420
Minimum flame head length	e	mm	315								
			Combustion chamber volume								
Flame tube (average values)		m^3	0.24	0.31	0.42	0.53	0.67	0.81	1.00	1.28	1.61
Flame tube and reversing chamber depth		m^3	0.29	0.37	0.48	0.59	0.74	0.89	1.10	1.40	1.74

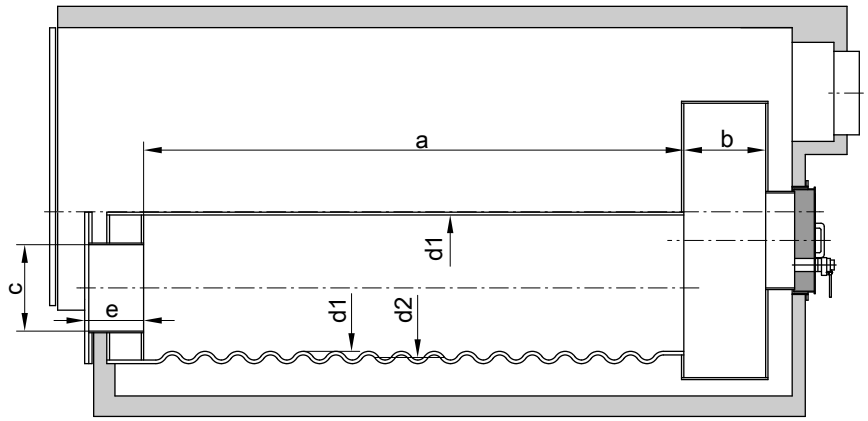


Fig. 1

Note

The pressure stage used determines the type of flame tube. Tolerances related to production factors are not taken into consideration.

*[*1] The actual steam output may be lower, subject to the emission limits specified at the site.*

Calculation of the combustion heating output

Values as an average for all boiler sizes
Residual oxygen content in the flue gas 3 %
Combustion air temperature 25 °C
Feedwater temperature 102 °C

Note
In accordance with steam boiler agreement 003-2011-01, the flame tube diameter restricts the permissible combustion heating output for fuel oil EL.

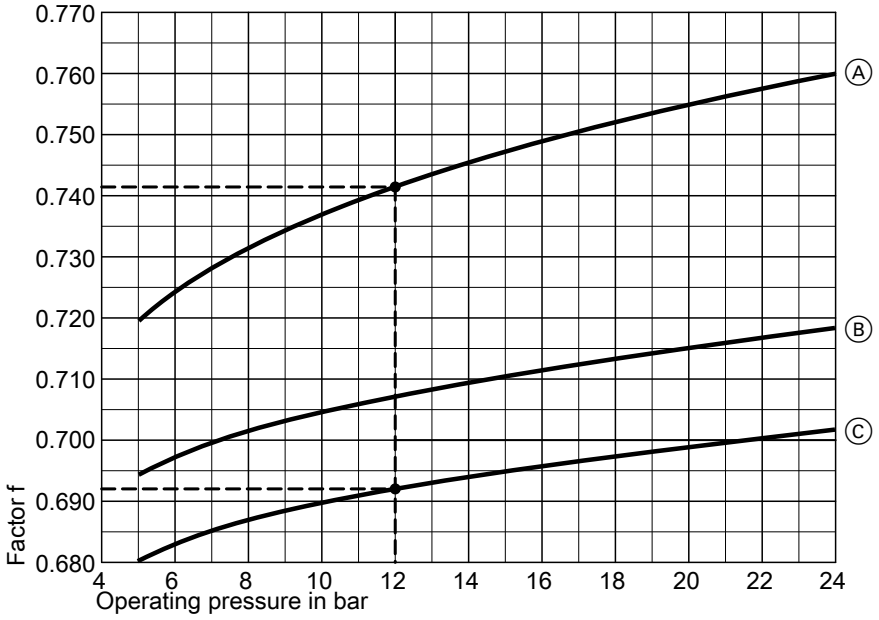


Fig. 1: Calculating factor f

Ⓒ With ECO 200
Ⓑ With ECO 100
Ⓐ Without Economiser

Combustion heating output in kW = factor f x steam output in kg/h

Example:

Steam output:	1300 kg/h
Operating pressure:	12 bar

1. Operation without economiser
   Factor f = 0.741 results in combustion heating output = 963 kW, curve Ⓐ at 12 bar
2. Operation with ECO 200
   Factor f = 0.692 results in combustion heating output = 900 kW, curve Ⓒ at 12 bar

Tab. 2: Max. pressure drop on the flue gas side

Boiler size			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
With ECO 200	- with natural gas	mbar	4.8	5.5	7.9	9.9	11.9	12.0	13.4	13.4	15.5
	- for fuel oil EL	mbar	4.4	5.0	7.3	9.1	10.8	10.9	12.3	12.4	14.1
With ECO 100	- with natural gas	mbar	4.6	5.3	7.2	8.9	11.4	11.5	12.4	12.4	14.0
	- for fuel oil EL	mbar	4.2	4.8	6.6	8.1	10.3	10.4	11.3	11.4	12.6
Without Economiser	- with natural gas	mbar	4.2	4.7	6.4	7.9	10.4	10.5	10.9	10.9	12.5
	- for fuel oil EL	mbar	3.8	4.2	5.8	7.1	9.3	9.4	9.8	9.9	11.1

