



By Appointment to  
Her Majesty the Queen  
Boilermakers  
Cochran Ltd, Annan

# High Efficiency Low NO<sub>x</sub> Products



COCHRAN



# Introduction

**For almost one hundred and fifty years, Cochran has been at the forefront of innovation in industrial boiler, steam and hot water generating plant, equipment and services.** That unrivalled experience means that when you choose us, you are selecting a lifelong solution for your energy needs.

Around the globe the Cochran brand is synonymous with quality, dependability and durability. Products are supported by over fifty engineers in the UK and a network of carefully selected, highly trained Agents around the world.

In today's environment, the focus is on high efficiency, low emission products – saving you money and helping the planet.

Cochran products are normally constructed to UK/EU standards, but the Company also maintains ASME S and U standards, Chinese and Russian accreditation. We hold ISO 9001:2008 and are an active member of all relevant trade bodies.

Every boiler is carefully inspected by a highly respected, fully independent inspector, ensuring that it meets stringent quality standards before it leaves the factory.

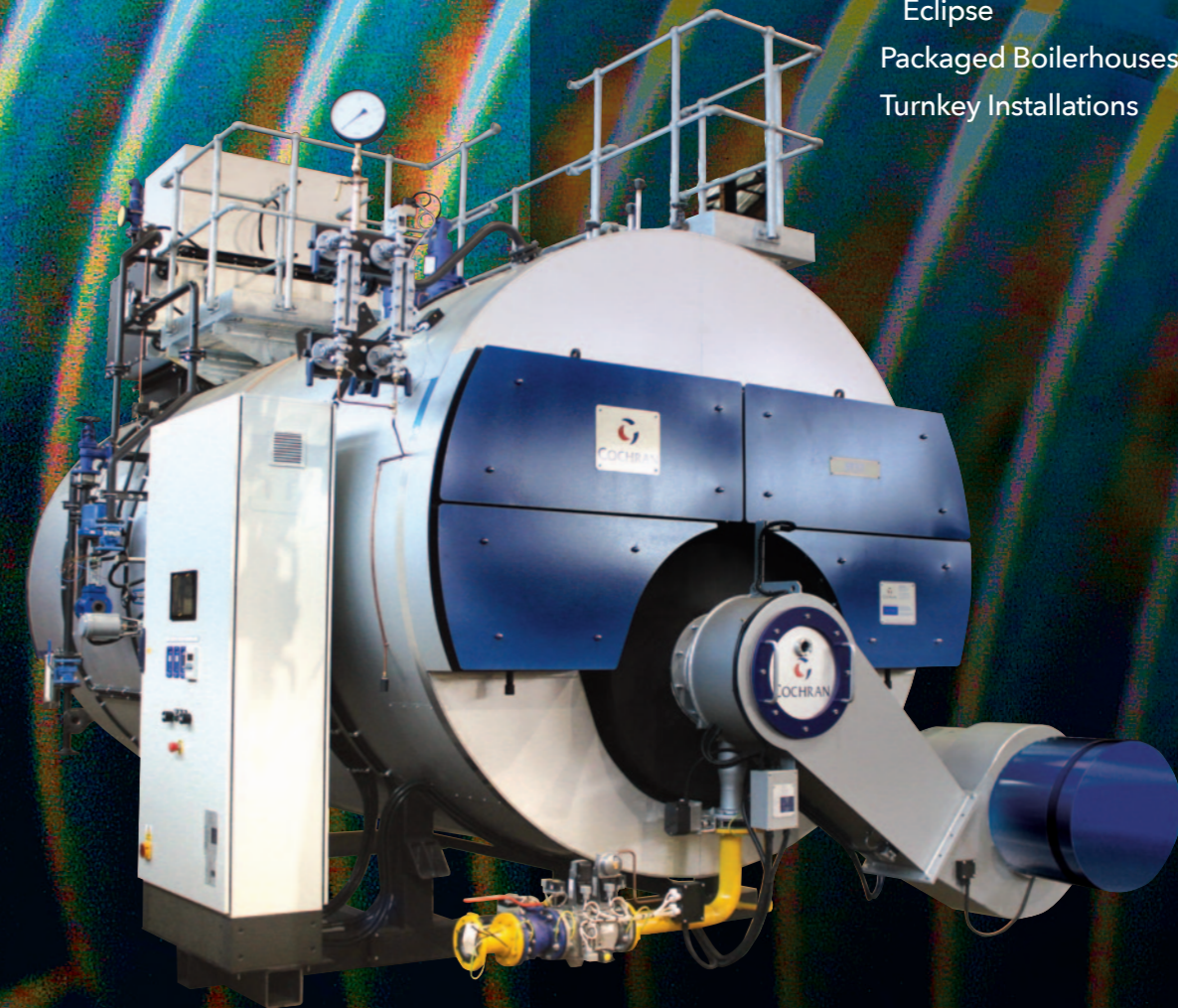
Our Chief Engineer and our Engineering Manager represent the UK at CEN level and BSI committee level. These key organisations are involved in the maintenance of the UK and EN standards.

From the smallest spare part to a turnkey project, Cochran can provide the solution.



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# Product Lifecycle Support



## We'll help you save money, improve reliability AND comply with the law

In addition to preventative and reactive maintenance, we can enhance your existing plant with the latest technologies to improve efficiency and reliability and reduce operating costs.

The first step to better energy production is to have us undertake a full, authoritative Boilerhouse Risk Assessment. This will tell you the steps you need to take to ensure that your plant is fully compliant with legislation and guidance and optimised for maximum efficiency.

Our extensive Product Lifecycle Support services are not limited to our own boilers. Cochran also provides comprehensive support for all the major boiler brands and model types, new and old.

**For further information on our Product Lifecycle Support, speak to your Service Engineer, visit [www.cochran.co.uk](http://www.cochran.co.uk) or call 01461 202 111.**

### Operational Support and Staff Training

- **Boilerhouse Risk Assessment:** In-depth assessment covering Health & Safety, Legislation, Environmental, Efficiency, Reliability and Resilience. If risks are identified, we can provide tailored solutions, often with impressively short pay back periods.
- **Personnel Training:** Cochran provides a wide range of training courses for boilerhouse personnel, including an introduction course for those new to boilers, an accredited operation and maintenance foundation course (BOMSA) and CEA accredited BOAS and I-GAS courses.
- **Operator Provision:** If you do not have boilerhouse personnel in-house, we provide experienced operators.
- **Boiler Hire:** Fully containerised, or trailer-mounted units are available for short or long term hire. Hiring a boiler is a good way to cover breakdowns or peaks in demand. Some customers choose a long term hire to avoid the capital cost of buying a new boiler. When we supply a Hire boiler it comes with all the ancillary equipment required for rapid 'plug and play' installation.
- **Boilerhouse Log Book:** Maintaining a consistent, accurate daily operational log of your boilers and burners is a statutory requirement in many countries. It also makes good maintenance and servicing sense and is absolutely essential for insurance purposes. Drawing on unrivalled boiler know-how, the hardbound Boilerhouse Log Book sets a new benchmark in compliance, information and usability.

### Minimise Downtime

- **Preventative Maintenance:** Maximise efficiency and reliability through preventative maintenance. We maintain the UK's largest network of industrial boiler service and maintenance engineers. Each of our highly skilled, directly employed team of engineers can service all major brands. We provide a range of tailored planned preventative maintenance packages, covering both routine servicing and statutory insurance preparations.
- **Emergency Breakdown Cover 24/7/365:** Our breakdown cover is supported by the largest all-makes spares holding in the UK, a national network of expert Service Engineers and complete in-house engineering capability... We'll get your boilerhouse back online quickly.
- **Spares Support:** As the leading OEM, we stock the largest selection of spare parts, boiler tubes and plates.
- **Chemical Descale:** A range of highly effective, minimally invasive cleaning solutions for the removal of scale, which can seriously impact your boiler's safety and efficiency.
- **Common Repairs:** The most common repairs performed by our specialists are the installation of 'D Patches' and tube replacements. As the OEM, all repairs are conducted in accordance with the same strict quality assurance requirements as for new manufacture.
- **Specialist Repairs:** Where repair requirements exceed the average repair provider, our Aftermarket Projects team have the fabrication resources and unrivalled experience to deliver the most complex repairs.

### Boilerhouse Upgrades

- **Legacy Support:** Bespoke solutions to support and extend the lifespan of your existing plant, applying the latest developments and equipment.
- **Fuel Conversions:** Reduce emissions and operating costs by taking advantage of alternative fuel sources such as Bio-Diesel, Bio-Gas, LPG and LNG.
- **Enhanced Boiler Control:** Upgrade existing plant to benefit from the latest advancements in technology to improve efficiency, functionality and reliability.
- **Reduced Manning:** Self-Monitoring, High Integrity Safety Control systems reduce your manning requirements. We can providing bespoke safety control upgrade packages for existing equipment to satisfy the latest Health & Safety guidance to suit your desired mode of operation in accordance with BG02.
- **Economisers:** Maximise the benefit of your boiler plant by installing a flue gas economiser to save a typical 6% on fuel.
- **Ancillary Systems:** Ongoing support to modernise and replace Hotwell Tanks, Deaerators, Blowdown Vessels and other existing Boilerhouse Ancillary Systems as required.



# Boilers



**All our boilers are designed and manufactured in the United Kingdom to unbeatable standards of specification, construction and quality. Our in-house team deliver a premium quality product that is both highly efficient and famously reliable.**

Every order is reviewed and then precision engineered to ensure that all of the client's requirements are met. From the 'supply only' of boiler equipment to a turnkey energy centre, each project is delivered by our dedicated project engineers.

Our extensive skills base enables us to take any project from feasibility studies through specification design to manufacture, installation, commissioning, operation and planned preventative maintenance.

Cutting-edge microprocessor control, monitoring and sequencing systems help reduce fuel consumption and running costs, whilst further improving reliability and keeping expensive downtime to a minimum. Our boiler range is globally renowned for reliable operation across a broad spectrum of demanding applications. Cochran boilers are the trusted solution for sectors such as education, healthcare, government facilities, hotels and food and drink processing where reliability is critical.

World beating quality is the reason that we were selected to receive the very highest British accolade - the award of a coveted Royal Warrant by appointment of Her Majesty the Queen.

## High Efficiency, Low NOx Boilers

Our flagship products have been developed to comply with both current UK/EU legislation and expected future regulations, be more efficient and emit lower NO<sub>x</sub>.

Building on the success of our famous Wee Chieftain and Thermax Steam Boilers, we have developed the ST28, ST37 and ST32. These high output, high efficiency boilers are supported by the ST23 and ST36 which have been specially developed as more cost efficient options for smaller volume applications.

Reflecting the high efficiency, low NO<sub>x</sub> capabilities of the ST boiler ranges, our HW29 and HW34 provide cost effective hot water production for heating and process applications.

Providing maximised efficiency and reducing fuel usage, Cochran economisers are available for every new boiler, as well as being a cost-effective retrofit option for existing systems.

## Heat Recovery Boilers

Heat Recovery systems harvest waste heat from a broad spectrum of industrial processes to generate 'free' steam or hot water that can be used elsewhere in your facility or sold to third parties, such as a housing developments or nearby businesses.

Our Heat Recovery boilers are versatile as steam or hot water applications and are designed to operate in conjunction with a wide range of heat generating equipment, such as gas turbines, reciprocating engines, incinerators, gasifiers and other process heat plant.

