



**APPROVED Product Submittal for XTherm® - Type H
Heating Boiler
Models 2505-4005**

Date: _____ Job: _____ Location: _____
Equipment Tags: _____ Engineer: _____ Contractor: _____
Model: _____ Notes: _____
Prepared by: _____ Indoor Outdoor Gas Type: Natural Gas Propane

The XTherm combines the proven capability of a finned copper tube heat exchanger with a stainless steel condensing heat exchanger to maximize thermal efficiency and provide long-term reliability.

- 96% thermal efficiency at full rate
- 100% factory fire-tested
- VERSA IC® modulating controller with 7" color touchscreen display
- Raymote™ IoT connectivity standard
- Full electronic modulation, constant ratio up to 11:1 turndown
- Full safety diagnostics with history
- Status display lights
- Cascade up to 8 heaters - no external sequencer required
- Cascade in parallel or sequential modulation modes
- Modbus RTU BMS port
- CSA low-lead certified ≤ .25% lead
- Maximum outlet water temperature: 235°F (112°F)
- Minimum inlet water temperature: 50°F (10°F)
- Limited 25-year thermal shock warranty
- Limited 5-year copper/10-year cupronickel primary heat exchanger warranty
- Limited 10-year stainless steel condensing heat exchanger warranty
- BAAQMD Rule 9-7 certified, Low NOx < 30 ppm
- Primary/secondary plumbing mandatory for proper operation
- Proudly assembled in the USA



UNCONTROLLED DOCUMENT IF PRINTED

Standard Features

Heat Exchanger

- Headers
 - Cast iron (standard)
 - A-1 Bronze (optional)
- ASME H-stamped; 160 PSIG MAWP
- National Board registered
- Finned tubing
 - Copper (standard)
 - A-3 cupronickel (optional)
- ASME powder-coated tube sheet
- Silicone high-temp O-rings
- ASME pressure relief valve (shipped loose)
 - 60 PSIG (standard)
 - ___ PSIG (optional)
- Air bleed valve, manual (2)
- T&P gauge (shipped loose)
- Four-pass primary heat exchanger
- Secondary stainless steel condensing heat exchanger - U-stamped
- Stainless steel evaporator plate
- 4" (102 mm) grooved copper water connections

Power supply

- 208V, 60Hz, 1Ø (standard)
- 240V, 60Hz, 1Ø (field-wired)

Control

- VERSA IC® built-in controller
- 7" (178 mm) color HD touchscreen display
- Raymote™ IoT connectivity
- Cascade up to 8 heaters
- Parallel and sequential modulation cascade modes
- Cascade interstage delay settings
- Ignition module
 - 3-Try (standard)
 - C-6 Single-try (optional)
- Remote flame sensor
- Fixed high limit, manual-reset, 240°F (116°C)
- 240/120V, 60Hz, transformer
- 240/24V, 60Hz, transformer
- On/off power switch
- Flow switch
- Blocked vent pressure switch
- Freeze protection

- Alarm dry contact
- High gas pressure switch, manual-reset
- Pump outputs - pilot duty
 - Injector system pump
 - DHW indirect
 - System
- Programmable pump time delays
- Modulating temperature control, up to 11:1 turndown
- Water temperature sensors 10kΩ (2 mtd, 3 loose, 1 well)
- Cold water protection package, built-in
- Modbus RTU BMS port (up to 115K baud rate, see installation and operation manual, P/N 241515)
 - B-85 BACnet MS/TP, BACnet IP, Metasys N2 or Modbus TCP (optional)
 - B-86 BMS Gateway, Modbus RTU to LonWorks (optional)

Burner

- Hot surface ignition (HSI)
- Radially-fired knitted burner

Gas Train

- Fuel
 - Natural gas
 - Propane gas (minimum grade HD-5)
- Dual-seat modulating combination valve
- Manual shutoff firing valve

Construction

- Indoor/outdoor construction
- Enclosed front controls
- PolyTuf powder-coat finish
- Rear connections (water, gas, vent, electrical, combustion air, condensate drain)
- Combustion air filter
- Front connection - low-voltage wiring
- Design certified ANSI Z21.13/CSA 4.9
- CSA low-lead certified ≤ .25% lead

Venting, cat IV

- D-11 Outdoor stack
- D-15 Vent termination, cap (horizontal)
- D-18 Flue exhaust boiler adapter
- D-19 Flue exhaust termination cap adapter
- D-22 Truseal intake air

- D-23 Flue exhaust vent support
- D-32 Vent adapter, PVC, with 162°F (72.2°C) max. manual vent limit (factory-installed ONLY)
- D-33 Vent adapter kit, Centrotherm™ polypro vent with 180°F (82.2°C) max. manual vent limit (shipped loose)
- D-37 Motorized combustion air damper

