









Smart Heat Recovery Solutions



Panaramic view of Sulphuric Acid Plant with our WH Boiler in Fertibarira, Spain



"From our 'Point of View', true success can be attained when you travel the extramile for the customer satisfaction. Hence our mission is "Improving Customer Business"

Thermal Systems



Thermal Systems (TSPL) is a fast growing ISO 9001 engineering company engaged in Waste Heat Recovery solutions around the world and India. TSPL is accredited with ASME, S, U, R&PP stamps. TSPL has developed wide range of expertise in Heat Recovery and its conversion. Our strong inhouse design, state-of-the-art manufacturing facilities enable us to execute from "concept to commissioning" of a variety of applications.

Thermal Systems was started in the year 1985, and within a span of two decades, has became a global supplier of Waste Heat Recovery Boilers to U.S.A.

Europe, South East Asia, Australia & Africa.

We have the distinction of having installed one of the world's largest WHRS system for 2 x 3500 tpd in India and for 2400 tpd in Europe for Sulphuric Acid Plants.

TSPL specialises in custom made process gas cooling systems for Sulphuric Acid Plant (SAP),

Hydrogen, Methanol Ammonia & Sulphur Recovery Unit (SRU)

We offer optimised and cost effective design solutions for guaranteed satisfaction of the customer.



Sulphuric Acid Plants (SAP)
Sulphur Recovery Units (SRU)
Steam Reformer Plants (H2, Methanol)
Spent Acid Regeneration Unit (SARU)



Sulphuric Acid Plants





Waste Heat Recovery System in operation for 2400 tpd SAP in Spain

Sulphuric Acid Plants - Sulphur based

Fire Tube Boilers **Water Tube Boilers** : External & Internal bypass

Economisers

: Steel Finned Tube

C.I Finned Tube

Superheaters

: Steel Finned Tube

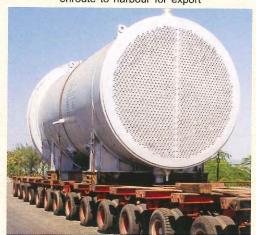
C.I Finned Tube

gas to gas HE

: Radical Flow, Disc & Do nut

Turnkey Solutions along with Trim, Piping, Deaerator, FW Tank, BFW pumps, etc.

Largest Fire Tube Boiler - 168 tons enroute to harbour for export





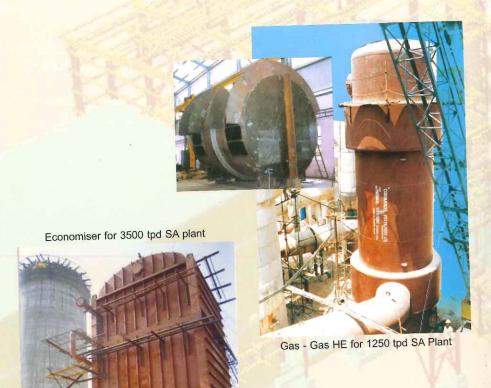
Sulphuric Acid Plants - Met. Gasses

- gas gas Heat Exchangers
- Inter Pass W.H Boiler
- Super Heaters
- **Economisers**

Sulphuric Acid Plants



Water Tube Boiler for 3500 tpd SA Plant



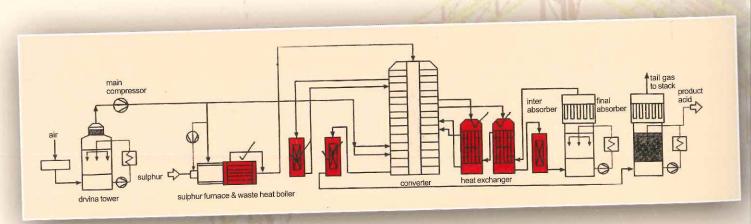
Sulphuric Acid production based on sulphur combustion is an exothermic reaction generating a considerable amount of heat which can be recovered as high-pressure steam which can be converted into electricity.

In the scheme of Heat Recovery, various equipments are used at different stages to recover heat as high pressure - high temp. steam.

A Boiler or Boiler cum SH behind Sulphur Furnace, Super Heater

behind first pass / tray, an Economiser behind third pass and an Economiser behind fourth pass and several other options.

We can offer Steaming Equipment with accessories & STG, as per clients choice / requirements.

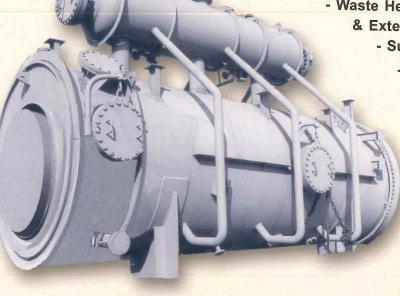




Sulphur Recovery Unit - Clause Process

- Waste Heat Boiler-Single pass or Two pass-Internal & External
 - Sulphur Condensers
 - Superheater cum Boiler for Incinerator

WH Boiler is placed behind Reaction Furnace to cool gasses thereby generating saturated steam.

