

BIOMASS-TER

PLC CONTROL SYSTEM



Compatible with all solid fuel combustion systems



TOTAL SYSTEMS MONITORING

- Draft Controls
- Hurst Developed Control Software
- Touch-Screen HMI Industrial Computer
- Variable-Speed Fan and Motor Drives (Vfd's)
- Intelligent Communication Between PLC, Vfd's and HMI

BIOMASS-TER

The HURST BIOMASSter Control System is one of the most advanced systems available for biomass combustion in today's market. The expertise gained through the years of biomass installations, combined with our commitment to continuous quality improvements has created a control system unsurpassed in the biomass industry. The control system is fully automated and provides the ultimate in flexibility to meet the requirements of the varying types of biomass fuels. The complete control system is developed and manufactured in-house by our control system department. Through the use of the latest PLC, VFD, instrumentation, and HMI technologies, we provide a comprehensive user-friendly system. Each system is designed not only to control the boiler but also to provide information as to address diagnostic and emission concerns. Each panel is manufactured and listed to UL 508A standards in our facility.

ALTERNATIVE FUEL "POWER BURNER" BOILERS

LIQUID AND GASEOUS FIRED SYSTEMS



- Bio-Diesel
- Digester Gas
- Synthetic Gas
- Bio-Gas
- Land Fill Gas
- Sewage Gas



"DEAERATOR" FEED WATER SYSTEMS

Deaerators have long been used in power plants and water-tube type boilers, primarily to remove the dissolved oxygen and other non-condensable gases and also pre-heat the feedwater. These same advantages are important today for all boilers due to higher capital investments. An additional advantage is to capture of more of the "flash loss" from higher-temperature condensate returns. This can be used to heat the feedwater and lower operating cost. The protection of all of the steel within the entire system easily justifies the cost of "OXY-MISER".

OXY-MISER SERIES

Packaged Deaerator Systems, 5,000 To 200,000 Pph. Conditions Feedwater to 0% Co2 and .005cc/Liter of Oxygen.

Genuine HURST REPLACEMENT PARTS

UPS Overnight Delivery

BOILER PARTS IN STOCK

Hurst is a major supplier of boiler parts and controls that are commonly found on most boiler systems. We stock parts and supplies for gas, oil, coal or solid fuel systems. No matter the maker, Hurst can fill all your parts needs.



CALL Parts Sales Dept. 1 877 774-8778
24 / 7 After Hours Parts 229 221-3338

Feed Water Pumps
Boiler Controls
Gaskets / Seals
Piping and Valves
Boiler Tubes
Fuel Augers
Replacement Chains

Forced Draft Burners
Refractory (Hurst Brand)
Fire Bricks / Hangers
Fire Grates
Stoker Assemblies / Parts
Gear Reduction Drives
Sight Glass / Float Valves



HURST BOILER & WELDING CO., INC.
Tel: (229) 346-3545 • Fax: (229) 346-3874
100 Boilermaker Lane • Coolidge, GA 31738-0530
www.hurstboiler.com
email: info@hurstboiler.com

For More Information

Hurst Boiler continually strives to provide the most comprehensive information and technical product data available via our web site at www.hurstboiler.com

Always visit www.hurstboiler.com for the latest product data, distributor, technical information and literature, as well as, links on news, events, and specials.

Please visit our site frequently, and be sure to use our CAD drawings or contact us on any of your boiler engineering questions or concerns.

It is always our pleasure to serve you with all of your boiler needs.

Thank you for considering,
Hurst Boiler & Welding Company Inc.

