GAE
GAE S
GAE BF
WARM-WATER BOILERS

GB-GANZ

GAE Family

HIGH EFFICIENCY
OVERPRESSURED WARM-WATER BOILERS

The GAE type, CE certfied, overpressured high-efficiency, welded steel boilers are supplied with gas-, oil-, or dual-fuel burners.

Developing the GAE series we have considered future requirements, because the boilers conform to not only the 90/396/CEE gas directives, but also to the 92/42/CEE boiler efficiency directives.

As a result of many test procedures, the boilers keep their high efficiency at any thermal load.

REVERSAL FURNACE CHAMBER: due to the design flame fills properly the reversal type furnace chamber without dead-spaces.

The flame turns back in the furnace chamber, and before fume-gases enter into the convective ducts, the radiation of the refractory door results in perfect afterburning of gases.

Special turbulators, set in the convective stage fume-gas pipes secure the uniform heat transfer along the tubes.

Perfect heat transfer secures high efficiency, that is > 90%

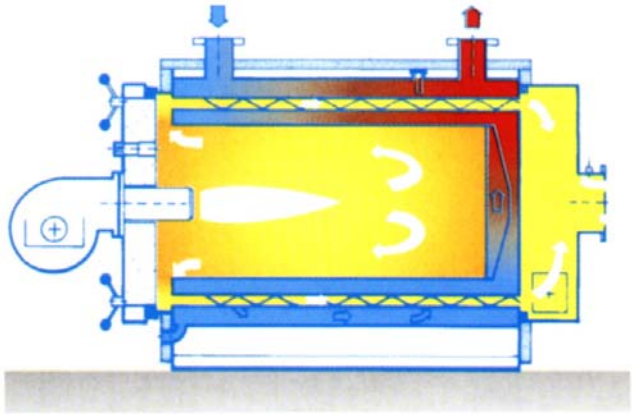
FLUE TUBES: low fume gas temperature is a characteristic feature of high capacity boilers. This low temperature results in a temporary acidic condensation on the cool surface of the flue tubes during the set-up procedure.

The corrosion - made by such an acidic condensation – determines the tubes working life, that is the boiler working life too.

A GAE boiler family flue tubes are thick-walled type, resulting in specially long-life operation.

PROTECTION AGAINST SCALE: designing the GAE boiler series, there was an aim to avoid local overheating, reducing this way the danger of scale formation.

PROTECTION AGAINST CONDENSATION WITH TURBULATORS: problem of condensation especially happens at gas firing: mainly in case of low fume-gas temperature or higher water content of the gases.

