



JENESIS

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Since 1984

Solution Partner Of Your
Steam Systems

PRODUCTS

TUBE HEAT EXCHANGERS

Spiral Tube Heat Exchangers
Flat Tube Heat Exchangers
Hygienic Heat Exchangers

HOT WATER ACUMULATION TANKS

Classic
Quick
Hygienic



DEAERATORS

Thermic
Compact



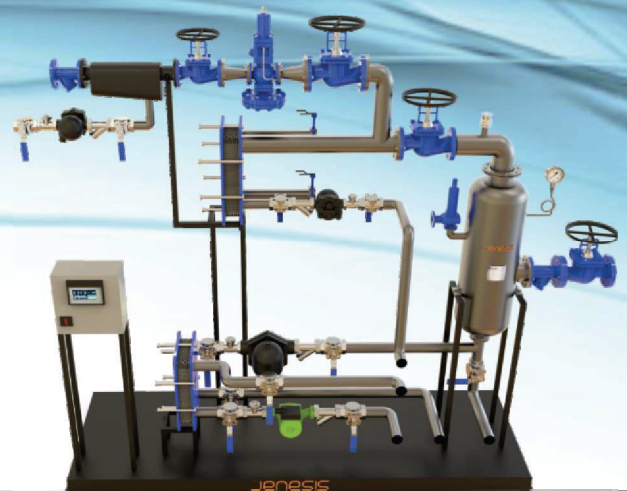
Correct Design, Quality Product and Trouble-Free Operation

STEAM BOILERS

Water Piped
HUB Moduler
Condensing

DRYING BOILERS

Pre-MIX⁺
HUB Pre-MIX⁺





ENERGY RECOVERY AND SAVING SYSTEMS

Flue Gas Economiser
Flash Steam Recovery System
Energy Saving from Condensate Tank
Energy Recovery from Blowdown System
Condensate Pump



FAST PACKAGE HOT WATER PRODUCTION SYSTEMS

JetPack
NormPack



SERVICES

Design
Training
Consultancy
Technical Service
Periodic Maintenance
Steam Production and Sales



REACTORS

Saturated Steam Reactor
Superheated Steam Reactor
Hygienic Steam Reactors
Hot Water Reactor

