

**Burnham®**

# High Efficiency Condensing Boilers



Proven Reliability,  
American-Made  
Home Heating Comfort.

**Burnham®**  
by  
**U.S. Boiler Company**



# A Family of Condensing Boilers



- ✓ **Superior energy savings**
- ✓ **Quality construction**
- ✓ **Variety of configurations**
- ✓ **Energy-saving standard features**

## ■ **THREE great options!**

U.S. Boiler Company offers the Aspen, the K2, and the Alpine. These three condensing boiler models offer an incredibly comprehensive array of sizes and capabilities that are UNMATCHED in the home heating industry. Unsure of which boiler to choose? Simply ask your home heating professional; they will eliminate the guesswork and help you find the best model to fit your needs.



## ■ **A Month of FREE HEAT?**

Yes, it may seem unbelievable, but upgrading from a typical 80% efficient boiler to any of U.S. Boiler's condensing boilers can provide about a 15-20% savings in energy, which can equate to a month (or more) of heating fuel costs. What this means to homeowners is that energy savings can be realized during the first year of operation, and EVERY YEAR THEREAFTER.

## ■ **Good for you and the environment**

High efficiency home heating benefits you by providing home heating comfort with lower fuel consumption. It also means less emissions, which benefits everyone!

## ■ **Extras INCLUDED**

All of these boilers come packed with standard energy saving features, one of which is "Outdoor Reset". By reading input from a sensor located outside the house, these boilers are able to determine what the correct output should be in order to match the heating requirement of the temperature outside. This feature is very useful in the "fringe" seasons of fall and spring, when the temperature outside can fluctuate greatly.





# Efficiency, Reliability, Flexibility

## ■ Combi options for heat AND hot water!

Looking for an all-in-one efficient solution for heat and hot water? U.S. Boiler has combi options available in the Aspen and K2 Boiler lines



## ■ Stainless steel heat exchangers for long-term reliability

The optimum material for the heat exchanger on an ultra-high efficiency boiler is stainless steel. The properties of stainless steel enable it to quickly transfer warm, comfortable heat while maintaining the lowest possible operating temperature, and highest efficiency.

## ■ Tested and Proven

For product reliability, U.S. Boiler Company goes the extra mile. The heat exchanger and combustion system are tested for proper operation. Once the boiler is assembled, it is given a complete final boiler and control test. This assures our customers that the quality and operation of every component, and the boiler as a whole have been proven before it leaves the factory.

## ■ Natural gas or propane

U.S. Boiler's condensing products are designed to run on either natural gas or liquid propane, offering greater fuel flexibility. A simple adjustment performed by your installer is usually all that is required to switch fuel sources.

## ■ American-made

Each of these boilers is assembled in U.S. Boiler Company's manufacturing facility, located in Lancaster, Pennsylvania, U.S.A.

## ■ FREE 5-year parts warranty

This outstanding protection comes with every residential condensing boiler\*, and covers all boiler components for five years from the date of installation at no additional cost. Extended warranties covering parts and labor are available separately. For additional details on extended warranty specifics, please visit [www.usboiler.net](http://www.usboiler.net)



## Control System Excellence

The boiler control systems used in these condensing boilers were co-developed in partnership with Honeywell, the leader in home comfort controls. The unique functionality and exclusive capabilities of these controls were designed by engineers at U.S. Boiler Company, the North American leader in boilers for home heating. These custom controls are produced in world-class manufacturing facilities and provide the outstanding quality and reliability synonymous with both industry leaders, U.S. Boiler Company and Honeywell.



\*Boiler sizes under 300 MBH and used in residential applications



# Aspen Boilers

## ■ High efficiency, high performance

With AFUEs up to 96%, the Aspen boiler is one of the most efficient boilers you can own. This is achieved by mating the proven and reliable performance of a high efficiency stainless steel firetube heat exchanger with the Sage2.3 boiler control system. The impressive list of high-value standard features that come standard with the Aspen adds to the overall efficiency savings that they can provide.

## ■ Wall or floor mounted option

The space-saving low depth profile of these boilers offers tremendous flexibility in tight installation spaces. Aspen boilers are ready to be wall mounted right out of the box, saving even more space. Boiler leg kits are also available for installations where a wall mount is impractical.

