



**Approved Submittal for Hi Delta® FlexGas®- Type WH
Dual-Fuel Water Heater
Models 992CD-2342CD**

Date: _____ Job: _____ Location: _____

Equipment Tags: _____ Engineer: _____ Contractor: _____

Model: _____ Notes: _____

Prepared by: _____ Indoor Outdoor

Gas Type: Natural Gas and Propane
[Requires connections to both]

100% Factory fire-tested

Up to 85% thermal efficiency

Versa IC® controller with LCD display

Maximum Setpoint: 160°F (71.1°C)

Maximum outlet temperature: 200°F (93.3°C)

Minimum non-condensing inlet temperature: 105°F (40.6°C)

Thermal shock proof heat exchanger

Limited 20-year thermal shock warranty

Limited 10-year cupronickel heat exchanger warranty

Limited 5-Year copper heat exchanger warranty

Full safety diagnostics with fault history

PolyTuf powder-coated cabinet

No combustible floor shield required

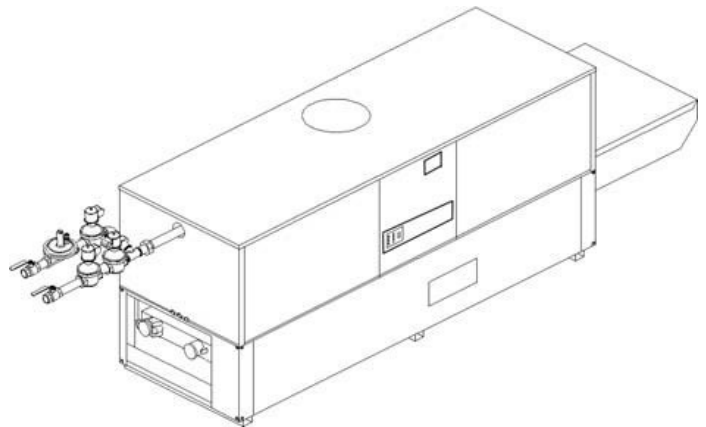
Fan-assisted

Patented burner security blanket

SCAQMD Rule 1146.2 certified, Low NOx < 20 ppm

Cascade up to 8 heaters – no external sequencer required

Proudly assembled in the USA



Patent Nos. 6,904,873 & 7,044,124; other patents pending.



Features and Options

Heat Exchanger

Headers

- Bronze (standard)
- A-2 Glass-lined cast iron (optional)
- ASME HLW-stamped; 160 PSIG MAWP
- National Board registered
- Fin tubing
 - Copper (standard)
 - A-3 Cupronickel (optional)
- ASME Steel tube sheet
- Silicone high temp. O-rings
- ASME Pressure relief valve
 - 125 PSIG (standard)
 - _____ PSIG (optional)
- T&P Gauge
- Water connections
 - Left hand (standard)
 - A-6 Right hand (optional)

Power

- 120V, 60Hz, 1Ø, Power supply
- 120/24V, 60Hz, Transformer

Control

- VERSA IC® Integrated control
- 100% Shut-off/lockout
- Hot surface ignition (HSI)
- Ignition module
 - 3-Try (standard)
 - C-6 Single-try (optional)
- Cascade up to 8 heaters
- Water temperature sensors 10kΩ (2 mtd, 1 loose, 1 well)
- Remote flame sensor
- High limit, manual-reset, fixed 240°F (115°C)
- Low gas pressure switch, manual-reset
- On/Off power switch
- Flow switch
- Blocked vent pressure switch
- Combustion air proving switch
- Programmable pump time delays
 - Heater
 - Recirculation
 - Enable/Disable

- LCD Display; status, fault and diagnostics
- Cold water protection function
 - CWR Variable-speed pump
 - CWR Controls
 - Factory-mounted
 - Shipped loose
- Modbus RTU BMS Port (Up to 115K baud rate)
 - B-85 – BMS Gateway – BACnet MS/TP, BACnet IP, N2 Metasys or Modbus TCP
 - B-86 – BMS Gateway – LonWorks

Gas Train

- Manual gas shutoff valve(s)
- Combo Valve(s)
- Firing mode
 - WH8 3-Stage (model 992CD only)
 - WH9 4-Stage (models 1262CD – 2342CD)
- Fuel (Requires connections to both)
 - Natural gas and propane (minimum grade HD-5)
 - Note:** Size 2002C is not offered as a FlexGas unit.
- Design Certified - ANSI Z21.10.3/CSA 4.3