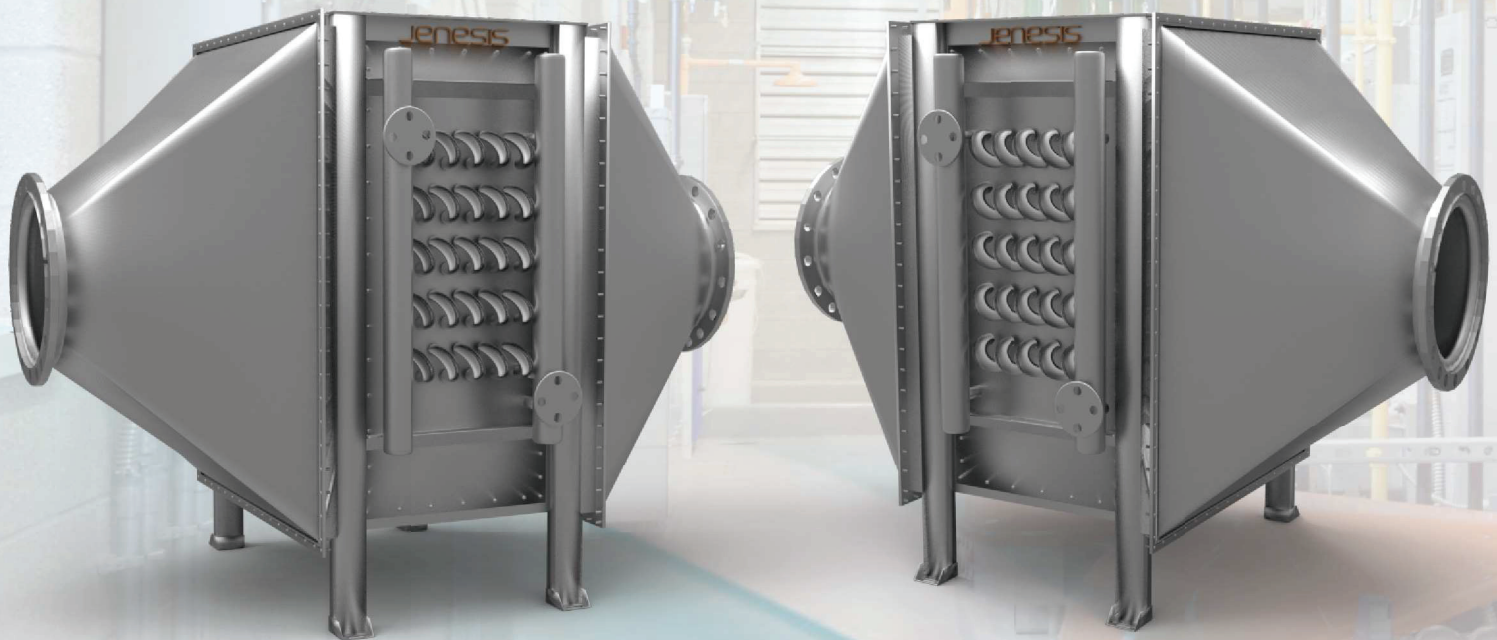


STEAM GENERATORS

Vertical Steam Generator
Horizontal Steam Generator
HUB Modular Steam Generator
Condensing Steam Generator
Hygienic Steam Generator
Superheated Steam Generator
Hermetic Steam Generator



FLUE GAS ECONOMISERS



According to second line

- *Economiser
- *Recuperator

According to Outlet Temperature

- *Condensing
- *Non-Condensing

According to Working Pressure

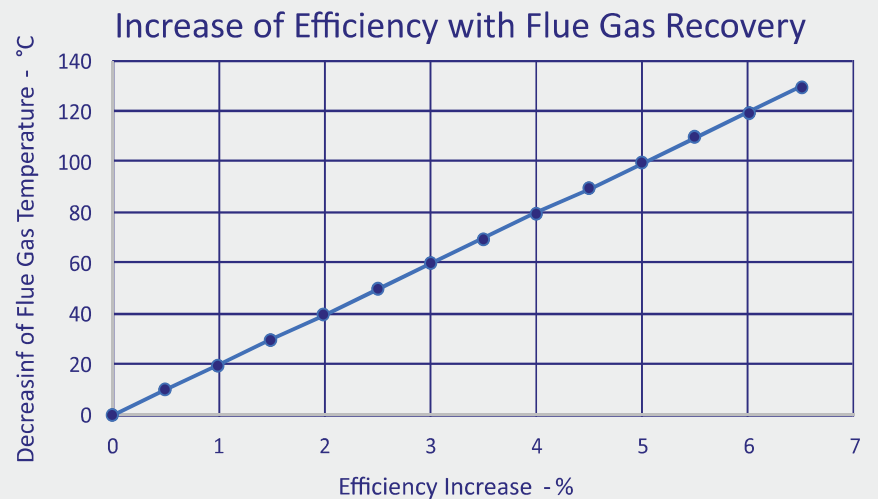
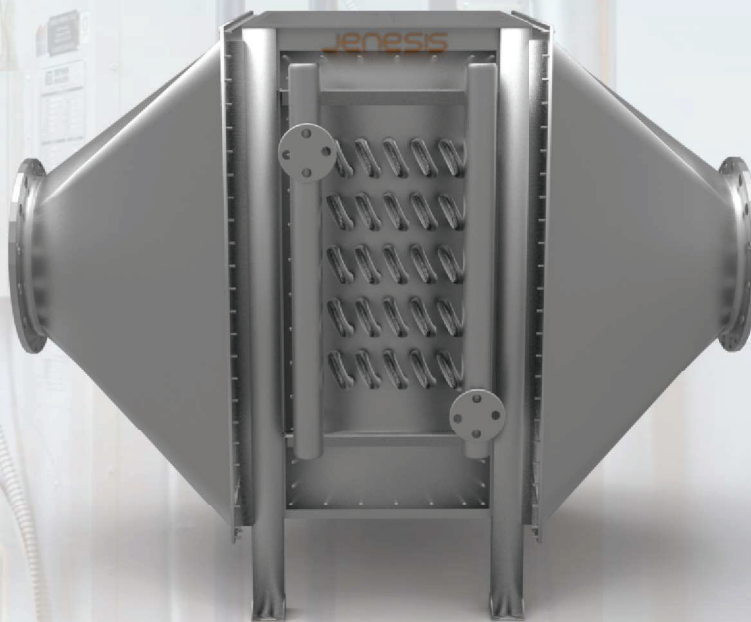
- *Water Piped
- *Smoke Piped