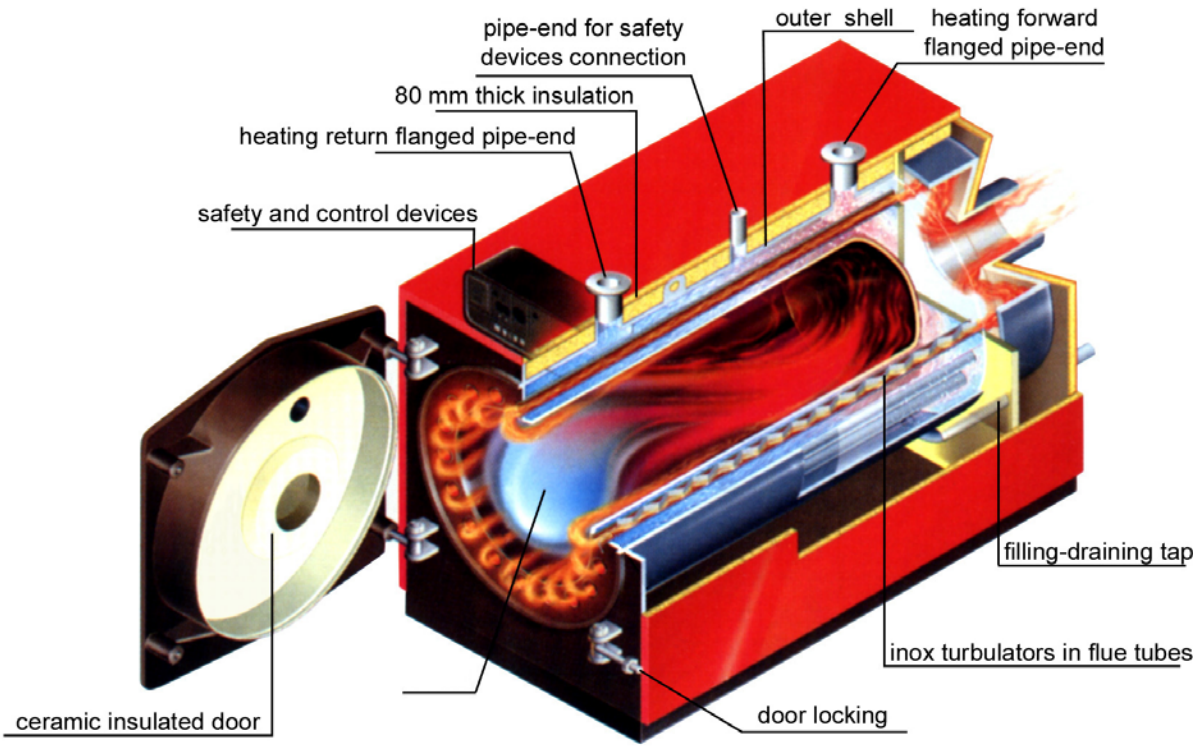


For this reason so called. „centrifugal type", efficiency-improving, spiral-flow retention elements were designed. As these turbulators are situated in the tubes' final stage, so reducing danger of acidic condensation.

TWO-WAY OPENING DOOR: boiler door can be opened alternatively, both at right-side or left-side, even upper-, and lower-opening facilities are possible for special request.

By this two-way opening door perfect central positioning of the door-gasket ensured. By its special heat-insulation boiler-door is resistant against high temperature, which high temperature is needed for afterburning, characteristic feature of reversal furnaced-chambered boilers. Door-sealing is perfect after years of working, due to its retentivity and shatter-proof features..

HEAT INSULATION: we took special care for the boiler heat insulation, with the aim of reducing the radiating loss to the minimum. There is a thick (80 mm) mineral-wool insulation under the removable non-poisonant material painted cover. Following same principle, door and rear fume-chamber are also protected similar way.



CONTROL PANEL: covered by plastic box, mounted on the boiler's upper side, conforms to the requirements of CEE/73/23 Low-Voltage Devices Directives.
Standard control panel consists of:

- Main switch
- Burner switch
- Heating circulation pump switch
- Adjustable control thermostat
- Safety-limit thermostat with manual reset
- Temperature gauge

