

Introducing . . .  
**ENERGY KINETICS'  
LEAP AHEAD IN HOME  
CONDENSING BOILER  
TECHNOLOGY!**

**95%  
AFUE**

**Improves  
on the highest  
real efficiency  
of all tested  
systems!**  
(See page 2)

# Accel CS™

The smart/efficient *combined heat  
and hot water condensing boiler system*

*Simply the smartest heating design  
ever developed for home or business, with  
the industry's proven top efficiency!*



## Superior Features:

- **95% AFUE** and **nearly endless hot water!**
- Natural gas or propane, easy to convert!
- Vessel of high grade stainless steel
- Accel CS is proudly **made in the USA!**
- Convenient wall or floor mount
- **Gas protection alarm**
- Includes **Smart Boost™** for better comfort
- Built-in **Auto Express Setup**, and primary/secondary loops are optional (This helps your heating professional assist you.)
- **Exceptional lifetime limited warranty!**

Awarded the  
ENERGY STAR®  
Most Efficient  
mark in 2014



# Accel CS is an integrated system, which means it produces both heat and hot water!

Heat and hot water are the largest energy consumers in cold climate homes. Accel CS is a single high efficiency appliance that delivers the best of *both*. The result is comfortable warmth for living spaces, plus abundant kitchen, bath, and laundry hot water including nearly endless hot showers.

## What is the primary advantage of Accel CS?

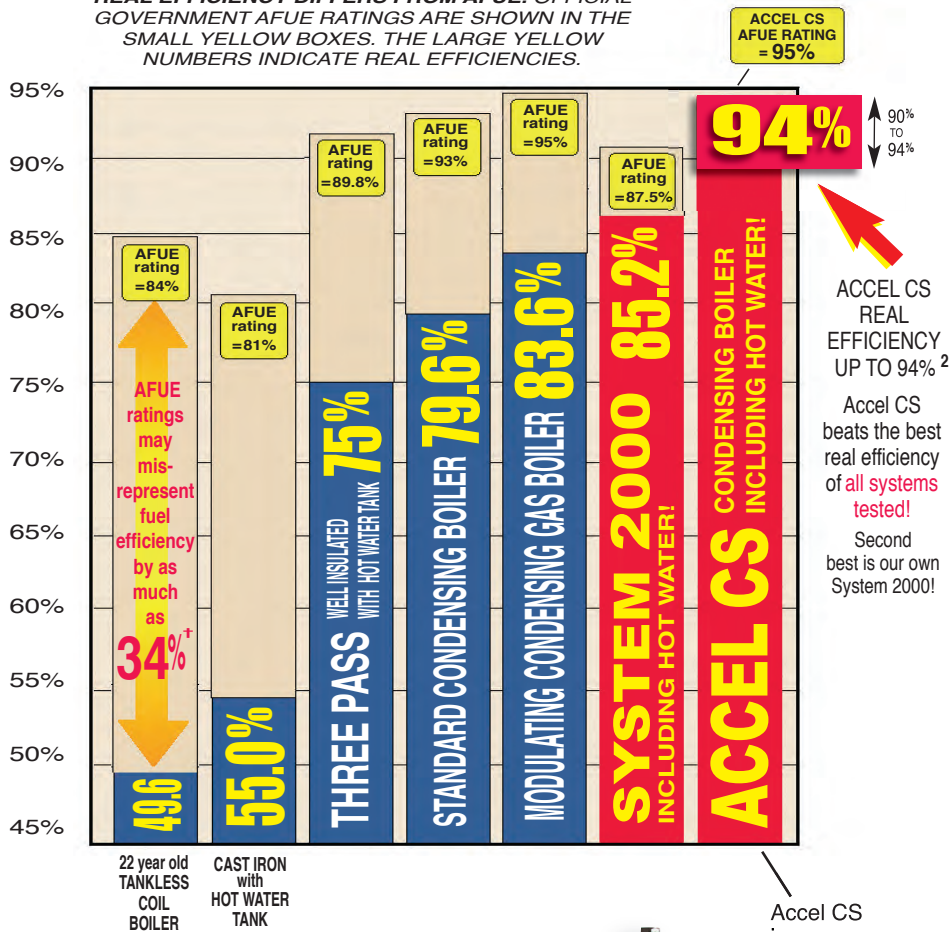
Condensing technology is already established as a high efficiency heating method. Accel CS takes it further, first with better construction and then by incorporating condensing technology in a *combined system*, a common sense marriage of processes that is simply smarter than any other heating system. Among many benefits, Accel CS runs more intelligently and adapts more swiftly to changing demands. As a result, it delivers bigger fuel savings (greater efficiency) in every area of heat and hot water production.

