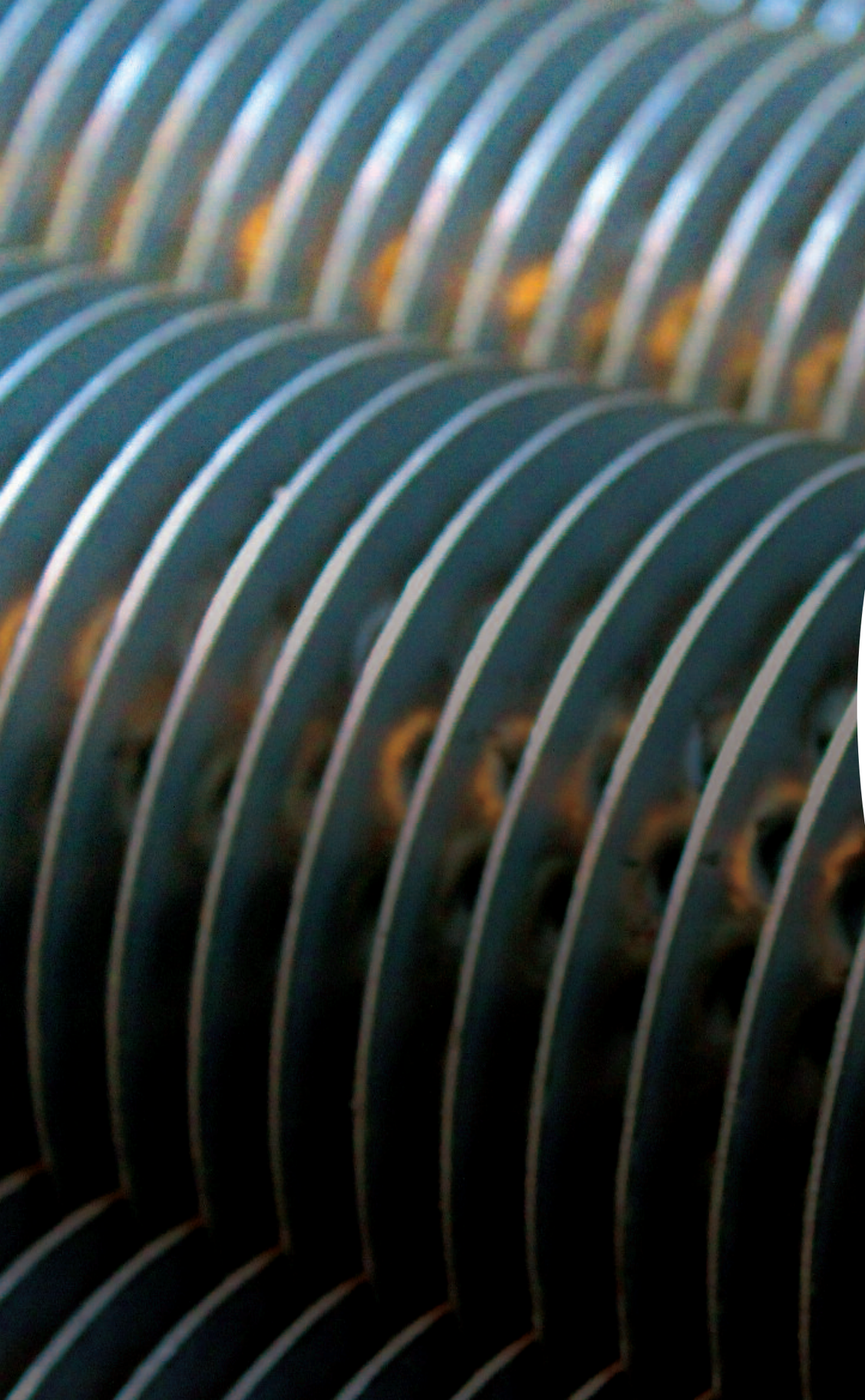
Industrial Specifications

COCHRAN

Energy Solutions Worldwide

By Appointment to
Her Majesty The Queen
Boilermakers
Cochran Ltd Annan



Cochran delivers fully engineered heat and energy solutions to commerce and industry across the globe. Cochran has been at the forefront of combining proven engineering skills with technological innovation in heat generation and transfer systems since 1878. Operating worldwide, the Cochran brand is the globally recognised benchmark for quality British engineering and manufacturing; a name that stands for unrivalled dependability, durability and premium performance.

Cochran are the internationally acknowledged experts in the provision of packaged steam and hot water boilers, along with integrated systems utilising shell boiler designs, combustion and ancillary technology constructed to exceed the most stringent UK, European and International standards.

COCHRAN

Whatever the requirement, Cochran offer the range and flexibility to deliver solutions that match the application, from the smallest system through to the planning, management and delivery of the largest turnkey energy centre projects.

The complete Cochran offering extends to include servicing, spares and planned maintenance solutions, combined with an in depth technical support throughout the long operational life of a Cochran boiler and ancillary equipment. The company also delivers comprehensive training; ensuring customers' operatives work both effectively and safely - whilst at the same time achieving maximum efficiency from the system.

Cochran's long and wide-ranging experience is backed-up by a worldwide network of carefully selected, highly trained and approved agents who deliver total global support. The Cochran package is founded on over 130 years at the forefront of industry-leading innovation in combustion and control system design and manufacture; unrivalled experience that means that when you choose Cochran, you have chosen a life-long solution to your energy needs.

www.cochran.co.uk
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Premium Specifications

Design Concept

- Cochran Boilers are manufactured to stringent international codes such as BS 2790, EN 12953, ASME, China's CSEI and Russian Gost.
- Developed using over 100 years' experience gained at the forefront of the industry, each Cochran product features a robust design and construction ensuring a long operational life and maximum fuel efficiency. Every Cochran product featured in this brochure is manufactured in Scotland, UK and is CE marked as applicable.
- The Company's extensive range of packaged steam and hot water boiler systems incorporate all the combustion equipment, feed water pump and controls, control panel, valves and fittings required for safe operation.

Quality

- Quality process standards and procedures are third party audited to internationally recognised ISO 9001 standards.
- Every Cochran boiler is third party insurance authority inspected prior to despatch.

Efficiency

- Cochran boiler and economiser systems will operate up to 96% efficiency, based upon an NCV of 34828 kJ/m^3 for Natural Gas and an NCV of 35863 kJ/l for Distillate Fuel Oil.

