

# RISKY BUSINESS

What You Need To Know About...

## Boilers

### WHAT IS A BOILER?

A boiler is defined as a closed vessel in which water is heated or circulated, either as hot water or as steam, for heating or power. It can be categorized as either high pressure or low pressure.

#### High Pressure



Steam: Over 15 psi



Water: Over 160 psi

#### Low Pressure



Steam: 15 psi or less



Water: 160 psi or less



High pressure boilers are required to be built to a different construction code than low pressure, due to their higher energy potential

### The primary uses for commercial boilers



Building Heat



Process and Manufacturing

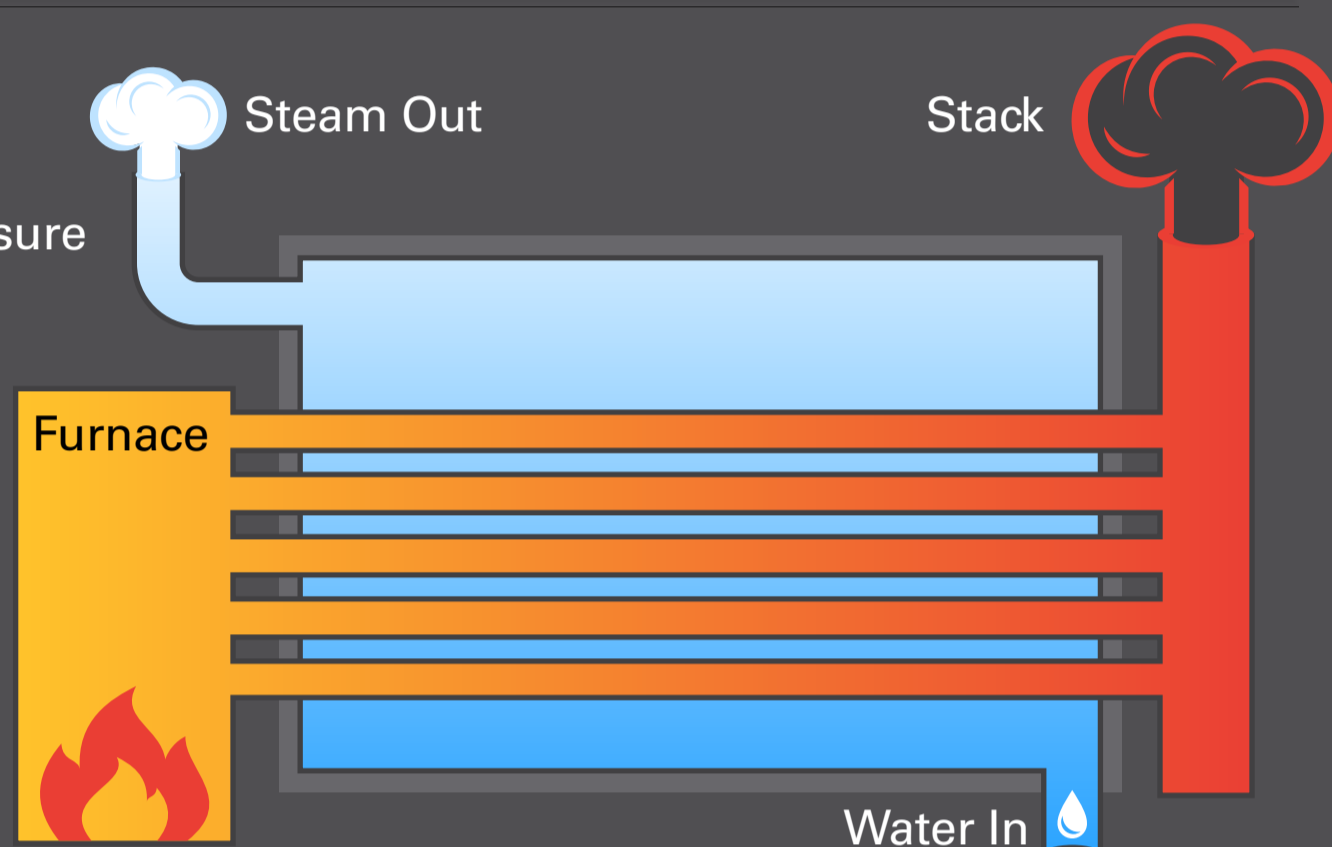


Power Generation

### THREE MAIN TYPES OF BOILERS:

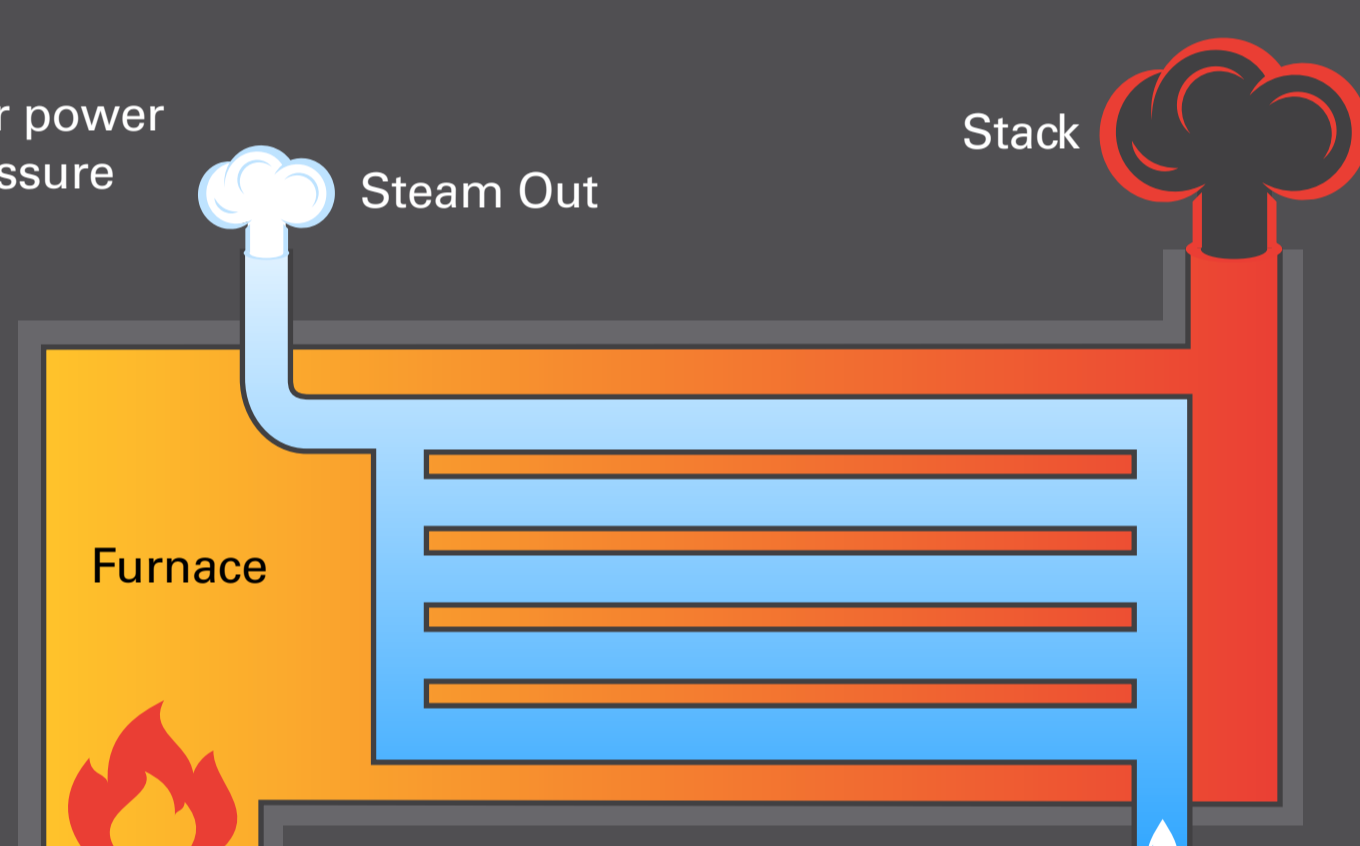
#### Fire tube:

- Heat or process
- High or low pressure



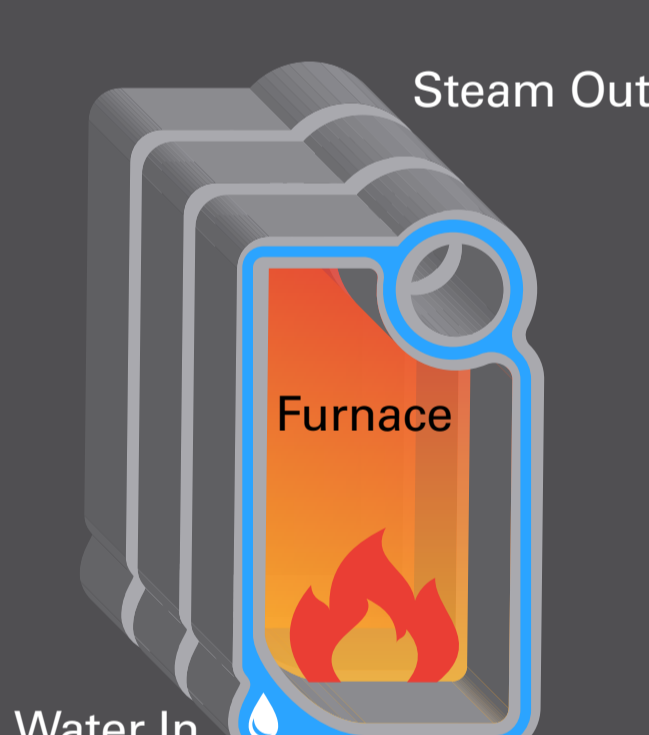
#### Water tube:

- Heat, process or power
- High or low pressure



#### Cast iron sectional:

- Heat only