According to Precision

- *Modulating
- *On/Off

Flue Gas temperature must be about 40-75 °C more than the produced steam temperature to get the intended steam temperature about design. Because of that recover of high temperature flue gas thrown away from chimney is very important. The systems which take the energy from chimney to water are called flue gas economiser.

Conditionaley custome manufacturing is made just like a tailer. Total boiler performance increases about %1 when system recover the energy of every 20 °C from the flue gas.



STEAM PIPE DIAMETER SELECTION TABLE

Steam Pressure P(Bar)	Steam Velocity V(m/s)	Tube Diameter(DN)													
		15 1/2" 16 mm	20 3/4" 21.6mm	25 1" 27.2mm	32 1 1/4" 35.9mm	40 1 1/2" 41.8mm	50 2" 53mm	65 2 1/2" 68.8mm	80 3" 80.8mm	100 4" 105.3mm	125 5" 130mm	150 6" 155.4mm	200 8" 204mm	250 10" 254mm	300 12" 303mm
		Steam Flow Rate Calculated According To Tube Inside Diameter Given Above (kg/h)													
0.5	15	9	17	27	48	64	104	175	241	40	623	891	1535	2379	3386
	20	13	23	36	63	86	138	233	321	545	831	1187	2046	3172	454
	30	19	34	55	95	129	207	349	482	818	1246	1781	3069	4759	6772
	40	28	46	73	127	172	276	466	642	1090	1662	2375	4093	6345	9029
1	15	12	22	36	62	84	135	228	315	534	814	1163	2005	3108	4423
	20	16	30	48	83	112	180	304	419	712	1086	1551	2673	4144	5897
	30	25	45	71	124	168	271	456	629	1068	1628	2327	4010	6216	8845
	40	33	60	95	16	224	361	608	839	1424	2171	3102	5346	8288	11794
2	15	18	33	62	91	123	197	333	459	779	1188	1697	2925	4535	6453
	20	24	44	69	121	164	263	444	612	1039	1584	2263	3900	6047	8605
	30	36	6	104	181	246	395	665	918	1559	2376	3395	5851	9070	12907
	40	48	87	139	242	328	527	887	1224	2078	3168	4527	7801	12093	17209
3	15	24	43	68	119	161	258	435	601	1020	1555	2222	3828	5935	8446
	20	31	57	91	158	214	345	581	801	1360	2073	2962	5105	7914	11261
	30	47	86	136	237	321	517	871	1201	2040	3109	4443	7657	11870	16892
	40	63	114	181	316	429	689	1161	1602	2720	4146	5924	10209	15827	22523
4	15	29	53	84	146	198	319	537	740	1258	1917	2739	4720	7318	10413
	20	39	71	12	195	264	425	716	987	1677	2556	3652	6294	9757	13884
	30	58	106	168	292	396	637	74	1481	2515	3834	5478	9440	14635	20826
	40	77	141	24	390	528	50	1432	1975	3354	5112	7304	12587	19513	27768
5	15	34	63	100	174	235	378	637	879	1493	2276	3252	5604	8687	12362
	20	46	84	133	231	314	504	850	1172	1991	3034	4336	7472	11583	16483
	30	69	126	199	347	471	756	1275	1758	2986	4551	6504	11207	17375	24725
	40	92	168	266	463	627	1009	1700	2344	3981	6068	8671	14943	23166	32966
6	15	40	73	115	201	272	437	737	1017	1727	2632	3761	6481	10048	14288
	20	53	97	154	268	363	583	983	1356	2302	3509	5015	8642	13397	19064
	30	80	145	230	401	544	875	1474	2034	3454	5264	7522	12963	20095	28597
	40	106	194	307	535	726	1167	1966	2711	4605	7019	10029	17283	26794	38129
8	15	51	92	146	255	345	555	935	1290	2191	3340	4772	8224	12750	18143
	20	67	123	195	340	460	740	1247	1720	2922	4453	6363	10966	17000	24191
	30	101	184	292	509	691	1110	1871	2580	4382	6680	9545	16448	25499	36287
	40	135	246	390	679	921	1480	2494	3441	5843	8906	12726	21931	33999	48382
10	15	61	112	177	308	418	672	1133	1562	2653	4043	5778	9957	15436	21966
	25	82	149	236	411	557	896	1510	2083	3537	5391	7704	13276	20581	29288
	30	123	223	354	617	836	1344	2265	3124	5306	8087	11556	19914	30872	43932
	40	163	298	472	822	1115	1792	3020	4165	7074	10783	15408	26552	41163	58576
12	15	72	131	208	362	491	789	1329	1833	3113	4745	6781	11685	18115	25778
	25	120	218	346	603	818	1314	2215	3055	5189	7909	11301	19475	30191	42963
	40	192	349	554	965	1308	2103	3544	4888	8302	12564	18081	31159	48305	68741
14	15	82	150	238	415	563	905	1525	2104	3573	5446	7782	13411	20791	29586
	25	137	251	397	692	938	1509	2542	3506	5955	9077	12970	22352	34651	49310
	40	220	401	636	1108	1501	2414	4068	5610	9529	14523	20753	35763	55442	78896
16	15	93	170	269	469	636	1022	1722	2375	4033	6147	8784	15138	23468	33396
	25	155	283	449	781	1059	1703	2870	3958	6722	10246	14641	25230	39114	55660
	40	248	453	718	1250	1695	2725	4592	6333	10756	16393	23425	40368	6282	89056
20	15	112	195	317	549	747	1232	1758	2715	4673	7343	10606	18365	28948	41519
	25	186	325	530	915	1245	2054	2929	4523	7788	12239	17677	30609	48247	69199
	40	298	520	847	1465	1993	3285	4688	7238	12463	19548	28282	48975	77196	110718

