

# EROĞLU

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Art of Heating



















## **ABOUT US**

Eroğlu Heat Inc. Company, Mehmet Eroglu 's in 1972, was founded by the 1st. Giant. Eng. Mime. After completing the academy and after 3 years of market experience in 1975, Eroglu Mechanical Industry (EMS) as an engineering and contracting company has started its activities. In 1984, due to increasing demands, EROĞLU ISI A.Ş. was established and the company continues its activities under this name. Now EROĞLU Family Has expanded to more than 30 countries all over the world

In Pressure Vessels sector, it has adopted the principle of using the latest technologies by improving itself every day, following the current standards and renewing itself according to the qualities that will always provide the most appropriate response to the customer demand.

**Eroğlu Heat Inc.** Conducts management, marketing and sales activities in its head office in Istanbul Dudullu Organized Industrial Zone. Our productions are carried out in our factory established in Kocaeli Dilovası Mermerciler Organized Industrial Zone on an area of 10000 m² open and 6000 m² closed area that coincide with the recent standards EN 12953, EN 12952, EN 303.1.2.3. and TSE, ASME standards and EC 92/42, EC 97/23 regulations and our quality management system has been awarded ISO 9001 2000 certificate We also have manufacturing qualification certificates from other countries we export to.

**Eroğlu Heat Inc.** Produces all kinds of Pressure Vessels, Scotch Type Three Pass Steam Boilers, Water Pipe Boilers, Hot Oil Boilers, Steam Generators, Two Pass, Three Pass Heating Boilers, Waste Boilers, Hot Water Boilers, Degassers, Heat Exchangers, Boilers, Underground Above Ground Storage and We produce solutions in service points with 39 years of experience in manufacturing and installation of fuel tanks and related mechanical installations. Our mission is to provide the confidence we provide with our high performance before and after sales and our business ethics. Our vision is to be the leader and 24 carat in the sector.

**Eroğlu Heat Inc.** has established many turnkey industrial plants (Steam Power Plant, Hot Water Plant, Hot Oil System and mechanical installation works) in Turkey and abroad and in which all parts were installed proffisionally and operating properly. All of the products we manufacture are certified to conform to international standards. We are recognize as first producers of CE Steam Boiler, Thermal Oil that produces boilers and steam generator in turkey.

**Eroğlu Heat Inc.** manufactures more than 50% of its products components and cooperate with leader manufacturers for all over the world. Countries we export to; Germany, Albania, Azerbaijan, Bahrain, **United Arab Emirates**, Algeria, Croatia, Iraq, Italy, Kazakhstan, TRNC Kuwait, Libya, Macedonia, Egypt, Mauritania, Russia, Sudan, Saudi Arabia, Turkmenistan, Ukraine, Jordan, Yemen and Greece As our products are sold to the final consumer, we have agents in some countries.



## **QUALITY ASSURANCE**

At **EROĞLU**, Quality assurance is a must to all of our production lines Product's management. This can be cleary seen with the certifiec products we introduce.





# **HOT WATER BOILERS**

## **KBK / SSK / UGSK SERIES**





## **SSK SERIES**



#### **SCOTCH 3 PASSES TYPE HOT WATER BOILERS**

They are packet boilers with liquid or gas fuel fired, of the three-passes scotch type, used up to 15bar and 135,000-4,500,000 kcal/h capacities. Our hot water boilers are design as high efficient and such that they will prevent thermal shocks. Since the water circulation inside the boiler is at the maximum level, the heat transfer is much better. Since complete burning/oxidation is obtained at the furnace places that are kept wide, the waste gas emissions are at minimum levels. MANUFACTURING CODES: EN 12953.

#### CONSTRUCTION

Pressurized boiler shell having a dished tube sheet, corrugated boiler furnace that has been kept wide to enhance the burning quality and the emission, optimum sizing and placing for smoke gas passes, the boiler tube sheet are dished, tube are expanded and then welded by Orbital (TIG) to the tube sheet, the furnaces are fox type, and the tube holes have been bored with drill. The welding are made by automatic column boom machine subjected to X ray control and thermal process is applied at 65°C, it is coated with 1 mm painted galvanized sheet iron over 100mm. the construction of the boiler is determined by means of boiler capacity, water temperature, operating pressure, type of fuel, and the other variables; but the three passes system certainly does not change, rock wool. The boilers are subjected to hydrostatic testing pressure which is 1.5 times of the design pressure.

## **MATERIAL**

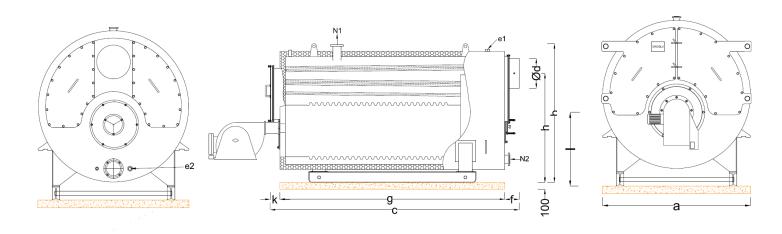
**EN 10028 P 235GH, P 265GH, P 295GH** boiler steel is used at the required thickness at the surfaces that are subjected to pressure (shell, tube sheet and furnace).

