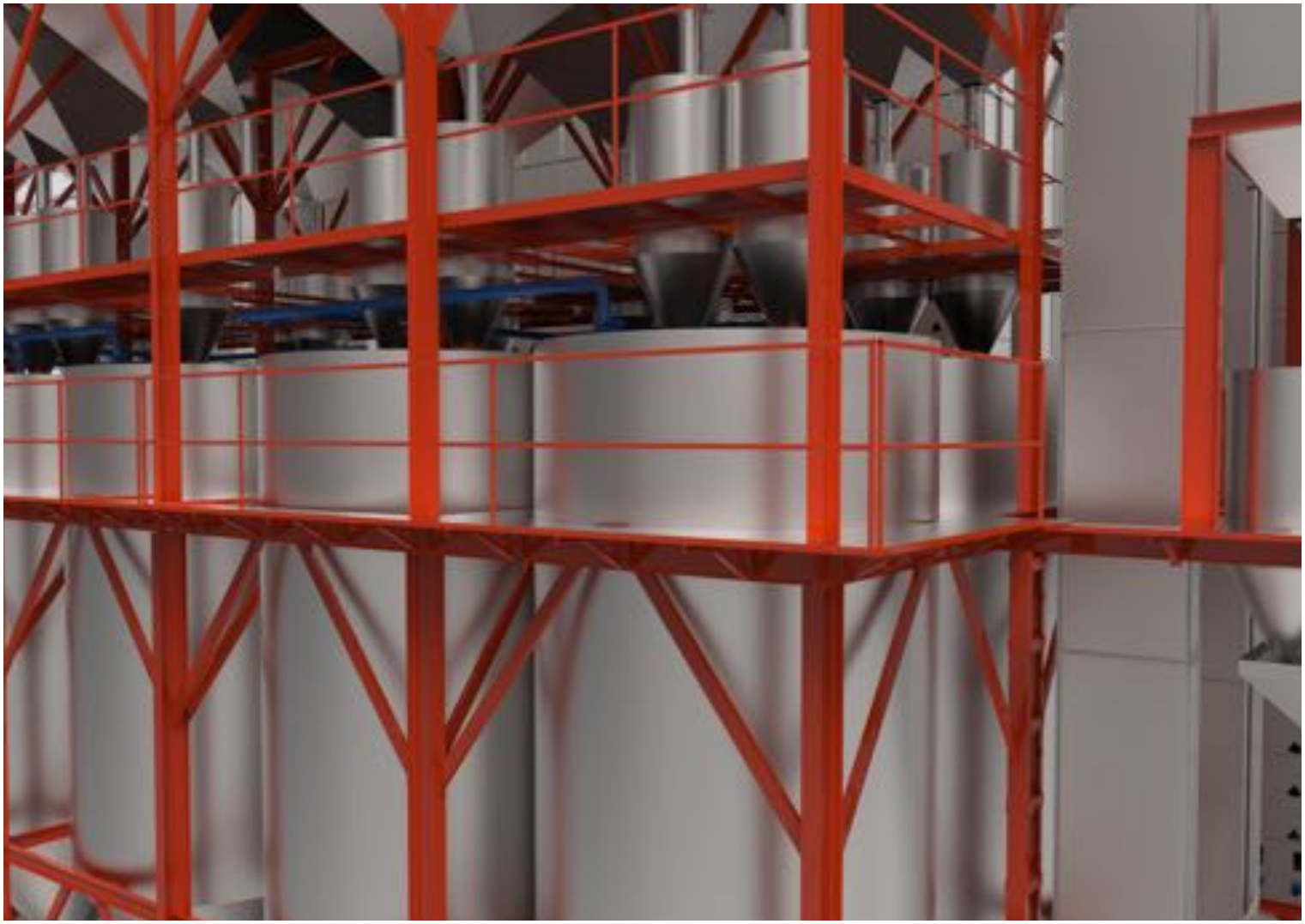
SINGLA®
Engineering Solutions

SINGLE STEAM SYSTEM
SINGLE STAGE PARBOILING SYSTEM
THREE STAGE PARBOILING SYSTEM
AUTOMATED PARBOILING SYSTEM

PADDY PARBOILING PLANT



PADDY PARBOILING

Parboiled rice- one of the most popular rice products worldwide- becomes more important not only by the fact of improved nutritional value but also by the improved cooking and processing properties which are desired from the industrial point of view.

Apart from the nutritional importance of parboiled rice, there are plenty of other advantages as well. Those advantages are, for instance, the increased head rice yield during milling of parboiled rice, the reduced stickiness of the cooked rice and the improved cooking behaviour of the parboiled rice.

