

**Burnham®**

# High Efficiency Condensing Boilers



Proven Reliability,  
American-Made  
Home Heating Comfort.



*Look for this logo  
throughout this literature to  
see the unique features that  
set U.S. Boiler Company  
apart from the competition!*



# The Alpine™ Boiler...



- ✓ **Superior energy savings**
- ✓ **Quality construction for reliable performance**
- ✓ **Variety of configurations**
- ✓ **Unique boiler control technology**

## ■ **A Month of FREE HEAT?**

Yes, it may seem unbelievable, but upgrading from a typical 80% efficient boiler to a 95% efficient Alpine boiler 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 with an Alpine boiler, energy savings can be realized during the first year of operation, and EVERY YEAR THEREAFTER. How can this boiler offer such savings potential? Simple...by offering a synergy of boiler design, control system capability, and reliability that is not available anywhere else.

## ■ **Adjustable firing rates**

If you were to drive a car from point "A" to point "B" by "flooring" the accelerator, you wouldn't expect to get good gas mileage. Many boilers operate in a similar fashion; either they're on or they're off, there's no in-between. The Alpine features variable firing rates. What this means is that the boiler automatically adjusts its firing rate to provide only the heat needed to meet demand.

## ■ **Outdoor air temperature monitor**

In order to determine what the heating demand actually is, the Alpine comes equipped with an "Outdoor Reset" feature. By reading input from a temperature sensor located outside the house, the Alpine is able to determine what the correct boiler output should be in order to match the heating requirement of the temperature outside. This feature is particularly useful in the "fringe" seasons of fall and winter, when the temperature outside can rise quickly.



# Quality Construction, Reliable Performance

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

The Alpine boiler is an ultra-high efficiency boiler. In order to attain optimum efficiency, the boiler must retain as much heat as possible in the heating exchanger, rather than letting it escape the heating system. The optimum material for this heat exchanger is stainless steel. The properties of stainless steel enable it to quickly transfer warm, comfortable heat to the home, while maintaining the lowest possible operating temperature, and highest efficiency.

## ■ Tested and Proven

For product reliability, U.S. Boiler Company goes the extra mile. Prior to assembly, every Alpine heat exchanger is tested for leaks. In addition, the combustion system is 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.

## ■ American-made

Every Alpine boiler is assembled in U.S. Boiler Company's manufacturing facility, located in Lancaster, Pennsylvania, U.S.A.

## ■ Attractive design

Featuring an attractive black and silver steel jacket, the Alpine has a sleek, modern, appliance-like design which will compliment any installation.

## ■ FREE 5-year parts & labor warranty

**US**

UNMATCHED  
ANYWHERE

This outstanding protection comes with every residential Alpine boiler\*, and covers all boiler components for five years from the date of installation at no additional cost. Boiler registration is required within 90 days of the installation date. Registration instruction are included with the Alpine boiler, or can be viewed at [www.usboiler.net](http://www.usboiler.net)

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



by CornerStone United

# A Variety of Configurations...



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ANYWHERE

## ■ Wall or floor mounted? You have the choice.

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

## ■ Natural gas or propane

The Alpine is designed to run on either natural gas or liquid propane, offering greater fuel flexibility. A simple adjustment is all that is required to switch between fuel sources.

## ■ Many sizes available

Alpine boilers are available in (7) sizes, ranging from 70 to 280 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.

## ■ 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 home. 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 will take the lead, and the other(s) 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.

**US**

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ANYWHERE



# Unique Boiler Control Technology

## ■ The Sage2.1 Control System



Every Alpine boiler comes equipped with the Sage2.1 Control System. This industry-leading boiler control system ties all of the elements of the Alpine boiler together, and is responsible for making sure that the Alpine is continually operating as efficiently as possible. The Sage2.1 does so by analyzing the information provided by the outdoor air temperature sensor and the demand for heat in the house. By continually monitoring demand, and making operational adjustments, it strikes the optimum balance between comfort and efficiency.

Virtually every boiler on the market today has a control system of some kind. What sets the Sage2.1 apart is that it has been designed by U.S. Boiler Company engineers, not outside suppliers. These people have a comprehensive understanding of not only the control system, but also of the boiler itself, and hydronic heating as a whole.

## ■ What's going on in there?

The Alpine and the Sage2.1 can relay real-time operational information by way of its high resolution backlit touch screen interface. By navigating through the easy to understand menus, complete information on your boiler's status is literally at your fingertips. In addition, if any trouble is detected in the boiler or the heating system as a whole, the screen will flash red and inform you about the problem. The touch screen also acts as a diagnostic tool for your professional service technician, which can contribute to lower costs for service calls.