Specification for boiler with ECO 200

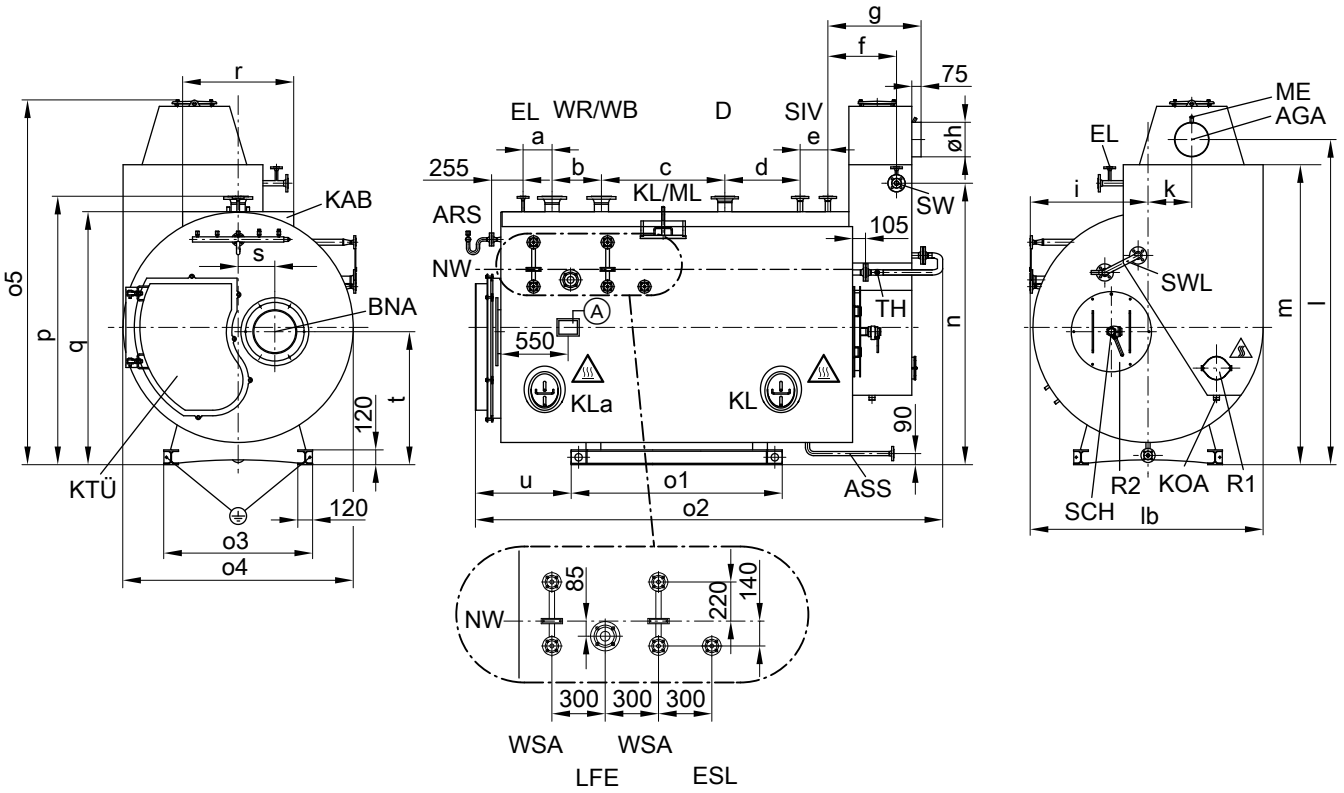


Fig. 2: ⚠ Caution - hot surface. Illustration shows standard version. Boiler can be delivered with laterally reversed layout.

Ⓐ	Type plate
AGA	Flue outlet
ARS	Connector for fitting assembly DN 20 PN 40
ASS	Blow-down valve connector DN 25 PN 40
BNA	Burner connection
D	Steam connector
EL	Vent connector DN 15 PN 40
ESL	Connector for TDS line DN 20 PN 40
KAB	Boiler cover
KLa/KL	Headhole 220 x 320 mm, KLa: up to size 3 centrally 1 x KL
KOA	Condensate drain R 1 ½
KTÜ	Boiler door
LFE	Connector for conductivity electrode DN 50 PN 40
ME	Test port R ½
ML	Manhole 320 x 420 mm, from size 3
DN	Minimum water level (LWL)
R1	Cleaning aperture, flue gas collector
R2	Combustion chamber cleaning aperture
SCH	Inspection port R 2
SIV	Connector for safety valve with 1 x dummy flange
SW	Feedwater connector
SWL	Feedwater line
TH	Thermometer
WR/WB	Connector for water level controller/limiter DN 100 PN 40
WSA	Connector for water level indicator, 1 x with dummy flange DN 20 PN 40

Tab. 3: Nominal dimensions for boiler with ECO 200 *2

Boiler size		1	2	3	4	5	6	7	8	9
a	mm	235	235	235	235	235	235	235	235	235
b	mm	300	300	300	400	400	400	400	400	400
c	mm	765	860	800	850	1000	1100	1200	1300	1400
d	mm	225	280	550	540	610	650	760	925	1160
e	mm	200	200	200	225	225	250	250	300	300
f	mm	521	521	521	556	556	736	736	736	736
g	mm	720	720	720	755	755	935	935	935	935
h *3	∅ mm	152	192	216	242	272	307	346	392	442
i	mm	815	850	880	910	955	1000	1025	1075	1115
k	mm	295	319	353	325	354	329	334	402	435
l	mm	2149	2239	2329	2549	2635	2564	2724	2849	2959
lb	mm	1520	1610	1700	1780	1865	1950	2060	2190	2300
m (shipping height)	mm	*4	*4	2202	2397	2483	2387	2547	2622	2732
n	mm	1820	1910	2000	2195	2281	2185	2345	2420	2530
o1	mm	1320	1395	1500	1600	1710	1810	1910	2070	2240
o2	mm	3010	3160	3370	3593	3813	4177	4387	4742	5077
o3	mm	1022	1070	1118	1161	1207	1252	1311	1381	1440

*2 *Subject to modification.*

*3 *Internal diameter; for external diameter: +8 mm.*

*4 *Shipping height = total height o5 + 50 mm (packaging + flue gas hood)*

Specification for boiler with ECO 200 (cont.)

