

Submittal #235233-2.0 235233 - WATER-TUBE BOILERS

Revision	0	Submittal Manager	David Hatfield (Triton Services, Inc.)
Status	Open	Date Created	May 24, 2023
Issue Date	May 24, 2023	Spec Section	235233 - WATER-TUBE BOILERS
Responsible Contractor	Emerson Swan	Received From	Josh Stevens (Emerson Swan)
Received Date		Submit By	
Final Due Date	Jun 7, 2023	Lead Time	
		Cost Code	
Location		Type	Product Information
Approvers	David Hatfield (Triton Services, Inc.)		
Ball in Court	David Hatfield (Triton Services, Inc.)		
Distribution	David Hatfield (Triton Services, Inc.)		
Description			

Submittal Workflow

Name	Sent Date	Due Date	Returned Date	Response	Attachments
General Information Attachments					23 52 33 Water Tube Boilers Revision_SD.pdf
David Hatfield		Jun 7, 2023		Pending	

Review does not relieve supplier from compliance with requirements of the drawings and specifications or conformance with contract documents.

<input type="checkbox"/>	Reviewed	Fabrication/Installation may be undertaken. Reviewed does not authorize changes to the Contract Sum or Contract Time.
<input checked="" type="checkbox"/>	Reviewed as Noted	
<input type="checkbox"/>	Revise and Resubmit	Fabrication and/or Installation MAY NOT be undertaken. In resubmitting limit corrections to items marked.
<input type="checkbox"/>	Rejected	
Reviewed neither extends nor alters any contractual obligations of the Architect or Contractor.  312 Plum Street Suite 700 Cincinnati, OH 45202		
By: dhammitt		Date: 5/24/2023

Comments:

- Allowable gas pressure is listed as 7" WC -10.5" WC. Schedule lists max up to 14" WC. Verify field compatibility with reduced max.
- Electrical amp draw in higher than in schedule
- Provide warranty per specs - 10 yrs on HX
- Hot-water boiler trim not observed. Coordinate with MC
- Venting kit not observed
- Design capacity is input capacity



Hi-Delta

2072C (2070 MBH Input - 4 Stage Fire)

Tag: **B-2**

Project: **Norwood HS**

Quantity: **1**

Unit Information

Model Series: **Hi-Delta**
 Size: **2072C (2070 MBH Input - 4 Stage Fire)**
 Fuel: **Natural Gas**
 Location: **Indoor**
 Altitude: **0** ft

Heating Performance

Input Temp: **130** F
 Output Temp: **160** F
 Design Capacity: **0** MBTUH
 Input Capacity: **2070** MBTUH
 Output Capacity: **1760** MBTUH
 Thermal Efficiency: **84** %

Water Flow

Design Flow: 117 gpm
 Max Flow: **132** gpm
 Min Flow: **90** gpm
Pressure Drop: 15 ft. wg

General Unit Data

Unit Weight: **1450** lbs.
 Unit Length: **32.625** in.
 Unit Width: **102.5** in.
 Unit Height: **41.25** in.



Hi-Delta



Product Data: Type H Hydronic Boiler

Qty

1

Description

Type H Hydronic Boiler

Tag(s): B-2

Selected Options

Model : Hi-Delta

Type : Boiler

Application : Hydronic

Location : Indoor

Model Size / Input : 2072C (2070 MBH Input - 4 Stage Fire)

Fuel Type : Natural Gas

Efficiency : 84.0 % - Category I or III Venting

Voltage : 120 1 Phase VAC / 8 Amps Max

Water Quality / Pump Selection Criteria : Not Applicable

Pump Type : None

Pump Material : None

Header Material : Cast Iron Glass-Lined

Heat Exchanger Material : Standard Copper

Pressure Relief Valves : A-12 60 PSIG (Standard for Boilers - 502C-2342C)

Ignition Module : C-6 Single-Try Ignition - Manual Reset (Optional)

Integral Flue Exhaust Tee : None

Low Water Cut Off : F-10 Low Water Cut Off (Manual Reset)

Codes : G-1 CSD-1/GE GAP

4 inch Supply Gas Pressure Configuration (G-20) : None

High Limit - Manual Reset : Fixed Manual Reset Limit - Standard

High Limit - Auto Reset : I-1 Adjustable Auto Reset Limit - 240 F

High Limit - Combination : None

Safety Valves : None

Vent Valve : None

Low Gas Pressure Switch : S-1 Low Gas Pressure Safety Switch - Manual Reset

High Gas Pressure Switch : S-2 High Gas Pressure Safety Switch - Manual Reset

Low and High Gas Pressure Switch : None

Low Water Pressure Switch : None

Surerack - Unit Stacking Kit : None

Mounting Location : Not Applicable

Mounted Pumps : None

Cold Water Start Systems : None

Cold Water Run Pumps : None

Digital Controllers : None

Injector Pumps : None

Flanges : None

Elevation : Below 2000 ft (0 – 1999 ft)