As the pipe, seamless steel tube boiler pipe of **EN 102-2** quality suitable to **P 235GH** is used. At low pressures; boiler pipe conforming to **EN 10217-2 P 235GH** is used as the pipe.



Тур	е	SSK 150	SSK 200	SSK 300	SSK 400	SSK 500	SSK 600	SSK 800	SSK 1000
Canacitu	Kcal/h	150000	200000	300000	400000	500000	600000	800000	1000000
Capacity	kW	174	233	349	465	581	698	930	1163
a (mr	m)	1175	1225	1330	1400	1450	1475	1525	1575
b (mr	m)	1400	1450	1630	1700	1750	1775	1825	1875
c (mr	n)	2100	2300	2400	2600	2700	2800	3050	3200
Ød (m	nm)	225	225	250	300	350	350	350	400
e1		1 1/4"	1 ½"	1 ½"	2"	2"	2"	2 ½"	2 ½"
e2		1"	1 1/4"	1 1/4"	1 1/4"	1 ½"	1 ½"	2"	2"
f (mr	n)	136	136	136	186	186	186	186	186
g (mr	m)	1868	2068	2168	2318	2418	2518	2768	2918
h (mr	m)	1010	1060	1220	1210	1250	1260	1310	1350
i (mr	n)	595	605	630	635	650	655	675	715
k (m	m)	96	96	96	96	96	96	96	96
Ø N-1 N2	2 (PN6)	DN50	DN50	DN65	DN80	DN80	DN80	DN100	DN100
Transportation (kg)	9	1100	1275	1610	2100	2260	2410	2640	3275
Water Volu	ume (lt)	780	920	1100	1360	1680	2156	2150	2690
Smoke way lo	sses (mbar)	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0

Тур	е	SSK 1200	SSK 1600	SSK 2000	SSK 2500	SSK 3000	SSK 3500	SSK 4000	SSK 4500
Canaaitu	Kcal/h	1200000	1600000	2000000	2500000	3000000	3500000	4000000	4500000
Capacity	kW	1395	1860	2326	2907	3488	3488	4651	5233
a (mı	m)	1600	1750	1885	2100	2250	2450	2550	2650
b (mı	m)	1900	2050	2200	2400	2550	2750	2850	2950
c (mr	n)	3250	3700	3800	4100	4550	5250	5550	5850
Ød (m	nm)	400	450	500	550	600	650	700	750
e1		2 ½"	3"	3"	4"	4"	4"	5″	5″
e2		2"	2 ½"	2 ½"	2 ½"	2 ½"	3″	3″	3"
f (mr	n)	186	186	186	186	186	186	186	186
g (mı	m)	2968	3418	3518	3818	4268	4969	5269	5569
h (mı	m)	1455	1585	1705	1780	1820	1950	2010	2080
i (mr	n)	755	820	875	950	1050	1225	1265	1325
k (m	m)	96	96	96	96	96	96	96	96
Ø N-1 N2	2 (PN6)	DN100	DN125	DN125	DN150	DN200	DN200	DN200	DN200
Transportation (kg	_	3750	5100	6120	7275	9250	11250	12450	13850
Water Vol	ume (lt)	2850	4486	6300	7695	8100	9615	10275	12250
Smoke way lo	sses (mbar)	6.0	6.5	7.0	7.0	7.0	8.0	8.0	8.0





## **KBSK SERIES**



#### CONSTRUCTION

**EROĞLU KBSK** Hot water boiler are. Reversed flame, high efficiency and long life boiler, by homonogeneously distributing the heat transfer area, the boiler passes to regime in a very short period of time. By the means of special design Cr Ni turbolators which are settled in the tubes, the heat energy of smoke transferd to water at maximum level. The smoke box has been design as easy to disassemble, thus the maintenance and repair of the tubes can be done easily. To avoid the heat losses shell of the boiler isolated with glass wool. Over electrostatic painted galvanize plate. Front cover isolated with refractory concrete. Resistand to 1.300°C. Its dimensions are small, covers little space, ideal for tight and small boiler rooms.

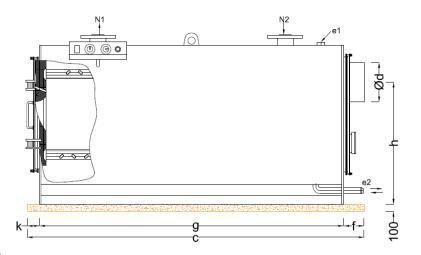
### **COMBUSTION PRINCIPLE**

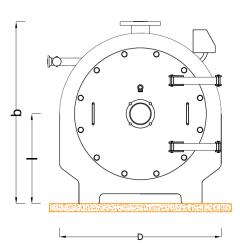
According to reverse flame turn back in the small cell and burns the half burned particulars and gasses. The bright flame, that is formed at the furnace where the double passes intensive burning take place, is conveyed to the water from the burning cell by means of radiation heat transfer. The tabulators in the tubes increase the speed of the smoke and gasses inside the smoke tube, thereby keeping the convectional heat transfer at the optimal level.