SATURATED STEAM TABLE

Gauge Pressure Pg (barg)	Absolute Pressure Pa (bar)	Temperature T (C°)	Specific Volume V (m³/kg)	Saturated Water Enthalpy hf (kJ/kg)	Enthalpy of Evaporation hfg (kJ/kg)	Steam Enthalpy hg (kJ/kg)
0,00	1,013	100	1,673	419,1	2258,4	2677,5
0,05	1,063	101,4	1,601	425	2254,2	2679,1
0,10	1,113	102,6	1,533	430,4	2251,2	2681,6
0,15	1,163	105,1	1,471	435,8	2247,9	2683,7
0,20	1,213	106,2	1,414	440,9	2245	2685
0,30	1,313	107,4	1,312	450,5	2238,7	2689,2
0,40	1,413	109,5	1,225	459,7	2232,8	2692,5
0,50	1,513	111,6	1,149	468,5	2227	2695,5
0,60	1,613	113,5	1,038	476,5	2221,5	2698
0,70	1,713	115,4	1,024	484,4	2216,9	2701,3
0,80	1,813	117,1	0,971	491,9	221,9	2703,8
0,90	1,913	118,8	0,923	499,1	2206,9	2705,9
1,00	2,013	120,4	0,881	505,8	2202,3	2708
1,10	2,113	121,9	0,841	512,5	2198,5	2711
1,20	2,213	123,4	0,806	519,2	2194,3	2713,5
1,30	2,313	124,9	0,773	525	2190,1	2715,1
1,40	2,413	126,3	0,743	530,9	2186,3	2717,2
1,50	2,513	127,6	0,714	536,3	2181,7	2718,1
1,60	2,613	128,9	0,689	542,2	2178,8	2721
1,70	2,713	130,1	0,665	547,2	2175	2722,3
1,80	2,813	131,4	0,643	552,7	2171,3	2723,9
1,90	2,913	132,5	0,622	557,7	2167,9	2725,6
2,00	3,013	133,7	0,603	562,7	2164,6	2727,3
2,20	3,213	135,9	0,568	571,9	2158,3	2730,2
2,40	3,413	138	0,536	581,1	2152	2733,1
2,60	3,613	140	0,509	589,5	2146,2	2735,7
2,80	3,813	141,9	0,483	597,9	2140,3	2738,2
3,00	4,013	143,7	0,461	605,8	2134,8	2740,7
3,20	4,213	145,4	0,440	612,9	2129,4	2742,4
3,40	4,413	147,2	0,422	620,5	2124,4	2744,9
3,60	4,613	148,8	0,405	627,6	2118,9	2746,5
3,80	4,813	150,4	0,389	634,3	2114,3	2748,6
4,00	5,013	152	0,374	641	2109,3	2750,3
4,20	5,213	153,4	0,361	647,3	2104,7	2752
4,40	5,413	154,8	0,348	653,6	2100,1	2753,7
4,60	5,613	156,2	0,336	659,8	2095,9	2755,8
4,80	5,813	157,6	0,325	665,7	2091,3	2757
5,00	6,013	158,9	0,315	671,1	2087,1	2758,3
5,50	6,513	162,1	0,292	685	2077,1	2762
6,00	7,013	165	0,272	697,9	2067,4	2765,4
6,50	7,513	167,8	0,255	710,1	2058,2	2768,3
7,00	8,013	170,5	0,240	721,8	2049	2770,8
7,50	8,513	173	0,227	733,1	2040,6	2773,8
8,00	9,013	175,4	0,215	743,6	2032,3	2775,8
8,50	9,513	177,7	0,204	753,6	2024,3	2777,9
9,00	10,013	180	0,194	763,3	2016,4	2779,6
9,50	10,513	182,1	0,185	772,9	2008,8	2781,7
