# V11H Series

## CAST IRON COMMERCIAL WATER OR STEAM BOILER

**UP TO 85% THERMAL EFFICIENCY**

837 TO 5733 MBH INPUT

OIL, GAS OR OIL/GAS COMBINATION

30, 50 OR 80 PSI

CAST IRON SECTIONAL DESIGN

WATER OR STEAM

TOP OR REAR VENTING

MAXIMIZE EFFICIENCY WITH SBC™ INTEGRATED BOILER CONTROL


**BURNHAM®**
**Commercial Boilers**

# V11H Series CAST IRON COMMERCIAL WATER OR STEAM BOILER

## *Your Commercial Heating Solution!*

Available in twenty sizes with gross output ratings from 674 to 4763 MBH, the V11H Series is commonly used in schools, hospitals, and other large commercial applications where comfort and reliability are critical. The product meets the energy efficiency requirements of ASHRAE 90.1 with thermal efficiencies up to 85%.

Cast iron construction, ease of assembly, two venting options, and stringent testing methods make the V11H Series boiler by Burnham Commercial your commercial heating solution.

### American-Made Cast Iron Construction

Burnham Commercial's unique cast iron formula has an extremely high silicon content, making it stronger and more flexible. It offers better thermal shock resistance and greater heat transfer capabilities than other cast iron products.

- **MANUFACTURED WITH QUALITY**
  Casting Solutions operates a state-of-the-art foundry, in Zanesville, Ohio, ensuring quality and availability of boiler sections.

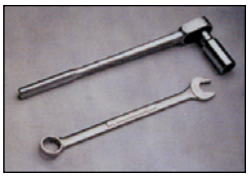
- **CAST IRON NIPPLE DIFFERENCE**
  V11H sections are held together using cast iron nipples, which are well known as being of the highest standard for boiler construction. Unlike gaskets used by many other boiler manufacturers, cast iron nipples are impervious to flue gases, oils, petroleum-based chemicals and other contaminants, which means fewer costly repairs and a longer lasting boiler.

USA MADE
CAST IRON
by
Casting Solutions
Zanesville, Ohio
*"American Made With Quality You Can Depend On"*

### Installation & Service Flexibility

The cast iron sectional design of the V11H boiler makes it easy to maneuver through doorways and into the boiler room. In addition to being shipped as loose sections, the boiler is available with factory-assembled sections or as a completely packaged and fire-tested unit.

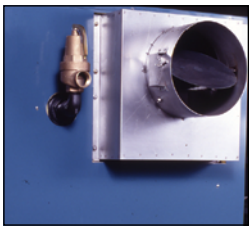
- **HASSLE-FREE SECTION ASSEMBLY**
  V11H boiler sections have reinforced lugs that are used to assemble the sections with individual draw rods resulting in fast, strain-free assembly.

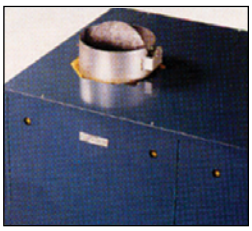


The sections can be assembled using two common tools—a 3/4" drive ratchet with a 1-1/16" deep socket and wrench. The sections are surface ground to ensure smooth surface mating. An elastic sealant and fiberglass rope are used on all section joints for a completely sealed and pressure-tight assembly.

- **EXTENSIVE TESTING METHODS — ASME APPROVED**
  Each boiler section is hydrostatically tested at 2-1/2 times the rated working pressure at the foundry. Factory-assembled sections are tested a second time at 1-1/2 times the rated working pressure.