Boiler size		1	2	3	4	5	6	7	8	9
o4	mm	1575	1655	1730	1800	1888	1975	2055	2170	2264
o5	mm	2445	2535	2625	2870	2956	2910	3070	3245	3355
p	mm	1830	1920	2010	2090	2175	2260	2370	2500	2610
q	mm	1705	1795	1885	1965	2050	2135	2245	2375	2485
r	mm	600	600	600	600	900	900	900	900	1000
s	mm	222	245	265	278	297	320	348	379	405
t	mm	895	940	995	1046	1078	1122	1199	1300	1385
u	mm	581	619	671	721	776	844	896	1015	1099

Tab. 4: Boiler with ECO 200

Boiler size			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Permiss. steam output*1 at 102 °C feedwater temperature		t/h	0.5	0.7	1.0	1.3	1.65	2.0	2.5	3.2	4.0
Max. combustion heating output*5			See Fig. 1 on page 3								
CE designation			See "Tested quality" on page 13								
Shipping dimensions incl. packaging*6											
- Total length		m	3.21	3.36	3.57	3.79	4.01	4.38	4.59	4.94	5.28
- Total width		m	1.63	1.71	1.78	1.85	1.94	2.03	2.11	2.24	2.35
- Total height		m	2.47	2.56	2.65	2.90	2.98	2.94	3.10	3.27	3.38
Dry weight*7 boiler incl. thermal insulation											
- for permiss. op. pressure	6 bar	t	2.2	2.5	2.9	3.2	3.6	4.1	4.9	5.7	6.3
	8 bar	t	2.4	2.7	3.0	3.4	3.8	4.4	5.2	6.2	7.0
	10 bar	t	2.6	2.9	3.3	3.7	4.2	4.9	5.8	6.9	7.7
	13 bar	t	2.8	3.2	3.7	4.1	4.8	5.4	6.5	7.5	8.5
	16 bar	t	3.1	3.5	4.1	4.5	5.3	6.0	7.1	8.4	9.8
	18 bar	t	3.4	3.7	4.3	5.0	5.7	6.4	7.7	9.2	10.5
	20 bar	t	3.6	4.1	4.8	5.3	6.1	7.0	8.3	9.9	11.2
	22 bar	t	3.8	4.3	5.1	5.8	6.4	7.5	9.0	10.5	11.3
	25 bar	t	4.2	4.9	5.5	6.3	7.1	8.1	9.6	10.9	12.3
Boiler water capacity											
- Total		m^3	1.79	2.18	2.66	3.20	3.86	4.57	5.45	6.76	8.13
- Average operating range *8		m^3	1.60	1.92	2.34	2.82	3.32	3.89	4.66	5.83	7.07
- Steam chamber volume*8		m^3	0.19	0.25	0.32	0.39	0.54	0.67	0.79	0.92	1.06
- Steam level surface area*8		m^2	1.61	1.91	2.25	2.59	3.09	3.55	4.92	4.64	5.29
Connections for boiler with/without economiser			**Steam connector**								
- for permiss. operating pressure	6 bar	PN 16 DN	65	65	80	100	100	125	125	150	150
	8 bar	PN 16 DN	50	65	65	80	100	100	100	125	150
	10 bar	PN 16 DN	—	50	65	65	80	80	100	125	125
	10 bar	PN 40 DN	40	—	—	—	—	—	—	—	—
	13 bar	PN 40 DN	32	40	50	65	65	80	80	100	100
	16 bar	PN 40 DN	32	40	50	50	65	65	80	80	100
	18 bar	PN 40 DN	32	32	50	50	65	65	65	80	100
	20 bar	PN 40 DN	32	32	40	50	50	65	65	80	80
	22 bar	PN 40 DN	32	32	40	50	50	65	65	65	80
	25 bar	PN 40 DN	32	32	32	40	50	50	65	65	80
			Safety valve connector								
- for permiss. op. pressure	6 bar	PN 40 DN	20	20	25	32	32	40	40	50	50
	8 bar	PN 40 DN	20	20	25	25	32	32	40	40	50
	10 bar	PN 40 DN	20	20	20	25	25	32	32	40	40
	13 bar	PN 40 DN	20	20	20	20	25	25	32	32	40
	16 bar	PN 40 DN	20	20	20	20	20	25	25	32	32
	18 bar	PN 40 DN	20	20	20	20	20	20	25	32	32
	20 bar	PN 40 DN	20	20	20	20	20	20	25	25	32
	22 bar	PN 40 DN	20	20	20	20	20	20	25	25	32
	25 bar	PN 40 DN	20	20	20	20	20	20	20	25	25
			Feedwater connector								
		PN 40 DN	25	25	25	32	32	32	32	32	32
Flue gas parameters			See Fig. 2 and 3 on page 6								
Flue gas mass flow rate - with 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	0.49	0.63	0.85	1.05	1.29	1.57	1.99	2.67	3.40

**1 The actual steam output may be lower, subject to the emission limits specified at the site.*

**5 The maximum combustion heating output varies due to the prescribed emission levels and the fuels used. Consult the burner manufacturer.*

**6 Flue gas hood delivered separately*

**7 The dry weight of the boiler varies by up to +10 % due to production factors.*

8 Average water level between pump **"ON" and pump **"OFF"**.*

Specification for boiler with ECO 200 (cont.)

Operating pressure, efficiency and flue gas temperature with ECO 200

Values as an average for all boiler sizes
Residual oxygen content in the flue gas 3 %
Feedwater temperature 102 °C

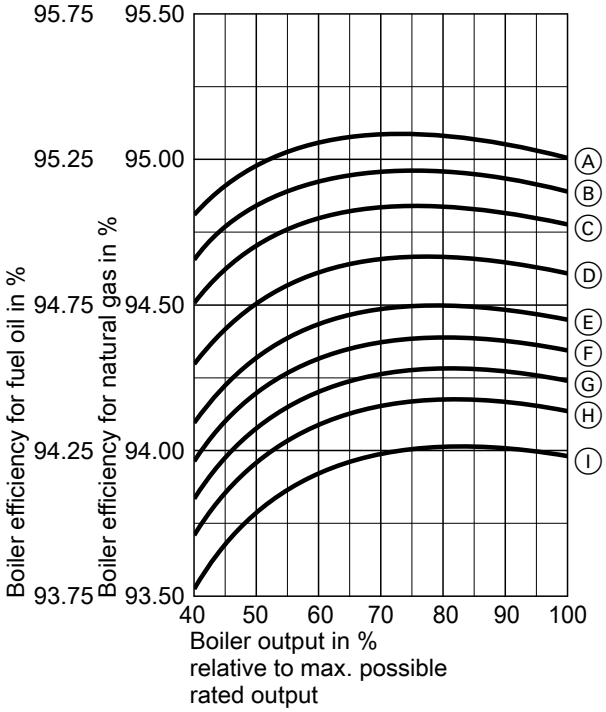


Fig. 2: Influence of operating pressure on boiler efficiency for operation with ECO 200

