

# RAYPAK FIRST AND FOREMOST IN COPPER FINNED TUBE BOILER DESIGN



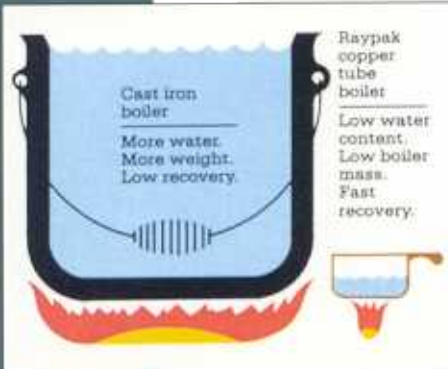
In 1948, Raypak introduced the first copper finned tube boilers for hydronic heating and hot water supply. Ever since, Raypak boilers have consistently led the industry in engineering innovations and quality improvements. Fifty years and over one million installed units later, Raypak is still the undisputed leader in quality and reliability. That's why more heating professionals rely on Raypak than any other manufacturer.

## Reliability

Design simplicity, quality materials and meticulous craftsmanship have earned Raypak a rock-solid reputation for reliability. While others busily design cost out of their products, Raypak has continued to engineer dependability in. Features like thermal shock-proof heat exchangers with floating return headers are standard. Burners are made from a high quality stainless steel alloy that won't corrode or warp. All metal surfaces are rust protected. Every detail is designed to extend product life. Every detail improves dependability. Because every detail matters.

## Compact Design

Raypak's low boiler mass design is a revolutionary improvement from antiquated cast iron, steel tube, and tank type heaters. With a smaller footprint and substantial reduction in weight, Raypak boilers can be installed just about anywhere, including on rooftops and in tight quarters. All units up to 1.8M BTUH input will fit through a standard doorway, and even the largest units are only 68" high.

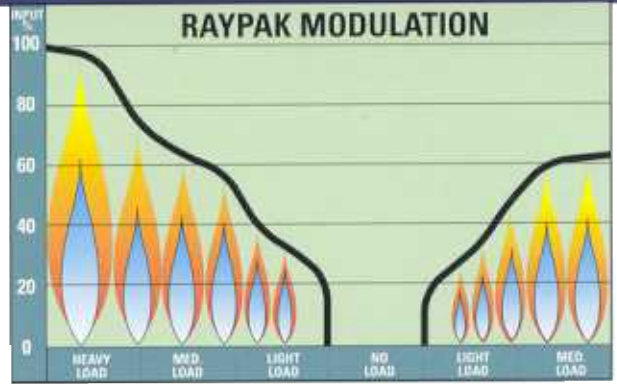


## Lower Operating Costs

Raypak's Advanced Design Boiler has the highest efficiency rating of any IAS-certified boiler - an unmatched 97% thermal efficiency. And Raypak atmospheric boilers are the most fuel efficient non-power burner units available. Moreover, their high recovery, low standby-loss designs can cut fuel costs substantially - as much as 50% compared to low-recovery cast iron, steel tube and fire tube boilers. With near instantaneous response and very little water content, Raypak boilers fire only as required to keep the system at temperature, thereby all but eliminating standby and jacket losses.

## Efficient Flame Modulation

Another key factor in reducing energy cost is the ability of a boiler to precisely meet the heating load. Raypak not only pioneered modulating technology for copper finned tube boilers, Raypak perfected it. Fuel input is evenly and accurately throttled to as low as 20% of full fire rate to



track any boiler load requirements. Wasteful short cycling is eliminated and dynamic efficiency is improved by as much as 20%.

## Trouble-Free Operation

Raypaks are engineered to perform quietly and reliably year after year under operating conditions where other boilers wouldn't last twelve months. High velocity flow through the heat exchangers creates a scouring action that keeps even the worst hard water conditions from fouling the boiler with scale. Heavy duty NEMA-rated control enclosures and wind, rain and debris-proof boiler jackets keep out Mother Nature. Even the exterior coating, an electro-statically applied baked-on UV-inhibited Polytuf powdercoat finish, was specifically selected to provide years of trouble-free service.