Selected Accessories

014691 (Qty: 1) - B-85 Protocol Converter - BACnet MS/TP, BACnet IP, Metasys N2 or Modbus TCP (Connects to Versa)

****Note: Only (1) BacNet communication card required for up to (8) boilers.**

Hi-Delta H Size C Large Standard Features

Qty: 1 **Tags: B-2**

Standard Features

Heat Exchanger

- ASME Inspected and H Stamped **160 PSIG Working Pressure**
- National Board Approved
- ASME Steel Tube Sheet
- Silicone High Temp O-Rings
- Temperature and Pressure Gauge

Control

- 120V, 60Hz, 1Ø, Power Supply
- 120/24V 60 Hz transformer
- **VERSA IC® Integrated Control**
- **100% Shut-Off/Lockout**
- **Hot Surface Ignition**
- Remote flame sensor
- Fixed high limit, manual reset, 240°F
- **On/Off Power Switch**
- **Flow Switch**
- Blocked Vent Pressure Switch
- Combustion Air Proving Switch
- Pump Outputs
 - Boiler
 - System – Pilot Duty
 - DHW Indirect – Pilot Duty
- Programmable Pump Time Delays
- Enable/Disable
- LCD Display; Fault and Diagnostics

Burner

- Ultra-Low NOx: Less than 20 PPM

Gas Train

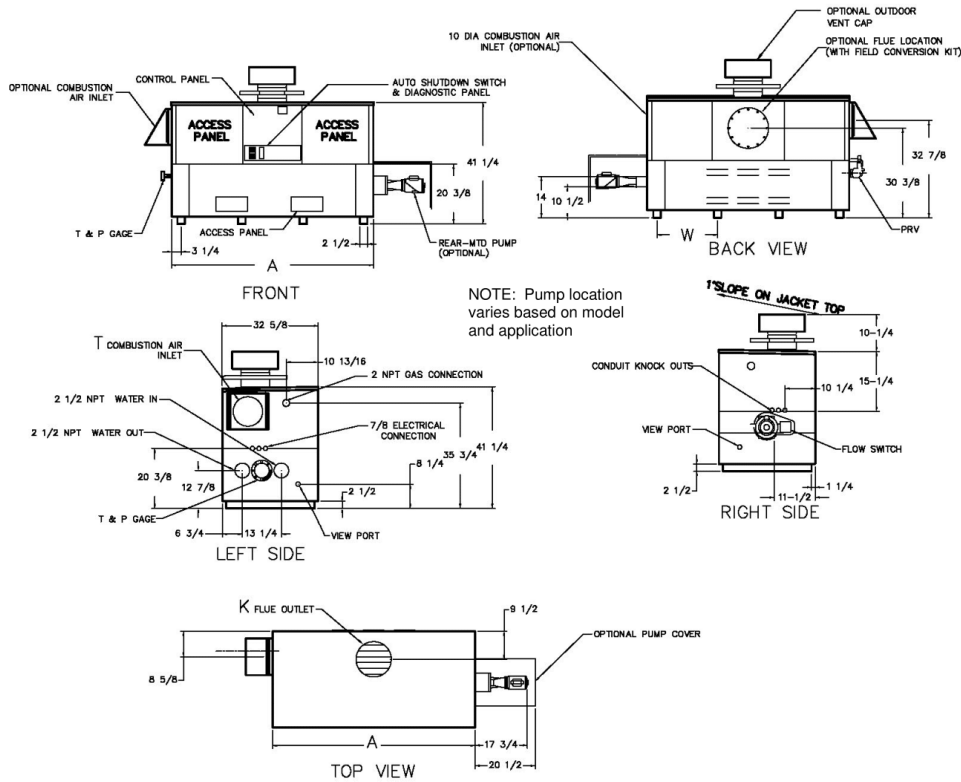
- Combo Valve(s)
- Manual Gas Shut Off Valve(s)
- Design Certified – ANSI Z21.13/CSA 4.9

Construction

- Indoor/outdoor construction
- Enclosed front controls
- CSA Low Lead Certified ≤.25% Lead
- **Thermal Shock Proof Heat Exchanger**
- **Limited Twenty-Year Thermal Shock Warranty**
- Limited Five-Year Heat Exchanger Warranty
- Full Safety Diagnostics with Fault History
- PolyTuf Powder Coated Cabinet
- No Combustible Floor Shield Required
- Fan-Assisted
- Patented Burner Security Blanket
- Cascade Up To 4 Heaters – No External Sequencer Needed
- Ultra Low NOx – SCAQMD 1146.2 Certified (992C-2002C)
- Proudly Assembled in the USA

Hi-Delta H Dimensions 2072C

Qty: 1 Tags: B-2



RATES OF FLOW AND PRESSURE DROPS

Model	20°F ΔT		30°F ΔT		Min. Flow			Max. Flow		
	GPM	ΔP (FT.)	GPM	ΔP (FT.)	GPM	ΔP (FT.)	ΔT	GPM	ΔP (FT.)	ΔT
2072C	N/A	N/A	117	15.0	89	8.7	39	132	19.5	27

Basis is 39°F ΔT for minimum flow, 132 GPM for maximum flow.

