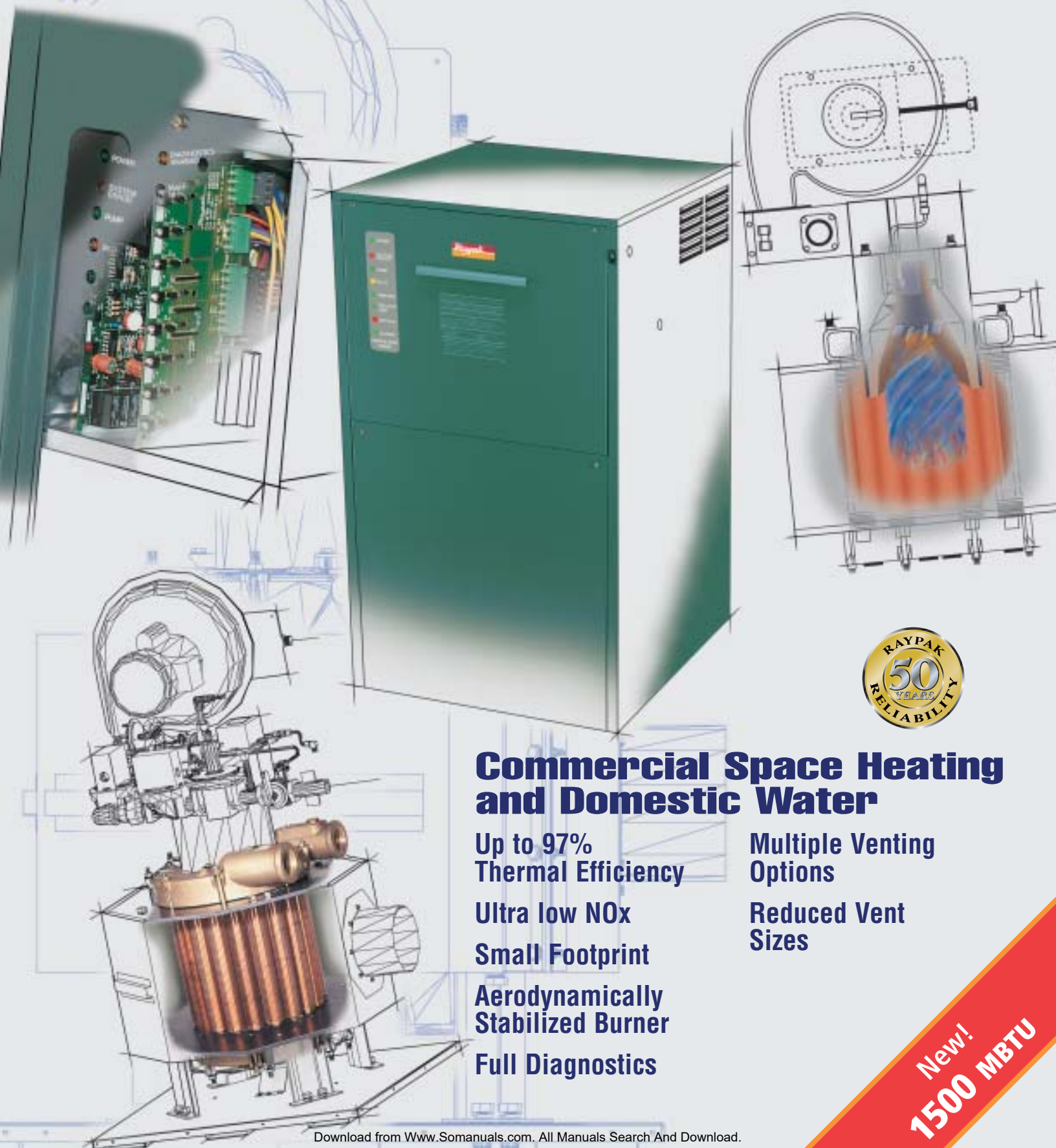


A NEW ERA IN BOILER DESIGN



Commercial Space Heating and Domestic Water

**Up to 97%
Thermal Efficiency**

**Ultra low NOx
Small Footprint**

**Aerodynamically
Stabilized Burner
Full Diagnostics**

**Multiple Venting
Options**

**Reduced Vent
Sizes**

**New!
1500 MBTU**

EFFICIENCY.