For situations where heat recovery alone is not sufficient to meet your demand, Composite Boilers incorporate additional firing, providing greater operational flexibility.



# ST28 Steam Boiler

1000-6000 kg/hour

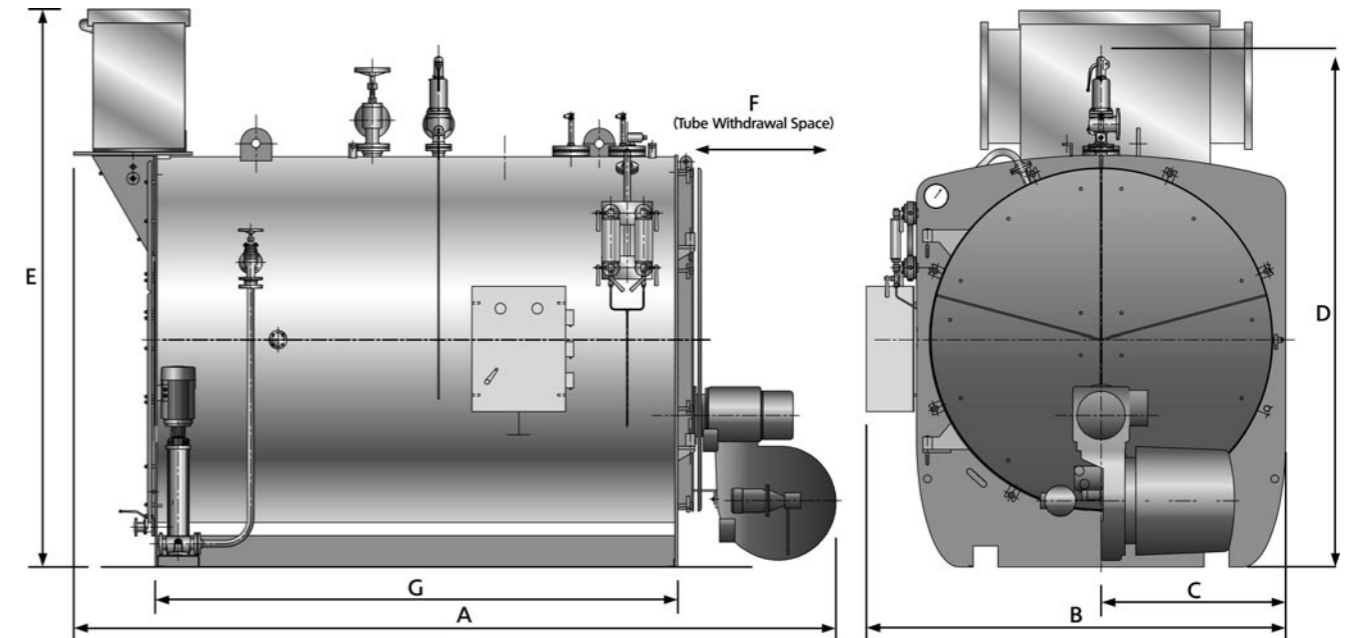
Developed from the world-renowned and extremely popular Wee Chieftain boiler, the ST28 is a low NO<sub>x</sub> packaged steam boiler that utilises a horizontal three pass wet back design constructed in accordance with BS EN 12953 to provide unrivalled efficiency and reliability. When fitted with compliant Cochran, or equivalent, combustion equipment, the boiler meets the latest European environmental legislation, the Medium Combustion Plant Directive (MCPD).

It also complies with the requirements of the Factories Act (1961) and Guidance on Safe Operation of Boilers Ref: BG01 developed by the Safety Assessment Federation (SAFED) and the Combustion Engineering Association (CEA). In addition, the ST28 is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment Directive (PED), Low Voltage; Electro-Magnetic Compliance & Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

Cochran's ST28 packaged steam boiler offers the following key features and optional upgrades:

- Emissions fully compliant with MCPD.
- Further NO<sub>x</sub> reductions achievable with the introduction of flue gas recirculation.
- Output range of 1000 kg/hr to 6000 kg/hr F&A 100°C at a nett efficiency of up to 95% in accordance with EN12953.
- Normal operating pressure 10 Barg, with options up to 30 Barg.
- Fully matched Cochran combustion equipment.
- Wide range of combustion and control packages and economiser options.
- Turndown of up to 6:1.
- Cochran Eclipse or Synergy Touchscreen HMI with Modbus interface and remote access capability.
- Variable speed drives for FD Fan and Feed water pump motors help deliver low noise levels and reduce power consumption.
- Enhanced insulation for lower touch temperature.



ST28 Boiler Model		ST28-1	ST28-2	ST28-3	ST28-4	ST28-5	ST28-6	
Rating F&A @100°C	kg/hr	1000	2000	3000	4000	5000	6000	
Dimensions	A	mm	3941	4801	5374	6158	6803	6731
	B	mm	1914	2650	2720	2854	2854	3823
	C	mm	781	1149	1184	1251	1251	1347
	D	mm	2180	2976	3223	3394	3394	3490
	E	mm	2314	3117	3344	3575	3575	3786
	F	mm	2040	2860	3580	4180	4730	4650
	G	mm	2313	3133	3853	4453	5003	4923
Min Transport Width	mm	1607	2343	2413	2547	2547	2739	
Min Transport Height	mm	1863	2655	2818	2911	2911	3040	
Rec Chimney Dia	mm	215	300	355	420	454	510	
Stop Valve Dia	mm	50	65	80	100	100	125	
Safety Valve Size	mm	25	32	40	50	50	50	
Safety Valve Outlet Dia	mm	40	50	65	80	80	80	
Blowdown Valve Dia	mm	25	25	25	25	25	25	
Feed Pump Inlet Dia	mm	32	32	32	32	32	40	
Weight Empty	Tonnes	5.1	9.4	12.5	16.4	17.7	20.6	
Weight to NWL	Tonnes	6.8	15.3	20.2	26.3	28.6	33.0	
Weight Full	Tonnes	7.2	16.7	21.9	28.7	31.3	36.1	

**Note:** All Dimensions and weights are approximate only and are based on a boiler working pressure of 10 BarG, other design pressures available. Table data includes use of an economiser, but no gas bypass.





# ST65 Steam Boiler

1500-5000 kg/hour

**Cochran's ST65 packaged steam boiler was developed for higher operational efficiencies and lower emissions to meet the requirements of the Medium Combustion Plant Directive (MCPD).**

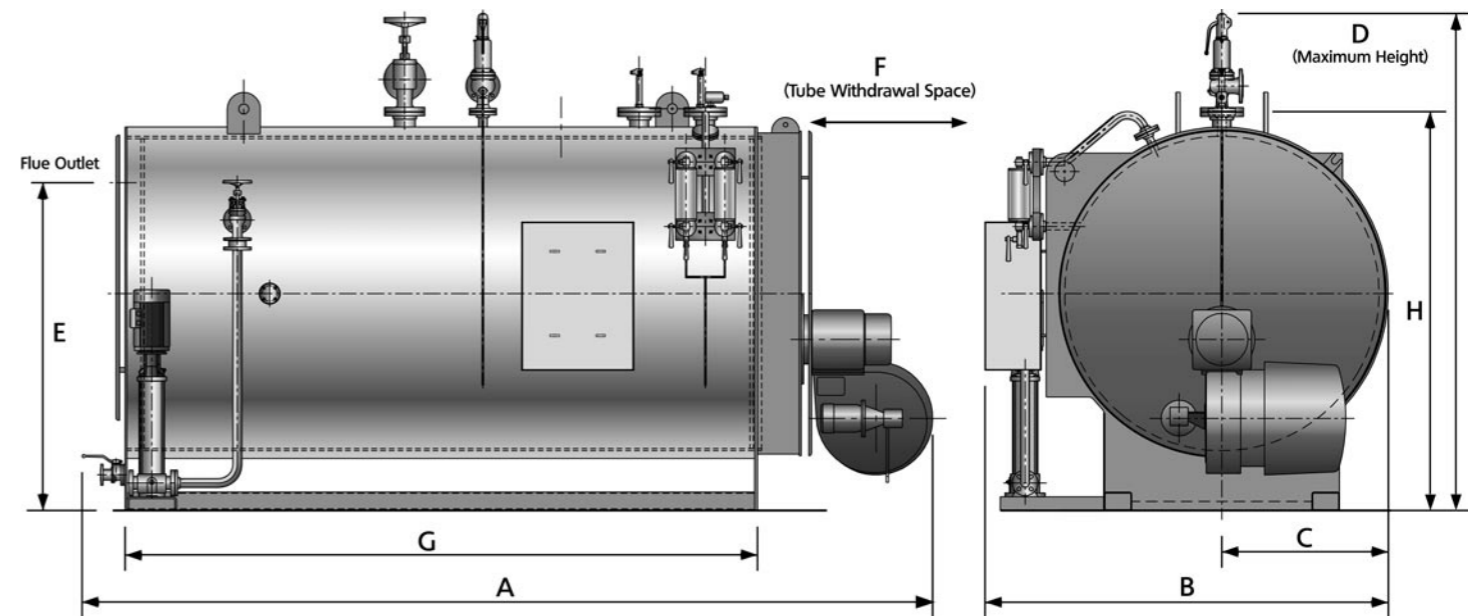
It complies with the requirements of the Factories Act (1961) and Guidance on Safe Operation of Boilers Ref: BG01 developed by the Safety Assessment Federation (SAFED) and the Combustion Engineering Association (CEA).

In addition, the ST65 is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment Directive (PED), Low Voltage; Electro-Magnetic Compliance & Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

**Cochran's ST65 packaged steam boiler offers the following key features and optional upgrades:**

- The ST65 features a three pass reverse flame boiler design.
- Compact design results in an economical footprint.
- Output range of 1500 kg/hr to 5000 kg/hr F&A 100°C at a nett efficiency of up to 95% in accordance with EN12953.
- Fully matched with oil, natural gas or dual firing combustion equipment.
- Wide range of combustion and control packages and economiser options.
- Turndown of up to 6:1.
- Variable speed drives for FD Fan and Feed water pump motors help deliver low noise levels and reduce power consumption.



ST65 Boiler Model		ST65-1	ST65-2	ST65-3	ST65-4	ST65-5	ST65-6	ST65-7	ST65-8		
Evaporation	kW	940	1254	1567	1881	2194	2507	2821	3134		
F&A 100°C (212°F)	kg/h	1500	2000	2500	3000	3500	4000	4500	5000		
	lb/h	3308	4410	5513	6615	7718	8820	9923	11025		
Dimensions	Oil	A	mm	3435	3908	4264	4478	4765	4765	4961	4731
		Gas	A	mm	3669	4129	4370	4773	4873	4873	5069
	B	mm	1760	1828	1955	2155	2403	2403	2487	2599	
	C	mm	725	760	805	905	1010	1010	1055	1125	
	D	mm	2216	2330	2420	2698	2908	2908	3054	3195	
Tube Withdrawal	E	mm	1465	1528	1593	1768	1960	1960	2042	2170	
	F	mm	2165	2625	2960	3195	3295	3295	3491	3545	
	G	mm	2310	2770	3085	3340	3440	3440	3636	3690	
H	mm	1808	1878	1968	2168	2378	2378	2467	2608		
Rec. Chimney Dia.	mm	280	305	355	405	405	440	440	455		
Sfy.Valve Exh.Dia.	BSP/mm	40	40	50	65	65	65	65	80		
Strm. Stop Valve Dia.	BSP/mm	65	80	80	100	100	100	100	125		
Blow Down Valve Dia.	mm	25	25	25	25	25	25	25	25		
Feed Water Inlet Dia.	mm	25	25	32	32	32	32	32	32		
Weight - Empty	Tonnes	3.75	4.47	5.59	7.65	9.08	9.08	11.77	15.06		
Weight to NWL	Tonnes	5.22	6.45	7.96	10.98	13.28	13.28	18.83	25.03		
Weight - Full of Water	Tonnes	5.59	6.94	8.59	11.88	14.60	14.60	21.03	28.53		

**Note:** All Dimensions and weights are approximate only and are based on a boiler working pressure of 10 BarG, other design pressures available.





