The Heating Engineer

# **Industrial** Systems

erensan

a company of GROUPE ATLANTIC

Rev 0921

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ
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# History

**1966**

Mechanical Engineer M. Sc Mesut EREN founded ERENSAN and started manufacturing boilers in the workshop in Çağlayan, İstanbul.

**1970**

İstanbul Yenibosna factory was built. Factory was moved from Çağlayan to Yenibosna.

**1998**

Yozgat Factory was founded. Production of hot water boilers was separated from industrial boilers and started in a new and modern facility as a production line.

**2016**

Erensan joined the Groupe Atlantic

**2017**

Erensan executive office moved to its new building in Yenibosna.

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# Contents



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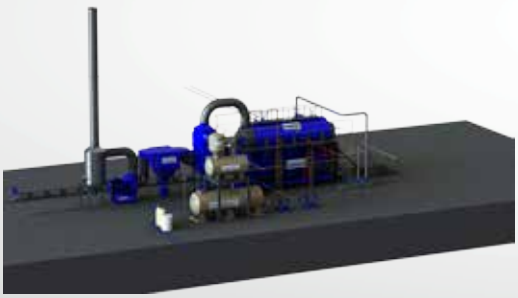
# **Industrial** Systems

**ESB**
Liquid and Gas Fuel Fired, Three-Pass,
High Pressure Steam Boiler
1-35t/h

**SP**
Fluid and Gas Fired, Two-Pass,
High Pressure Steam Boiler
0.25-5.5 t/h

**DB**
Liquid and Gas Fueled
Package Hot Oil Boiler
300.000 kcal/h - 8.000.000 kcal/h

**SR (STEAMROOM)**
Fluid and Gas Fired, Mobile
Steam Boiler Room
0.25-5.5 t/h



**ESB.K**
Conveyor Grid
Solid Fueled Steam Boiler
2-30 t/h

## EUROMAX S
Liquid and Gas Fired, Three-Pass
Hot Water Boiler
1170-10000 kW

## EUROMAX SC
Liquid and Gas Fired, Three-Pass,
Integrated Condensing Economizer
Superheated Boiler
1170-10000 kW

## SHW
Liquid and Gas Fired, Three-Pass
Superheated Boiler
700-23200 kW

## HWR S
Liquid and Gas Fired, Two-Pass
Package Superheated Boiler
465-4070 kW

## WASTE HEAT BOILERS
Smoke/Water Tube Waste Heat Boilers

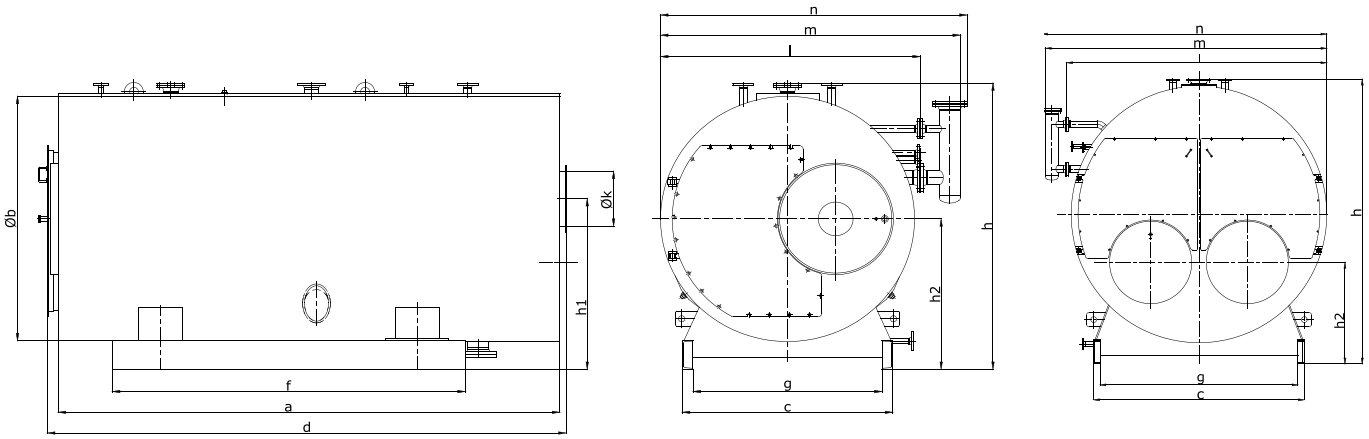
# ESB

## Liquid and Gas Fuel Fired, Three-Pass, High Pressure Steam Boiler


* 1-35 t/h steam generation capacity
* 6-16 bar operating pressure
* Liquid and gas fired
* Suitable for peak steam demand with optimum water-steam volume ratio
* Low furnace load to ensure burning is completed in furnace (< 1,3 MW/m³)
* Complete burning and low NOx emission, thanks to thermal design
* Wet-back design enables maximum benefit from heat transfer surface
* Thanks to high density insulation material used in coating boiler body, radiation and standby losses are reduced
* Up-to 91% boiler efficiency (Up-to 95.5% efficiency in economizer applications)
* Easy assembly and interference with catwalk platform on the boiler
* Optional water, air economizer, superheater use

### ESB

Fluid and Gas Fueled, Three-Pass, High Pressure Steam Boiler

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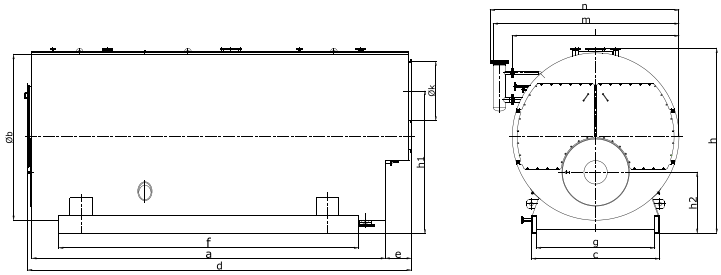
### ESB 100 - ESB 300

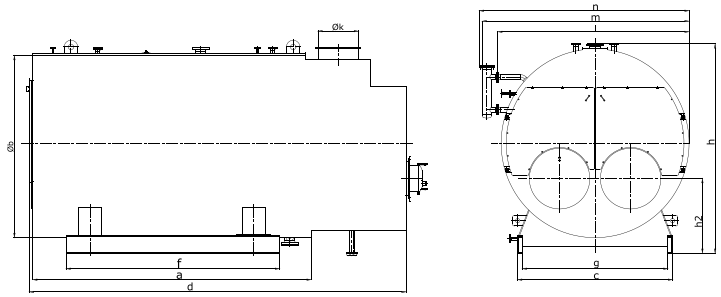
| Technical Specifications | Unit | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| Capacity | kg/h | 1000 | 1.250 | 1.500 | 2.000 | 2.500 | 3.000 |
| Capacity | kW | 655 | 818 | 982 | 1.309 | 1.637 | 1.964 |
| Fuel Consumption (Natural Gas) | [Nm³/h] | 76 | 96 | 115 | 153 | 191 | 229 |
| Water Volume | m³ | 0,43 | 0,52 | 0,65 | 0,77 | 1,02 | 1,26 |
| Steam Volume | m³ | 1,67 | 2,04 | 2,52 | 3,07 | 4,02 | 4,27 |
| a | mm | 2.730 | 2.985 | 3.340 | 3.490 | 3.930 | 3.930 |
| Øb | mm | 1.556 | 1.622 | 1.682 | 1.820 | 1.924 | 2.008 |
| c | mm | 1.240 | 1.300 | 1.350 | 1.500 | 1.570 | 1.670 |
| d | mm | 2.916 | 3.171 | 3.526 | 3.676 | 4.114 | 4.116 |
| f | mm | 1.870 | 2.125 | 2.270 | 2.370 | 2.810 | 2.800 |
| g | mm | 1.090 | 1.150 | 1.200 | 1.350 | 1.400 | 1.500 |
| h | mm | 1.857 | 1.917 | 2.012 | 2.122 | 2.264 | 2.371 |
| h1 | mm | 1.114 | 1.162 | 1.248 | 1.290 | 1.380 | 1.400 |
| h2 | mm | 956 | 986 | 1.040 | 1.090 | 1.158 | 1.236 |
| Øk | mm | 250 | 250 | 300 | 350 | 350 | 400 |
| l | mm | 1.646 | 1.705 | 1.764 | 1.896 | 1.985 | 2.070 |
| m | mm | 1.964 | 2.023 | 2.082 | 2.214 | 2.303 | 2.390 |
| n | mm | 2.017 | 2.076 | 2.135 | 2.267 | 2.356 | 2.442 |
| Counter-Pressure | mbar | 4,8 | 4,8 | 4,8 | 4,8 | 4,8 | 4,8 |
| Empty Weight | ton | 3,4 | 3,7 | 4,3 | 5,2 | 6 | 6,7 |

