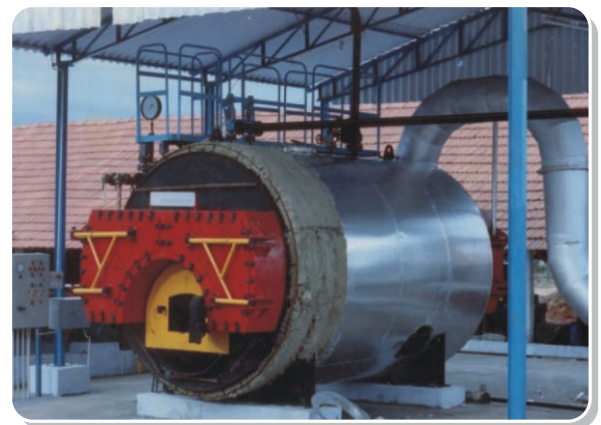
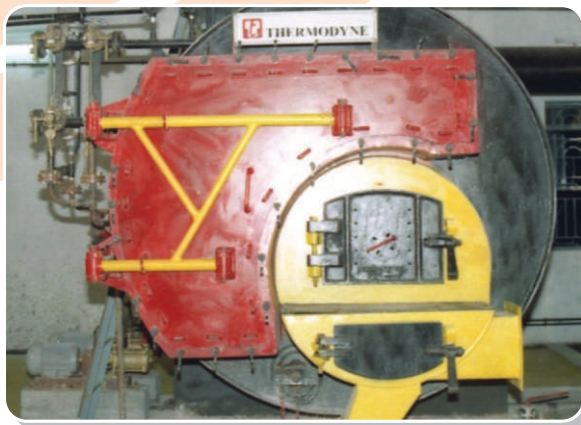




**THERMODYNE
INDUSTRIAL PRODUCTS**

*Excelling
Steaming
Solutions*

SOLID FUEL FIRED PACKAGED BOILERS



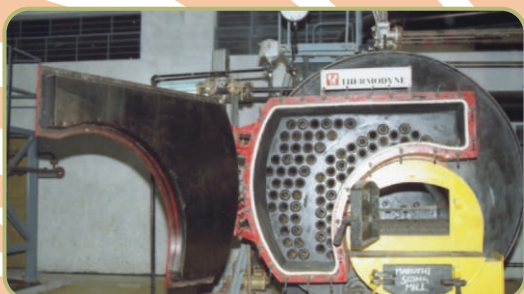
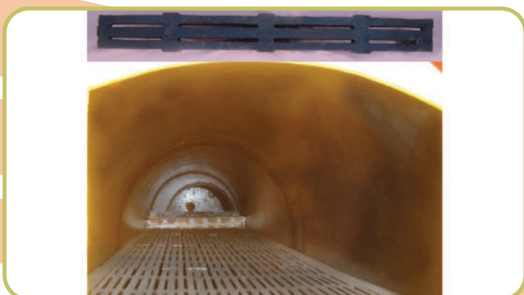
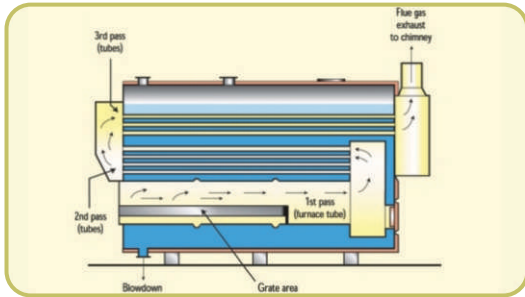
COST EFFECTIVE STEAM GENERATION WITH