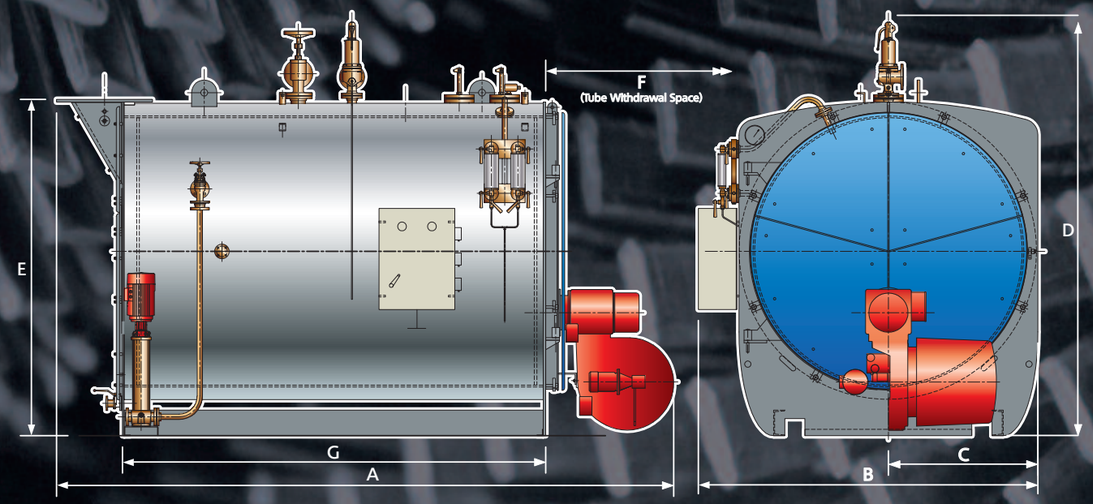
Support services

- Every Cochran product is backed by a comprehensive package of well-proven support services.
- Turnkey boilerhouse consultancy and supply.
- Installation and project management.
- Comprehensive preventative maintenance packages.
- Efficiency upgrades and plant enhancements.
- International commissioning and maintenance services covering over 100 countries.
- Full spares support covering all current boilers and burners and products still in operational life.

Cochran Steam Boiler

Model:
Wee Chieftain

The Wee Chieftain is probably the world's best-known and most respected industrial boiler. The Cochran three pass, wetback boiler is renowned for its reliability and durability, as well as its robust design. Wee Chieftain boilers can be found hard at work in over 100 countries across the globe. Suitable for any application, the design features Cochran's low NOx, low noise burners as standard, and are available with a comprehensive range of control options.



Rating (F&A 100°C): 1000 kg/hr to 6000 kg/hr (2205 lb/hr to 13228 lb/hr / 627 kW to 3761 kW)
Standard Working Pressure: 10.34 Bar. All steam boiler designs are available from 6 Bar up to 28 Bar.

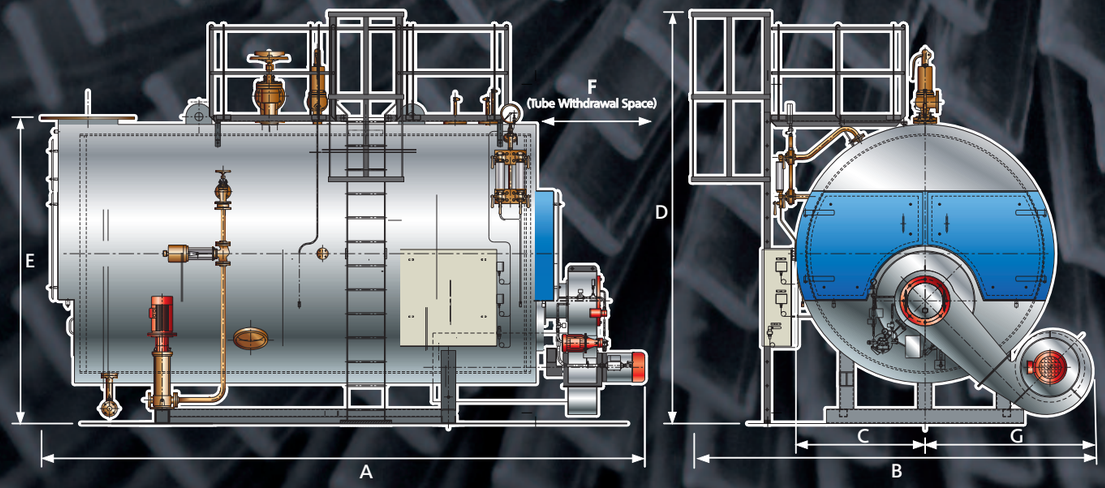
Evaporation			kW	627	940	1254	1567	1881	2194	2507	2821	3134	3510	3761
F&A 100°C (212°F)			kg/h	1000	1500	2000	2500	3000	3500	4000	4500	5000	5600	6000
			lb/h	2205	3307	4409	5512	6614	7716	8818	9921	11023	12346	13228
Dimensions	Oil	A	mm	3145	3763	3763	4347	4391	4391	4896	4901	5414	5838	6176
	Nat.Gas	A	mm	3355	3953	3953	4552	4727	4753	5009	5009	5522	5951	6176
		B	mm	1901	2101	2101	2486	2637	2637	2690	2690	2845	2845	3671
		C	mm	781	881	881	1073	1149	1149	1184	1184	1250	1250	1250
		D	mm	2153	2413	2413	2882	3034	3034	3251	3251	3366	3394	3394
		E	mm	1766	1966	1966	2350	2502	2502	2647	2647	2779	2780	2780
		F	mm	1980	2440	2440	2964	2950	2950	3170	3170	3650	3980	4205
		G	mm	2153	2633	2633	3154	3140	3140	3360	3360	3840	4233	4456
Recommended Chimney Dia.			mm	230	280	305	355	380	405	430	455	485	510	535
Safety Valve Exhaust Dia.			mm	40	50	50	65	65	65	80	80	80	100	100
Steam Stop Valve Dia.			mm	50	65	65	80	100	100	100	100	100	125	125
Blow Down Valve Dia.			mm	25	25	25	25	25	25	25	25	25	25	25
Feed Check Value Dia.			mm	25	25	25	25	40	40	40	40	40	40	40
Feed Pump Inlet Dia.			mm	25	25	25	25	25	25	25	25	25	32	32
Feed Water Strainer Dia.			mm	25	25	25	25	40	40	40	40	40	40	40
Oil Inlet Connection Dia.			B.S.P.	3/8"	3/8"	3/8"	3/8"	3/8"	1"	1"	1"	1"	1"	1"
Boiler Weight-Empty			Tonne	3.70	5.00	5.10	8.10	9.20	9.20	11.30	11.40	14.20	14.42	16.82
Weight to N.W.L.			Tonne	5.20	7.40	7.50	13.30	14.90	14.90	17.60	17.70	22.70	23.88	26.74
Weight full of Water			Tonne	5.60	8.00	8.10	14.40	16.30	16.30	19.20	19.30	24.70	26.10	28.74

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 10.34 Bar G.

Cochran Steam Boiler

Model:
Thermax

For larger applications the Cochran Thermax high volume range offers the right combination of performance and integrity for users world-wide. The well-proven three pass wetback design is fully compliant with European regulations and delivers outputs of up to 24 tonnes on a single furnace. This range of boilers can be found in distilleries, chemical plants, hospitals, CHP and a host of other applications requiring reliable and flexible steam production and comes with a wide range of combustion and control packages, superheater and economiser options.