1,00	11,013	184,1	0,177	782,1	2001,3	2783,4
11,00	12,013	188	0,163	799,3	1987,1	2786,3
12,00	13,013	191,7	0,151	815,6	1973,7	2789,2
13,00	14,013	195,1	0,141	831,1	1960,7	2791,8
14,00	15,013	198,3	0,132	845,7	1948,1	2793,9
15,00	16,013	201,4	0,124	859,6	1936,4	2795,9
16,00	17,013	204,4	0,117	872,9	1924,7	2797,6
17,00	18,013	207,2	0,110	885,5	1913,4	2798,9

ATMOSPHERIC CONDENSATE PIPE DIAMETER TABLE

Steam Pressure P (barg)	Pipe Diameter (DN)													
	15	20	25	32	40	50	65	80	100	125	150	200	250	300
	1 1/2" 16 mm	3/4" 21.6mm	1" 27.2mm	1 1/4" 35.9mm	1 1/2" 41.8mm	2" 53mm	2 1/2" 68.8mm	3" 80.8mm	4" 105.3mm	5" 130mm	6" 155.4mm	8" 204mm	10" 254mm	12" 303mm
	SCH40 Black Pipe Poured into Atmospheric Tank Calculated According to Actual Internal Diameter Approximate Condensate + Flash Steam Flow (kg / h)													
0,5	215	568	627	1120	1480	2370	4050	5590	9560	14430	20490	35440	55050	78900
1	170	372	496	864	1170	1880	3175	4380	7435	11335	16195	2792	43265	61570
1,5	146	315	422	727	995	1605	2667	3715	6300	9602	13722	11086	36657	52165
2	122	258	349	590	820	1330	2160	3050	5165	7870	11250	19380	30050	42760
2,5	112	245	329	567	762	1240	2050	2865	4857	7405	10576	18225	28260	40220
3	102	233	310	545	705	1150	1940	2680	4550	6940	9903	17070	26470	37680
3,5	97	214	285	497	660	1070	1805	2490	4225	6450	9201,5	15870	24610	35025
4	92	195	260	450	615	990	1670	2300	3900	5960	8500	14670	22750	32370
4,5	85	186	247	427	582	940	1582	2180	3700	5645	8065	13910	21560	30680
5	79	177	235	405	550	890	1495	2060	3500	5330	7630	13150	20370	28990
6	73	160	215	374	507	815	1375	1890	3215	4900	7005	12070	18720	26630
7	68	155	202	352	476	767	1287	1780	3027	4600	6602	11360	17590	25055
8	64	150	190	330	445	720	1200	1670	2840	4300	6200	10650	16460	23480
9	62	141	182	317	428	682	1130	1610	2710	4115	5900	10175	15780	22415
10	61	132	174	304	411	644	1060	1550	2580	3930	5600	9700	15100	21350
11	57	128	170	294	399	625	1040	1480	2485	3775	5415	9325	14490	20560
12	54	124	167	284	388	606	1020	1410	2390	3620	5230	8950	13880	19770
13	51	117	159	272	369	585	987	1365	2305	3505	5037	8650	13415	19100
14	49	111	151	260	350	565	955	1320	2220	3390	4845	8350	12950	18430
15	47	108	145	254	342	545	917	1265	2150	3295	4707	8105	12585	17790