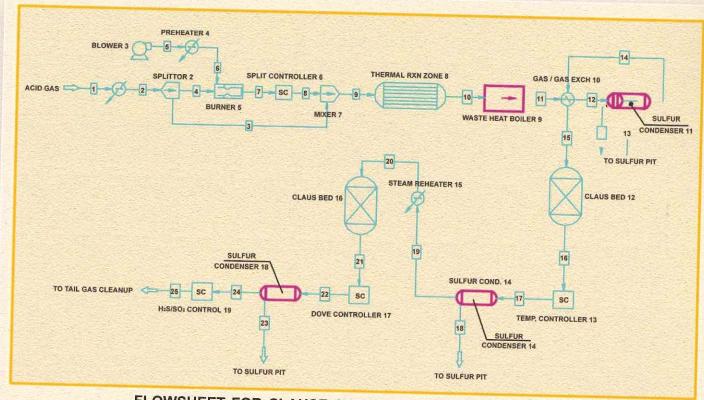


WH Boiler for SRU for BPCL, Mumbai

Sulphur Condensers are used down stream of Clause bed to cool gasses for Sulphur Recovery and as well heat recovery. Sulphur Condensers can be designed and supplied as a stand alone equipment per each Clause bed or multiple equipment for several bed.



WH Boiler 2 pass internal



FLOWSHEET FOR CLAUSE SULFUR RECOVERY UNIT (SRU)

Steam Reformer Plant

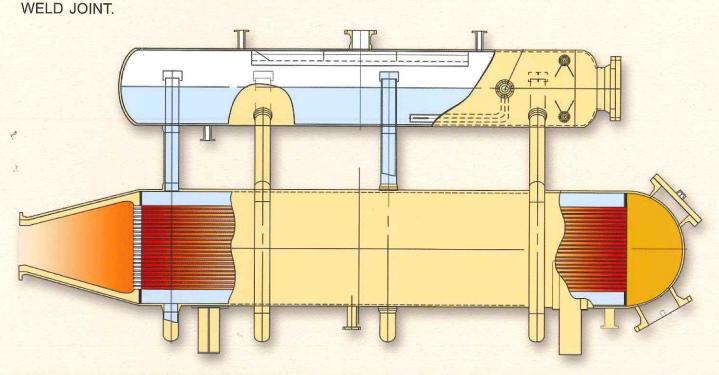
THERMAL

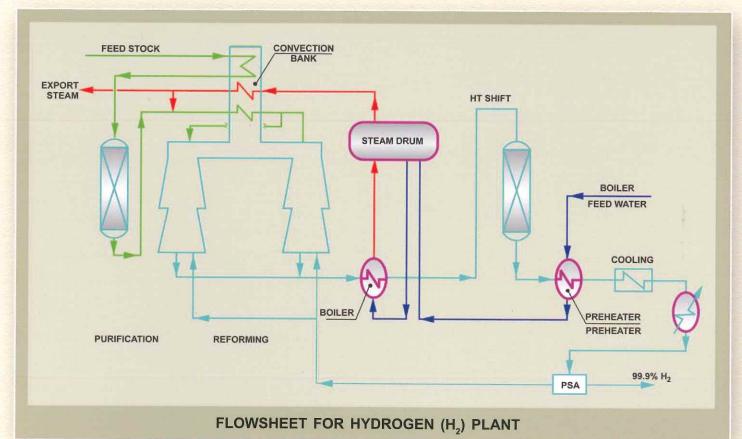
Process Gas Boiler is installed behind Steam Reformer to cool high pressure high temperature process gases thereby generating high pressure saturated steam.

We use GAPFREE WELDING for tube to tube sheet joints to avoid CREVICE CORROSION and to have COOLED

Steam Reformer Plant

Hydrogen, Methanol, Ammonia Process Gas Boiler







Manufacturing Facilities

Dedicated 300,000 sq.ft, fully equipped with state of the art manufacturing facility located at Hyderabad, INDIA.

Thermal Systems Worldwide

Our Clientele include some of the best known companies in India, Australia, Bangladesh, Bulgaria, China, DR of Congo, Egypt, Germany, Indonesia, Iran, Jordon, Kazakstan, Kenya, Kuwait, Namibia, Netherlands, Nigeria, Oman, Peru, Philippines, Russia, Saudi, South Africa, Spain, Srilanka, Syria, Thailand, Tunisia, Turkey, United Kingdom, U.S.A, Zambia.

TSPL - Range of Products

AFBC Boilers

Carbon Black : CO gas Boilers, Reactor

W.H. Boilers, Quench Boilers

Cement : Waste Heat Boilers & WHRPP

Coke Dry Cooling : Waste Heat Boilers
 Coke Oven Batteries : Waste Heat Boilers

Ferro Alloys : WH Boilers, Tail Gas Boilers

Gasification : Waste Heat Boilers

 Steam Reformer : PG Boiler (H2 Mehanol)

Incinerators / TGTU : WH Boiler, SH, Inc.pkg.

Natural Gas : TWHRU

Nitric Acid : Waste Heat Boilers
 Non Ferrous Metals : Waste Heat Boilers

(Zn, Cu, Pb, Pirites)

❖ Petr Coke calcinations : Waste Heat Boilers

❖ Pig Iron
 ∴ BF gas Boilers

Power Plants : upto 50 MW on WH Recovery and / or Solid Fuel

SRU : WH Boiler, Sulphur Condensers

Reactors, Furnaces.

Sulphuric Acid Plant: Process Gas Boilers, gas-gas HE, Preheater, ECO, SH

Spent Acid Regn. Unit : Process Gas Boilers, ECO, SH

Sponge Iron : Waste Heat Boiler

Steel Furnaces : W.H.Boiler

Air Heater : Several Applications

❖ Sintering Plant
❖ Palletising Plant
❖ F.C.C.U
W.H. Boilers
W.H. Boilers











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