Sellers® MANUFACTURING CO.

# S SERIES

## HOT WATER BOILERS


- Digital Modulation Family responds to your varying process and operational demands for steam and hot water.
- An industry-leading breakthrough in rapid-response, variable output, compactness and low maintenance!
- Easier interface with process control/automation via common communications protocols.
- Patents Pending design innovation from the leader in firetube boilers that eliminate thermal shock.
- Unique single pass design allows for high temperature differential operation with no risk of thermal shock.

## HOT WATER BOILER RATINGS, CAPACITIES, WEIGHTS

| BOILER HORSE POWER | HOURLY GAS INPUT (1000BTU) | GROSS HOURLY OUTPUT | TURN-DOWN | FUEL OPTIONS | LOW $NO_x$ EMISSIONS OPTION | WATER CAPACITY (U.S. GAL) | WATER CAPACITY (POUNDS) | SHIPPING WEIGHT (POUNDS) | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 100PSI | 150 PSI |
| 40 | 1,674 | 1,339 | 3 to 1 | NG, LP | 30 PPM | 139 | 1,161 | 2,680 | 2,680 |
| 50 | 2,092 | 1,674 | 3 to 1 | NG, LP | 30 PPM | 224 | 1,872 | 3,260 | 3,260 |
| 60 | 2,511 | 2,009 | 3 to 1 | NG, LP | 30 PPM | 219 | 1,826 | 3,360 | 3,360 |
| 70 | 2,929 | 2,343 | 3 to 1 | NG, LP | 30 PPM | 213 | 1,779 | 3,450 | 3,450 |
| 80 | 3,348 | 2,678 | 3 to 1 | NG, LP | 30 PPM | 319 | 2,659 | 4,250 | 4,330 |
| 100 | 4,184 | 3,348 | 3 to 1 | NG, LP | 30 PPM | 307 | 2,565 | 4,470 | 4,470 |
| 125 | 5,231 | 4,184 | 3 to 1 | NG, LP | 30 PPM | 424 | 3,539 | 5,590 | 5,860 |
| 150 | 6,277 | 5,021 | 3 to 1 | NG, LP | 30 PPM | 411 | 3,427 | 5,820 | 6,090 |
| 175 | 7,323 | 5,858 | 3 to 1 | NG, LP | 30 PPM | 397 | 3,314 | 6,050 | 6,320 |
| 200 | 8,369 | 6,695 | 4 to 1 | NG, LP | 30 PPM | 534 | 4,456 | 7,450 | 7,580 |
| 250 | 10,461 | 8,369 | 4 to 1 | NG, LP | 30 PPM | 654 | 5,460 | 9,520 | 9,520 |
| 300 | 12,553 | 10,043 | 4 to 1 | NG, LP | 30 PPM | 839 | 7,000 | 11,520 | 12,110 |
| 350 | 14,645 | 11,716 | 4 to 1 | NG, LP | 30 PPM | 806 | 6,728 | 12,060 | 12,490 |
| 400 | 16,738 | 13,390 | 4 to 1 | NG, LP | 30 PPM | 1,015 | 8,471 | 12,840 | 13,780 |
| 500 | 20,922 | 16,738 | 4 to 1 | NG, LP | 30 PPM | 1,218 | 10,162 | 15,080 | 15,600 |
| 600 | 25,107 | 20,085 | 4 to 1 | NG, LP | 30 PPM | 1,446 | 12,067 | 17,390 | 18,520 |
| 700 | 29,291 | 23,433 | 4 to 1 | NG, LP | 30 PPM | 1,698 | 14,168 | 19,920 | 21,310 |
| 800 | 33,475 | 26,780 | 4 to 1 | NG, LP | 30 PPM | 1,981 | 16,535 | 23,330 | 24,190 |
| 900 | 37,659 | 30,127 | 4 to 1 | NG, LP | 30 PPM | 3,263 | 27,116 | 31,770 | 32,865 |

(1) High tempurature construction is available.
(2) Low $NO_x$ may affect turn-down.