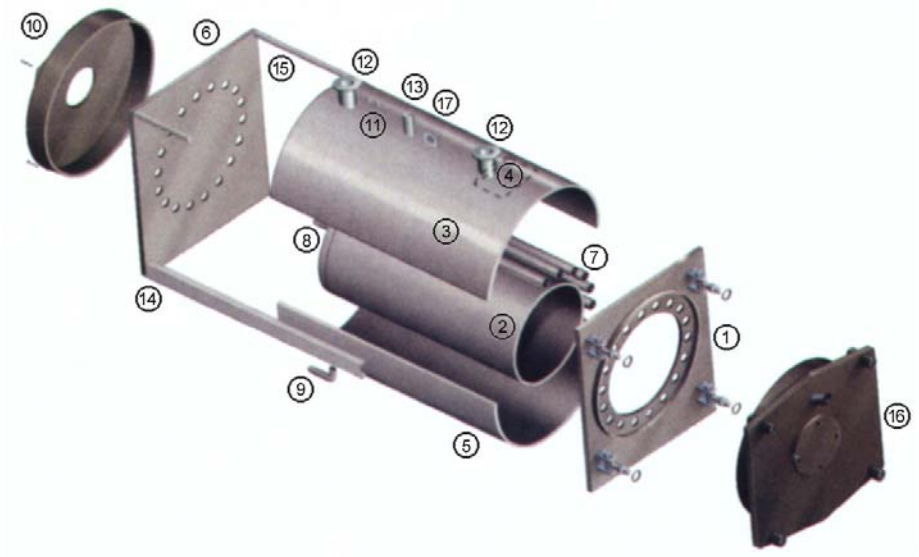
GAE S Family

OVERPRESSURED, HIGH EFFICIENCY WARM-WATER BOILER IN DETAILS

The GAE S family is a technical solution for the problem of passing a big boiler trough a narrow way. Boiler elements can be assembled in the heating center.

The 200.000 - 1.000.000 kcal/h capacity type boilers are delivered in details and will be welded in the heating center.

Designing the boiler elements easy forwarding capability and simple assemblage were taken into consideration.



LEGEND:
1. Front tube-wall
2. Furnace chamber
3. Upper shell
4. Conducting element
5. Lower shell
6. Rear tube-wall
7. Fume-tubes
8. Consol
9. Filling-draining tap
10. Fume-gas collector
11. 1/2" Fitting
12. Flanges
13. Measuring pin
14. Horizontal consol
15. Horizontal consol
16. Boiler door
17. Lifting eye

GAE BF Family

SUPERIMPOSED DOUBLE FURNACE-CHAMBERED HIGH EFFICIENCY OVERPRESSURED WARM-WATER BOILERS

Request for flexible output range and safety - connecting to the seasonal characteristics of the heating period and control requirements – led to the developing of the GAE BF type super-imposed double furnace-chambered boiler family. Main advantage of this system the safety working. One boiler failure is not dangerous for the safety running, because rising flexibly the other boiler's capacity requested output could be reached, keeping the efficiency on a constant high level.

The command panel controls both boilers, and detects also the uniform wear. Verticalal design makes setting easy in the boiler houses, and results in small outline dimensions. Boilers' water systems are connected at the rear side by two pieces special collector, which perfectly separate the water circuits' flows.

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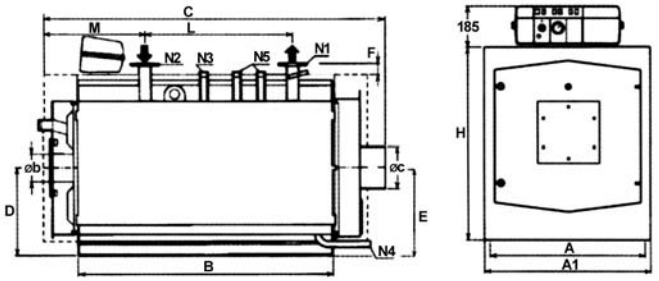
GAE HIGH EFFICIENCY OVERPRESSURED WARM-WATER BOILERS



Legend

N1 Heating forward flanged pipe-end
N2 Hetaing return flanged pipe-end
N3 Pipe-end for control and detector devices
N4 Filling-draining pipe-end
N5 Pipe-end for safety valve(s) and expansion tank
b. Burner mounting flange
c. Fume-duct

GAE	Nominal thermal output	Nominal thermal load	Boiler water capacity	Water system resistance*	Furnace chamber pressure	Max. working water pressure
Type	kW	kW	Liter	daPa	daPa	bar
8	93	102	123	100	4	5
9	105	115	123	120	6	5
10	116	128	123	130	8	5
13	151	167	172	140	12	5
16	186	205	172	150	16	5
20	232	254	300	160	18	5
25	290	318	356	180	20	5
30	349	387	360	200	30	5
35	407	452	360	250	40	5
40	465	515	540	220	35	5
50	581	644	645	270	50	5
60	697	774	855	250	50	5
70	814	903	950	320	50	5
80	930	1031	950	390	55	5
90	1046	1160	1200	260	55	5
100	1162	1280	1200	300	60	5
125	1395	1546	1820	280	60	5
135	1569	1739	2020	320	65	5
150	1744	1930	2200	370	70	5
170	1976	2186	2350	350	60	5
205	2325	2581	2700	400	75	5
255	2907	3221	3600	480	80	5
305	3488	3865	4400	600	90	5

