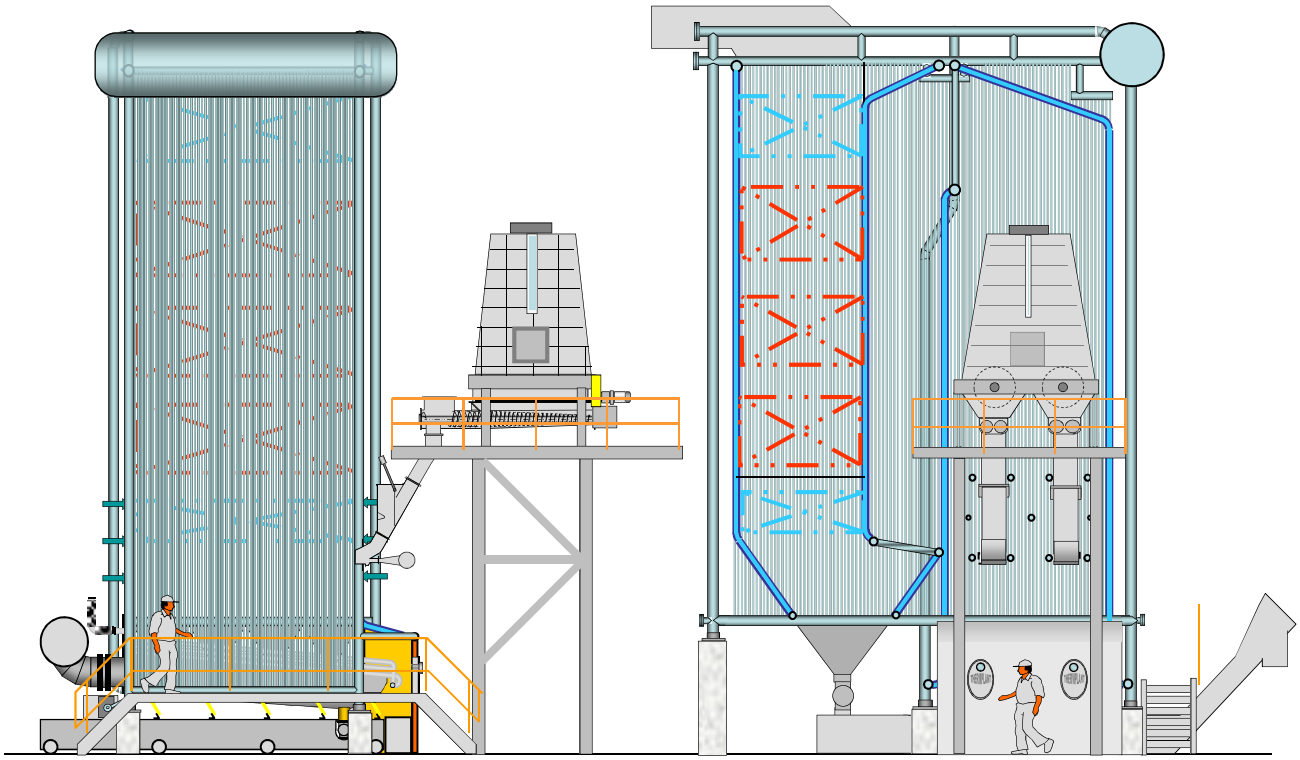
PRODUCT DESCRIPTION P202.1

BIOMASS HOPPER AND FEEDER
For sizes up to 60 tn/h steam



BIOMASS BOILER HOPPER

The Biomass Hopper receives fuel by conveyor, and holds ~ 5-10 minutes fuel supply. The fuel is discharged naturally or by special hopper dischargers to screw feeders on the base of the hopper. The screw feeders discharge to spreader stokers on the grate.