HBC-09500
09/2009

Fuel Reclaimer Systems, Screening and Conveying Units



Hurst Offers a Complete Range of Reclaimer Designs From its Fuel Handling Equipment Division

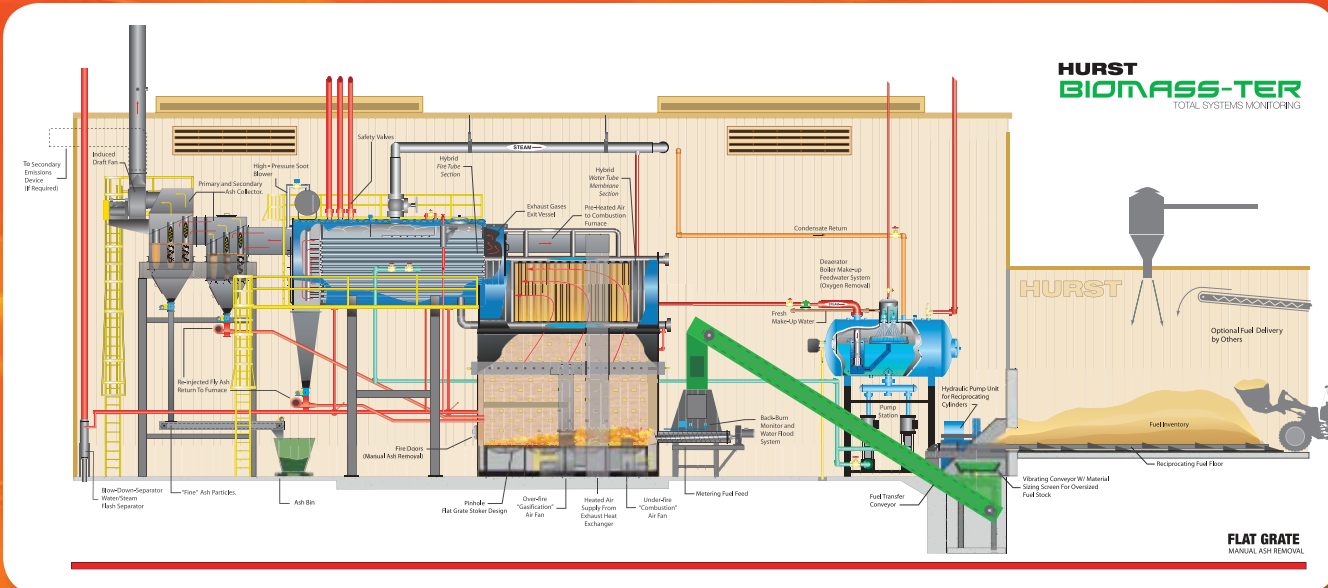
- **Reciprocating Floor System:** Heavy, robust systems built from boiler quality materials by boiler makers. Designed from the "walking floor" concept, handling of solid fuel materials has never been so simplified. Hurst superior design, construction and final quality control, this system is built for boiler duty dependability and 24/7 operation.
- **Fuel Screen Unit:** We offer a complete line of fuel screens, vibrating type along with disk-screen type.
- **Conveyor Systems:** No matter which fuel system you have, solid fuel has to be mechanically conveyed. We offer screw augers systems, drag chain and belt conveyor units all built to the same integrity; built boiler duty tough for 24/7 operation.
- **Silo Systems:** Concrete or steel bolt-up designs for fuel unloading systems (bottom screw type and flail type).
- **Silo Loading Systems and Fuel Receiving Stations:** Hurst offers complete designed systems for loading and fuel receiving stations built for your capacity and requirements.



BIOMASS

- Steam Boilers
- Hot-Water Boilers
- Direct-Fired "STAG" Units

Flat Grate Stoker



Nuts Shells / Grain Husks Paper / Cardboard Agricultural / Forestry Biomass

Boilers for all Hurst Combustion Systems

HYBRID SERIES
Available in Steam or Hot Water, Multi-Pass Dry Back Design. 100 to 1,800 BHP, 15 to 450 PSI Steam.

N65 SERIES
Available in Steam or Hot Water, FireBox Design. 100 to 1,500 BHP, 15 to 450 PSI Steam.

S100 SERIES
Available in Steam or Hot Water, Fire-Box Design. 100 to 800 BHP, Low Pressure Steam with Hot Water Options.

ALTERNATIVE FUEL SOLUTIONS

Flat Grate Stoker with manual ash removal
Simplistic in design the "push fuel to ash" concept delivers consistent, clean even, burns with minimal ash management. This unit offers mechanical replacement of fuel with just (1) moving part within the furnace. This manual ash removal unit is offered in various configurations to utilize a wide selection of solid fuels.