SPECIFICATIONS

Model			Firing Stages	A Width	K	T	W	Amp. Draw*	Approx. Shipping Wt. (Lbs.)
	Input	Output							
2072C	2070	1739	4	102-1/2	14	10	31-15/16	<12	1450

Dimensions are in inches.

*Without pump.

- NOTES: 1. Rates shown are for natural or propane gas, and elevations up to 4,500 feet. For installation above 4,500 feet, please contact manufacturer.
 2. Required natural gas pressure is 7 – 10.5" WC. Required propane gas pressure is 11 - 13" WC.



**Hi-Delta
2072C (2070 MBH Input - 4 Stage
Fire)**

Tag: **B-4**

Project: **Norwood HS**

Quantity: **1**

Unit Information

Model Series: **Hi-Delta**
 Size: **2072C (2070 MBH Input - 4 Stage Fire)**
 Fuel: **Natural Gas**
 Location: **Indoor**
 Altitude: **0** ft

Heating Performance

Input Temp: **130** F
 Output Temp: **160** F
 Design Capacity: **0** MBTUH
 Input Capacity: **2070** MBTUH
 Output Capacity: **1760** MBTUH
 Thermal Efficiency: **84** %

Water Flow

Design Flow: 117 gpm
 Max Flow: **132** gpm
 Min Flow: **90** gpm
Pressure Drop: 15 ft. wg

General Unit Data

Unit Weight: **1450** lbs.
 Unit Length: **32.625** in.
 Unit Width: **102.5** in.
 Unit Height: **41.25** in.



Hi-Delta



Product Data: Type H Hydronic Boiler**Qty**

1

Description

Type H Hydronic Boiler

Tag(s): B-4**Selected Options**

Model : Hi-Delta

Type : Boiler

Application : Hydronic

Location : Indoor

Model Size / Input : 2072C (2070 MBH Input - 4 Stage Fire)

Fuel Type : Natural Gas

Efficiency : 84.0 % - Category I or III Venting

Voltage : 120 1 Phase VAC / 8 Amps Max

Water Quality / Pump Selection Criteria : Not Applicable

Pump Type : None

Pump Material : None

Header Material : Cast Iron Glass-Lined

Heat Exchanger Material : Standard Copper

Pressure Relief Valves : A-12 60 PSIG (Standard for Boilers - 502C-2342C)

Ignition Module : C-6 Single-Try Ignition - Manual Reset (Optional)

Integral Flue Exhaust Tee : None

Low Water Cut Off : F-10 Low Water Cut Off (Manual Reset)

Codes : G-1 CSD-1/GE GAP

4 inch Supply Gas Pressure Configuration (G-20) : None

High Limit - Manual Reset : I-2 Adjustable Manual Reset Limit - 240 F

High Limit - Auto Reset : I-1 Adjustable Auto Reset Limit - 240 F

High Limit - Combination : None

Safety Valves : None

Vent Valve : None

Low Gas Pressure Switch : S-1 Low Gas Pressure Safety Switch - Manual Reset

High Gas Pressure Switch : S-2 High Gas Pressure Safety Switch - Manual Reset

Low and High Gas Pressure Switch : None

Low Water Pressure Switch : None

Surerack - Unit Stacking Kit : None

Mounting Location : Not Applicable

Mounted Pumps : None

Cold Water Start Systems : None

Cold Water Run Pumps : None

Digital Controllers : None

Injector Pumps : None

Flanges : None

Elevation : Below 2000 ft (0 – 1999 ft)

Selected Accessories

Hi-Delta H Size C Large Standard Features

Qty: 1 **Tags: B-4**

Standard Features

Heat Exchanger

- ASME Inspected and H Stamped 160 PSIG Working Pressure
- National Board Approved
- ASME Steel Tube Sheet
- Silicone High Temp O-Rings
- Temperature and Pressure Gauge

Control

- 120V, 60Hz, 1Ø, Power Supply
- 120/24V 60 Hz transformer
- **VERSA IC® Integrated Control**
- **100% Shut-Off/Lockout**
- Hot Surface Ignition
- Remote flame sensor
- Fixed high limit, manual reset, 240°F
- **On/Off Power Switch**
- **Flow Switch**
- Blocked Vent Pressure Switch
- Combustion Air Proving Switch
- Pump Outputs
 - Boiler
 - System – Pilot Duty
 - DHW Indirect – Pilot Duty
- Programmable Pump Time Delays
- Enable/Disable
- LCD Display; Fault and Diagnostics