There are presently a lot of traditional and industrial methods where the basic steps like soaking, thermal treatment (steaming or cooking) and drying often only differ by the application of different techniques and process parameters. Apart from constant quality, the rice industry requires special quality specification of the rice products. A necessary prerequisite for this is the knowledge of the certain impacts of process parameters to different rice varieties and quality aspects on the final product. To achieve this special aim, modern parboiling equipment is needed which can be customised according to the customers' requirements.

Leading technology for all parboiling aspects can be provided by *SINGLA* Parboiling technique like batch system, open tank without pressure, continuous pressure cooking system etc. *SINGLA* Rice Parboiling technologies are based on intensive research and development in this field.

Features of Parboiled Rice:

- Increase head rice yield during milling
- Simplify hulling process
- Uniform and stable cooking and processing properties
- Reduce stickiness of cooked rice
- Improve nutritional value and extend shelf life

Parboiled Rice

STEAMED

- Paddy Filled in tanks
- Steamed till moisture reaches at desired level
- Drying

HALF BOILED

- Paddy Filled in tanks
- Soaked in water
- Water is drained out
- Steaming
- Drying

BOILED

- Paddy Filled in tanks
- Soaked in hot Water
- Water is drained out
- Steaming
- Drying

SELLA

- Paddy filled in small tanks
- Steaming
- Paddy discharged to Soaking Tank
- Soaked in hot/fresh water
- Water is drained out
- Again steaming
- Drying

Our Team

We have with us an experienced and qualified team of mechanical & electrical engineers, Industrial designers, marketing personnel and other staff to support our production process. They assist us in designing and developing the products as per the given specifications and requirements of our clients. All our team members work in coordination to meet the demands of product designing process, resulting in production of international quality standard and low cost products.

Research & Development

Our well developed research and development unit assists us in our manufacturing, product up gradation and new product development process. With extensive research work, our R&D unit also helps us to keep ourselves abreast with the technological advances and market trends and add new features to the existing range

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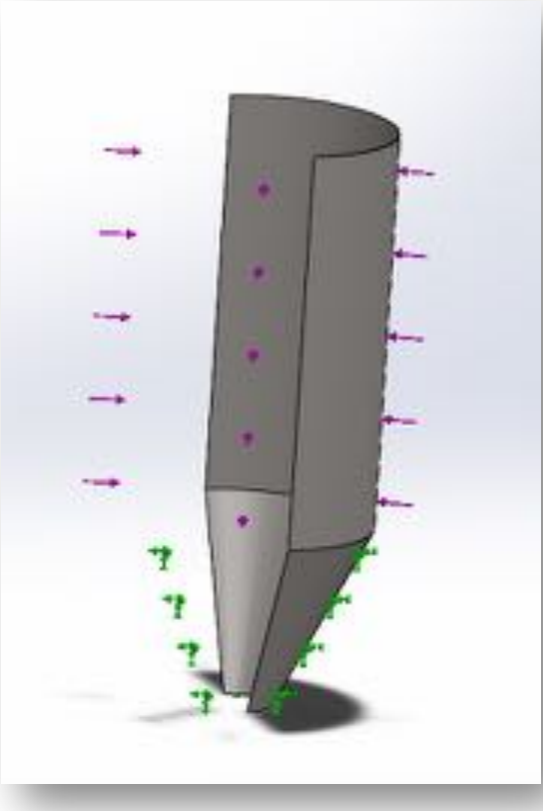
Infrastructure

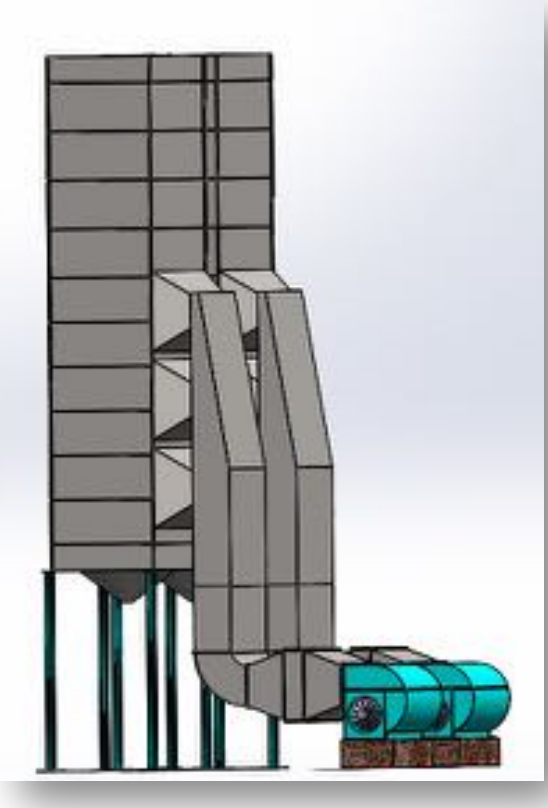
Our well-equipped infrastructure enables us to produce world class products. Segregated into different units like procurement unit, product designing & development unit, marketing department. Furthermore, we have also installed modern machines and equipment at our infrastructure, which assist us in fabricating our range. With the state of the art CNC controlled machines we fulfil all the requirements of rice milling industry.

