



**Product Submittal for Hi Delta® FlexGas®- Type WH
Water Heater
Models 302CD-902CD**

Date: _____ Job: _____ Location: _____

Equipment Tags: _____ Engineer: _____ Contractor: _____

Model: _____ Notes: _____

Prepared by: _____ Indoor Outdoor

Gas Type: Natural Gas and Propane

100% Factory fire-tested

Fast, economical natural-to-propane gas switchover

Thermal efficiency: 85%

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

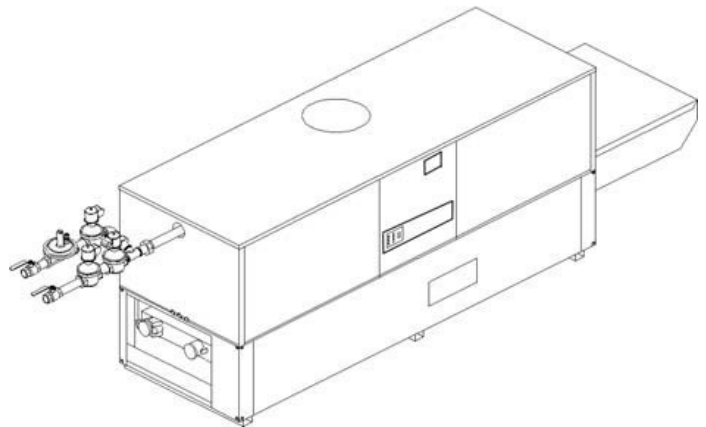
Fan-assisted

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



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)
- Cascade up to 8 heaters
- Water temperature sensors 10kΩ (2 mtd, 1 loose, 1 well)
- Ignition module
 - 3-Try (standard)
 - C-6 Single-try (optional)
- Remote flame sensor
- High limit, manual-reset, fixed 200°F (93.3°C)
- 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
- 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)
- Gas pressure regulator
- Safety shutoff valve
- Firing control valve
- 2-Stage firing mode
- Fuel
 - Natural gas
 - Propane gas (minimum grade HD-5)
- Gas Connection
 - Left hand (standard)
 - A-6 Right hand (optional)
- 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

- Vent Category I/III Cupronickel
- Vent Category II/IV Copper
- Vent location
 - Top (standard)
 - D-14 Rear flue exhaust tee
- Vent termination
 - D-11 Vent termination, outdoor (Cat III)
 - D-15 Vent termination, sidewall (Cat III & IV horizontal)
 - D-20 Vent termination vertical (Cat I)
- Combustion air
 - D-16 Air intake elbow (indoor only)
 - D-17 Inline air intake filter (used with Truseal™)

- D-12 Barometric damper (without thermostwitch)
- D-18 Adapter, boiler vent (Cat III & IV)
- D-19 Adapter, vent termination (Cat III & IV)
- D-21 Truseal™ direct vent air intake (factory-installed)
- D-22 Truseal™ direct vent air intake (field-installed)
- D-23 Outdoor vent supports
- D-37 Motorized combustion air damper

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
 - Water Hardness _____ GPG
 - Mounted
 - Loose
 - Front
 - Rear

