Industrial boilers

THD-U · THSD-I … E · THW-I … NTE · THW-I … HTE

Hoval

Steam-, hot- and high temperature hot water boilers.

Hoval Industrial Boilers.
Advantages at a glance.

Our products represent the technological state-of-the-art and our innovative solutions offer extremely low energy consumption in keeping with our motto “Responsibility for energy and environment”.

economical

Cost effectiveness

- **Cost-efficient solution**
  due to low investment costs
- **Best effectiveness**
  due to built in
  - water cooled fin tube wall at flame tube rear wall
  - dimpled tubes at THD-U boiler series
- **Power saving and high efficiency**
  - due to smooth heating surfaces
  - boiler design calculated according to actual rules

ecological

Lowest emissions

- **Environment friendly**
  due to lowest noxious emission
- **Low CO_2 emissions**
  due to minimal consumption
- **Outstanding emissions values**
  due to power adjustment (modulation) of LowNOx burners
- **Low fuel consumption** due to special calculated heat transfer areas resulting in high boiler efficiency

easy to use

Simple maintenance

- **Easy to use** due to intelligent design details
- **Convenient and accessible remote maintenance** by using TopTronic® online (THW-I...NTE)
- **Large boiler front door** which garantuees easy access for cleaning of boiler and burner service
- **Boiler door hinged** – no special lifting or support tools necessary
- **No fire proof concrete** at back wall of boiler

clever

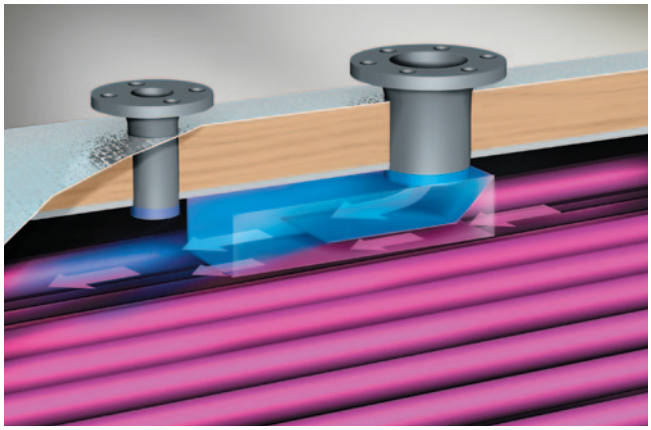
Perfect solution

- **Large range of applications**
  due to flexible combination options
- **Space-saving**
  due to compact design
- **Simple installation**
  due to high flexibility in positioning

Hoval Industrial Boiler.
Durable, efficient and economical.

Durability

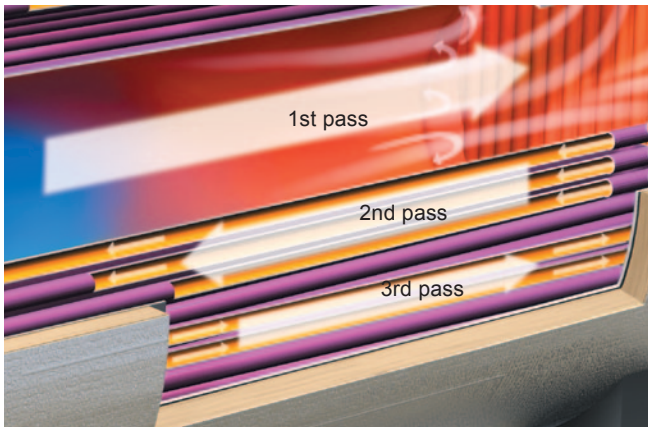
This is ensured by an integrated injector nozzle which mixes the cold return water with the hot water in the boiler which means there is less risk of flue gas condensation. For steam boilers the water is distributed at the upper side of the water level by a special drilled tube – this guarantees a fast mixing of colder feed water with the hot boiler water and reduces thermal shocks.



