



AT THE HEART OF YOUR HEATING SYSTEM



TK-Topboiler

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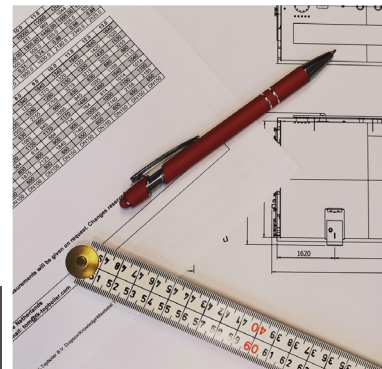
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"Bringing you the best quality products.
We don't settle for less."

About TK-Topboiler

Renowned for its focus on quality and worldwide certification, TK-Topboiler has been a trusted supplier of heating equipment in the greenhouse industry for over 10 years. In collaboration with our experienced partners we have designed our products for optimal durability, efficiency and ease-of-use, ensuring a long lifespan and care-free operation.

Built by industrial grade workers in an industrial grade factory, the quality inspection on every part of our products far surpasses the greenhouse quality standard of today. This is what we believe in. Bringing you the best quality products. We don't settle for less.



Greenhouse boiler

TK-Topboiler's flagship model is the hot-water boiler with 3-pass fire tube design. No concessions were made in this design that is based on 40 years of experience in the greenhouse industry.

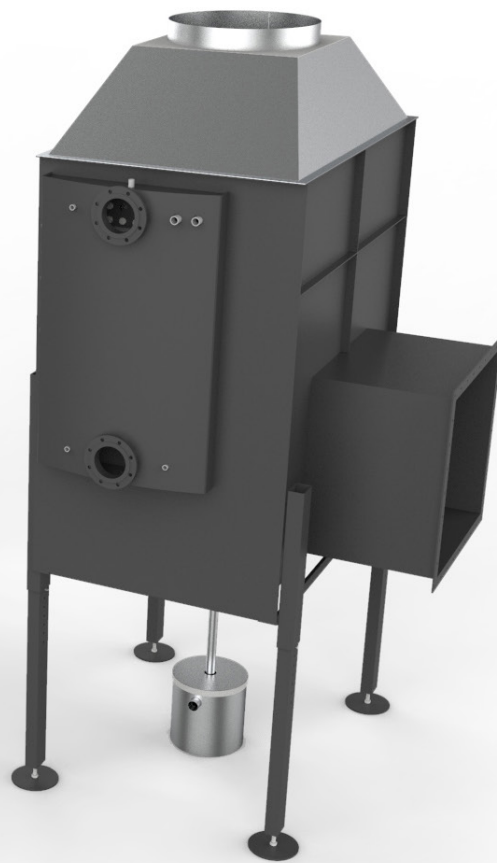
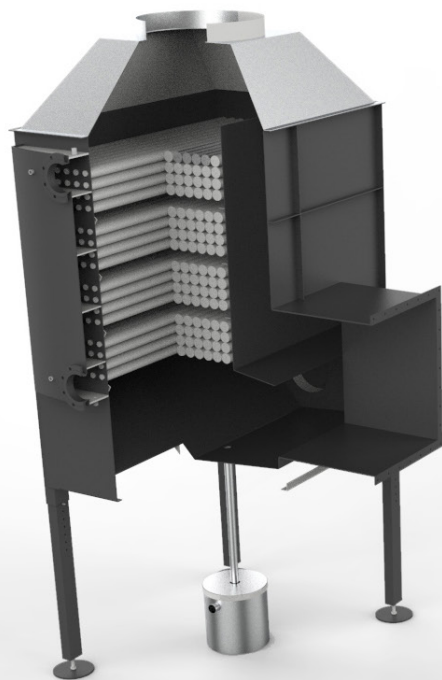
Features:

- Worldwide certification for China, USA, Canada, Europe, EAC Economic Union and more.
- Capacity range: 1 to 15 MW/h - 1 to 13 Gcal/h
- Water cooled return chambers and burner plate*
- Large water buffer
- Low CO emission for safe use of CO₂ from flue gas in combination with matching TK-Topcondenser
- Wide furnace for low NOx emission
- High efficiency
- Prepared shunt system for internal circulation
- Low sound emission and vibration
- Maintenance platform
- Custom switch box support for burner panel
- 100mm special, extra dense insulation with PVC coated steel cladding and stainless steel/aluminum rims
- Insulated boiler front and maintenance door
- Pressure and temperature gauges in front
- Flat welded fluegas tubes for durable and reliable bond
- Flue gas recirculation possible
- Safety valves can be included in delivery

*not applicable on design for Chinese market









Condensing heat exchanger

The condensing heat exchanger is an integral part of a greenhouse boiler room. Further increasing efficiency by extracting energy from the fluegases whilst cooling it to safely extract CO₂ to use as fertilizer in the greenhouse. The humid conditions require the condenser to be manufactured from special COR-TEN steel with corrosive resistant properties, and aluminum fin-tubes.