## Serviceability

When servicing is required, Raypak makes it effortless. Controls are front-located for easy access. Burners and heat exchangers are simple to remove for inspection, and are designed for quick, straight-forward repair. Replacement parts, if needed, are readily available from Raypak and through a worldwide network of distributor representatives and parts houses.

## Experienced Technical Support

Raypak's technical support team is the best in the business. Raypak's applications engineers and service technicians have decades of experience and can help with every aspect of the job from sizing to post installation technical support. That's why Raypak is known as "the Hot Water Management Expert."



# FEATURES

Proven design, superior materials and careful attention to detail produce a hot water boiler whose quality, performance and reliability is unsurpassed.

**Rugged All-Bronze Headers**

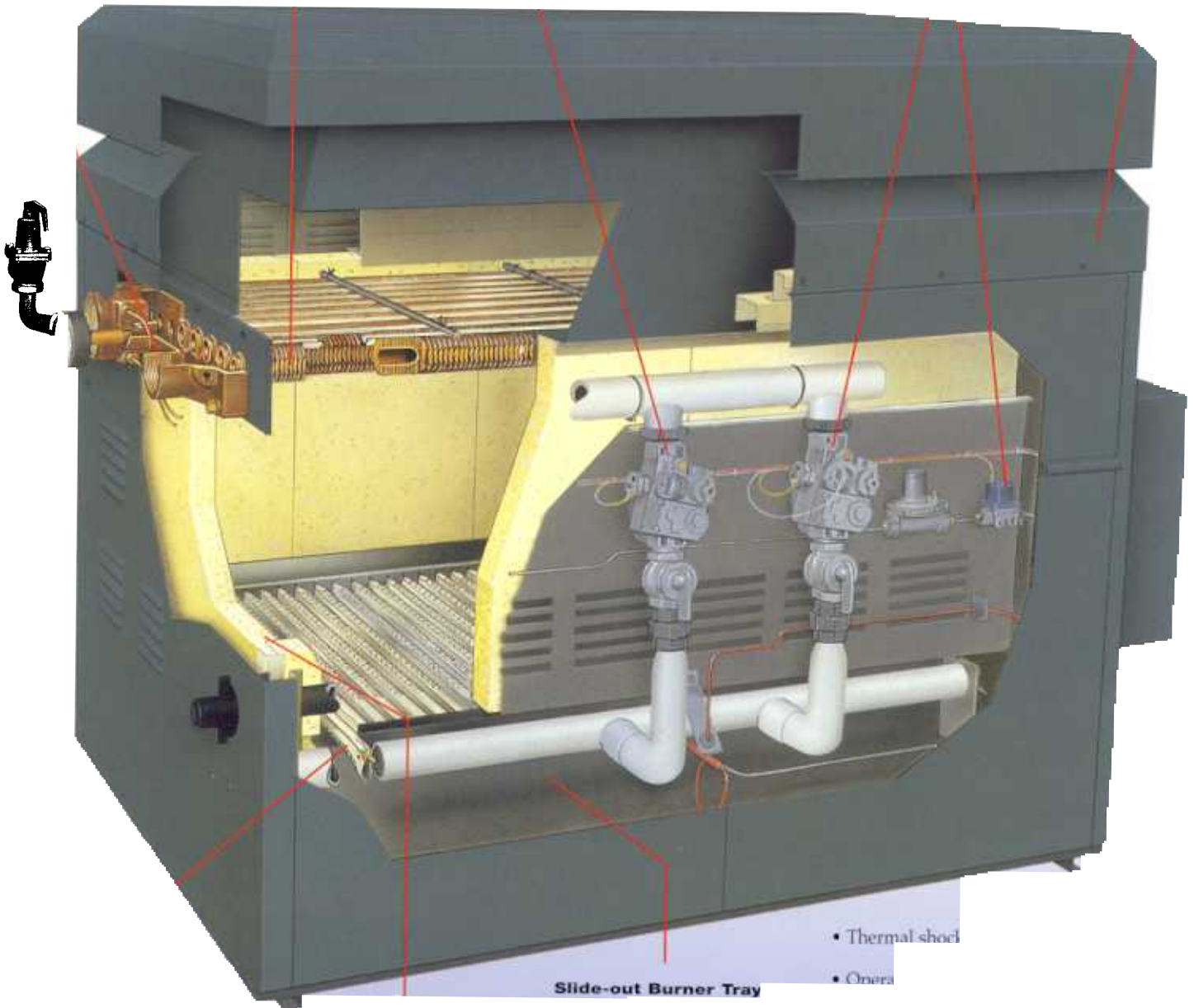
**Combination Modulating Valves**

**24-Volt Controls**

**Finned Copper Tube Heat Exchanger**

**Corrosion Resistant Steel**

**Floating Return Header**



**Stainless Steel Burners**  
maintain precise com  
ing rates  
n't clog c

**Interlocking Refractory Panels**  
with sealed corners reduce  
radiation losses.

- Thermal shield
- One

- High velocity hydraulics virtually eliminate corrosion and scale.

## APPLICATIONS

Raypak copper finned tube boilers and hot water supply systems can be used in any application that requires hot water.

### Domestic Hot Water Supply

A Raypak boiler/tank combination will reliably deliver 140°F water for apartments, condominiums, hotels and motels of virtually any size. Laundries, coin-op or commercial, car washes or industrial processes – wherever there is a need for domestic hot water in volume, the efficient Raypak boiler/tank combination is clearly superior to inefficient and unreliable tank-type hot water heaters.

### Space Heating

Raypak's boilers provide the ultimate in personal comfort in space heating. Ideally suited for all types of space heating applications – multi-family, commercial buildings, schools, institutions, etc. – the instantaneous response of the copper finned tube heat exchanger and the ability to control the fuel input to 20% of the boiler rating adds up to outstanding performance.