Twin 1200 BHP
"Super Heated" 450psi
Erected in Dominican Republic.

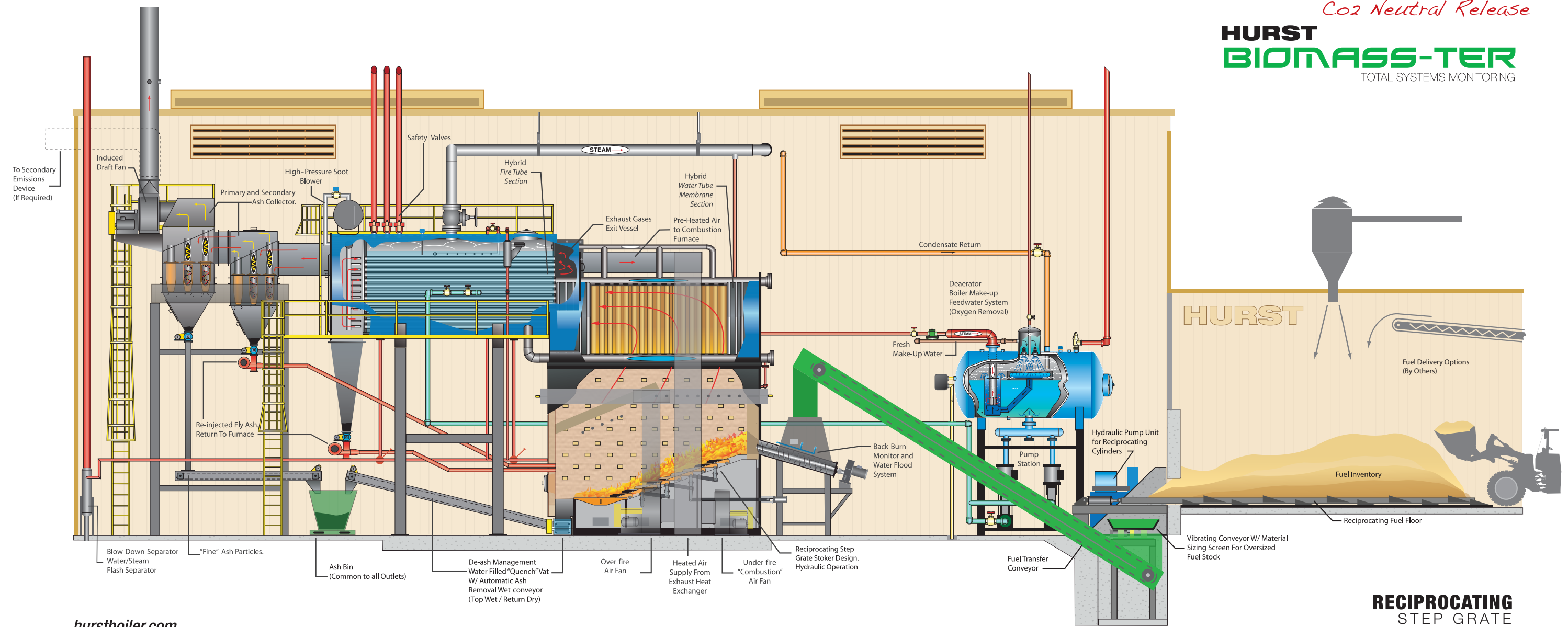
Twin Ash Collectors
Primary and Secondary Modular Units
Being Lifted in Place.



- INSTALLATIONS WORLD-WIDE
- COMPLETE SYSTEMS
- HUNDREDS OF BIOMASS FUELS
- LOW-COST INSTALLATIONS
- OVER 40 YEARS OF COMBUSTION DESIGN
- HURST FACTORY REPLACEMENT PARTS

HYBRID SERIES
Available in Steam or Hot Water, Multi-Pass Dry Back Design. 100 to 1,800 BHP, 15 to 450 PSI Steam.

1500 BHP Hybrid Design Leaving Hurst Factory
Pulp Mill / Northern Wisconsin



hurstboiler.com

AUTOMATIC ASH REMOVAL

TRAVELING GRATE STOKER



1200 BHP (Traveling Grate Stoker)

Traveling Grate Stoker with automated ash removal
 Innovative self-cleaning stoker design for biomass and coal fuel applications. This combination of stoker and "hybrid boiler" delivers performance, efficiency, and reliability.