THE EFFICIENCY YOU WANT AND THE RELIABILITY YOU NEED.

High efficiency boilers were introduced in response to the energy crisis of the seventies. Most first generation high efficiency boilers were simply standard units that had been hurriedly modified to boost efficiency. These boilers obtained higher efficiencies by permitting steady-state condensation in the heat exchanger and in the combustion chamber. Failure to adequately protect the combustion chamber and heat exchanger from the corrosive effects of condensate meant that most first generation units failed prematurely. The units condensed, eventually corroded, and finally were discarded.

Manufacturers learned from their mistakes. They upgraded materials, redesigned heat exchangers and refined their manufacturing techniques. The second generation of high efficiency boilers, which began to appear in the late eighties, was a vast improvement. However, second generation units still experience damage from condensation. Although the materials used in second generation high efficiency boilers last considerably longer, they still eventually succumb to corrosion.

THIRD GENERATION TECHNOLOGY

After two decades of trial-and-error, the boiler industry has finally realized that high efficiency and long product life can only be obtained by preventing condensation from occurring in the combustion chamber. Raypak's Advanced Design Boiler is the first of a new generation of boilers that can obtain ultra-high efficiencies without compromising product life. The "secret" to the ADB's longevity is that condensation occurs only in a corrosion-resistant condensing heat exchanger. The ADB is designed so that condensation will not occur in the primary heat exchanger or the combustion chamber. The result is an ultra-high efficiency product that lasts.

Welcome to the future of boiler technology.

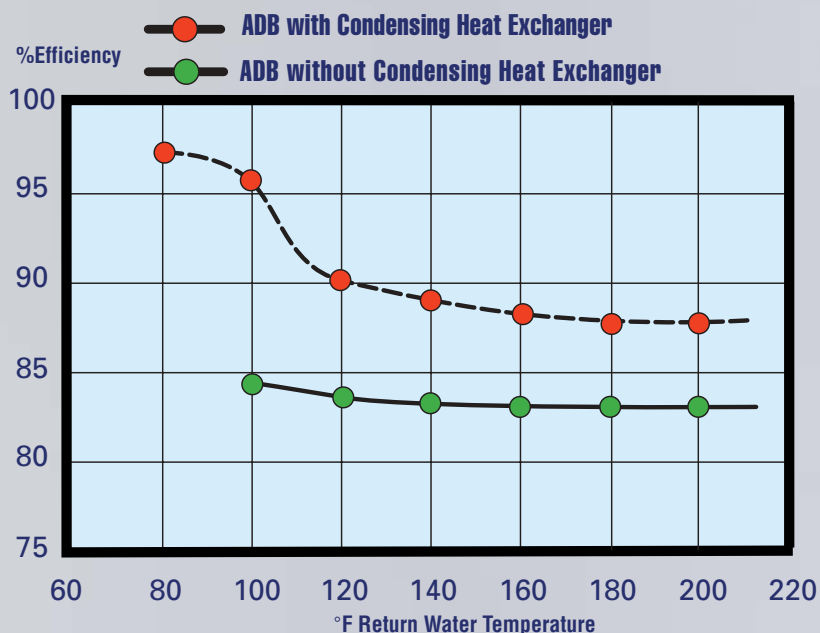
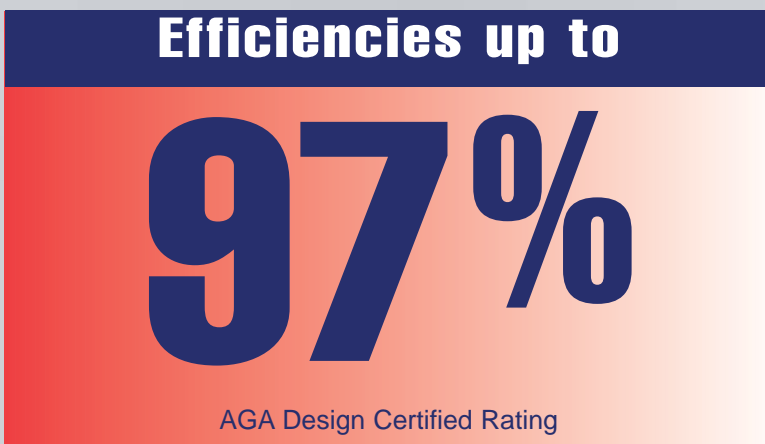