# ST37 Steam Boiler

7000-24000 kg/hour

Cochran's ST37 Low NO<sub>x</sub> packaged steam boiler is a horizontal three pass wet back design constructed in accordance with BS EN 12953. When fitted with compliant Cochran, or equivalent, combustion equipment, the boiler meets the latest European environmental legislation, the Medium Combustion Plant Directive (MCPD).

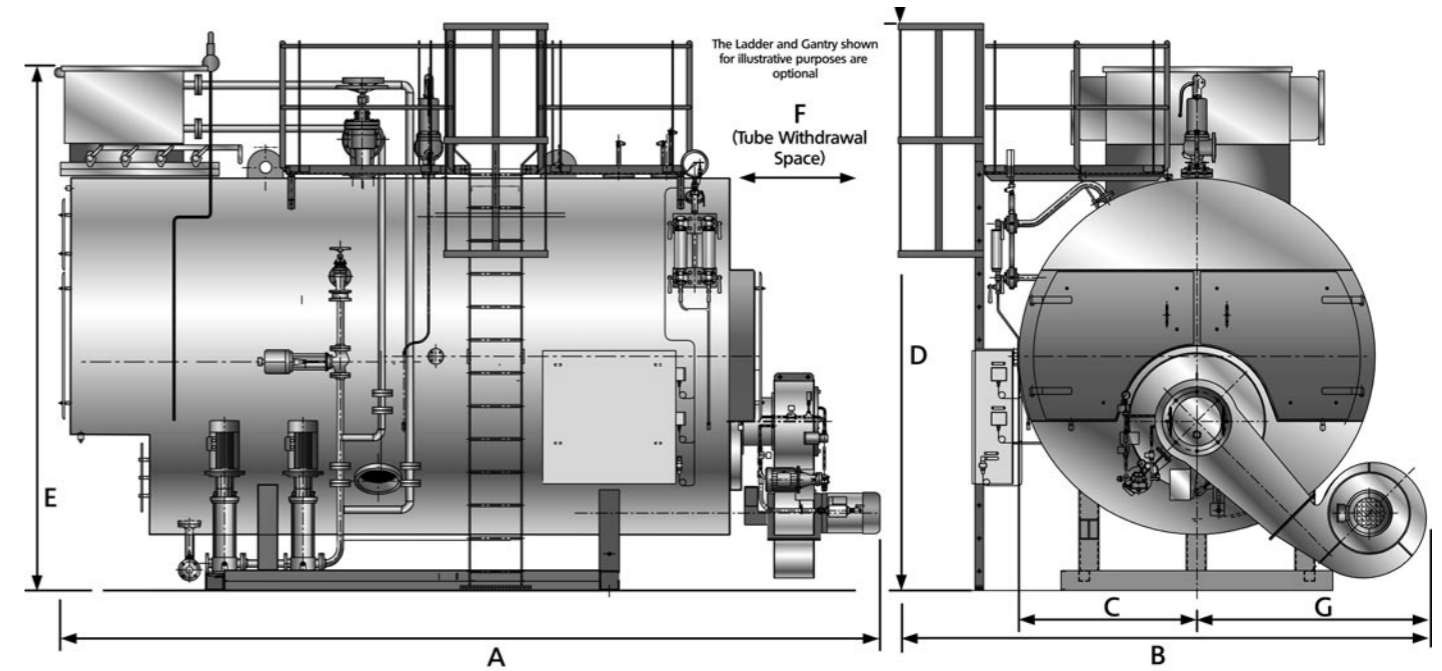
It also complies with the requirements of the Factories Act (1961) and Guidance on Safe Operation of Boilers Ref: BG01 developed by the Safety Assessment Federation (SAFED) and the Combustion Engineering Association (CEA).

In addition, the ST37 is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment Directive (PED), Low Voltage; Electro-Magnetic Compliance & Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

Cochran's ST37 packaged steam boiler offers the following key features and optional upgrades:

- Capable of achieving NO<sub>x</sub> emissions of 70-80 mg/Nm<sup>3</sup> for natural gas firing.
- Further NO<sub>x</sub> reductions achievable with the introduction of flue gas recirculation.
- UKCA, UKNI+CE or CE marked, horizontal three-pass, wet-back boiler design developed from Cochran's world-renowned Thermax range.
- Designed and constructed in accordance with the latest European environmental legislation. BS EN 12953 and MCPD compliant, subject to other plant and equipment within the boilerhouse.
- Output range of 7000 kg/hr to 24000 kg/hr F&A 100°C at a nett efficiency of up to 95%.
- Normal operating pressure 10 Barg, with options up to 30 Barg.
- Features Cochran's low NO<sub>x</sub> burners as standard.
- Wide range of combustion and control packages, superheater and economiser options.
- Turndown of up to 7:1.
- Cochran Eclipse or Synergy Touchscreen HMI with Modbus interface and remote access capability.
- Variable speed drives for FD Fan and Feed water pump motors help deliver low noise levels and reduce power consumption.
- Enhanced insulation for lower touch temperature.



ST37 Boiler Model		ST37-7	ST37-8	ST37-9	ST37-10	ST37-12	ST37-14	ST37-16	ST37-18	ST37-20	ST37-22	ST37-24
Rating F&A 100°C	kg/hr	7000	8000	9000	10000	12000	14000	16000	18000	20000	22000	24000
Dimensions	A mm	6649	6941	6766	7055	8022	7710	8213	8224	8674	8952	9202
	B mm	4303	4481	4561	4561	4798	4923	5035	5566	5566	5986	5986
	C mm	1402	1484	1539	1539	1651	1727	1750	1897	1897	1970	1970
	D mm	4531	4699	4807	4807	5056	5112	5175	5354	5354	5515	5515
	E mm	4116	4724	4832	4832	5081	5137	5177	5379	5379	5540	5540
	F mm	4740	5040	4740	5140	5900	5750	5750	5760	6210	6510	6760
	G mm	1720	1816	1841	1841	1966	2015	2104	2488	2488	2835	2835
Min Transport Width	mm	2872	3036	3146	3146	3370	3522	3568	3862	3862	4008	4008
Min Transport Height	mm	3441	3609	3717	3717	4016	4072	4112	4124	4124	4285	4285
Rec Chimney Dia	mm	550	600	650	660	720	800	865	900	945	1000	1020
Stop Valve Dia	mm	125	150	150	150	200	200	200	200	250	250	250
Safety Valve Size	mm	50	65	65	65	65	80	80	80	100	100	100
Safety Valve Outlet Dia	mm	80	100	100	100	125	125	125	125	150	150	150
Blowdown Valve Dia	mm	50	50	50	50	50	50	50	50	50	50	50
Feed Pump Inlet Dia	mm	40	50	50	50	50	50	50	50	50	65	65
Weight Empty	Tonnes	21.8	27.8	28.5	30.3	35.6	39.7	42.9	43.3	47.7	58.3	59.6
Weight to NWL	Tonnes	36.3	45.5	45.6	48.8	60.8	64.7	66.3	76.5	80.0	95.1	97.8
Weight Full	Tonnes	39.3	49.2	49.4	52.8	67.0	71.4	72.9	84.6	88.8	104.9	108.0

**Note:** All Dimensions and weights are approximate only and are based on a boiler working pressure of 10 BarG, other design pressures available. Table data includes use of an economiser, but no gas bypass and no hood.





# ST32 Twin Furnace Steam Boiler

18000-40000 kg/hour

Cochran's ST32 Low NO<sub>x</sub> packaged steam boiler is a horizontal three pass wet back design constructed in accordance with BS EN 12953. When fitted with compliant Cochran, or equivalent, combustion equipment, the boiler meets the latest European environmental legislation, the Medium Combustion Plant Directive (MCPD).

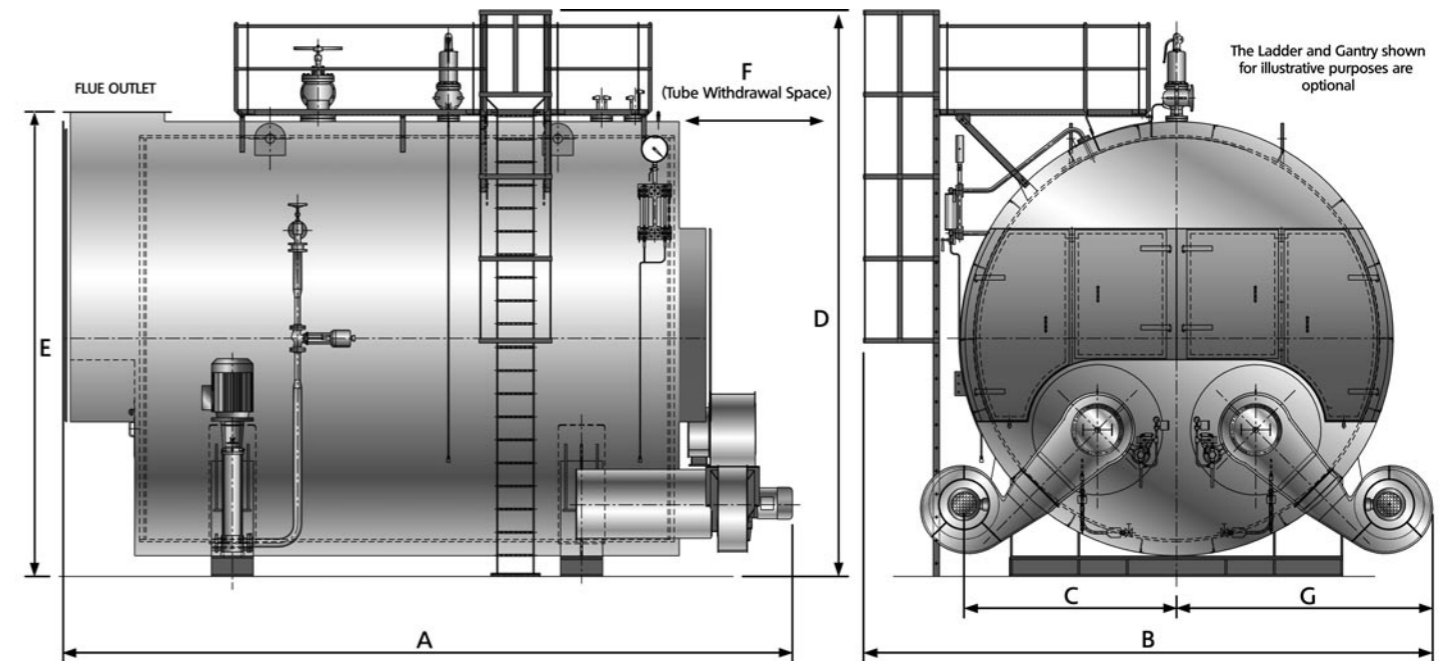
It also complies with the requirements of the Factories Act (1961) and Guidance on Safe Operation of Boilers Ref: BG01 developed by the Safety Assessment Federation (SAFED) and the Combustion Engineering Association (CEA).