HIGH RELIABILITY	STATE-OF-THE-ART TECHNOLOGY
MAXIMUM EFFICIENCY	USER SPECIFIC EXECUTION



THERMODYNE INDUSTRIAL PRODUCTS

SOLID FUEL FIRED BOILER



Design & construction

- Three Pass Full Wet Back design with **Nil** refractory rear end to give highest thermal efficiency.
- Computer rating and **optimised** design to provide maximum steam generation **per unit heating surface**.
- Conservatively sized **grate area** for effective spread of fuel to promote good combustion.
- Manufactured to highest **quality standards**, meeting latest **IBR**, (or International codes like BS, ASME)
- Flue tube provided with Bowling Hoops/stiffner rings to take care of expansion and to reduce thermal stresses.
- Adequately sized ID fan to meet the draft losses and maintain furnace draft.
- Internal separator ensures good quality, dry steam.
- Unique grate bar design to select air openings to suit fuel size and quality.
- Ergonomically designed Fire doors and ash discharge openings to facilitate ease of fuel feeding and ash removal.
- Stringent quality standards for materials and manufacture to give high durability of components.
- Sound selection and acceptance norms for all accessories including pumps, motors, fans, valves etc. to ensure smooth and trouble free operation.
- Smooth hinged door mechanism for smoke boxes for easy tube cleaning.
- **NIL** Rear End refractory maintenance due to full wet back design.
- Engineering, selection and manufacture of components to provide maximum safety, high efficiency, smooth operation and easy, low

Safety & controls

- Level controller operated feed pump. ON-OFF to automatically maintain water level.
- Pressure switch Interlock with alarm when the steam pressure rises above the set value.
- Completely pre-wired, factory tested control panel with starters, contractors, rotary switches, lamp, hooter.
- Two Level gauges with protector to meet the safety regulations.
- Two safety valves adequately sized to ensure boiler safety.
- One large dial steam pressure gauge, easily readable from distance..
- Two fusible plugs provide additional safety and redundancy.



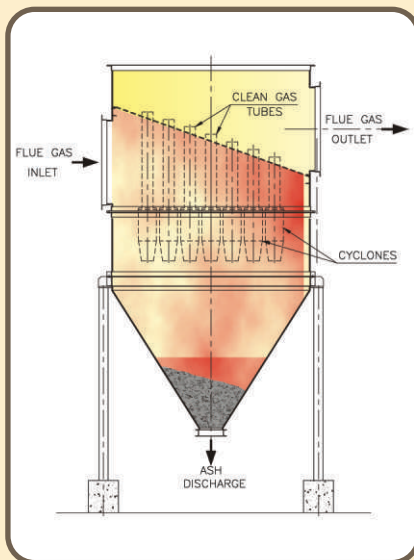
THERMODYNE INDUSTRIAL PRODUCTS

MODEL	MCR F&A 1000C (kg/hr.)	DIMENSIONS				STEAM BRANCH (NB)	WATER INLET (NB)	BLOW DOWN (NB)	DUCT CONN (Dia MM)	FDN. LOAD TONS	ELECT CONN. KW	NO. OF FURNACES
		LENGTH (A) mm	WIDTH (B) mm	HEIGHT (C) mm	*S mm							
TSF-110	1000	5600	2200	3000	4200	50	25	25	300	16	5.9	1
TSF-115	1500	6000	2750	3450	4300	50	40	40	300	25	9.2	1
TSF-120	2000	6300	3200	3850	4400	80	40	40	300	28	11.2	1
TSF-125	2500	6500	3300	4150	4500	80	40	40	350	33	11.2	1
TSF-230	3000	6800	3400	4300	4600	100	40	40	460	44	14.8	2
TSF-240	4000	6900	4000	4500	4700	100	40	40	680	55	18.5	2
TSF-250	5000	7000	4350	4600	4900	150	40	50	760	61.5	26.0	2

Data given for 10.5 kg/sq.cm(g) pressure rating. Subject to change with continual design Improvement. *S = Free distance in front of Boiler for tube cleaning
Two Pass Dry Back Models available on request