**THE ADB'S
NON-CONDENSING
PRIMARY HEAT EXCHANGER**

THE EFFICIENCY YOU WANT

The Advanced Design Boiler is the first boiler that can meet your exact efficiency requirements. The ADB, when used without the Condensing Heat Exchanger (CHX), can deliver thermal efficiencies up to 84%.

If higher efficiency is required, simply add the Condensing Heat Exchanger to the installation. The CHX is designed to capture the maximum amount of available energy by extracting both sensible and latent heat from the flue gases. That means ultra-high efficiencies – and substantial energy savings.



RELIABILITY.

ADVANCED BURNER TECHNOLOGY

The heart of any boiler is the burner. It's a critical component that's got to be designed right. That's why Raypak spent over four years perfecting the ADB burner. The result is an industrial grade, fan-assisted burner that provides superior performance and is practically indestructible.

Standard high efficiency boilers use burners that are either flimsy flame retention screens that burn out, or radial perforated burners that eventually clog and operate at reduced efficiencies. Unlike these burner designs, the patented advanced design burner **will not clog or burn out**. In fact, Raypak is so confident, the new burner head is backed with a **TEN YEAR UNCONDITIONAL WARRANTY**.

The ADB's burner utilizes a solid metal bluff-body burner head to generate a high-intensity aerodynamically stabilized flame. The burner's turbulent mixing action reduces residence time and increases flue gas recirculation. The result is clean, efficient combustion with NOx emissions well within the limits of the most restrictive air quality requirements.*

This is one tough burner and the warranty proves it.

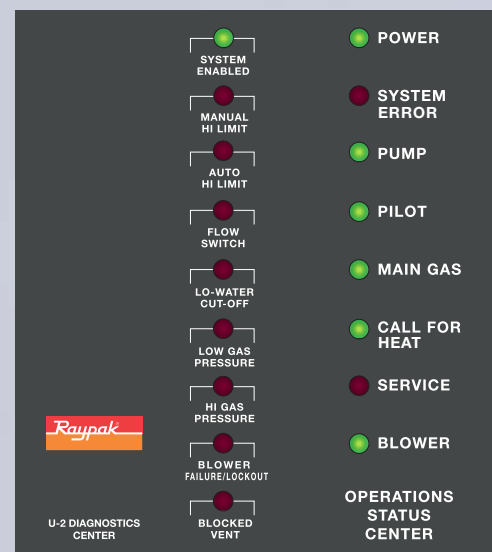
* NOx emissions:
0-30 ppm depending on combustion air quality and gas composition.



CENTRAL POINT WIRING AND DIAGNOSTICS

Raypak boilers have a well earned reputation for being easy to service. The ADB is no exception. In fact, the ADB sets a whole new standard for serviceability – because it's the first commercial boiler to incorporate central point wiring (CPW).

Unlike older control technologies, CPW individually monitors each and every boiler control and safety function. Using an intuitive LED display referred to as the Operation Status Center, CPW gives split-second feedback on boiler firing status. Should service be required, the ADB will even indicate which component requires attention by illuminating the appropriate fault LED located on the ADB's U-2 Diagnostics Panel.



FLEXIBILITY.

