

# QUANTUM 90-200

NATURAL OR PROPANE  
GAS-FIRED BOILERS



**Dunkirk®**   
*America's Hottest Boiler Value!*

An ISO 9001-2000 Certified Company





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The *New* Quantum 90-200 hot water boiler by Dunkirk delivers all the benefits of the Quantum 90-100 plus added features that will appeal to every homeowner. Like the Q90-100, it achieves the optimum combination of high efficiency, innovative technology, and simplicity of design, making it an ideal choice for today's heating customer.

## Remarkable 90% AFUE Efficiency

The Q90-200 dramatically reduces fuel consumption and *pays for itself* with substantial annual fuel savings. Its efficiency is increased beyond 90% when used in low temperature systems, such as radiant systems (see Chart 1 below).

## Revolutionary Cast Aluminum "Mono Block" Heat Exchanger

This *one-piece* heat exchanger design eliminates leaks that can occur between sections of multi-piece heat exchangers. The greater thermal conductivity of cast aluminum transfers heat *three times faster* than conventional cast iron, producing enormous gains in heat-up speed and operating efficiency. Also, the packaged boiler weighs *only 284 pounds* for easier installation.



## Safe, Economical CPVC and PVC Vent Pipe

Cooled flue gas can be safely vented through inexpensive readily available and easy to install PVC, after 5' of CPVC provided with the unit. The air intake also utilizes PVC pipe.

## Simplified Controls

The Quantum 90-200's control design is engineered to maximize reliability. The Q90-200 incorporates an integrated boiler control with high limit and low water cut-off for operation, safety and diagnostics. Ignition is provided by a hot surface igniter and a single stage gas valve. Dual switches ensure air intake and exhaust vents are clear. All components are easily accessible through the removable door.

## Sealed Combustion, Direct-Vent Forced Draft System

Unlike conventional atmospheric boilers, the Q90-200 draws fresh air from outdoors for combustion, instead of air from inside the home. Therefore it does not compete with building occupants for its air supply. With this design the Q90-200 runs quieter and more efficiently than a traditional boiler.

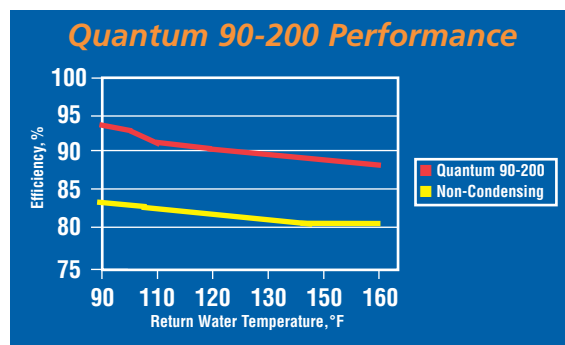
## Environmentally Friendly

The Q90-200's direct-vent system, premix gas burner and low flame temperature reduce CO and NOx emissions (acid rain and smog components) by more than 30% and 50% respectively.

## Ideal for Use with Radiant Systems

When used in combination with radiant systems, which use low supply and return water temperatures, the Q90-200's efficiency is increased beyond 90%. Unlike cast iron boilers, the Q90-200 does not require a return bypass or injection pumping system to preheat return water prior to entering the heat exchanger. This saves on material and labor costs since the cast aluminum heat exchanger works best at low water temperatures.

Chart 1



## FEATURES & BENEFITS

### Low Water Cut-off

Provides for safe and reliable operation.

### Easy Maintenance

All controls are easily accessible through the service door attached with slam latches.