Twin Hybrid 1200 BHP

N65 SERIES
 Available in Steam or Hot-Water,
 FireBox Design. 100 to 1,500 BHP,
 15 to 450 PSI Steam.



N65 600 BHP
 Green House Heating Application
 (Canada)



Made in the USA

Innovative Self-Cooling and Cleaning Design.



Triple 600 BHP
 w/ Silo Fuel Storage

Automated
 Ash Removal
 (Wet System)



Forestry Related: Trimmings, Mill Waste, Bark, Saw Dust, Chips

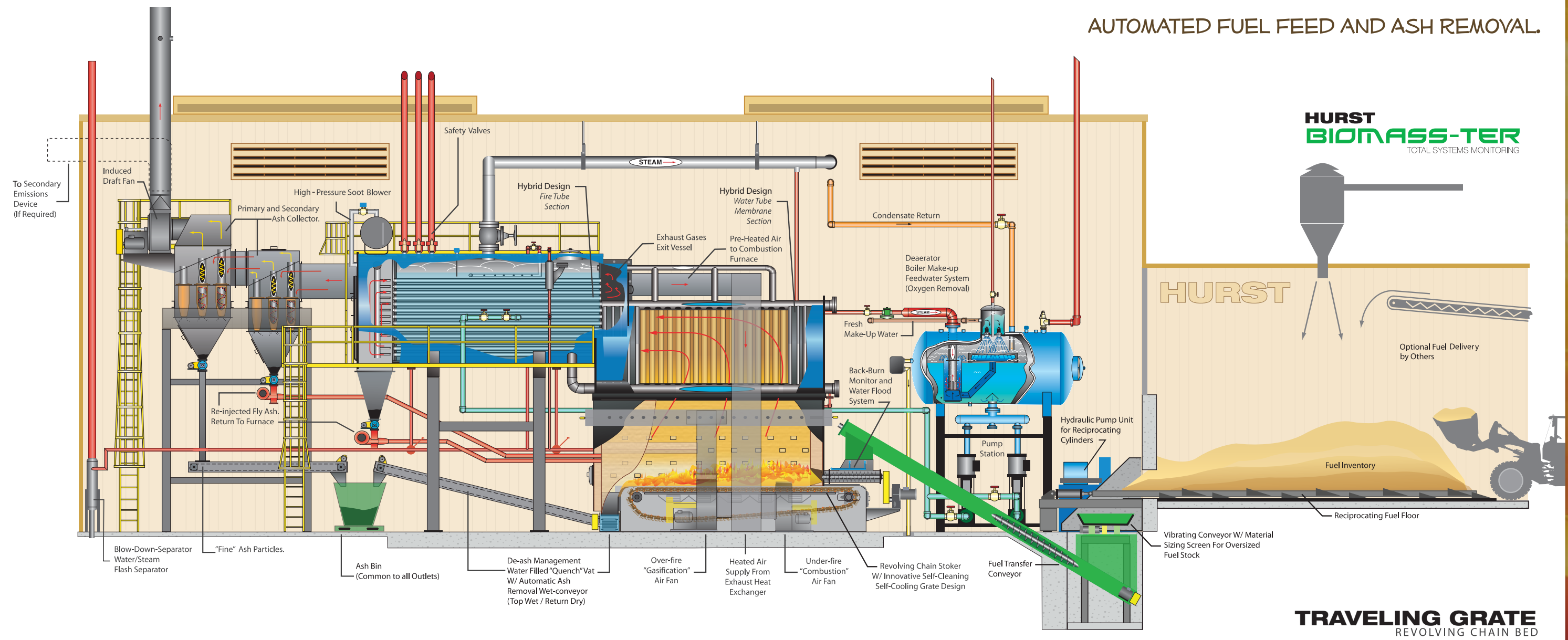
ALTERNATIVE FUEL SOLUTIONS

**MORE MODELS
 CHOICES
 SOLUTIONS**



Corporate Headquarters Coolidge, Georgia

AUTOMATED FUEL FEED AND ASH REMOVAL



TRAVELING GRATE
 REVOLVING CHAIN BED

AUTOMATIC ASH REMOVAL

Direct-Fire Burner
with automated ash removal

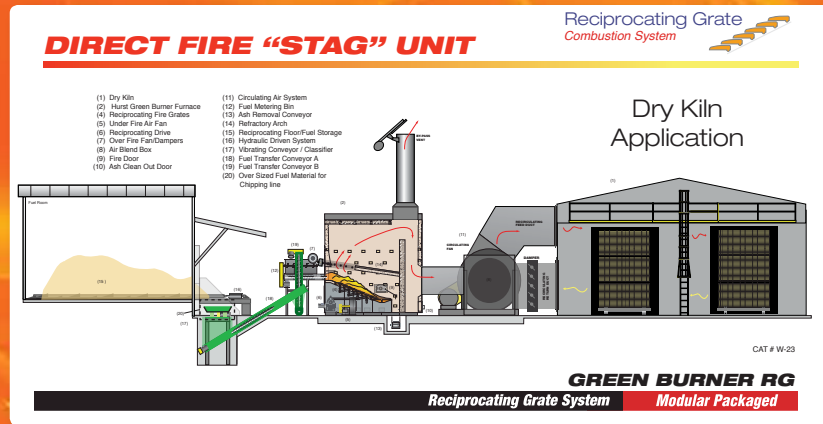
Hurst "STAG" units are used when heated air is needed instead of steam or hot water. Hurst manufactures units to service Oil Heaters, Rotary Dryers, Lumber Kilns, Brick Kilns, and firing and co-firing of boilers. To complete your STAG unit, Hurst offers available components such as: Ash Systems (wet or dry), Material Handling Equipment, Custom Blend Refractories, Combustion Air Systems and the Hurst "Biomass-Ter" Combustion Monitoring System.



