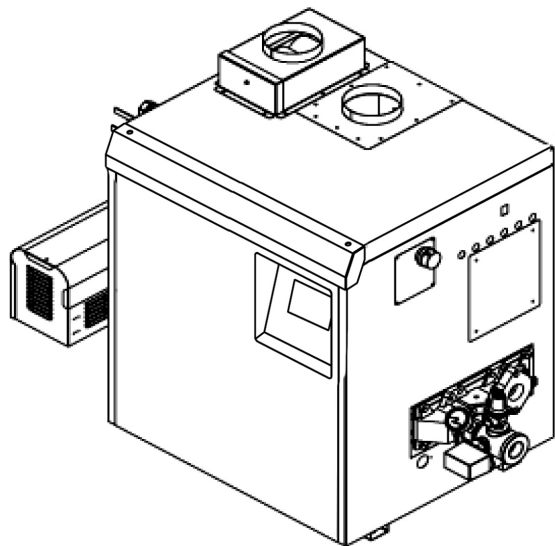


PENNANT®



Pump-Mounted Boiler

PNCH Hydronic Heater

Indoor/Outdoor Sizes 500-2000



Date:

Project #:

Engineer:

Prepared By:

Bid Date:

Submittal Data

Project Name:

Location:

Contractor:

Standard Equipment

- ASME 160 psi working pressure heat exchanger
- ASME "H" stamp
- Electronic staging & ignition control with LCD touchscreen
- Cascades up to 8 boilers with redundancy options
- Multiple pump control (system, boiler and indirect water heater), each with time delay
- BACnet MSTP and Modbus (optional BACnet IP, Metasys, or LonWorks)
- Accepts external 0-10VDC or 4-20mA for remote control of temperature or stages
- Displays messages in clear text form
- Complete diagnostics for analog and digital inputs
- Password protected parameters
- Quick start configuration
- Hot surface ignition
- 24V control system
- On/off toggle switch
- 115/24VAC transformer
- Boiler, system, DHW, and outdoor temperature sensors
- Manual reset high limit
- Automatic reset high limit
- Dry run and alarm contacts
- Anti-frost mode
- Anti-short-cycle mode
- Pump, mounted and wired
- Flanged water connections
- Glass-lined headers
- External header gaskets
- 75 psi (517 kPa) ASME rated pressure relief valve
- Water flow switch
- Temperature/pressure gauge
- Multiple operating gas valve/pressure regulators
- Manual "A" gas valve
- Multiple removable burner trays
- Stainless steel burners
- Built-in draft fan for Category I or III vent systems
- Intake air filter
- Air pressure switch
- Burner site glass

Boiler Data

Number of Units:

Fuel

- ☐ Natural
☐ Propane

Heat Exchanger

- ☐ Copper (Std)
☐ Cupro-Nickel
☐ Copper, Reversed
☐ Cupro-Nickel, Reversed

Water Trim

- ☐ Glass-Lined Cast Iron (Std)
☐ Bronze Trim

Options

- ☐ CSD-1 (LWCO Not Included)
☐ Low Water Cutoff
☐ Additional manual reset high limit
☐ Additional automatic reset high limit
☐ Alternate display orientation for top unit in stacked system.



Sizing Data

	Size	Input ¹ BTU/hr.	Input ¹ kW	Output ¹ BTU/hr.	Output ¹ kW	Gas Conn. Size inches ²	Water Conn Size inches ²	Shipping Weight lbs	kg
	500	500,000	147	425,000	125	1¼	2	715	324
	750	750,000	220	638,000	187	1¼	2	810	367
	1000	1,000,000	293	850,000	249	1½	2½	955	433
	1250	1,250,000	366	1,065,000	312	2	2½	1050	476
	1500	1,500,000	440	1,278,000	374	2	2½	1185	538
	1750	1,750,000	513	1,491,000	437	2	2½	1280	581
	2000	2,000,000	586	1,704,000	499	2	2½	1410	640

AHRI Certified Ratings			
Size	Combustion Efficiency%	Thermal Efficiency%	
	500	85.0	85.0
	750	85.0	85.0
	1000	85.0	85.0
	1250	85.1	85.2
	1500	85.1	85.2
	1750	85.1	85.2
	2000	85.1	85.2

- NOTES:**
1. Input and output must be derated 4% per 1000 feet above sea level when installed above 2000 feet altitude.
 2. Dimensions are nominal.
 3. Shipping weight is approximate based on previous units shipped and can be effected by several variables including the various weights for optional pumps and even the green or dry wood used in the crate.