Ratings (F&A 100°C): From 5000 kg/hr to 24000 kg/hr (11023 lb/hr to 59210 lb/hr / 3134 kW to 15045 kW).
Standard Working Pressures: 10.34 Bar and 17.2 Bar. All steam boiler designs are available from 6 Bar up to 28 Bar.

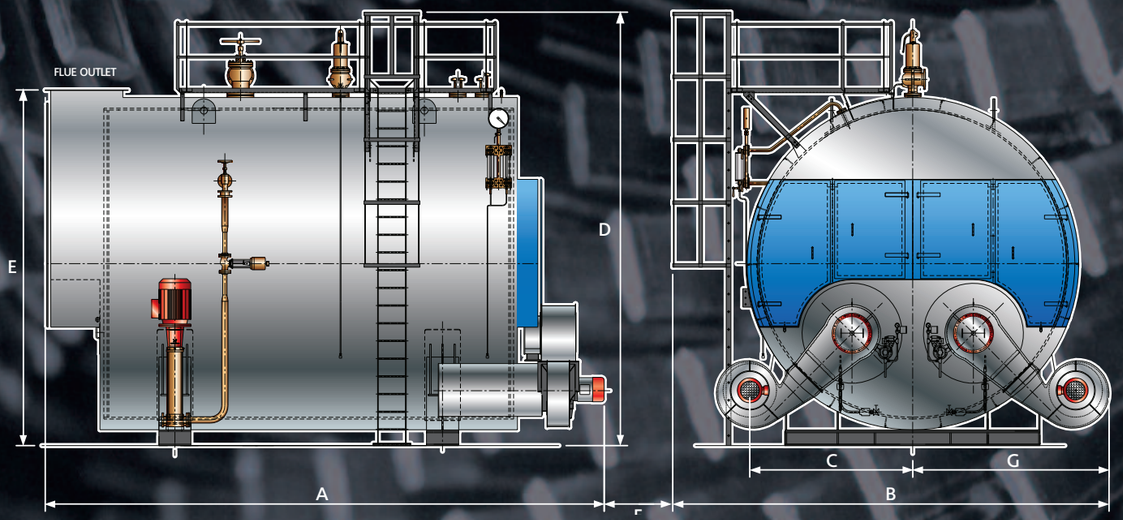
Evaporation		kW	3134	3510	3761	3949	4263	4551	4833	5121	5404	5686	6400	7109	7522	8150	8532	9955	11374	12537	14104	15045
F&A 100°C (212°F)		kg/h	5000	5600	6000	6300	6800	7260	7710	8170	8620	9070	10210	11340	12000	13000	13610	15880	18144	20000	22500	24000
		lb/h	11023	12345	13227	13888	14991	16005	16997	18011	19003	19995	22509	25000	26455	28660	30005	35009	40000	44092	49604	52910
Dimensions	A	mm	5497	5591	5731	5756	5856	5941	6088	6167	6223	6328	6854	6980	6980	7414	7414	7795	7785	8235	8710	9110
	B	mm	3915	4235	4245	4255	4292	4407	4317	4347	4398	4403	4755	4809	4809	4980	4980	5062	5248	5422	5757	5901
	C	mm	1206	1236	1246	1256	1297	1337	1337	1352	1398	1403	1485	1540	1540	1652	1652	1728	1965	1965	2055	2055
	D	mm	3844	3904	3924	3945	4027	4107	4107	4137	4230	4202	4506	4516	4516	4740	4740	4892	5292	5292	5455	5455
	E	mm	2755	2815	2835	2855	2938	3018	3018	3048	3141	3151	3417	3427	3427	3651	3651	3803	4124	4124	4287	4287
	F	mm	2993	3054	3194	3234	3284	3358	3494	3563	3604	3756	3639	3789	3789	4149	4149	4499	5760	6210	6410	6910
	G	mm	1631	1921	1921	1921	1917	1917	1917	1917	1922	1922	1922	2190	2190	2250	2250	2275	2272	2446	2691	2835
Min.Trans.Width		mm	3006	2799	2819	2840	2921	3001	2986	3031	3123	3133	3300	3409	3409	3632	3632	3766	3862	3862	4012	4012
Min.Trans.Height		mm	2865	2925	2945	2965	3048	3158	3158	3188	3331	3291	3457	3617	3617	3841	3841	3993	4124	4124	4287	4287
Rec.Chimney Dia.		mm	455	510	510	535	560	560	600	610	635	635	660	710	710	815	815	865	900	940	1000	1000
Sfy.Valve Exh.Dia.		mm	80	80	80	80	80	80	100	100	100	100	100	100	100	125	125	125	125	150	150	150
Steam Stop Valve Dia.		mm	125	125	125	125	125	150	150	150	150	150	200	200	200	200	200	200	200	200	250	250
Blow Down Valve Dia.		mm	32	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Feed Pump Inlet Dia.		mm	32	32	40	40	40	40	40	40	50	40	65	65	65	65	65	65	50	50	65	65
Weight-Empty		Tonne	14.2	16.0	16.7	17.1	18.1	18.8	19.5	19.9	21.2	22.2	26.4	28.7	28.7	32.0	32.0	36.1	44.0	46.6	52.7	54.9
Weight to N.W.L.		Tonne	23.3	25.5	26.5	27.1	29.0	30.8	31.5	32.3	34.8	36.0	42.8	46.0	46.0	54.8	54.8	61.8	73.8	77.2	88.7	93.2
Weight Full of Water		Tonne	25.1	27.5	28.5	29.2	31.3	33.3	34.0	35.0	37.7	39.0	46.3	49.9	49.9	59.7	59.7	67.6	81.8	85.8	98.5	103.6

Notes:
1. All Dimensions and weights are approximate only and are based on a boiler working pressure of 10.34 Bar G.
2. For boilers rated above 20000kg/hr, the heat input on oil firing is limited to comply with EN12953 standards.

Cochran Steam Boiler

Model:
Thermax Twin Furnace

The Twin Furnace Thermax steam boiler range is ideally suited for large load applications. The range can be equipped with superheaters to produce very high quality process steam, or economisers to recover heat from the flue gas. Simultaneous or independent firing of the furnaces ensures maximum flexibility and turndown performance. The Thermax Twin Furnace steam boiler range is suitable for a wide range of applications, including CHP, airports and manufacturing.



Ratings (F&A 100°C): From 18140 kg/hr to 40000 kg/hr (40000 lb/hr to 88200 lb/hr / 11373 kW to 25075 kW).
Standard Working Pressures: 10.34 Bar and 17.2 Bar. All steam boiler designs are available from 6 Bar up to 28 Bar.
Contact Cochran for information on capacities over 32000kg/hr.

