BURNHAM COMMERCIAL

AMERICA'S BOILER COMPANY®

PRODUCT SELECTION GUIDE

Your Complete Guide to "America's Boiler Company"

America's Boiler Company

Series 4NP

Series 4N

Series 4F

Series 3

Specifying engineers and contractors turn to Burnham Commercial for quality scotch and firetube boilers when their jobs call for reliable, durable heating equipment. Ideal in commercial and industrial applications, Burnham Commercial has nearly 150 years of manufacturing expertise in producing boilers for steam and hot water systems.

This tradition of excellence continues today with Burnham Commercial's complete line of scotch and firebox boilers that range from 7 to 1,000 BHP, and the nationwide network support of trained, experienced independent manufacturer's representatives selling our product. When you compare both quality and features with competitive boilers, you'll see why Burnham Commercial is the source for dependable commercial heating equipment.

BURNHAM® COMMERCIAL™
AMERICA'S BOILER COMPANY®

Series 4S

Series C

Shock Proof Boilers

Low NOx

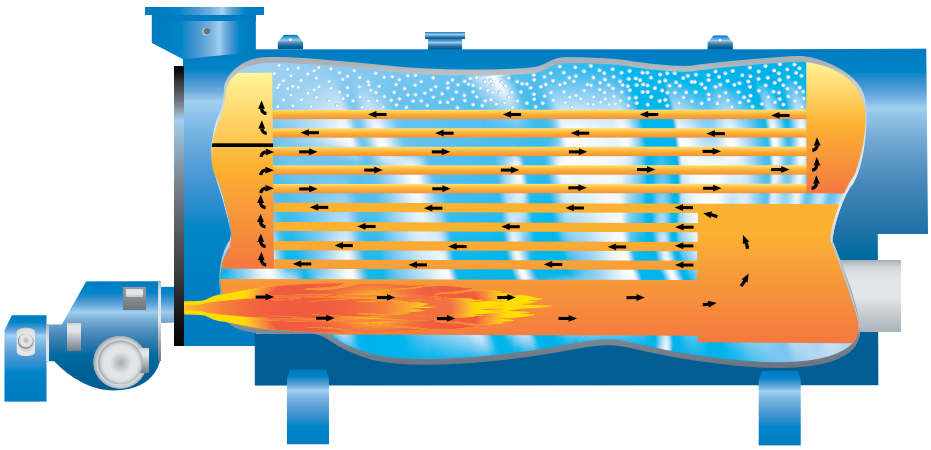
Series 4S — 4 Pass Wetback Scotch Boiler

100-800 HP Water Boiler **100-800 HP Steam Boiler**

The Series 4S uses the very latest design techniques and standards. This means it is designed for low volumetric release rates and produces a higher efficiency due to the larger furnace and higher heat transfer design. The 4S is also a great option for low NOx applications.

Series 4S Benefits

- Forced-draft firing with oil, gas, or combination gas/oil
- Low or high pressure steam or water
- High efficiency 4-Pass design
- Completely packaged for “same day” installation
- Heavy steel base provides adequate stability along with shipping and rigging protection
- Front and rear full-sized hinged access doors are standard and secured with non-corrosive brass nuts
- Access door is constructed of durable, lightweight vacuum formed ceramic fiber making the door liner weigh less than 40 pounds
- Handhole clean-outs are placed for ease of servicing
- UL approved packaged burners are trimmed and wired to assembled gas trains
- 5 sq.ft./hp rated design, no turbulators or welded tube-ends
- Multitude of QC checkpoints and stringent final inspection assures you of a quality product
- No proprietary parts or gaskets on the boiler trim or the burner
- Designed for low volumetric release rates of no more than 130,000 btu/hr/cu.ft.
- Fiberglass insulated aluminized steel jacket is finish painted with high gloss Burnham blue enamel
- All external trim piping is designed and installed in accordance with the ASME Code and certified by an independent inspection agency for compliance



4 Pass Wetback Scotch Boiler—To learn more about wetback versus dryback, refer to our wetback literature

Series 3 — Packaged Firetube Boiler

40-800 HP Water Boiler **40-1000 HP Steam Boiler**

Save Thousands Of Dollars Over The Life Of Your Boiler

Long-term energy and maintenance efficiencies are the focus of Burnham quality engineering. When choosing a boiler, it's a good idea to select a product with these features in order to reduce enormous hidden costs down the road. Review our wetback versus dryback literature for cost savings.

Boiler Costs Is Not Jus A First Year Proposition

With any ordinary boiler, expenses such as fuel, maintenance, and repair costs can escalate as the years go on. Burnham packaged boilers are designed to diminish these significant expenditures.