Accessories

-  Outdoor reset sensor/housing
-  Vent terminal for outdoor unit
-  Side-wall combustion air terminal for indoor unit with horizontal ducted air
-  Side-wall vent terminal for indoor unit with horizontal venting
-  Air terminal for outdoor unit
-  Propane conversion kit
-  Natural gas conversion kit

Water Flow Data

Size	Temperature Rise in Degrees							
	20°F	11°C	25°F	14°C	30°F	17°C	35°F	19°C
	Flow gpm	Flow lpm	Flow gpm	Flow lpm	Flow gpm	Flow lpm	Flow gpm	Flow lpm
500	43	161	34	129	28	107	24	92
750	64	241	51	193	43	161	36	138
1000	85	321	68	257	57	214	49	184
1250	106	401	85	322	71	269	61	231
1500	128	483	102	386	85	322	73	276
1750	N/R	N/R	119	451	99	375	85	322
2000	N/R	N/R	136	515	113	429	97	368

Clearances

Appliance Surface	Required Clearance From Combustible Material		Suggested Service Access Clearances	
Left Side	1	2.5	24	61
Right Side	1	2.5	24	61
Top	1	2.5	12	30
Back*	1	2.5	12	30
Front	1	2.5	36	91
Vent	Per venting system supplier's instructions			

Dimensions in **inches** *cm*

*When vent and/or air is connected to the back, **36"** (91*cm*) is suggested.