In addition, the ST32 is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment Directive (PED), Low Voltage; Electro-Magnetic Compliance & Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

Cochran's ST32 packaged twin furnace steam boiler offers the following key features and optional upgrades:

- UKCA, UKNI+CE or CE marked, horizontal three-pass, wet-back boiler design developed from Cochran's renowned Thermax range.
- Output range of 18000 kg/hr to 40000 kg/hr F&A 100°C at a nett efficiency of up to 95%.
- Designed and constructed in accordance with the latest European environmental legislation. BS EN 12953 and MCPD compliant, subject to other plant and equipment within the boilerhouse.
- Normal operating pressure 10 Barg, with options up to 30 Barg.
- Features Cochran's low NO<sub>x</sub> burners as standard.
- Wide range of combustion and control packages, superheater and economiser options.
- Turndown of up to 7:1.
- Cochran Eclipse or Synergy Touchscreen HMI with Modbus interface and remote access capability.
- Variable speed drives for FD Fan and Feed water pump motors help deliver low noise levels and reduce power consumption.
- Enhanced insulation for lower touch temperature.



ST32 Boiler Model		ST32-18	ST32-20	ST32-22	ST32-5	ST32-27	ST32-30	ST32-32
F&A 100°C (212°F)	kg/h	18000	20000	22500	25000	27500	30000	32000
Dimensions	A	mm	7100	7250	7400	7610	7630	8330
	B	mm	4061	4860	4980	5086	5225	5310
	C	mm	1681	2095	2210	2286	2325	2360
	D	mm	5335	5640	5745	5840	5940	6205
	E	mm	4490	4535	4715	4850	4880	4900
Boiler Tube Withdrawal	F	mm	3625	3980	3980	4315	4335	4685
	G	mm	2340	2765	2770	2800	2900	2950
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	Tonnes	45.7	50.8	55.9	61	67	75.2	84.4
Boiler Weight-Full	Tonnes	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 BarG.





# HW29 Hot Water Boiler

1200-4100 kW

Cochran's HW29 horizontal three pass reverse flame hot water boiler is constructed in compliance with BS EN 12953, and when fitted with compliant combustion equipment, the boiler meets the latest European environmental legislation and the Medium Combustion Plant Directive (MCPD). This model is suitable for both low and high temperature applications.

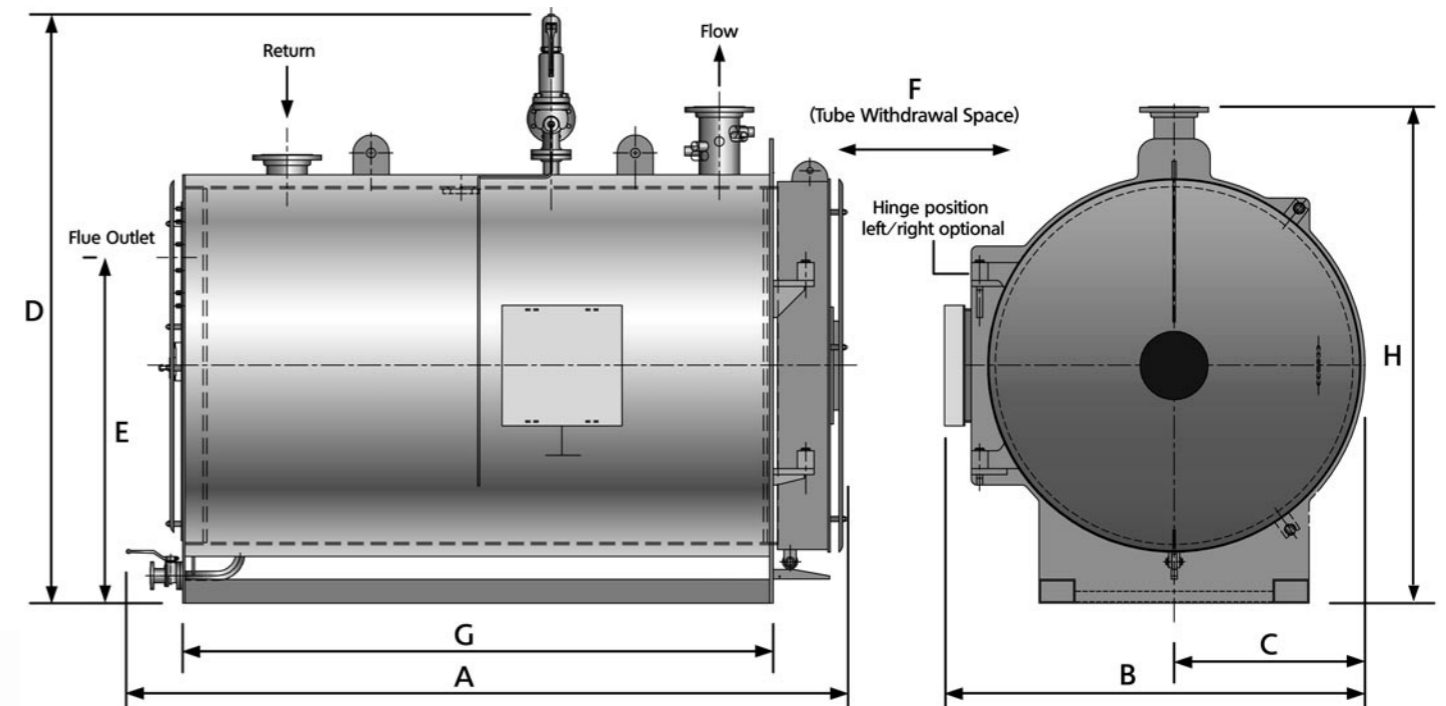
The boiler is designed to meet the current UK building regulations with gross seasonal efficiency of over 86% and complies with the requirements of the Factories Act (1961) and with HSE and UK Inspection Authority requirements.

In addition, the Boiler is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment; Low Voltage; Electro-Magnetic Compliance; and Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

Cochran's HW29 packaged hot water boiler offers the following key features and optional upgrades:

- A compact, fully wet-back hot water boiler range, developed to meet today's demands for higher operational efficiencies and lower emissions.
- Provides energy saving, low emissions solutions for commercial and industrial applications.
- Normal operating pressure is 5.25 Barg, with options up to 10 Barg.
- Wide range of combustion, control packages and economiser options.
- Turndown of up to 6:1.
- Variable speed drives for FD Fan motor helps deliver low noise levels and reduce power consumption.



HW29 Boiler Model		HW29-1	HW29-2	HW29-3	HW29-4	HW29-5	HW29-6	HW29-7	HW29-8
Output	kW	1200	1400	1650	2000	2500	3000	3500	4100
Length	A mm	2674	2799	2977	3209	3505	3785	4055	4316
Width	B mm	1835	1835	1997	2100	2233	2283	2177	2305
	C mm	795	795	860	925	925	950	950	1028
	D mm	2398	2398	2583	2713	2713	2893	2893	3048
	E mm	1440	1440	1505	1695	1695	1705	1705	1855
Boiler Tube Withdrawal	F mm	2080	2205	2380	2605	2905	3185	3455	3719
	G mm	2233	2358	2535	2760	3060	3340	3610	3874
	H mm	2068	2068	2198	2328	2328	2378	2378	2533
Rec. Chimney Dia	mm	275	300	325	375	405	450	475	500
Flow Connection Dia	mm	125	125	125	150	150	200	200	200
Return Connection Dia	mm	125	125	125	150	150	200	200	200
Safety Valve Size	mm	40	40	50	50	50	65	65	80
Safety Valve Outlet Dia	mm	65	65	80	80	80	100	100	125
Drain Valve Dia	mm	25	25	25	25	25	25	25	25
Weight Empty	Tonnes	4.1	4.1	5.0	5.7	5.9	7.5	8.2	8.9
Weight Full	Tonnes	6.2	6.2	7.3	8.6	9.2	11.0	11.4	13.8

**Notes:**  
 1. All dimensions and weights are approximate only and are based on a boiler with a working pressure of 5.25 BarG.  
 2. The weights include an allowance for the combustion equipment.





# HW34 Hot Water Boiler

5000-16000 kW

Cochran's HW34 is a horizontal three pass, wet back hot water boiler. Designed and built to EN12953, the HW34 delivers higher operational efficiencies. This model is suitable for both low and high temperature applications, the boiler meets the latest European environmental legislation and the Medium Combustion Plant Directive (MCPD).

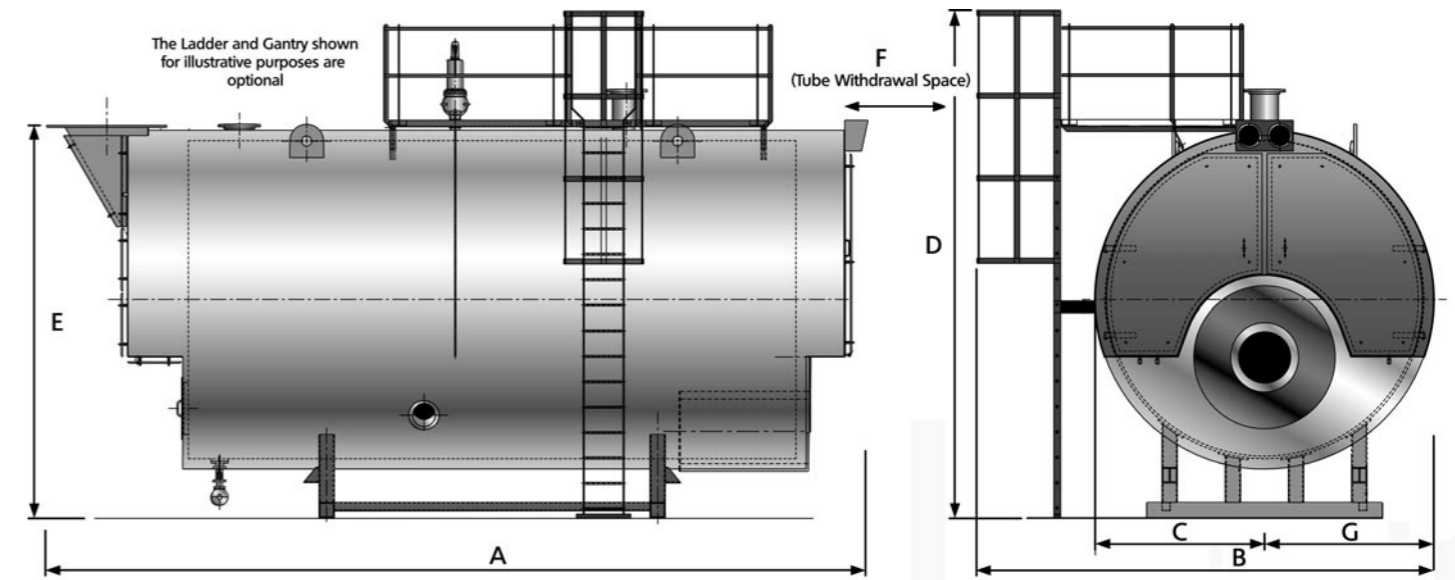
The boiler is designed to meet the current UK building regulations with gross seasonal efficiency of over 86% and complies with the requirements of the Factories Act (1961) and with HSE and UK Inspection Authority requirements.