# ESB

## Fluid and Gas Fueled, Three-Pass, High Pressure Steam Boiler



**ESB 400 - ESB 3000**



**ESB-T 1800 - ESB-T 3000**

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| Technical Specifications | Unit | 400 | 500 | 600 | 700 | 850 | 1000 | 1200 | 1400 | 1500 |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kg/h | 4.000 | 5.000 | 6.000 | 7.000 | 8.500 | 10.000 | 12.000 | 14.000 | 15.000 |
| Capacity | kW | 2.619 | 3.273 | 3.928 | 4.583 | 5.565 | 6.547 | 7.856 | 9.165 | 9.820 |
| Fuel Amount (Natural Gas) | [Nm³/h] | 306 | 382 | 459 | 535 | 650 | 765 | 918 | 1.071 | 1.147 |
| Water Volume | m³ | 2,07 | 2,48 | 3,19 | 3,59 | 4,04 | 4,47 | 5,56 | 6,61 | 7,02 |
| Steam Volume | m³ | 9,41 | 11,77 | 12,80 | 14,53 | 16,63 | 18,16 | 23,86 | 27,09 | 27,92 |
| a | mm | 4.635 | 5.000 | 5.072 | 5.411 | 5.479 | 5.833 | 6.483 | 6.633 | 6.874 |
| Øb | mm | 2.416 | 2.590 | 2.698 | 2.798 | 2.970 | 3.040 | 3.247 | 3.417 | 3.440 |
| c | mm | 2.000 | 2.000 | 2.050 | 2.050 | 2.360 | 2.400 | 2.400 | 2.700 | 2.700 |
| d | mm | 5.097 | 5.477 | 5.538 | 5.842 | 5.946 | 6.299 | 6.949 | 7.099 | 7.340 |
| e | mm | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 | 380 |
| f | mm | 3.445 | 3.770 | 3.840 | 4.226 | 4.280 | 4.690 | 5.055 | 5.370 | 5.650 |
| g | mm | 1.800 | 1.800 | 1.850 | 1.850 | 2.160 | 2.200 | 2.200 | 2.500 | 2.500 |
| h | mm | 2.745 | 2.890 | 3.020 | 3.120 | 3.336 | 3.400 | 3.606 | 3.787 | 3.810 |
| h1 | mm | 2.100 | 2.154 | 2.260 | 2.354 | 2.551 | 2.540 | 2.755 | 2.870 | 2.900 |
| h2 | mm | 965 | 985 | 1.040 | 1.052 | 1.161 | 1.173 | 1.223 | 1.246 | 1.313 |
| Øk | mm | 450 | 550 | 600 | 600 | 700 | 750 | 800 | 900 | 900 |
| l | mm | 2.436 | 2.598 | 2.730 | 2.798 | 2.998 | 3.070 | 3.247 | 3.417 | 3.440 |
| m | mm | 2.730 | 2.886 | 3.019 | 3.086 | 3.375 | 3.446 | 3.624 | 3.786 | 3.810 |
| n | mm | 2.782 | 2.940 | 3.072 | 3.139 | 3.435 | 3.506 | 3.684 | 3.852 | 3.875 |
| Counter-Pressure | mbar | 4,8 | 4,8 | 4,8 | 4,8 | 4,8 | 6,5 | 6,5 | 6,5 | 6,5 |
| Approximate Empty Weight | ton | 9 | 10,6 | 11,8 | 13,6 | 15,5 | 18,4 | 22,2 | 25,4 | 26,8 |

| Technical Specifications | Unit | 1600 | 1800 | -T 1800 | 2000 | -T 2000 | 2500 | -T 2500 | 3000 | -T 3000 | -T 3000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kg/h | 16.000 | 18.000 | 18.000 | 20.000 | 20.000 | 25.000 | 25.000 | 30.000 | 30.000 | 35.000 |
| Capacity | kW | 10.474 | 11.784 | 11.784 | 13.093 | 13.093 | 16.366 | 16.366 | 19.640 | 19.640 | 22.790 |
| Fuel Amount (Natural Gas) | [Nm³/h] | 1.224 | 1.376 | 1.376 | 1.529 | 1.529 | 1.912 | 1.912 | 2.294 | 2.294 | 2.676 |
| Water Volume | m³ | 7,79 | 8,29 | 6,41 | 9,08 | 7,13 | 11,72 | 8,21 | 12,25 | 9,94 | 15,26 |
| Steam Volume | m³ | 29,58 | 34,32 | 25,74 | 33,31 | 29,05 | 38,77 | 32,83 | 40,78 | 39,54 | 53,78 |
| a | mm | 7.102 | 7.714 | 5.360 | 7.714 | 5.360 | 8.602 | 5.974 | 8.615 | 5.980 | 6.918 |
| Øb | mm | 3.500 | 3.544 | 3.970 | 3.574 | 4.003 | 3.774 | 4.227 | 3.947 | 4.418 | 4.950 |
| c | mm | 2.700 | 2.820 | 3.158 | 2.860 | 3.175 | 2.860 | 3.175 | 3.290 | 3.640 | 4.000 |
| d | mm | 7.568 | 8.180 | 7.240 | 8.180 | 7.240 | 9.068 | 8.025 | 9.078 | 8.000 | 8.725 |
| e | mm | 380 | 380 | * | 380 | * | 380 | * | 380 | * | * |
| f | mm | 5.840 | 6.200 | 3.950 | 6.200 | 3.950 | 7.340 | 4.640 | 7.340 | 4.640 | 5.000 |
| g | mm | 2.500 | 2.600 | 2.940 | 2.640 | 2.955 | 2.640 | 2.955 | 3.070 | 3.420 | 3.780 |
| h | mm | 3.870 | 3.944 | 4.377 | 3.986 | 4.425 | 4.184 | 4.644 | 4.431 | 4.900 | 5.412 |
| h1 | mm | 2.950 | 3.023 | * | 3.074 | * | 3.241 | * | 3.465 | * | * |
| h2 | mm | 1.282 | 1.296 | 1.465 | 1.350 | 1.525 | 1.382 | 1.561 | 1.540 | 1.747 | 1.798 |
| Øk | mm | 950 | 1.000 | 1.000 | 1.050 | 1.050 | 1.150 | 1.150 | 1.250 | 1.250 | 1.350 |
| l | mm | 3.500 | 3.545 | 4.041 | 3.575 | 4.075 | 3.775 | 4.304 | 3.945 | 4.495 | 4.838 |
| m | mm | 3.868 | 3.967 | 4.483 | 3.997 | 4.517 | 4.143 | 4.681 | 4.315 | 4.865 | 5.215 |
| n | mm | 3.935 | 4.033 | 4.547 | 4.063 | 4.583 | 4.210 | 4.747 | 4.380 | 4.930 | 5.270 |
| Counter-Pressure | mbar | 6,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 | 8,5 |
| Approximate Empty Weight | ton | 28,5 | 30,6 | 31,1 | 32,5 | 33,8 | 36,6 | 38,8 | 42,7 | 43,5 | 61,5 |

