Cleaver Brooks®

CBCW

The highest-quality, customized systems.
A simple, streamlined process.

Just the boiler system you need, sooner than you'd expect.

With almost 90 years of industry knowledge, Cleaver-Brooks can provide truly customized Industrial Watertube boiler solutions faster than ever without the costs typically associated with a fast-track customized order. We've pre-engineered 17 different configurations based on the most popular customer needs and applications. All you need to do is identify key performance parameters and choose options on your CBCW boiler system, and because of the work we've already done, we can deliver a solution tailored to your specifications easier and faster than ever before.

Cleaver-Brooks makes all the components.

The watertube boiler, burner, state-of-the-art combustion controls and all of the accessories are designed, engineered and manufactured by Cleaver-Brooks, guaranteeing the highest quality and the best total cost of ownership.

Components interface perfectly.

Because Cleaver-Brooks designs and manufactures every part, they work together seamlessly for maximum efficiency and minimum emissions. Other boiler manufacturers order components from a variety of suppliers and then bolt them together. The result can compromise performance, reliability, efficiency and safety.

It's the complete boiler package and still customizable.

From the air inlet to the stack outlet and the feedwater inlet to the steam nozzle outlet, Cleaver-Brooks makes it convenient and cost effective by including everything you need to operate the boiler system. Specialization for your application or need is still available, but could require additional time.

Product Overview Chart	
Pressure Vessel	D-Type Boiler
Control	Hawk 4500
Capacity	17 pre-engineered options 10,000-225,000 lb/h
Design Pressure	250, 399 and 600 psig
Available Fuels	Natural gas only, oil only or natural gas and oil
Emissions	NOx and CO

Layout and configuration drawings make planning easier.

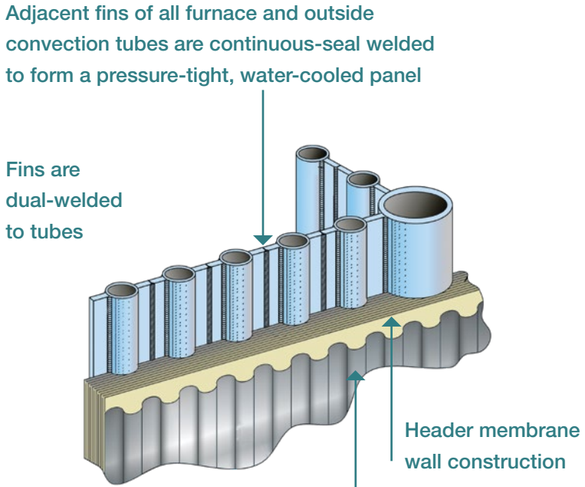
Whether we're talking about our boilers or our process, Cleaver-Brooks is committed to maximizing efficiency. To that end, we're eliminating unnecessary downtime for our customers by delivering detailed information much earlier in the process. With the CBCW, a complete package of technical documents is now available at the time of quote, and with drawings available so quickly, you're able to plan and manage your work up to 8-12 weeks faster than with a traditional system. That's efficiency.

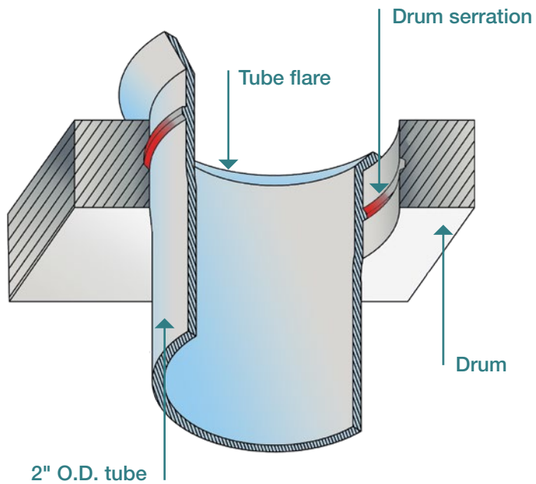
Documents Available at the Time of the Quote:

- **Project Schedule**
- **Calculations** of expected boiler performance for fuel consumption and emissions
- **Diagram** of piping and instrumentation
- **Drawing** of general arrangement and foundation loading
- **Utility Consumption**
- **Costs**
- **Transportation Details**

One size does not fit all.

Our years of industry knowledge have taught us what pressure vessel configurations are most often needed. With the CBCW's 17 pre-engineered options, we will have yours ready for fast delivery and optimal performance. It all starts with a D-style Industrial Watertube pressure vessel – ideal for almost any steam need.





Highest-Quality Boiler Construction
Completely Drainable 2.0-inch O.D. tubes
Grooved tube seats for improved tube-to-drum seal
Fully welded gas seals are used throughout to ensure gas-tight operation
Boiler wall construction is 100 percent water-cooled
Furnace construction utilizes a welded-membrane wall design
Virtually no refractory
Conservatively designed tube layouts, coupled with large drums, provide superior natural circulation and operational benefits
Complete access to boiler water side is provided through manways at both ends of each drum

System-matched burner

Seamless integration is a hallmark of Cleaver-Brooks products and the CBCW is a prime example. The boiler and burner are married together by Computational Fluid Dynamics (CFD), eliminating traditional refractory throat blocks. Meanwhile, center-core technology provides ultra-stable load following and remarkably reliable performance. It's a big part of the reason that the Cleaver-Brooks burner is the benchmark of the industry, with more than 10,000 units installed.