Material

High quality of the raw material & strict quality control norms enables us to deliver high quality product which not only minimizes the maintenance cost of our customer but also results in more saving per production yield. All parts are specially designed for easy & trouble free operation, high energy efficiency & minimum manpower involvement which ensures higher profitability, less broken percentage & additional value realization.



Load testing of the tank



3d Simulation of the Dryer

PARBOILING PLANTS

Stainless Steel Plant that produces hygienic rice of World class standard with minimum broken. Produces Basmati Rice-maximum production with minimum broken.

Three Stage Parboiling Plant
with Post Steaming (Pakki) on the side.

LSU PADDY DRYER

APPLICATION

Wide range of sizes and capacity of paddy dryer are available depending on the customer's requirement. Guaranteed to quality workmanship, design efficiency and excellent performance we offer dryers specially designed for parboiling units which are capable of handling paddy with extreme moisture content such as 40% with minimum broken percentage.

DESIGN AND FEATURES

- Simple and easy operation
- Specially designed for parboiled paddy which works smoothly on high temperature
- Heat Resistance rubber belts are used in the elevator.
- Complete modular design which makes it easy to dismantle.
- Stainless Steel Baffles for longer life.
- Split duct design for optimum air distribution.
- Split-style hood for easy accessibility and repair of elevator head.
- Impeller type boot pulley is provided for minimum broken of the paddy.
- Rotors are driven by helical geared motor.
- Very Low energy consumption.

SPECIFICATION

MODEL	CAPACITY	SPACE	POWER(HP)
SEBD-8R	24 Tonne	27X16Ft	24 HP
SEBD-8R	32 Tonne	27X17Ft	27 HP
SEBD-11R	40 Tonne	27X20Ft	35.5 HP
SEBD-13R	50 Tonne	27X23Ft	45 HP

OPTIONAL

- Available in Mild Steel, Galvanised Steel and Stainless Steel Material
- Access Ladder and Support Structure
- Automatic moisture and temperature control system are also available.

BUCKET ELEVATOR

APPLICATION

Wide range of sizes and capacity of bucket elevators are available depending on different applications. Guaranteed to quality workmanship, design efficiency and excellent performance we offer bucket elevator specially designed for parboiling units. Designed for vertical conveying of fine & coarse grain materials like Parboiled Paddy.