### Radiant Systems - In Floor Heating, De-icing and Snow Melting

The Raypak boiler, with its high efficiency and modulation, delivers low operating cost and trouble-free performance for in-floor heating, de-icing, and snow melting applications. The boiler automatically and continuously heats a glycol solution that circulates within the system piping. Accurate load tracking is accomplished by modulating the burner flame to safely meet any design criteria, which in snow melt applications may be surface temperatures of 35°F.

### Multiple Boiler System and Sequencing

Raypak's wide selection of models and inputs allows the ultimate in design optimization. Sizes and complete systems can be matched to the load, thereby keeping the number of boilers in the system to a minimum.

### Dual Temperature Hot Water Supply

The Raypak instantaneous boiler, coupled with an accumulator tank, provides a continuous supply of 180°F sanitizing rinse water and 140°F general purpose water simultaneously. Designed for restaurant applications. Gas modulation controls match input to the load for maximum economy and precise temperature control.

### Closed Loop Water Source Heat Pump Systems

Raypak copper finned tube boilers are the most efficient heat source for system water temperatures below 90°F and where condensation at the boiler site is of concern. With their high thermal efficiency and low water content, Raypak systems achieve instant response for better control of the heat pump system.

### Advanced Boiler Controls

Raypak manufactures a complete line of state-of-the-art boiler controls. Raypak's B6000 Boiler Management Systems is the world's most advanced microprocessor based, anticipatory, self tuning boiler control. Combining full boiler diagnostics, an advanced PID control algorithm and DECC (direct expanded control capability) for building management systems integration, the B6000 is the boiler control of choice. Raypak's Y-2 Electronic Boiler Control provides a value priced alternative by combining the most in-demand features of the B6000 with a very competitive price.