### GAS REQUIREMENTS

Main and pilot gas pressure regulators are supplied with each boiler. Refer to the chart below for gas pressure requirements. Pressures shown are with the unit running.

| BOILER HORSEPOWER | PRESSURE REQUIRED AT GAS TRAIN INLET |
|---|---|
| | STD RANGE |
| 40-80 | 1 to 5 PSI |
| 100-150 | 1 to 5 PSI |
| 175-200 | 1 to 5 PSI |
| 250 | 1 to 5 PSI |
| 300-350 | 2 to 10 PSI |
| 400-900 | 2 to 10 PSI |

For high and low gas pressure applications consult the factory.

### ELECTRICAL REQUIREMENTS

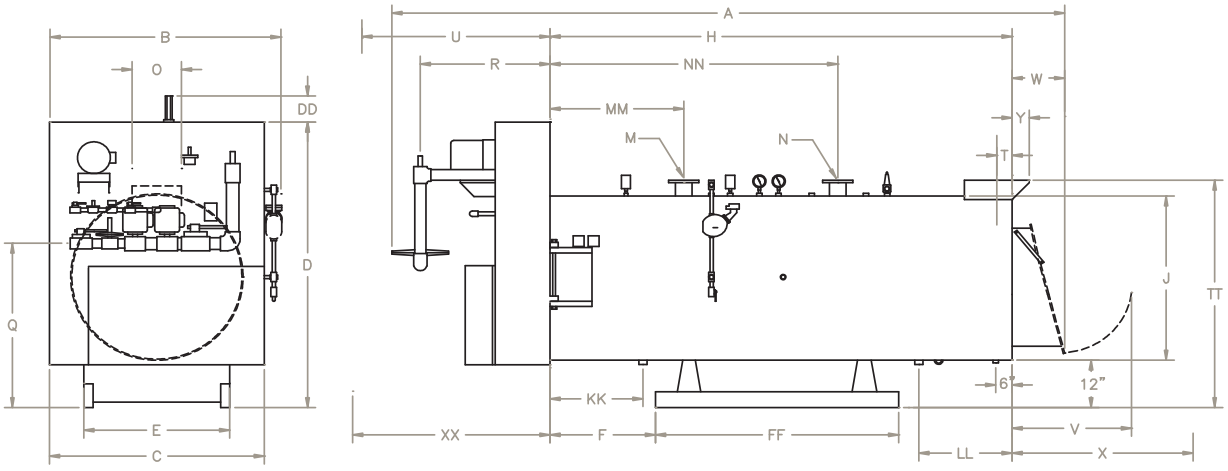
A single incoming power connection is required to the junction box provided at the hinge of all boilers. Boilers are wired for jobsite supply power characteristics.

### STACK REQUIREMENTS

Design stack to provide +/- .1 water column draft at flue outlet. Smooth transitions and bends are required. Maximum stack weight on boiler should be 1,000 pounds on 40 to 80 HP and 2000 pounds for 100 to 900 HP units.

### AIR REQUIREMENTS

Provide 1/2 square foot of free air inlet area per 1,000,000 BTU input to the burner. Cross ventilation is preferred in lieu of a single opening.