In addition, the Boiler is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment; Low Voltage; Electro-Magnetic Compliance; and Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

Cochran's HW34 packaged hot water boiler offers the following key features and optional upgrades:

- A fully wet-back hot water boiler range, developed to meet today's demands for higher operational efficiencies and lower emissions.
- Offers impressive performance and lower emissions for larger commercial and industrial applications.
- Features Cochran's low NO<sub>x</sub> burners as standard.
- Wide range of outputs from 5000 kW to 16000 kW, with bespoke twin furnace designs for outputs up to 30000 kW.
- Normal operating pressure is 5.25 Barg, with options up to 25 Barg.
- Features Cochran's low NO<sub>x</sub> burners as standard.
- Wide range of combustion and control packages, superheater and economiser options.
- Turndown of up to 7:1.
- Variable speed drives for FD Fan motor helps deliver low noise levels and reduce power consumption.
- Enhanced insulation for lower touch temperature.



HW34 Model		HW34-1	HW34-2	HW34-3	HW34-4	HW34-5	HW34-6	HW34-7	HW34-8	HW34-9
Output	kW	5000	6000	7000	8000	9000	10000	12000	14000	16000
Length	A mm	6547	7218	7318	7569	8126	8200	8962	9671	10205
Width	B mm	4171	4547	4631	4582	4582	4682	4994	5346	5446
	C mm	1280	1387	1454	1496	1496	1514	1665	1915	1915
	D mm	4250	4447	4459	4704	4704	4698	5035	5392	5392
	E mm	3020	3217	3229	3474	3474	3468	3805	4162	4162
Boiler Tube Withdrawal	F mm	4144	4794	4754	4924	5424	5454	5896	6455	6888
	G mm	1810	2079	2096	2005	2005	2087	2248	2350	2450
Rec. Chimney Dia.	mm	535	550	610	650	690	700	800	835	885
Flow Connection Dia.	mm	250	250	250	300	300	300	350	350	350
Return Connection Dia.	mm	250	250	250	300	300	300	350	350	350
Safety Valve Size	mm	80	80	100	100	100	125	125	150	150
Safety Valve Outlet Dia.	mm	125	125	150	150	150	200	200	250	250
Drain Valve Dia.	mm	50	50	50	50	50	50	50	50	50
Weight Empty	Tonnes	14.1	18.9	18.5	19.8	21.5	23.6	30.1	38.4	41.7
Weight Full	Tonnes	26.2	35.1	37.2	39.1	42.7	44.8	54.3	83.1	88.7

Note: All Dimensions and weights are approximate only and are based on a boiler working pressure of 5.25 BarG.





# Heat Recovery Boilers

**Cochran's ST95 packaged heat recovery steam boiler is available as a single, twin or triple stream design constructed in accordance with BS EN 12953.**

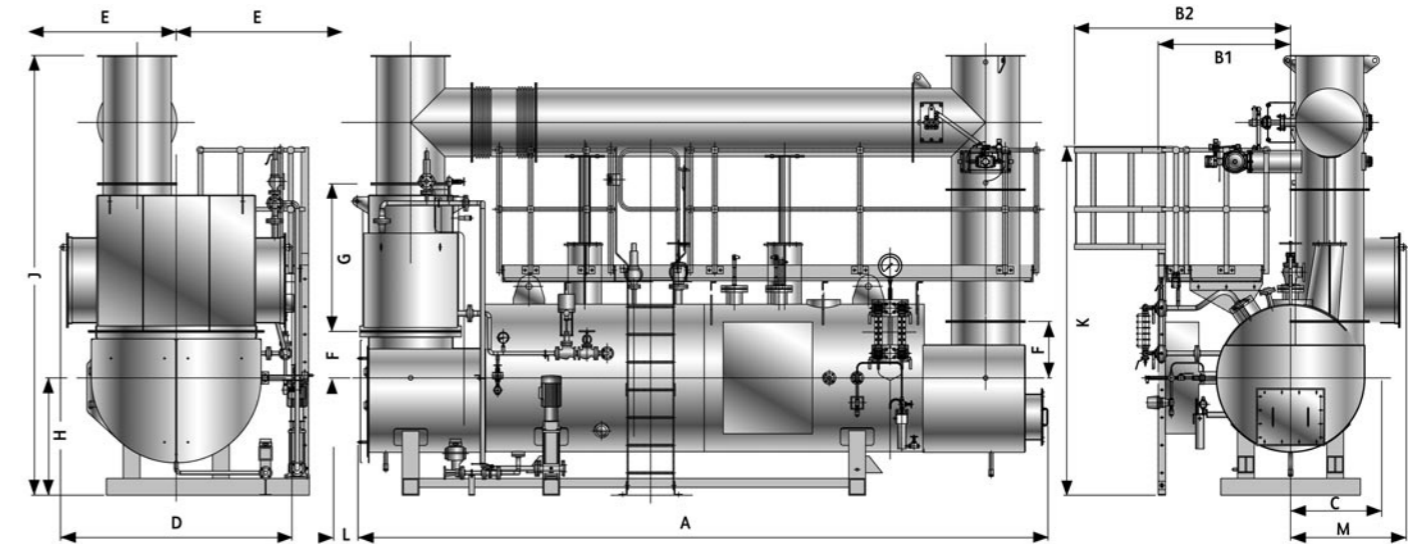
It also complies with the requirements of the Factories Act (1961) and Guidance on Safe Operation of Boilers Ref: BG01 developed by the Safety Assessment Federation (SAFED) and the Combustion Engineering Association (CEA).

In addition, the ST95 is UKCA, UKNI+CE or CE marked to meet the requirements of the Pressure Equipment Directive (PED), Low Voltage; Electro-Magnetic Compliance & Machinery Safety Directives.

Throughout the manufacturing process, this boiler is subject to inspection by a leading Independent Insurance Company, in addition to Cochran's own ISO 9001-compliant quality procedures.

**Cochran's ST95 packaged heat recovery steam boiler offers the following key features and optional upgrades:**

- The ST95 is a heat recovery boiler range providing single, twin or triple stream solutions.
- Designs to match commercially available gas engines, thermal oxidisers, gas turbines and other heat source.
- Complies with the requirements of BS EN 12953 and the PED (Pressure Equipment Directive).
- Supplied as a package, fully insulated and clad, complete with valves and pipework to ease site installation.
- Optional equipment such as bypass dampers, ductwork and control interface modules are available.
- Variable speed drives for feedwater pump motors help deliver low noise levels and reduce power consumption.
- Enhanced insulation for lower touch temperature.



ST95 Single Pass Boiler Model		ST95-1	ST95-2	ST95-3	ST95-4	ST95-5	ST95-6	ST95-7	ST95-8
Nominal Engine Size	kW	400	600	800	1200	1600	2000	3500	4300
Boiler Output with Economiser	kg/Hr	302	473	623	800	1115	1342	2524	3191
Boiler Output with Economiser	kW	204	320	421	541	754	907	1706	2157
Dimensions	A	mm	5415	5540	5665	5790	5960	6155	6740
	B1	mm	1155	1155	1155	1155	1155	1155	1266
	B2	mm	1905	1905	1905	1905	1905	1905	1989
	C	mm	564	614	664	714	766	816	966
	D	mm	1436	1536	1636	1736	1860	1960	2260
Economiser Tube Withdrawal	E	mm	1465	1615	1765	1915	2071	2221	2671
	F	mm	335	370	400	430	460	495	590
	G	mm	1150	1085	1015	1150	1195	1280	1115
	H	mm	800	850	900	950	1000	1050	1200
	J	mm	3185	3255	3315	3580	3755	4025	4255
	K	mm	2618	2718	2818	2918	3020	3120	3420
Boiler Tube Withdrawal	L	mm	3180	3105	3030	2950	2835	2740	2550
	M	mm	718	768	818	868	930	980	1130
Minimum Transport Width	mm	1582	1682	1782	1882	1996	2096	2396	2596
Minimum Transport Height	mm	2285	2305	2315	2530	2655	2825	2905	3065
Recommended Chimney Diameter	mm	300	350	400	450	500	600	750	900
Safety Valve Exhaust Diameter	mm	32	32	32	32	40	50	65	65
Steam Stop Valve Diameter	mm	50	50	50	50	65	65	80	100
Blow Down Valve Diameter	mm	25	25	25	25	25	25	25	25
Feed Pump Inlet Diameter	mm	25	25	25	25	25	25	32	32
Boiler Weight - Empty Complete	Tonnes	4.8	5.2	5.8	6.5	7.2	8.8	11.7	14.2
Boiler Weight - to NWL	Tonnes	6.3	6.9	7.9	9.0	10.2	12.1	16.6	20.2
Boiler Weight - Full of Water	Tonnes	6.5	7.2	8.3	9.5	10.7	12.8	17.5	21.5

**Notes:**

1. Boiler output based on a feed water temperature of 80°C with the economiser fitted and 7.0 BarG working pressure.
2. Actual boiler output will be dependent on exhaust gas temperature and flow rate.
3. Designs based on typical commercially available gas engine.



# Economisers

Install a Cochran Economiser...  
Achieve up to 96% efficiency\* and  
fuel savings in excess of 6%.  
With payback in under a year.

The use of an Economiser can greatly reduce fuel consumption by utilising boiler flue gases to heat water for process services or to preheat boiler feed water. Cochran design and manufacture Economiser systems complete with all associated equipment to raise feed or returns water from a heating system.

## Cut fuel consumption, reduce emissions, save money

Cochran's compact Economiser units transfer the heat held in the boiler's exhaust gases into the feed water BEFORE it enters the boiler, increasing the boiler's overall thermal efficiency. Improving thermal efficiency cuts fuel use, resulting in significant cost savings and reduced emissions.

In fact, the capital cost of fitting a Cochran Economiser is usually recovered within 12 months.

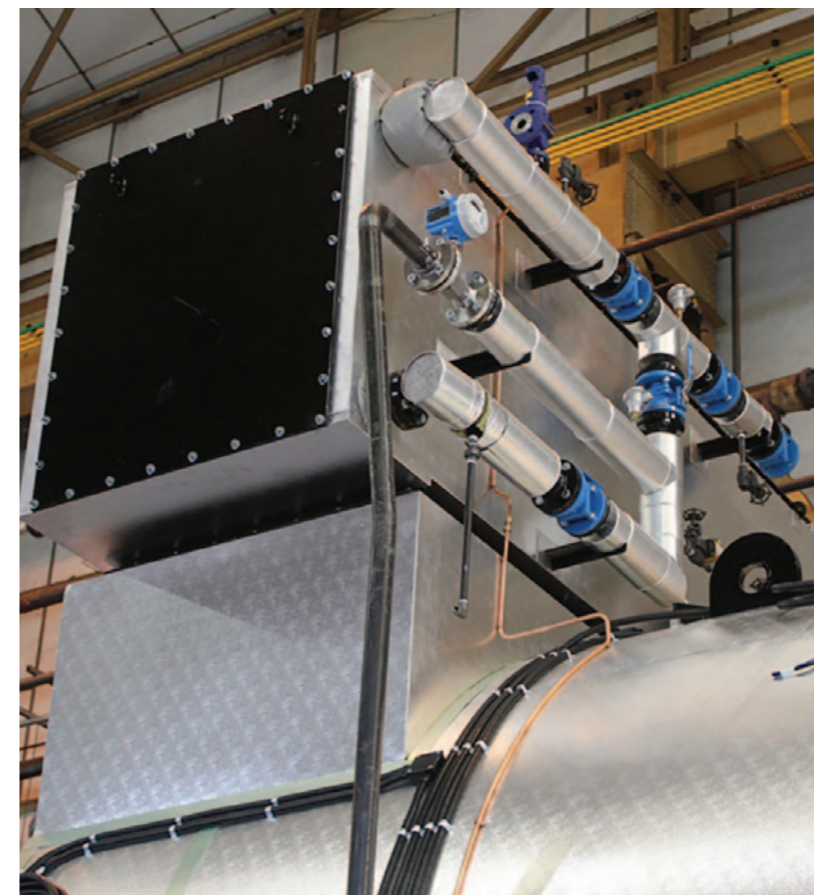
Whilst they are normally fitted to natural gas-fired boilers, specially designed units may also be fitted to Liquid Fuelled Boilers. Each unit is supplied complete with all the associated equipment required.