Тур	е	KBSK 60	KBSK 80	KBSK 100	KBSK 120	KBSK 150	KBSK 200	KBSK 240	KBSK 300	KBSK 360
Cit.	Kcal/h	60000	80000	100000	120000	150000	200000	240000	300000	360000
Capacity	kW	70	93	116	140	174	233	279	349	419
a (mr	m)	830	830	850	870	880	908	928	958	1003
b (mı	m)	1048	1048	1068	1068	1098	1127	1152	1182	1225
c (mr	m)	1045	1195	1285	1360	1450	1578	1683	1783	1870
Ød (m	nm)	200	200	200	225	225	225	250	250	300
e1		1"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 ½"	1 ½"	1 ½"	1 ½"
e2		1/2"	1"	1"	1"	1"	1 1/4"	1 1/4"	1 ½"	1 ½"
f (mr	n)	136	136	136	136	136	136	136	136	136
g (mı	m)	813	963	1053	1128	1218	1346	1451	1551	1638
h (mı	m)	752	752	760	780	790	813	835	865	872
i (mr	n)	569	569	579	589	594	609	619	634	655
k (m	m)	96	96	96	96	96	96	96	96	96
Ø N-1 N2	2 (PN6)	DN32	DN32	DN40	DN40	DN50	DN50	DN65	DN65	DN65
Transportation (kg)	9	395	435	468	531	574	666	691	852	944
Water Vol	ume (lt)	203	242	273	300	323	375	410	451	503
Smoke wa (mba	,	1.2	1.2	1.4	1.8	2.0	2.2	2.4	3.0	3.5

Тур	e	KBSK 400	KBSK 500	KBSK 600	KBSK 800	KBSK1000	KBSK1200	KBSK1600	KBSK2000	KBSK2500
	Kcal/h	400000	500000	600000	800000	100000	1200000	1600000	2000000	2500000
Capacity	kW	465	581	698	930	1163	1395	1860	2326	2907
a (mr	m)	1040	1130	1190	1335	1438	1488	1518	1548	1666
b (mr	m)	1260	1350	1410	1565	1714	1766	1796	1826	1944
c (mr	n)	2020	2120	2290	2346	2718	3093	3248	3880	3925
Ød (m	nm)	300	350	350	350	400	400	450	500	550
e1		2"	2"	2"	2 ½"	2 ½"	2 ½"	3″	3″	4"
e2		1 ½"	1 ½"	1 ½"	2"	2"	2"	2 ½"	2 ½"	2 ½"
f (mr	n)	186	186	186	188	188	188	188	188	188
g (mr	m)	1738	1838	2008	2040	2432	2807	2962	3594	3639
h (mr	m)	908	973	1033	1150	1290	1315	1325	1344	1425
i (mn	n)	675	719	749	822	919	944	959	974	1033
k (mı	m)	96	96	96	98	98	98	98	98	98
Ø N-1 N2	2 (PN6)	DN80	DN80	DN80	DN100	DN100	DN100	DN125	DN125	DN150
Transportation (kg)	9	1079	1300	1469	1884	2372	2726	3161	3947	4897
Water Volu	ume (lt)	569	677	793	1199	1665	2032	2067	2548	2850
Smoke wag (mba	,	4.0	4.5	4.5	5.0	5.5	6.0	6.5	7.0	7.5







## **UGSK SERIES**



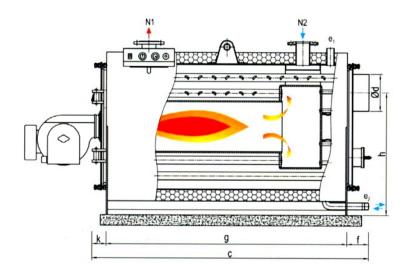
#### THREE PASS HOT WATER BOILER (UGSK)

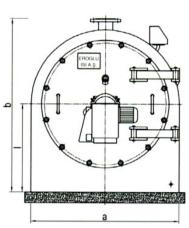
EROĞLU UDGSK Service domestic type boiler are the most develop boilers in its category. Front and rear smoke boxes are place in the main shell, combustion chamber's water volume kept wide so the smoke loses its energy at the maximum level. Fire and smoke tube are located homogenously around the furnace. This location maximizes the transfer of the heat to the water. Since an economizer place to the rear smoke box 5% fuel save achieved. Tubes are welded to the tube plate by TIG welding and life time leak proof guaranteed. Front and rear covers are constructed specially for non smoke leakage. Cr Ni tabulators which are settled in the tube, the heat energy of smoke transferred to water. Front cover isolated with refractory concrete resistant to 1300°C. shell coated with isolation material over specially manufactured painted galvanize plate so life time a nice view obtained. These boilers are the preference of the industrial plants, hotels, hospital and apartment buildings where the energy consumption is high.