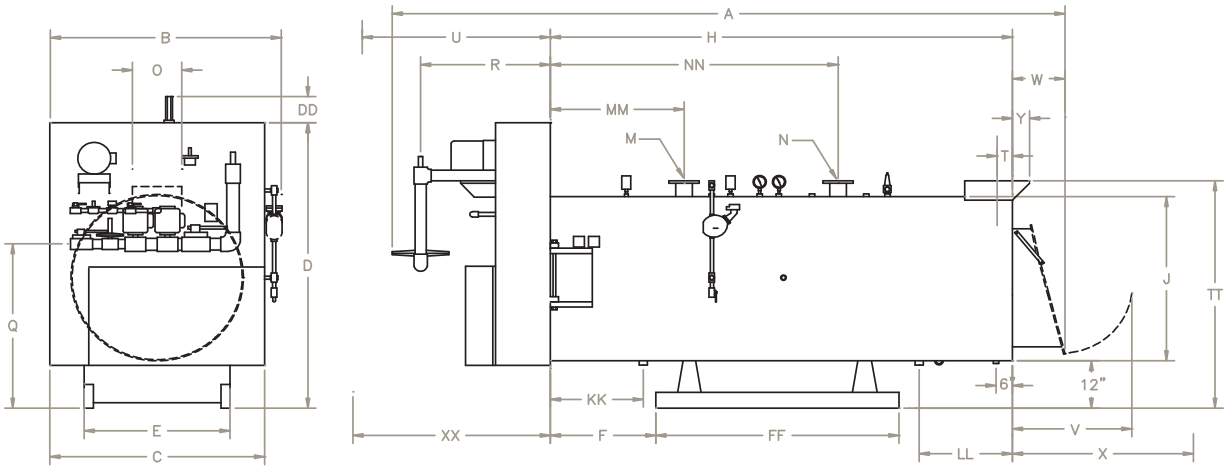



## HOT WATER BOILER DIMENSIONS

| HORSEPOWER | | C-40-W | C-50-W | C-60-W | C-70-W | C-80-W | C-100-W | S-125-W |
|---|---|---|---|---|---|---|---|---|
| **OVERALL DIMENSIONS:** | | | | | | | | |
| LENGTH | A | 143 | 143 | 145 | 150 | 151 | 159 | 160 |
| WIDTH | B | 36 | 42 | 42 | 42 | 48 | 48 | 54 |
| BURNER WIDTH | C | 32 | 35 | 35 | 35 | 41 | 41 | 47 |
| BURNER HEIGHT | D | 59 | 65 | 65 | 65 | 70 | 70 | 75 |
| SECONDARY AIR CAP HEIGHT | DD | 6 | 6 | 6 | 6 | 6 | 6 | |
| **BASE:** | | | | | | | | |
| WIDTH | E | 24 | 24 | 24 | 24 | 30 | 30 | 36 |
| LOCATION | F | 20 | 20 | 20 | 20 | 20 | 26 | 26 |
| LENGTH | FF | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| **SHELL:** | | | | | | | | |
| LENGTH | H | 108 | 108 | 108 | 108 | 108 | 114 | 114 |
| DIAMETER INSIDE | J | 24 | 30 | 30 | 30 | 36 | 36 | 42 |
| **SHELL CONNECTIONS:** | | | | | | | | |
| DRAIN SIZE | K | 1.25 | 1.25 | 1.25 | 1.25 | 1.5 | 1.5 | 1.5 |
| DRAIN LOCATION | KK | 16 | 16 | 16 | 16 | 16 | 22 | 22 |
| MANUAL FILL SIZE | L | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |
| MANUAL FILL LOCATION | LL | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| HOT WATER OUTLET SIZE (NOTE 3) | M | 3 | 4f | 4f | 4f | 4f | 4f | 6f |
| HOT WATER OUTLET LOCATION | MM | 26 | 26 | 26 | 26 | 26 | 33 | 33 |
| HOT WATER RETURN SIZE (NOTE 3) | N | 3 | 4f | 4f | 4f | 4f | 4f | 6f |
| HOT WATER RETURN LOCATION | NN | 64 | 64 | 64 | 64 | 64 | 71 | 71 |
| **GAS CONNECTIONS:** | | | | | | | | |
| MAIN BURNER VALVE IPS (NOTE 5) | QQ | 1.5 | 1.5 | 2 | 2 | 2 | 2.5 | 2.5 |
| VERTICAL LOCATION (NOTE 11) | Q | 33 | 36 | 36 | 36 | 39 | 39 | 42 |
| HORIZONTAL LOCATION (NOTE 4) | R | 20 | 20 | 22 | 26 | 26 | 28 | 28 |
| PILOT BURNER VALVE IPS | S | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |
| **FLUE CONNECTIONS:** | | | | | | | | |
| FLUE SIZE (NOTES 6 & 10) | O | 10 | 10 | 10 | 12 | 12 | 14 | 14 |
| FLUE LOCATION | T | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 4.75 | 4.75 |
| FLUE HEIGHT | TT | 43 | 49 | 49 | 49 | 55 | 55 | 61 |
| **INSTALLATION CLEARANCES:** | | | | | | | | |
| COMBUSTION ASSEMBLY SWING | U | 36 | 38 | 40 | 41 | 46 | 48 | 53 |
| RELIEF DOOR SWING (NOTE 7) | V | 18 | 21.5 | 21.5 | 21.5 | 25.5 | 25.5 | 29.5 |
| TUBE REMOVAL, FRONT (NOTE 8) | XX | 73 | 73 | 73 | 73 | 73 | 66 | 66 |
| TUBE REMOVAL, REAR (NOTE 8) | X | 71 | 71 | 71 | 71 | 71 | 72 | 72 |
| RELIEF DOOR ASSEMBLY | VV | 10 | 11 | 11 | 11 | 12 | 12 | 13 |
| FLUE OUTLET PROJECTION | Y | | | | | | 2.25 | 2.25 |
| **BLOWER MOTOR:** | | | | | | | | |
| BLOWER HORSEPOWER | | 3 | 5 | 5 | 5 | 5 | 7.5 | 7.5 |
| LOW $NO_x$ BLOWERS | | 3 | 5 | 7.5 | 7.5 | 7.5 | 7.5 | 10 |

See Notes on Page 25.

