

## Key Plant supplied in the Coalmaster Package

### ● Combustion Automation/Optimisation standard with every Coalmaster:

- Installed locally
- Full PLC Controls
- Steam Pressure Control
- Boiler Efficiency
- Reduce Electrical Consumption
- Boiler Preservation and Safety
- Reduced Environmental Impact
- Elimination of Human Intervention
- Make every grain of coal count

Combustion automation aims at optimising the cost of raising steam. Reduced coal usage of 12 % is common with this technology, and reductions in excess of 20 % have been recorded.

### ● Mk 4 Chainrate stoker is supplied standard with:

- Stoker Frame, Front Shaft, Sprockets and Roller
- Chainrate
- Air Dampers
- Coal Hopper supplied complete with Guillotine Door, Set Radial Doors and Lifting Mechanism
- Riddling Hoppers
- Ignition Arch
- Side Seals and Carbofrax Blocks
- Forced Draft Fan complete with Housing and Motor
- AC Variable Speed Drive Unit
- Manual Grate Movement Handle
- One set of Stoker Trolleys per Stoker

### ● The Optiflame Automation system has additional/optional features:

- Autobed Guillotine Automation
- Oxygen Trim Control
- Stack Temperature Sensor
- Feed Water Temperature Sensor
- Feed Water Flowmeter
- Coal Level Switch
- Leveltech Level Switch
- Vortex type Steam Flow Meter
- Two Cyclo Stoker Gear Drives

### ● Optional Additional Services:

- Water Treatment Package
- Turnkey Installation
- Boilerhouse Equipment
- Steam and Condensate Lines
- Service/Maintenance Contracts
- Government Statutory Inspections
- Full Spares Support



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**COCHRAN**  
Approved Representative



# Coalmaster Boilers

  
**COCHRAN**  
Energy Solutions Worldwide



# Coalmaster Boilers

Established in 1878, Cochran were the original inventor of the revolutionary horizontal firetube boiler. The Thompson-Cochran group initially brought modern package boiler technology to South Africa and then, as part of the Rolls-Royce group, became fully established as an international leader in boilermaking. Since regaining its independence as a company, Cochran has continued to develop its business worldwide and is now proud to re-enter the market in association with respected South African heat technology company Steam Generation Africa.

Building on over 135 years of boilermaking innovation, the Coalmaster offers Cochran's famous reliability and quality in a highly efficient coal-fired package. Every Coalmaster is built to order to match the exact requirements of each client's application.

The Coalmaster is a three-pass wetback design, with the furnace and tube passes configured to optimise heat transfer and boiler efficiency. Nett efficiencies of 84% are typically achievable on coal.

Coalmasters are available in single furnace for outputs typically from 2 to 10 tonnes per hour. Operating pressures range from 10 to 18 bar, but are available up to 20 bar.

Built in Scotland, at Cochran's ISO 9001 accredited factory, every Coalmaster is designed and third party inspected to the internationally recognised EN12953 boiler design code. Proven design and robust construction help ensure that Coalmaster boilers deliver Cochran's famous reliability and long working lives.

The Coalmaster boiler is supplied to South Africa as a complete boiler pressure vessel with Bureau Veritas inspection certification. This Cochran package includes standpipes, access doors and lifting lugs, ash drop chute, base frame/cradle supports, front and rear smokebox casings with hinged access doors, front and rear heat screen plates, flanged flue gas outlet arranged for vertical gas flow, 100mm mineral wool insulation and Stucco Aluminum cladding, platform and access ladder, observation ports, reflex type water gauges and water level probes as standard.

Steam Generation then supplies the MK4 chain grate stoker, grit arrestor, trolleys, ID & FD fans, ducting, sootblowers, feedwater pumps, control panel, Optiflame automated control, automatic TDS controller system and all necessary valves and fittings required to complete the package in accordance with EN12953 code and the demands of the local market.

**Output (F&A 100°C): 2000 kg/hr to 10000 kg/hr.**  
**Standard Working Pressure: 10 Bar and 18 Bar, with design options up to 20 Bar.**

F&A 100°C (212°F)	kg/h	2000	3200	5000	8000	10000	8000	10000
Operating Pressure	Bar g	10	10	10	10	10	18	18
Dimensions	A	mm	3950	4650	5200	6060	6480	6480
	B	mm	3373	3667	4143	4535	4737	4737
	C	mm	1146	1293	1531	1727	1828	1727
	D	mm	4122	4416	4892	5284	5486	5284
	E	mm	2877	3171	3647	4039	4241	4039
Boiler Tube Withdrawal	F	mm	3200	3900	4000	4860	5280	4860
Recommended Chimney Dia.	mm	355	440	550	700	785	715	810
Safety Valve Inlet/Outlet	mm	32/50	40/65	50/80	65/100	65/100	50/80	50/80
Stop Valve Dia.	mm	65	80	100	125	150	100	125
Blow Down Valve Dia.	mm	25	25	50	50	50	50	50
Feed Inlet Valve Dia.	mm	25	25	40	50	50	50	50
Boiler Weight-Empty	Tonnes	9.70	12.9	19.5	29.3	32.8	34.2	38.5
Weight to N.W.L.	Tonnes	15.9	23.9	34.6	52.2	60.0	56.5	65.1
Weight full of Water	Tonnes	16.7	25.1	36.4	55.0	63.4	59.4	68.5