Return water infeed with injector effect

Minimal emissions during all operating conditions

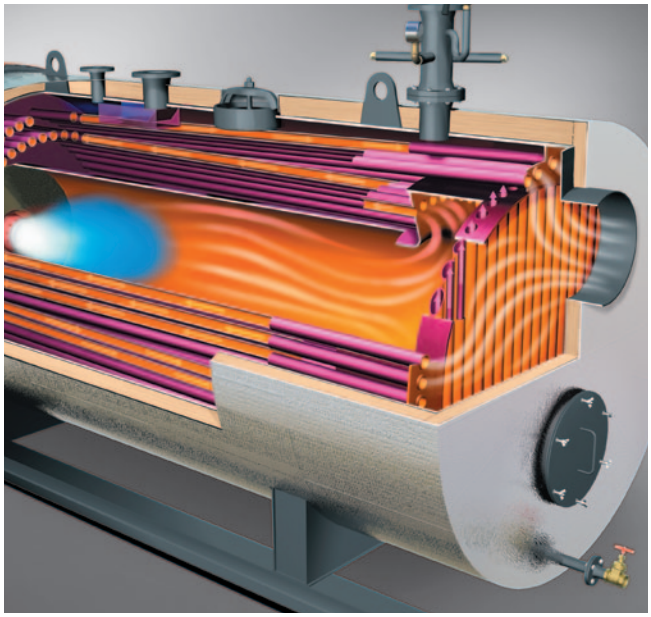
This is achieved by an optimum heating surface geometry and flame tube dimensions which comply with the latest directives. In view of the thermal stress inside the boiler, the boilers are designed to be extremely flexible. A 3-pass firing sequence guarantees extremely low emission of pollutants and optimum burn-out.



3-pass LowNOx firing

Highest efficiency

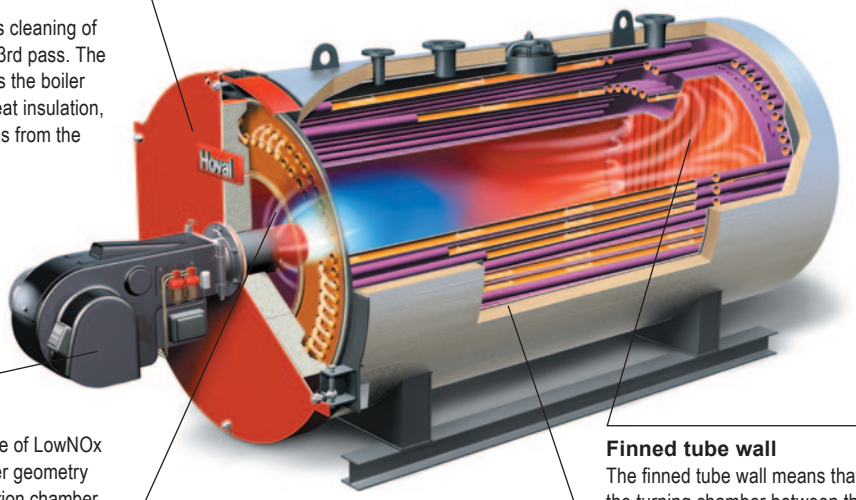
A water-cooled flame tube rear wall (made from finned tubes) increases the heat utilisation and reduces radiation losses in the boiler. As no additional brickwork (fireclay) is required in the flame tube, maintenance and servicing costs are kept to a minimum. The secondary heating surfaces are smooth and thus very easy to clean.
The flue gas tubes on the THD-U boiler series are Hoval dimpled tubes (patented), resulting in low flue gas temperatures and optimum efficiency with compact design.
All Hoval industrial boilers are designed as “natural circulation boilers,” allowing for optimum desludging and draining without the need for external circulating pumps. Depending on the fuel used, especially developed heat exchangers (economisers) can be combined with all boiler types to further boost the efficiency of the boiler and the complete system.



