



# **Rite Steam Boilers**



## **The Rite Advantage**

Rite is the <u>ONLY</u> boiler engineered with complete waterside access for inspection, cleaning and repair.

#### **Steam Boilers**

Steam boilers are a key piece in your heating or production puzzle. Rite designs and builds boilers with operations in mind. They are specifically engineered to be completely repairable in the field, to provide long reliable service. The ability to access, inspect and clean the boiler watersides means that the boiler efficiency will be just as great in twenty years as it was when you installed the boiler.



Atmospheric burner boiler

- a Rite boilers are the only boilers built that provides 100% waterside access for inspection, cleaning and repair of the boiler.
- (b) Non-proprietary 2" boiler tubes, field replaceable and available and stocked by most repair companies.
- **c** Easy service access to the burners, inspect the refractory and inspect the boiler tubes.
- d Extremely long lasting, cast iron, burners for decades of trouble-free operation.
- e Natural draft exhaust system to eliminate dangerous exhaust gas leaks.



Power burner boiler

- a Rite boilers are the only boilers built that provides 100% waterside access for inspection, cleaning and repair of the boiler.
- b Non-proprietary 2" boiler tubes, field replaceable and available and stocked by most repair companies.
- C Easy service access to the burner, inspect the refractory and inspect the boiler tubes.
- **d** Complete fuel train and control to meet any emission requirements in the world.
- e Natural draft exhaust system to eliminate dangerous exhaust gas leaks.

#### What Goes Into a Great Steam Boiler Design?

- Our boilers are impervious to thermal shock—we back up this claim with a 25 year warranty against this damage.
- Low water volume for an inherently safer design—if the vessel ruptures all you get is a leak.
- Large water tubes forgive bad water chemistry—if your water chemistry gets temporarily out of control
- The ability to go from a cold start to steam in minutes.

#### **Atmospheric or Power Burner?**

If the boiler is going to be installed in an area that has restricted NOx emissions then you will need a power burner boiler. If your area doesn't require low NOx then you can consider an atmospheric boiler. These are generally less expensive to purchase and maintain, but you lose 1-2% efficiency compared to a power burner.

The other difference is harder to define. It comes to production performance. In small operations, an atmospheric boiler can be much more responsive to steam demands. This has to do with the purge time required, by code, on power burners. Code requires that when a burner starts it must purge the combustion chamber of any accumulated gasses. The purge time is usually 60-90 seconds after the burner is started before the burner can actually fire. An atmospheric burner can fire as soon as it receives a start signal. During that time the steam pressure can fall dramatically, dropping 40% or more as shown in this graphic.



In larger steam systems with consistent steam loads this heavy cycling can be minimized on power burner systems by specifying high turndown, modulating burners.

#### High pressure or Low pressure?

If the required operating steam pressure/temperature is less than 15 psi you can use a low-pressure boiler. Anything above that requires a high-pressure steam boiler. Rite boilers offers both. High pressure steam boilers and their associated systems are usually more expensive to purchase, install and operate than the low pressure counterparts.

Туре	MAWP*	Operating Pressure	input Range MBtu/H	Output Range BHP
Low Pressure LP (15psi)	15 PSI	0-13.5 PSI	150 –12,500	4—300
High Pressure HP (150PSI)	150 PSI	10-147 PSI	398—10,500	9.5-250

#### **Emission Requirements**

Emission requirements vary greatly from one jurisdiction to another. Emission levels are set to address the very specific environmental issues of a region. The regulations normally limit NOx emission levels to reduce smog. In areas where there are no restrictions there is no real benefit to controlling NOx as there is typically a trade-off in performance that can reduce your plant efficiency and actually increase the facility's carbon footprint. Contact Rite boilers or your local Rite representative to learn about the latest requirements and technologies.

### **Steam Boiler Accessories**

Rite provides all of the accessories required by most boiler rooms. This equipment is available as a package with our boilers or as stand alone accessories.



Water softeners are a vital component to your steam boiler systems. They eliminate the rapid accumulation of scale

Proper water treatment is critical in long term care for your boilers. We can provide the equipment, chemicals and expertise to help you care for your boilers.



Often simpler is better we offer basic condensate collection/ feedwater set for smaller boiler applications.

BT-611

We manufacture blowdown tanks for your boiler room. An ASME blowdown tank provides a safe reservoir for your boiler blowdown. They are available with cold water aftercoolers should your project require it.



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