

Powermaster[®]

TF



Twin Furnace

**Boiler manufacturer
since 1971**

THE GRESHAM'S STORY

Gresham's started boiler manufacturing in 1971 in an association with Karachi Shipyard & Engineering Works Limited as a pioneering project for Pakistan. To date, we have manufactured over 1200 boilers of various designs for customers ranging from food processors to power plant boilers. We have been the first in Co-Generation and EPC Projects. Notable installations include the Finance & Trade Centre at Karachi, The MCB Towers, the SNGPL Head Office Building and many others.

Gresham's Boilers exported to France, Italy, Algeria, Iraq, UAE, Saudi Arabia, Sri Lanka, Bangladesh, Myanmar and Afghanistan are a testimony of our quality.

Quality Inspiration.



William Edwards Deming was an American engineer, statistician, professor, author, lecturer, Quality Expert. Mr. Deming inspired Toyota to quality manufacture in 1954.

Boilers of Firetube, Watertube, Forced circulation Steam Generators, Waste Heat Recovery Units, Power plant boilers, Themic oil Boilers, Hot air generators, RO & Water Treatment Plants, Heat Exchangers, Equipment for oil and gas industries, Portable accomodation systems, Filtration Plants are manufactured under licence agreements from world renowned brands such as Powermaster, Keeler, Wanson, Ygnis, Alpha boilers..... to give you a highly engineered, safe & efficient products built to ASME Standards and Inspected by Germanischer Lloyds, TUV, SGS....

In 1982 we originated the idea of energy conservation and were behind the Boilers in Pakistan study done by the Ministry of Production which study led to the creation of ENERCON.

Gresham's -- dedicated to boiler manufacture since 1971, -- commitment to energy conservation, -- commitment to deliver a safe reliable product.



ASME Codes used for manufacturing all Boilers.



Powermaster twin furnace boilers for industrial steam are high quality, reliable boilers built strictly in accordance with the requirements of the ASME Code Section I.

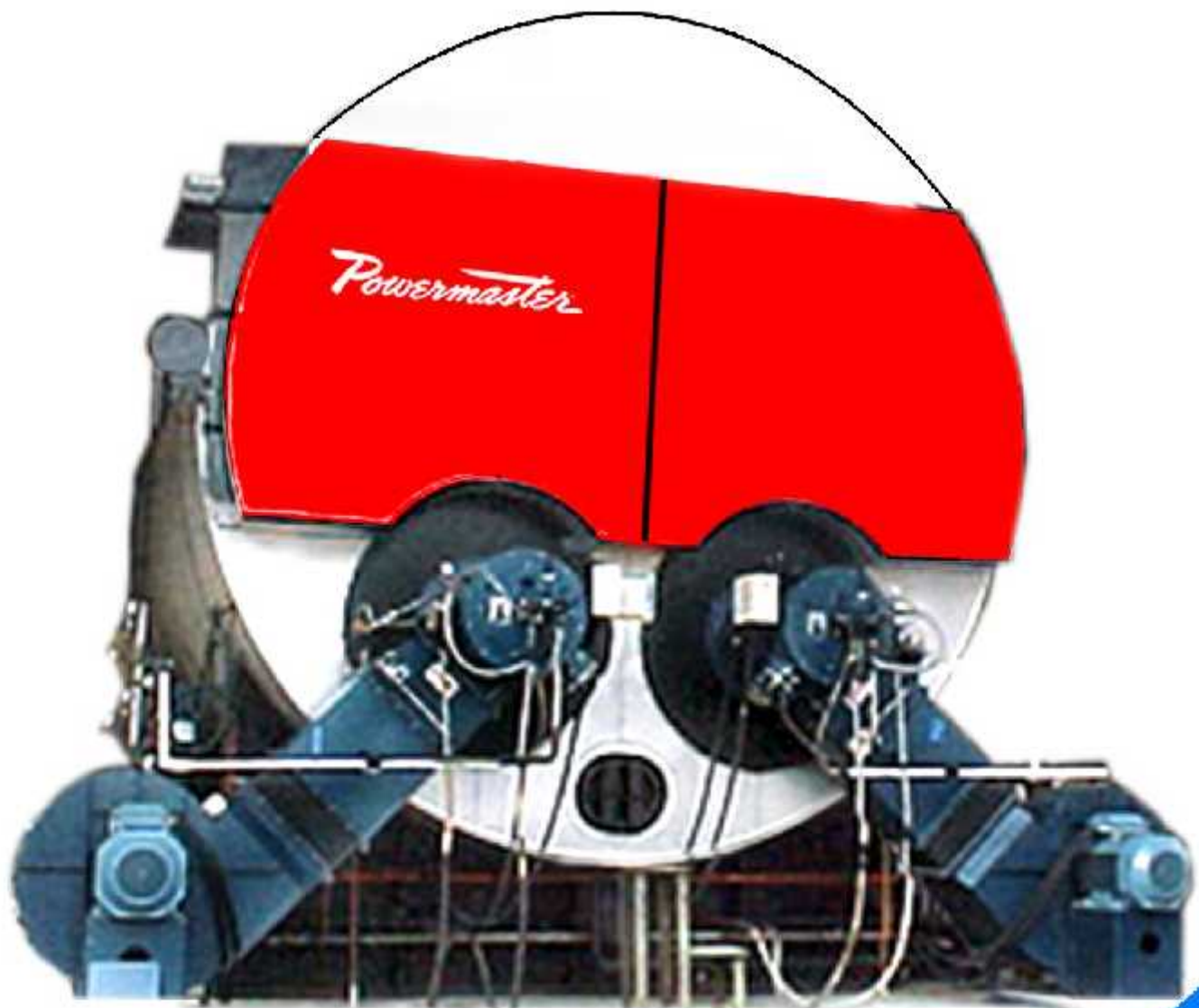
Powermaster, the world's first packaged Boiler design was licensed to Gresham's for manufacturing in Pakistan in 1970 and a large number of boilers were built and are still in operation at many locations in Pakistan.