Burnham's High Life-Cycle Efficiency

While most competitive boilers can give fuel-to-steam efficiencies of 80% or over—when they're new—how consistently can they be expected to maintain this level of operation? Burnham wetback boiler performance will not drop due to deteriorating rear refractory, leaking door baffles and seals, and heat-stressed rear tube sheet as can happen with some drybacks. Easy access is a necessity for those with heavy refractory, since they need frequent and expert maintenance.

The Burnham Wetback Saves Big Money On Maintenance

Over the life of a dryback, brittle refractory baffling and rear door gasketing will require continuous monitoring, maintenance, and replacement, costing thousands upon thousands of dollars. *These built-in maintenance costs can eventually equal or exceed the original cost of the boiler.* As refractory deteriorates, leaking hot gas causes boiler efficiency to drop until the condition is noticed and the repairs can be made. Expensive flue temperature alarms are offered with some drybacks to monitor this dangerous and costly potentiality. The rear door itself can become heat-distorted, requiring an expensive replacement. In addition, boiler downtime during repairs can mean crippling losses.

This waste of time and money is eliminated with the Burnham Wetback. The actively functional water jacket eliminates the need for: refractory wall, rear door, rear door inspection and sealing, door swing space, and flue temperature alarm. These costly maintenance headaches are gone, while boiler performance is *increased*. Burnham has only a small, inexpensive refractory area in the burner area, for burner mounting. The rear access door liner is a ceramic fiber insert that contains no refractory.

The furnace and rear turnaround area are cool running, fully wetbacked radiant heat transfer surfaces. They promote good internal water circulation and rapid heat absorption. There is no need for the forced internal circulation pumps often specified to cool the rear tube-sheets and drybacks.

The Burnham Wetback Is Built To Last

Typical dryback boilers have a common rear tubesheet that expands and contracts at different rates adjacent to each tube pass, stressing tube ends and increasing the likelihood of leaks. Additionally, the heavy refractory used in some drybacks reflects intense heat to the rear tube ends and tube sheet, accelerating their deterioration. In attempts to stop leaking, the rear ends of tubes have sometimes been welded. Cleaning or tube replacement involves opening both the front and rear covers and resealing them when the job is done. Usually, if tubes have been welded at the ends, the welds must be burned out, the tube sheet repaired (or a new segment welded in) and the new tubes welded.

These costly expenditures are not an issue with the Burnham Scotch Marine: separate rear tube sheets from each pass to expand and contract at its own rate without tube-to-sheet stress. Tubes are rolled and flared in low-pressure units; and rolled, flared and beaded in high-pressure units. No welding of tubes is permitted, nor is it necessary. Any eventual tube replacement is simply a mechanical operation, no welding involved. The end result is less cost and less headache.

Series 4F — Forced Draft Firebox Boiler

12-615 HP Water Boiler **12-615 HP Steam Boiler**

The Series 4F is a compact boiler that fits where other designs of similar capacity cannot. It's perfect as the heart of almost any system as it requires no tall expensive stack.

*60-psi water boiler available in sizes 4F-63 through 4F-993.

Series 4F Benefits

- Forced-draft firing with oil (No. 2,4,5, or 6), gas, or combination gas/oil
- High efficiency three-pass design
- Available for 15 psi steam and 30 or 60 psi water*
- Factory assembled
- Ideal for modular applications when in a tight installation area
- Easy to clean and maintain—requiring no special tools, materials, or skills
- Elaborate or expensive proprietary seals are not required to re-close the doors as with some boilers
- ASME code construction

C Series — Packaged Firetube Boiler

20-100 HP Water Boiler **20-100 HP Steam Boiler**

The C Series is fully packaged and designed to provide maximum energy efficiency at minimum cost. This is a great economical selection for a retrofit or upgrade of an existing boiler room.

C Series Benefits

- Forced-draft firing with oil, gas, or combination gas/oil
- Steam or water
- High efficiency three-pass design
- Fits through any standard 36" x 80" doorway, eliminating the need for any costly building alterations or difficult site assemblies
- All combustion air is provided by the forced-draft burner fan eliminating the expense of a tall stack
- Front doors open so the firetubes can be brushed clean without disconnecting fuel lines and disturbing the burner
- ASME code construction

Low NOx Boiler

Our proven designs use the very latest low NOx techniques and standards, and every Burnham Commercial Low NOx package design application is approved by our own Engineering Department and our burner vendors' Engineering and Applications Design Groups. Our successful track record, assures you that our products, and our burner selection, are the best available.
Being America's Boiler Company, we know what burner vendors are looking for in boiler designs when it comes to reduced NOx combustion levels:

LOW NOx Benefits

- Large furnaces for low volumetric release rates
- High heat transfer for the most efficient boiler for your application
- Less burner motor horsepower so less energy is used to operate your boiler

Combining these three features contribute to an ideal low NOx package application.