Тур	e	UGSK 150	UGSK 200	UGSK 300	UGSK 400	UGSK 500	UGSK 600	UGSK 800	UGSK1000
Capacity	Kcal/h	150000	200000	300000	400000	500000	600000	800000	1000000
Capacity	kW	174	233	349	465	581	698	930	1163
a (mr	m)	1100	1150	1250	1350	1350	1504	1578	1612
b (mr	m)	1314	1364	1464	1568	1568	1718	1796	1833
c (mr	n)	1586	1736	1886	2136	2286	2586	2866	3166
Ød (m	nm)	225	225	250	300	350	350	350	400
e1		1 ½"	1 ½"	1 ½"	2"	2"	2"	2 ½"	2 ½"
e2		1"	1 ½"	1 ½"	1 ½"	1 ½"	1 ½"	2"	2"
f (mr	n)	136	136	136	186	186	150	186	186
g (mı	m)	1354	1504	1654	1854	2004	2304	2854	2884
h (mı	m)	1010	1060	1135	1220	1220	1365	1365	1430
i (mr	n)	700	725	775	825	825	902	939	956
k (m	m)	96	96	96	96	96	96	96	96
Ø N-1 N2	2 (PN6)	DN50	DN50	DN65	DN80	DN80	DN80	DN100	DN100
Transportation (kg)	9	900	1040	1280	1555	1670	2225	2700	3030
Water Vol	ume (lt)	651	784	1001	1360	1429	2156	2673	3083
Smoke way lo	sses (mbar)	4.0	4.0	5.0	5.0	5.0	5.0	5.0	5.0

Тур	e	UGSK1200	UGSK1600	UGSK2000	UGSK2500	UGSK3000	UGSK3500	UGSK4000	UGSK4500
Canacity	Kcal/h	1200000	1600000	2000000	2500000	3000000	3500000	4000000	4500000
Capacity	kW	1395	1860	2326	2907	3488	4070	4651	5233
a (mr	n)	1700	1800	1850	1900	1950	2050	2130	2250
b (mr	m)	1966	2068	2118	2168	2218	2318	2400	2520
c (mr	m)	3421	3721	4171	4601	4951	5251	5551	5851
Ød (m	ım)	400	450	500	550	600	650	700	750
e1		2 ½"	3″	3″	4"	4"	4"	5″	5″
e2		2"	2 ½"	2 ½"	2 ½"	2 ½"	3″	3″	3"
f (mn	n)	186	186	186	186	186	186	186	186
g (mr	m)	3239	3439	3889	4319	4669	4969	5269	5569
h (mr	m)	1490	1520	1600	1630	1650	1680	1700	1720
i (mn	n)	1050	1100	1125	1150	1175	1225	1265	1325
k (mı	m)	96	96	96	96	96	96	96	96
Ø N-1 N2	(PN6)	DN100	DN125	DN125	DN150	DN200	DN200	DN200	DN200
Transportatio (kg)	-	3720	4340	5220	6270	7130	8150	9015	10115
Water Volu	ume (lt)	3694	4486	5112	5713	6275	7549	8704	10546
Smoke way los	sses (mbar)	6.0	6.5	7.0	7.0	7.0	8.0	8.0	8.0







# SCOTCH TYPE HIGH PRESSURE STEAM BOILERS

## **SBK SERIES**

Three pass, fire-smoke tube steam boilers 300 kg/h - 15t/h steam





## **SBK SERIES**



**EROĞLU SBK** Series, are fire – smoke tube 3- pass high pressure boilers between 0.5-20 bar pressure and 0.5-15 ton /h. it is the most frequently used scotch type boilers. SBK steam boilers are manufacture and guaranteed by the over thirty years of experience of **EROĞLU** in the construction of industrial and professional boilers which are installed and appreciated all over the world. SBK series steam boiler design to produce: saturated steam, superheated steam, low pressure steam.

#### **CONSTRUCTION**

Manufacturing Code: EN 12953-TS 377-TS 497 and PED 97 / 23. Pressurized boiler shell having dished tube plates, corrugated Fox type furnace that has been kept wide to enhance the burning quality and emission. Optimum sizing and placing the fire and smoke tube. Wet back reverse chamber located at the end of furnace. Cylindrical shell and other pressure parts of the boiler is welded by submerged (column & boom) and orbital (TIG) machines. 100% X-ray satisfactory result can be obtain. Boilers are subject to 650°C stress relieving process. Front cover and rear smoke boxes are design to minimize the smoke leakage. To avoid thermal loses, it is coated with 100mm rock wool over 1mm electro static painted galvanized plate. After welding process boilers are subjected to hydrostatic pressure test, which is 1.5 times the working pressure. At high capacity boilers, super heater is located to back furnace.

#### **MATERIAL**

- ♣ Steel Plate: for boiler surfaces under pressure (shell, furnace, tube plate, wet back reverse chamber) appropriate to EN 10028 GH, P256 GH, P295 GH quality boiler steel. Non pressure parts EN 10025 steel.
- **Tube :** Seamless steel tube, appropriate to EN 10216 P195 GH, P235 GH, P295 GH quality seamless tube

#### **SAFETY**

It is possible to establish, high & low water level limiter low pressure and high pressure switches, flue gas temperature thermo cup, thermo meter, manometer, water level gauge, pressure safety valves bottom blow-down, surface below- down and men less operating according to TRD 604