GAE type	Dimensions										Connections						Weight
	A	A1	B	C	D	E	F	H	L	M	N1/N2	N3	N4	N5	B**	c	
	mm	mm	mm	mm	mm	mm	mm	Mm	mm	mm	DN	ϕ	ϕ	ϕ	mm	mm	kg
8	700	750	755	1 140	415	415	55	855	265	484	50	1"	1"	-	130	200	217
9	700	750	755	1 140	415	415	55	855	265	484	50	1"	1"	-	130	200	228
10	700	750	755	1 140	415	415	55	855	265	484	50	1"	1"	-	130	200	240
13	750	800	1 000	1 440	440	440	55	905	475	484	50	1"	1"	-	160	250	335
16	750	800	1 000	1 440	440	440	55	905	475	484	50	1"	1"	-	160	250	350
20	850	900	1 250	1 690	490	490	55	1 005	700	484	65	1"	1"	-	180	250	420
25	850	900	1 500	1 940	490	490	55	1 005	980	484	65	1"	1"	-	180	250	543
30	890	940	1 502	1 900	500	500	65	1 015	850	600	80	1"	1"	1 ¼"	225	250	840
35	890	940	1 502	1 900	500	500	65	1 015	850	600	80	1"	1"	1 ¼"	225	250	920
40	1 110	1 160	1 502	1 950	610	610	65	1 205	850	660	80	1"	1 ¼"	1 ¼"	225	300	1 000
50	1 110	1 160	1 792	2 240	610	610	65	1 205	1 150	660	80	1"	1 ¼"	1 ¼"	225	300	1 200
60	1 240	1 290	1 753	2 255	675	675	65	1 335	1 100	710	100	1"	1 ½"	1 ½"	280	350	1 500
70	1 420	1 290	2 003	2 500	675	675	65	1 335	1 200	710	100	1"	1 ½"	1 ½"	280	350	1 680
80	1 240	1 290	2 003	2 500	675	675	65	1 335	1 200	710	100	1"	1 ½"	1 ½"	280	350	1 850
90	1 390	1 440	2 003	2 500	750	750	65	1 485	1 200	710	125	1"	1 ½"	1 ½"	280	400	2 020
100	1 390	1 440	2 003	2 500	750	750	65	1 485	1 200	710	125	1"	1 ½"	1 ½"	280	400	2 250
125	1 500	1 510	2 265	2 650	885	1 135	80	1 650	1 300	785	150	1"	1 ½"	1 ½"	320	400	2 540
135	1 500	1 510	2 565	2 950	885	1 135	80	1 650	1 600	785	150	1"	1 ½"	1 ½"	320	400	2 860
150	1 500	1 510	2 815	3 200	885	1 135	80	1 650	1 850	785	150	1"	1 ½"	1 ½"	320	400	3 220
170	1 720	1 730	2 615	3 020	960	1 160	80	1 830	1 550	855	200	1 ½"	1 ½"	2"	360	500	3 680
205	1 720	1 730	3 015	3 420	960	1 160	80	1 830	1 950	855	200	1 ½"	1 ½"	2"	360	500	4 250
255	1 870	1 880	3 280	3 670	1 055	1 335	80	2 000	2 050	855	200	1 ½"	1 ½"	2"	400	550	5 190
305	2 000	2 010	3 470	3 850	1 110	1 410	80	2 110	2 250	855	200	1 ½"	1 ½"	2"	400	550	6 150