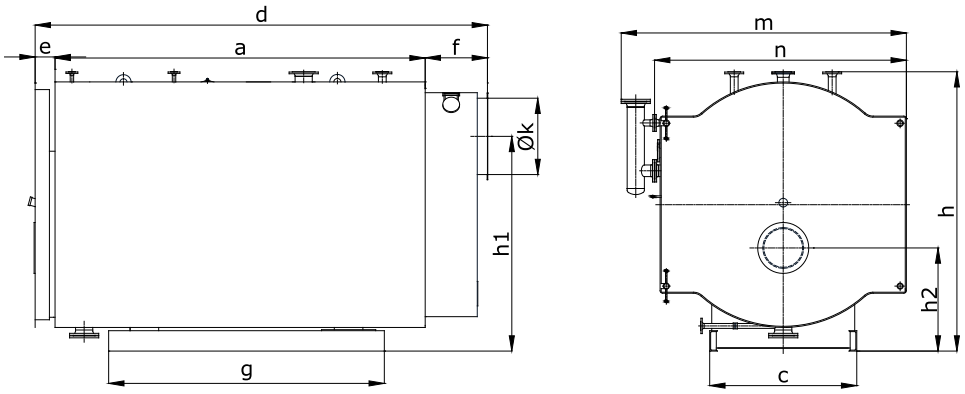
# SP

## Fluid and Gas Fueled, Two-Pass, High Pressure Steam Boiler


* 0,25-5,5 t/h steam generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Can be used with pressure jet burner
* Up-to 91% boiler efficiency. Up-to 95.5% efficiency in economizer applications.
* Easy assembly and interference with platform on the boiler
* Standard equipment: Steam outlet, feed water intake, airvent, discharge, surface blow off valves and safety valves, feed water pump group, operation and safety accessories, electric control panel
* Optional water, air economizer use

**SP**

Fluid and Gas Fueled, Two-Pass, High Pressure Steam Boiler




CE

| Technical Specifications | Unit | HDR 25 | HDR 32 | HDR 40 | HDR 50 | HDR 65 | HDR 80 | HDR 100 | HDR 125 | HDR 160 | HDR 200 | HDR 250 | HDR 300 | HDR 400 | HDR 550 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kg/h | 250 | 320 | 400 | 500 | 650 | 800 | 1.000 | 1.250 | 1.600 | 2.000 | 2.500 | 3.000 | 4.000 | 5.500 |
| Capacity | kW | 164 | 209 | 262 | 327 | 426 | 524 | 655 | 818 | 1.047 | 1.309 | 1.637 | 1.964 | 2.619 | 3.601 |
| Fuel Amount (Natural Gas) | [Nm³/h] | 19 | 24 | 30 | 38 | 49 | 61 | 76 | 95 | 121 | 152 | 190 | 227 | 303 | 417 |
| Fuel Amount (Fuel-Oil) | kg/h | 17 | 22 | 27 | 34 | 44 | 54 | 67 | 84 | 108 | 134 | 168 | 202 | 269 | 370 |
| Water Volume | lt | 510 | 510 | 750 | 750 | 930 | 930 | 1.150 | 1.530 | 1.860 | 2.170 | 3.100 | 3.460 | 4.380 | 6.490 |
| Steam Volume | lt | 175 | 175 | 220 | 220 | 249 | 249 | 286 | 329 | 383 | 604 | 1.003 | 1.388 | 1.611 | 2.521 |
| a | mm | 1.325 | 1.325 | 1.645 | 1.645 | 1.785 | 1.785 | 1.985 | 2.185 | 2.395 | 2.655 | 2.850 | 3.200 | 3.425 | 4.190 |
| Øb | mm | 1.192 | 1.192 | 1.262 | 1.262 | 1.342 | 1.342 | 1.422 | 1.500 | 1.572 | 1.672 | 1.944 | 2.022 | 2.132 | 2.434 |
| c | mm | 700 | 700 | 740 | 740 | 800 | 800 | 850 | 900 | 960 | 1.040 | 1.170 | 1.190 | 1.365 | 1.440 |
| d | mm | 1.863 | 1.863 | 2.183 | 2.183 | 2.388 | 2.388 | 2.573 | 2.788 | 2.983 | 3.350 | 3.490 | 3.840 | 4.115 | 4.980 |
| e | mm | 228 | 228 | 228 | 228 | 228 | 228 | 228 | 228 | 228 | 270 | 180 | 180 | 180 | 180 |
| f | mm | 310 | 310 | 310 | 310 | 360 | 360 | 360 | 360 | 360 | 410 | 460 | 460 | 510 | 610 |
| g | mm | 940 | 940 | 1.180 | 1.180 | 1.314 | 1.314 | 1.480 | 1.780 | 1.780 | 2.100 | 2.000 | 2.500 | 2.650 | 3.250 |
| h | mm | 1.556 | 1.556 | 1.643 | 1.643 | 1.744 | 1.744 | 1.806 | 1.882 | 1.952 | 2.072 | 2.340 | 2.406 | 2.540 | 2.800 |
| h1 | mm | 1.115 | 1.115 | 1.202 | 1.202 | 1.282 | 1.282 | 1.332 | 1.370 | 1.415 | 1.531 | 1.776 | 1.794 | 1.898 | 2.109 |
| h2 | mm | 655 | 655 | 697 | 697 | 743 | 743 | 750 | 771 | 796 | 841 | 948 | 949 | 992 | 1.013 |
| Øk | mm | 150 | 150 | 150 | 150 | 200 | 200 | 250 | 250 | 300 | 350 | 350 | 400 | 450 | 550 |
| m | mm | 1.562 | 1.562 | 1.615 | 1.615 | 1.710 | 1.710 | 1.785 | 1.873 | 1.936 | 2.040 | 2.312 | 2.395 | 2.508 | 2.800 |
| n | mm | 1.250 | 1.250 | 1.320 | 1.320 | 1.320 | 1.320 | 1.474 | 1.546 | 1.610 | 1.713 | 1.986 | 2.068 | 2.181 | 2.472 |
| Counter-Pressure | mbar | 0,8-1,2 | 1-1,5 | 2-2,5 | 2-2,5 | 2,5-3 | 3-3,5 | 4,5-5 | 5-5,5 | 5,5-6 | 5,5-6 | 6-6,5 | 6,5-7 | 7-7,5 | 7,5-8 |

