



ENERSOLS SYSTEM

274/1 A, Ulhasnagar, MainRoad
Kupwad, Sangli-416 416

TECHNO - COMMERCIAL OFFER

FOR

1000 Kg/Hr; 10.40 KGS / CM²; HIGH EFFICIENCY

Agro Waste Fired ; PACKAGED TYPE BOILER

DATED: - 14th Jan.,2022

SUBMITTED BY

ENERSOLS SYSTEM

ADDRESS : 5/29, PRASHANT, ZP Colony, Sangli
WORKS : 274/1, A, Ulhasnagar, MainRoad Kupwad.
PHONE : 91-9850121117
E-MAIL : shriganeshengineers@gmail.com



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**Subject: Offer for 1000 Kg/hr IBR Steam Boiler Working Pressure 10.40 kg/cm²,
Packed type. IBR Approved Steam Boiler.**

Dear Sir,

Sonhira Agro Farmer Producer Company Ltd,
Mohitanchevadgaon, Tal Kadegaon Dist Sangli

We thank you for the valued enquiry for IBR Steam boiler. With reference to the data submitted by you we are pleased to enclose herewith our offer for –

Model : - EN-1000
Type : - Packaged type, Composite type external furnace Steam Boiler
Capacity : - 1000 Kg/Hr from and at 100 deg c.
Design Pressure : - 10.4 Kg/Cm² (G)
Fuel : - Multi Solid fuel fired (Wood/ Coal/Baggass)

We hope that you shall find our offer of your interest and most competitive. If you require any further clarifications, please feel free to contact us at any time.

Thanking you and assuring our best attention at all times, we remain,

Yours faithfully,

FOR ENERSOLS SYSTEM.

Vinod Suryawanshi

Mobile: 9850121117



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-: Some Salient Features of Proposed Boiler:-

Boiler Pressure Parts:

-Heat Exchanger Shell & Tubes: Consists of Shell, Tube Plates and Smoke Tubes. All Tubes are 3.6 mm Thk. making Boiler Strong & Long Life.

Furnace Design:

Furnace Design is perfect for Solid Fuels like Agri Briquettes, Indonesian Coal, Wood;

Boiler Feed Water Pumps with Motor:

Single Suction; Multi-Stage Centrifugal Pumps with more than 20 % margins on-Capacity & Pressure. World Class Boiler Feed Water Pumps being manufactured by Grundfoss/ Nan Fang Make.

Combustion Fans :

The rugged & sturdy I D Fan & F D Fan are provided. Fans are designed with enough Margins as per international standards- 25 % on Pressure Side ; 35 % on Capacity Side. Fans are with easy operation & lockable dampers. Even under conditions of low voltage; excessive steam demand and hence need for overloading of Boiler for sometime– Fans can fulfill the duty. Fans are being purchased from Very Reputed & Specialist Fan Manufacturers. Hence Fans are sure to have longest trouble free life. Fans are Dynamically Balanced on Machine; hence vibration free operation. This in totality results- Fans draw lesser Electricity and hence Lesser Electrical Consumption.

Valves & Mountings: Standard Make; rugged and reliable Valves & Mountings are supplied with Boiler.

Pollution Control Equipment: Standard SILSON Make Dust Collector with anti erosive material for long life and optimum efficiency. Dust Collector is with Bottom Ash Collection Hopper.

Instrumentation & Control Panel:

For Boilers' Operation; Safety and Reliability – Instruments are very important; especially critical instruments like Mobery. All Standard & Most Reliable Makes of Instruments are used by us. Self Standing; Dust Proof Control Panel is pre-wired as per Control & Safety Logic.

Most Dry Steam to Process: Our Boilers have inbuilt Water/Steam Separator; located inside Shell; on the Steam Outlet Nozzle. When Steam Generation occurs; some water particles are bound to get carried away with Steam. These Water particles cause condensation of Steam in Pipeline in turn Heat Loss. Also associated Process Problems like lower steam temperatures etc. By providing Steam Separator; all these Problem get overcome. This results in Lower Fuel consumption. More Important advantage is Better Steam Quality to the Process and Improved Process Parameters.