Features:

- SELO pressure vessel certification for delivery in China.
 - Seamless integration with TK-Topboiler, but also applicable to other boiler systems
 - Manufactured from COR-TEN steel for corrosive resistance and high tensile strength
 - Aluminum fin-tubes for high heat transfer and durable operation
 - Intelligent bypass system for emergency oil firing
 - Inspection and maintenance hatch
 - Safety set and condensation reservoir are included for complete package
 - Optional delivery of chimney with CO₂ connection, stackflange to chimney and counterflanges
-

Heat storage tanks

CO₂ fertilization by day, heat by night. This can be realized with the use of a heat storage tank, in combination with a gas fired boiler. The insulated buffer tank stores the heat energy for use at other times, providing the grower with higher yields and increased climate control, without wasting energy.

Cooling buffer

Cooling is becoming more important in horticulture everyday as certain crops(e.g. cannabis) thrive at low temperatures and/ or low humidity. These aspects can be controlled with a cooling system. A proper cooling system incorporates a cooling buffer tank to provide more control over the water temperature. It is important to adjust the insulation material for the cooling buffer tank since it has to cope with condensation on the steel parts.

Standards and specifications

Designs will be calculated and constructed according to EN-14015 or API 650. All tanks can be delivered in materials, with or without insulation, along with instructions for assembly. Optionally the tank can be assembled and insulated by an experienced crew on site. Ask us about the options.





Certification

To ensure proper delivery and commissioning, TK-Topboiler can supply boilers and condensers with certification for worldwide installation. Design of products may differ slightly due to differing design requirements per standard. With delivery comes complete documentation for care free transportation, customs clearance and commissioning on site.





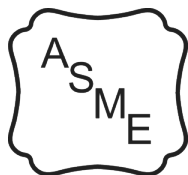
China Special Equipment Manufacture License

Boiler design according to Chinese basic requirements TSG G-0001-2012. TK-Topboiler/HKB is the single European greenhouse boiler supplier with Chinese certification from SELO(Special Equipments Licensing Office)



TR CU (EAC) certificate of conformity

Boiler design according to Technical Regulations Customs Union for the EAC Economic Union: Russia, Belarus, Kazakhstan, Armenia and Kyrgyzstan.



Certificate of Authorization ASME S/H/U

Boiler design according to ASME Boiler and Pressure vessel code for the United States of America and Canada. Delivery for Canadian provinces come with Canadian registration number.



PED 2014/68/EU for CE-marking

Boiler design according to Pressure Equipment Directive 2014/68/EU for the European Economic Area.

Specifications

LNE Compact according ASME Section IV

2 Bar (g) / 110°C
30 PSI / 250°F

Revision: 4
Version: 08-04-2020

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Nett. Capacity (MCal)	1000	1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000
Brut. Capacity (MCal) Heating capacity	1087	1630	2174	2717	3261	3804	4348	5435	6522	7609	8696	9783	10869	11956	13043	14130
Nett. Capacity (MW)	1.16	1.74	2.33	2.91	3.49	4.07	4.65	5.81	6.98	8.14	9.30	10.47	11.63	12.79	13.95	15.12
Gas consumption (nm ³ /h) *	143.8	215.7	287.5	359.4	431.3	503.2	575.1	718.9	862.6	1006.4	1150.2	1294.0	1437.7	1581.5	1725.3	1869.1
Oil Consumption (kg/h) **	106.6	159.8	213.1	266.4	319.7	373.0	426.3	532.8	639.4	746.0	852.5	959.1	1065.7	1172.2	1278.8	1385.4
Watercontent (m ³)	3.0	4.5	6.6	7.8	9.6	10.0	11.3	13.9	17.2	19.0	20.2	21.1	25.1	26.3	32.7	33.6
Pressure lost of fluegas (mbar) app.	4.1-5.6	6.0-7.5	6.0-7.5	6.1-7.6	6.3-7.8	5.8-7.3	7.0-8.5	6.0-7.5	7.7-9.1	8.9-10.4	9.9-11.4	10.0-11.5	9.8-11.3	10.2-11.7	10.6-12.1	11.1-12.6