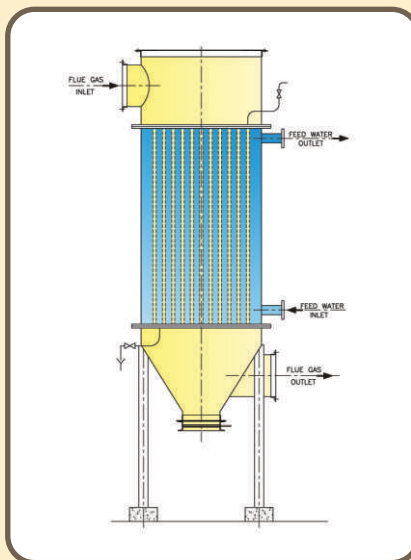
OPTIONAL AUZILIARIES

Mechanical dust collector



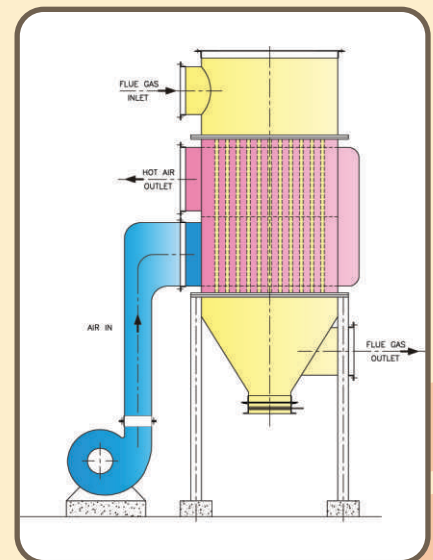
- Comprises multiclones with distinctive aerofoil section vanes, clean gas tubes, casing & hooper.
- High collection efficiency in mechanical type dust separation.
- Reduced draft loss due to aerofoil sections giving low ID fan Power.
- Reduced maintenance due to wear-resistant material of cyclones.
- Essential for many existing and new Installations to meet air pollution control norms.

Feed water heater



- Comprises of shell and tube non-IBR heat exchanger located downstream of boiler.
- Increases thermal efficiency with extra heat recovery from flue gases.
- Quick payback
- Can be retrofitted after reviewing existing ID fan.

Air preheater



- Comprises of Multipass tubular air preheater, FD fan with specially designed interconnecting duct work and supports.
- Promotes combustion, especially with high moisture fuels.
- Increases thermal efficiency due to additional heat recovery from flue gases.
- Boiler operates under balanced draft. FD fan provides, Controlled excess air, giving further reduction in fuel consumption.
- Quick pay back

THERMODYNE.... the one-stop-shop... at your service.
To give you comprehensive, top quality, most economic and efficient Steam Generation solutions

HUSK FIRED PACKAGED BOILER



DESIGN & CONSTRUCTION

- ❖ Three Pass Full Wet Back design with **NIL** refractory rear end to give highest thermal efficiency.
- ❖ **Optimised** design to provide maximum steam generation **per unit heating surface**.
- ❖ Conservatively sized **grate area** for effective spread of fuel to promote good combustion.
- ❖ Manufactured to highest **quality standards**, meeting latest **IBR** standards (or International codes like BS, ASME).
- ❖ Flue tube provided with Bowling Hoops/Stiffener rings to take care of expansion to reduce thermal stresses.
- ❖ Adequately sized fan to meet the draft losses and maintain furnace draft.
- ❖ Internal separator ensures good quality, dry steam.
- ❖ Unique nozzle design with select air openings to suit fuel size and quality.
- ❖ Ergonomically designed fire doors and ash discharge openings to facilitate ease of fuel feeding and ash removal.
- ❖ Stringent quality standards for materials and manufacturing to give high durability of components.
- ❖ Sound selection and acceptance norms for all accessories including pumps, motors, fans, valves etc. to ensure smooth and trouble free operation for many years.
- ❖ Smooth hinged door mechanism for smoke boxes for easy tube cleaning.
- ❖ **NIL** Rear End refractory maintenance due to full wet back design.
- ❖ Engineering, selection and manufacture of components to provide maximum safety, high efficiency, smooth operation and easy, low maintenance.



THERMODYNE INDUSTRIAL PRODUCTS

HUSK/MULTI FUEL PACKAGED BOILER



Boiler Description

The Pneumatic feed system delivers the fuel from bunker or hopper through a feeder pipe directly to the boiler. The fuel enters the boiler through the top feeding arrangement, which delivers the fuel with swirling and distributes over the specially designed grates. The boiler is a three pass fully wet back design which incorporates two passes of smoke tubes in addition to the furnace.

Salient Features

The Boiler is manufactured on the well established design of THERMODYNE which focused to give highest fuel efficiency there by on high saving on fuel cost.

The Boiler will be compact, economical and efficient with adequate thermal efficiency based on the GCV of fuel.

Manufactured to highest quality standards, meeting latest BR (or international codes like B.S., ASME for exports)

Flue tube provided with bowling hoops/stiffner rings to take care of expansion and to reduce thermal stresses.

Smooth hinged door mechanism for smoke boxes for easy tube cleaning.

NIL Rear End refractory maintenance due to full wet back design.

Fire Bars are specially designed out of heat resistant Cast Iron to give full combustion and long life without expensive maintenance.