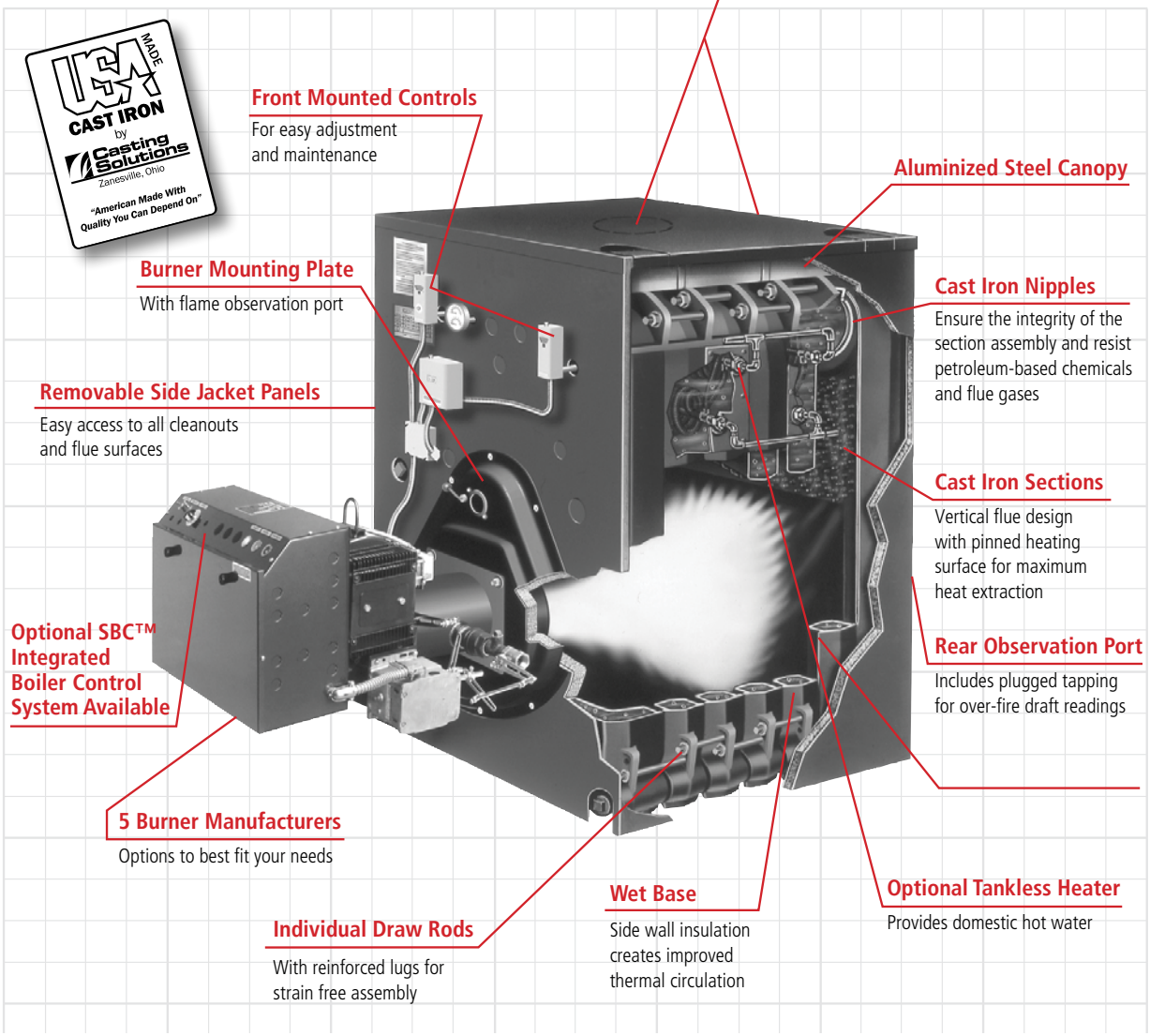
- **REAR OR TOP VENTING**
  As a forced draft boiler, the V11H provides optimum draft for controlled efficiency, eliminating the need for high chimneys or induced draft fans. A unique feature of the V11H boiler is that it can be vented from the rear or the top. This enables easy chimney or sidewall venting for maximum installation flexibility. Top outlet venting saves floor space and reduces installation time and materials. A plugged tapping is provided to make flue outlet pressure readings.