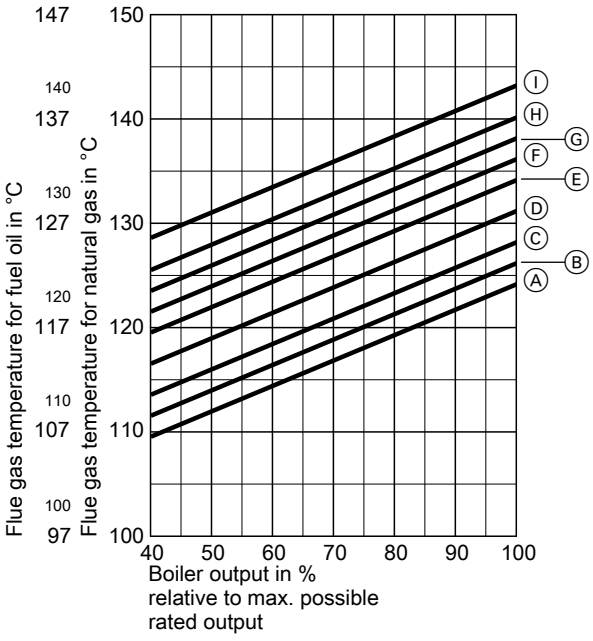


Fig. 3: Influence of operating pressure on flue gas temperature for operation with ECO 200

Operating pressure:
Ⓐ 5 bar
Ⓑ 7 bar
Ⓒ 9 bar
Ⓓ 12 bar
Ⓔ 15 bar
Ⓕ 17 bar
Ⓖ 19 bar
Ⓗ 21 bar
Ⓘ 24 bar

Specification for boiler with ECO 100

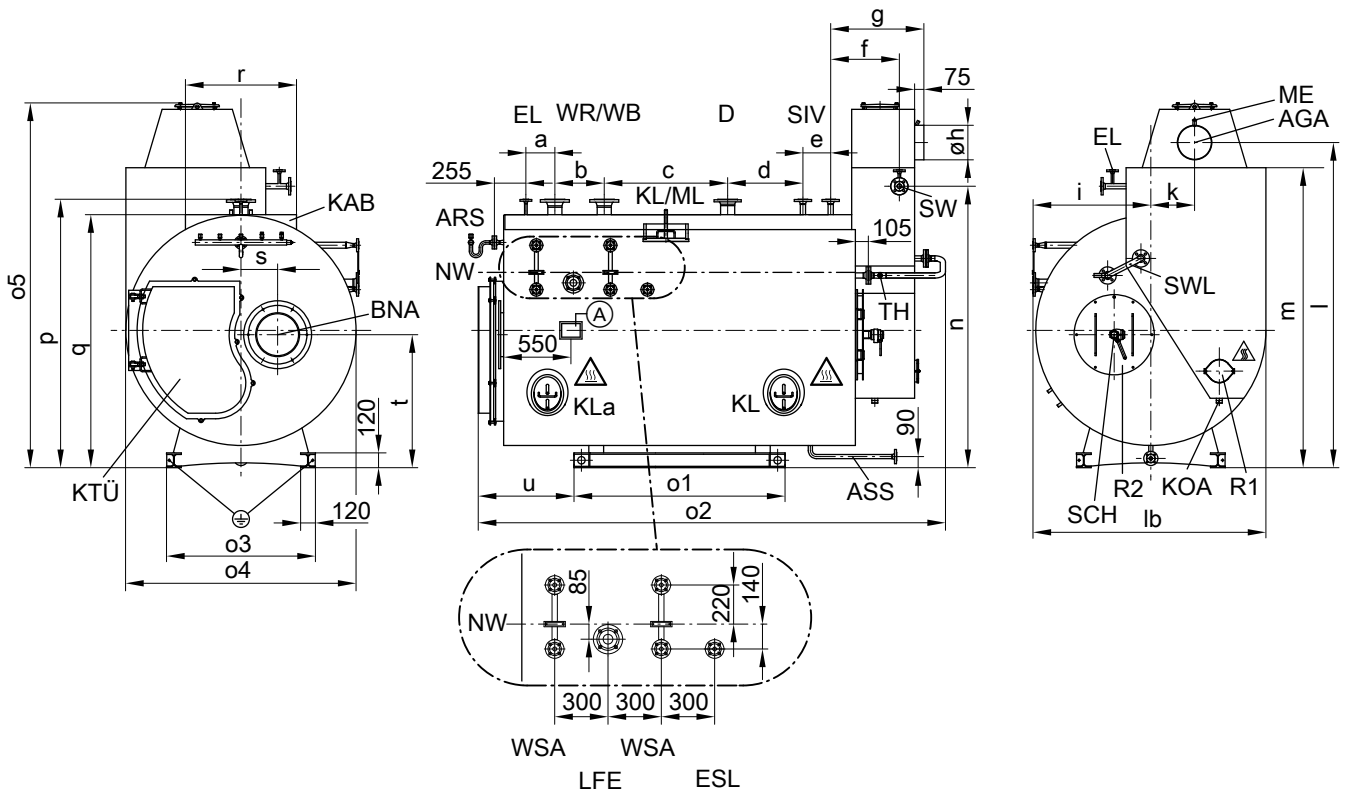


Fig. 3: ⚠ Caution - hot surface. Illustration shows standard version. Boiler can be delivered with laterally reversed layout.