Wide variety of fuels can be used such as Coal, Wood, Saw Dust, Wood Chips, Groundnut Husk, and Briquette with minimum modification.



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HUSK FIRED PACKAGED BOILER



COST EFFECTIVE STEAM GENERATION WITH
HIGH RELIABILITY **STATE-OF-THE-ART TECHNOLOGY**
MAXIMUM EFFICIENCY **USER SPECIFIC EXECUTION**

THERMODYNE INDUSTRIAL PRODUCTS

No.18/3, II Floor, Ayodhya Colony, Velachery, Chennai – 600 042.

Ph : 044 – 40055490 / 42054144

E-mail : thermodyneip@thermodyneip.in / thermodynesales.chennai@gmail.com

Web : www.thermodyne.in

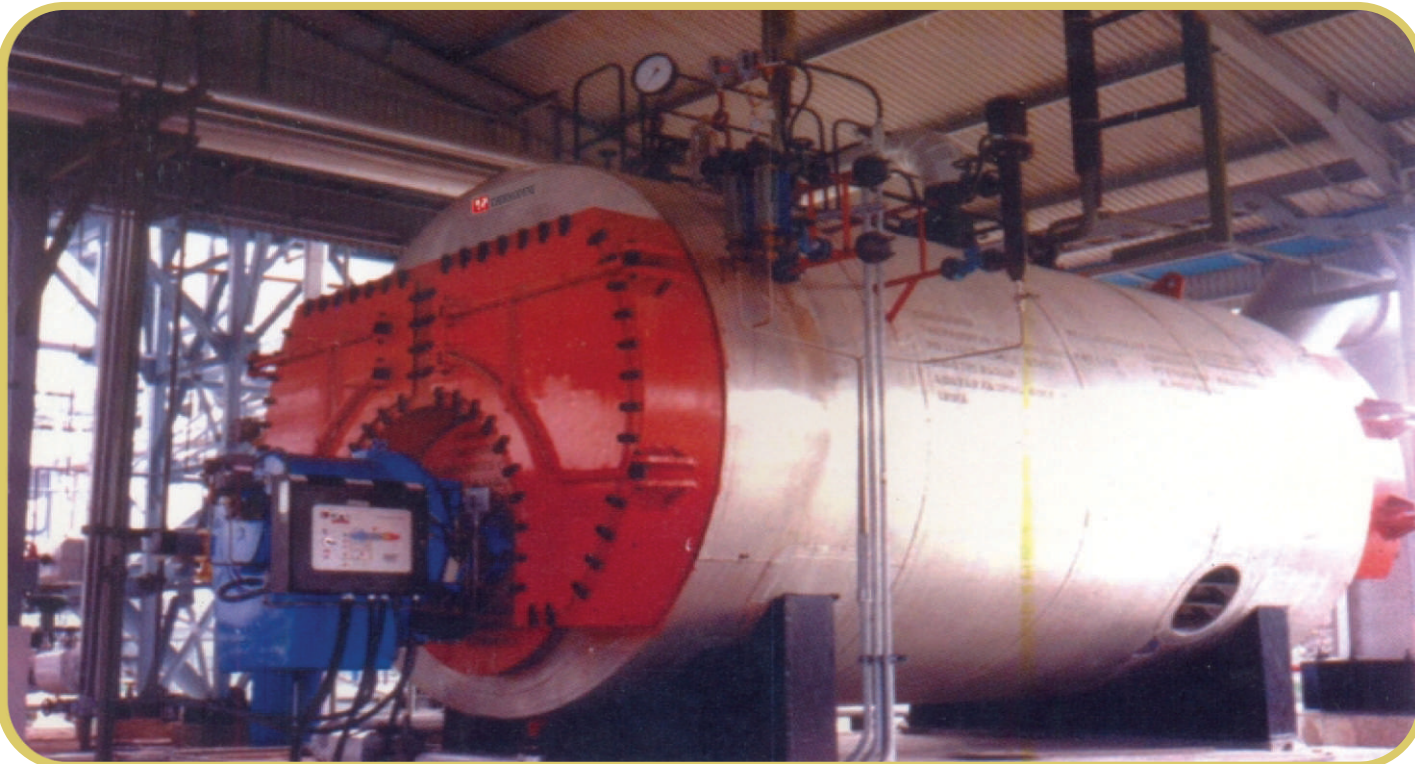
FACTORY

NO. 13, SIDCO INDUSTRIAL ESTATE, INDIRA GANDHI INDUSTRIAL COMPLEX,
RANIPET - 632 406, TAMILNADU.