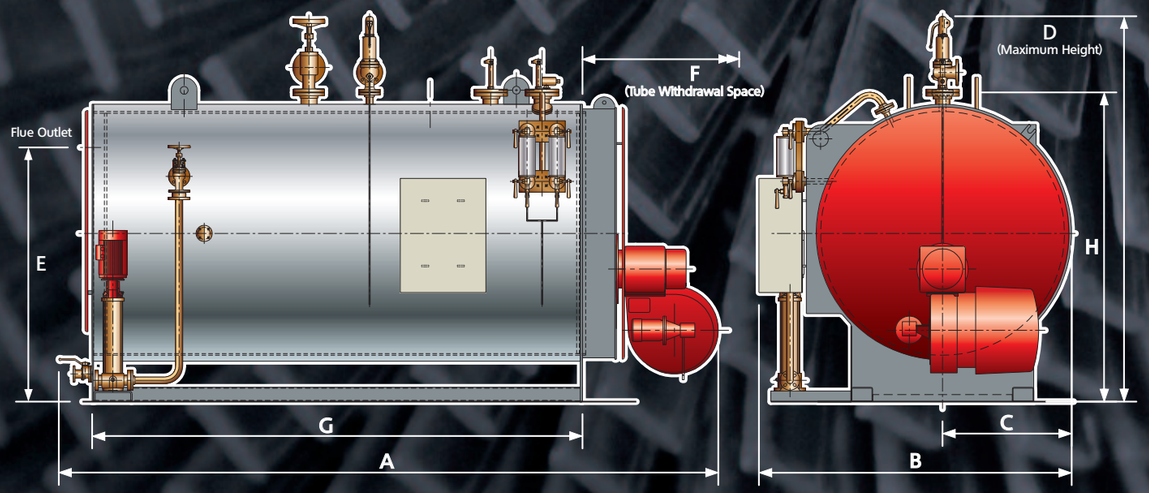
Evaporation		kW	11373	12795	14216	15633	17060	18481	19903
F&A 100°C (212°F)		kg/h	18140	20408	22675	24943	27210	29478	31751
		lb/h	40000	45000	50000	55000	60000	65000	70000
Dimensions	A	mm	7100	7250	7400	7610	7630	8330	8330
	B	mm	4061	4860	4980	5086	5225	5310	5475
	C	mm	1681	2095	2210	2286	2325	2360	2400
	D	mm	5335	5640	5745	5840	5940	6205	6355
	E	mm	4490	4535	4715	4850	4880	4900	5050
	F	mm	3625	3980	3980	4315	4335	4685	4685
	G	mm	2340	2765	2770	2800	2900	2950	3075
Min. Transport Width		mm	3362	4190	4420	4573	4650	4720	4800
Min. Transport Height		mm	3512	4340	4570	4725	4800	4870	4955
Rec. Chimney Dia.		mm	890	940	1016	1092	1168	1194	1220
Safety Valve Exhaust Dia.		mm	114	114	114	140	140	140	140
Steam Stop Valve Dia.		mm	230	250	250	300	300	300	300
Blow Down Valve Dia.		mm	50	50	50	50	50	50	50
Feed Water Inlet Dia.		mm	75	75	75	75	75	75	75
Boiler Weight-Empty		Tonne	45.7	50.8	55.9	61	67	75.2	84.4
Boiler Weight-Full		Tonne	86.7	96.6	106	113	127	142	158

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 10.34 Bar G.

Cochran Steam Boiler

Model:
Borderer

The Cochran Borderer steam boiler utilisies a full wet back design for maximum efficiency. A key feature of the Borderer series is the boilers' compact design. The small footprint makes it ideal for a wide range of commercial and light industrial applications such as laundries, hotels and small to medium manufacturing sites. The Borderer also features Cochran's low NOx, low noise combustion package as standard in combination with a wide range of control options, allowing maximum flexibility.



Ratings (F&A 100°C): From 50 kg/hr to 6800 kg/hr (110 lb/hr to 15000 lb/hr / 31 kW to 4263 kW).
Standard Working Pressures: 6.9 Bar and 10.34 Bar. All steam boiler designs are available from 6 Bar up to 28 Bar.

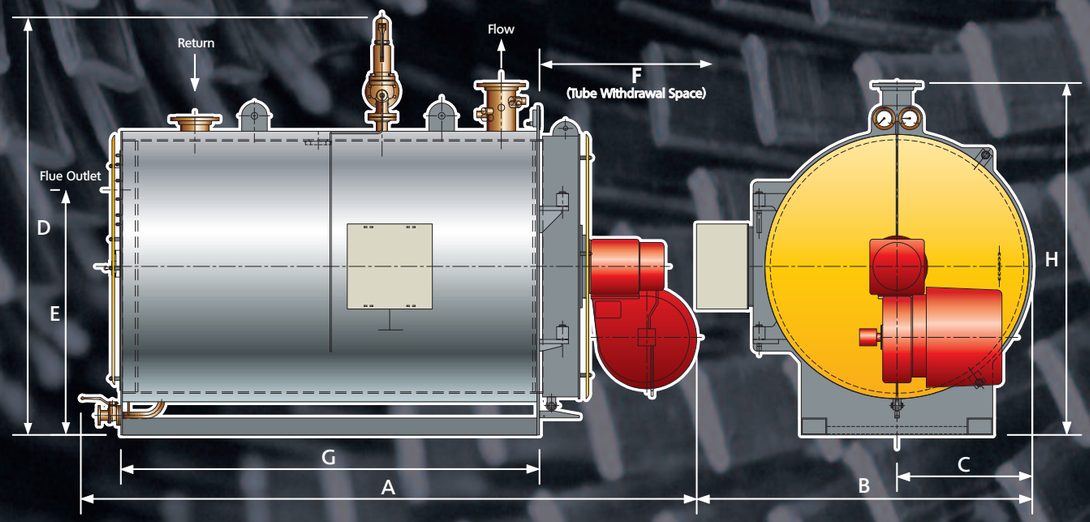
Evaporation		kW	284	357	427	570	714	853	995	1137	1422	1706	2275	2844	3134	3510	3761	3949	4263
F&A 100°C (212°F)		kg/h	455	570	680	910	1140	1360	1588	1815	2268	2720	3630	4535	5000	5600	6000	6300	6800
		lb/h	1000	1255	1500	2005	2510	3000	3500	4000	5000	6000	8000	10000	11025	12348	13230	13891	14994
Dimensions Oil	A	mm	2885	3085	3085	3185	3285	3335	3385	3435	3908	4264	4478	4765	4961	4951	4731	4968	5168
Gas	A	mm	2753	2953	2953	3205	3305	3547	3619	3669	4129	4370	4773	4873	5069	5059	4942	4968	5168
	B	mm	1423	1505	1500	1540	1660	1633	1678	1760	1828	1955	2155	2403	2487	2496	2599	2575	2598
	C	mm	580	580	595	615	675	675	688	725	760	805	905	1010	1055	1064	1125	1099	1124
	D	mm	1774	1774	1804	1862	2062	2116	2141	2216	2330	2420	2698	2908	3054	3073	3195	3273	3138
	E	mm	1168	1159	1180	1208	1395	1383	1395	1465	1528	1593	1768	1960	2042	2056	2170	2241	2096
	F	mm	1465	1665	1665	1765	1865	2065	2115	2165	2625	2960	3195	3295	3491	3481	3545	3571	3771
	G	mm	1610	1810	1810	1910	2010	2210	2260	2310	2770	3085	3340	3440	3636	3626	3690	3716	3916
	H	mm	1483	1438	1468	1508	1708	1708	1733	1808	1878	1968	2168	2378	2467	2486	2608	2686	2551
Rec. Chimney Dia.		mm	145	162	180	205	230	255	280	290	305	355	405	440	455	465	480	495	515
Sfy.Valve Exh.Dia.		BSP/mm	32	32	32	32	32	40	40	40	40	50	65	65	80	80	80	80	80
Stm. Stop Valve Dia.		BSP/mm	40	40	40	50	50	65	65	65	80	80	100	100	125	125	125	125	125
Blow Down Valve Dia.		mm	25	25	25	25	25	25	25	25	25	25	25	25	25	50	50	50	50
Feed Water Inlet Dia.		mm	25	25	25	25	25	25	25	25	25	32	32	32	32	32	40	40	40
Weight - Empty		Tonne	1.76	1.86	2.04	2.36	2.77	2.99	3.35	3.75	4.47	5.59	7.65	9.08	11.77	13.04	15.06	15.95	16.62
Weight to NWL		Tonne	2.49	2.64	2.86	3.25	3.93	4.20	4.61	5.22	6.45	7.96	10.98	13.28	18.83	21.51	25.03	26.91	27.51
Weight - Full of Water		Tonne	2.64	2.81	3.05	3.46	4.20	4.50	4.93	5.59	6.94	8.59	11.88	14.60	21.03	24.35	28.53	30.71	32.18