Southern Pine Saw Mill
Dry Kiln Application

Automated Fuel Feed and Ash Removal

HURST "STAG" UNITS
(STAND ALONE GASIFIER)



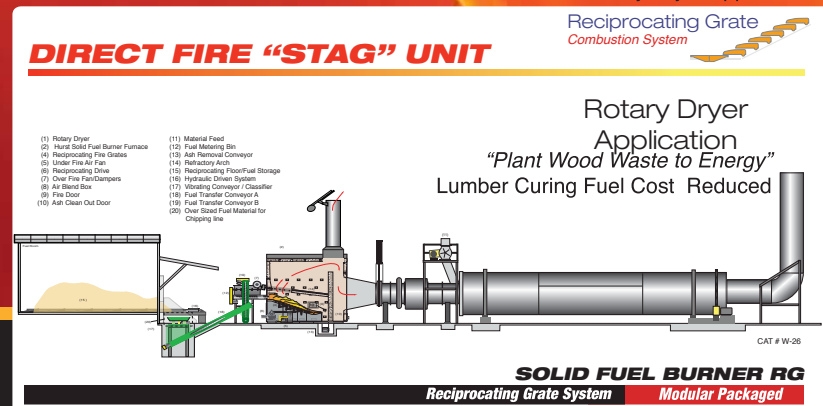
Dry Kiln Application

Air Temperature Designs Range from 200° to 2000° Fahrenheit



Each STAG unit employs the same technology and design integrity that Hurst has provided for over 40 years in its solid fuel boiler designs.

Rotary Dryer Application



Rotary Dryer Application
"Plant Wood Waste to Energy"
Lumber Curing Fuel Cost Reduced

"Saw Mill Converts Waste-to-Energy"
Lumber Curing Fuel Cost Reduced



RECIPROCATING GRATE STOKER



Twin 1200 BHP
Saw Mill / Arkansas

Reciprocating Grate Stoker with automated ash removal

This unit offers the very best of solid-fuel combustion allowing mechanical replacement of fuel with the least amount of moving parts. This efficient multi-fuel design is offered in various configurations to utilize a wide selection of solid fuels. All Hurst factory stokers are cast from the highest quality steel alloys and mounted on a robust undercarriage system.