Ⓐ	Type plate
AGA	Flue outlet
ARS	Connector for fitting assembly DN 20 PN 40
ASS	Blow-down valve connector DN 25 PN 40
BNA	Burner connection
D	Steam connector
EL	Vent connector DN 15 PN 40
ESL	Connector for TDS line DN 20 PN 40
KAB	Boiler cover
KLa/KL	Headhole 220 x 320 mm, KLa: up to size 3 centrally 1 x KL
KOA	Condensate drain R 1 ½
KTÜ	Boiler door
LFE	Connector for conductivity electrode DN 50 PN 40
ME	Test port R ½
ML	Manhole 320 x 420 mm, from size 3
DN	Minimum water level (LWL)
R1	Cleaning aperture, flue gas collector
R2	Combustion chamber cleaning aperture
SCH	Inspection port R 2
SIV	Connector for safety valve with 1 x dummy flange
SW	Feedwater connector
SWL	Feedwater line
TH	Thermometer
WR/WB	Connector for water level controller/limiter DN 100 PN 40
WSA	Connector for water level indicator, 1 x with dummy flange DN 20 PN 40

Tab. 5: Nominal dimensions for boiler with ECO 100*2

Boiler size		1	2	3	4	5	6	7	8	9
a	mm	235	235	235	235	235	235	235	235	235
b	mm	300	300	300	400	400	400	400	400	400
c	mm	765	860	800	850	1000	1100	1200	1300	1400
d	mm	225	280	550	540	610	650	760	925	1160
e	mm	200	200	200	225	225	250	250	300	300
f	mm	521	521	521	556	556	736	736	736	736
g	mm	720	720	720	755	755	935	935	935	935
h*3	∅ mm	152	192	216	242	272	307	346	392	442
i	mm	815	850	880	910	955	1000	1025	1075	1115
k	mm	295	319	353	325	354	329	334	402	435
l	mm	1889	1979	2069	2174	2260	2319	2479	2604	2714
lb	mm	1520	1610	1700	1780	1865	1950	2060	2190	2300
m (shipping height)	mm	*4	*4	*4	*4	*4*4	2142	2302	2377	2487
n	mm	1560	1650	1740	1805	1891	1925	2085	2160	2270
o1	mm	1320	1395	1500	1600	1710	1810	1910	2070	2240
o2	mm	3010	3160	3370	3593	3813	4177	4387	4742	5077

*2 *Subject to modification.*

*3 *Internal diameter; for external diameter: +8 mm.*

*4 *Shipping height = total height o5 + 50 mm (packaging + flue gas hood)*

Specification for boiler with ECO 100 (cont.)

Boiler size		1	2	3	4	5	6	7	8	9
o3	mm	1022	1070	1118	1161	1207	1252	1311	1381	1440
o4	mm	1575	1655	1730	1800	1888	1975	2055	2170	2264
o5	mm	2185	2275	2365	2495	2581	2665	2825	3000	3110
p	mm	1830	1920	2010	2090	2175	2260	2370	2500	2610
q	mm	1705	1795	1885	1965	2050	2135	2245	2375	2485
r	mm	600	600	600	600	900	900	900	900	1000
s	mm	222	245	265	278	297	320	348	379	405
t	mm	895	940	995	1046	1078	1122	1199	1300	1385
u	mm	581	619	671	721	776	844	896	1015	1099

Tab. 6: Boiler with ECO 100

Boiler size				**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Permiss. steam output[*1] at 102 °C feedwater temperature			t/h	0.5	0.7	1.0	1.3	1.65	2.0	2.5	3.2	4.0
Max. combustion heating output[*5]				See Fig. 1 on page 3								
CE designation				See "Tested quality" on page 13								
Shipping dimensions incl. packaging[*6]												
- Total length			m	3.21	3.36	3.57	3.79	4.01	4.38	4.59	4.94	5.28
- Total width			m	1.63	1.71	1.78	1.85	1.94	2.03	2.11	2.24	2.35
- Total height			m	2.21	2.30	2.39	2.52	2.61	2.69	2.85	3.03	3.14
Dry weight[*7] boiler incl. thermal insulation												
- for permiss. op. pressure	6 bar		t	2.1	2.4	2.7	3.0	3.4	3.9	4.6	5.3	5.9
	8 bar		t	2.3	2.6	2.8	3.2	3.6	4.2	4.9	5.8	6.6
	10 bar		t	2.5	2.8	3.1	3.5	4.0	4.7	5.5	6.5	7.3
	13 bar		t	2.7	3.1	3.5	3.9	4.6	5.2	6.2	7.1	8.1
	16 bar		t	3.0	3.4	3.9	4.3	5.1	5.8	6.8	8.0	9.4
	18 bar		t	3.3	3.6	4.1	4.8	5.5	6.2	7.4	8.8	10.1
	20 bar		t	3.5	4.0	4.6	5.1	5.9	6.8	8.0	9.5	10.8
	22 bar		t	3.7	4.2	4.9	5.6	6.2	7.3	8.7	10.1	10.9
	25 bar		t	4.1	4.8	5.3	6.1	6.9	7.9	9.3	10.5	11.9
Boiler water capacity												
- Total			m^3	1.78	2.17	2.65	3.19	3.85	4.55	5.43	6.73	8.09
- Average operating range [*8]			m^3	1.59	1.91	2.33	2.81	3.31	3.87	4.64	5.80	7.03
- Steam chamber volume[*8]			m^3	0.19	0.25	0.32	0.39	0.54	0.67	0.79	0.92	1.06
- Steam level surface area[*8]			m^2	1.61	1.91	2.25	2.59	3.09	3.55	4.92	4.64	5.29
Connections for boiler with/without economiser				**Steam connector**								
- for permiss. op. pressure	6 bar	PN 16 DN		65	65	80	100	100	125	125	150	150
	8 bar	PN 16 DN		50	65	65	80	100	100	100	125	150
	10 bar	PN 16 DN		—	50	65	65	80	80	100	125	125
	10 bar	PN 40 DN		40	—	—	—	—	—	—	—	—
	13 bar	PN 40 DN		32	40	50	65	65	80	80	100	100
	16 bar	PN 40 DN		32	40	50	50	65	65	80	80	100
	18 bar	PN 40 DN		32	32	50	50	65	65	65	80	100
	20 bar	PN 40 DN		32	32	40	50	50	65	65	80	80
	22 bar	PN 40 DN		32	32	40	50	50	65	65	65	80
	25 bar	PN 40 DN		32	32	32	40	50	50	65	65	80
				Safety valve connector								
- for permiss. op. pressure	6 bar	PN 40 DN		20	20	25	32	32	40	40	50	50
	8 bar	PN 40 DN		20	20	25	25	32	32	40	40	50
	10 bar	PN 40 DN		20	20	20	25	25	32	32	40	40
	13 bar	PN 40 DN		20	20	20	20	25	25	32	32	40
	16 bar	PN 40 DN		20	20	20	20	20	25	25	32	32
	18 bar	PN 40 DN		20	20	20	20	20	20	25	32	32
	20 bar	PN 40 DN		20	20	20	20	20	20	25	25	32
	22 bar	PN 40 DN		20	20	20	20	20	20	25	25	32
	25 bar	PN 40 DN		20	20	20	20	20	20	20	25	25
				Feedwater connector								
		PN 40 DN		25	25	25	32	32	32	32	32	32
Flue gas parameters				See Fig. 4 and 5 on page 9								
Flue gas mass flow rate	- with 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	0.49	0.63	0.85	1.05	1.29	1.57	1.99	2.67	3.40