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 10.34 Bar G.

Cochran Hot Water Boiler

Model:
Clansman

The Clansman is a compact, cost-effective hot water boiler, built to Cochran's famous high standards. The Clansman features Cochran's low NOx, low noise combustion equipment as standard. The full wet back system delivers maximum efficiency; combined with a compact design and small boiler footprint; the Clansman is ideal for a wide range of commercial and light industrial heating applications such as hospitals, hotels and small to medium sized manufacturing sites.



Rating: 293 kW to 3516 kW (1.0x10⁶ BTU/hr to 12x10⁶ BTU/hr).
Standard Working Pressures: 4.5 Bar, with designs available up to 9.3 Bar.

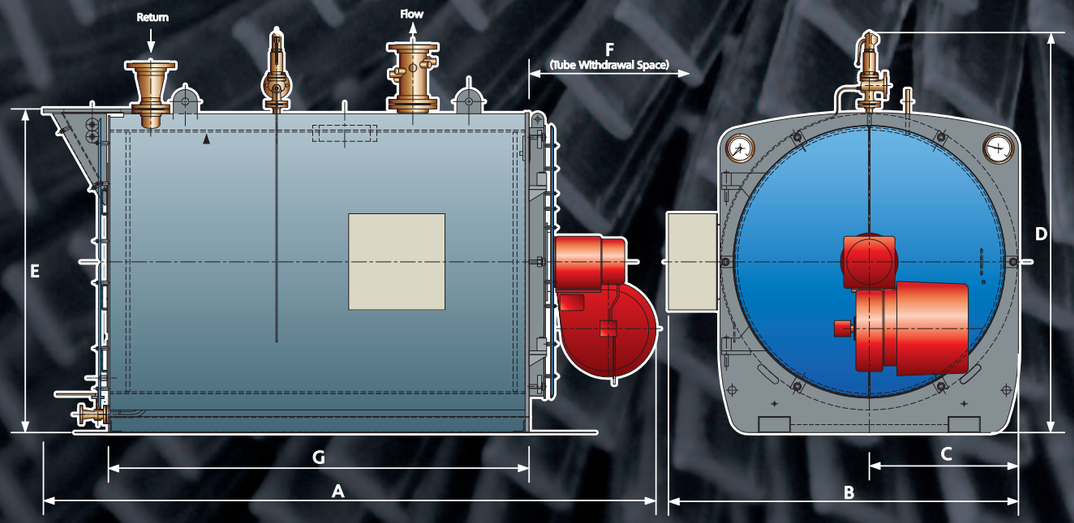
Boiler Ratings		kW	293	366	440	586	732	879	1025	1172	1465	1758	2344	2930	3516
		kCal/h x10³	252	314	378	504	629	756	881	1008	1260	1512	2016	2520	2520
		BTU/h x10⁶	1.00	1.25	1.50	2.00	2.50	3.00	3.50	4.00	5.00	6.00	8.00	10.00	12.00
Dimensions Oil	A	mm	2278	2328	2381	2616	2765	2911	3016	3066	3320	3420	3570	4000	4100
Gas	A	mm	2278	2481	2534	2936	3085	3231	3358	3408	3660	3740	3890	4039	4139
	B	mm	1105	1105	1155	1505	1425	1565	1565	1685	1750	1940	1940	1960	1985
	C	mm	540	540	565	590	600	620	665	680	715	820	885	950	975
	D	mm	1335	1335	1430	1540	1600	1600	1735	1765	1765	2340	2530	2660	2710
	E	mm	799	803	832	898	898	910	969	1017	1042	1161	1265	1355	1377
	F	mm	1450	1500	1550	1700	1800	2000	2100	2150	2300	2400	2550	2800	2900
	G	mm	1508	1558	1608	1758	1858	2058	2158	2208	2358	2460	2610	2860	2960
	H	mm	1350	1350	1400	1520	1530	1530	1640	1670	1735	1910	2090	2220	2270
Rec. Chimney Dia.		mm	145	162	180	205	230	255	280	290	330	355	405	455	510
Sfy.Valve Exh.Dia.		BSP/mm	1.25"	1.25"	1.5"	1.5"	2'	2'	2'	2.5"	2.5"	100	125	125	125
Drain Valve Dia.		BSP	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"
Flow Connection Dia.		mm	63.5	80	80	100	100	125	125	125	150	150	200	200	200
Return Connection Dia.		mm	63.5	80	80	100	100	125	125	125	150	150	200	200	200
Weight-Empty		Tonne	1.09	1.21	1.31	1.52	1.63	1.92	2.27	2.52	2.90	3.99	4.62	5.56	6.24
Weight-Full of Water		Tonne	1.67	1.77	1.93	2.25	2.41	2.85	3.37	3.67	4.23	5.98	6.95	8.55	9.45

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 4.50 Bar G.