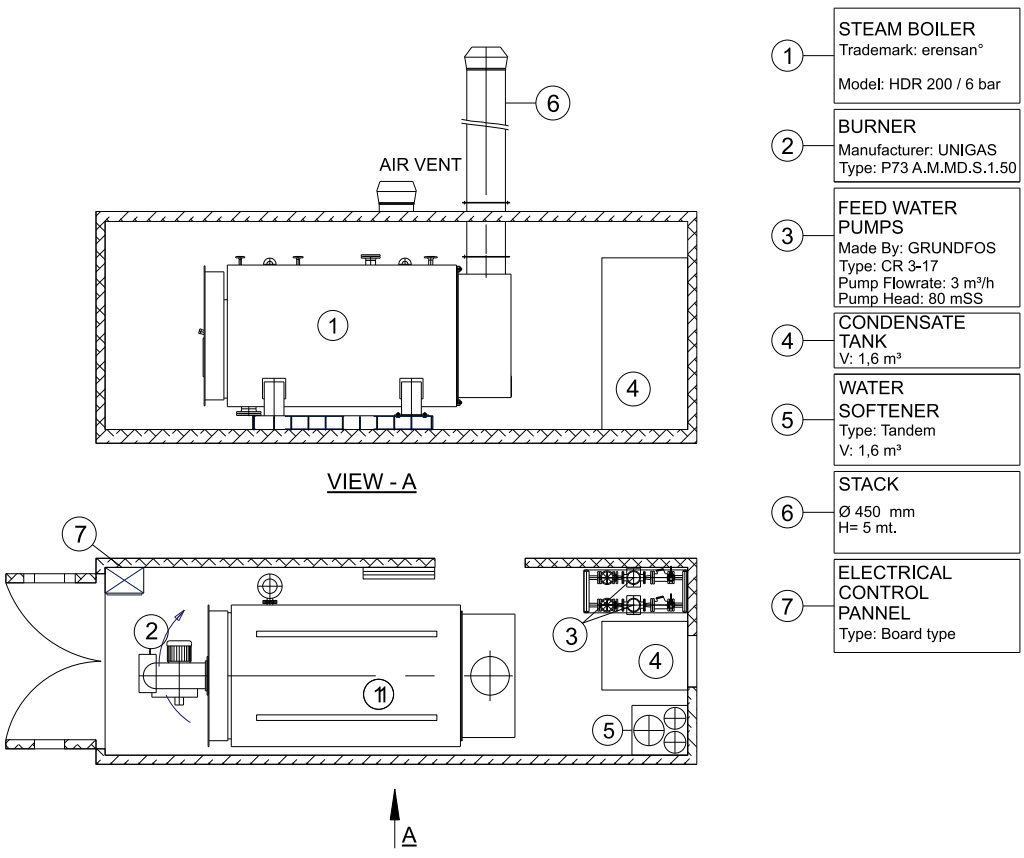
# SR (STEAMROOM)

Fired and Gas Fueled, Mobile Steam Boiler Room


* 0,25-5,5 t/h steam generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Can be used with pressure jet burner
* Up-to 91% boiler efficiency. Up-to 95.5% efficiency in economizer applications
* Easy assembly and interference with catwalk platform on the boiler
* Boiler room accessories: Steam outlet, feed water intake, air vent, discharge valves and safety valve, feed water pump group, electric control panel, operation and safety accessories optionally, condensation tank, burner, automated surface and bottom blow off system, proportional feed water system, chimney and water softening device

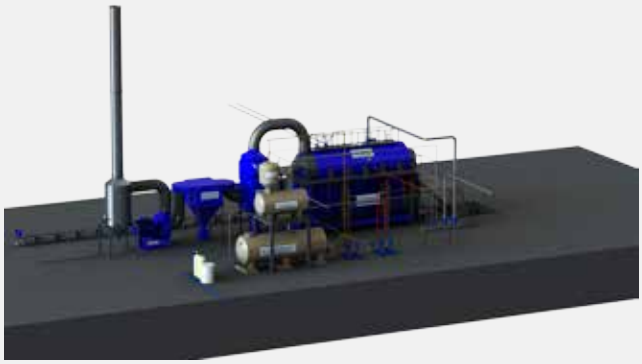
## SR (STEAMROOM)

Fluid and Gas Fueled, Mobile Steam Boiler Room



# ESB.K

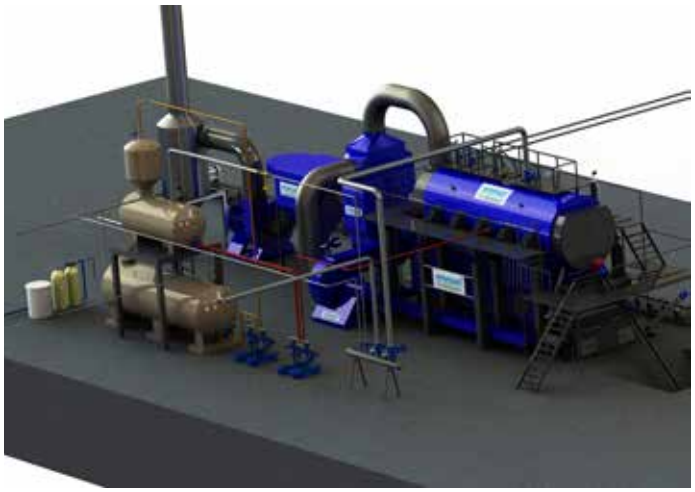
## Conveyor Grid Solid Fueled Steam Boiler



* 4-30 t/h steam generation capacity
* 6-30 bar operating pressure
* Design combining water tube and flame tube boiler types in a single body
* With conveyor grid made of cast material suitable for operating at high temperature
* Optimum air duct and fan adjustment design for homogeneous and efficient combustion in whole surface
* Maximum combustion volume and burning efficiency with high volume furnace made of water wall mounted on conveyor grid
* Quicker response to peak steam demands with large steam volume and quick steam generator with water piped primer furnace
* Easy access to steam pipes with boiler front and back hatch designs
* Ability to monitor and interfere with all auxiliary functions with PLC based control

**ESB.K**

Conveyor Grid Solid Fueled Steam Boiler



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| Technical Specifications | Unit | ESB.K 4 | ESB.K 6 | ESB.K 8 | ESB.K 10 | ESB.K 12 | ESB.K 15 | ESB.K 20 | ESB.K 25 | ESB.K 30 |
|---|---|---|---|---|---|---|---|---|---|---|
| Kapasite | kg/h | 4000 | 6000 | 8000 | 10000 | 12000 | 15000 | 20000 | 25000 | 30000 |
| | 1000kcal/h | 2336 | 3504 | 4672 | 5840 | 7008 | 8760 | 11680 | 14600 | 17520 |
| | kWh | 2716 | 4074 | 5432 | 6790 | 8148 | 10185 | 13580 | 16975 | 20370 |
| Coal Consumption | kg/h | 572 | 858 | 1144 | 1430 | 1716 | 2145 | 2860 | 3575 | 4290 |
| Turkish Coal (0,5-10 mm) | 4600 kcal/kg | | | | | | | | | |
| Travilling grid | | | | | | | | | | |
| Length | mm | 6700 | 7800 | 8100 | 8700 | 8700 | 9450 | 9800 | 10000 | 11500 |
| Width | mm | 1910 | 2300 | 2700 | 3100 | 3120 | 3200 | 3700 | 4000 | 4000 |
| Travilling Grid + Boiler Height | mm | 4400 | 4800 | 4800 | 5300 | 5500 | 5700 | 6500 | 6700 | 6900 |