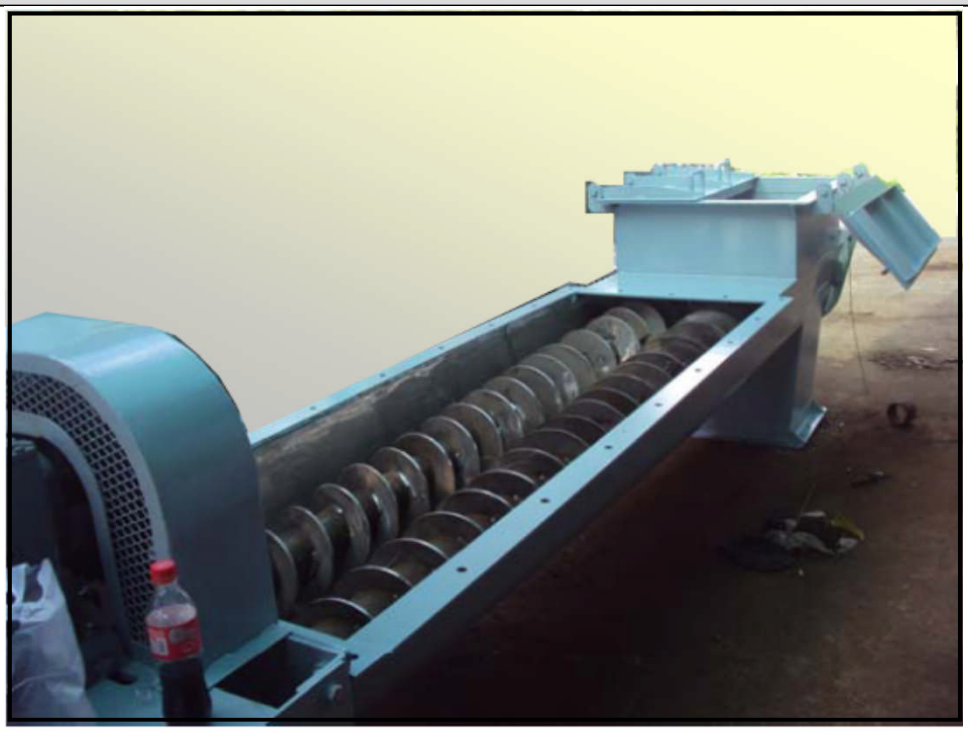
The hoppers are negative rake design to allow the biomass fuel to feed to the screw feeders and, provided the fuel is free flowing, then the dischargers are not required. To be free flowing the fuel should meet the size specified in Product Sheet ' Fuel Sizing for DGA Grates'. Provided the fuel has a smooth profile and is not 'spiky' this will ensure that the standard hopper will operate with the fuel.

The diagram shows a rotary 'stirrer' with 2 screw dischargers. This is typical of a hopper for a palm waste fired grate where the fuel tends to bridge over the screws. The rotary action 'ploughs' the fuel and this keeps it moving so it cannot lock and bridge. If this discharger system does not operate for instance with shredded wood fuels then a ladder frame discharger may be used.

Both styles of bin discharger are available and can be fitted as delivered or retrofitted if bridging becomes a problem due to change of fuel after commissioning.

Screw Feeders

The hopper will be fitted with twin screw feeders as standard. These are counter rotating twin screw feeders which convey between the two screw 'worms'. These are normally fitted with a tapered section in the hopper, a control section and discharge section. This style of screw is designed to withdraw the fuel evenly from the hopper and deliver the fuel evenly to the spreader or ram feeder for onward transmission to the Grate. The width of the grate sets the number of dischargers required for each hopper.



Typical twin screw feeder showing tapered section under the hopper and the discharge, viewed form the drive end. A stepped diameter screw design may be used for difficult fuels.

The hopper is fitted with sight glasses which allow the fuel level to be monitored as it is discharged to the grate.

Fuel Hopper

Hopper supply scope includes

- the hopper for the specified capacity volume of fuel
- the insert frame for the discharger. Discharger not included with standard unit unless specified
- discharger unit if specified, ie stirrer or ladder discharger to suit fuel type
- variable speed screw dischargers, twin screw style with common drive
- screw flight material is standard in thick carbon steel. Options are available for 3CR12 for abrasive fuels such as rice husk.
- stub legs to connect with the mounting steelwork. Steelwork not included unless specified
- mountings for level detectors as required to suit clients choice of level detector. Level detectors not included unless specified
- sight glasses for visual level monitoring of the fuel contents
- manholes, 1 each for for access to interior
- finish painting on exterior to suit client

Style of fuel delivery

The style of the fuel delivery to the grate affects the thermal rating of the grate. The highest ratings are achieved by the spreader stoker as the injection system ensures that all the fuel on the grate is ignited and burning immediately it settles on the grate. Some fuels cannot be fed by spreader stoker and alternative fuel delivery systems are available. These may affect the thermal capacity of the grate.