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Length L (mm) excl. burner	3674	4274	4774	4874	5374	5474	5976	6574	6578	7280	7278	7278	7878	7978	8378	8578
Total width B (mm) incl. switchbox	2050	2250	2450	2650	2750	2800	2850	3050	3250	3350	3400	3550	3650	3800	3900	3900
Height H1 (mm) excl. Valves	2211	2302	2399	2701	2762	2778	2970	3109	3251	3256	3385	3460	3631	3690	3745	3745
Boilerlength L1 (mm) incl. isolation	3224	3724	4224	4224	4724	4724	5226	5724	5728	6230	6228	6228	6728	6828	7228	7428
Boilersupport B1 (mm)	1074	1215	1356	1498	1569	1612	1647	1789	1953	2024	2063	2169	2240	2346	2417	2417
Distance between boiler chairs B2 (mm)	1800	2100	2400	2400	2700	2700	3000	3300	3300	3600	3600	3600	3900	3900	3900	4000
Height burnerconnection A (mm)	1200	1200	1200	1400	1400	1400	1600	1600	1600	1600	1740	1740	1850	1850	1850	1850
Diameter of boiler D (mm) incl. isolation	1650	1850	2050	2250	2350	2400	2450	2650	2850	2950	3000	3150	3250	3400	3500	3500
Fluegas outlet diameter R (mm)	300	400	400	500	500	600	600	700	700	900	900	900	1000	1000	1100	1100
Furnacediameter D1(mm)	800	900	1000	1150	1200	1200	1250	1400	1500	1600	1600	1650	1700	1800	1800	1800
Furnacelenght excl. Reversal chamber	2100	2540	3200	3200	3750	3750	4300	4800	4800	5300	5300	5300	5800	5900	6300	6500

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Flow m ³ /h	50	75	100	125	150	175	200	250	300	350	400	450	500	550	600	650
Supply/Return T=20°C	5"	5"	6"	8"	8"	8"	8"	10"	10"	10"	10"	12"	12"	12"	14"	16"
Drain (threaded)	1"	1"	1 ½"	1 ½"	1 ½"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Shunt (DN)	2 1/2"	2 1/2"	3"	3"	3"	4"	4"	4"	4"	4"	5"	5"	5"	6"	6"	6"
Safety valves (DN)	1 x 2"	2 x 2"	2 x 2"	2 x 2"	3 x 2"	3 x 2"	3 x 2"	4 x 2"	5 x 2"	6 x 2"	6 x 2"	7 x 2"	8 x 2"	9 x 2"	9 x 2"	10 x 2"

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Heated surface (m ²)	40	59	72	95	120	130	146	180	205	240	280	315	340	375	425	440
Fluegas content (m ³)	1.9	2.9	3.8	5.0	6.0	5.9	7.3	9.6	10.7	14.1	14.9	15.9	17.3	19.6	20.8	21.6
Transport mass (tons)	2.6	4.0	5.3	6.8	8.4	8.7	9.7	12.3	14.0	16.7	18.2	20.2	22.2	24.3	27.0	28.0

* Dutch gas Hi=31,669 MJ/m³

** Oil HBO I Hi=42,696 MJ/kg

In case of an order exact boiler weight and measurements will be given on request. Changes reserved.

**LNE Compact according Chinese basic requirements
TSG G0001-2012**

Revision: 0

Version: 20-05-2020

**2 Bar (g) / 110°C
30 PSI / 250°F**

Type	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Nett. Capacity (MCal)	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000
Brut. Capacity (MCal) Heating capacity	2174	3261	4348	5435	6522	7609	8696	9783	10869	11956	13043	14130
Nett. Capacity (MW)	2.33	3.49	4.65	5.81	6.98	8.14	9.30	10.47	11.63	12.79	13.95	15.12
Gas consumption (nm ³ /h) *	261.0	381.0	522.0	641.0	775.0	894.0	1021.0	1150.0	1280.0	1407.0	1537.0	1672.0
Watercontent (m ³)	6.3	10.6	13.5	13.9	16.0	19.3	20.2	25.8	28.1	29.0	33.1	32.6
Pressure lost of fluegas (mbar) app.	9,0-10,0	10-11,5	10-11,5	10-11,5	11-12,5	11-12,5	12,0-13,5	12,5-14,0	12,5-14,0	12,0-14,0	13,0-14,5	14,0-15,5