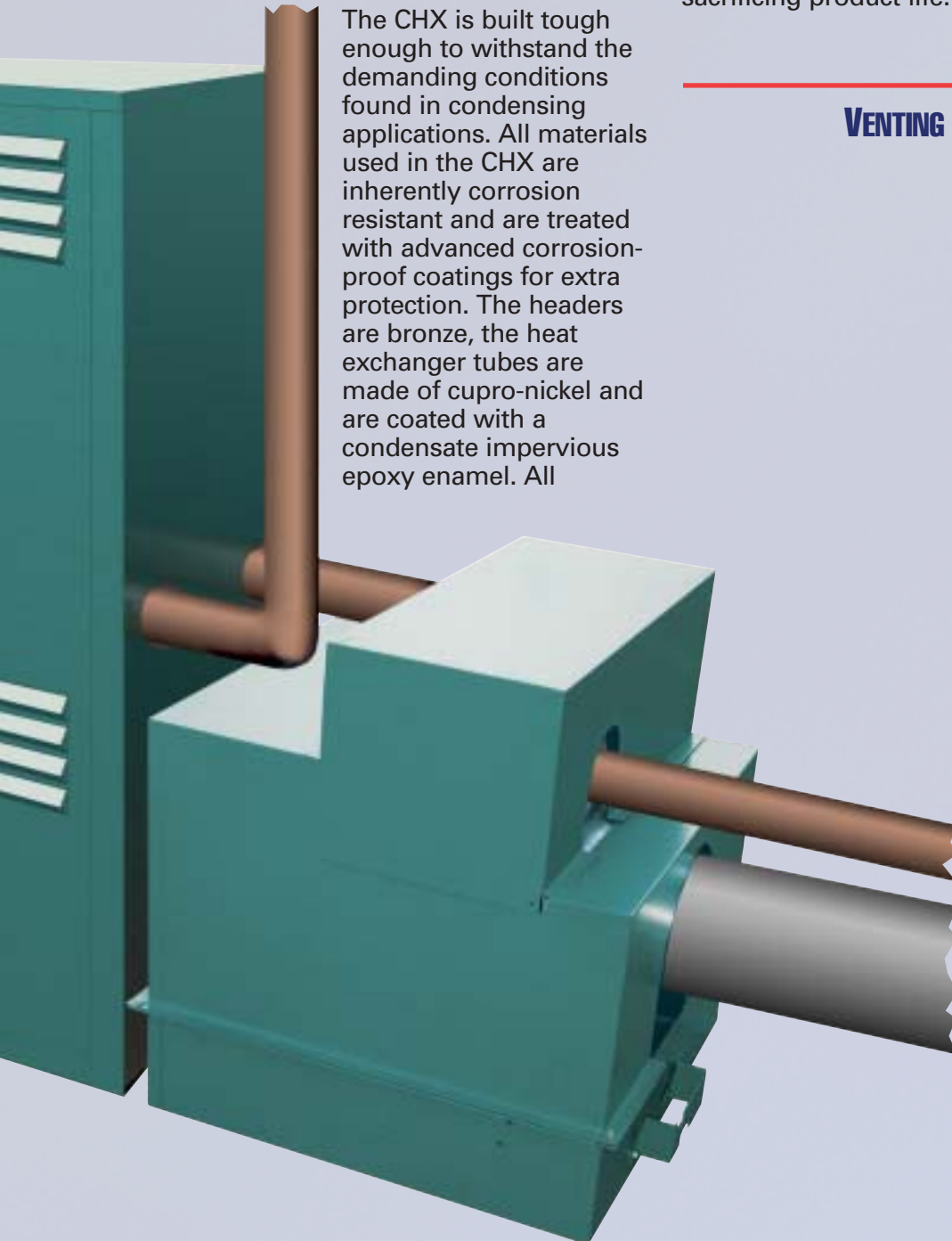
THE CONDENSING HEAT EXCHANGER (CHX)

The CHX is a scavenging heat exchanger that has been specifically designed to capture the maximum amount of energy from the ADB's exhaust gases. When used with a pre-heat tank and a storage tank, the ADB/CHX system can squeeze out an amazing 97% of all heat of combustion energy contained in the flue gases.

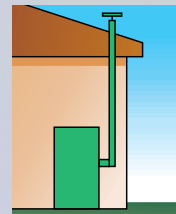
The CHX is built tough enough to withstand the demanding conditions found in condensing applications. All materials used in the CHX are inherently corrosion resistant and are treated with advanced corrosion-proof coatings for extra protection. The headers are bronze, the heat exchanger tubes are made of cupro-nickel and are coated with a condensate impervious epoxy enamel. All

non-stainless internal fittings are either epoxy coated or are chemically immune. The tube bundle casing is fabricated from AL29-4C stainless steel, and the outer jacket has an electrostatically applied powder coat finish that is baked-on for superior corrosion resistance and extra long life.