Maintaining high efficiency is key. It impacts both your financial bottom line and your carbon footprint. And the CBCW boiler delivers with low excess air and low flue gas recirculation (FGR), all while keeping emissions low for safe, efficient, and optimal combustion. Its traditional layout with a full windbox design is ideal for industrial, commercial, and institutional applications. So Super-low NOx, CO, VOC and PM emissions are easily obtainable.

Optimized control system

A boiler's performance is based on the ability of the boiler, burner and controls to work together seamlessly. The Cleaver-Brooks Hawk control system offers precise boiler/burner management and safety with logic-based ancillary devices and functions. The state-of-the-art HAWK 4500 burner management and combustion control system provides an intuitive, efficient human-to machine interface that allows you to get the reliability, safety and efficiency you'd expect from your Cleaver-Brooks system.

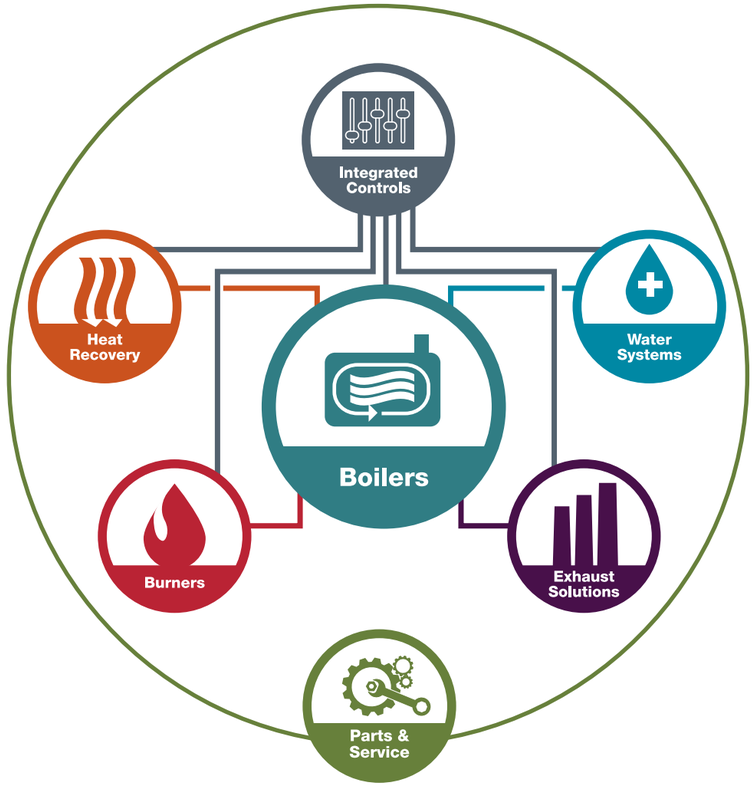
- Fully metered cross-limited control system with O_2 trim or parallel positioning with O_2 trim
- Single-, two- and three-element feedwater control system
- Online efficiency monitoring
- Drum water conductivity control
- Draft control
- Can be customized and optimized for any system
- Compatible with building automation systems
- NFPA and UL compliant

Advanced heat recovery

It takes energy to heat up the boiler flue gas. The CBCW's custom economizer captures the waste heat to increase the temperature of the feedwater entering the boiler drum, reducing fuel consumption, overall energy costs and environmental impact. This takes energy that would otherwise be wasted and uses it to save you money, and increase the life and efficiency of the boiler system while reducing your carbon footprint. That's a win-win-win.

Fully-integrated freestanding stack

To develop the most efficient exhaust systems, capable of meeting the most stringent emissions requirements, we employ the latest technology and techniques in research and development, quality control and manufacturing. And just like every component of a Cleaver-Brooks boiler, we manufacture every part of the exhaust system, so it fits together seamlessly with every other part to work more efficiently and reliably. With minor customization, the CBCW can accommodate selective catalytic reduction (SCR) and CO catalyst.



Providing energy-efficient, environmentally friendly boiler room solutions.

Cleaver-Brooks is one of only a few boiler room solution providers in the world to operate a dedicated research and development facility. Having pioneered several industry-leading technologies, we remain just as committed today to introducing technology and products that enable a more energy-efficient and environmentally friendly generation of steam and hot water.

We distribute our products through the Cleaver-Brooks Representatives Association, or CBRA, an alliance of independently owned and operated companies that provide boiler room products and service. CBRA companies can be counted on to provide Cleaver-Brooks products and parts, engineering support, customer training, technical service and system maintenance.

To find a CBRA representative near you, please visit **cleaverbrooks.com/reps.**

Engineered Boiler Systems
6940 Cornhusker Hwy, Lincoln, NE 68507 USA
402.434.2000 · info@cleaverbrooks.com
cleaverbrooks.com/engineered

Printed in the USA

CB-8562
11/17