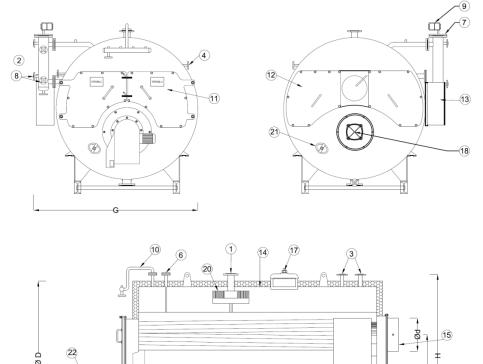
	Туре	SBK	10-08	15-08	20-08	25-08	35-08	40-08
,	Working pressure		0.5-18	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18
Cana	Steam	Kg	500	700	1.050	1.250	1.600	1.850
Capa	Capacity Heat		290.000	406.000	609.000	725.000	928.000	1.073.000
	Heating Surface	m <sup>2</sup>	14	20	25	30	39	45
	Smoke way loses	mmSS	50	50	50	50	50	60
	Water Volume	dm <sup>3</sup> (lt)	1.445	1.625	2.410	2.660	3.120	3.700
	Steam Volume	dm³(lt)	225	235	420	465	615	690
	Transport Weight	kg	1.850	2.100	2.900	3.150	3.850	4.500
۵	Fuel oil / heavy oil	1/ a /b	34.8	40.7	72.0	86.9	111.2	128.6
Fuel nsum tion	Hu=9.700 kcal/kg	Kg/h	34.8	48.7	73.0	80.9	111.2	128.0
Fuel consump	i vatarar gas	Nm³/h	39.1	54.7	82.0	97.6	125.0	144.5
ŭ	Hu=8.250 kcal/ Nm <sup>3</sup>	INIII /II	59.1	54.7	62.0	97.6	125.0	144.5
	Н	mm	1.600	1.710	1.915	1.915	2.050	2.070
L C	L	mm	2.650	2.750	3.350	3.350	3.575	3.900
nsic	G	mm	1.650	1.750	1.950	1.900	2.050	2.060
Dimension	DØ	mm	1.350	1.450	1.650	1.610	1.740	1.770
≅	h	mm	1.050	1.165	1.290	1.290	1.350	1.350
	dØ	mm	250	250	300	300	350	400
	Steam Outlet	DN	32	40	50	50	65	65
	Feed Water Inlet	DN	32	32	32	32	32	32
В	Bottom blow Down	DN	25	25	25	40	40	40

		Туре	SBK	50-08	55-08	60-08	70-08	80-08	95-08
,	Working pressure		bar	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18
	Capacity Steam		Kg	2.100	2.250	2.520	3.000	3.500	4.200
Capa	city	Heat	Kcal/h	1.218.000	1.305.000	1.461.600	1.740.000	2.030.000	2.436.000
	Heat	ing Surface	m <sup>2</sup>	50	54	60	72	82	95
	Smok	e way loses	mmSS	60	60	70	70	70	70
	Wat	er Volume	dm <sup>3</sup> (lt)	3.715	4.560	4.895	5.280	5.870	6.550
	Stea	m Volume	dm³(lt)	705	750	1.090	1.140	1.200	1.330
•	Trans	port Weight	kg	4.950	5.300	6.350	7.050	7.600	9.400
Fuel nsump tion		uel oil / heavy oil u=9.700 kcal/kg	Kg/h	146.0	156.4	175.2	208.6	243.3	292.0
Fuel consump		Natural gas =8.250 kcal/ Nm <sup>3</sup>	Nm³/h	164.0	175.8	196.8	234.3	273.4	328.1
		Н	mm	2.090	2.185	2.250	2.350	2.400	2.450
L C		L	mm	3.950	4.180	4.310	4.420	4.750	4.950
Dimension		G	mm	2.080	2.210	2.300	2.360	2.450	2.450
me		DØ	mm	1.790	1.910	2.050	2.100	2.150	2.200
Ξ		h	mm	1.370	1.400	1.510	1.550	1.580	1.620
		dØ	mm	400	400	450	500	500	550
	Ste	am Outlet	DN	80	80	80	100	100	125
	Feed	Water Inlet	DN	40	40	40	40	40	50
В	otton	n blow Down	DN	40	40	40	40	40	40



	Туре	SBK	100-08	125-08	150-08	175-08	200-08	250-08	300-18
V	Vorking pressure	bar	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18	0.5-18
C	Steam	Kg	4.750	5.500	6.750	7.600	9.600	11.500	15.300
Capac	Heat	Kcal/h	2.755.000	3.190.000	3.915.000	4.408.000	5.568.000	6.670.000	8.874.000
H	Heating Surface	m <sup>2</sup>	105	125	140	170	200	250	306
S	moke way loses	mmSS	70	80	80	80	80	90	90
	Water Volume	dm <sup>3</sup> (lt)	7.270	8.535	9.105	11.540	12.685	15.305	19.410
	Steam Volume	dm³(lt)	1.520	1.785	2.275	2.555	3.680	4.415	5.965
T	ransport Weight	kg	10.000	11.600	13.000	15.200	17.700	19.500	24.500
Ē	Fuel oil / heavy oil	17 - 7h	220.2	202.4	460.2	F20.4	CC7 F	700.6	1.002.0
ptio	Hu=9.700 kcal/kg	Kg/h	330.3	382.4	469.3	528.4	667.5	799.6	1.063.8
Fuel	Natural gas	2							
Fuel	Hu=8.250 kcal/ Nm <sup>3</sup>	Nm³/h	371.0	429.6	527.3	593.7	749.9	898.3	1.195.2
	Н	mm	2.500	2.610	2.800	2.900	3.080	3.190	3.400
L C	L	mm	5.000	5.300	6.000	6.100	6.400	7.200	7.800
Dimension	G	mm	2.500	2.600	2.750	2.950	3.020	3.100	3.370
me	DØ	mm	2.250	2.380	2.450	2.550	2.730	2.800	3.000
<u>.</u>	h	mm	1.640	1.660	1.700	1.850	1.900	1.950	2.070
	dØ	mm	550	650	700	750	800	900	950
	Steam Outlet		125	125	150	150	150	200	200
F	Feed Water Inlet		50	50	50	50	50	50	50
Во	ottom blow Down	DN	40	40	40	40	40	40	40