Construction

- Indoor/outdoor construction
- Front controls enclosed
- Powder-coat Finish
- CSA low-lead certified (≤ .25% Lead)

Venting options

- Vent Category I/III Cupronickel
- Vent Category II/IV Copper
- Vent location
 - Top (standard)
 - D-12* Barometric damper w/o thermostwitch (*must be used when vertical flue height is greater than 25 feet, or when power vent is used.)
 - D-14 Rear flue exhaust tee (optional)
 - Factory-mounted
 - Shipped loose
- Vent termination
 - D-11 Vent termination, outdoor
 - D-15 Vent termination, sidewall (Cat III & IV horizontal)
 - D-19 Cat III & IV vent termination adapter
 - D-23 Outdoor vent supports
 - D-37 Motorized combustion air damper
 - Indoor, vertical (by others)
- Combustion air

- D-16 Air intake elbow (indoor only)
- D-17 Inline air intake filter (used with Truseal™)
- D-18 Adapter, boiler vent (Cat III)
- TruSeal Direct Vent*
 - D-21 Factory-mounted
 - D-22 Shipped loose (*must use with D-17)
- Extractor (optional)
 - By others
 - Not required

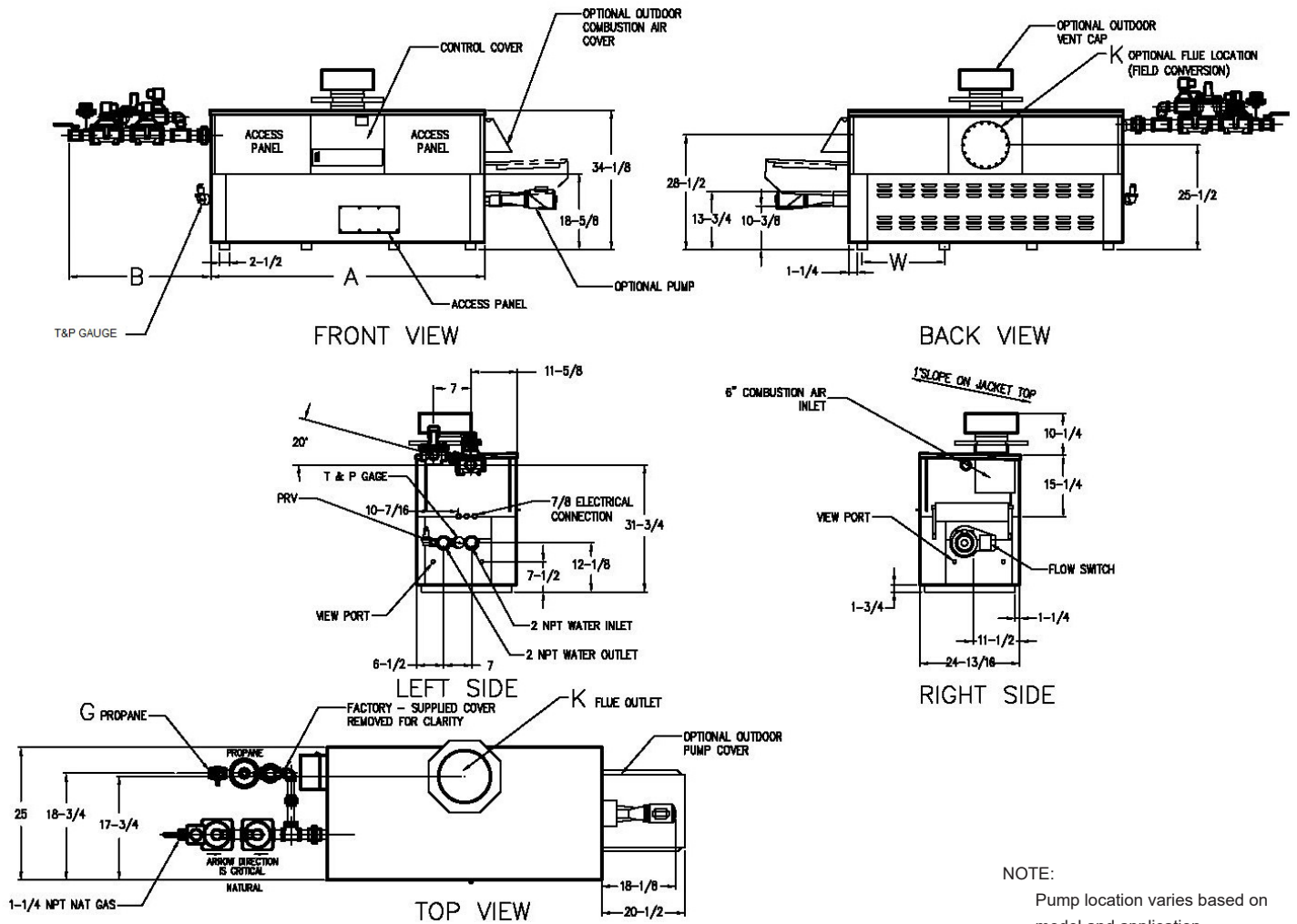
Options

- B-31 Tankstat well
- B-32 Outdoor air sensor
- E-5 Alarm with 4" bell
 - Factory-mounted
 - Shipped loose
- F-10 Low water cut-off, remote probe
- I-5 Adj. manual-reset, high limit, 200°F (93.3°C) max
 - Factory-mounted
 - Shipped loose
- I-13 Adj. auto-reset, high limit, 200°F (93.3°C) max
 - Factory-mounted
 - Shipped loose
- I-14 Adj. auto-reset, high limit, 180°F (82.2°C) max
 - Factory-mounted
 - Shipped loose
- I-20 Adj. manual-reset, high limit, 180°F (82.2°C) max
 - Factory-mounted
 - Shipped loose
- P_____ Pump: _____ HP, 120V, 1Ø, 60Hz
 - Bronze
 - Mounted
 - Loose
 - Front
 - Rear
- S-2 High gas pressure switch, manual-reset
 - Factory-mounted
 - Shipped loose
- X-1 SureRack® kit
- X-2 SureRack® above-ground reinforcing
- X-3 SureRack® restraint brackets