Technical Specifications: ~~~~~

-- Type of Boiler	-- Multi fuel; Smoke Tube, Grate Furnace.
-- Design Code	-- IBR 1950 with its latest Amendments

-- Steam Output; f & a 100 ° C	-- 1000 Kg/Hr.
-- Steam Pressure	-- 10.4 Kg/Cm ² .
-- Hydro test Pressure	-- 14.00 Kg/Cm ² .
-- Flue Gas Passes	-- Three Nos.
-- Flue Gas – End Temperature	-- 150 – 160 Deg C.
-- Fuel	-- Wood / Agri-Briquetts
-- Fuel Calorific Value	-- Baggasse : 2200 KCals/Kg. with 50 % Moisture -- Wood : 2800 KCals / Kg with 30 % Moisture -- Agri Briquetts : 3600 KCals / Kg.
-- Fuel Firing Mode	-- Wood/ Agri-Briquetts : Manual
-- Furnace Grate	--
-- Furnace Draught	-- Balanced Draught achieved by ID Fan; FD Fan;
-- Waste Heat Recovery	-- Water Pre-Heater
-- Pollution Control Equipment	-- Multi cyclone Dust Collector
-- Efficiency	-- Baggasse : 2200 kcal/Kg. -- 72 ± 2 % -- Agri Briquetts : 3600 kcal / Kg. -- 78 ± 2 % -- Wood : 2800 kcal / Kg -- 78 ± 2 %
-- Water Volume Shell	-- 486 Liter
-- Membran Volume	-- NA
-- Steam Volume	-- 0.8 Cu Mtr. - at Working
-- Steam Interference Area	-- NA
-- Total Heating Surface area	-- 11.85m ² (Shell + Tubes)
-- Boiler Dimensions approx.	-- Length : 2500 mm X Width : 1500 mm X Height : 2550 mm
-- Chimney Size Required	-- 300 mm top Diameter. Height as per Local Pollution Laws. (not consider in offer)

Engineering Details: All data is tentative may to change while doing detailed Engineering.

:Scope of Supply:

- **Boiler – Pressure Part:**

- ‘Shell & Tubes Heat Exchanger mounted on Saddles; with all required ‘Valves & Mounting’ Nozzles Welded; with required Manholes & Hand holes etc.
- Feed water piping from Feed water Pumps to shell with required Valves in between.

Waste Heat Recovery Unit: Water pre-heater

- **ONE FORCED DRAUGHT FAN :** One liberally designed Forced Draught Fan for providing the combustion Air will be provided. The fan is directly coupled with motor. The fan is designed to provide combustion air for various fuels like Briquette, Coal and Wood with sufficient excess air.

- **ONE INDUCED DRAUGHT FAN:**

Induced fan of the suitable capacity designed for high temperature service will be provided. A Plummer Block of Heavy Duty shall be provided for the shaft and bearings. The fan is coupled to the suitable motor by set of "V" belts & pulleys

.MOUNTINGS & FITTINGS(USED BOILER)

- Main Steam Stop Valve 1 No
- Angle Type Single Post Spring Loaded Safety Valve 2 Nos.
- Gauge Glass Column with Protecting Goggles. 2 Nos.
- Check Valves In Feed Water Line. 1 Nos.
- Globe Valves in Feed Water Line. 1 Nos.
- Blow Down Valve 1 Nos.
- Steam Pressure Indicator with Siphon 1 Nos.
- Fusible Plug 1 Nos.
- **AUXILIARIES:**
- 1 Nos. Feed water Pump Assembly complete with motor; base frame; coupling etc.
- One No. Induced Draught Fan Assembly complete with base frame; motor; V belts & pulleys; with lockable suction damper .
- One No. Primary Draught Fan Assembly complete with base frame; motor with suction damper .
- **ONE CONTROL PANEL:**

Every control is pre-wired and undergoes and extensive functional test. Control panel consists of isolator switch main fuses, for all motors controller, timer volt meters, and ammeter, indicating lamps, hooter pressure switch, stack temperature controller, and audio visual alarm for abnormal working conditions are pre wired by means of cable duct wiring.

- **PRS:**

25NB Pressure Reducing Station, with mechanically operated PRV, Moisture separator, Strainer.

- **STEAM PIPING:**

40NB IBR STEAM PIPING up to 6mtrs. (Extra piping will add extra cost.)

25NB Blow off piping up to 6mtrs. (Extra piping will add extra cost.)

- **CHIMNEY:**

300mm dia. Rope supported chimney

- **DUCTING:**

Complete MS ducting

- **REFRACTORY:**

AS PER BOILER REQUIRMENTS

: Terminal Points:

Feed water	:	Inlet of Water Pre Heater Tank.
Steam	:	STOP VALVE Outlet.