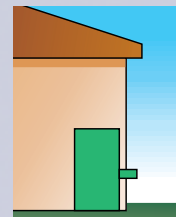
By segregating condensation from the primary heat exchanger and the combustion chamber, the CHX produces ultra-high efficiency without sacrificing product life.



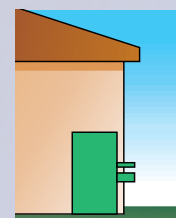
VENTING OPTIONS



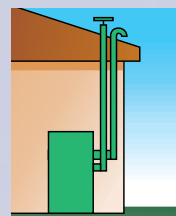
CONVENTIONAL VENT



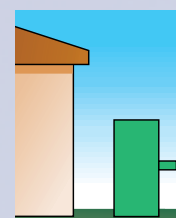
THROUGH-WALL VENT



DIRECT VENT/SEALED COMBUSTION



VERTICAL VENT/SEALED COMBUSTION



OUTDOOR

THE ADVANCED DESIGN BOILER

OPERATION STATUS CENTER

Central point wiring, standard operating lights, full-boiler diagnostics.

WEATHER PROOF JACKET

The heavy gauge steel exterior jacket is protected with a baked-on UV-resistant Polytuf powder coat finish.

VENT PRESSURE SWITCHES

Enhance safety by verifying proper burner operation.

COMBUSTION AIR FAN

With easy-to-adjust combustion air shutter.

UP-FRONT CONTROLS

Easy access to all controls and gas train components.

CORROSION RESISTANT STEEL

All metal fittings are galvanized against rust.

ADVANCED BLUFF BODY BURNER

Industrial-tough, solid metal burner head won't clog or burn out – and it's backed with a TEN YEAR UNCONDITIONAL WARRANTY.

SPARK TO PILOT IGNITION

The most dependable ignition method available.

RUGGED ALL BRONZE HEADERS

Are naturally corrosion resistant.

MINIMUM CLEARANCE REQUIREMENTS

Only one inch of clearance is required from combustible surfaces.

VENT OUTLET FLEXIBILITY

The flue gas outlet can be repositioned in the field to vent from either the back or right side of the unit.

PRIMARY HEAT EXCHANGER

Vertical, cylindrical, multi-pass heat exchanger captures all radiant energy, eliminating the need for heavy refractory.

TUBE SHEET CONSTRUCTION

Eliminates the repair and maintenance problems associated with rolling tubes directly into a casting.

CUPRO-NICKEL FINNED TUBES

Provide fast, efficient heat transfer with extended tube life. Will not corrode or erode and can handle aggressive and hard water with ease.

VIEWING PORT

Allows easy fine-tuning of the power burner.

SMALL FOOTPRINT

The ADB occupies less than 5 1/2 sq. ft. of floor space.

FEATURES

- Advanced Fan-Assisted Burner with Aerodynamically Stabilized Flame
- Design Certified ANSI Z21.13 and Z21.10.3
- Ultra-Low NOx: Less than 30ppm
- Reduced Footprint
- Indoor/Outdoor Construction
- Thermal Shock Resistant
- 20 Year Limited Warranty
- Natural Gas or Propane (except 1501)

STANDARD EQUIPMENT

HEAT EXCHANGER

- Bronze Headers
- Integral Finned Tube Heat Exchanger
Copper For Type H4
Cupro-Nickel For WH1
- ASME Inspected and Stamped 150 PSIG
- National Board Approved
- Factory Installed ASME Relief Valve
- Temperature and Pressure Gauge