* water system resistance at 12^{o} C temperature stage

** burner air-tube length 200-250 mm

GB-GANZ SERVICES
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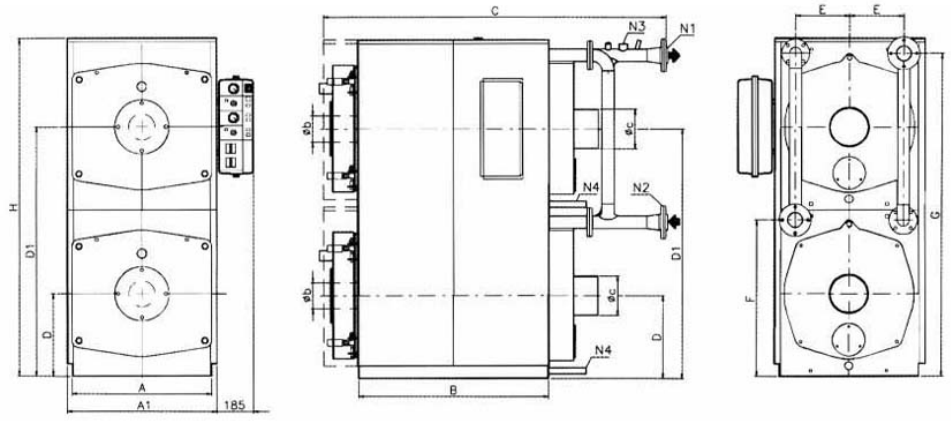
GAE and GAE S TYPE HIGH EFFICIENCY OVERPRESSURED WARM WATER BOILERS PARAMETERS

GAE S	Furnace chamber dimensions [mm]			Boiler-door dimensions [mm]		
	∅	length	weight	width	height	weight
Type	mm	mm	kg	mm	mm	kg
20	500	1135	61	850	778	90
25	500	1385	76	850	778	90
30	545	1380	98	890	807	110
35	545	1380	98	890	807	110
40	645	1365	137	1100	984	180
50	645	1655	137	1100	984	180
60	690	1665	200	1240	1130	210
70	690	1915	230	1240	1130	210
80	690	1915	230	1240	1130	210
90	790	1930	275	1390	1270	235
100	790	1930	275	1390	1270	235

GAE BF SUPERIMPOSED DOUBLE FURNACE-CHAMBERED HIGH EFFICIENCY OVERPRESSURED WARM-WATER BOILER PARAMETERS



Legend

N1 Heating forward pipe-end

N2 Heating return pipe-end

N3 Pipe-end for control and detector devices

N4 Filling-draining tap

b Burner mounting flange

c Fume-duct

GAE BF	Nominal thermal output	Nominal thermal load	Dimensions										Connections				Boiler water capacity	Water system re-sistance *	Furnace chamber pressure	Weight
			A	A1	B	C	D	E	F	D1	G	H	N1/N2	N3/N4	b **	c				
Type	kW	kW	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	DN	∅	mm	mm	Liter	daPa	daPa	kg
16	186	204	700	750	755	1470	415	270	780	1245	1610	1693	65	1"	130	200	246	120	4	454
18	209	230	700	750	755	1470	415	270	780	1245	1610	1693	65	1"	130	200	246	140	6	476
20	233	257	700	750	755	1470	415	270	780	1245	1610	1693	65	1"	130	200	246	150	8	500
26	302	333	750	800	1000	1745	440	295	830	1320	1710	1793	80	1"	160	250	344	160	12	695
32	372	411	750	800	1000	1745	440	295	830	1320	1710	1793	80	1"	160	250	344	170	16	725
40	465	512	850	900	1250	2000	490	345	930	1470	1910	1993	80	1"	180	250	600	180	18	870
50	581	639	850	900	1500	2250	490	345	930	1470	1910	1993	80	1"	180	250	712	200	20	1116

* water system resistance at 12^{o} C temperature stage
** burner's air-tube length 200-250 mm
max working water pressure: 5 bar

Boilers are conform to the requirements of:
90/396/CEE gas directives, 92/42/ CEE boiler efficiency directives.

Technical data in this leaflet serve just for information. The GB-GANZ is continuously developing its products and keep the right to changing the technical parameters.