With a view to fully complement the single furnace design, Gresham sought technology from International Combustion, Slovenia who designed a range of Twin Furnace Firetube Boilers with data and working experience of many years operational experience coupled with a record of highly efficient performance and reliability.

The Powermaster Twin Furnace design has been checked by powerful ANSYS Stress Analysis nodes under stressful operating conditions and made safe and reliable with a calculated life cycle of 250,000 hours.

Various burner options from internationally reputed manufacturers provide very high turn down ratios and permits maintenance work to be carried out on each burner in turn whilst boiler output is maintained at up to 50% of normal rated output on the other furnace.

To meet process requirements, superheaters can easily be incorporated at the rear end of the boilers.



Powermaster Twin Furnace Specifications

Steam and Hot Water Boiler (Gas Type)						
Model		Unit	PTF-1000	PTF-1400	PTF-1600	PTF-1800
Boiler Specification	Rated Evaporation:	kg/hr	10,000	14,000	16,000	18,000
	Quantity of Heat	kW/tb/hr	7750	10,880	12,450	13,950
	Maximum Working Pressure	bar (g)	20	20	20	20
	Efficiency on HCV with Economiser (Gas)	%	92	91.5	90	92
	Heating Surface	m ²	141	191	215	248
	Weight	Ton	31	42	44	46
	Operating Weight	Ton	54	66	72	76
	Combustion Control System	PLC	Yes	Yes	Yes	Yes
	Gas Consumption (without Eco)	Nm ³ /hr	697	972	1130	1244
Model		Unit	PTF-2000	PTF-2500		
Boiler Specification	Rated Evaporation	kg/hr	20,000	25,000		
	Quantity of Heat	kW/hr	15,550	19,440		
	Maximum Working Pressure	bar (g)	20	20		
	Efficiency on HCV with Economiser	%	91	92.5		
	Heating Surface	m ²	288	355		
	Weight	Ton	45	56		
	Operating Weight	Ton	72	86		
	Combustion Control System	PLC	Yes	Yes		
	Control System Gas Consumption	Nm ³ /hr	1,390	1,660		
Model		Unit	PTF-3000	PTF-4000		
Boiler Specification	Rated Evaporation	kg/hr	30,000	40,000		
	Quantity of Heat	kW/tb/hr	23350	31100		
	Maximum Working Pressure	bar (g)	20	20		
	Efficiency on HCV with Economiser	%	92	92.5		
	Heating Surface	m ²	440	572		
	Weight	Ton	66	84		
	Operating Weight	Ton	99	122		
	Combustion Control System	PLC	Yes	Yes		
	Control System Gas Consumption	Nm ³ /hr	2095	2825		



The Powermaster TF: a conventional Three Pass full wetback boiler design.

Construction Code:

The Powermaster TF boilers are designed and constructed in accordance with ASME Code Section I and are inspected by Internationally reputed third party Inspectors such as SGS, Germanischer Lloyds.

Construction

Heavy Duty Construction with ASTM 516-70 Steel Plate construction on ASME Section I with 100% Radiographic Examination of all circumferential and Longitudinal welds.

Tube sheets, nozzles are inspected with DPT, Ultrasonic examination.

Two fully corrugated furnaces with wetback reversal chambers ensure against operating thermal stresses. All Boilers are stress Relieved at 600 C after welding. After manufacturing the Powermaster TF is hydrostatically tested at 1.5 times design pressure in accordance with ASME Code requirements .

A large manhole at the top and four more inspection openings on the shell sides provide cleaning access for operators.

Firing System

Powermaster TF Boilers are equipped with burners for Natural gas, LPG or Heavy Furnace oil from reputed International manufacturers with state of the art PLC controls.

All tubes are of Grade SA 106-B and rolled with seal welding to the tube sheet ensuring trouble free operation for years.

**Sizes 10,000 to 40,000 kg/hr.
Pressures upto 20 bar (g)**