- Z-9 Thermometer

Additional Options or Accessories

Multi-Boiler Temperature Controllers

- TempTracker Mod+ Hybrid
- B-36 2-4 Heaters
- B-37 5-10 Heaters
- B-38 11-16 Heaters
- B-39* EMS 4-20mA remote setpoint interface module
- B-62* BACnet MS/TP Interface module (*requires B-36 to B-38)



NOTE:
Pump location varies based on model and application.

| SPECIFICATIONS | | | | | | | | | | Approx. Shipping Wt. Lbs. (Kg) |
|---------------------------------|-------------|------------|--------------|---------------|--------------------------|----------|----------|----------------|-----------|--------------------------------|
| Model | MBTUH (kWh) | | | Firing Stages | Dimensions - Inches (mm) | | | | Amp Draw* | |
| | Input | Output 85% | Output 83.1% | | A Width | K | T | W | | |
| <input type="checkbox"/> 992CD | 990 (290) | 842 (247) | 823 (241) | 3 | 57-1/8 (1451) | 10 (254) | 10 (254) | 16-13/16 (427) | <12 | 900 (408) |
| <input type="checkbox"/> 1262CD | 1260 (369) | 1071 (314) | 1047 (307) | 4 | 68-1/2 (1740) | 12 (305) | | 20-9/16 (522) | | 1010 (458) |
| <input type="checkbox"/> 1532CD | 1530 (448) | 1301 (381) | 1271 (372) | 4 | 79-7/8 (2029) | 12 (305) | | 24-3/8 (619) | | 1225 (556) |
| <input type="checkbox"/> 1802CD | 1800 (527) | 1530 (448) | 1496 (438) | 4 | 91-1/8 (2315) | 14 (356) | | 28-1/8 (714) | | 1350 (612) |
| <input type="checkbox"/> 2072CD | 2070 (607) | 1760 (516) | 1720 (504) | 4 | 102-1/2 (2604) | 14 (356) | | 31-15/16 (811) | | 1450 (658) |
| <input type="checkbox"/> 2342CD | 2340 (686) | 1989 (582) | 1945 (570) | 4 | 113-7/8 (2892) | 16 (406) | | 35-11/16 (906) | | 1520 (689) |

NOTES:
1. Rates shown are for natural or propane gas, and elevations up to 4,500 ft. De-rate above 4,500 ft.
2. Required natural gas pressure is 5.6 - 10.5" WC. Required propane gas pressure is 10.5 - 13" WC.