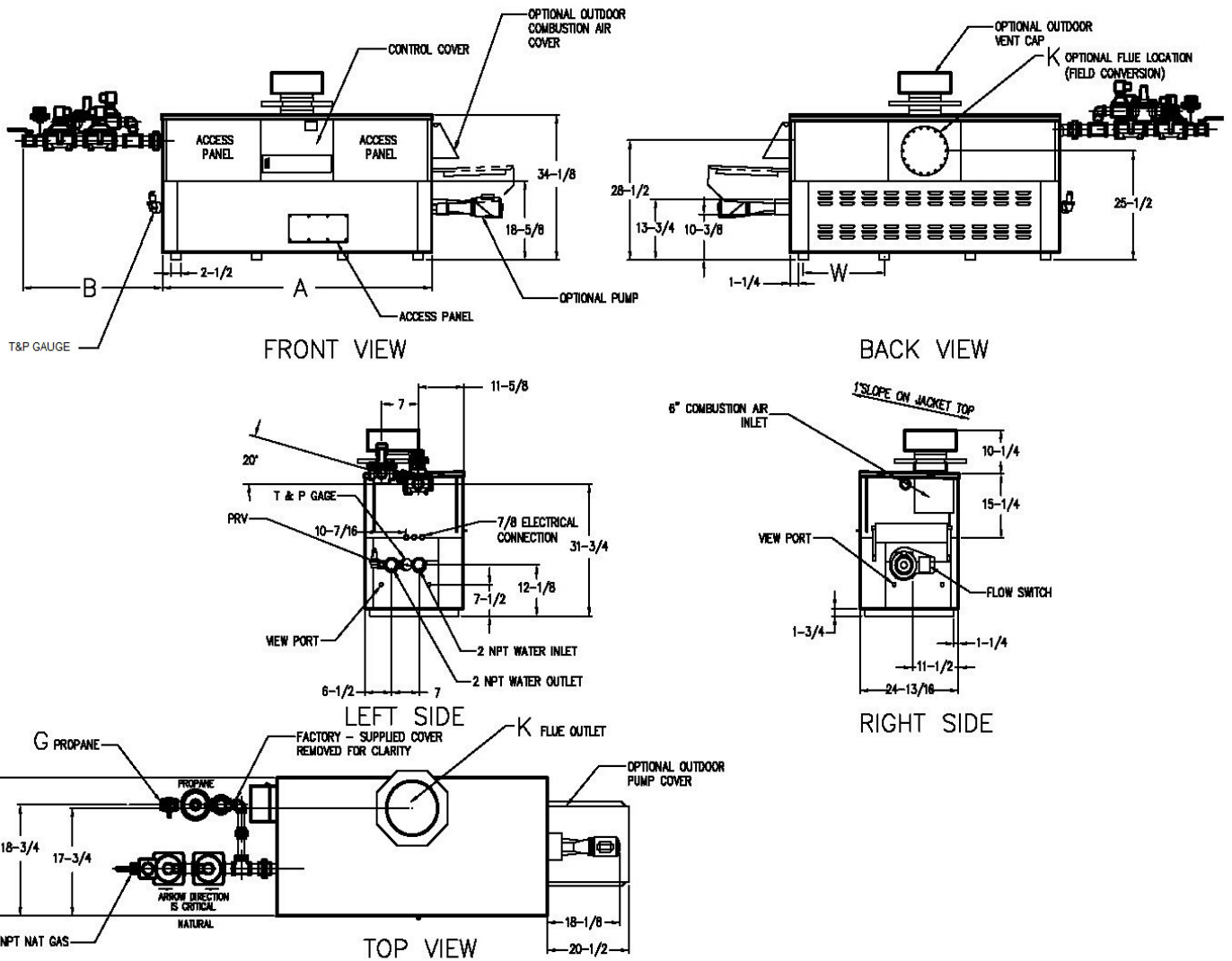
- S-1 Low gas pressure switch, manual-reset
- S-2 High gas pressure switch, manual-reset
- X-1 SureRack® kit
- X-2 SureRack® above-ground reinforcing
- X-3 SureRack® restraint brackets
- Z-4 3/4" T&P relief valve
- Z-9 Thermometer

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)

Job: _____



SPECIFICATIONS									Approx. Shipping Wt. Lbs. (Kg)
Model	MBTUH (kWh)			Dimensions - Inches (mm)					
	Input	Output 85%	Output 83.1%	A Width	Gas Connection, PRO G NPT	Flue Collar K	W	Amp Draw*	
<input type="checkbox"/> 302CD	300 (88)	255 (75)	249 (73)	36 (914)	3/4 (19)	5 (127)	14-3/4 (375)	6	380 (172.3)
<input type="checkbox"/> 402CD	399 (117)	339 (99)	332 (97)	43 (1092)	3/4 (19)	6 (152)	18-1/2 (470)	6	445 (201.8)
<input type="checkbox"/> 502CD	500 (147)	425 (125)	416 (122)	50 (1270)	1-1/4 (32)	6 (152)	22 (559)	6	545 (247.2)
<input type="checkbox"/> 652CD	650 (190)	553 (162)	540 (158)	60-1/2 (1537)	1-1/4 (32)	8 (203)	27-1/4 (692)	6	590 (267.6)
<input type="checkbox"/> 752CD	750 (220)	638 (187)	623 (183)	67-1/2 (1715)	1-1/4 (32)	8 (203)	30-3/4 (781)	6	675 (306.1)
<input type="checkbox"/> 902CD	900 (264)	765 (224)	748 (219)	78 (1981)	1-1/4 (32)	8 (203)	36 (914)	7	740 (335.6)

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 supply pressure is 5.6" - 10.5" WC. Required propane gas supply pressure is 10.5" - 13" WC.