Type	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Length L (mm) excl. burner	5395	5905	6405	6905	6905	7405	7405	7405	7885	7885	8385	8385
Total width B (mm) incl. switchbox	2100	2500	2650	2850	2950	3200	3300	3400	3400	3500	3575	3575
Height H1 (mm) excl. Valves	2415	2815	2965	3165	3265	3515	3615	3715	3715	3815	3890	3890
Boilerlength L1 (mm) incl. isolation	3950	4460	4960	5460	5460	5960	5960	5960	6440	6440	6940	6940
Boilersupport B1 (mm)	1310	1400	1700	1840	1900	2100	2150	2250	2250	2300	2350	2350
Distance between boiler chairs B2 (mm)	2400	2700	3000	3300	3300	3600	3600	3600	3900	3900	4160	4160
Height burnerconnection A (mm)	1250	1450	1525	1625	1675	1800	1850	1900	1900	1950	1987.5	1987.5
Diameter of boiler D (mm) incl. isolation	1850	2250	2400	2600	2700	2950	3050	3150	3150	3250	3325	3325
Fluegas outlet diameter R (mm)	400	450	500	560	600	630	710	710	800	800	800	900
Furnacediameter D1(mm)	1000/900	1200/1100	1250/1150	1400/1300	1500/1400	1600/1500	1600/1500	1650/1550	1700/1600	1800/1700	1800/1700	1800/1700

Type	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Flow m3/h	100	150	200	250	300	350	400	450	500	550	600	650
Supply/Return delta T=20°C	150	200	200	250	250	250	250	300	300	300	350	350
Drain DN (Flanged PN 6)	40	40	50	50	50	50	50	50	50	50	50	50
Shunt DN (Flanged PN 6)	80	80	100	100	100	100	125	125	125	150	150	150
Safety valves DN (PN 16)	2xDN65	2xDN65	2xDN80	2xDN80	2xDN100	2xDN100	2xDN125	2xDN125	2xDN125	3xDN100	4xDN100	4xDN100

Type	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Heating surface (m2)	68	115	135	175	210	240	270	310	335	370	395	415
Fluegas content (m3)	3.8	6.9	8.8	11.0	12.0	15.3	16.2	19.8	21.0	23.0	25.6	26
Transport mass (tons) excl. Refractory / In	5.4	6.7	8.5	10.0	11.0	14.1	16.0	16.5	18.2	18.7	21.2	21.7

* Dutch gas Hi=31,669 MJ/m³

** Oil HBO I Hi=42,696 MJ/kg

Revision: 4
Version: 08-04-2020

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Nett. Capacity (MCal)	1000	1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000
Brut. Capacity (MCal) Heating capacity	1087	1630	2174	2717	3261	3804	4348	5435	6522	7609	8696	9783	10869	11956	13043	14130
Nett. Capacity (MW)	1.16	1.74	2.33	2.91	3.49	4.07	4.65	5.81	6.98	8.14	9.30	10.47	11.63	12.79	13.95	15.12
Gas consumption (nm ³ /h) *	143.8	215.7	287.5	359.4	431.3	503.2	575.1	718.9	862.6	1006.4	1150.2	1294.0	1437.7	1581.5	1725.3	1869.1
Oil Consumption (kg/h) **	106.6	159.8	213.1	266.4	319.7	373.0	426.3	532.8	639.4	746.0	852.5	959.1	1065.7	1172.2	1278.8	1385.4
Watercontent (m ³)	3.0	4.5	6.6	7.8	9.6	10.0	11.3	13.9	17.2	19.0	20.2	21.1	25.1	28.0	32.7	33.6
Pressure lost of fluegas (mbar) app.	4.1-5.6	6.0-7.5	6.0-7.5	6.1-7.6	6.3-7.8	5.8-7.3	7.0-8.5	6.0-7.5	7.7-9.1	8.9-10.4	9.9-11.4	10.0-11.5	9.8-11.3	10.2-11.7	10.6-12.1	11.1-12.6