## For both new and existing installations.

Cochran's Economiser units can be supplied to fit every make and model of boiler, new or old. Each unit is supplied complete with all necessary valves and gauges.

The Economiser's controls are interlinked with boiler feed water regulating valve to ensure a flow of water through the economiser at all times.

Whether boiler-mounted or installed in a standalone format, every Cochran economiser is lagged and clad to maximise efficiency. Ideally, economiser units should use a vertical gas flow. If site conditions require a horizontal gas flow, then additional vent and drain connections are fitted.

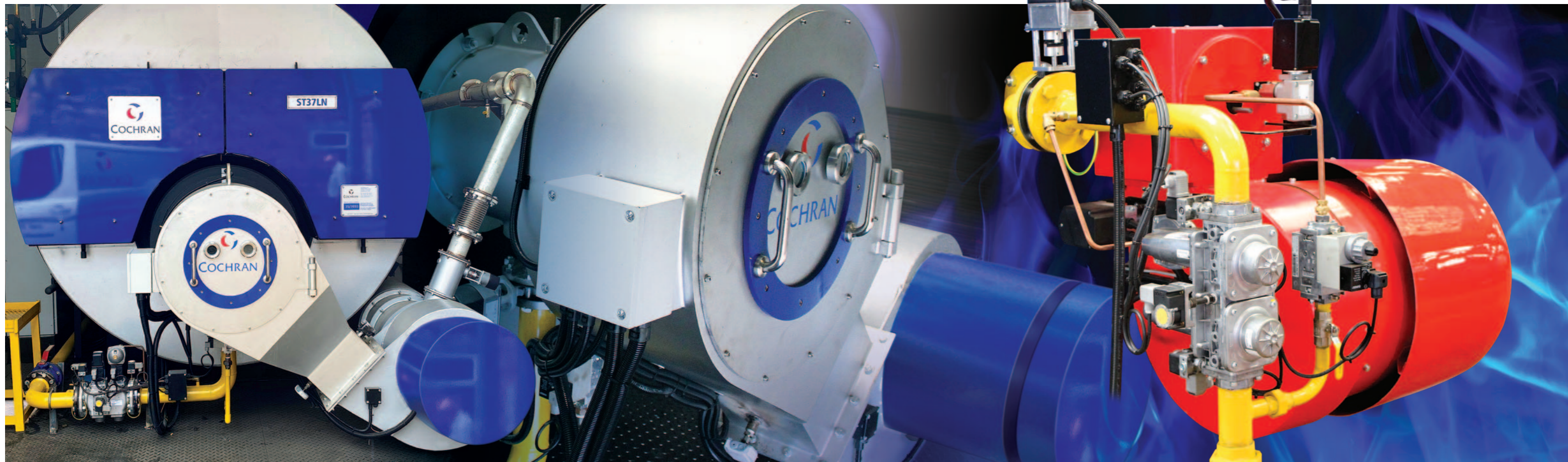


## Benefits of Cochran Economisers

- **Environmental:** An economiser substantially reduces overall emissions and consumption of global resources.
- **Cost Savings:** Our Economiser will reduce a boiler's overall fuel consumption by more than 6%.
- **Flexibility:** Units can be constructed to suit the geometry of the site and can be fitted to suitable heat sources.
- **Retrofit:** Whilst today almost every Cochran boiler is supplied with an Economiser already in place, we design, build and retrofit units to fit every make of boiler, no matter how old it is.
- **Maintenance:** Our Economisers have ease of maintenance and reliability designed-in.
- **Efficiency:** Every Cochran economiser delivers an increase of 5% in efficiency, increasing to 6% at turndown.



# Combustion Equipment



Cochran have designed and manufactured burners at their Annan facility for over 50 years. Not only suitable for installation on any fire tube boiler, our Simplex, Triplex, Equinox and Ultrinox burners can also be fitted on a wide range of other applications, such as gasifiers, dryers and kilns.

Uniquely, Cochran are the only boiler manufacturer in the UK to design and manufacture their own combustion equipment. Cochran burners are supported by forty field engineers, each strategically located around the UK and reinforced by a network of agents and dealers worldwide.

When paired with the Cochran's Synergy or Eclipse boiler management system, the company's Simplex, Triplex, Equinox and Ultrinox burners represent an exceptional proposition.

Through our commitment to product develop, to compliment our well-established Simplex, Triplex and Equinox burner ranges, we have added the Ultrinox low emission burner capable of achieving NO<sub>x</sub> levels of 30mg/Nm<sup>3</sup>.

## Benefits of upgrades from Cochran:

- Increased Efficiency, Reduced Fuel Costs and Lower Emissions:** Modern advances in equipment have delivered impressive reductions in fuel consumption and marked increases in overall efficiency. This has helped deliver substantial savings in operating costs, as well as significantly lower emissions.
- Improved Control:** The latest upgrades also offer much improved control-ability, particularly in association with the latest in boilerhouse management systems.
- Greater Reliability, Reduced Maintenance, Extended Operational Life:** Greater reliability has been matched with a reduced need for maintenance, whilst the operational life of equipment has also been much improved.
- Simpler Fuel Handling:** Use of modern gas firing and better oil systems have contributed to much simplified fuel handling systems.

## MCPD limits for NEW Boiler Plant\*

Fuel	Net RTI	NO <sub>x</sub> (mg/Nm <sup>3</sup> )	SO <sub>2</sub> (mg/Nm <sup>3</sup> )	Dust
Natural Gas		100		
Biogas		200	100	
Low CV Coke Ovens		200	400	
Low CV Blast Furnaces		200	200	
Other Gases		200	35	
Gas Oil		200		
Other Liquid Fuels	1-5 MW	300	350	50
	≥5 MW	300	350	20
Wood	1-5 MW	500	N/A	50
	5-20 MW	300	N/A	30
	≥20 MW	300	N/A	20
Other Solid Biomass	1-5 MW	500	200	50
	5-20 MW	300	200	30
	≥20 MW	300	200	20
Other Solid Fuels	1-5 MW	500	500	50
	5-20 MW	300	400	30
	≥20 MW	300	400	20

Gaseous Fuels  Liquid Fuels  Solid Fuels



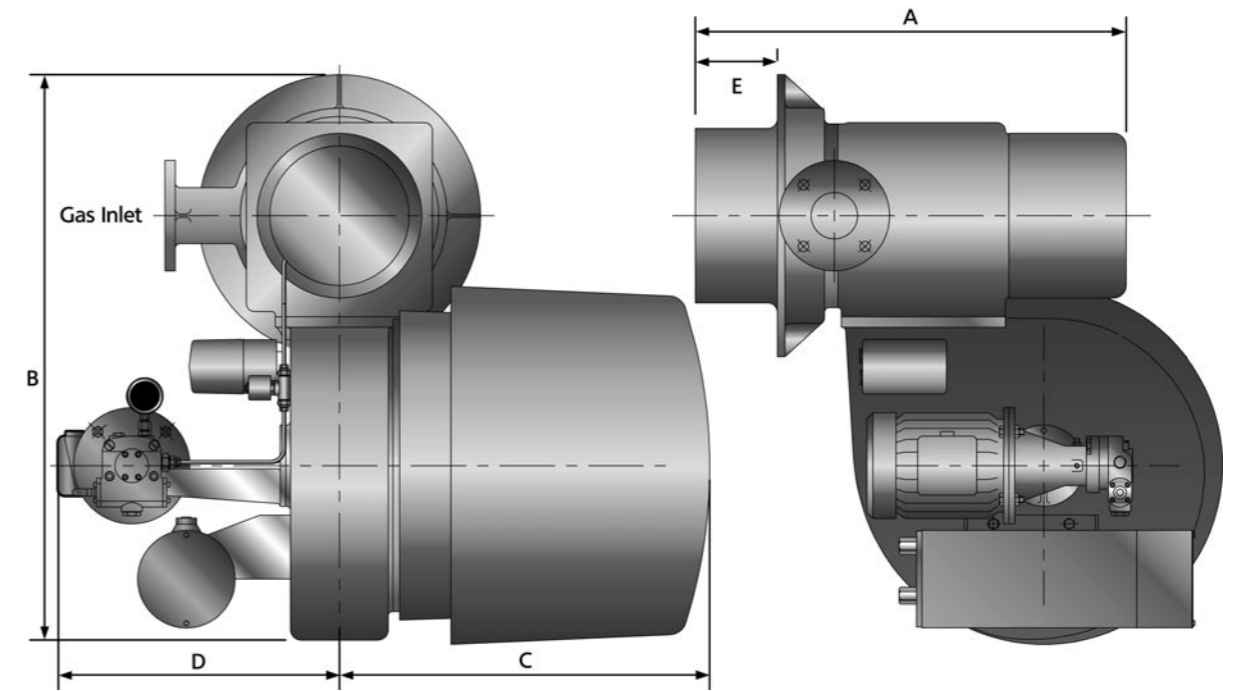
**Natural wear and tear, tough operating conditions and irregular maintenance can take their toll. Since boiler shells usually outlast other boiler plant, it makes sense to upgrade the ancillary plant during its working life. Burners are often replaced so that a new fuel can be used, such as converting from traditional heavy oil or coal, to natural gas or diesel.**

These designs features Cochran's unique combustion head, efficient combustion and low NO<sub>x</sub> throughout the firing range. Fully modulating options available throughout the range on all fuel types and combinations.

Cochran's Simplex and Triplex burners feature a unique combustion head incorporating a digital combustion control system as standard to maximise efficiency and repeatability of product. Subject to other plant and equipment within the boilerhouse, Simplex and Triplex burners are MCPD compliant.

**Cochran's Simplex and Triplex burners offer the following key features:**

- Suitable for firing oil or gaseous fuels, or for dual oil/gas firing, providing maximum flexibility.
- Unique combustion head delivers efficient fuel combustion and low NO<sub>x</sub> emissions 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.
- Suitable for operation and control using modern boiler management systems, such as Cochran's touchscreen Synergy and Eclipse boilerhouse operation technology.
- Subject to other plant and equipment within the boilerhouse, the Simplex and Triplex burner ranges are both MCPD compliant.
- Ideal for a broad spectrum of furnace applications, including kilns and dryers, as well as a wide variety of industrial steam and hot water boiler brands.
- Variable speed drives options are available.