Shock-Proof Hot Water Boilers

Eliminate any thermal shock concerns with our Series 3-SP Shock-Proof hot water boiler package. This boiler design uses our reliable Series 3 that incorporates a high steam space volume that can easily accommodate coils larger in capacity than other designs. The Series 3 wetback design and low volumetric furnace release rates allow easy firing and a prolonged boiler life. When properly commissioned and maintained, your shock-proof packaged boiler will last for many years.

Shock Proof Benefits

- There is no steam side water make-up, so no steamside accessories are required
- After treating the steam side, you can expect your boiler to run clean for a long time
- The hot system water flows only through the tubes of the heat exchanger
- The specially designed heat exchanger tubes are highly resistant to corrosion and erosion
- The specially constructed head allows for flanged supply and return connecting and connections for the complete coil trim package provided
- The coil trim package consists of inlet and outlet pressure gauges, inlet and outlet thermometers and coil side safety valves

Horizontal and Integral Deareators

Performance Features

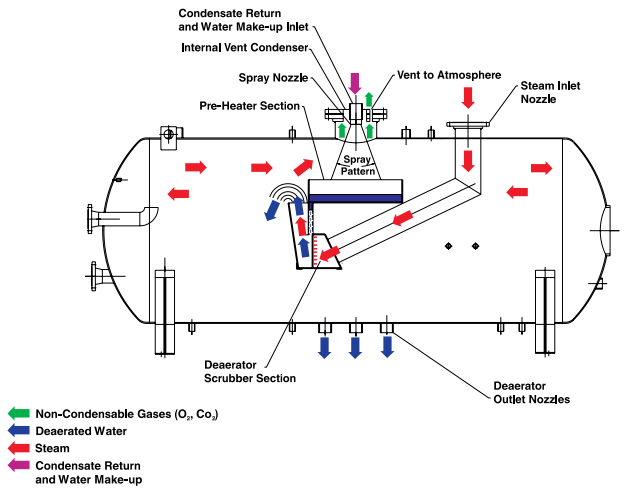
- Oxygen removal to .005 cc/l (7PPB)
- CO_2 removal to 0% measurable
- Reduce chemical costs
- Reduce boiler and system corrosion
- Improve boiler efficiency
- Pre-heat boiler feedwater
- Quick equipment payback compared to chemical oxygen removal

Construction Features

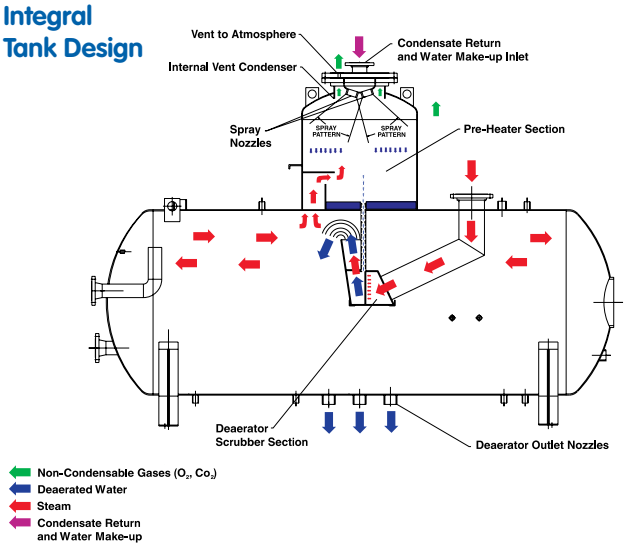
- Constructed to ASME Section VIII, Division 1 for 50 PSIG
- Easily accessible manway
- Standard ten minute deaerator storage
- Internal vent condenser for minimum steam loss
- Self-adjusting spring-loaded stainless steel spray valve
- Structural steel stand/pump platform
- Two-stage deaeration
- Available as completely packaged unit including pumps and control panel

- Stainless steel spring-loaded spray valve and second stage steam scrubber
- Available with a complete range of boiler feedpumps and control options

Horizontal Tank Design



Integral Tank Design



The Complete Boiler Room Supplier

Firebox

Scotch

Bottom Blowdown

Chemical Feed System

Compact Feed System

Surface Blowdown/ Heat Recovery System

Deaerator System

Water Softener System

Boiler Feedwater System

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