Turning chamber with finned tubes

Hoval THW-I … NTE
Hot water boiler for oil and gas firing

Boiler door
Large boiler door significantly simplifies cleaning of the combustion chamber, the 2nd and 3rd pass. The special construction of the hinge makes the boiler door easy to open. With its optimum heat insulation, the boiler door helps reduce heat losses from the boiler to a minimum.



Burner
The boiler is optimally suited for the use of LowNOx burners due to the combustion chamber geometry and the low thermal load at the combustion chamber.

Finned tube wall
The finned tube wall means that full water cooling in the turning chamber between the 1st and 2nd pass is achieved. This significantly boosts fuel exploitation.

Heating surface
The smooth-tubed heating surface without turbulators reduces flue gas losses and enables quick and easy cleaning to ensure economical operation.

Insulation
High-efficiency thermal insulation with aluminium cladding reduces standby losses to a minimum and thus contributes to optimum cost effectiveness.

Technical data THW-I ... NTE Type	Boiler output kW*	Water content litres	Transport weight bar/kg	Net efficiency %**	L x W x H mm
(23/15)	1500 - 2300	2800	10 / 4500	91.3 - 93.3	3480 x 1750 x 2430
(28/20)	2000 - 2800	3500	10 / 6000	91.4 - 92.9	3980 x 1850 x 2530
(35/25)	2500 - 3300	4500	10 / 6900	91.7 - 93.1	4330 x 1950 x 2630
(40/30)	3000 - 4000	5000	10 / 7600	91.9 - 93.2	4630 x 2000 x 2835
(45/35)	3500 - 4500	5500	10 / 8200	92.1 - 93.2	4780 x 2050 x 2885
(50/40)	4000 - 5000	6500	10 / 10000	92.4 - 93.3	5180 x 2150 x 3065
(55/45)	4500 - 5500	7000	10 / 10800	92.3 - 93.2	5430 x 2200 x 3165
(60/50)	5000 - 6000	8000	10 / 12200	92.4 - 93.2	5480 x 2250 x 3215
(70/60)	6000 - 7000	9000	10 / 13500	92.6 - 93.2	5970 x 2450 x 3505
(80/70)	7000 - 8000	10000	10 / 15000	92.4 - 93.0	6270 x 2550 x 3605
(90/80)	8000 - 9000	11500	10 / 17000	92.6 - 92.9	6570 x 2650 x 3705
(100/90)	9000 - 10000	13000	10 / 18500	92.3 - 92.8	6720 x 2750 x 3910
(120/100)	10000 - 12000	14000	10 / 21000	92.4 - 93.2	7020 x 2850 x 4060
(140/120)	12000 - 14000	15000	10 / 23000	92.2 - 92.9	7220 x 3050 x 4260
(160/140)	14000 - 16000	16500	10 / 26500	92.2 - 92.9	7420 x 3250 x 4460
(180/160)	16000 - 18000	20000	10 / 30500	92.6 - 93.1	7620 x 3350 x 4745
(200/180)	18000 - 20000	25000	10 / 35500	92.8 - 93.2	7920 x 3650 x 5245