### D-1 Draft Induced Boilers

Any Raypak boiler can be equipped with a factory-mounted draft inducer. The D-1 configuration provides an easy solution for tough venting problems.



### **3 Different Combustion Designs Provide an Engineered Solution For Any Venting or Equipment Room Requirement.**

#### **Advanced Design Boilers™ Fan Assisted**

- 3 Model Sizes
- 500,000 to 1,000,000 BTU per Hour Inputs
- Indoor or Outdoor Construction
- Heating (H)
- Domestic Hot Water (W)
- Pool (P)
- TruSeal™ Direct Vent
- Up to 97% Efficiency
- Low NO<sub>x</sub>
- Small Footprint
- On/Off Firing

#### **Hi Delta™ Boilers Fan Assisted**

- 13 Model Sizes
- 300,000 to 2,340,000 BTU per Hour Inputs
- Indoor or Outdoor Construction
- Heating (H)
- Domestic Hot Water (W)
- Pool (P)
- TruSeal™ Direct Vent
- 84% Efficiency
- Multi Stage Firing
- Low NO<sub>x</sub>

#### **Raytherm™ Boilers Atmospheric**

- 40 Model Sizes
- 90,000 to 4,000,000 BTU per Hour Inputs
- Indoor or Outdoor Construction
- Heating (H)
- Domestic Hot Water (W)
- Restaurants (R)
- Instantaneous (N)
- Pool (P)
- 82%+ Efficiency
- Modulating, Stage and On/Off Firing

### **5 Engineered Styles Deliver Precision Hot Water For Any Application.**

#### **TYPE H Commercial Space Heating Boilers**

- 136,000 to 4,000,000 BTU per Hour Inputs
- Cast Iron-Glass Lined Headers Standard
- Optional Bronze Headers
- Proprietary Control Packages

#### **TYPE W Commercial Hot Water Supply Boilers**

- 90,000 to 4,000,000 BTU per Hour Inputs
- For use with Storage Tank
- All Bronze and Copper Waterways Standard

#### **TYPE R Dual Temperature Boilers**

- For use in Restaurants
- 514,000 to 1,125,000 BTU per Hour Inputs
- Modulating Firing
- All Bronze and Copper Waterways Standard

#### **TYPE N Instantaneous Boilers**

- Used in Non-storage Type Hot Water Systems
- 514,000 to 1,826,000 BTU per Hour Inputs
- Modulating Firing
- Indoor or Outdoor Construction
- All Bronze and Copper Waterways Standard

#### **TYPE H Residential Space Heating Boilers**

- 42,000 to 180,000 BTU per Hour Inputs - Six Sizes
- Fully packaged
- On/Off or Stage Firing
- To 84% A.E.U.E.
- Non-ferrous Option for Radiant Heating

#### **TYPE P Commercial Pool Heaters**

- 514,000 to 4,000,000 BTU per Hour Inputs
- All Bronze and Cupro-Nickel Waterways Standard



ADVANCED DESIGN BOILER™



HI DELTA™ BOILER



RAYTHERM™ BOILER

# The Raypak Mission

- To be recognized in the industry as the leader in technological innovations and product reliability.
- To be recognized as the industry's most professional and most service-oriented company.
- To provide value to its customers that competitors cannot match.
- To constantly seek out opportunities for growth and improvement in the industry.
- To create a work environment that encourages all employees to improve the operation and the product wherever they can and to offer employees the opportunity to utilize their strengths and talents to the fullest.
- To create an organization that can outperform its competitors in every industry facet.



Raypak Corporate Headquarters  
Oxnard, California



Raypak Canada Facility



Raypak Australia Facility



Raypak, Inc. reserves the right to make product changes or improvements at any time without notice.

**FIRST IN COPPER FINNED TUBE DESIGN.**

**For over 50 years**

**1st in Quality**

**1st in Reliability**

**1st in Service**

**1st in Innovation**



*The Hot Water Management Experts.™*

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