**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			2.0 : 1	2.0 : 1	3.0 : 1	3.0 : 1	3.0 : 1
Typical Noise Level - dBa 1 m 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			2.0 : 1	2.0 : 1	3.0 : 1	3.0 : 1	3.0 : 1
Typical Noise Level - dBa 1 m from Burner			80	83/84	83/84	84-87	84-87
Approximate Burner Weight		Kg	184	220	230	250	240

**Options:** Remote monitoring and data logging - accessible via Internet; O<sub>2</sub> Trim; Exhaust Gas Monitoring; and Integral Gas Leak testing.





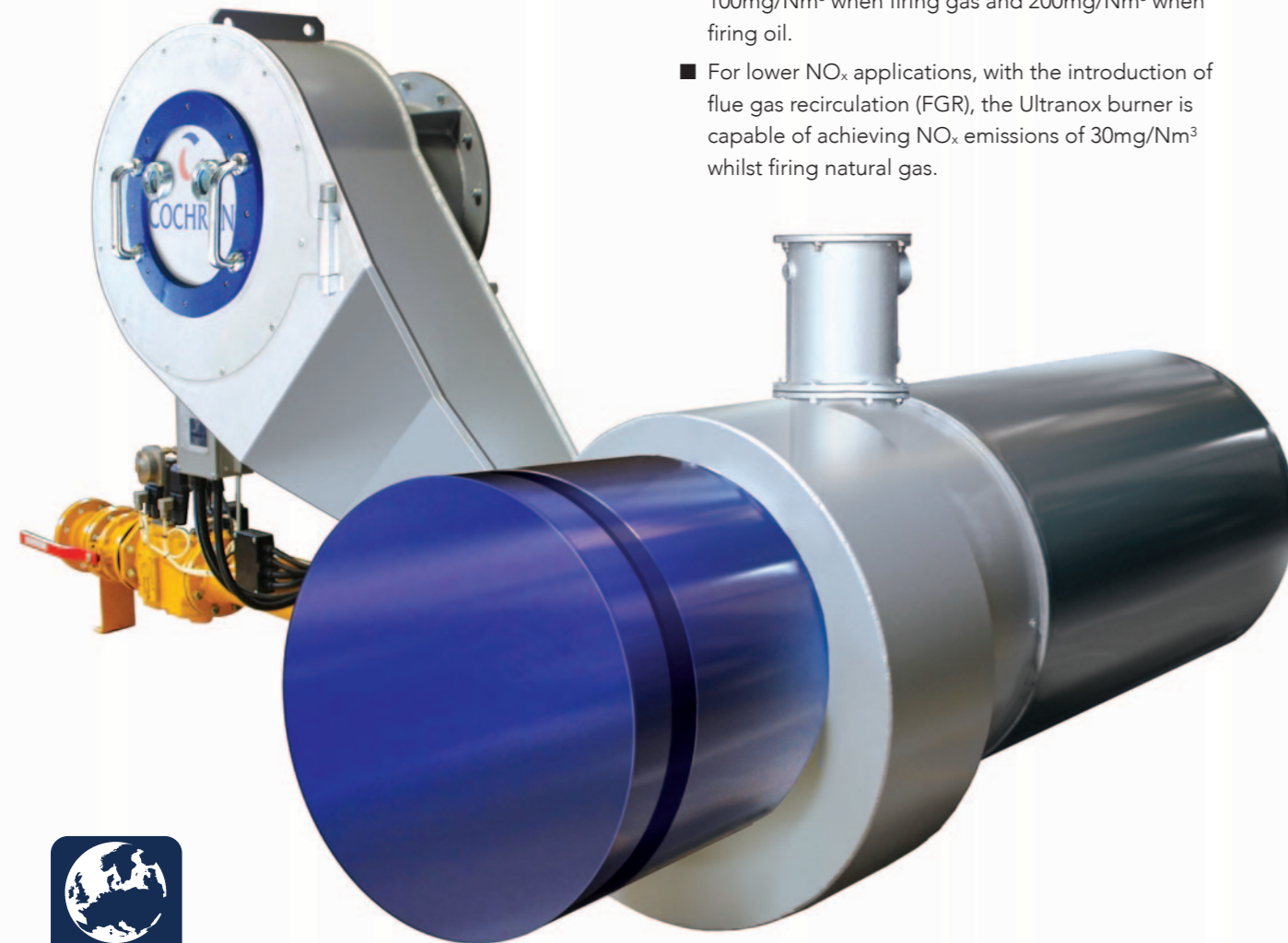
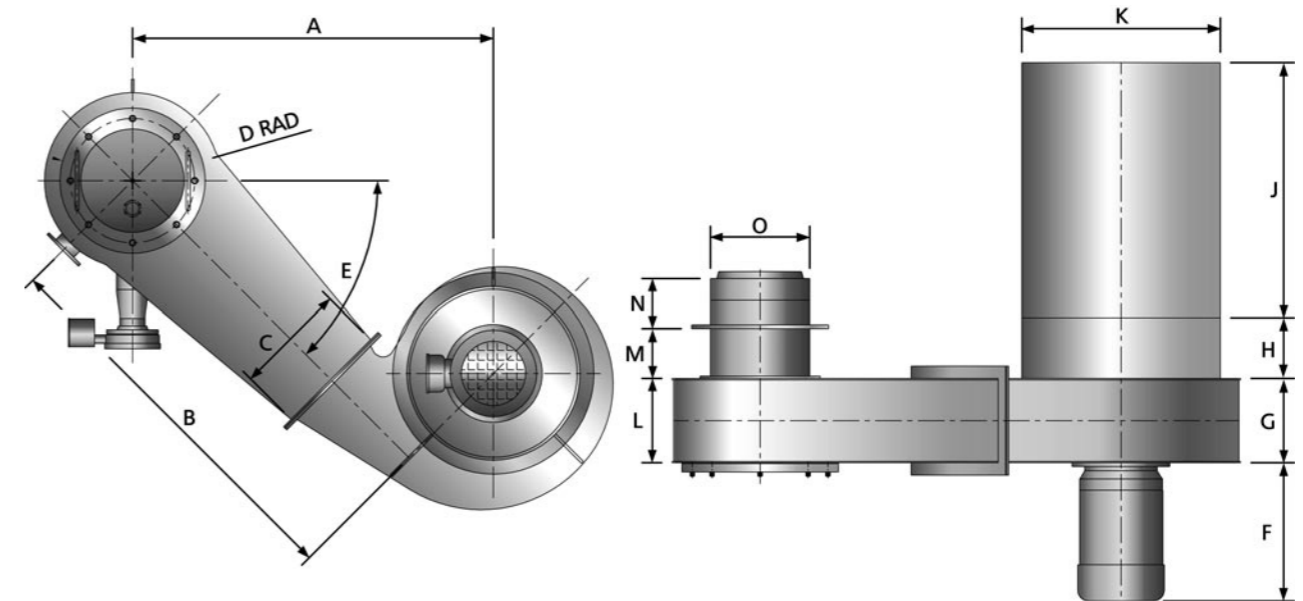
**Cochran's Equinox burner is well established in the market place and capable of delivering efficient fuel combustion and NO<sub>x</sub> emissions to meet the requirements of the Medium Combustion Plant Directive (MCPD).**

Now, as a result of extensive product development and testing, the Cochran Ultranox burner delivers benchmark standards in environmental emissions. Through innovative design the Ultranox burner provides maximum reliability whilst remaining easy to service and operate.

When paired with the Cochran's Synergy or Eclipse boiler management systems, Equinox and Ultranox combustion equipment provide an exceptional proposition, reflecting Cochran inhouse development and know how.

**Cochran's Equinox and Ultranox burners offer the following key features:**

- Suitable for both gaseous fuels and dual oil/gas firing.
- Delivers efficient fuel combustion and low NO<sub>x</sub> emissions throughout the firing range.
- Provides direct drive to all fuel and air valves via independent servo motors. Variable speed drive options are available.
- Digital combustion control as standard.
- Suitable for operation and control using modern boiler management systems, such as Cochran's Synergy and Eclipse technology.
- Ideal for a broad spectrum of furnace applications including kilns and dryers as well as a wide variety of industrial steam and hot water boilers.
- To obtain MCPD compliance, the Equinox burner is capable of achieving NO<sub>x</sub> emissions less than 100mg/Nm<sup>3</sup> when firing gas and 200mg/Nm<sup>3</sup> when firing oil.
- For lower NO<sub>x</sub> applications, with the introduction of flue gas recirculation (FGR), the Ultranox burner is capable of achieving NO<sub>x</sub> emissions of 30mg/Nm<sup>3</sup> whilst firing natural gas.



**Equinox and Ultranox Gas and Dual Fired Burners**

Boiler Outputs	kg/hr	5600	6000	6300	6800	7260	7710	8170	8620	9070	10210	11340	13610	15880	
<b>Boiler Frame Size</b>		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
Turndown Gas Firing (STD)			4.0:1	4.0:1	4.0:1	4.0:1	4.0:1	4.0:1	4.5:1	4.5:1	4.5:1	4.5:1	5.0:1	5.0:1	5.0:1
Turndown Gas Firing (VSD)			5.0:1	5.5:1	5.0:1	5.0:1	6.0:1	6.0:1	6.0:1	6.0:1	6.0:1	6.5:1	6.5:1	6.5:1	7.0:1
Turndown Oil Firing (STD)			3.7:1	4.0:1	3.7:1	4.0:1	3.8:1	3.7:1	3.9:1	3.7:1	3.9:1	4.0:1	3.8:1	4.0:1	4.0:1
Typical Noise Level - dBa 1m from Burner			77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78	77/78

**Options:** Remote monitoring and data logging - accessible via Internet; O<sub>2</sub> Trim; Exhaust Gas Monitoring; and Integral Gas Leak testing.





# Boiler Management



The result of extensive research and development, Cochran's leading edge management technology takes all the boiler and combustion control functions and integrates them seamlessly into a single cutting edge control centre.

Drawing on its unrivalled boilerhouse know-how, Cochran has developed two advanced boilerhouse management systems, Eclipse and Synergy. Both systems are based on a simple, intuitive touchscreen interface, combining ease of use with an extensive array of monitoring and control tools that make efficient operation of your boiler and its ancillary equipment quick, simple and reliable.

Eclipse is the next generation of standard boiler control. The 7 inch 'push button' touchscreen interface boasts a wide variety of on-screen controls, status indicators and a broad spectrum of optional monitoring extras. All of this, with future-proof expandability too!

Very much Cochran's flagship system, Synergy offers an even more comprehensive package of controls, status indicators and monitoring as standard. Based around a high resolution toughened glass 10.1 inch touchscreen with maximum expandability, Synergy also offers extensive remote operation capability as well as the ability to operate multiple boilers from the same unit.

## Benefits of Cochran Boiler Management Systems

- **FULL Integration:** Connectivity doesn't stop at the boiler panel; our systems enable external equipment, and in the case of Synergy even multiple boilers, to be networked into a single highly effective, easy to operate system using industry standard protocols.
- **Optimised Schedule Control:** Reduce energy consumption and boilerhouse manning by utilising the flexible setpoint control profiles. Up to four different setpoints per day can then be allocated to each day of the week.
- **Optimised Plant Loading:** Sequencing and integration of all equipment.
- **Real-time Access:** Local or remote monitoring and optimisation of plant settings, with instant access to current reports and trends.
- **Boilerhouse and Process Improvements:** Reporting and trending functions enable quick, accurate analysis. Costs and efficiency can then be evaluated and managed.
- **Less Downtime:** Fault logging quickly identifies the causes of any problem, cutting downtime.
- **Pre-emptive Alarms:** Monitoring functions enable users to set pre-emptive alarms to address minor issues before they become serious problems.