# V11H Series COMMITMENT TO QUALITY

Burnham Commercial, "America's Boiler Company," has earned a reputation for quality and dependability. Built for a variety of applications, the V11H Series is right for your next job.






| Boiler Model (1) | GAS EFFICIENCIES | | | | OIL EFFICIENCIES | | | |
|---|---|---|---|---|---|---|---|---|
| | Water | | Steam | | Water | | Steam | |
| | Combustion Efficiency | Thermal Efficiency | Combustion Efficiency | Thermal Efficiency | Combustion Efficiency | Thermal Efficiency | Combustion Efficiency | Thermal Efficiency |
| V1104H | 82.7% | 81.5% | 82.5% | 80.5% | 85.4% | 84.4% | 85.7% | 83.5% |
| V1105H | 82.7% | 81.6% | 82.5% | 80.7% | 85.4% | 84.5% | 85.7% | 83.7% |
| V1106H | 82.7% | 81.7% | 82.4% | 80.9% | 85.5% | 84.7% | 85.6% | 83.9% |
| V1107H | 82.7% | 81.8% | 82.4% | 81.1% | 85.5% | 84.8% | 85.6% | 84.1% |
| V1108H | 82.7% | 81.9% | 82.3% | 81.3% | 85.6% | 84.9% | 85.5% | 84.3% |
| V1109H | 82.6% | 81.9% | 82.3% | 81.5% | 85.6% | 85.0% | 85.5% | 84.5% |
| V1110H | 82.6% | 82.0% | 82.3% | 81.7% | 85.6% | 85.2% | 85.4% | 84.7% |
| V1111H | 82.6% | 82.1% | 82.2% | 81.9% | 85.7% | 85.3% | 85.4% | 84.9% |
| V1112H | 82.6% | 82.2% | 82.2% | 82.1% | 85.7% | 85.4% | 85.3% | 85.1% |
| V1113H | 82.6% | 82.2% | 82.2% | 82.0% | 85.7% | 85.4% | 85.3% | 85.0% |
| V1114H | 82.6% | 82.3% | 82.2% | 82.0% | 85.6% | 85.4% | 85.3% | 84.9% |
| V1115H | 82.6% | 82.3% | 82.2% | 81.9% | 85.6% | 85.4% | 85.3% | 84.8% |
| V1116H | 82.6% | 82.3% | 82.2% | 81.9% | 85.6% | 85.4% | 85.3% | 84.7% |
| V1117H | 82.6% | 82.3% | 82.2% | 81.8% | 85.6% | 85.4% | 85.3% | 84.6% |
| V1118H | 82.6% | 82.4% | 82.1% | 81.8% | 85.5% | 85.4% | 85.2% | 84.5% |
| V1119H | 82.6% | 82.4% | 82.1% | 81.7% | 85.5% | 85.4% | 85.2% | 84.4% |
| V1120H | 82.6% | 82.4% | 82.1% | 81.7% | 85.5% | 85.4% | 85.2% | 84.3% |
| V1121H | 82.6% | 82.4% | 82.1% | 81.6% | 85.5% | 85.4% | 85.2% | 84.2% |
| V1122H | 82.6% | 82.5% | 82.1% | 81.6% | 85.4% | 85.4% | 85.2% | 84.1% |
| V1123H | 82.6% | 82.5% | 82.1% | 81.5% | 85.4% | 85.4% | 85.2% | 84.0% |