GAS CONTROL TRAIN

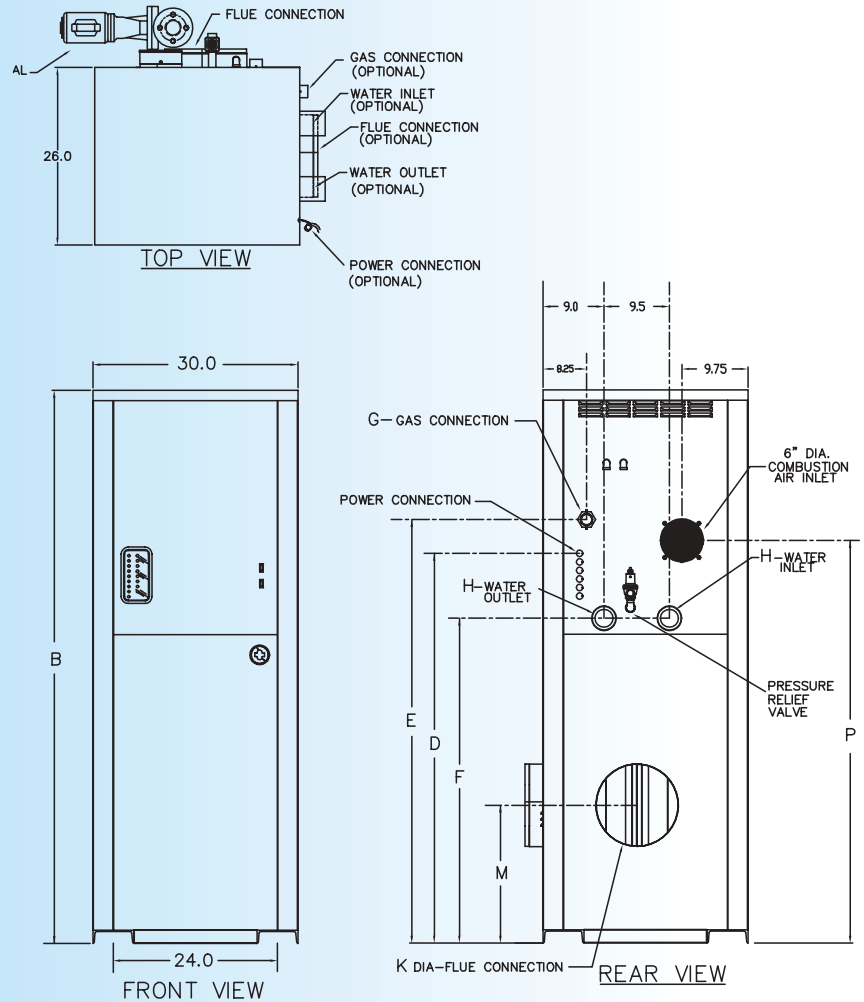
- Manual Main Gas Shut-Off Cock
- Main Gas Pressure Regulator
- Safety Shut-Off Valve, Redundant
- Firing Mode: On/Off
- Factory Fire Tested
- CSD-1 Compliant Gas Train

CONTROLS

- 120V, 60Hz, 1 ϕ Power Supply
- 120/24V Transformer
- 100% Pilot Safety
- Electronic Intermittent Ignition (IID)
- High Limit Safeties
- Central Point Wiring
- Full Boiler Diagnostics
- Fan Proving Switch
- Flow Switch
- Blocked Flue Switch

CONSTRUCTION

- Front Controls: Enclosed
- Polytuf Powder Coat Finish
- Durable Indoor/Outdoor Construction
- Right Side or Rear Connections



MODEL	INPUT (MBTU)	OUTPUT (MBTU)	B HEIGHT	D	E	F	G NPT	H NPT	K FLUE	M	P	SHIP WGT Lbs.	FOOT PRINT Ft. ²	AMPS
H 751	750	630	64	38	44-1/2	29-3/4	1-1/2	2	8	17-3/4	41	680	5.4	8
H 1001	999	840	72	46	52-1/2	37-3/4	1-1/2	2-1/2	10	21-1/2	49	720	5.4	10
H 1501	1499	1260	82	56	62-1/2	47-3/4	1-1/2	2-1/2	12	20-1/4	59	780	5.4	12

Dimensions are in inches. Ratings shown for elevations up to 5000 feet. For installation at elevations over 5000 feet, please contact manufacturer. See catalog 2000.27 for complete installation dimensions.



RAYPAK CORPORATE OFFICE AND PRINCIPAL MANUFACTURING FACILITY
 2151 Eastman Avenue
 Oxnard, CA 93030
 (805) 278-5300 FAX: (800) 872-9725

RAYPAK CANADA LIMITED
 2805 Slough St., Mississauga
 Ontario, Canada L4T 1G2
 (905) 677-7999 FAX: (905) 677-8036



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