Pressure Temperature Condition Norm / DIN2401																
Material		Pressure	Max. Working Pressure [barg] and Temperature [°C]													
			(-10°C) (+120°C)	200°C	250°C	300°C	350°C	400°C	425°C	450°C	475°C	500°C	510°C	520°C	530°C	550°C
GG25	0.6025	PN16	16	13	11	10										
GGG40.3	0.7043	PN16	16	13	11	10	"9"									
		PN25	25	20	18	16	"14"									
		PN40	40	32	28	24	"21"									
GP 240 GH C22.8 ST35.8 S 355 J2G3	1.0619 1.0460 1.0305 1.0570	PN16	16	14	13	11	10	8		"6"						
		PN25	25	22	20	17	16	13		"10"						
		PN40	40	35	32	28	24	21		"18"						
		PN63	63	50	45	40	36	32	"30"	"28"						
		PN100	100	80	70	60	56	50	"48"	"46"						
		PN160	160	130	112	96	90	80	"75"	"70"						
		PN250	250	200	175	150	140	125		"110"						
		PN320	320	250	225	192	180	160	"150"	"140"						
		PN400	400	320	280	240	225	200		"175"						
G17 CrMo 5-5 13 CrMo 4-5	1.7357 1.7335	PN40				40	38	36	35	34	33	29	24	19	15	
		PN63				63	61	58	57	56	53	47	40	32	25	
		PN100				100	95	91	89	87	82	74	62	49	38	
		PN160				160	153	146	142	139	132	118	100	79	62	46
		PN250				250	238	227	223	217	206	184	154	124	97	73
		PN320				320	304	292	285	278	264	237	200	158	124	93
		PN400				400	380	364	356	348	330	295	250	198	155	116

JENESIS



ABOUT US

Jenesis get started with producing hot water and steam boilers in 1984 and is producing only steam generator since 1999. Jenesis continues to produce steam generator by believing in the importance of standardization and specialisation and serves for the professions of Turkey and the World with ISO9001:2015 certificate under the trademark of Jenesis which is identified with trust. By this time Jenesis has produced hundreds of steam generators at different capacities and with liquid or gas as fuel choices to be used at different sectors like food, textile, chemical, corrugating, pharmaceutical, hotel, hospital etc...



Jenesis believes that the key of the ideal solution to analyse the structure of the process where steam generator will be used. Jenesis team that combines 34 years experience with reformer attitude, generates a special solution for every process with the Professional staff and technical substructure. Jenesis has become the leader Company of the sector producing technology by the means of producing new products and improving the existing products with the budget we left for R&D studies due to the increasing power. Jenesis represents our country abroad in many countries by increasing exportation ratio, with customer satisfaction Notion of work. Jenesis following the technological improvements closely, looking out the responsibilities to environment and nature. Jenesis steam generators have CE and TSEK certificates



JENESIS



Since 1984