THERMODYNE INDUSTRIAL PRODUCTS

OIL/GAS FIRED BOILER



Design & construction

- Three pass full wet back design with nil refractory to give highest thermal efficiency.
- Computer rating and optimised design to provide maximise steam generation per unit heating surface.
- Judicious matching of burner and boiler to maximise combustion and steaming performance.
- Manufactured to highest quality standards, meeting latest BR (or international codes like B.S., ASME for exports)
- Flue tube provided with bowling hoops/stiffner rings to take care of expansion and to reduce thermal stresses.
- Safe, efficient and reliable burner with optimum excess air to provide completeness of combustion and low pollution.
- Specific designs to suit individual fuel firing application OIL OR GAS OR COMBINATION DUAL FUEL, with all types of oil (Heavy, medium light) and gas (natural, Biogas, LNG, LPG)
- Suitable internal separator to ensure good quality dry steam.
- Flexible design to incorporate customised features.

Safety & Controls

- Level controller operating feed pump ON-OFF to automatically maintain water level. Additional 'burner trip' at low Water level.
- Burner management system incorporating startup permissives, sequential start, flame monitoring and safety trips.
- Pressure Switch hook-up with alarm and burner trip when the steam pressure tends to rise beyond permissible value.
- Two Nos, Level Gauges and two nos. safety valves to meet safety regulations.
- Completely pre-wired, factory tested control panel assembly for safe and smooth operation.
- Two fusible plugs provide additional protection against very low water level conditions.

Operation & Maintenance

- Stringent quality standards for materials and manufacture to give high durability of components.
- Sound selection and acceptance norms for all accessories, including burner, pumps, motors, fan valves etc. to ensure smooth and trouble free operation.
- Easy access and low maintenance of burner.
- Smooth hinged door mechanism for smoke boxes for easy tube cleaning.
- NIL Rear End refractory maintenance due to full wet back design.
- High turndown ratio to meet wide range of load.
- Liberally sized blow down valve for quick and effective operation
- Engineering, selection and manufacture of components to provide maximum safety, high efficiency, smooth operation and easy, low maintenance.

THERMODYNE.... the one-stop-shop... at your service.
To give you comprehensive, top quality, most economic and efficient Steam Generation solutions

Core Competence

- In-depth expertise in basic Engineering of wide spectrum of steam generators.
- Extensive exposure and deep knowledge in fabrication Technologies.
- Comprehensive understanding of National and International Standards and Practices.
- Project Management skills for Turnkey Operations from concept to commissioning.

Products & Services

- Packaged Smoke Tube Boilers
- Water Tube Boilers
- Composite Boilers with Radiant Water Tube and Convective Smoke Tube.
- Heat Recovery Steam Generators - Water Tube and Smoke Tube
- Small Co-gen Systems.
- Heat Recovery Equipment -Air Preheater, Economisers, Feed Water Heaters
- Boiler Pressure Parts Spares like Superheaters, Economisers, Membrane Waterwalls, Boiler Bank Tubes.
- Pulverized Fuel Firing System.
- Thermic Fluid Heaters.
- Tubular Heat Exchangers.
- Hot Air/Gas Generators.
- Boiler up-gradation, Trouble Shooting.
- Turnkey Execution
- After Sales Service.

Group Companies

- Thermodyne Technologies Private Ltd
- Thermodyne Industrial Products



...Engineering

- Strong know-how and know-why.
- Computer Aided Design and drafting.
- Design optimizations.
- Customised Engineering.



...Manufacturing

- High Standards of tube / plate forming Technologies
- High Quality Welding Techniques



...Quality

- NDT/Hydrostatic Test.
- Third Party Inspection- National/International Agencies.
- Receipt, In-Process and Final Inspection through established Quality Control Procedures.
- Quality Assurance Surveillance.



...Installation

- Site Erection
- Site Management
- Field Quality Control



...Technology Export

- Uniquely positioned as Principal for two leading Boiler Manufacturers in Malaysia for Industrial Boiler Technology.
- Export of Boilers/Boiler Components to World-class Standards.



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