Cochran Hot Water Boiler

Model:
Calpac

The Cochran Calpac hot water boiler range shares many of the winning features of the Wee Chieftain steam range, reformatted to deliver exceptional hot water generation performance. With a reputation for robust design and reliability, Calpacs are in service around the world. The design is based on a three pass, wet back system with additional flexibility provided by the Calpac's tolerance to high differentials in the feed and return temperatures of the hot water system. Typical applications include schools, hospitals, process heat and district heating schemes. The Calpac range features low NOx, low noise Cochran burners as standard, backed up by a wide range of control options.



Rating: 879 kW/hr to 3515 kW/hr (3x10⁶ BTU/hr to 12x10⁶ BTU/hr).
Standard Working Pressure: 9.3 Bar, with designs available up to 27 Bar.

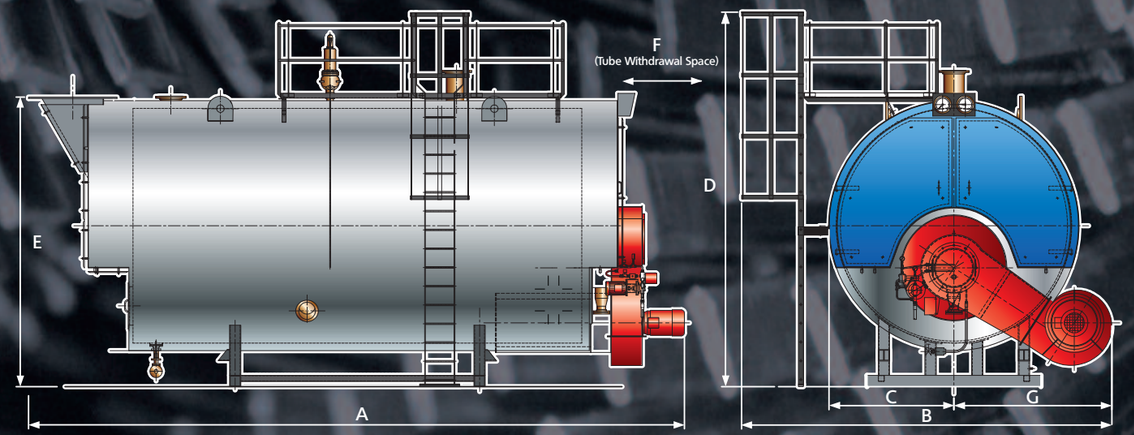
Rating			kW	879	1026	1172	1319	1465	1612	1758	2051	2345	2638	2960	3515
			kCal/h x10³	760	880	1010	1130	1260	1390	1510	1760	2020	2270	2550	3030
			BTU/h x10⁶	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0	9.0	10.1	12.0
Dimensions	Oil	A	mm	3280	3280	3280	3794	3850	3850	3850	4510	4510	4510	4754	5380
	Gas	A	mm	3520	3520	3520	3997	4090	4090	4090	4710	4710	4710	4834	5446
		B	mm	1884	1884	1884	2050	2050	2050	2050	2400	2400	2400	2450	2600
		C	mm	775	775	775	925	925	925	925	1075	1075	1075	1175	1175
		D	mm	2170	2170	2170	2740	2535	2535	2535	2900	2900	2900	2900	3610
		E	mm	1770	1770	1770	2070	1973	1973	1973	2299	2299	2299	2299	2664
		F	mm	2000	2000	2000	2440	2440	2440	2440	2740	2740	2740	3000	3710
		G	mm	2160	2160	2160	2623	2623	2623	2623	2923	2923	2923	3193	4483
Rec. Chimney Dia.			mm	255	280	280	305	330	355	355	380	405	430	455	485
Safety Valve Exhaust Dia.			mm	80	80	80	100	100	100	100	100	100	100	100	150
Flow Connection Dia.			mm	125	125	125	150	150	150	150	150	150	150	150	200
Return Connection Dia.			mm	125	125	125	150	150	150	150	150	150	150	150	200
Drain Valve Dia.			mm	25	25	25	25	25	25	25	32	32	32	25	25
Oil Inlet Connection			BSP	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	1"	1"	1"	1"	1"
Boiler Weight-Empty			Tonne	3.3	3.3	3.3	3.88	3.88	3.88	3.88	8.27	8.27	8.27	9.51	9.65
Boiler Weight-Full			Tonne	5.5	5.0	5.0	7.28	7.28	7.28	7.28	13.5	13.5	13.5	15.20	17.6

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 9.30 Bar G.

Cochran Hot Water Boiler

Model:
Thermax

For larger applications the Cochran Thermax high volume range offers the right combination of performance and integrity for users world-wide. The well-proven three pass wetback design is fully compliant with European regulations and delivers outputs of up to 16MW from a single furnace and up to 30MW for the twin furnace option. Cochran hot water boilers can be found in airports, hospitals, CHP, district heating schemes and a host of other applications requiring reliable, high volume hot water production.



Ratings: From 3224 kW to 10550 kW (11x10⁶ BTU/hr to 36x10⁶ BTU/hr)
Standard Working Pressures: 9.3 Bar, with designs available up to 25 Bar.