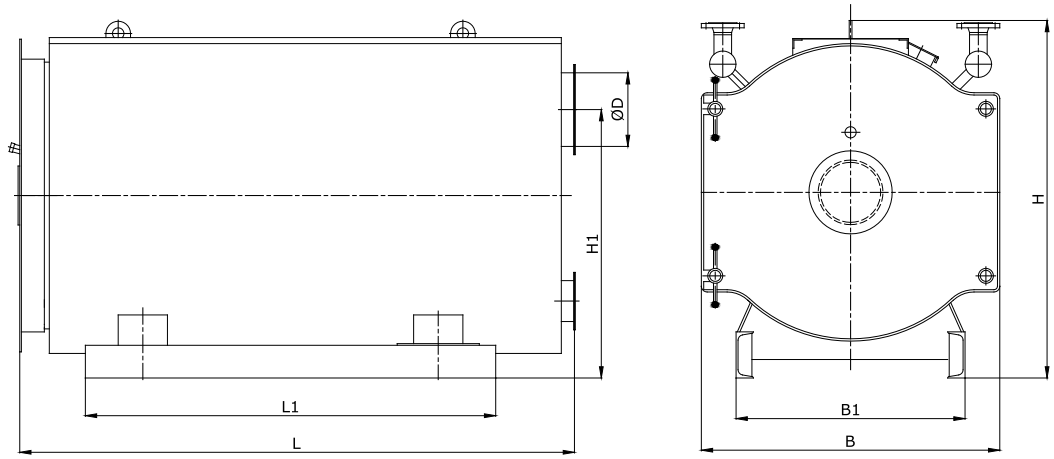
# DB

## Liquid and Gas Fueled Package Hot Oil Boiler


* 300.000 -8.000.000 kcal/h hot oil generation range
* 6 bar operating pressure
* Package solution for thermal oil outlet temperatures up to 300 °C
* Heat generation with special heat transfer oils at required temperatures
* Safe use in low pressures for processes where high temperature is required
* Special design against residue accrual and corrosion
* Thanks to high density insulation material used in coating boiler body, radiation and standby losses are reduced
* DB package system components: Liquid or gas fueled burner, hot oil circulation pumps, boiler control and safety accessories, electric control panel, getter

**DB**

Liquid and Gas Fueled Package Hot Oil Boiler




CE

| Technical Spec. | Unit | 300 | 400 | 600 | 800 | 1000 | 1250 | 1500 | 2000 | 2500 | 3000 | 4000 | 5000 | 6000 | 8000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kcal/h | 300.000 | 400.000 | 600.000 | 800.000 | 1.000.000 | 1.250.000 | 1.500.000 | 2.000.000 | 2.500.000 | 3.000.000 | 4.000.000 | 5.000.000 | 6.000.000 | 8.000.000 |
| Capacity | kW | 349 | 465 | 698 | 930 | 1.163 | 1.453 | 1.744 | 2.326 | 2.907 | 3.488 | 4.651 | 5.814 | 6.977 | 9.302 |
| L | mm | 2.170 | 2.390 | 2.600 | 2.890 | 3.040 | 3.274 | 3.640 | 4.058 | 4.300 | 4.630 | 5.300 | 6.000 | 6.210 | 7.940 |
| L1 | mm | 1.570 | 1.610 | 1.900 | 2.100 | 2.350 | 2.330 | 2.780 | 3.140 | 3.445 | 3.530 | 4.000 | 4.220 | 5.060 | 6.400 |
| B | mm | 1.190 | 1.290 | 1.450 | 1.545 | 1.645 | 1.760 | 1.910 | 2.070 | 2.246 | 2.445 | 2.720 | 2.835 | 3.220 | 3.280 |
| B1 | mm | 890 | 990 | 1.100 | 1.245 | 1.200 | 1.300 | 1.450 | 1.600 | 1.650 | 2.000 | 2.055 | 2.055 | 2.400 | 2.406 |
| H | mm | 1.485 | 1.585 | 1.745 | 1.815 | 1.910 | 2.025 | 2.175 | 2.335 | 2.513 | 2.815 | 3.093 | 3.208 | 3.536 | 3.607 |
| H1 | mm | 1.015 | 1.040 | 1.210 | 1.245 | 1.290 | 1.400 | 1.530 | 1.640 | 1.800 | 2.043 | 2.267 | 2.308 | 2.500 | 2.500 |
| ØD | mm | 250 | 300 | 350 | 400 | 450 | 500 | 500 | 600 | 650 | 700 | 800 | 900 | 950 | 1.000 |
| Counter Pressure | mbar | 1,0 | 1,0 | 1,0 | 1,5 | 1,5 | 2,0 | 3,0 | 4,0 | 4,0 | 5,0 | 5,0 | 6,0 | 6,0 | 6,0 |

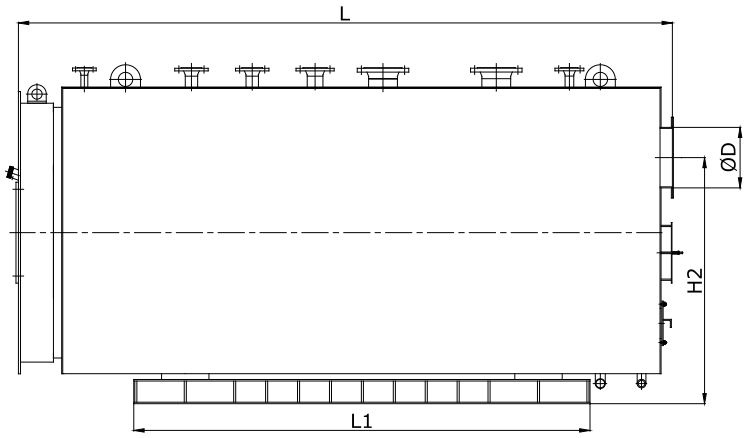
# EUROMAX S

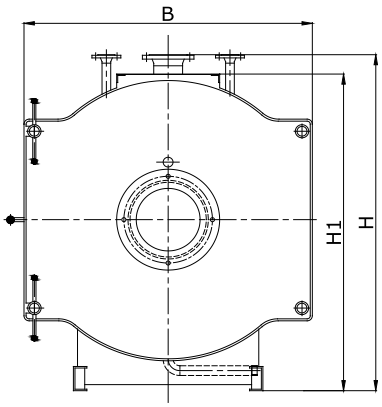
## Liquid and Gas Fueled, Three-Pass Superheated Water Boiler


* 1170-10000 kW superheated water generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Long boiler life with uninterrupted pass in all three suction and balanced cooling of steam gases
* Pollution sections is minimized with low chimney gas emissions
* Thanks to high density insulation material used in coating boiler body, radiation and standby losses are reduced
* Symmetrically positioned heat transfer surfaces provides robust boiler construction
* Optimum heat transfer with three-pass burning principle and water cooled reversal chamber
* Suitable for large capacity central heating systems