## ■ Getting connected

The Sage2.1 can easily be integrated into modern home HVAC management systems. Many of these systems offer capabilities which enable the boiler to communicate system status and boiler operation to apps which can be read on most smartphones.



## Control System Excellence



The exclusive Sage2.1 Boiler Control System used in Alpine boilers was co-developed in partnership with Honeywell, the leader in home comfort controls. The unique functionality and exclusive capabilities of this control was designed by engineers at U.S. Boiler Company, the North American leader in boilers for home heating. This custom control is produced in world-class manufacturing facilities and provide the outstanding quality and reliability synonymous with both industry leaders, U.S. Boiler Company and Honeywell.



# Alpine Boiler FAQs...

## ■ 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, but the side effect is 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 to operate under these conditions, and are equipped with condensate drains. What sets the Alpine boiler apart from it's competition in this regard is that it is also equipped with a patented condensate drain switch. The purpose of this device is to protect the stainless steel heat exchanger in the event of a backup in the condensate drain line.



## ■ Can I use an Alpine boiler as a replacement boiler for an older heating system with large radiators?

The Alpine boiler will work in most types of installations. For large water volume systems using cast iron radiation, Alpine boilers are a good choice. For high temperature systems, such as fin-tube style baseboard systems, 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, Alpine 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. In addition, in these applications, Alpine boilers do not use indoor air for combustion and require a means to vent the boiler directly to the outside (not chimney venting).



## The final word...

The Alpine boiler is a high performance, ultra high-efficiency boiler which provides an outstanding level of comfort and control, and does so in a safe and quiet manner. It is designed and built in America, and will provide years of reliable, efficient service while lowering monthly home heating bills.

# Alliance SL™ Indirect Water Heaters



- ✓ Perfect companion for any boiler
- ✓ High recovery rate, provides virtually limitless hot water
- ✓ Highly efficient, very low heat loss
- ✓ Works well in hard water conditions
- ✓ Five sizes available

## ■ The perfect pairing

Reduce home heating bills AND get abundant domestic hot water with an Alliance SL. The Alliance SL uses heat generated by your boiler to produce and store hot water at a rate which can actually be higher than it can be used! This combination can provide significant savings over conventional direct-fire water heaters, and unlike standalone tankless water heaters, can store hot water for days (in the event of a power interruption).

## ■ Protection from within

Some water conditions can create havoc with a conventional water heater. Thanks to a heavy gauge steel tank and hydrastone inner lining, the Alliance SL is different. The hydrastone lining actually neutralizes corrosive hard water, making the Alliance SL impervious to its harmful effects. The inner tank and hydrastone lining are wrapped with 2-3" of energy saving insulation which enables the tank to only lose between .39 and .97 degrees of water temperature per hour in standby mode. The tank is also equipped with a control sensor which constantly monitors water temperature, ensuring optimum comfort and efficiency.

## 10/2/1 warranty protection

This unique warranty provides a 10-year full tank replacement, two years of labor coverage, and one year on parts. For longer protection an optional lifetime warranty is also available.



**5 Sizes Available**

# Models, Sizes, & Efficiencies

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



Alpine Models—Wall or Floor Mount		
Boiler Model	Input MBH (min-max)	AFUE% 
ALP080	16-80	95
ALP105	21-105	95
ALP150	30-150	95
ALP210	42-210	95



Alpine Models—Floor Mount ONLY		
Boiler Model	Input MBH (min-max)	AFUE% 
ALP285	57-285	95
ALP399	80-399	94*

\*Thermal Efficiency

## Indirect Water Heaters



Alliance SL Models				
Model	Storage Capacity (gal.)	Maximum First Hour Rating at 135°F (gal./hr.)	Continuous Draw Rating at 135°F (gal./hr.)	Standby Heat Loss (°F per hour)
AL27SL	27	192	162	0.97
AL35SL	35	200	162	0.72
AL50SL	50	225	171	0.56
AL70SL	70	294	217	0.45
AL119SL	119	339	235	0.39

## Additional Gas Boiler Options

U.S. Boiler Company offers a complete line of gas-fired cast iron water boilers. For information and the complete line of U.S. Boiler Company products, please see product literature or visit [www.usboiler.net](http://www.usboiler.net)



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