# V11H Series Specifications

| Boiler Model (1) | GROSS OUTPUTS: Water Output (MBH) | GROSS OUTPUTS: Water Output (BHP) | GROSS OUTPUTS: Steam Output (MBH) | GROSS OUTPUTS: Steam Output (BHP) | I=B=R NET RATING (3): Steam MBH | I=B=R NET RATING (3): Steam Sq. Ft. | I=B=R NET RATING (3): Water MBH | INPUTS: Gas Input (MBH) | INPUTS: Oil Input (GPH) | Net Firebox Volume (Cu. Ft.) | Pressure in Firebox (In. Wc.) | Vent Dia. (In.) | Approx. Shipping & Lifting Weight (Lb.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V1104H | 682 | 20.4 | 674 | 20.1 | 505 | 2,106 | 593 | 837 | 5.8 | 7.9 | 0.48 | 8 | 2,105 |
| V1105H | 871 | 26.0 | 862 | 25.7 | 647 | 2,694 | 758 | 1,068 | 7.4 | 10.6 | 0.48 | 8 | 2,510 |
| V1106H | 1,085 | 32.4 | 1,074 | 32.1 | 806 | 3,358 | 943 | 1,328 | 9.2 | 13.2 | 0.49 | 8 | 2,920 |
| V1107H | 1,298 | 38.8 | 1,288 | 38.5 | 969 | 4,036 | 1,129 | 1,588 | 10.9 | 15.9 | 0.50 | 10 | 3,325 |
| V1108H | 1,536 | 45.9 | 1,525 | 45.6 | 1,166 | 4,857 | 1,335 | 1,876 | 12.9 | 18.5 | 0.50 | 10 | 3,733 |
| V1109H | 1,750 | 52.3 | 1,741 | 52.0 | 1,345 | 5,604 | 1,522 | 2,136 | 14.7 | 21.1 | 0.48 | 10 | 4,147 |
| V1110H | 1,965 | 58.7 | 1,958 | 58.5 | 1,520 | 6,333 | 1,709 | 2,396 | 16.5 | 23.8 | 0.50 | 12 | 4,557 |
| V1111H | 2,181 | 65.2 | 2,175 | 65.0 | 1,689 | 7,037 | 1,896 | 2,656 | 18.3 | 26.5 | 0.48 | 12 | 4,964 |
| V1112H | 2,373 | 70.9 | 2,370 | 70.8 | 1,840 | 7,668 | 2,064 | 2,887 | 19.8 | 29.1 | 0.49 | 12 | 5,374 |
| V1113H | 2,552 | 76.2 | 2,546 | 76.1 | 1,977 | 8,236 | 2,219 | 3,103 | 21.3 | 31.8 | 0.47 | 12 | 5,771 |
| V1114H | 2,790 | 83.3 | 2,781 | 83.1 | 2,159 | 8,997 | 2,426 | 3,392 | 23.3 | 34.4 | 0.44 | 14 | 6,184 |
| V1115H | 3,028 | 90.5 | 3,015 | 90.1 | 2,341 | 9,754 | 2,633 | 3,680 | 25.3 | 37.1 | 0.43 | 14 | 6,601 |
| V1116H | 3,208 | 95.8 | 3,191 | 95.3 | 2,477 | 10,323 | 2,789 | 3,897 | 26.8 | 39.7 | 0.44 | 14 | 7,008 |
| V1117H | 3,447 | 103.0 | 3,425 | 102.3 | 2,659 | 11,081 | 2,997 | 4,186 | 28.8 | 42.4 | 0.46 | 14 | 7,417 |
| V1118H | 3,685 | 110.1 | 3,659 | 109.3 | 2,840 | 11,835 | 3,204 | 4,474 | 30.8 | 45.0 | 0.44 | 16 | 7,823 |
| V1119H | 3,865 | 115.5 | 3,833 | 114.5 | 2,976 | 12,401 | 3,361 | 4,691 | 32.3 | 47.7 | 0.43 | 16 | 8,231 |
| V1120H | 4,104 | 122.6 | 4,066 | 121.5 | 3,157 | 13,154 | 3,568 | 4,979 | 34.3 | 50.3 | 0.43 | 16 | 8,638 |
| V1121H | 4,343 | 129.7 | 4,299 | 128.4 | 3,338 | 13,908 | 3,777 | 5,268 | 36.3 | 53.0 | 0.44 | 16 | 9,053 |
| V1122H | 4,524 | 135.1 | 4,473 | 133.6 | 3,473 | 14,471 | 3,934 | 5,485 | 37.8 | 55.6 | 0.44 | 18 | 9,456 |
| V1123H | 4,763 | 142.3 | 4,705 | 140.6 | 3,653 | 15,221 | 4,142 | 5,773 | 39.8 | 58.3 | 0.45 | 18 | 9,865 |