1	Steam Outer Flange
2	Feed Water Flange
3	Safety Outlet Flanges
4	Continuous Blow Down Valve (TDS)
5	Drain and Blow Down Valve
6	Steam Temperature Thermostat
7	Sensitive Accessory Collector
8	Level Indicator Flanges
9	Water Level Controller Electrode
10	Pressure Controller (S) Manometer
11	Front Smoke Box
12	Rear Smoke Box
13	Control Box
14	Boiler Body
15	Boiler Chimney
16	Saddle Iron
17	Inspection Manhole
18	Inspection
19	Insulation
20	Separator
21	Hand Hole
22	Burner





# **HOT OIL BOILER**

## **KYK SERIES**

250.000 kcal/h to 6.000.00 Spiral tube winding hot oil boiler.





## KYK SERIES



#### **CONSTRUCTION**

Construction of KYK series of Thermal Oil Boilers are made in two ways: 1) Horizontal Type, 2) Vertical Type. Heat Transfer area is form of spiral winded tubes. Depending upon the velocity of the heat transfer oil, its winded as two way. Three way and four way. Material expansion related to high temperature is avoided by the means of spiral winding. Boiler design as three pass. Front cover is designed as hinged, easy to open, rear cover can be dismantled easily, dry places are isolated with refractory concrete.

#### **ADVANTAGES**

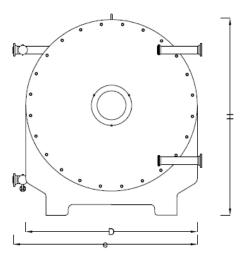
Heat transfer oil which we use in the boilers can rise up to 350°C without any corruption in the oil. Thus there is no need to passing from liquid phase to gas phase nor high pressure to avoid boiling. Although the heat transfer oil heated up to 350°C it is under the boiling temperature for this reason there is no need to increase the working pressure. Heat transfer oil, doesn't leave sediment in the pipe lines, doesn't cause corrosion, no need for chemical treatment, doesn't freeze at normal weather conditions. Temperature control made b the means of automatic control valves in a perfect way.

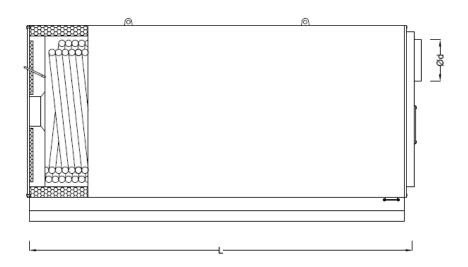
Thermal oil boilers chimney temperature is high considering to steam boiler, because of high working temperatures, but if we take into consideration, condensate loss, blow-down loss flash steam loss, and water losses, we see that thermal oil boiler is more efficient and economic. It is possible the locate economizer or air heater to chimney of the thermal oil boiler to recover the chimney temperature and to increase the efficiency. With thermal oil heat exchanger we can obtain steam.



Туре		KYK 250	KYK 400	KYK 500	KYK 600	KYK 800	KYK 100	KYK 100
sanasitu.	Kcal/h	250.000	400.000	500.000	600.000	800.000	1.000.000	1.200.000
capacity	kW	291	465	581	698	930	1.163	1.395
D (mm)	)	960	1.080	1.150	1.160	1.300	1.400	1.500
h (mm)	)	1.210	1.300	1.400	1.410	1.850	1.750	1.850
l (mm)		1.935	2.150	2.350	2.620	2.400	3.450	3.500
Ø d (mn	า)	250	250	300	320	375	400	450
e (mm)		1.110	1.275	1.300	1.310	1.450	1.550	1.655
Weight (kg)		985	1.380	1.620	1.745	2.315	2.785	3.210
Inlet – Outlet Flanges		DN40	DN50	DN65	DN65	DN80	DN80	DN100