Boiler pressure: standard 6 and 10 bar

Subject to modifications

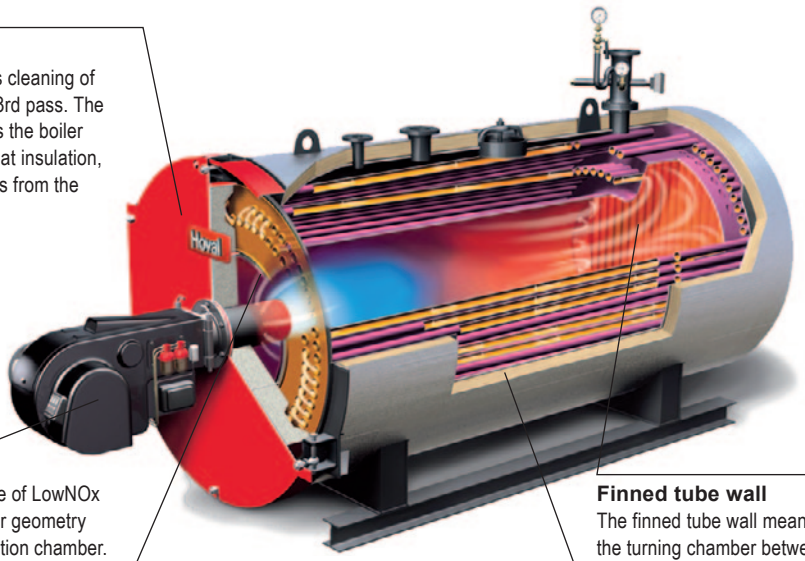
* kW Burner setting full load, air coefficient λ = 1.1 (CO_2, heating oil EL = 13.9%, natural gas = 10.8%),

** % With a clean boiler, boiler water (average temperature) = 70 °C

Flue gas temperature at nominal output approx. 175° C
Dimensions and weight: incl. insulation, without burner and other fitted parts

Hoval THW-I … HTE
High-temperature hot water boiler for oil and gas firing

Boiler door
Large boiler door significantly simplifies cleaning of the combustion chamber, the 2nd and 3rd pass. The special construction of the hinge makes the boiler door easy to open. With its optimum heat insulation, the boiler door helps reduce heat losses from the boiler to a minimum.



Burner
The boiler is optimally suited for the use of LowNOx burners due to the combustion chamber geometry and the low thermal load at the combustion chamber.

Finned tube wall
The finned tube wall means that full water cooling in the turning chamber between the 1st and 2nd pass is achieved. This significantly boosts fuel exploitation.

Heating surface
The smooth-tubed heating surface without turbulators reduces flue gas losses and enables quick and easy cleaning to ensure economical operation.

Insulation
High-efficiency thermal insulation with aluminium cladding reduces standby losses to a minimum and thus contributes to optimum cost effectiveness.

Technical data THW-I ... HTE Type	Boiler output kW*	Water content litres	Transport weight bar/kg	Net efficiency %**	L x W x H mm
(10/05)	500 - 1000	1700	10 / 2500	88.5 - 91.5	2580 x 1550 x 2150
(13/08)	800 - 1300	1900	10 / 2900	89.1 - 91.2	2880 x 1600 x 2285
(17/10)	1000 - 1700	2100	10 / 3500	89.9 - 91.9	3080 x 1700 x 2360
(22/15)	1500 - 2200	2800	10 / 4500	89.7 - 91.3	3480 x 1750 x 2430
(27/20)	2000 - 2700	3500	10 / 6000	89.6 - 90.9	3980 x 1850 x 2530
(34/25)	2500 - 3400	4500	10 / 7000	89.8 - 91.8	4330 x 1950 x 2630
(39/30)	3000 - 3900	5000	10 /7500	90.0 - 91.1	4630 x 2000 x 2835
(43/35)	3500 - 4300	5500	10 / 8500	90.3 - 91.2	4780 x 2050 x 2885
(48/40)	4000 - 4800	6500	10 / 10500	90.5 - 91.3	5180 x 2150 x 3065
(54/45)	4500 - 5400	7000	10 / 12000	90.4 - 91.1	5430 x 2200 x 3165
(59/50)	5000 - 5900	8000	10 / 12500	90.4 - 91.1	5480 x 2250 x 3215
(68/60)	6000 - 6800	9000	10 / 13500	90.7 - 91.2	5680 x 2350 x 3315
(78/70)	7000 - 7800	10000	10 / 16000	90.5 - 90.9	5970 x 2450 x 3505
(89/80)	8000 - 8900	11500	10 / 18000	90.4 - 90.8	6270 x 2550 x 3605
(99/90)	9000 - 9900	13000	10 / 20000	90.3 - 90.7	6570 x 2650 x 3705
(115/100)	10000 - 11500	14000	10 / 22000	90.3 - 90.9	6720 x 2750 x 3910
(130/120)	12000 - 13000	15000	10 / 25000	90.5 - 90.8	7020 x 2850 x 4060
(150/140)	14000 - 15000	16500	10 / 29000	90.5 - 90.8	7220 x 3050 x 4260
(170/160)	16000 - 17000	20000	10 / 33000	90.8 - 91.2	7420 x 3250 x 4460
(190/180)	18000 - 19000	25000	10 / 37000	90.9 - 91.2	7620 x 3350 x 4745
(210/200)	20000 - 21000	30000	10 / 43000	91.4 - 91.5	7920 x 3650 x 5245