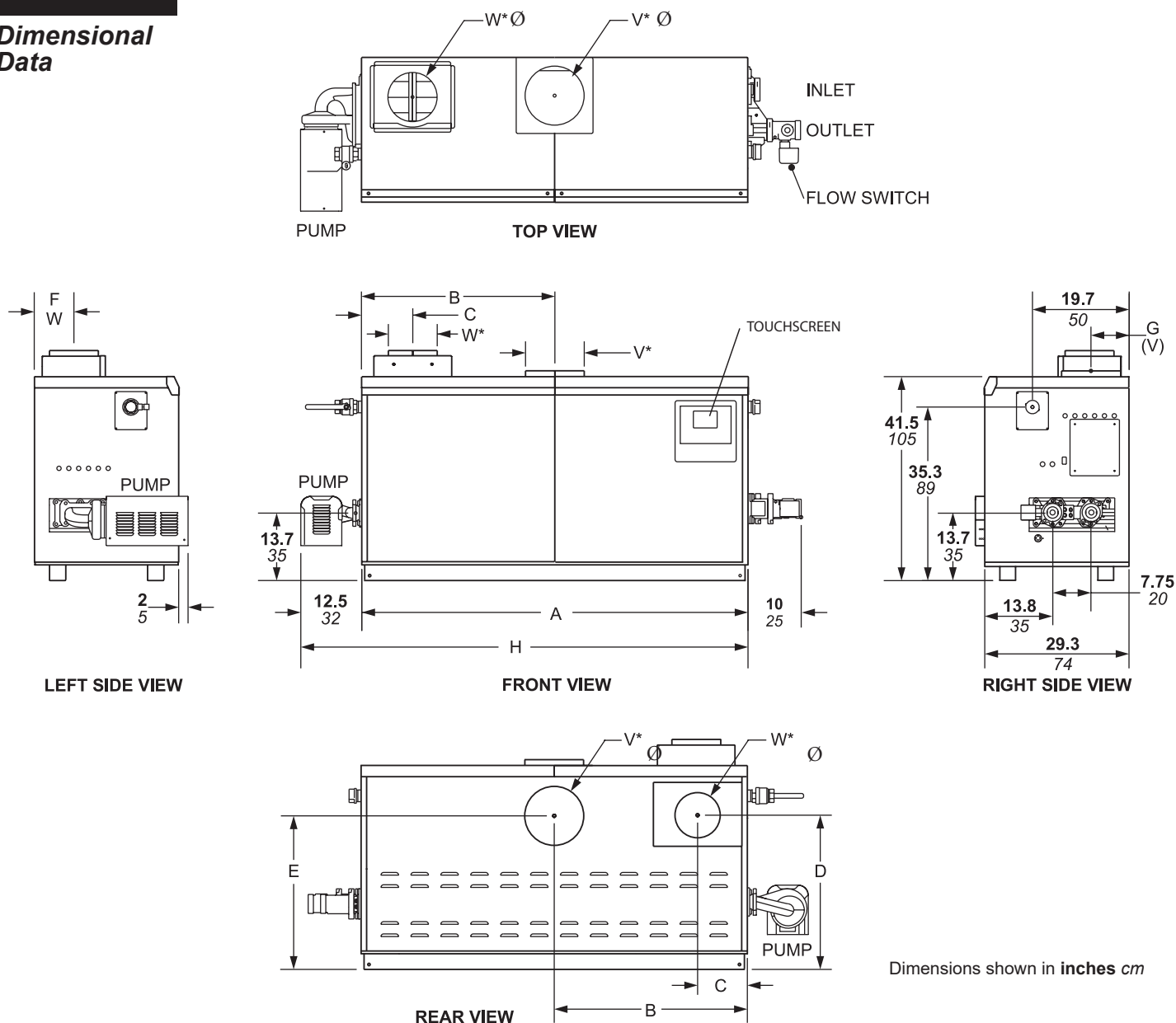
Electrical Data

Size	Boiler Circuit			Pump Circuit		
	Voltage	Phase	Overcurrent Protection Rating	Volts	Phase	Overcurrent Protection Rating
500	120 VAC	Single	20 Amps	Included in Boiler Circuit		
750	120 VAC	Single	20 Amps	Included in Boiler Circuit		
1000	120 VAC	Single	25 Amps	Included in Boiler Circuit		
1250	120 VAC	Single	30 Amps	Included in Boiler Circuit		
1500	120 VAC	Single	30 Amps	Included in Boiler Circuit		
1750	120 VAC	Single	--	120 VAC	Single	15 Amps
2000	120 VAC	Single	--	120 VAC	Single	20 Amps

Pump Data

Size	HP	Amps
500	1/3	2.8
750	1/3	2.8
1000	1/2	5.2
1250	1/2	5.2
1500	3/4	7.2
1750	3/4	7.2
2000	1	9.8

Dimensional Data



Dimensions shown in inches cm

Size	A		B		C		D		E		F		G		H		Air Conn. W*		Vent Conn. V*		Horiz. Vent Pipe	
500	33½	85	15¾	40	5¾	15	29¾	76	33¾	86	7¾	20	8¾	22	46	117	6	15	8	20	6	15
750	45½	116	21¾	55	5¾	15	29¾	76	33¾	86	7¾	20	8¾	22	58	147	8	20	10	25	8	20
1000	57½	146	28¾	73	5¾	15	29¾	76	33¾	86	7¾	20	7	18	70	178	8	20	10	25	8	20
1250	68	172	34	86	10⅞	26	30¾	78	31⅞	79	8¾	22	8¾	22	80	203	12	30	12	30	10	25
1500	78½	199	39¾	101	10⅞	26	30¾	78	31⅞	79	8¾	22	8¾	22	91	231	12	30	12	30	10	25
1750	89	226	44½	113	10⅞	26	30¾	78	31⅞	79	8¾	22	8¾	22	101	256	12	30	14	36	12	30
2000	99½	253	49¾	126	10⅞	26	30¾	78	31⅞	79	8¾	22	8¾	22	112	284	12	30	14	36	12	30

*Air and vent connections may be on top or back, and are field convertible.

Dimensions in inches cm

Laars Heating Systems Company reserves the right to change specifications, components, features, or to discontinue products without notice.