# Sellers Fits Where Others Won't




## HOT WATER BOILER DIMENSIONS

| HORSEPOWER | | S-150-W | S-175-W | S-200-W | S-250-W | S-300-W | S-350-W | S-400-W | S-500-W | S-600-W | S-700-W | S-800-W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **OVERALL DIMENSIONS:** | | | | | | | | | | | | |
| LENGTH | A | 166 | 166 | 167 | 193 | 196 | 210 | 213 | 214 | 218 | 220 | 228 |
| WIDTH | B | 57 | 57 | 61 | 64 | 67 | 72 | 76 | 83 | 89 | 95 | 101 |
| BURNER WIDTH | C | 53 | 53 | 56 | 62 | 62 | 72 | 74 | 82 | 88 | 94 | 100 |
| BURNER HEIGHT | D | 73 | 73 | 82 | 80 | 87 | 97 | 102 | 107 | 112 | 120 | 125 |
| SECONDARY AIR CAP HEIGHT | DD | | | | | | | | | | | |
| **BASE:** | | | | | | | | | | | | |
| WIDTH | E | 36 | 36 | 42 | 42 | 48 | 48 | 54 | 57 | 63 | 66 | 72 |
| LOCATION | F | 26 | 26 | 26 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| LENGTH | FF | 60 | 60 | 60 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| SHELL: | | | | | | | | | | | | |
| LENGTH | H | 114 | 114 | 114 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |
| DIAMETER INSIDE | J | 42 | 42 | 48 | 48 | 54 | 54 | 60 | 66 | 72 | 78 | 84 |
| **SHELL CONNECTIONS:** | | | | | | | | | | | | |
| DRAIN SIZE | K | 1.5 | 1.5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| DRAIN LOCATION | KK | 22 | 22 | 22 | 34 | 34 | 34 | 34 | 34 | 34 | 34 | 34 |
| MANUAL FILL SIZE | L | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | | | | | | | | | | | |
| HOT WATER OUTLET SIZE (NOTE 3) | M | 6f | 6f | 6f | 8f | 8f | 8f | 8f | 10f | 10f | 10f | 12f |
| HOT WATER OUTLET LOCATION | MM | 33 | 33 | 33 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| HOT WATER RETURN SIZE (NOTE 3) | N | 6f | 6f | 6f | 8f | 8f | 8f | 8f | 10f | 10f | 10f | 12f |
| HOT WATER RETURN LOCATION | NN | 71 | 71 | 71 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| **GAS CONNECTIONS:** | | | | | | | | | | | | |
| MAIN BURNER VALVE IPS (NOTE 5) | QQ | 3 | 3 | 3 | 2.5 | 2.5 | 2.5 | 3 | 3 | 3 | 3 | 3 |
| VERTICAL LOCATION (NOTE 11) | Q | 38 | 38 | 41 | 44 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| HORIZONTAL LOCATION (NOTE 4) | R | 32 | 32 | 32 | 34 | 34 | 48 | 50 | 50 | 50 | 50 | 56 |
| PILOT BURNER VALVE IPS | S | 0.75 | 0.75 | 0.75 | 0.75 | 1 | 1 | 1 | 1 | 1.25 | 1.25 | 1.25 |
| **FLUE CONNECTIONS:** | | | | | | | | | | | | |
| FLUE SIZE (NOTES 6 & 10) | O | 16 | 18 | 18 | 20 | 22 | 24 | 26 | 28 | 32 | 34 | 36 |
| FLUE LOCATION | T | 3.75 | 2.75 | 2.75 | 5.75 | 4.5 | 3.5 | 2.5 | 1.5 | -0.5 | -1.5 | -2.5 |
| FLUE HEIGHT | TT | 61 | 61 | 67 | 67 | 73 | 73 | 79 | 85 | 97 | 103 | 109 |
| **INSTALLATION CLEARANCES:** | | | | | | | | | | | | |
| COMBUSTION ASSEMBLY SWING | U | 58 | 58 | 62 | 65 | 68 | 80 | 84 | 90 | 95 | 100 | 108 |
| RELIEF DOOR SWING (NOTE 7) | V | 29.5 | 29.5 | 35.5 | 35.5 | 40 | 40 | 43 | 46 | 50 | 48 | 50 |
| TUBE REMOVAL, FRONT (NOTE 8) | XX | 66 | 66 | 66 | 88 | 88 | 88 | 88 | 88 | 88 | 88 | 88 |
| TUBE REMOVAL, REAR (NOTE 8) | X | 72 | 72 | 72 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| RELIEF DOOR ASSEMBLY | VV | 13 | 13 | 14 | 14 | 15 | 15 | 16 | 17 | 18 | 17 | 18 |
| FLUE OUTLET PROJECTION | Y | 4.25 | 6.25 | 6.25 | 4.25 | 8.5 | 10.5 | 12.5 | 14.5 | 18.5 | 20.5 | 22.5 |
| **BLOWER MOTOR:** | | | | | | | | | | | | |
| BLOWER HORSEPOWER | | 7.5 | 7.5 | 10 | 15 | 15 | 20 | 20 | 25 | 25 | 30 | 30 |
| LOW $NO_x$ BLOWERS | | 10 | 10 | 15 | 20 | 20 | 20 | 20 | 20 | 30 | 30 | 30 |

