

## PhD Technology - Precision Hydronic Data

An intelligent system that delivers Precision Hydronic heating and hot water needs while maximizing efficiency by measuring and responding to the Data parameters of your heating system.

PhD Technology is built around proven key components that when combined make the Ultra the most advanced, reliable and efficient boiler available.

## The key components include...

A negative regulated gas valve that Precisely delivers gas to the boiler;

A variable speed motor that matches combustion output to your heating needs;

A venturi mixing body that Precisely mixes air and gas providing higher efficiency;

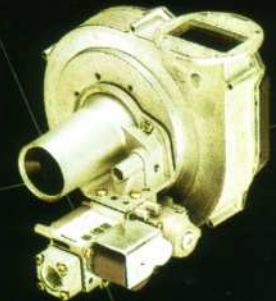
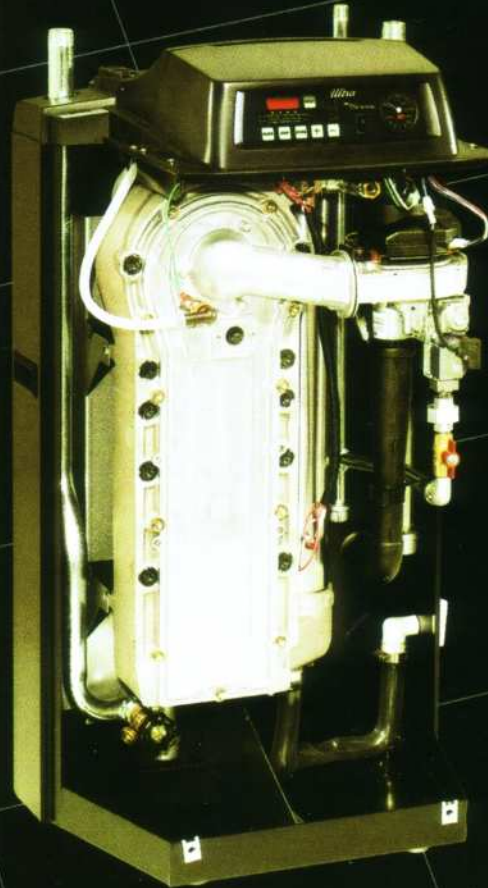
System intelligence with the Ultra Control Module which maintains proper, efficient and Precise Hydronic heat through inputs of all system Data;

A cast aluminum mono block heat exchanger designed to operate in low temperature condensing applications;

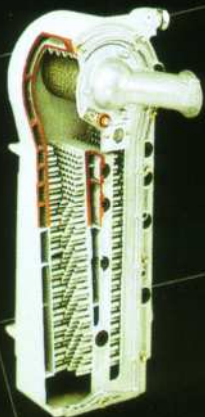
Pre-mix stainless steel burner designed for perfect firing rate modulation, efficiency, clean combustion and quiet operation.



The Ultra Control Module, a microprocessor electronic control, responds to signals from the room thermostat, supply water temperature sensor, return water temperature sensor, flue temperature sensor, domestic hot water aquastat, summer/winter switch and outdoor temperature sensor. The module automatically adjusts blower speed and gas flow rate to modulate boiler firing rate to closely match boiler output for space heating or DHW heating demand.



The blower, gas valve and venturi all work in concert to provide the proper fuel and air mixture for precise combustion. The blower pulls in air and gas through the venturi. The air and gas mix inside the blower and are pushed into the burner for combustion. The gas valve senses suction from the blower, allowing gas to flow only if combustion air is flowing and proper combustion is achieved.



The cast aluminum heat exchanger features a mono block design. This low mass heat exchanger heats faster, providing heat to the system quicker. This aluminum block has been specifically designed to work in low return temperature applications in condensing mode.



High grade stainless steel burner with woven steel fiber mesh. Burner uses pre-mixed air and gas providing for a 20% to 100% modulating firing rate. The Ultra burner features long life, quiet operation, high efficiency and cleaner combustion for low NOx applications.



The 4-digit electronic display with programming buttons and data port make entering and receiving information very easy. There are two levels of information: User Level and Contractor Level. The User Level is used to: Turn space and DHW heating "on" or "off"; set space heating temperature and boiler circulator operation; display soft and hard lockout codes for troubleshooting. The Contractor Level is accessible through the use of a special code that is entered through the front panel or with a computer interface control kit and a laptop computer. This access can be used to customize the Ultra boiler to each specific job application. Adjustments can be made for high altitude, outdoor reset, boost limits, and much more.

# WEIL-McLAIN

# Ultra



## Weil-McLain *Ultra* Boiler

The Weil-McLain Ultra boiler has been designed for easy installation. The Ultra boiler requires minimal clearance and minimal floor space, and the same boiler can be used in floor standing or wall hung applications.

Water and gas piping is conveniently arranged for connection at the top or bottom of the boiler. In fact, when using the boiler in a floor standing application, all boiler connections are on the top of the boiler except for the condensate drain.

The electrical components have been pre-wired and labeled on separate line voltage and low voltage terminal strips. Terminal strips are provided for quick and easy field wiring.

Venting has been simplified by using PVC for both exhaust and combustion air. Slide the PVC into the top outlet flue pipe adaptors and tighten the restraining ring. No messy sealants required. You can even achieve vent runs up to the equivalent of 100 feet.

The Ultra comes with a side mounted service receptacle on a separate circuit for use with a condensate pump, service equipment or service light.

The Ultra boiler is lightweight compared to a conventional boiler. Side jacket handles are provided for easy handling along with four adjustable boiler feet for easy placement and leveling.

For fast and easy installation, combine an Ultra PLUS Indirect-Fired Water Heater with your Ultra boiler installation. Ultra PLUS water heaters come in three sizes:

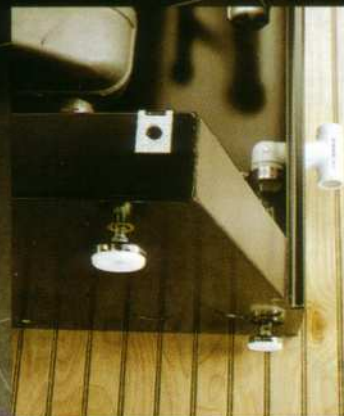
*Ultra* PLUS 40

*Ultra* PLUS 60

*Ultra* PLUS 80

Combined with an Ultra boiler, the Ultra PLUS water heater provides more domestic hot water when you need it, while taking advantage of the extremely high efficiency of the Ultra boiler. A standard feature of the Ultra boiler control module is domestic hot water priority control, providing quicker response time for domestic hot water demands, along with faster recovery times for the hot water tank.

*The perfect match for an Ultra boiler is an Ultra PLUS Indirect-Fired Water Heater.*



## *Ultra* High Efficiency And Environmentally Friendly

All Ultra boilers feature AFUE efficiencies in the range of 92.0 - 93.0%. These are some of the highest efficiencies in the industry, however, Ultra boilers, when used in common low temperature applications have annual efficiencies of 98.0%. The Ultra boiler exceeds all of the requirements of the Department of Energy's ENERGY STAR program.

Besides being Ultra High Efficient, the Ultra boiler is environmentally friendly. Through PhD Technology and the use of our high grade burner, the Ultra boiler produces less NOx while exceeding all current environmental codes and is certified by South Coast Air Quality Management District (Rule 1146.2) in California.