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Length L (mm) excl. burner	3674	4274	4774	4874	5374	5474	5976	6574	6578	7280	7278	7278	7878	7978	8378	8578
Total width B (mm) incl. switchbox	2050	2250	2450	2650	2750	2800	2850	3050	3250	3350	3400	3550	3650	3800	3900	3900
Height H1 (mm) excl. Valves	2211	2302	2399	2701	2762	2778	2970	3109	3251	3256	3385	3460	3631	3690	3745	3745
Boilerlength L1 (mm) incl. isolation	3224	3724	4224	4224	4724	4724	5226	5724	5728	6230	6228	6228	6728	6828	7228	7428
Boilersupport B1 (mm)	1074	1215	1356	1498	1569	1612	1647	1789	1953	2024	2063	2169	2240	2346	2417	2417
Distance between boiler chairs B2 (mm)	1800	2100	2400	2400	2700	2700	3000	3300	3300	3600	3600	3600	3900	3900	3900	4000
Height burnerconnection A (mm)	1200	1200	1200	1400	1400	1400	1600	1600	1600	1600	1740	1740	1850	1850	1850	1850
Diameter of boiler D (mm) incl. isolation	1650	1850	2050	2250	2350	2400	2450	2650	2850	2950	3000	3150	3250	3400	3500	3500
Fluegas outlet diameter R (mm)	300	400	400	500	500	600	600	700	700	900	900	900	1000	1000	1100	1100
Furnacediameter D1(mm)	800	900	1000	1150	1200	1200	1250	1400	1500	1600	1600	1650	1700	1800	1800	1800

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Flow m ³ /h	50	75	100	125	150	175	200	250	300	350	400	450	500	550	600	650
Supply/Return T=20°C	100	125	150	150	200	200	200	250	250	250	250	300	300	300	350	400
Drain (threaded)	1"	1"	1 ½"	1 ½"	1 ½"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Shunt (DN)	65	65	80	80	80	100	100	100	100	100	125	125	125	150	150	150
Safety valves (DN)	2 x 2"	2 x 2"	3 x 2"	2xDN65	2xDN65	2xDN80	2xDN80	2xDN80	2xDN100	2xDN100	2xDN125	2xDN125	2xDN125	3xDN100	4xDN100	4xDN100

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Heated surface (m ²)	40	59	72	95	120	130	146	180	205	240	280	315	340	375	425	440
Fluegas content (m ³)	1.9	2.9	3.8	5.0	6.0	5.9	7.3	9.6	10.7	14.1	14.9	15.9	17.3	19.6	20.8	21.6
Transport mass (tons)	2.5	3.4	4.4	5.4	6.7	7.0	7.7	10.0	12.0	14.5	16.0	17.5	19.0	21.0	23.0	28.0

* Dutch gas Hi=31,669 MJ/m³

** Oil HBO I Hi=42,696 MJ/kg

In case of an order exact boiler weight and measurements will be given on request. Changes reserved.