Under contract with the US Department of Energy, a Brookhaven National Lab study confirmed:

**U.S. energy guide (AFUE) ratings miss significant areas of energy loss, and do not reflect the real efficiencies of common heating systems.<sup>1</sup>**

**THIS CHART SHOWS HOW ACCEL CS BEATS THE BEST REAL EFFICIENCIES OF ALL SYSTEMS TESTED.**

**REAL EFFICIENCY DIFFERS FROM AFUE. OFFICIAL GOVERNMENT AFUE RATINGS ARE SHOWN IN THE SMALL YELLOW BOXES. THE LARGE YELLOW NUMBERS INDICATE REAL EFFICIENCIES.**



<sup>†</sup>This means that some Annual Fuel Utilization Efficiency (AFUE) ratings underestimate fuel consumption by more than 50%.

<sup>1</sup>Data and conclusions are drawn from the report "Performance of Integrated Hydronic Heating Systems." Paper and presentation by Brookhaven National Laboratory, Upton, NY, under contract No. DE-ACO298CH10886 with the United States Department of Energy by Dr. T. Butcher; and "Chimney Related Energy Losses in Residential Oil-Fired Heating Systems."

<sup>2</sup>The real efficiency rating for Accel CS of 94% is based on boiler return water temperature of 118°F (comparable to AFUE test conditions). Higher return water temperatures normally found in American heating systems may reduce annual efficiency to 90%; lower heating efficiency is associated with higher water return temperature on all condensing boilers.

Accel CS improves on the best real efficiency of all systems tested.



**Our plate heat exchanger vastly outperforms old fashioned coil in tank systems.**



**Old fashioned tank with coil**

This design is inefficient because the tank heats slowly all over, even when you need only a small amount of heat or hot water.

In addition, the temperature of the system's boiler is allowed to rise *above* the tank's temperature, meaning there is an automatic loss of heat energy every time the boiler heat has nowhere to go, which wastes energy.



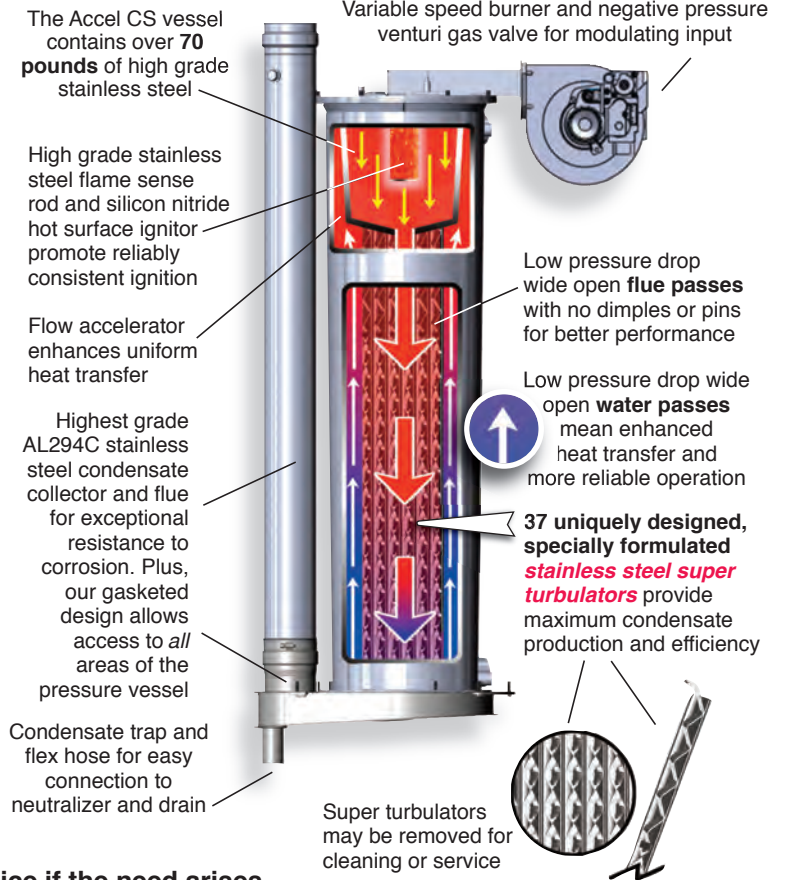
**Plate Heat Exchanger**

By comparison, our plate heat exchanger draws cold water from the *bottom* of the tank and feeds hot water from the *top down*. This delivers the highest efficiency through the entire hot water cycle.

