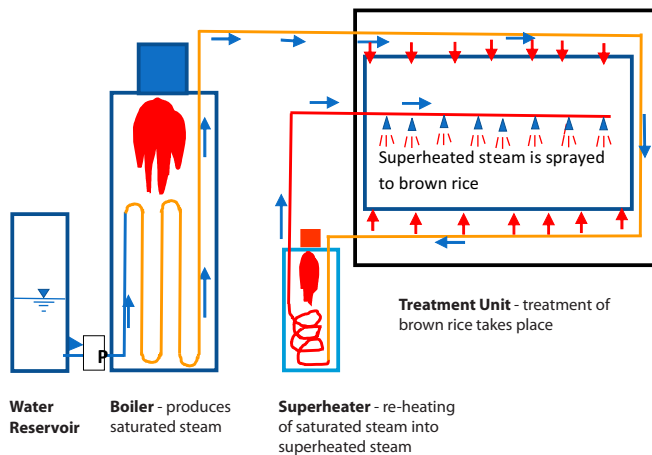


CONTINUOUS-TYPE SUPERHEATED STEAM TREATMENT SYSTEM (SSTS) for STABILIZED BROWN RICE

Principle of operation of the Continuous-Type Superheated Steam Treatment System



for more information, please write, fax, call, or email:



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The continuous-type SSTS was the second prototype developed by Metals Industry Research and Development Center (MIRDC) together with the Food and Nutrition Research Institute (FNRI). The system was designed and developed in accordance with the standardized parameter generated from the study of the batch-type SSTS. The distinction of this system from the batch type is that, aside from its continuous treatment process, it has a mechanism inside the treatment chamber that controls the duration of exposure of brown rice to superheated steam simultaneous with the mixing action to facilitate uniform treatment of brown rice.

The system has a) **loading unit** that serves as reservoir for untreated brown rice, together with a metering device to facilitate synchronized feeding to the treatment unit; b) **treatment unit** where actual treatment of brown rice with superheated steam takes place; c) **cooling unit** that cools down treated brown rice

System Specifications:

Treatment Unit

Space requirements	: 5.75m x 6.5m
Capacity	: 2000 kg/hr
Treatment time	: 90 sec
Treatment temperature	: 120°C
Processing type	: Continuous
Number of operators	: 2 persons
Materials	: The machine is made mainly of stainless steel and mild steel
Power requirements	: 5.9 kW

Superheated steam generator

Indicated power	: 20 Boiler Horse Power
Steam rate	: 0.126 m ³ /sec
Operating pressure	: at least 3 bars
Fuel	: Diesel
Burner	: Pressure atomizing
Ignition	: Spark ignition
Mode of operation	: Automatic water level control
	: Automatic cut-off at high pressure
	: Manual, On – Off/ Start
Power supply	: 220 V, single phase, 60 Hz
Power requirements	: 1.560 kW
Superheater	: 40 W

to a temperature tolerable for handling; d) **superheated steam generator unit** which is composed of a boiler that provides saturated steam and a superheater that reheats the saturated steam to generate a superheated steam; and e) **control unit** that ensures that signals are sent to and received from every component to synchronize sequence of activities and implement settings of operation. It also dictates the automatic or manual manner of operation.

The system was designed for the production of stabilized brown rice in terms of larger processing capacity.

Process flow for continuous-type SSTS



LOADING



TREATMENT



COOLING



BAGGING