- Low pressure only



### TOP CAUSES OF BOILER BREAKDOWN:



Scale and sediment buildup causes overheating



Automatic control or safety device failure

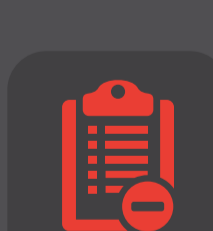


Thermal shock

### CONTRIBUTING CAUSES OF BOILER LOSSES:



Lack of Maintenance



Improper Testing



Operator Error

### PREVENTIVE MAINTENANCE:

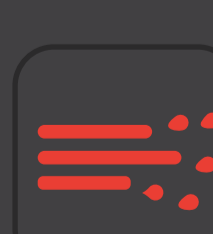
#### How to protect your boiler from loss



Check boiler conditions every time you visit the boiler room



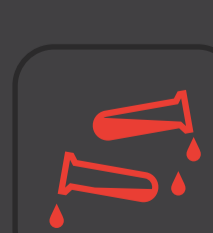
Arrange for a qualified boiler technician to service the boiler annually



Blowdown bottom drain valves and water columns regularly to remove sediment



Use qualified and trained operators



Ensure that boiler water chemistry is optimal to hinder corrosion and/or scale formation



Test boiler automatic controls and safety devices regularly—low water fuel cut-offs, safety relief valves, temperature and pressure switches, fuel combustion safety controls