Synergy is Cochran's proven flagship boiler management system. The advanced unit is based on a 24 V DC powered 10.1" TFT 16:9, 16 million colour high resolution toughened glass touchscreen. Substantial built-in memory capacity, with expansion capability helps ensure Synergy is secure, reliable, expandable and future-proof.

There are 32x Digital Inputs and 32x Digital Outputs, plus 12 x Analogue Inputs, with potential to expand both inputs and outputs. Synergy also features 3x independent ethernet connections, 2x independent USB ports, an SD memory card slot and two plug-in modules for future proof system expansion.

Comprehensive communications options include RS232/485, Ethercat, Modbus and Modbus TCP as standard, with options for BACnet, Profibus, Profinet, EthernetIP, Canbus (amongst others) providing maximum connectivity and flexibility.

#### Touchscreen Controls

Burner Control
Feed Pump Selection and Control
Gas/Oil Fuel Selection
Timed Bottom Blowdown
TDS Level Control
Firing Rate Control
Water Level Control
Pressure Setpoint
Analogue Sensor Calibration/Scaling
30 day Historical Trending, exportable via USB, SD, network or email
30 day Historical Alarms, exportable via USB, SD, network, alarm notification can also be emailed when triggered
Setpoint Scheduler

#### Remote Access and Interrogation

Synergy can be utilised as a secure VPN Tunnel Gateway via Corvina Cloud, providing remote access to all equipment within the selected Subnet and making it ideal for remote monitoring, diagnostics and maintenance.

The screen can also be shared locally using Windows' Remote Desktop or VNC.

Synergy has a full OPC UA server and client built-in, providing easy two way access to the plant's SCADA systems and IOT Cloud systems.

A web server is built into the unit, enabling each screen to be accessed as an HTML5 web page.

Finally and importantly, the entire system is based on a secure, robust Linux OS and Real Time Kernel software, making it immune to MS Windows-based virus and security attacks.

#### Status Indicators, if sensors fitted

Fire Detection	
Excess Pressure	
High Water	
Low Water	First, Second and Third
Burner Fault	
Boiler Lockout	
FD Fan	Running or Tripped
Feed Pump One or Two	Running or Tripped
Oil Pump	Running or Tripped
Intermittent Bottom Blowdown	
TDS Level	

#### Boiler Component Monitoring

Integral Level Control
High Integrity Level Limiters
Variable Speed Feed Pump(s) and FD Fans
BG01 Alarm Panel Interface
4-20 mA Water Level Retransmission
4-20 mA TDS Level Retransmission
High TDS Level Alarm
Hotwell Level Control, with network feedback
On-Boiler Sequence Control of two or more boilers
Header Pressure Sequence Control of two or more boilers
Independent online and standby control setpoints for holding standby boilers at lower set point. The multi-boiler system will intelligently bring on Boiler closest to set point.
Sequencing operation can be adjusted from any boiler, meaning that no 'Master or Supervisor' is required.

#### Boiler Components Monitoring, optional extras

Gas Meter interface, Oil Meter interface, Water Meter interface, Economiser Water Inlet and Outlet Temperature, Economiser Gas Inlet and Outlet Temperature.
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Developed as a sister system to the advanced Synergy unit, the Eclipse system is based on a 24 V DC powered 7" TFT 16:9, 64k colour touchscreen, with one ethernet connection and a USB port.

Eclipse features 16x Digital Inputs and 14x Digital Outputs, plus 4x Analogue Inputs and 4x Analogue Outputs, with potential to expand both inputs and outputs. Substantial built-in memory, with expansion capability, helps to ensure Eclipse is secure, reliable, expandable and future-proof.

Comms are based on a proven industrial Ethernet backbone, with a standard interface comprising RS232/485 and Modbus TCP/Profinet, with optional BACnet, Modbus Serial etc.

#### Touchscreen Controls

Burner Control
Feed Pump Control
Feed Pump Selection
Fuel Selection
Timed Bottom Blowdown

#### Status Indicators, if sensors fitted

Fire Detection	
Excess Pressure	
High Water	
Low Water	First, Second and Third
Burner Fault	
Boiler Lockout	
FD Fan	
Feed Pump One or Two	
Oil Pump	
Intermittent Bottom Blowdown	

#### Boiler Component Monitoring

Standard Integrity Level	Control and Limiters
Hotwell Level Control with network feedback	
On-boiler Lead/Lag Control of two or more boilers	

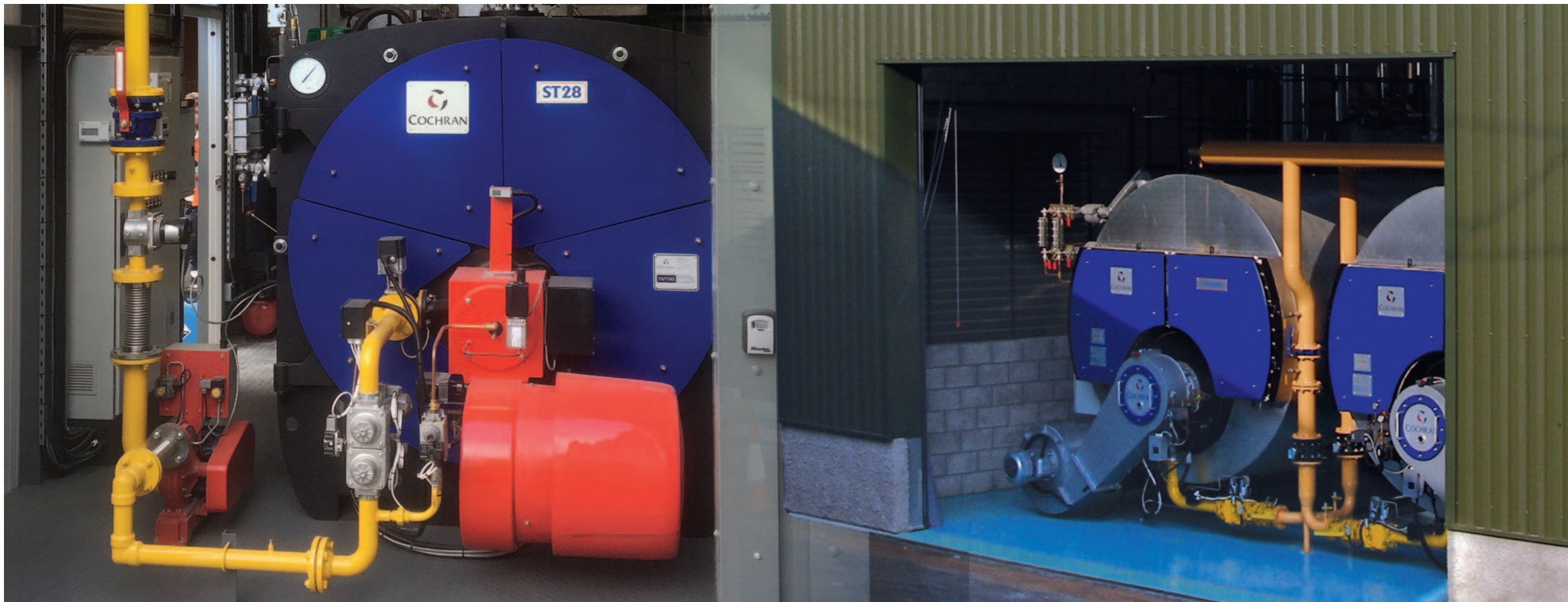
#### Boiler Components Monitoring, optional extras

Header Pressure Lead/Lag Control of two or more boilers, High Integrity Level Limiters, Variable Speed FD Fan, Variable Speed Feed Pump(s), BG01 Alarm Panel Interface, Economiser Water Inlet and Outlet Temperature, Economiser Gas Inlet and Outlet Temperature, 4-20 mA Water Level Retransmission, 4-20 mA TDS Level Retransmission, High TDS Level alarm, other boilerhouse component monitors.





# Packaged Boilerhouses



**Cochran's packaged boilerhouse solutions draw on the highest standards of design, unrivalled experience and manufacturing expertise. Plant rooms are built to order and can be tailored to meet your requirements.** A packaged boilerhouse solution significantly reduces work on site and therefore the traffic of construction workers and associated deliveries. Depending on your location, the lack of noisy construction may be a significant advantage.

Whilst Cochran's turnkey capabilities mean that we can deliver almost any boilerhouse structure, constructed in virtually any suitable material, most frequently the Company utilises three standard designs that combine speed of delivery and flexibility with impressive cost efficiency.

Containerised boilerhouses are an excellent option for smaller output boilers. Typically housing the MCPD-compliant ST28 development of our world-famous Wee Chieftain, this is very much the go-to choice for extremely rapid 'plug'n'play' installation and portability. Delivered complete on a trailer, Cochran containerised units can be dropped or craned into the narrowest of spaces, providing a self-contained unit that can easily be relocated if required. Used extensively by Cochran in our popular boiler hire service, many clients initially hire a unit and find it so suitable that they go on to purchase it.

Based around a robust steel panel kit construction, our prefabricated units are delivered to site as a series of walls and a roof that can be rapidly built on a suitable slab to provide a compact, good looking permanent boilerhouse in minimal time.

Like any steel framed industrial unit, Cochran portal frame boilerhouses can be constructed to almost any size and design. Often utilised for applications requiring larger steam or hot water production, the Company has delivered units to house two, three or even four boilers, along with fuel storage and associated plant for a wide range of healthcare, manufacturing and processing sites.

Needless to say, whichever packaged boilerhouse you choose, it will comply with all relevant regulations and will contain include the boiler(s) and all necessary ancillary equipment to meet your requirements.

**Containerised:** Secure and weatherproof, Cochran's containerised boilerhouses are a compact and portable solution when a smaller boiler is required. Supplied with all the equipment required for easy connection and operation, they are 'plug and play', making site installation fast and trouble-free.



**Prefabricated:** We design our premium quality, prefabricated boilerhouses to be as compact as possible, minimising the footprint space required on site. Sections are pre-assembled off-site, cutting on-site construction time and minimising disruption to your facility.

**Portal Frame:** A portal frame boilerhouse is bespoke and has no size limit, making it a good solution for bigger boilers and when more than one boiler needs to be accommodated. They are largely assembled off-site, minimising on-site construction time and disruption to your operations.



## Turnkey Installations

Cochran specialises in Turnkey Design, Build and Maintenance packages for steam and hot water boilers. Our complete installation packages place energy efficiency at the forefront of boiler design, installation of equipment and provision of ancillaries. Drawing on the Company's unrivalled expertise from more than a hundred years at the forefront of the boiler industry, this comprehensive service encompasses specification development, manufacture, installation and integration into an existing boilerhouse.

Working in a close, supportive relationship with the client, we develop a project from its initial concept through to turnkey delivery. Manufacturing at our facility in Scotland is followed by on-site plant commissioning, supervision, training and handover delivered entirely by Cochran.

The complete Cochran offering meets with all aspects of the Construction Design and Management (CDM) regulations and can be tailored to include a broad spectrum of site supervision and operator training programmes, as well as full spares, service and planned maintenance solutions. This comprehensive installation package is backed up by in-depth technical support throughout the long operational life of a Cochran boiler and its ancillary equipment.

Cochran's benchmark standards of planning, seamless time management and worry-free site delivery, combined with the industry-leading performance of our boilers, ensures that every Cochran turnkey installation meets and exceeds customer expectations.







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