TK-Topcondensating heatexchanger

2 Bar (g) / 110°C
30 PSI / 250°F

Revision: 4
Version: 08-04-2020

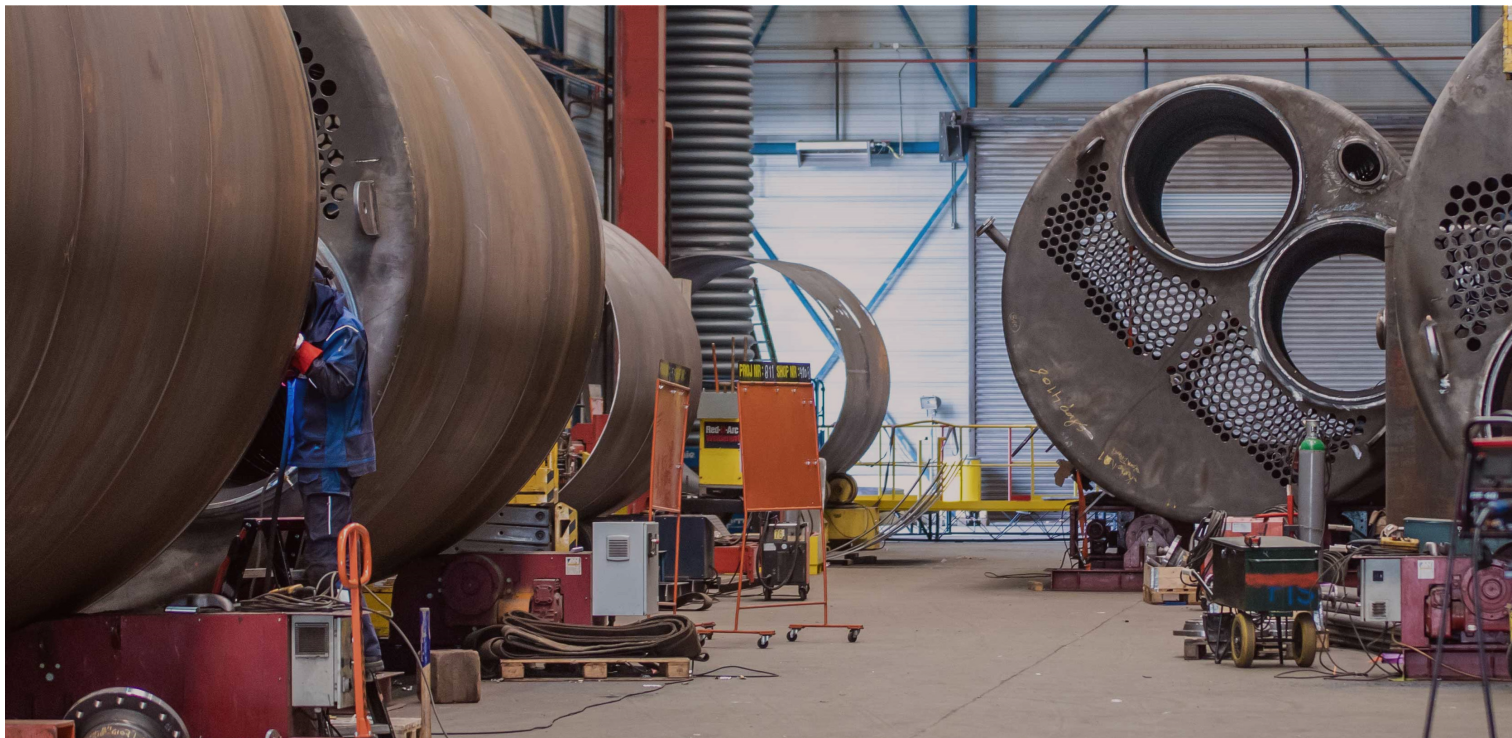
Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Boiler capacity of Mcal/hr	1000	1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	13000
Heated surface (m²)	68	119	143	184	230	276	307	368	460	537	665	775	831	969	1044	1193
Capacity (Kw) appr.	109.00	181.00	218.00	290.00	363.00	435.00	508.00	580.00	725.00	870.00	1015.00	1160.00	1305.00	1450.00	1595.00	1740.00
Back pressure (Pa)	350.0	350.0	350.0	350.0	400.0	400.0	400.0	450.0	450.0	450.0	500.0	500.0	500.0	555.0	555.0	555.0
Back pressure waterside (Pa*104)	0,41	0,38	0,42	0,29	0,35	0,47	0,58	0,91	1,02	1,11	0,16	0,31	0,74	0,88	0,88	0,88
Weight appr. (Kg)	380.0	500.0	555.0	680.0	760.0	840.0	950.0	1050.0	1220.0	1350.0	1590.0	1800.0	1930.0	2180.0	2340.0	2525.0

Type	1.0	1.5	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
A - Distance between legs	710	910	1110	710	910	1110	890	1090	1390	1640	1340	1640	1340	1640	1640	1640
B - Distance between legs	600	750	750	950	950	950	1020	1020	1020	1020	1270	1270	1320	1320	1420	1520
C - Depth	630	780	780	980	980	980	1030	1030	1030	1030	1280	1280	1330	1330	1430	1530
D - Height without legs	1420	1470	1470	1980	1980	1980	2505	2505	2505	2505	2755	2755	3215	3215	3255	3255
E	330	375	375	430	430	430	530	530	530	530	660	660	630	630	680	680
F	599	705	805	610	710	810	710	810	960	1085	945	1095	945	1095	1105	1115
G - Distance water connections	450	450	450	810	810	810	1120	1120	1120	1120	1170	1170	1490	1490	1540	1540
H - Chimney connection	214	314	364	410	410	464	514	514	564	614	664	714	764	814	1014	1014
I - Fluegas connection	400	500	500	600	600	600	800	800	800	800	900	900	1000	1000	1100	1100
J - Total width	1159	1365	1565	1175	1375	1575	1375	1575	1875	2125	1840	2140	1840	2140	2155	2185
K - Height chimney connection	300	300	300	400	400	400	500	500	500	500	550	550	600	600	650	650
Nozzle N1 / N2 (PN6)	DN65	DN80	DN80	DN100	DN100	DN100	DN100	DN100	DN100	DN100	DN150	DN150	DN150	DN150	DN150	DN150

* Dutch gas Hi=31,669 MJ/m³

** Oil HBO I Hi=42,696 MJ/kg

In case of an order exact weight and measurements will be given on request. Changes reserved.



For more information, please visit our website
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