*Without pump



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Job: _____

83.1% System Flow and Head Loss															
Model	3-4 Grains Per Gallon					5-15 Grains Per Gallon					16-25** 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"/> 302CD	13 (7.2)	40 (152)	2.0	2 (51)	5.1	10 (5.5)	50 (190)	3.0	2 (51)	7.7	6 (3.3)	90 (341)	9.8	2 (51)	23.7
<input type="checkbox"/> 402CD	17 (9.4)	40 (152)	2.0	2 (51)	5.1	13 (7.2)	52 (197)	3.4	2 (51)	8.4	7 (3.8)	90 (341)	10	2 (51)	23.8
<input type="checkbox"/> 502CD	21 (11.6)	40 (152)	2.1	2 (51)	5.2	16 (8.8)	52 (197)	3.5	2 (51)	8.6	9 (4.9)	90 (341)	10.4	2 (51)	24.2
<input type="checkbox"/> 652CD	27 (14.9)	40 (152)	2.2	2 (51)	5.3	21 (11.6)	52 (197)	3.7	2 (51)	8.7	12 (6.6)	90 (341)	10.8	2 (51)	24.7
<input type="checkbox"/> 752CD	28 (15.5)	45 (171)	3.0	2 (51)	6.8	23 (12.7)	55 (208)	4.4	2 (51)	9.9	14 (7.7)	90 (341)	11.3	2 (51)	25.1
<input type="checkbox"/> 902CD	28 (15.5)	54 (205)	4.3	2 (51)	9.7	21 (11.6)	73 (277)	7.8	2 (51)	17.2	17 (9.4)	90 (341)	11.7	2 (51)	25.5

SHL includes 50 ft. of tubing each way (100 total)

** Must use optional cupronickel tubes. For hardness exceeding 25 GPG, must use water softener Basis for minimum flow is 40 GPM or 30°F ΔT, 90 GPM for maximum flow.

85% System Flow and Head Loss															
Model	3-4 Grains Per Gallon					5-15 Grains Per Gallon					16-25** 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"/> 302CD	13 (7.2)	40 (152)	2.0	2 (51)	5.1	10 (5.5)	50 (190)	3.0	2 (51)	7.7	6 (3.3)	90 (341)	9.8	2 (51)	23.7
<input type="checkbox"/> 402CD	17 (9.4)	40 (152)	2.0	2 (51)	5.1	13 (7.2)	52 (197)	3.4	2 (51)	8.4	8 (4.4)	90 (341)	10.0	2 (51)	23.8
<input type="checkbox"/> 502CD	21 (11.6)	40 (152)	2.1	2 (51)	5.2	16 (8.8)	52 (197)	3.5	2 (51)	8.6	10 (5.5)	90 (341)	10.4	2 (51)	24.2
<input type="checkbox"/> 652CD	28 (15.5)	40 (152)	2.2	2 (51)	5.3	21 (11.6)	52 (197)	3.7	2 (51)	8.7	12 (6.6)	90 (341)	10.8	2 (51)	24.7
<input type="checkbox"/> 752CD	29 (16.1)	45 (171)	3.0	2 (51)	6.8	23 (12.7)	55 (208)	4.4	2 (51)	9.9	14 (7.7)	90 (341)	11.3	2 (51)	25.1
<input type="checkbox"/> 902CD	29 (16.1)	54 (205)	4.3	2 (51)	9.7	21 (11.6)	73 (277)	7.8	2 (51)	17.2	17 (9.4)	90 (341)	11.7	2 (51)	25.5

SHL includes 50 ft. of tubing each way (100 total)

** Must use optional cupronickel tubes. For hardness exceeding 25 GPG, must use water softener Basis for minimum flow is 40 GPM or 30°F ΔT, 90 GPM for maximum flow.

Model	83.1 % Recovery Rates									
	20°	30°	40°	50°	60°	70°	80°	90°	100°	
<input type="checkbox"/> 302CD	1511	1007	755	604	504	432	378	336	302	
<input type="checkbox"/> 402CD	2010	1340	1005	804	670	574	502	447	402	
<input type="checkbox"/> 502CD	2518	1679	1259	1007	839	709	630	560	504	
<input type="checkbox"/> 652CD	3274	2182	1637	1309	1091	935	818	727	655	
<input type="checkbox"/> 752CD	3777	2518	1889	1511	1259	1079	944	839	755	
<input type="checkbox"/> 902CD	4533	3022	2266	1813	1511	1295	1133	1007	907	

Model	85 % Recovery Rates									
	20°	30°	40°	50°	60°	70°	80°	90°	100°	
<input type="checkbox"/> 302CD	1545	1030	773	618	515	442	386	343	309	
<input type="checkbox"/> 402CD	2055	1370	1028	822	685	587	514	457	411	
<input type="checkbox"/> 502CD	2576	1717	1288	1030	859	736	644	572	515	
<input type="checkbox"/> 652CD	3348	2232	1674	1339	1116	957	837	744	670	
<input type="checkbox"/> 752CD	3864	2576	1932	1545	1288	1104	966	859	773	
<input type="checkbox"/> 902CD	4636	3091	2318	1855	1545	1325	1159	1030	927	