### Optimum Combustion

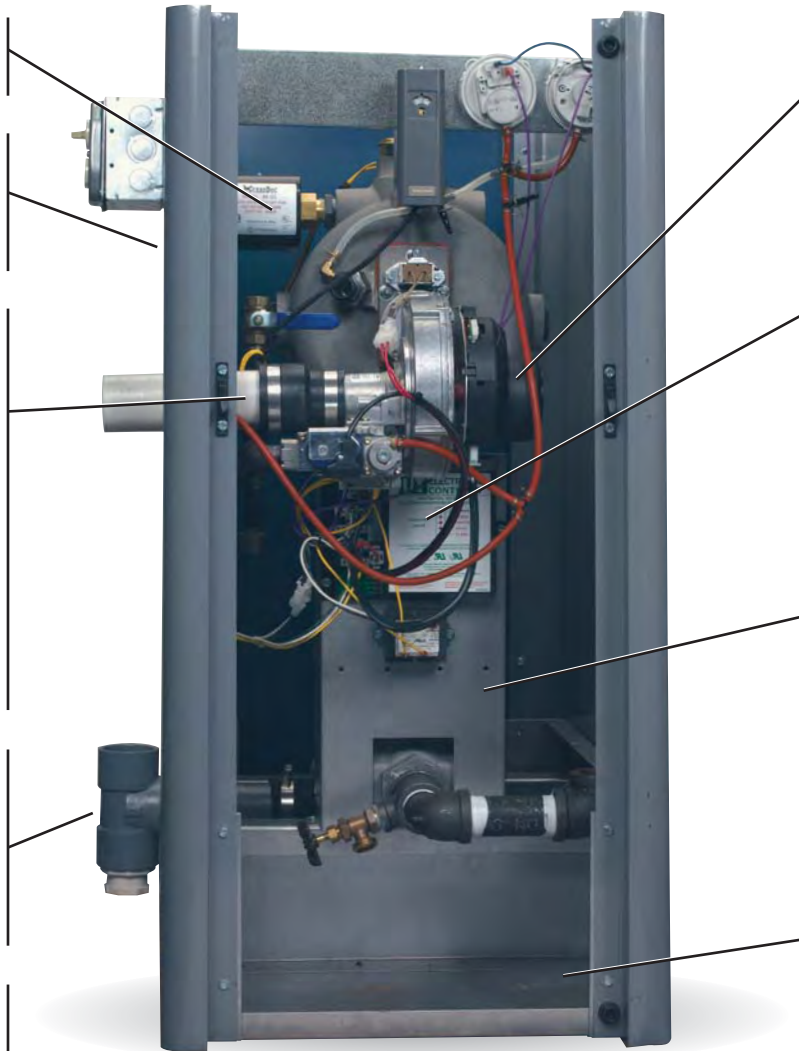
Pressure drop through venting systems change due to vent pipe length and environmental factors such as temperature, pressure and wind conditions. The vent and gas valve design automatically adjusts fuel and air mixture to compensate for these factors ensuring ideal combustion.

### Air Vent Pipe

Cooled flue gases are exhausted through 5 feet of CPVC (provided – not shown) and transitions to PVC for safe and economical venting.

### Supply-Side Pumping

The pump is shipped pre-wired with 5 feet of BX wiring ready for field installation.



### Forced Draft Fan

Draws fresh air from outside, and mixes with fuel so that combustion and efficiency are optimized.

### Integrated Boiler Control (IBC)

The operating sequence is checked by a self-diagnostic control system to ensure safe operation. Sequencing lights make troubleshooting easy.

### Cast Aluminum Mono Block Heat Exchanger

Revolutionary one piece heat exchanger eliminates section interface leaks and incorporates wide water ways that reduce pressure drop and the need for high head pumps. There is no longer a need for flow proving switches.

### Combustible Floor Plate

The Q90-200 is constructed on an integral, protective platform, which has adjustable leveling legs. The boiler can be installed on combustible flooring. (No carpets.)



## PAYBACK

**Quantum 90-200** ..... **90% AFUE**

Typical 20-year old Boiler ..... 70% AFUE

Difference in AFUE ..... 20%

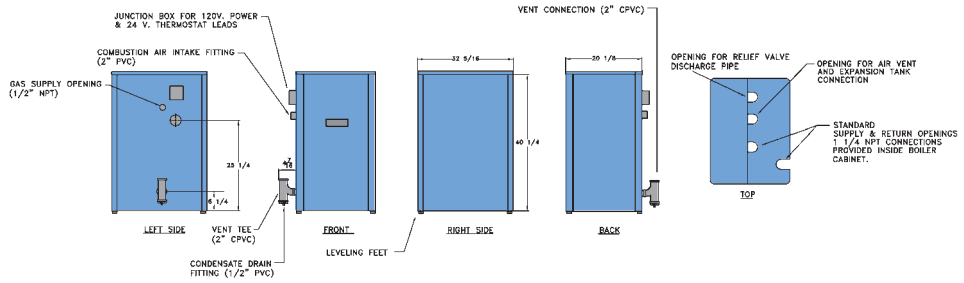
Increased Efficiency over 70% Model (20% ÷ 70%) ..... 28.57%

The increased efficiency of the Q90-200 could save you approximately 28% on your heating bill each year... which means, if you pay \$1500 annually in fuel bills to space heat your home, you could save as much as **\$428 per year!**

## FULL PORT ISOLATION VALVE

Full Port Isolation Ball Valves offer a full 1-1/4" passage to maximize boiler water flows. An exterior handle clearly indicates the valve position. The ball valves allow the boiler piping to be switched from threaded pipe to copper piping, without the need for additional fittings, saving the installer valuable time!