*Without pump



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Job: _____

| Clearances - Inches (mm) | | | | | | | | | | |
|--------------------------|-------|----------------|-----------------|----------------------|-----------------------|----------------------|-----------------------|-----------|----------|--------|
| | Floor | Rear (Indoors) | Rear (Outdoors) | Water Side (Indoors) | Water Side (Outdoors) | Other Side (indoors) | Other Side (outdoors) | Top | Front | Vent |
| Combustible Minimum | 0 | 1 (25.4) | 12 (304.8) | 12 (304.8) | 36 (914) | 1 (25.4) | 36 (914) | 1 (25.4) | Open | 2 (51) |
| Minimum Service | 0 | 6 (152.4) | 6 (152.4) | 24 (610) | 36 (914) | 24 (610) | 36 (914) | 6 (152.4) | 24 (610) | 2 (51) |

| 83.1% System Flow and Head Loss | | | | | | | | | | | | | | | |
|---------------------------------|-----------------------|-------------|------------|--------------|-------------|------------------------|-------------|------------|--------------|-------------|--|-------------|------------|--------------|-------------|
| Model | 3-4 Grains Per Gallon | | | | | 5-15 Grains Per Gallon | | | | | 16-25 ⁽¹⁾ Grains Per Gallon | | | | |
| | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) |
| <input type="checkbox"/> 992CD | 29 (16.1) | 60 (227) | 2.7 | 2-1/2 (63.5) | 5.2 | 17 (9.4) | 98 (371) | 7.3 | 2-1/2 (63.5) | 13.3 | 13 (7.2) | 132 (500) | 13.1 | 2-1/2 (63.5) | 23.6 |
| <input type="checkbox"/> 1262CD | 29 (16.1) | 72 (272) | 4.4 | 2-1/2 (63.5) | 7.9 | 18 (9.9) | 115 (435) | 11.3 | 2-1/2 (63.5) | 19.4 | 16 (8.8) | 132 (500) | 14.8 | 2-1/2 (63.5) | 25.3 |
| <input type="checkbox"/> 1532CD | 29 (16.1) | 86 (325) | 7.1 | 2-1/2 (63.5) | 11.9 | 21 (11.6) | 120 (454) | 13.7 | 2-1/2 (63.5) | 22.5 | 19 (10.5) | 132 (500) | 16.5 | 2-1/2 (63.5) | 27.0 |
| <input type="checkbox"/> 1802CD | 29 (16.1) | 102 (386) | 10.9 | 2-1/2 (63.5) | 17.4 | 25 (13.8) | 120 (454) | 15.1 | 2-1/2 (63.5) | 23.9 | 23 (12.7) | 132 (500) | 18.3 | 2-1/2 (63.5) | 28.7 |
| <input type="checkbox"/> 2072CD | 31 (17.2) | 117 (443) | 15.1 | 2-1/2 (63.5) | 23.4 | 26 (14.4) | 132 (500) | 19.0 | 2-1/2 (63.5) | 29.5 | 26 (14.4) | 132 (500) | 19.0 | 2-1/2 (63.5) | 29.5 |
| <input type="checkbox"/> 2342CD | 33 (18.3) | 120 (454) | 17.8 | 2-1/2 (63.5) | 26.5 | 30 (16.6) | 132 (500) | 21.4 | 2-1/2 (63.5) | 31.8 | 30 (16.6) | 132 (500) | 21.4 | 2-1/2 (63.5) | 31.8 |