1. Suffix "S" indicates steam boiler, "W" indicates water boiler. Suffix "G" indicates gas-fired, "O" indicates oil-fired and "GO" indicates combination gas/oil-fired.
2. Boiler ratings are based on 13% $CO_2$ on oil; 10% $CO_2$ on gas and + 1/10" water column pressure at boiler flue outlet.
3. I=B=R net ratings shown are based on piping and pick up allowances which vary from 1.333 to 1.288 for steam and 1.15 for water.
   Consult manufacturer for installations having unusual piping and pick up requirements, such as intermittent system operation, extensive piping systems, etc.
4. The I=B=R burner capacity in GPH is based on oil having a heat value of 140,000 BTU per gallon.

Ratings shown above apply to altitudes up to 1000 feet for oil and 2000 feet for gas. For altitudes above those indicated, the ratings should be reduced at the rate of 4% for each 1000 feet above sea level.

Note: Maximum allowable working pressure (MAWP):
Steam: 15 PSI
Water: 80 PSI (Standard relief valve provided is 50 PSI) (80 PSI/30 PSI Optional)

## Standard Equipment

| | |
|---|---|
| **ALL BOILERS:** | Sections unassembled, flush insulated jacket, burner mounting plate, rear observation port cover, fire wall plates, target wall (V11H04–11H06 only), **rear flue outlet damper** (top outlet optional), flue canopy, trim, and miscellaneous plugs, bushing and fitting. |
| **STEAM TRIM:** | 15 PSI safety valve, L404F pressuretrol, gauge glass assembly, steam gauge. |
| **WATER TRIM:** | 50 PSI safety valve, L4006A high limit, pressure temperature gauge. |
| **OIL BURNER:** | Flange mounted flame retention oil burner furnished with 2 stage fuel unit, primary control and dual oil valves. |
| **GAS BURNER:** | Flange mounted gas burner with standard controls meeting the latest UL requirements, dual gas valves, gas-electric ignition with proven gas pilot, flame rod on JR burner, ultra violet flame detector on others, electronic programming controls and components are factory wired in a burner mounted control panel (except JR—panel available as an option). |
| **GAS/OIL BURNERS:** | Flange mounted combination gas/oil burner with standard controls meeting latest UL requirements, manually operated fuel transfer switch for dual fuel changeover, dual gas valves and oil valves, electric ignition with proven gas pilot on both fuels (direct spark ignition of oil is optional), ultra-violet flame detector, electronic programming controls and components are factory wired in a burner mounted control panel. |

## Optional Equipment

Assembled sections; completely packaged (including manual reset high limit and manual reset low water cutoff); packaged and fire-tested; top outlet flue damper; tankless heaters; side inspection tappings with brass plugs; pressure relief door; 30 PSI and 80 PSI safety relief valves; combustion and hydronic controls to meet special applications including F.M., I.R.I, and ASME CSD-1.

PLEASE CONSULT BURNHAM COMMERCIAL WEBSITE FOR BOILER DIMENSIONAL DATA, PIPING CONFIGURATIONS AND BURNER MODELS/SPECIFICATIONS.

All Burnham Commercial products are currently in compliance with the Energy Policy and Conservation Act and are registered with the Department of Energy (DOE) in accordance with Federal Register 10 CFR Parts 429, 430, & 431.





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BURNHAM® Commercial Boilers