Burner

- Ultra-Low NOx: Less than 20 PPM

Gas Train

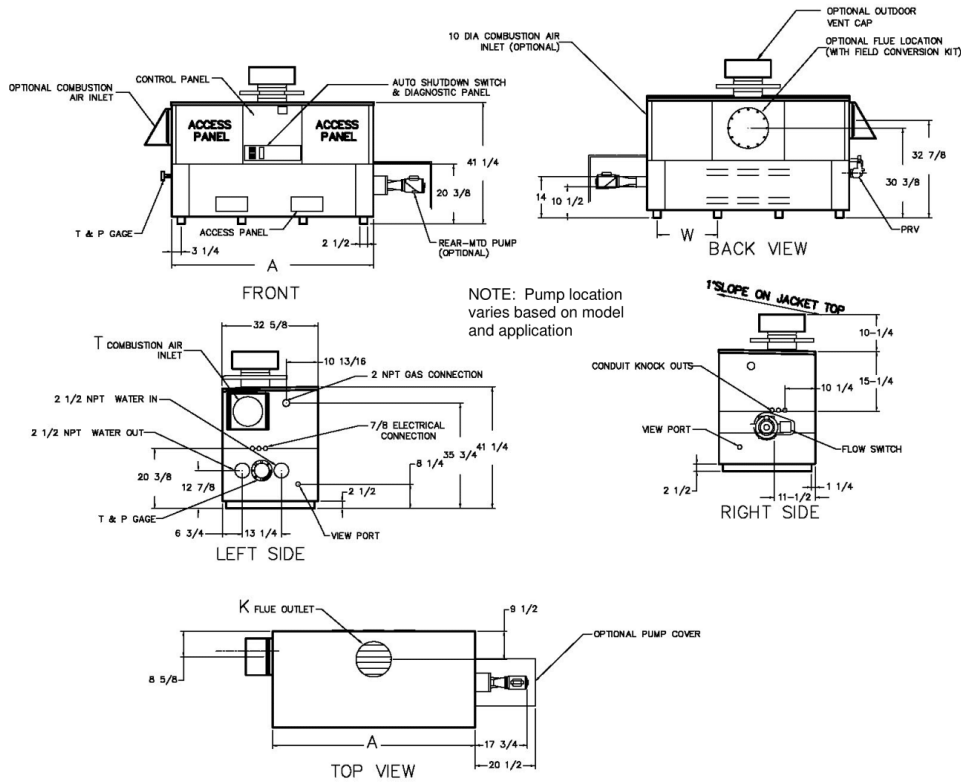
- Combo Valve(s)
- Manual Gas Shut Off Valve(s)
- Design Certified – ANSI Z21.13/CSA 4.9

Construction

- Indoor/outdoor construction
- Enclosed front controls
- CSA Low Lead Certified ≤.25% Lead
- Thermal Shock Proof Heat Exchanger
- Limited Twenty-Year Thermal Shock Warranty
- Limited Five-Year Heat Exchanger Warranty
- Full Safety Diagnostics with Fault History
- PolyTuf Powder Coated Cabinet
- No Combustible Floor Shield Required
- Fan-Assisted
- Patented Burner Security Blanket
- Cascade Up To 4 Heaters – No External Sequencer Needed
- Ultra Low NOx – SCAQMD 1146.2 Certified (992C-2002C)
- Proudly Assembled in the USA

Hi-Delta H Dimensions 2072C

Qty: 1 Tags: B-4



RATES OF FLOW AND PRESSURE DROPS

Model	20°F ΔT		30°F ΔT		Min. Flow			Max. Flow		
	GPM	ΔP (FT.)	GPM	ΔP (FT.)	GPM	ΔP (FT.)	ΔT	GPM	ΔP (FT.)	ΔT
2072C	N/A	N/A	117	15.0	89	8.7	39	132	19.5	27

Basis is 39°F ΔT for minimum flow, 132 GPM for maximum flow.

SPECIFICATIONS

Model			Firing Stages	A Width	K	T	W	Amp. Draw*	Approx. Shipping Wt. (Lbs.)
	Input	Output							
2072C	2070	1739	4	102-1/2	14	10	31-15/16	<12	1450

Dimensions are in inches.

*Without pump.

- NOTES: 1. Rates shown are for natural or propane gas, and elevations up to 4,500 feet. For installation above 4,500 feet, please contact manufacturer.
 2. Required natural gas pressure is 7 – 10.5" WC. Required propane gas pressure is 11 - 13" WC.