Cast from the highest quality steel alloys and mounted on a robust undercarriage system.



800 BHP
Paper/Cardboard Fired



View of Step Grates



Twin 1200 BHP
450 PSI Super Heated

1500 BHP
1500 BHP 250 psi design being erected in Wisconsin.
This assembly is shipped in (3) large modular pieces for a cost saving installation.

1500 BHP
Shipped to South America



UNDER-FEED STOKER

Under Feed Stoker with manual ash removal

For low-ash content fuels, the under feed design is hard to beat for even burns and performance. A long time workhorse from the stable of Hurst combustion stokers, the under feed design is unsurpassed with handling the dirtiest of coal and biomass fuels.

Complete systems include emissions equipment and solid fuel handling system.



Triple 600 BHP
"Pine" Saw Mill
Steam "coil" dry kilns
heat application.

\$100 SERIES
Available in Steam or Hot Water, FireBox Design, 100 to 800 BHP, Low-Pressure Steam with Hot-Water Options.

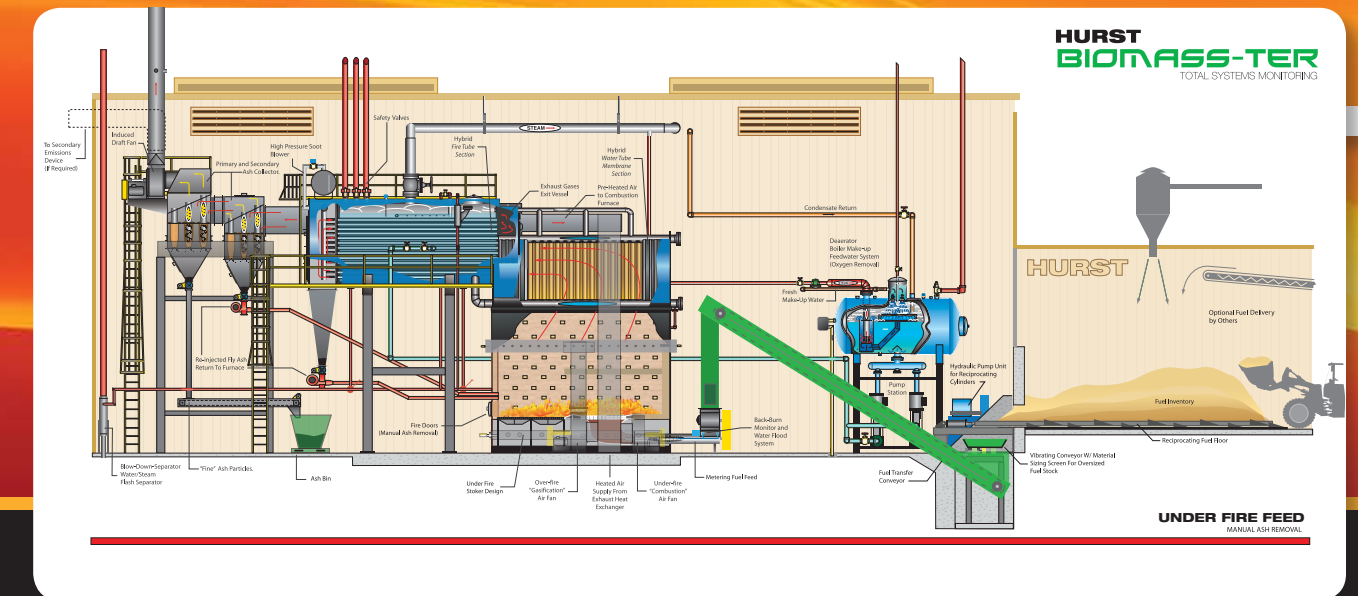
400 BHP
FireBox Design
Correction Facility, Central Mississippi



Twin 600 BHP
Hardwood veneer plant
Steam vats and "coil"
dryer heat application.



Chipped Waste, Bark, Saw Dust
Forestry and furniture related industries wood waste products and residues.



HURST BIOMASS-TER
TOTAL SYSTEMS MONITORING

UNDER FIRE FEED
MANUAL ASH REMOVAL