Boiler pressure: standard 10, 13 and 16 bar/max. operating temperature up to 210° C

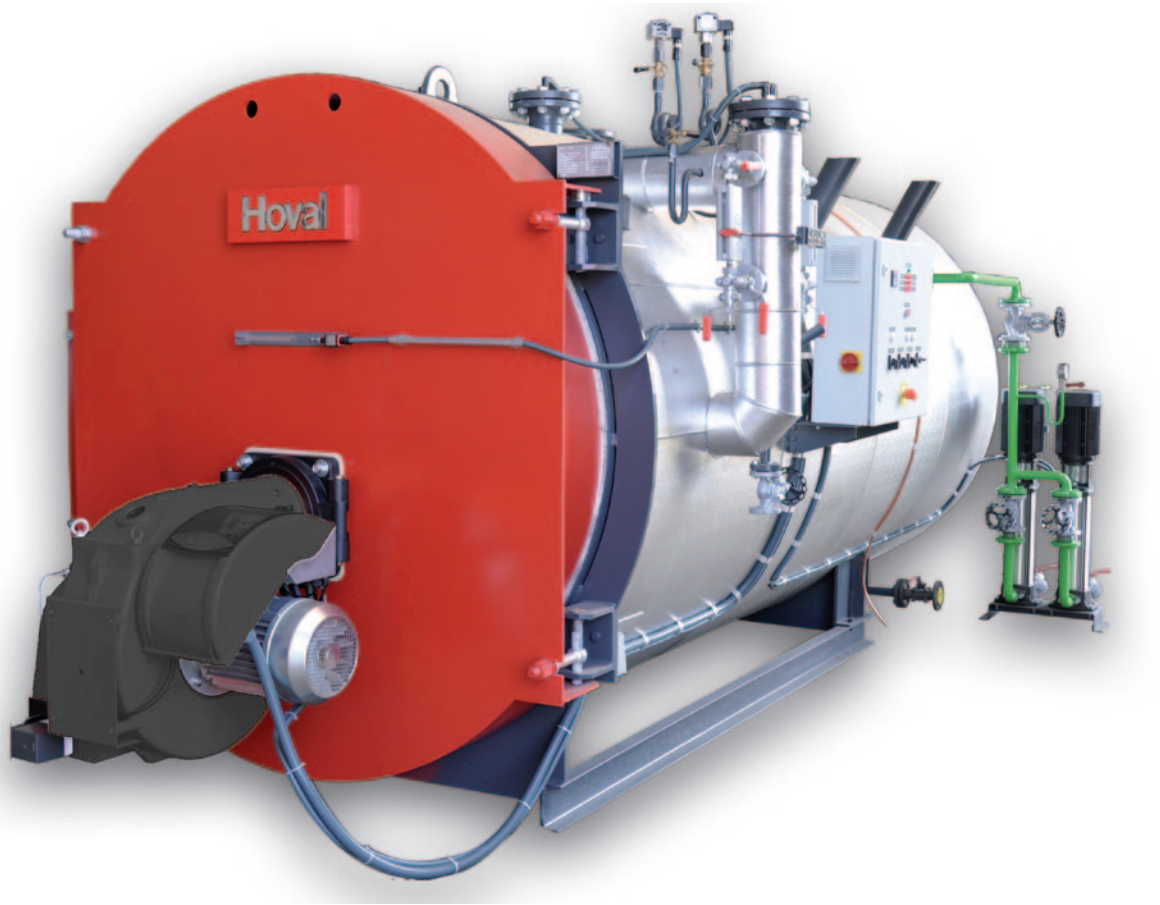
Subject to modifications

* kW Burner setting full load, air coefficient λ = 1.1 (CO_2, heating oil EL = 13.9%, natural gas = 10.8%),