**Our hot water plate heat exchanger maximizes condensing – during every hot water cycle.**

**Accel CS features a high grade American made stainless steel pressure vessel**

... and employs the highest grade AL294C stainless steel for its condensate collector and flue (a rugged material originally developed for the nuclear power generating industry).



**Accel CS features removable panels for very easy service if the need arises.**



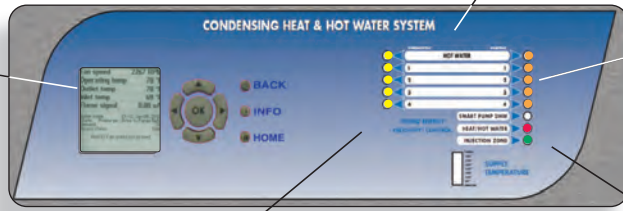
**Accel CS means better heating and bigger savings, plus peace of mind for you and your family.**

# Hybrid Energy Recovery® – the easy-set controls behind Accel CS efficiency!

The Accel CS Condensing Hybrid Energy Recovery Control integrates thermal purge with temperature reset for the best year round performance and hot water efficiency.

Friendly lighted indicators show thermostats calling, zone operation, heat and hot water demand, primary loop circulator operation, and boiler supply water temperature.

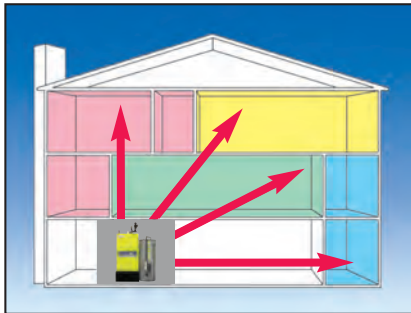
Large easy-read display



Hot water plus 4 zones (standard)

**Zone Control** – The primary/secondary loop option controls up to 3 separate thermostats and zones, and includes a relay for the primary loop circulator, with fast and easy setup.

**Smart Boost™ Comfort** – Outdoor temperature reset can leave your home cold when recovering from overnight setback or whenever you turn up your thermostat. But our Smart Boost technology automatically adjusts to make your home warm and comfortable faster.



Accel CS provides precise, expandable control to maintain comfort levels in all areas of your home.

### And more:

Accel CS's rapid hot water recovery squeezes more out of your fuel dollars. Unlike systems where the boiler heats up along with the tank (which can virtually stop the condensing operation) our advanced plate heat exchanger can run at full output while maintaining peak condensing!

**Auto Express temperature settings** allow quick selection for baseboard, radiators, air handlers and other systems. Optional custom outdoor reset boiler supply temperatures can be enabled with the flick of a switch.

### Accel CS feature summary:

- 95% AFUE (UL Energy Verified)
- Condenses during full hot water cycle
- **No primary/secondary piping required**
- Wall or floor mount and **made in the USA!**
- Smart Boost™ for a warmer home
- Heavily insulated water storage tank
- Simple outdoor settings programmed by using Auto Express Setup
- **Propane and natural gas models available, with easy conversion**



Exceptional residential lifetime limited warranty on pressure vessel and condensing energy manager! See actual warranty for details.

## Accel CS Specifications



**95% AFUE**

**Input:**  
120,000 BTU/hr

**Dimensions:**  
Size with stand  
14" D x 25 7/8" W x 64 15/16" H  
Size wall mounted  
14" D x 25 7/8" W x 50 7/16" H

**Weight (wall mounted)**  
200 lbs.

**Gas Type**  
Natural Gas or Propane  
(easy to convert)

**Maximum Pressure**  
30 psi

**Maximum Vent and Intake**  
100 ft equivalent 3" polypropylene  
50 ft equivalent 2" polypropylene  
(intake may be PVC)

**Gas Connections**  
Size 3/4" NPT

**Maximum Supply**  
Water 210°F

**GAS FIRED**



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Energy Kinetics / System 2000®

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visit [www.energykinetics.com](http://www.energykinetics.com)

### Installation Flexibility with multiple venting options



Sidewall direct venting



Through the roof



Chimney