*[*1] The actual steam output may be lower, subject to the emission limits specified at the site.*

*[*5] The maximum combustion heating output varies due to the prescribed emission levels and the fuels used. Consult the burner manufacturer.*

*[*6] Flue gas hood delivered separately*

*[*7] The dry weight of the boiler varies by up to +10 % due to production factors.*

*[*8] Average water level between pump **"ON"** and pump **"OFF"**.*

Specification for boiler with ECO 100 (cont.)

Operating pressure, efficiency and flue gas temperature with ECO 100

Values as an average for all boiler sizes
Residual oxygen content in the flue gas 3 %
Feedwater temperature 102 °C

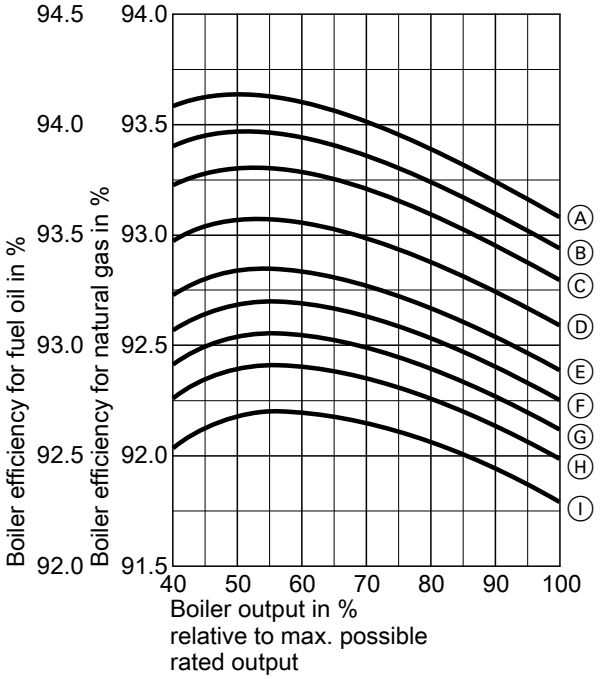
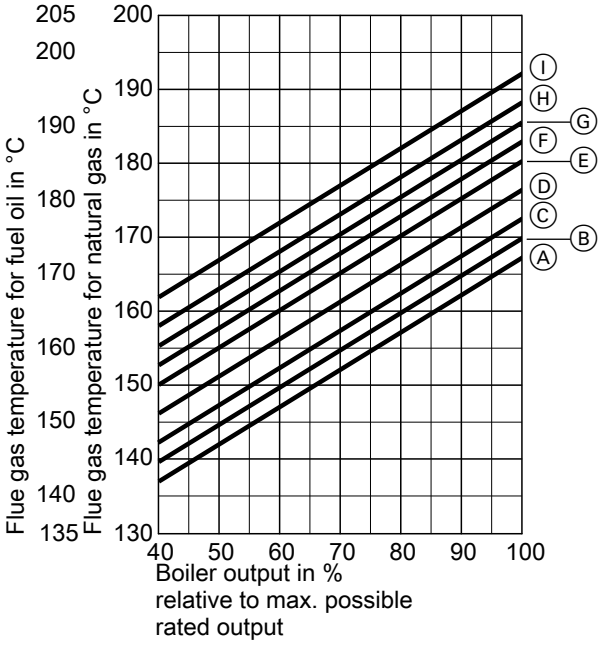


Fig. 4: Influence of operating pressure on boiler efficiency for operation with ECO 100



Operating pressure:
Ⓐ 5 bar
Ⓑ 7 bar
Ⓒ 9 bar
Ⓓ 11 bar
Ⓔ 15 bar
Ⓕ 17 bar
Ⓖ 19 bar
Ⓗ 21 bar
Ⓘ 23 bar

Fig. 5: Influence of operating pressure on flue gas temperature for operation with ECO 100