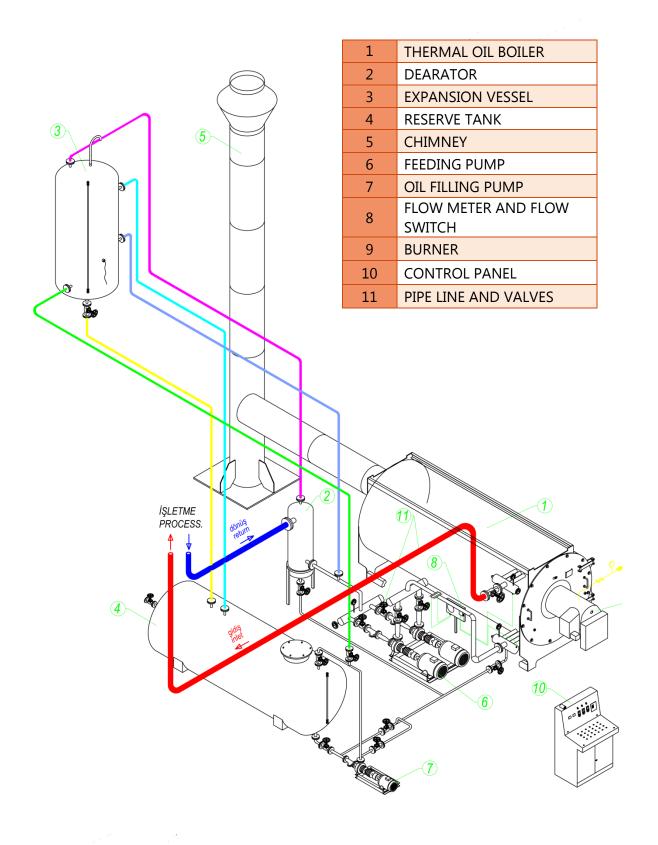
Туре		KYK 1500	KYK 2000	KYK 2500	KYK 3000	KYK 4000	KYK 5000	KYK 6000
con a city	Kcal/h	1.500.000	2.000.000	2.500.000	3.000.000	4.000.000	5.000.000	6.000.000
capacity	kW	1.744	2.326	2.907	3.488	4.651	5.814	6.977
D (mm)	)	1.600	1.850	2.150	2.350	2.600	2.850	3.150
h (mm)	1	1.980	2.250	2.550	2.750	3.000	3.250	3.550
l (mm)		3.715	4.415	4.850	5.400	6.040	6.450	6.950
Ø d (mm	า)	470	575	650	700	800	900	1.000
e (mm)		1.800	2.060	2.450	2.650	2.800	3.150	3.450
Weight (kg)		3.855	5.420	3.680	8.720	10.880	13.550	15.500
Inlet – Outlet Flanges		DN100	DN125	DN125	DN150	DN150	DN200	DN200







# THERMAL OIL BOILER FLOW DIAGRAM





# **STEAM GENERATORS**

## **ESG SERIES**

Four pass, progressive control, coil type Steam Generator capacity from 150 kg/h to 3000 kg/h steam





## **ESG SERIES**



**EROĞLU STEAM GENERATOR** Steam: one of the most important components is a fast evolving industry. EGS series steam generators is the only answer for low operation cost, space saving and maximum safety systems. At maximum capacity, saturated dry steam is ready in 3 minutes.

#### WHY STEAM GENERATOR

According to 97/23 EC Directive Steam Producing boilers divided into 3 categories as shown below:

- **♣** PxV > 600
- + P x V > 10 / P x V < 600
- $\frac{4}{}$  PxV  $\leq 10$

#### WHY STEAM GENERATOR

**ESG** Steam Generators starts working when the system requires steam, when the system do not require steam the generator will stop. There is no heat loss or noise during operation. Generator do not increase the fuel cost by heating more water than needed. Easy installation. Easy to maintain. Efficiency is very high 90-94%. ESG Series Steam Generators are 4 – Pass design to benefit from the inside gasses also decreased emission values. To facilitate the maintenance and repairing as easy opening door and ravelable serpentine design. As a safety factor this generators is in the 3<sup>rd</sup> category and can be install anywhere you wish there is no obligatory law. ESG Series are equipped with numerical indicator of functions which indicates the condition of the generator in every working phase. Steam quality increased by the means of separator located to steam outlet. Water drops separated from water. Operation is not dangerous. There is no risk of explotion like boilers. Require minimum space.

### **CONSTRUCTION**

The codes used are : AD-200, TSEK, EN 12952

Heat Resistance Tube : EN 10216-2 P235, GH / P265 GH
Heat Resistance Boiler Tube : EN 10028-2 P235, GH / P265 GH

Heat Resistance Insulation Material : Rock Wool over Painted Galvanize Plate

EN 13501-1 / EN 10142 DX51+Z



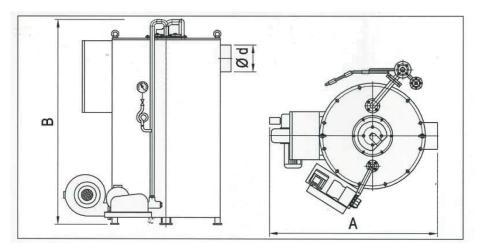
Туре		ESG 150	ESG 250	ESG 350	ESG 500	ESG 600	ESG 700	ESG 800	
Steam Cap. Kg/h		150	250	350	500	600	700	800	
Hoati	ina Can	Kcal/h	90.000	150.000	210.000	300.000	360.000	420.000	480.000
Heating Cap		kW	105	175	245	349	419	488	558
Water Inlet		DN20	DN20	DN20	DN25	DN32	DN32	DN32	
Steam Outlet		DN25	DN25	DN25	DN32	DN40	DN40	DN40	
Blow Down		DN20							
Chi	imney	Ømm	200	200	250	250	250	300	300
Wat	ter Vol.	Lt.	30	45	60	100	150	165	175
.0	Natural gas		11.99	19.98	27.97	39.96	47.95	55.94	63.94
Fuel consumptio		LPG	8.99	14.99	20.98	29.97	35.96	41.96	47.95
F. usu	-	ght oil	9.98	16.68	23.28	33.26	39.91	46.56	53.22
8	Heavy oil		10.79	17.98	25.17	35.96	43.16	50.35	57.54
		Width	1580	1645	1970	1730	1785	1850	1875
(A x E	3 x C)	Length	2010	2210	2600	2900	3200	3400	3400
		Height	1790	1970	2000	2275	2410	2550	2600
Weight		Kg	550	750	1000	1200	1350	1500	1650