## ■ High performance...even at high altitudes!

When your home is 2,000 feet (or more) above sea level, you typically wind up buying a boiler that is larger and more expensive than it needs to be. Why? Because all boilers lose a percentage of heating capacity at higher altitudes. The Aspen boiler's retains its capacity at a higher rate than most competitive models. In fact, most models only lose less than 1% of their capacity (industry standard is 4%) in high altitude installations.



## ■ Many sizes available

Aspen boilers are available in (5) residential sizes. The Aspen Light Commercial model is also available in (2) larger sizes for installations with higher heating demands.



**Aspen**  
High efficiency  
condensing  
boiler with  
fire tube heat  
exchanger

## Also available as a Combi boiler!

What's a combi boiler? It's a boiler that provides heat in the winter and domestic hot water all year long. Combi boilers provide hot water on demand, eliminating the need for a separate hot water tank.



**Aspen Light  
Commercial**



# K2 Boilers



## K2

High efficiency condensing boiler with water tube heat exchanger



## ■ High performance, impressive value!

The K2 boiler offers an impressive 95% efficiency across all heating boiler sizes. Having an impressive array of standard features is one thing, doing so at a very favorable price is quite another. The K2 offers all of this, and more, including features like a pre-installed boiler loop circulator which can save money on installation costs!

## ■ Wall or floor mounted? Your choice.

In many homes, space is at a premium. The K2 features a low profile design and is ready for wall mounting right out of the box. For installations where a wall mount is impractical, an optional boiler leg kit is also available.

## ■ NEW! Combi model available

Looking for a heat and hot water solution in the same package? Look no further than the new K2 Combi. Equipped with the same proven and reliable heat exchanger, same 95% AFUE efficiency, and the same reliable boiler control system as the original K2 boiler. The K2 Combi adds a completely enclosed flat plate heat exchanger to provide hot water for your home. This on-demand domestic hot water capability requires no external tank and offers best-in-class performance for most installations.

## Designed to save

The K2 has been engineered from the inside out to save money and energy. K2's is very easy to install and service, which offers additional savings beyond your heating bill. It also includes many features which do not come standard with competitive products.



## K2 Combi

High efficiency condensing boiler and water heater



# Alpine Boilers



## ■ Proven performance

The Alpine boiler has been heating homes for almost 10 years, and remains a "go-to" choice for many professional heating contractors. With AFUEs of 95% for residential models, the Alpine continues to provide energy-saving home heating comfort in thousands of homes across North America.

## ■ Wall or floor mounted? Your choice.

Looking for additional floor space? The Alpine boiler is available as a wall mounted boiler (in four sizes, 80-210 MBH) that can also be floor mounted. Cabinets are also designed to be stackable for floor mount installations which may require multiple boilers.

## ■ Many sizes available

Alpine boilers are available in (5) sizes\*, ranging from 80 to 285 MBH. This range of sizes provides a wide array of possibilities to match the correct boiler, or boilers to the heating requirements of your home.

\*Larger "Commercial" sizes are available, see our website at [www.usboiler.net](http://www.usboiler.net) for details

## ■ Multiple boiler installations

In some situations, multiple boiler installations may be a better choice than a larger, single boiler. This is where the Alpine REALLY shines ...not only can these boilers be easily linked together, but they also automatically communicate with one another and share the load of heating the space. Smart features built into the boiler provide capabilities such as "lead/lag cycling". As the name implies, once linked together by way of a simple RG-45 phone cord, one boiler takes the lead, and the other(s) will supplement the heating load. In this type of installation, boilers "talk" to each other continually and take turns at being the lead boiler. By doing so, the load is shared equally between all the boilers in the heating system.



## A proven, versatile performer

The Alpine has garnered a reputation as a highly efficient and reliable full-feature boiler. It also has one of the widest range of sizes of any condensing boiler available in the industry, enabling an incredibly wide array of applications.



# Condensing Boiler Q&A

**Some common questions associated with U.S. Boiler condensing products...**

## ■ What is the difference between condensing and non-condensing boilers?

The answer is “efficiency”. The most efficient boilers keep heat in the house rather than letting it escape through the chimney or vent pipe. An ultra-high efficiency boiler, is able to keep more heat in the heating system, and manage condensation.

## ■ What happens to the water formed in the condensation process?

Water will condense from escaping flue gases when they are cooled to a certain temperature (this is also known as the “dew point”). In less efficient boilers with high flue temperatures, this happens well outside the home – sometimes a number of feet above the house – and the condensation simply evaporates. In higher efficiency boilers, the lower flue temperatures enable this process to happen inside the heating system. The water produced in the condensation process can be destructive to traditional boilers, but condensing boilers are designed and built to operate under these conditions, and are equipped with condensate drains.