** % With a clean boiler, boiler water (average temperature) = 120 °C

Flue gas temperature at nominal output approx. 210° C
Dimensions and weight: incl. insulation, without burner and other fitted parts

Hoval THD-U
Industrial steam boiler for oil and gas firing (3-pass reversed flow principle)



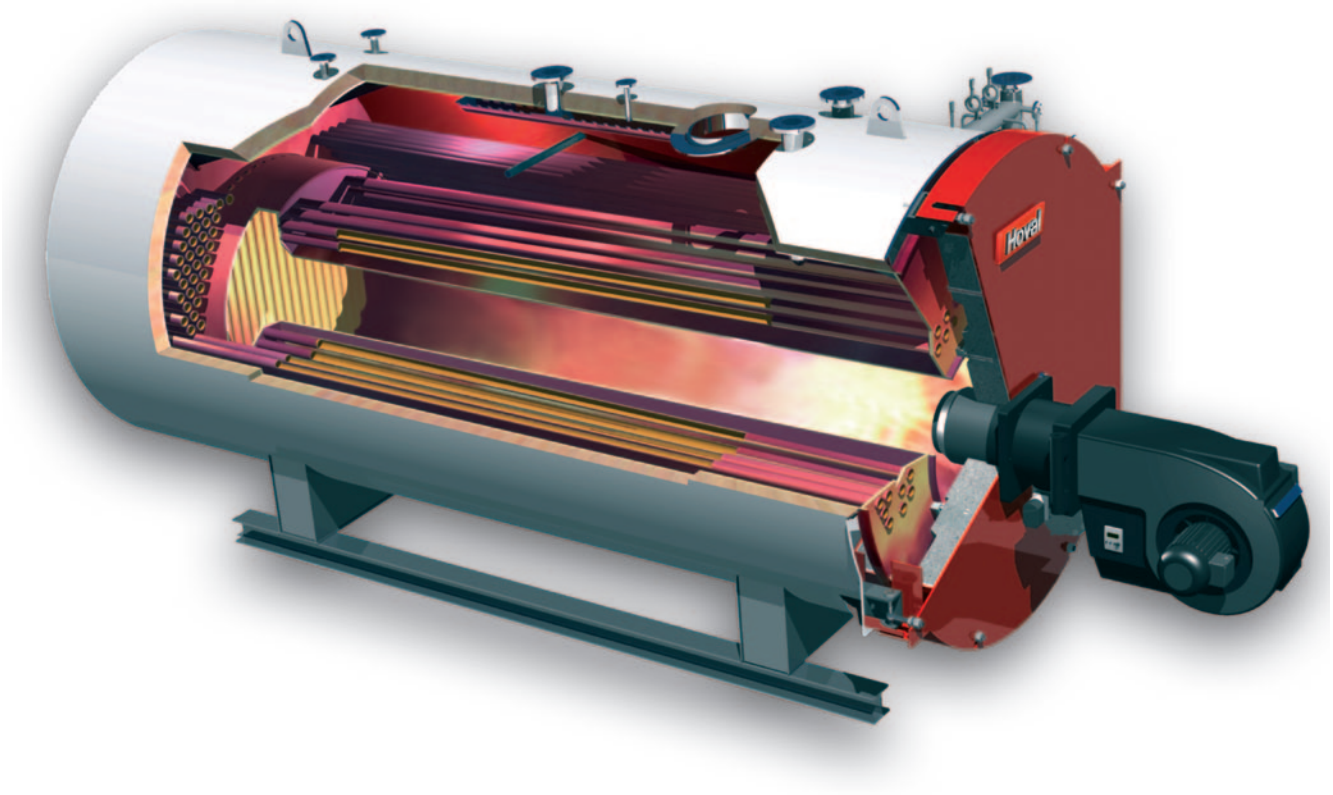
Boiler output kg/h	Water content up to LWL* litres	Transport weight bar/kg	Net efficiency %	L x W x H mm
(500)	871	10/ 1590	89.1	2285 x 1800 x 1950
(650)	997	10/1960	89.4	2435 x 1850 x 2000
(800)	1211	10/2330	89.3	2585 x 1950 x 2100
(1000)	1328	10/2720	89.4	2835 x 1950 x 2100
(1200)	1647	10/3260	89.7	3185 x 2000 x 2150
(1600)	1859	10/3680	89.6	3285 x 2100 x 2250
(2000)	2254	10/4700	89.6	3305 x 2300 x 2450
(2500)	2636	10/5560	89.5	3435 x 2300 x 2550
(3000)	3074	10/6150	89.4	3435 x 2450 x 2700
(3500)	3952	10/8415	89.5	3685 x 2650 x 2950
(4000)	4261	10/9230	89.7	4185 x 2650 x 2950
(4500)	4783	10/9860	89.7	4185 x 2700 x 3000
(5000)	5163	10/10520	89.8	4185 x 2800 x 3200