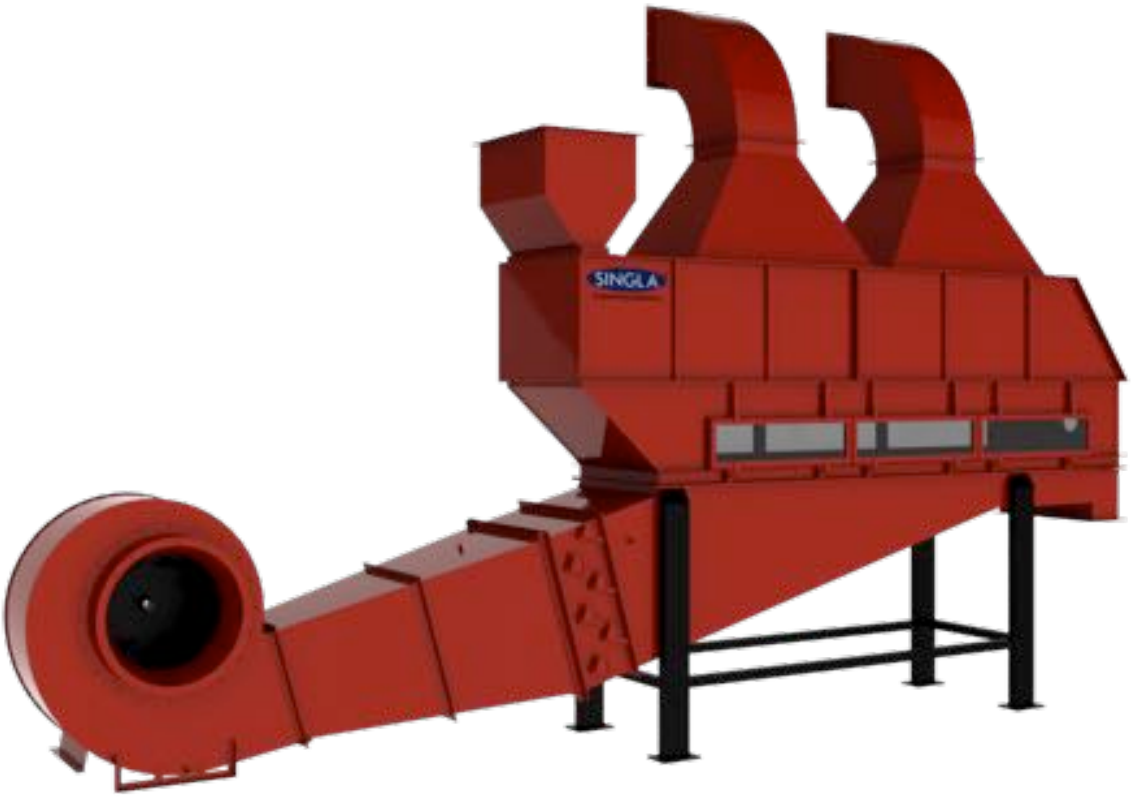
DESIGN AND FEATURES

- Specially designed for parboiled paddy which works smoothly on high temperature
- Heat Resistance rubber belts are used in the application of dryer.
- Available with different bucket sizes
- Complete modular design which makes it easy to dismantle
- Best suited for paddy parboiling application.
- Adjustable back flow sheet in the discharge hood
- Tapered bearing at pulley to eliminate lateral movement
- Split-style hood for easy accessibility and repair
- Trunking are available in both Single box and Split Box design.
- Ribbed type pulley is provided in the head section and Ribbed fan type pulley is provided in the boot section

OPTIONAL

- Available in Mild Steel, Galvanised Steel and Stainless Steel Material
- Buckets are available in stainless steel, mild steel and plastic
- Access Ladder and Support Structure

FLUIDIZED BED DRYER



APPLICATION

Used before LSU type dryer for pre-drying the parboiled paddy. The clean hot air will directly contact wet paddy at temperature 50°C - 110°C (temperature can be adjusted) it can reduce moisture 6-8% and then paddy go out in the bin without any damage to paddy giving higher yield recovery than all other drying system.

SPECIFICATON

- Capacity : 15 -20 Tonne
- Moisture reduced 8-10%
- Airflow: 28000 CFM
- Power(HP): 75HP

OPTIONAL

- Cyclone Separator are also available

DESIGN AND FEATURES

- Efficient high moisture reduction, reduce moisture 6-8% (per passage) within 2-4 minute, complete mixed flow ensurers overall touching of grain surface.
- Uniform moisture content output regardless of uneven moisture content input because of fluidization by hot air, dried paddy (lighter) will stay shorter in the chamber than wet paddy (heavier).
- Higher percentage of rice yield in comparison with other types of driers or sun drying as semi-gelatinization will close husk and harden the kernel.

TECHNICAL SPECIFICATION FOR PLANT

SINGLE STEAM ONLY

Plant Model	TANK CAPACITY	No. Of Tanks	Space Required	Dryers
4/12	3 Tonne Steam	4 Tanks	15x13ft	24Tx2= 48T
4/16	4 Tonne Steam	4 Tanks	16x14ft	32Tx2= 64T
6/18	3 Tonne Steam	6 Tanks	18x15ft	24Tx3= 72T

PARBOILING SINGLE STAGE SYSTEM

Plant Model	CAPACITY	No. Of Tanks	Space Required	Dryers
6/24	24 Tonne	6 Tanks	17x21ft	24Tx1= 24T
8/32	32 Tonne	8 Tanks	17x26ft	32Tx1= 32T
10/40	40 Tonne	10 Tanks	17x32ft	40Tx1= 40T
12/50	50 Tonne	12 Tanks	17x37ft	50Tx1=50T