## ■ Can I use one of these condensing boilers as a replacement boiler for an older heating system with large radiators?

These boilers will work in most types of installations. For large water volume systems using cast iron radiators, all are a good choice. For high temperature systems, such as fin-tube style baseboard radiators, or in homes where it may be impractical to vent a boiler directly to outside air without using a chimney, the Burnham ES2, Series 3, or Series 2 gas boilers may be a more viable option. A consultation with a professional home heating contractor will provide the best answer.

## ■ Is a condensing boiler going to be the best choice for my home?

There are many factors to consider when determining the best choice for your home. The heating system in a home not only includes the boiler, but also all of the pipes, valves, pumps, and heat distribution as well. Your professional heating contractor will be able to determine what heating equipment will be best suited for your home heating system. Typically, condensing boilers operate most efficiently in homes with low system temperatures, such as those with radiant floor systems or in homes with high water volume cast iron radiators. Condensing boilers do not use indoor air for combustion and require a means to vent the boiler directly to the outside (not chimney venting).

## ■ What's the difference Firetube and Water Tube heat exchangers?

The first thing to understand is that they do the same thing (provide heat to system water) in a slightly different manner. In a Water Tube, system water is pumped through a coil that surrounds the combustion chamber. a Firetube pumps the water into a vessel which is divided by vertical fire tubes that heat the water. Your professional heating contractor will evaluate your heating needs and will guide you in your selection.

## ■ Is there any difference in the way a combi performs vs. a traditional water heater?


A combi boiler creates "on demand" domestic hot water, while a conventional water heater both heats and stores hot water. Under most circumstances, there will be little or no difference between a combi and a traditional water heater. The exception would be in families that take multiple showers and run hot-water consuming appliances simultaneously. If that kind of hot water consumption is the norm, ask your professional home heating contractor to show you the comparisons of hot water output so you can make an informed decision on which method of delivering domestic hot water is the best fit for your family.

# Models, Sizes, & Efficiencies

For complete technical specifications and dimension information on these products, please visit our website at [www.usboiler.net](http://www.usboiler.net)



## Aspen Ratings & Specifications

Model	 AFUE %	Input (MBH) min-max	DOE Heating Capacity (MBH)	Net AHRI (MBH)
ASPN-085	96.0	8.5-85	79	69
ASPN-110	96.0	11-110	103	90
ASPN-155	95.0	15.5-155	145	126
ASPN-205	95.0	20.5-205	189	164
ASPN-270	95.0	27-270	252	219
COMBI MODEL				
ASPNC-155	95.0	15.5-155	145	126




## Aspen Light Commercial Ratings & Specifications

Model	Thermal Efficiency %	Input (MBH) min-max	Gross Output (MBH)	Net AHRI (MBH)
ASPN-320	95.0	32-320	304	264
ASPN-399	95.0	39.9-399	379	330




## K2 Ratings & Specifications

Model	 AFUE %	Input (MBH) min-max	DOE Heating Capacity (MBH)	Net AHRI (MBH)
K2WT-080B	95.0	8-80	74	64
K2WT-100B	95.0	10-100	94	82
K2WT-120B	95.0	12-120	112	97
K2WT-150B	95.0	15-150	142	123
K2WT-180B	95.0	18-180	169	148




## K2 Combi Ratings & Specifications

Model	 AFUE %	Input (MBH) min-max	DOE Heating Capacity (MBH)	Net AHRI (MBH)
K2WTC-135B	95.0	12-120	112	97
K2WTC-180B	95.0	18-180	169	147




## Alpine Models—Wall or Floor Mount

Boiler Model	Input MBH (min-max)	 AFUE%
ALP080B	16-80	95
ALP105B	21-105	95
ALP150B	30-150	95
ALP210B	42-210	95



## Alpine Models—Floor Mount ONLY

Boiler Model	Input MBH (min-max)	 AFUE%
ALP285	57-285	95.0
ALP399	80-399	94.0*

\*Thermal Efficiency

NOTE: larger "commercial" sizes are available, for more information, see our website at [www.usboiler.net](http://www.usboiler.net)

Before purchasing, read important information about estimated annual energy consumption, yearly operating cost, or energy efficiency rating that is available from your retailer.



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