## QUANTUM 90-200 RATINGS NATURAL & PROPANE GAS FIRED BOILERS. Ratings & Specifications for Q90 Condensing Boilers.

MODEL	INPUT *(MBH)	HEATING CAPACITY *(MBH)	I=B=R NET RATING *(MBH)	AFUE %	FLUE DIAMETER	SHIPPING WEIGHT (POUNDS)
**Q90-125	125	112.5	98	90%	3"	284
**Q90-150	150	135.0	117	90%	3"	284
**Q90-175	175	157.5	137	90%	3"	284
**Q90-200	200	180.0	157	90%	3"	284

\*1 MBH = 1,000 Btuh.      \*\*Indicates an ENERGY STAR® product.      Btuh = British Thermal Units Per Hour

The ratings marked "NET I=B=R RATINGS" indicate the amount of energy that can be applied to heat the radiation or terminal units. The Net I=B=R ratings shown are based on an allowance of 1.15 in accordance with the factors shown on the I=B=R Code as published by the Hydronics Institute.

Selection of boiler size should be based upon "NET I=B=R RATING" being equal or greater than the calculated heat loss of the building.

Consult manufacturer before selecting a boiler for installations having unusual piping and pick-up requirements. Q90 boilers may be installed on combustible flooring.

These gas-fired boilers are design certified by C.S.A. in the United States and Canada for use with natural and propane gas. They are constructed and hydrostatically tested for a maximum working pressure of 50 psi in accordance with A.S.M.E. (American Society of Mechanical Engineers) Boiler and Pressure Vessel Code Section IV standards for heating boilers. They are capacity rated in accordance with the code of the Hydronics Institute.

### SPECIFICATIONS

- GAS-FIRED, DIRECT-VENT CONDENSING HOT WATER BOILER
- May be installed on combustible flooring (No Carpets)
- 1" clearance on top, right, base, and back to combustible construction
- 8" clearance left side for vent/air intake pipe installation
- 24" clearance front and left side, 8" top clearance for servicing
- 0" clearance for Vent and Air Intake Pipes to combustible construction

### CONNECTIONS

- 120 Volts AC, 60 Hertz, 1 Phase, Less than 12 Amps
- VENT PIPE & AIR INTAKE PIPE
  - Vent pipe - first 5' is schedule 80 2" CPVC (provided), then schedule 40 3" PVC
  - Air intake - schedule 40 3" PVC
- Water In/Out ..... 1-1/4" NPT
- Gas In ..... 1/2" NPT
- Condensate Drain ..... 1/2" PVC

### STANDARD EQUIPMENT

- Aluminum boiler with painted jacket.
  - Hi limit aquastat.
  - Transformer.
  - 1-1/4" Taco (or Grundfos) circulator with isolation ball valves.
  - Low water cut off.
  - Temperature and pressure gauge.
  - 30 psi ASME relief valve.
  - Air vent.
  - Service switch.
- Completely installed and wired safety control system with burner consisting of:*
- Microprocessor based Integrated Boiler Control.
  - Stainless steel premix burner.
  - Automatic gas valve.
  - Hot surface igniter.
  - Casting temperature safety switch.
  - Air flow proving switches (2).
  - Forced Draft Blower.

### 15-YEAR LIMITED HEAT EXCHANGER WARRANTY.

All of our boilers are backed by Dunkirk's reputation for quality and service to customers, based on over 75 years of successful hydronic experience.

### DUNKIRK QUALITY HEATING. AMERICA'S HOTTEST BOILER VALUE!

Dunkirk hydronic boilers lead the industry in value, with premium quality design and componentry. In fact, some of the most respected "brand name" boilers are produced by Dunkirk. These major manufacturers selected Dunkirk hydronic boilers for the same basic reasons you should: **superb quality** and **unmatched value**. Just compare our quality to cost ratio, and your boiler choice will become perfectly clear.

Specifications and dimensions are subject to change without notice. Made in America-by American Craftsmen.



Since 1928. America's Hottest Boiler **Value**.



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