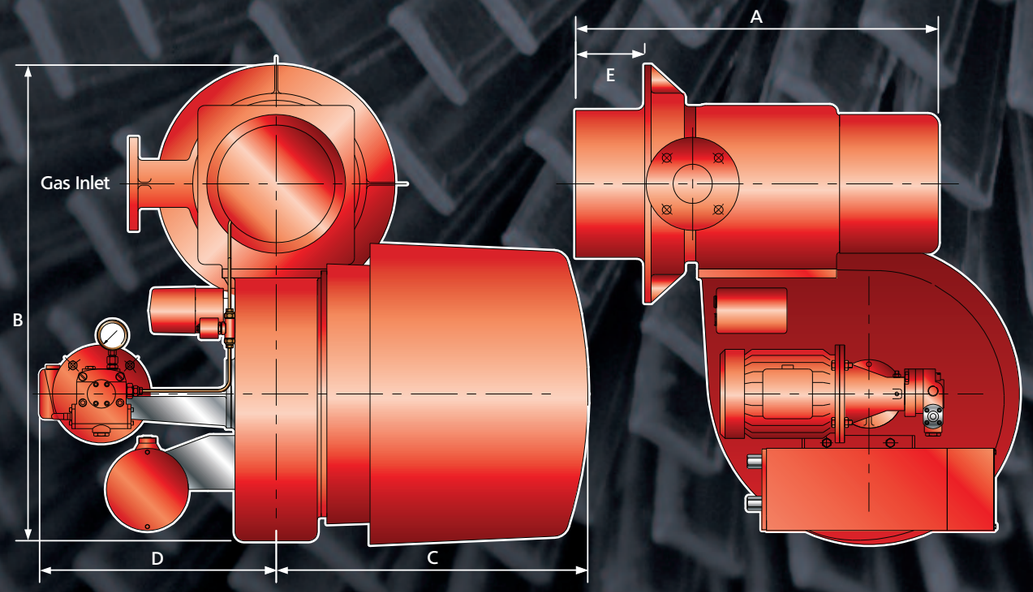
Rating		kW	3224	3517	3810	4103	4395	4689	5275	5861	6741	7327	8206	8792	9671	10550
	kcal/h x 10³		2772	3024	3276	3528	3780	4032	4536	5040	5796	6300	7056	7560	8316	9072
	Btu/h x 10⁶		11	12	13	14	15	16	18	20	23	25	28	30	33	36
Dimensions	A	mm	6170	6170	6170	6555	6555	6555	7405	7405	7405	7880	7880	8315	8315	8765
	B	mm	3850	3850	3850	3965	3965	3965	4385	4385	4385	4775	4775	4900	4900	5450
	C	mm	1178	1178	1178	1255	1255	1255	1380	1380	1380	1510	1510	1610	1610	1685
	D	mm	4070	4070	4070	4220	4220	4220	4470	4470	4470	4670	4670	4820	4820	4970
	E	mm	2950	2950	2950	3100	3100	3100	3350	3350	3350	3550	3550	3700	3700	3850
	F	mm	3530	3530	3530	3815	3815	3815	4105	4105	4105	4485	4485	4860	4860	5225
	G	mm	1650	1650	1650	1690	1690	1690	1985	1985	1985	2250	2250	2275	2275	2750
Min.Trans.Width		mm	2630	2630	2630	2780	2780	2780	3030	3030	3030	3285	3285	3485	3485	3635
Min.Trans.Height		mm	3125	3125	3125	3225	3225	3225	3525	3525	3525	3725	3725	3875	3875	4025
Rec. Chimney Dia.		mm	485	510	535	560	585	610	635	685	710	760	790	815	840	865
Sfy.Valve Exhaust Dia.		mm	100	100	100	125	125	125	150	150	150	150	150	150	150	150
Drain Valve Dia.		mm	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Flow Conn.Dia.		mm	175	175	175	200	200	200	250	250	250	250	250	300	300	300
Return Conn.Dia.		mm	175	175	175	200	200	200	250	250	250	250	250	300	300	300
Boiler Weight-Empty		Tonne	13.38	13.63	13.88	15.71	15.98	16.25	19.78	20.33	20.88	24.28	25.36	28.09	29.33	34.17
Boiler Weight-Full		Tonne	24.95	25.04	25.13	31.05	31.15	31.25	38.97	39.18	39.39	49.04	49.48	59.03	59.43	66.49

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 9.30 Bar G.

Cochran Burners

Simplex and Triplex 450-4500 kW Oil & Gas/Dual Fuel Fired Burners

Cochran combustion and control equipment suitable for firing oil or gas/dual fuel. The designs feature Cochran's unique combustion head, efficient combustion and low NOx throughout the firing range. Fully modulating options available throughout the range on all fuel types and combinations. Digital combustion systems can be incorporated into the burner control package.



Oil Fired Burners - Suitable for viscosities from 35 SRNI to 4200 SRNI as per BS 2869

Burner Size			16 Two Stage	17 Two Stage	17 Three Stage	23 Three Stage	23 Modulating
Dimensions	A	mm	830	880	907	1106	1060
	B	mm	715	729	729	932	916
	C	mm	595	620	678	853	855
	D	mm	420	420	483	388	340
	E	mm	191	191	191	191	178
Maximum Input		kW	1650	3100	3100	3980	4300
Turndown			2 : 1	2 : 1	3 : 1	3 : 1	3 : 1
Operation			Hi/Lo	Hi/Lo	Hi/Med/Lo	Hi/Med/Lo	Modulating
Typical Noise Level - dBa 1m from Burner			80	83/84	83/84	84-87	84-87
Approximate Burner Weight		Kg	158	192	190	215	215

Gas and Dual Fired Burners

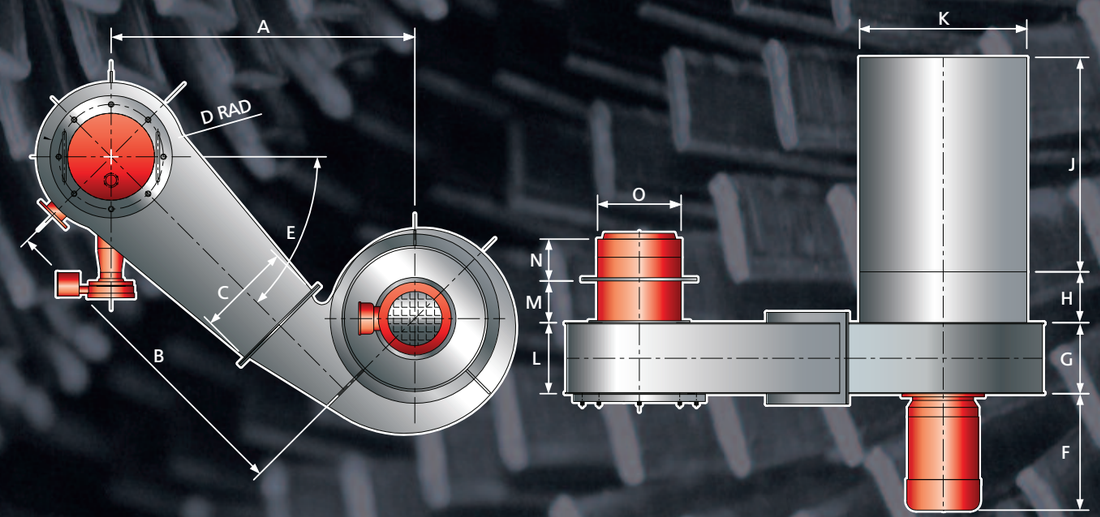
Burner Size			16 Two Stage	17 Two Stage	17 Three Stage	23 Three Stage	23 Modulating
Dimensions	A	mm	827	876/851	907	1074	1060
	B	mm	684	729	729	932	916
	C	mm	595	620	678	853	855
	D	mm	420	420	483	388	340
	E	mm	166	166/141	141	141	178
Maximum Input		kW	1650	3100	3100	3980	4300
Turndown			2 : 1	2 : 1	3 : 1	3 : 1	3 : 1
Operation			Hi/Lo	Hi/Lo	Hi/Med/Lo	Hi/Med/Lo	Modulating
Typical Noise Level - dBa 1m from Burner			80	83/84	83/84	84-87	84-87
Approximate Burner Weight		Kg	184	220	230	250	240

Options: Two stage stepped combustion; Three stage stepped combustion; Electro/mechanical fully modulating.

Cochran Burners

Equinox 4000-16,000 kW Oil & Gas/Dual Fuel Fired Burners

Cochran's EquiNox combustion and control equipment is suitable for firing both oil and gaseous fuels. Delivering efficient fuel combustion and low NOx emissions throughout the firing range, EquiNox also provides direct drive to all fuel and air valves via independent servo motors. Digital combustion control is standard on every EquiNox burner.