| 85% System Flow and Head Loss | | | | | | | | | | | | | | | |
|---------------------------------|-----------------------|-------------|------------|--------------|-------------|------------------------|-------------|------------|--------------|-------------|--|-------------|------------|--------------|-------------|
| Model | 3-4 Grains Per Gallon | | | | | 5-15 Grains Per Gallon | | | | | 16-25 ⁽¹⁾ Grains Per Gallon | | | | |
| | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) | ΔT °F (°C) | GPM (L/min) | ΔP (FT WC) | MTS in (mm) | SHL (FT WC) |
| <input type="checkbox"/> 992CD | 28 (15.5) | 60 (227) | 2.7 | 2-1/2 (63.5) | 5.2 | 17 (9.4) | 98 (371) | 7.3 | 2-1/2 (63.5) | 13.3 | 13 (7.2) | 132 (500) | 13.1 | 2-1/2 (63.5) | 23.6 |
| <input type="checkbox"/> 1262CD | 28 (15.5) | 76 (288) | 4.8 | 2-1/2 (63.5) | 8.5 | 19 (10.5) | 115 (435) | 11.3 | 2-1/2 (63.5) | 19.4 | 16 (8.8) | 132 (500) | 14.8 | 2-1/2 (63.5) | 25.3 |
| <input type="checkbox"/> 1532CD | 32 (17.7) | 83 (314) | 7.1 | 2-1/2 (63.5) | 11.9 | 22 (12.2) | 120 (454) | 13.7 | 2-1/2 (63.5) | 22.5 | 20 (11.1) | 132 (500) | 16.5 | 2-1/2 (63.5) | 27.0 |
| <input type="checkbox"/> 1802CD | 32 (17.7) | 98 (371) | 10.9 | 2-1/2 (63.5) | 17.4 | 26 (14.4) | 120 (454) | 15.1 | 2-1/2 (63.5) | 23.9 | 23 (12.7) | 132 (500) | 18.3 | 2-1/2 (63.5) | 28.7 |
| <input type="checkbox"/> 2072CD | 32 (17.7) | 112 (424) | 15.1 | 2-1/2 (63.5) | 23.4 | 27 (15.0) | 132 (500) | 19.0 | 2-1/2 (63.5) | 29.5 | 27 (15.0) | 132 (500) | 19.0 | 2-1/2 (63.5) | 29.5 |
| <input type="checkbox"/> 2342CD | 32 (17.7) | 126 (477) | 21.4 | 2-1/2 (63.5) | 31.8 | 30 (16.6) | 132 (500) | 21.4 | 2-1/2 (63.5) | 31.8 | 30 (16.6) | 132 (500) | 21.4 | 2-1/2 (63.5) | 31.8 |

⁽¹⁾ Must utilize cupronickel tubes. If over 25 grains per gallon, a water softener/treatment system must be utilized.

Caution: For scale free operation with "Hard Water" (16-25 grains per gallon of total hardness), the operating control must NOT be set higher than 130°F. For higher than 130°F operation, a water softener/treatment system must be utilized.

Caution: Water softened below 3 grains per gallon is known to be aggressive and corrosive.

| 83.1% Recovery Rates (GPH) | | | | | | | | | |
|---------------------------------|-----------------------|------|------|------|------|------|------|------|------|
| Model | Temperature Rise (°F) | | | | | | | | |
| | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° | 100° |
| <input type="checkbox"/> 992CD | 4986 | 3324 | 2493 | 1994 | 1662 | 1425 | 1247 | 1108 | 997 |
| <input type="checkbox"/> 1262CD | 6346 | 4231 | 3173 | 2538 | 2115 | 1813 | 1586 | 1410 | 1269 |
| <input type="checkbox"/> 1532CD | 7706 | 5137 | 3853 | 3082 | 2569 | 2202 | 1926 | 1712 | 1541 |
| <input type="checkbox"/> 1802CD | 9065 | 6044 | 4533 | 3626 | 3022 | 2590 | 2266 | 2015 | 1813 |
| <input type="checkbox"/> 2072CD | 10425 | 6950 | 5213 | 4170 | 3475 | 2979 | 2606 | 2317 | 2085 |
| <input type="checkbox"/> 2342CD | 11785 | 7857 | 5893 | 4714 | 3928 | 3367 | 2946 | 2619 | 2357 |

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Approved Submittal for Hi Delta® FlexGas® - Type WH

Job: _____

| 85% Recovery Rates (GPH) | | | | | | | | | |
|---------------------------------|-------|------|------|------|------|------|------|------|------|
| Temperature Rise (°F) | | | | | | | | | |
| Model | 20° | 30° | 40° | 50° | 60° | 70° | 80° | 90° | 100° |
| <input type="checkbox"/> 992CD | 5100 | 3400 | 2550 | 2040 | 1700 | 1457 | 1275 | 1133 | 1020 |
| <input type="checkbox"/> 1262CD | 6491 | 4327 | 3245 | 2596 | 2164 | 1855 | 1623 | 1442 | 1298 |
| <input type="checkbox"/> 1532CD | 7882 | 5255 | 3941 | 3153 | 2627 | 2252 | 1970 | 1752 | 1576 |
| <input type="checkbox"/> 1802CD | 9273 | 6182 | 4636 | 3709 | 3091 | 2649 | 2318 | 2061 | 1855 |
| <input type="checkbox"/> 2072CD | 10664 | 7109 | 5332 | 4265 | 3555 | 3047 | 2666 | 2370 | 2133 |
| <input type="checkbox"/> 2342CD | 12055 | 8036 | 6027 | 4822 | 4018 | 3444 | 3014 | 2679 | 2411 |