### EUROMAX S

Liquid and Gas Fueled Three-pass Hot Water Boiler

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| Technical Specifications | Unit | 1170 | 1455 | 1745 | 2330 | 2910 | 3500 | 4000 | 5000 | 6000 | 8000 | 10000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kW | 1170 | 1455 | 1745 | 2330 | 2910 | 3500 | 4000 | 5000 | 6000 | 8000 | 10000 |
| L | mm | 3.185 | 3.555 | 3.685 | 3.885 | 4.190 | 4.540 | 4.790 | 4.940 | 5.430 | 6.252 | 6.756 |
| L1 | mm | 2.215 | 2.570 | 2.700 | 2.915 | 3.210 | 3.500 | 3.736 | 3.880 | 4.370 | 5.260 | 5.760 |
| B | mm | 1.400 | 1.460 | 1.490 | 1.550 | 1.700 | 1.790 | 1.855 | 2.030 | 2.404 | 2.715 | 2.905 |
| H | mm | 1.765 | 1.830 | 1.860 | 1.900 | 2.072 | 2.160 | 2.226 | 2.396 | 2.774 | 3.137 | 3.353 |
| H1 | mm | 1.570 | 1.632 | 1.663 | 1.704 | 1.873 | 1.962 | 2.028 | 2.200 | 2.577 | 2.934 | 3.143 |
| H2 | mm | 1.220 | 1.240 | 1.270 | 1.350 | 1.472 | 1.560 | 1.590 | 1.715 | 2.025 | 2.317 | 2.476 |
| ØD | mm | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 750 | 900 | 1.000 |
| Water Volume | lt | 1.791 | 2.178 | 2.270 | 2.600 | 2.848 | 3.998 | 4.663 | 6.678 | 10.237 | 15.142 | 18.643 |
| Counter Pressure | mbar | 5,2 | 6,2 | 7 | 8,7 | 9,2 | 9,4 | 9,4 | 9,8 | 9,8 | 10,2 | 12,4 |

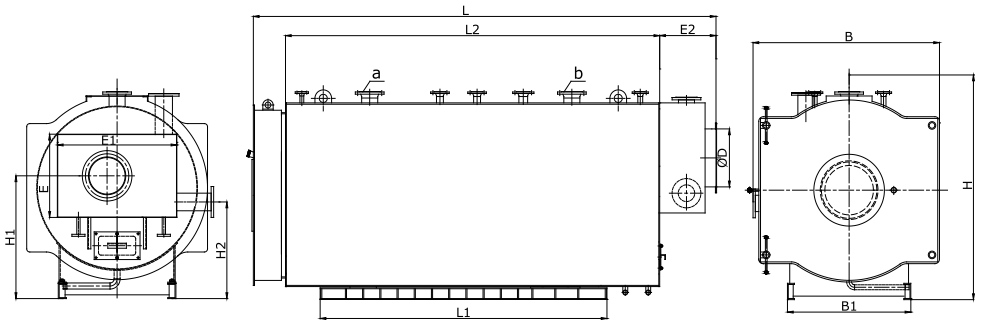
# EUROMAX SC

Liquid and Gas Fueled, Three-Pass, Integrated Condensing Economizer Superheated Water Boiler


* 1170-10000 kW superheated water generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Long boiler life with uninterrupted pass in all three suction and balanced cooling of steam gases
* Pollution is minimized with low chimney gas emissions
* Thanks to high density insulation material used in coating boiler body, radiation and stand by losses are reduced
* Symmetrically positioned heat transfer surfaces provides robust boiler construction
* Optimum heat transfer with three-pass burning principle and water cooled reversal chamber
* Integrated condensing economizer condenses water vapor in steam gas from burning gas fuel, increasing boiler efficiency
* Suitable for large capacity central heating systems

## EUROMAX SC

Liquid and Gas Fueled, Three-Pass, Integrated Condensing Economizer Hot Water Boiler




| Technical Specifications | Unit | 1170 | 1455 | 1745 | 2330 | 2910 | 3500 | 4000 | 5000 | 6000 | 8000 | 10000 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kW | 1170 | 1455 | 1745 | 2330 | 2910 | 3500 | 4000 | 5000 | 6000 | 8000 | 10000 |
| Condensing Economizer | | | | | | | | | | | | |
| 30 °C | kW | 78 | 97,5 | 118 | 158 | 198 | 239 | 268 | 340 | 408 | 544 | 680 |
| 60 °C | kW | 65 | 81 | 97 | 131 | 164 | 198 | 222 | 280 | 339 | 456 | 570 |
| Boiler Dimensions | | | | | | | | | | | | |
| Length | mm | 3690 | 4060 | 4190 | 4474 | 4778 | 5170 | 5464 | 5651 | 6185 | 7047 | 7720 |
| Width | mm | 1549 | 1554 | 1645 | 1812 | 1950 | 2055 | 2061 | 2223 | 2404 | 2733 | 2305 |
| Height | mm | 1680 | 1745 | 1776 | 1815 | 1987 | 2075 | 2104 | 2311 | 2678 | 3047 | 3256 |
| | | | | | | | | | | | | |
| L | mm | 3690 | 4060 | 4190 | 4474 | 4778 | 5170 | 5464 | 5651 | 6185 | 7047 | 7720 |
| L1 | mm | 2215 | 2570 | 2700 | 2915 | 3210 | 3500 | 3740 | 3880 | 4370 | 5260 | 5760 |
| L2 | mm | 2995 | 3365 | 3495 | 3695 | 4000 | 4350 | 4600 | 4745 | 5235 | 5950 | 6450 |
| B | mm | 1549 | 1554 | 1645 | 1812 | 1950 | 2055 | 2061 | 2223 | 2404 | 2733 | 2905 |
| B1 | mm | 920 | 950 | 960 | 1040 | 1145 | 1210 | 1260 | 1385 | 1670 | 1870 | 2000 |
| H | mm | 1765 | 1830 | 1860 | 1900 | 2072 | 2160 | 2226 | 2396 | 2774 | 3137 | 3353 |
| H1 | mm | 859 | 923 | 898 | 1140 | 1117 | 1170 | 1176 | 1356 | 1435 | 1673 | 1851 |
| H2 | mm | 510 | 574 | 577 | 680 | 740 | 773 | 860 | 963 | 952 | 1169 | 1357 |
| ØD | mm | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 750 | 900 | 1000 |
| E | mm | 1020 | 1020 | 1077 | 1077 | 1087 | 1077 | 1077 | 1077 | 1277 | 1411 | 1411 |
| E1 | mm | 1085 | 1085 | 1245 | 1314 | 1420 | 1565 | 1514 | 1660 | 1489 | 1913 | 1913 |
| E2 | mm | 460 | 460 | 460 | 544 | 540 | 585 | 630 | 671 | 713 | 860 | 1033 |
| Water Outler Nozzle (a) (Δt 20-30-40) | DN | 125-100-80 | 125-100-100 | 125-100-100 | 150-125-100 | 200-200-150 | 200-150-150 | 200-200-150 | 250-200-150 | 250-200-200 | 300-250-200 | 300-250-250 |
| Water Inlet Nozzle (b) (Δt 20-30-40) | DN | 125-100-80 | 125-100-100 | 125-100-100 | 150-125-100 | 200-200-150 | 200-150-150 | 200-200-150 | 250-200-150 | 250-200-200 | 300-250-200 | 300-250-250 |
| Economizer Water Intake-outlet nozzle (Δt 20-30-40) | DN | 65 | 65 | 65 | 80 | 80 | 100 | 100 | 100 | 125 | 150 | 150 |
| Water Volume | lt | 1.791 | 2.178 | 2.270 | 2.600 | 2.848 | 3.998 | 4.663 | 6.678 | 10.237 | 15.142 | 18.643 |
| Economizer Water Flow Rate | $m^3/h$ | 15 | 19 | 23 | 30 | 30 | 36 | 41 | 52 | 62 | 103 | 129 |
| Counter Pressure | mbar | 6,8 | 7,8 | 8,6 | 10,5 | 11 | 11,2 | 11,2 | 11,6 | 12 | 12,7 | 14,9 |