See Notes on Page 25.

## NOTES

1. Dimensions are accurate for layout but are subject to change. Certified prints are available upon request.
2. Lifting lugs and insulation are not shown on drawing. The manhole, when furnished, is not shown.
3. Openings are threaded unless indicated:
   f = Class 150 ASA flange. F = Class 300 ASA flange.
   Threaded couplings project 2" or less.
4. Provide "R + 12" clearance from the right side of burner box to the right side wall to open hinged burner.
5. Gas train may change with gas type and pressure.
6. Outside diameter and dimensions are shown. (see note 10)
7. Provide "J + 7" clearance from the rear end of the shell to swing the hinged back plate on 300 HP and larger boilers.
8. Tubes may be removed from the front or rear.
9. Dip tube (2" min.) provided on hot water outlet.
10. Flue outlet dimension on larger boilers are inside diameter with angle iron flanged connection.
11. Horizontal gas train dimension will vary based on required gas train components and addition of Low $NO_x$ option. Gas train may extend beyond burner manifold dimension C.

## STANDARD EQUIPMENT FURNISHED

**Pressure Vessel:** 100 or 150 PSI, ASME stamped with "H"cloverleaf.

**Manholes:** Standard on 500 HP or larger boilers.

**Handholes:** Five (5) furnished, 3-1/2" x 4-1/2".

**Lifting lugs:** One or more provided on each boiler.

**Energy X-tractors:** High temperature stainless steel to provide high efficiency. Installed in each tube.

**Insulation:** 2" fiberglass with double painted steel jacket.

**Relief Door:** Gravity operated for rear access and safety.

**Burner Assembly:** Hinged to shell including:

- Fully modulating burner with parallel positioning controls.
- Individual burner nozzles.
- Air proving switch.
- Ignition transformer, spark and flame rods.
- Gas control trains with dual main shutoff cocks, pilot and main gas pressure regulators, gas volume adjustment and other components as follows:

**Operating Temperature Control:** Controls temperature.

**High Limit Temperature Control:** Manual reset limit control.

**UL Labeled:** Packaged boiler.

**Low Water Cutoffs:** MM150 S-M float type with manual reset.

**Pressure Gauge:** 4-1/2" dial type mounted on pigtail.

**Temperature Gauge:** 5" dial type.

**Base:** Heavy duty structural steel skid.

**Relief Valve(s):** ASME rated for full boiler nozzle output at design pressure rating.

**Flame observation ports:** Two or more provided in combustion chamber to view burners.

**Control Panel:** With motor starter, control transformer with primary and secondary fuses & indicating lights. Siemens LMV5 Microprocessor based burner management system with real time MODBUS communication.

## OPTIONAL AGENCY APPROVALS

- Factory Mutual
- CSD-1
- NFPA-85