Туре		ESG 950	ESG1050	ESG1250	ESG1500	ESG1750	ESG2000	ESG2500	ESG3000	
Steam Cap. Kg/h		950	1050	1250	1500	1750	2000	2500	3000	
l la ativa	C	Kcal/h	570.000	630.000	750.000	900.000	1050000	1200000	1500000	1800000
Heating Cap		kW	663	732	872	1047	1221	1396	1745	2093
Water Inlet		DN32	DN40	DN40	DN40	DN50	DN50	DN50	DN65	
Steam Outlet		DN40	DN50	DN50	DN50	DN65	DN65	DN65	DN80	
Blow Down		DN25	DN25	DN25	DN25	DN32	DN32	DN32	DN32	
Chimney Øn		Ømm	300	350	350	400	450	500	550	600
Water Vol.		Lt.	275	300	325	390	560	690	900	950
.0	Natu	ral gas	75.92	83.92	99.90	119.88	139.86	159.84	199.80	239.76
Fuel sumpt n	. L	.PG	56.94	62.94	74.93	84.91	104.90	119.88	149.85	179.82
Fuel consumptio n	Lig	ht oil	63.19	69.84	83.15	99.78	116.41	133.04	166.30	199.56
	Heavy oil		68.19	75.52	89.91	107.89	125.87	143.85	179.81	215.78
		Width	1920	1960	1970	2080	2150	2310	2500	2650
(A x B	· ·	Length	3600	4000	4200	4450	4900	5450	5550	6200
		Height	2650	2800	2950	3000	3250	3450	3580	3800
Weight		Kg	1800	1900	2100	2400	2800	3400	3750	4750

## Capacity Table Prepared According To 60°C Feed Water And 8 Bar Working Pressure

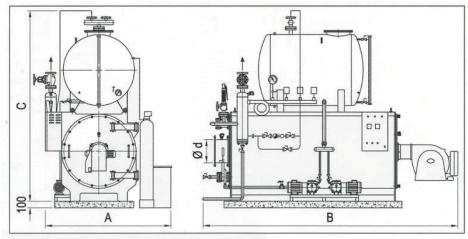
- **ESG** model steam generator has vertical type.
- **♣** Separator is constants on the steam generators.
- ♣ For High Steam temperatures we have special de super heater
- ♣ In the case of high steam pressure, economizer can be added.
- ♣ Manufacturing company reserve the right to change the dimensions and capacities.





# **VERTICAL**

# HORIZONTAL

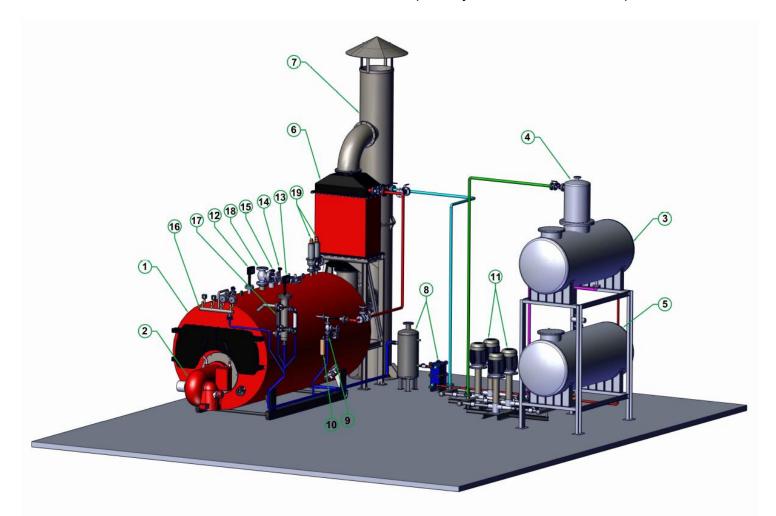


1					
1	Steam Outlet	8	Rear Cover		
2	Steam Serpantine	9	Hinged Front Cover		
3	Accessory Group	10	Re factory Material		
4	Steam Trap Group	11	Control Box		
5	Hot Water Serpantine	12	Chimney Gas Flange		
6	Economizer Serpantine	13	Safety Valve		
7	Isolation and rock wool	14	Saperator		



## **SAMPLE BOILER ROOM**

**EROĞLU** Introduces to its clients a complete system level solution & plan rooms.



	Legend	10	Sample cooler		
1	Steam boiler	11	Dearator & Boiler pump		
2	Burner	12	Level Control system		
3	Dearator Tank	13	Modulating level control system		
4	Dearator Tower	14	Low level control system		
5	Condensate Tank	15	High level control system		
6	Economizer	16	Presostate collector		
7	Chimney	17	Level indicators		
8	Bottom blow down recovery system	18	Main steam outlet valve		
9	Conductivity (TDS) control system	19	Safety valves		





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