

**For feeding biomass and alternative fuels, including woody biomass, agricultural or refuse derived fuels into boilers.**

## Features/Advantages

### Fuel Feed Systems

Jeffrey Rader brand boiler fuel feed systems are made up of a combination of storage, reclaim, conveying and feeding equipment. We work closely with you to ensure that our feed systems are designed to meet the requirements of your boiler, whether it is feeding 100% biomass or co-firing biomass with coal. Our systems are in operation today at fuel feed rates of 3 to over 200 tons per hour.



Typical equipment can include:

- Boiler front day bins, silos and hoppers
- Distribution screws and conveyors
- Metering screws
- Robbing screws
- Expansion joints
- Isolation valves
- Feed chutes
- Rotary airlock feeders
- Fine grinding systems for PF boilers
- Gravimetric and volumetric feed controls

Depending on the boiler fuel specifications and design criteria, our system of equipment can be customized to achieve the objectives of the project. Inherent in our system design is the capability to react quickly to changes in fuel demand.

Jeffrey Rader offers mechanical boiler feed systems for the following types of utility or industrial boilers and kilns:

- Moving floor, stoker or grate fired boilers
- Circulating fluidized bed boilers (CFB)
- Bubbling fluidized bed boilers (BFB)
- Cyclone boilers
- Thermal gasifiers

### Fuel Storage, Distribution and Metering

The typical boiler feed system will include fuel storage, distribution and metering to the required number of feed points on the boiler. Fuel storage prior to injection is usually provided with day bins (silos, bunkers or bins near the face of the boiler). Day bins can be circular screw reclaimers in the bottom of silos, full live bottom screws, stokers or chains.

Fuel from the day bins can be discharged directly into the boiler feed spout or to a metering screw conveyor for feeding to a single feed point for injection to the boiler.

Distribution to multiple feed points can be accomplished with distribution conveyors (screw or chain), robbing screws and metering feed screws. A sophisticated control system utilizing level controls, variable frequency drives, and in some cases gravimetric feeders, works in concert with the boiler house DCS to optimize the distribution and delivery of fuel to the boiler feed point.

### Mechanical Injection Systems

Jeffrey Rader mechanical injection systems are typically used on CFB, BFB and moving floor or grate type boilers where larger material sizes at higher moisture contents can be utilized and where firing in suspension is not required.

Fuel received from the fuel distribution and metering system is normally discharged to the boiler feed chute by a rotary airlock feeder or back draft damper.





# Mechanical Boiler Feed Systems

## Features/Advantages (continued from other side)



Generally a system of isolation valves and expansion joints, along with pressure and temperature indicators, are provided at this point near the face of the boiler. Rotary airlock feeders are recommended for isolation of upstream equipment from the boiler.

Jeffrey Rader rotary airlock feeders have been used in many severe-duty applications and can be ATEX certified for dusty environments. When it comes to supplying your boiler with fuel, let the experts at Jeffrey Rader work with you to design and supply a system that will meet your needs.



Contact your local sales representative to learn more about the benefits of a long-term partnership with TerraSource Global!

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www.terrasource.com ■ info@terrasource.com