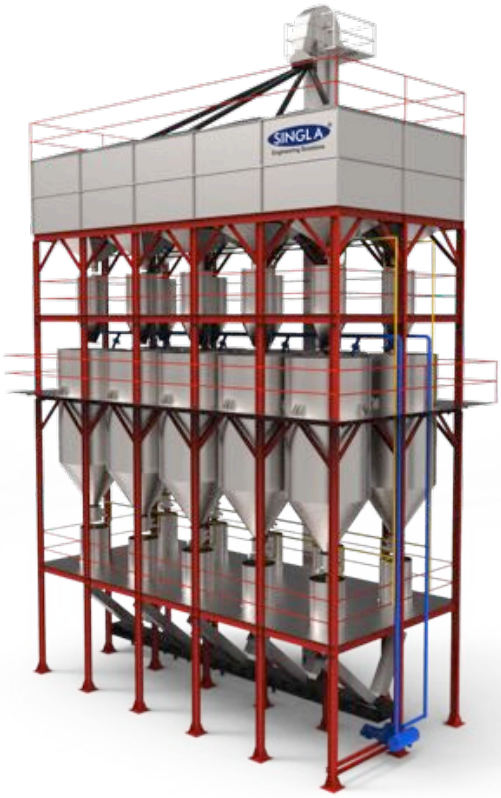
TECHNICAL SPECIFICATION FOR PLANT

PARBOILING THREE STAGE SYSTEM

Plant Model	CAPACITY	No. Of Kachi-Pakki Tanks	No. Of Soaking Tanks	Space Required	Dryers
2/24	24T SELLA	4-4 Tanks	2 Tanks	22x22ft	24Tx1= 24T
2/32	32T SELA	4-4 Tanks	2 Tanks	25x25ft	32Tx1= 32T
4/64	64T SELLA	8-4 Tanks	4 Tanks	27x35ft	32Tx2= 64T
8/96	96T SELLA	16-16 Tanks	8 Tanks	26x39ft	24Tx4= 96T
8/128	128T SELLA	16-4 Tanks	8 Tanks	27x54ft	32Tx4= 128T
10/160	160T SELLA	20-6 Tanks	10 Tanks	27x64ft	32Tx5= 160T
12/192	192T SELLA	24-8 Tanks	12 Tanks	27x73ft	32Tx6=192T

PARBOILING THREE STAGE ALL IN ONE

Plant Model	CAPACITY	No. Of Kachi-Pakki Tanks	No. Of Soaking Tanks	Space Required	Dryers
5/24	24T BOILED	5-5 Tanks	5 Tanks	11x36ft	24Tx1=24T
6/32	32T BOILED	6-6 Tanks	6 Tanks	21x24ft	32Tx1=32T
10/48	48T BOILED	10-10 Tanks	10 Tanks	19x36ft	24Tx2=48T
12/64	64T BOILED	12-12 Tanks	12 Tanks	21x44ft	32Tx2=64T
15/72	72T BOILED	15-15 Tanks	15 Tanks	27x36ft	24Tx3=72T



EQUIPMENTS FOR PLANT

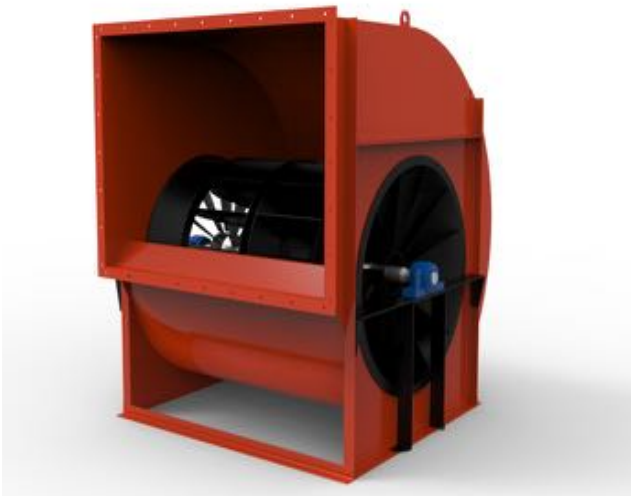
HEAT EXCHANGER (STEAM TO AIR)

Heat Exchanger

FEATURES

Aluminium Extruded Finned type Heat Exchanger for maximum heat transfer media because of solid fin tubes and better bi-metallic metallic properties. 100% contact in between fins and tubes provides better heat transfer and low air losses than conventional finned tubes.

BLOWER FOR DRYER



Dryer Blower

FEATURES

Double inlet type Blower Fan with aero dynamic design. Impeller is computerized balanced as per the standards. Graded Steel Shaft reduces breakdown risks. Specially designed to work with Paddy Dryer with different capacities.

CAPACITY	SIZE	CFM	SPEED
24T	33”	28000	890
32T	36”	36000	830
40T	40”	46000	760
50T	44”	56000	680

CYCLONE SEPERATORS

Cyclone Separator

FEATURES

Double inlet type Blower Fan with aero dynamic design. Impeller is computerized balanced as per the standards. Graded Steel Shaft reduces breakdown risks.

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