Boiler Ratings		kg/hr	5600	6000	6300	6800	7260	7710	8170	8620	9070	10210	11340	13610	15880
Boiler Frame Size			6	7	8	9	10	11	12	13	14	15	16	17	18
Dimensions	A	mm	1199	1199	1199	1293	1293	1293	1320	1320	1363	1363	1498	1583	1656
	B	mm	1320	1320	1320	1400	1400	1400	1400	1400	1500	1500	1580	1650	1770
	C	mm	330	330	330	378	378	378	378	378	378	378	374	584	654
	D	mm	295	295	295	315	315	315	340	340	365	365	390	390	440
	E	degrees	45°	45°	45°	45°	45°	45°	45°	45°	45°	45°	40°	38°	33°
	F	mm	495	495	495	495	495	495	495	495	495	495	495	495	557
	G	mm	264	264	264	302	302	302	302	302	302	302	302	315	412
	H	mm	258	258	258	269	269	269	269	269	269	269	269	275	274
	J	mm	900	900	900	1120	1120	1120	1120	1120	1120	1120	1200	1200	1250
	K	mm	550	550	550	710	710	710	710	710	710	710	762	762	780
	L	mm	264	264	264	302	302	302	302	302	302	302	302	318	412
	M	mm	190	190	190	190	190	240	240	240	240	240	240	240	265
	N	mm	180	180	180	180	180	180	180	180	180	180	180	180	187
	O	mm	323	323	323	356	356	356	406	406	406	406	457	457	508

Options: Remote monitoring and data logging - accessible via Internet; O2 Trim; Exhaust Gas Monitoring; and Integral Gas Leak testing.

Product Support

Cochran can provide full life cycle support for each boiler plant, incorporating plant servicing, maintenance, emergency response, spare parts and repairs to suit any model. As the original manufacturer, we are uniquely placed to provide full design, manufacturing and technical support for existing plant, backed-up by the UK's largest dedicated network of service teams and a global network of approved agents, operating in over 100 countries worldwide.

Full Boilerhouse Support

Cochran can provide routine servicing, maintenance and repair capability to support all items within the Boilerhouse, tailoring bespoke packages to suit specific requirements, covering boiler plant, combustion equipment, water level controls, hot well tanks, deaerators, blow-down vessels, pumps, valves and steam systems. The complete service and repair package includes service contracts, insurance survey preparation and emergency breakdown response, through to complete Energy Management contracts under which Cochran operate, monitor and maintain the plant in its entirety.

The Total Spares Solution

Cochran's highly trained boiler spares interpreters are totally committed to providing a fast, comprehensive and reliable spares parts service. Cochran's expert technical staff and sales team are available to help customers identify and supply the parts that they require. UK-based customers can also purchase goods through the Company's dedicated website, www.cochranspares.co.uk

Their aim is to make your search for spare parts as simple as possible. Cochran stock and supply an expanding range of goods to meet the demand of both our on-line customers and those that require boiler specific items or prefer to speak to our friendly technical staff.

Economisers

Cochran economisers recover heat from boiler exhaust gases, transferring it to the boiler feed water; often improving the system's thermal efficiency significantly. Cochran economisers can deliver fuel savings in excess of 6%. A short Heat Recovery & Economiser Survey, enables our experts to determine a plant's heat recovery potential. Whilst economisers are usually fitted to natural gas-fired systems, Cochran can also design and fit specialist systems for some liquid-fuelled boilers.

Fuel Conversions

Cochran provide fuel conversions for almost any industrial heat or steam boiler. Conversion to cleaner burning fuels can deliver cost reductions and reduce maintenance, as well as simplifying fuel handling and improving the control and reliability of your boiler. Cochran can also provide solutions for a range of bio-fuel applications. Cochran can supply and install new, efficient combustion systems with the latest control systems, making all the modifications to the boiler required for maximum efficiency and safety using the new fuel.

Boilerhouse Upgrades

Cochran has vast experience in upgrading all types and brands of industrial boiler and ancillary plant. Projects can range from simple fuel conversions to total boiler house refurbishments that address every aspect of plant control, combustion and monitoring. New components and the latest systems offer a broad spectrum of benefits, particularly when it comes to improving fuel efficiency and reliability and reducing emissions. In some cases increased automation and better control systems can even achieve reduced boiler house manning levels; delivering significant savings as a result.

Descaling Services (UK only)

The company has developed a highly effective chemical descaling service. Chemical descaling is a non-invasive cleaning technique that is the best way to free your boiler from scale and corrosion; this maximises efficiency and prolongs its operational life.

Fireside Cleaning (UK only)

Cochran can provide a professional cleaning service to ensure your Plant Performance is optimised. Attention needs to be paid to water quality and the deposits that reduce safety and efficiency, resulting in damage to the boiler.

Cochran Hire (UK only)

Cochran provides a variety of flexible options for temporary heat and energy applications. A unit hired from Cochran can provide a quick cost-effective solution to maintain site production for short-term coverage in support of new plant installation, ongoing maintenance, statutory inspections, upgrade or repair outages or to cater for seasonal load demands. We can also provide units for extended term hire applications, ideal for long-term site project works or where capital expenditure is unavailable. Cochran can also provide purpose built units to suit site specific, long-term requirements.

All Cochran hire units are fully self-contained with either trailer mounted packages or static containers; featuring Cochran boilers, hot well tanks, water treatment, blow down vessels and chimney sections required for operation. Each packaged unit is designed for quick and easy installation into existing site services.

Training

Cochran has a long record of accomplishment and global reputation for the delivery of premium boiler operation training on all boiler makes and models. Whether delivering a Training Course at our Training Centre in Newbie, or mentoring operatives at, or, close to your own site, our expert training professionals will develop the skills and awareness of your Boilerhouse team to achieve the best from your equipment. Cochran is just one of a handful of organisations around the world who are approved providers of the Combustion Engineering Association's accredited five day training course. Training options vary from one-day seminars that provide an introduction to boiler plant to more in-depth training or brief refresher courses. Courses can be tailored to meet your specific boiler type and the special needs and requirements of your company. The benefits of Cochran Boiler Training:

Safety: Ensure that those responsible for day-to-day boiler operation, or overall management, are fully conversant with the risks, safe procedures and best practice in the boiler house. Satisfy HSE and Insurance Company's requirement for proof of competence.

Efficiency: Training helps ensure that boilers run at peak performance at all times. Even just a 0.5% drop in boiler efficiency between services could cost thousands of pounds in excess fuel.

Environmental: Ensure compliance with current legislation by learning the correct procedures to minimise emissions.

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Accredited Contractor
www.chas.gov.uk

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Design by CarneWhitney.com 01228 596 895. **Version 2 11/2013.**