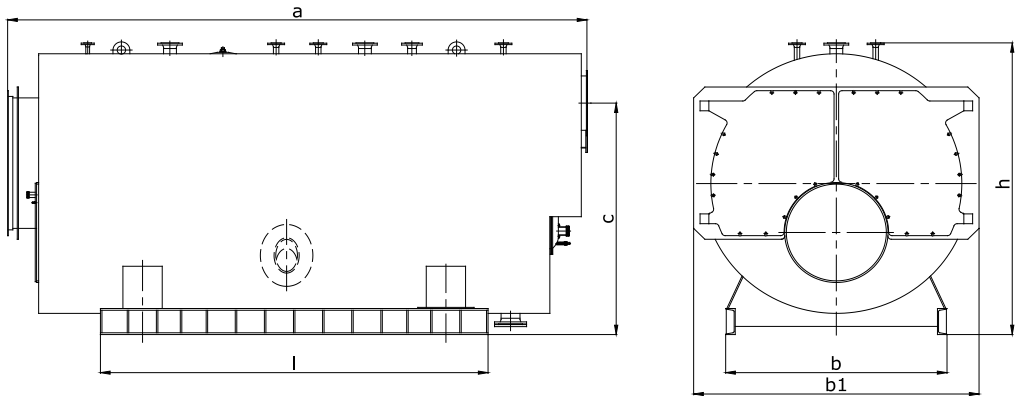
# SHW

## Liquid and Gas Fueled, Three-Pass Superheated Water Boiler


* 700-23200 kW superheated water generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Can be used with pressure jet burner
* Suitable for energy demand peaks
* Suitable for large capacity central heating systems
* Wet-back design enables maximum benefit from heat transfer surface
* Low furnace load to ensure burning is completed in firebox (< 1,3 MW/m$^3$)
* Complete combustion and low NOx emission, thanks to thermal design
* Thanks to high density insulation material used in coating boiler body, radiation and standby losses are reduced
* Up-to 95% efficiency in economizer use

### SHW

Liquid and Gas Fueled, Three-Pass Superheated Water Boiler

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| Technical Specifications | Unit | 0807 | 1008 | 1210 | 1513 | 1815 | 2016 | 2520 | 3025 | 3530 | 4035 | 4540 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kcal/h | 688.000 | 860.000 | 1.032.000 | 1.290.000 | 1.548.000 | 1.720.000 | 2.150.000 | 2.580.000 | 3.010.000 | 3.440.000 | 3.870.000 |
| Capacity | kW | 800 | 1.000 | 1.200 | 1.500 | 1.800 | 2.000 | 2.500 | 3.000 | 3.500 | 4.000 | 4.500 |
| a | mm | 3.936 | 4.180 | 4.400 | 4.460 | 4.555 | 4.618 | 4.933 | 5.273 | 5.555 | 5.806 | 6.050 |
| b | mm | 1.235 | 1.450 | 1.450 | 1.650 | 1.750 | 1.650 | 1.700 | 1.900 | 1.950 | 2.000 | 2.040 |
| b1 | mm | 2.000 | 2.052 | 2.130 | 2.230 | 2.260 | 2.296 | 2.376 | 2.526 | 2.574 | 2.664 | 2.776 |
| c | mm | 1.599 | 1.600 | 1.722 | 1.780 | 1.932 | 1.838 | 1.903 | 2.022 | 2.064 | 2.128 | 2.211 |
| l | mm | 2.475 | 2.610 | 2.730 | 2.790 | 2.880 | 2.950 | 3.260 | 3.460 | 3.625 | 3.875 | 4.120 |
| h | mm | 2.047 | 2.047 | 2.178 | 2.280 | 2.420 | 2.420 | 2.510 | 2.687 | 2.738 | 2.827 | 2.950 |
| Counter Pressure | mbar | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 7 |
| Water Volume | lt | 3.278 | 3.536 | 4.596 | 5.030 | 6.154 | 6.124 | 7.157 | 8.919 | 9.720 | 11.028 | 13.160 |

| Technical Specifications | Unit | 5045 | 6050 | 7060 | 8070 | 9080 | 10090 | 1200 | -T 120100 | -T 146120 | -T175146 | -T232195 | -T232195 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kcal/h | 4.300.000 | 5.160.000 | 6.020.000 | 6.880.000 | 7.740.000 | 8.600.000 | 10.320.000 | 10.320.000 | 12.556.000 | 15.050.000 | 20.000.000 | 20.000.000 |
| Capacity | kW | 5.000 | 6.000 | 7.000 | 8.000 | 9.000 | 10.000 | 12.000 | 12.000 | 14.600 | 17.500 | 23.200 | 25.000 |
| a | mm | 6.270 | 6.740 | 6.785 | 7.170 | 7.515 | 7.844 | 8.190 | 6.948 | 7.450 | 7.972 | 8.240 | 8.240 |
| b | mm | 2.100 | 2.150 | 2.280 | 2.400 | 2.430 | 2.465 | 2.320 | 3.110 | 3.110 | 3.500 | 3.383 | 3.383 |
| b1 | mm | 2.836 | 2.860 | 2.970 | 3.110 | 3.100 | 3.160 | 3.183 | 3.870 | 4.120 | 4.306 | 4.670 | 4.670 |
| c | mm | 2.270 | 2.282 | 2.430 | 2.490 | 2.550 | 2.607 | 2.677 | 3.148 | 3.300 | 3.374 | 3.893 | 3.893 |
| l | mm | 4.300 | 4.760 | 4.755 | 5.140 | 5.285 | 5.615 | 6.320 | 4.637 | 5.118 | 5.635 | 5.930 | 5.930 |
| h | mm | 3.030 | 3.050 | 3.220 | 3.335 | 3.395 | 3.544 | 3.666 | 4.214 | 4.466 | 4.596 | 5.000 | 5.000 |
| Counter Pressure | mbar | 7 | 8 | 9 | 9 | 9 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Water Volume | lt | 14.257 | 15.666 | 16.767 | 19.729 | 20.793 | 22.688 | 26.886 | 28.901 | 36.674 | 41.976 | 49.473 | 49.473 |