Boiler pressure: standard 10, 13 bar
Burner setting full load, air coefficient λ = 1.1
(CO_2, heating oil EL = 13.9%, natural gas = 10.8%),
LWL = Low Water Level

Values without economiser
Flue gas temperature at nominal output approx. 240° C
Dimensions and weight: incl. insulation, incl. fittings and without burner

Subject to modifications

Hoval THSD-I … E
Industrial steam boiler for oil and gas firing



Technical data THSD-I...E Type	Boiler output kg/h	Water content up to LWL* litres	Transport weight bar/kg	Net efficiency %	L x W x H mm
(25/20)	2000 - 2500	3630	10 / 5000	89.3 - 89.9	3600 x 2450 x 2300
(30/25)	2500 - 3000	4370	10 / 6000	89.1 - 89.6	3850 x 2550 x 2400
(35/30)	3000 - 3500	4790	10 / 7000	88.9 - 89.4	4050 x 2600 x 2450
(45/40)	4000 - 4500	5840	10 / 8000	89.1 - 89.5	4400 x 2700 x 2600
(55/50)	5000 - 5500	7100	10 / 9500	89.5 - 89.8	4850 x 2800 x 2700
(70/60)	6000 - 7000	8050	10 / 11000	89.7 - 90.1	5050 x 2900 x 2800
(90/80)	8000 - 9000	9040	10 / 14500	88.8 - 89.2	5550 x 3100 x 3000
(110/100)	10000 - 11000	13280	10 / 17500	88.8 - 89.1	6000 x 3300 x 3250
(130/120)	12000 - 13000	15690	10 / 22000	88.9 - 89.2	6400 x 3400 x 3350
(150/140)	14000 - 15000	17650	10 / 26000	89.0 - 89.2	6700 x 3600 x 3550
(170/160)	16000 - 17000	19310	10 / 28500	88.8 - 89.0	7000 x 3700 x 3650
(190/120)	18000 - 19000	21970	10 / 30500	88.6 - 88.8	7200 x 3800 x 3750
(220/200)	20000 - 22000	23020	10 / 34000	88.9 - 89.2	7700 x 3900 x 3850

Boiler pressure: standard 10, 13 and 16 bar
Burner setting full load, air coefficient λ = 1.1
(CO_2, heating oil EL = 13.9%, natural gas = 10.8%),
LWL = Low Water Level

Values without economiser
Flue gas temperature at nominal output approx. 260° C
Dimensions and weight: incl. insulation, incl. insulation and without burner

Subject to modifications