Specification for boiler without economiser

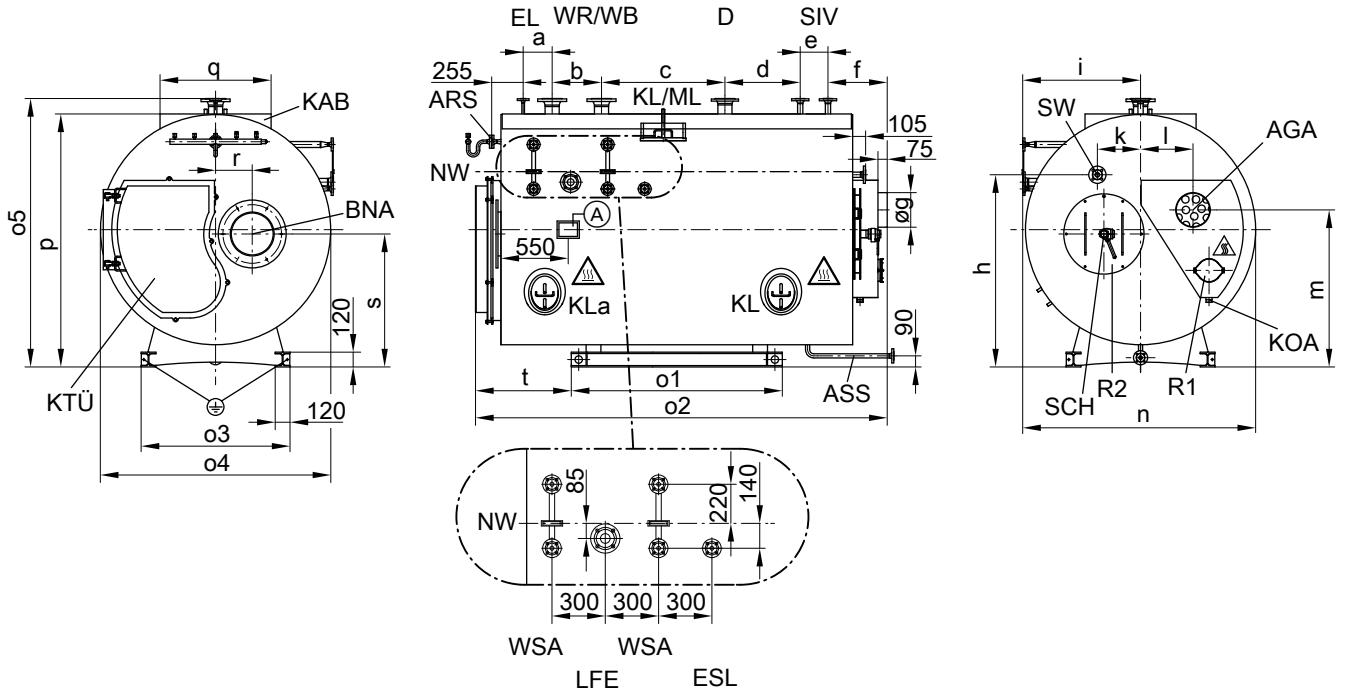


Fig. 4: ⚠ Caution - hot surface.

Ⓐ	Type plate
AGA	Flue outlet
ARS	Connector for fitting assembly DN 20 PN 40
ASS	Blow-down valve connector DN 25 PN 40
BNA	Burner connection
D	Steam connector
EL	Vent connector DN 15 PN 40
ESL	Connector for TDS line DN 20 PN 40
KAB	Boiler cover
KLa/KL	Headhole 220 x 320 mm, KLa: up to size 3 centrally 1 x KL
KOA	Condensate drain R 1½
KTÜ	Boiler door
LFE	Connector for conductivity electrode DN 50 PN 40
ML	Manhole 320 x 420 mm, from size 3
DN	Minimum water level (LWL)
R1	Cleaning aperture, flue gas collector
R2	Combustion chamber cleaning aperture
SCH	Inspection port R 2
SIV	Connector for safety valve with 1 x dummy flange
SW	Feedwater connector
WR/WB	Connector for water level controller/limiter DN 100 PN 40
WSA	Connector for water level indicator, 1 x with dummy flange DN 20 PN 40

Tab. 7: Nominal dimensions for boiler without economiser*2

Boiler size		1	2	3	4	5	6	7	8	9
a	mm	235	235	235	235	235	235	235	235	235
b	mm	300	300	300	400	400	400	400	400	400
c	mm	765	860	800	850	1000	1100	1200	1300	1400
d	mm	225	280	550	540	610	650	760	925	1160
e	mm	200	200	200	225	225	250	250	300	300
f	mm	445	445	445	480	480	510	510	510	510
g*3	∅ mm	152	192	216	242	272	307	346	392	442
h	mm	1295	1360	1437	1506	1558	1620	1719	1845	1953
i	mm	815	850	880	910	955	1000	1025	1075	1115
k	mm	235	230	325	350	350	375	400	425	450
l	mm	350	375	380	380	425	450	450	490	500
m	mm	1070	1115	1175	1230	1273	1315	1395	1500	1580
n	mm	1520	1610	1700	1780	1865	1950	2060	2190	2300
o1	mm	1320	1395	1500	1600	1710	1810	1910	2070	2240
o2	mm	2556	2706	2916	3116	3336	3550	3760	4115	4450
o3	mm	1022	1070	1118	1161	1207	1252	1311	1381	1440
o4	mm	1575	1655	1730	1800	1888	1975	2055	2170	2264
o5	mm	1830	1920	2010	2090	2175	2260	2370	2500	2610
p	mm	1705	1795	1895	1965	2050	2135	2245	2375	2485
q	mm	600	600	600	600	900	900	900	900	1000
r	mm	222	245	256	278	297	320	348	379	405

*2 *Subject to modification.*

*3 *Internal diameter; for external diameter: +8 mm.*

Specification for boiler without economiser (cont.)

Boiler size		1	2	3	4	5	6	7	8	9
s	mm	895	940	995	1046	1078	1122	1199	1300	1385
t	mm	581	619	671	721	776	844	896	1015	1099