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Blow down / drains	:	Outlet of Blow Down piping..
Exhaust Steam / Air vent	:	Outlet of Safety Valves and Air Vent Valve
Fuel	:	Inlet of Fire Doors of Furnace
	:	
	:	
Ash	:	At the Outlet of Ash Door
Combustion air	:	At the Inlet of Primary Air Fan to Furnace.
	:	
Flue gas	:	Furnace to ID to Chimney(Optional)
Electricals &	:	Incoming Mains to Control Panel
Instruments	:	Incoming of all Motors of Accessories Incoming & Outgoing of all Field Instruments

: Exclusions:

- Raw Water; Service Tanks; Water Piping up to Our Terminal Point.
- Water Treatment Plant.
- All Civil & Structural Works.
- All Electrical & Instrumentation Cabling – from & up to Our Terminal Points.
- All Commissioning Consumables and Manpower.
- Fuel Preparation & Handling System
- Fuel storage Bunker & Chutes
- Bottom Support for Rotary Drum Fuel Feeder; Chutes between drum Feeders & Pneumatic spreaders.
- Any Pollution Control Scheme; Other than Dust Collector
- Any Other Item, not specifically mentioned in Our Offer.
- Any kind of insulation & Lagging

:Water Quality Requirements:

Extract from IS 10392 – 1982, Specification for Feed Water and Boiler Water for Low and Medium land boilers.

Characteristics		Requirement
Feed water		
Total hardness (as CaCO ₃) max.	PPM	Nil

pH value at 24 Deg C		8.4 to 9.4
Dissolved oxygen max.	PPM	0.01
Total Iron max.	PPM	0.01
Total Copper max.	PPM	0.01
Silica (as SiO ₂) max.	PPM	0.04
Conductivity at 24 OC	µs/cm	2.0
Hydrazine residual	PPM	0.02 – 0.04
Boiler Water		
Total hardness (of filtered Sample) (as CaCO ₃)	PPM	Not detectable
PH Value at 24 OC		10.0 to 10.4
Residual sodium sulphate (as Na ₂ SO ₃) max.	PPM	Non – Detectable
Residual hydrazine as (N ₂ H ₄)	PPM	0.04 to 0.3
Phosphates (as PO ₄), (if added)	PPM	10 to 20
Total dissolved solids max.	PPM	400-800
Silica (as SiO ₂). Max.	PPM	3.0

COMMERCIAL OFFER FOR COMPOSITE STEAM BOILER

Our commercial offer is based on the Design Philosophy, Technical Specifications, Scope of Supply, Battery Limits and Exclusions specified in our Offer. The Price and other commercial terms are as given below:

Price Schedule:-

Sr. No.	Description	Quality	Final Price ex.work
1.	Basic Price of the Boiler: (Used) Supply of 750Kg/Hr Capacity with W.P. 10.4 Kg/Cm² Packaged Steam Boiler. Scope of Supply- As mentioned above Including Supply ID & FD Fan, Feed Pump, Control Panels & Mounting & fittings.	1 No.	Rs19,50,000/-
2.	Dust Collector		Rs.65000/-
3.	Chimney Fabrication, 42 feet		Rs.75,000/-
4.	Pressure Reducing Station,		



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	(all valves Make: WJ/Atom/Equivalent)		Rs.3,25,000/-
5	Installation		Rs.,155000/-
6	IBR Paper Work		Rs.,85,000/-
7	M.S Piping		Rs.,2,34,000/-
8	Insulation		Rs.,67500/-
	Total		Rs.,2956500
9	GST@18		Rs,532350
10	Total Amount		Rs.3488850

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TAXES AND DUTIES

Sr. No	Description	
1.	Price Basis	Ex- our work, Sangli.
2.	GST	Including 18% or as applicable at the time of dispatch.
3.	Payment Terms	50% Advance along with P.O 50% Against Performa Invoice
4.	Delivery	2 Months from the date of receipt of technically & Commercially Purchase Order & along with Firm Advance.
5.	Terms	As per enclosed Terms & Conditions of Supply.
6.	Validity	15 days

7.	Transportation	Extra (Ex works SANGLI)
8.	Packaging & Forwarding	3%

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Other Works Offered by ENERSOLS

- Package type boiler
- Membrane panel solid fuel fired boiler (Composite type)
- Membrane panel Husk fired boiler. (Composite type)
- Bi – Drum High pressure boiler for power generation
- Package type boiler (Smoke tube shell type)
- Oil/ Gas Fired boiler (Smoke tube shell type)
- Thermic Fluid Heater
- Hot Water Generator
- Hot Air Generator
- Waste Heat Recovery Units.
- Co - generation Projects up to 3 MW
- All turnkey projects for Boilers.
- Pressure Reducing Station



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- Condensate Recovery System
- Sugar, Jaggery & Kath Plant fabrication & erection.
- Material handling systems.