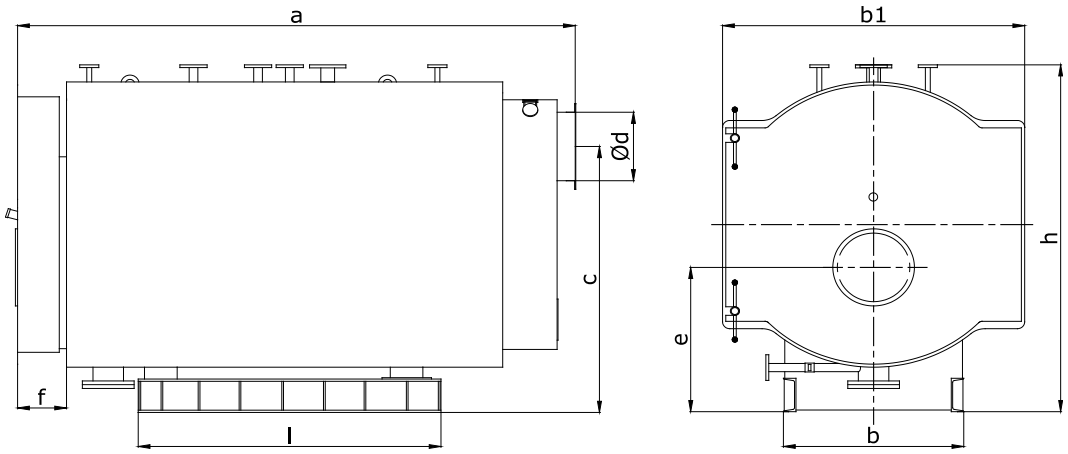
# HWR S

## Liquid and Gas Fueled, Two-Pass Package Superheated Water Boiler


* 465-5000 kW Superheated water generation capacity
* 6-16 bar operating pressure
* Liquid and gas fueled
* Can be used with pressure jet burner
* Thanks to high density insulation material used in coating boiler body, radiation and standby losses are reduced
* Electric control panel integrated into package system
* Digital temperature controlled safety system
* Standard Equipment: expansion tank, feed water tank, fuel tank (in liquid fuel), water softening device, PLC/Scada applications, chimney (Optional)

### HWR S

Liquid and Gas Fueled, Two-Pass Package Superheated Water Boiler




CE

| Technical Specifications | Unit | 400 | 500 | 600 | 750 | 1000 | 1250 | 1500 | 2000 | 2500 | 3000 | 3500 | 4300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | kcal/h | 400.000 | 500.000 | 600.000 | 750.000 | 1.000.000 | 1.250.000 | 1.500.000 | 2.000.000 | 2.500.000 | 3.000.000 | 3.500.000 | 4.300.000 |
| Capacity | kW | 465 | 581 | 698 | 872 | 1.163 | 1.453 | 1.744 | 2.326 | 2.907 | 3.488 | 4.070 | 5.000 |
| Fuel Amount (Fuel-Oil) | kg/h | 45 | 55 | 69 | 86 | 110 | 138 | 172 | 206 | 275 | 324 | 378 | 469 |
| a | mm | 2.388 | 2.388 | 2.573 | 2.788 | 2.983 | 3.350 | 3.490 | 3.840 | 4.115 | 4.430 | 4.430 | 4.600 |
| b | mm | 800 | 800 | 850 | 900 | 960 | 1.040 | 1.170 | 1.190 | 1.365 | 1.420 | 1.420 | 1.500 |
| b1 | mm | 1.320 | 1.320 | 1.400 | 1.480 | 1.550 | 1.650 | 1.922 | 2.000 | 2.110 | 2.410 | 2.410 | 2.600 |
| c | mm | 1.282 | 1.257 | 1.312 | 1.370 | 1.415 | 1.500 | 1.750 | 1.769 | 1.898 | 2.000 | 2.110 | 2.200 |
| Ød | mm | 300 | 350 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 750 |
| e | mm | 743 | 743 | 750 | 771 | 796 | 841 | 948 | 949 | 992 | 992 | 992 | 992 |
| f | mm | 228 | 228 | 228 | 228 | 228 | 270 | 180 | 180 | 180 | 180 | 180 | 180 |
| h | mm | 1.739 | 1.739 | 1.777 | 1.877 | 1.943 | 2.066 | 2.334 | 2.400 | 2.534 | 2.750 | 2.794 | 2.850 |
| l | mm | 1.314 | 1.314 | 1.480 | 1.780 | 1.780 | 2.100 | 2.000 | 2.500 | 2.650 | 2.700 | 2.700 | 2.900 |
| Water Volume | lt | 1.178 | 1.178 | 1.440 | 1.858 | 2.246 | 2.772 | 3.100 | 3.464 | 4.384 | 6.453 | 6.486 | 7.426 |
| Counter Pressure | mbar | 2,5-3 | 3-3,5 | 4,5-5 | 5-5,5 | 5,5-6 | 5,5-6 | 6-6,5 | 6,5-7 | 7-7,5 | 7,5-8 | 7,5-8 | 8 |

# WASTE HEAT BOILERS

## Smoke Tube Waste Heat Boilers

* Generation of steam, superheated water and hot water at requested pressure for turbines, furnaces, gas and liquid fueled motor waste gases
* Heat and electricity generation using the energy from high temperature waste flue gas
* Project specific design solutions suitable for process data
* Material selection and design solutions suitable for chemical and physical properties of the waste gas
* Ability to monitor and interfere with all auxiliary functions with PLC based control systems
* All necessary equipment required for the system such as economizer superheater and damper (Optional)
* Type design options such as ground type, or over the chimney or vertical type depending on system layout
* High Energy recovery with duct burner addition

**WHB-ESB Smoke Tube Waste Heat Steam Boiler**
**WHB-HW Smoke Tube Waste Heat Hot Water Boiler**
**WHB-SHW Smoke Tube Waste Heat Superheated Water Boiler**
**WHB-DB Waste Heat Superheated Oil Boiler**

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| | WHB-ESB | WHB-HW | WHB-SHW | V/WHB-HW | V/WHB-SHW | WHB-S | WHB-DB |
|---|---|---|---|---|---|---|---|
| Capacity | Selected depending on motor flow rate and Temperature | | | Selected depending on motor flow rate and Temperature | | Selected depending on motor flow rate and Temperature | Selected depending on motor flow rate and Temperature |
| | | | | | | Selected depending on turbine flow rate and Temperature | |
| Design | Cylindirical | | | Prismatic | | Prismatic | Cylindirical |
| | Horizontal | | | Vertical | | Vertical (Economizer, Evaporator Superheater Units) | Horizontal |
| | Smoke Tube | | | Water Tube | | Water Tube (Finned pipe, serrated pipe) | Spiral Coiled |
| Type | Without Burner | | | Without Burner | | Without Burner | Without Burner |
| | Waste Gas Heat | | | Waste Gas Heat | | Waste Gas Heat | Waste Gas Heat |
| Steam/ Water | Steam | Hot Water | Superheated Water | Hot Water | Superheated Water | Steam /Superheated Steam | Superheated Oil |
| Control | Erensan PLC | | | Erensan PLC | | Erensan PLC | Erensan PLC |
| | Erensan HMI | | | Erensan HMI | | Erensan HMI | Erensan HMI |

# WASTE HEAT BOILERS

Water Tube, Waste Heat Boilers

* Maximum steam and superheated steam generation from turbine waste gasses at high pressures
* Heat and electricity generation using the energy from high temperature waste flue gas
* Project specific design yielding solutions suitable for process data
* Material selection and design solutions suitable for chemical and physical properties of the waste gas
* High frequency welded serrated tube and special design finned tube based on the fuel type used in the system with consideration of cleaning of heating surfaces of the boiler and specific heating surface options depending on the properties of waste gas
* High quality dry steam generation in the steam storage drum
* Uninterrupted and integrated design including all heating surfaces (economizer – evaporator – superheater) in a single body
* Ability to monitor and interfere with all auxiliary functions with PLC based control systems

## WHB-S Water Tube Waste Heat Superheated Steam Boiler

CE

# Some of our References

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The Heating Engineer

# **Industrial** Systems

erensan

a company of GROUPE ATLANTIC

ООО «ТИ-СИСТЕМС» ИНЖИНИРИНГ И ПОСТАВКА ТЕХНОЛОГИЧЕСКОГО ОБОРУДОВАНИЯ
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