Tab. 8: Boiler without economiser

Boiler size			**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Permiss. steam output[*1] at 102 °C feedwater temperature		t/h	0.50	0.70	1.0	1.30	1.65	2.0	2.5	3.2	4.0
Max. combustion heating output[*5]			See Fig. 1 on page 3								
CE designation			See "Tested quality" on page 13								
Shipping dimensions incl. packaging[*6]											
- Total length		m	2.75	2.90	3.11	3.31	3.53	3.75	3.96	4.31	4.65
- Total width		m	1.63	1.71	1.78	1.85	1.94	2.03	2.11	2.24	2.35
- Total height		m	1.86	1.95	2.04	2.12	2.20	2.29	2.40	2.53	2.64
Dry weight[*7] boiler incl. thermal insulation											
- for permiss. op. pressure	6 bar	t	1.9	2.2	2.5	2.8	3.2	3.6	4.3	5.0	5.6
	8 bar	t	2.1	2.4	2.6	3.0	3.4	3.9	4.6	5.5	6.3
	10 bar	t	2.3	2.6	2.9	3.3	3.8	4.4	5.2	6.2	7.0
	13 bar	t	2.5	2.9	3.3	3.7	4.4	4.9	5.9	6.8	7.8
	16 bar	t	2.8	3.2	3.7	4.1	4.9	5.5	6.5	7.7	9.1
	18 bar	t	3.1	3.4	3.9	4.6	5.3	5.9	7.1	8.5	9.8
	20 bar	t	3.3	3.8	4.4	4.9	5.7	6.5	7.7	9.2	10.5
	22 bar	t	3.5	4.0	4.7	5.4	6.0	7.0	8.4	9.8	10.6
	25 bar	t	3.9	4.6	5.1	5.9	6.7	7.6	9.0	10.2	11.6
Boiler water capacity											
- Total		m^3	1.77	2.16	2.64	3.18	3.84	4.53	5.41	6.71	8.07
- Average operating range [*8]		m^3	1.58	1.90	2.32	2.80	3.30	3.85	4.62	5.78	7.01
- Steam chamber volume[*8]		m^3	0.19	0.25	0.32	0.39	0.54	0.67	0.79	0.92	1.06
- Steam level surface area[*8]		m^2	1.61	1.91	2.25	2.59	3.09	3.55	4.02	4.64	5.29
Connections for boiler with/without economiser			**Steam connector**								
- for permiss. op. pressure	6 bar	PN 16 DN	65	65	80	100	100	125	125	150	150
	8 bar	PN 16 DN	50	65	65	80	100	100	100	125	150
	10 bar	PN 16 DN	—	50	65	65	80	80	100	125	125
	10 bar	PN 40 DN	40	—	—	—	—	—	—	—	—
	13 bar	PN 40 DN	32	40	50	65	65	80	80	100	100
	16 bar	PN 40 DN	32	40	50	50	65	65	80	80	100
	18 bar	PN 40 DN	32	32	50	50	65	65	65	80	100
	20 bar	PN 40 DN	32	32	40	50	50	65	65	80	80
	22 bar	PN 40 DN	32	32	40	50	50	65	65	65	80
	25 bar	PN 40 DN	32	32	32	40	50	50	65	65	80
			Safety valve connector								
- for permiss. op. pressure	6 bar	PN 40 DN	20	20	25	32	32	40	40	50	50
	8 bar	PN 40 DN	20	20	25	25	32	32	40	40	50
	10 bar	PN 40 DN	20	20	20	25	25	32	32	40	40
	13 bar	PN 40 DN	20	20	20	20	25	25	32	32	40
	16 bar	PN 40 DN	20	20	20	20	20	25	25	32	32
	18 bar	PN 40 DN	20	20	20	20	20	20	25	32	32
	20 bar	PN 40 DN	20	20	20	20	20	20	25	25	32
	22 bar	PN 40 DN	20	20	20	20	20	20	25	25	32
	25 bar	PN 40 DN	20	20	20	20	20	20	20	25	25
			Feedwater connector								
		PN 40 DN	25	25	25	32	32	32	32	32	32
Flue gas parameters			—								
Flue gas mass flow rate	- with 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	0.49	0.63	0.85	1.05	1.29	1.57	1.99	2.67	3.40

*[*1] The actual steam output may be lower, subject to the emission limits specified at the site.*

*[*5] The maximum combustion heating output varies due to the prescribed emission levels and the fuels used. Consult the burner manufacturer.*

*[*6] Flue gas hood delivered separately*

*[*7] The dry weight of the boiler varies by up to +10 % due to production factors.*

*[*8] Average water level between pump **"ON"** and pump **"OFF"**.*

General specification

Minimum clearances

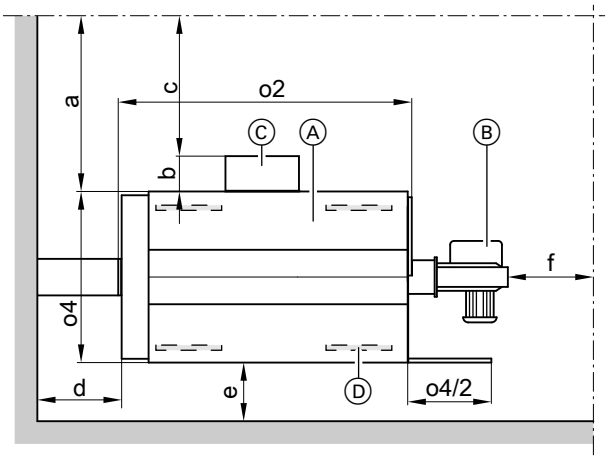


Fig. 5

Ⓐ Boiler
Ⓑ Burner
Ⓒ Regulating and control system
Ⓓ Optional: Anti-vibration boiler supports
a Control system not fitted
b Control system depth
c Control system fitted
d,e,f Miscellaneous clearances
o2, o4 See dimensions: Max. length, max. width

Tab. 9

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. **The minimum clearances must be observed**. Check the clearances with regard to the regulations applicable at the installation site. Allow for equipment and accessories.

Siting conditions

- Prevent air contamination from halogenated hydrocarbons. Halogenated hydrocarbons can be found in sprays, paints, solvents and cleaning agents.
- Avoid very dusty conditions.
- Avoid high levels of humidity.
- Prevent frost and ensure good ventilation.
- Site on a level surface.

Impact can cause system faults and damage.
If there is a risk of air contamination from **halogenated hydrocarbons** where the boiler is sited, an adequate supply of uncontaminated combustion air must be provided.

Delivered condition

The boilers are delivered with:
- Thermal insulation
- Fitting assembly
- Blank flanges for connectors that are not required
- Sight glass
- Burner plate supplied
- Insulation material for sealing the flame head
- Installation protection and transport packaging if required

For boilers with economiser, the following are also provided:
- Feedwater line with thermal insulation
- Flue gas hood with thermal insulation

Design information

Selecting and fitting the burner

Note
*See chapter **"General specification for burner selection"** and the burner specification.*

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

Note
Certain types of burner can hinder the opening of the cleaning doors. Check with the factory prior to delivery.

Required for pressure-jet oil burners:
- Test and identification in accordance with EN 267

Required for pressure-jet gas burners:
- Test in accordance with EN 676
- CE designation in accordance with Directive 2009/142/EC

Burner connection

Note
The burner plate can be prepared at the factory. If this is required and the burner is not supplied by Viessmann: Please state the burner make and boiler type when ordering.

*9 ***Note for trouble-free removal of the turbulators** (if fitted) **and cleaning:** Leave one boiler length of space clear in front of the boiler door.*

5822 534 GB

Design information (cont.)

Otherwise, make the blast tube aperture and fixing holes in the blank plate supplied on site. Then fit the burner to the boiler.

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

Fuels

Oil
- Fuel oil EL to DIN 51603 part 1.

Alternative fuels on request.

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

Tested quality

CE The CE designation is compliant with current EC Directives.

Subject to technical modifications.

Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5822 534 GB