Options

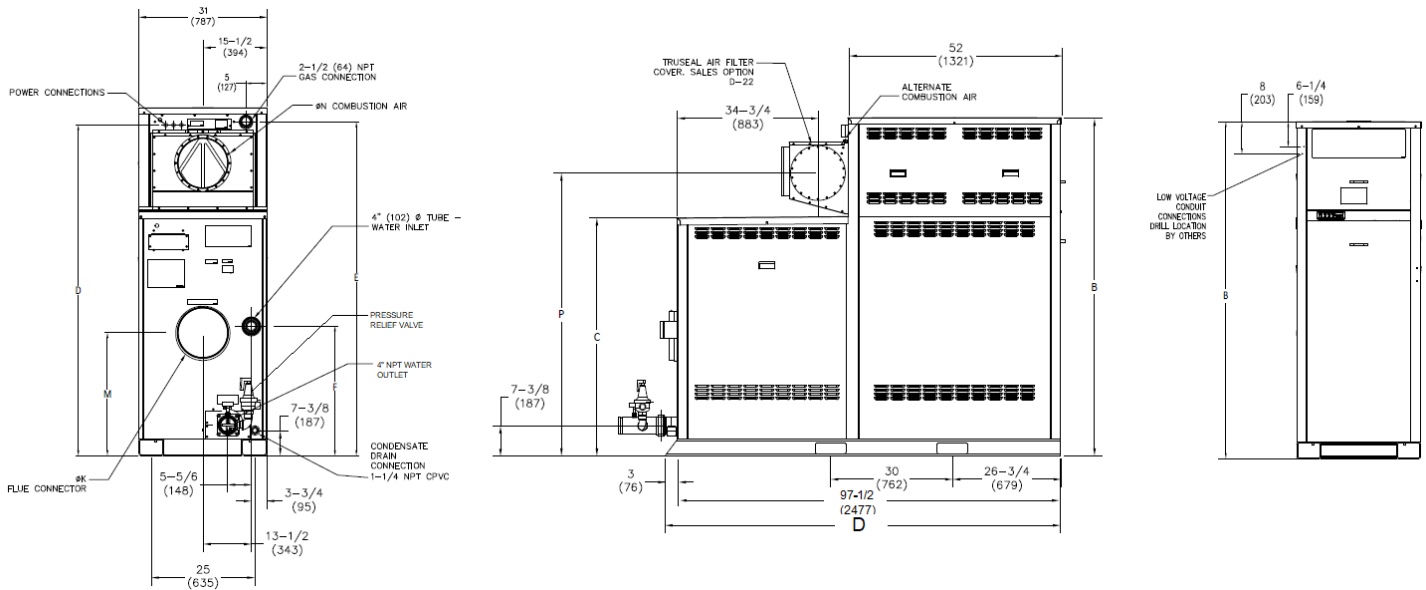
- B-31 Sensor well assembly
- B-32 Outdoor air sensor
- B-65 Indirect tank Aquastat (for use with hydronic system with indirect tank)
- E-5 Boiler alarm with 4" bell
- E-15 Alarm with buzzer (shipped loose)
- F-10 Low water cut-off (remote)
- I-1 High limit, auto-reset, 240°F (115.6°C) max.
- I-2 High limit, manual-reset 240°F (115.6°C) max.
- I-5 High limit, manual-reset 200°F (93.3°C) max.
- I-13 High limit, auto-reset 200°F (93.3°C) max.
- M-1 Safety valve, motorized
- M-10 Safety valve, solenoid
- M-15 Vent valve, (requires M-1 or M-10)
- S-1 Low gas pressure switch, manual-reset
- Z-4 T & P relief valve
- Z-9 Thermometer (shipped loose)
- Z-12 Condensate neutralizer

Additional Options or Accessories

Multi-Boiler System Controllers

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

Job: _____



* Water connections are grooved copper tube.
Dimensions are shown in inches (mm).

Model H7-	MBTUH (kW)		Dimensions - Inches (mm)									AHRI Thermal Efficiency	Turn Down	Approx. Shipping Weight - lbs. (kg)
	Input	Output	B	C	D	E	F	K Flue	M	N C/A	P			
<input type="checkbox"/> 2505	2501 (733)	2401 (703.7)	68-1/4 (1733.6)	43-1/2 (1104.9)	64-1/8 (1628.8)	65 (1651)	21-1/4 (539.8)	10 (254)	18-1/2 (469.9)	10 (254)	54-5/8 (1387.5)	96%	11:1	2656 (1204.7)
<input type="checkbox"/> 3005	3000 (879.2)	2880 (844)	73-1/4 (1860.6)	48-1/2 (1231.9)	69-1/8 (1755.8)	70 (1778)	26-1/4 (666.8)	10 (254)	23-1/2 (596.9)	10 (254)	59-1/2 (1511.3)		10:1	2775 (1258.7)
<input type="checkbox"/> 3505	3500 (1025.7)	3360 (984.7)	78-1/4 (1987.6)	53-1/2 (1358.9)	74 (1879.6)	75 (1905)	31-1/4 (739.8)	10 (254)	28-1/2 (723.9)	12 (305)	64-3/4 (1644.7)		10:1	2925 (1326.8)
<input type="checkbox"/> 4005	4000 (1172.3)	3840 (1125.4)	83-1/4 (2114.6)	58-1/2 (1485.9)	79 (2006.6)	80 (2032)	31 (787.4)	12 (305)	29-1/4 (743)	12 (305)	69-5/8 (1768.5)		7:1	3058 (1387.1)

Ratings shown apply to elevations up to 4,500 ft. De-rate above 4,500 ft; consult factory.

Clearances - Inches (mm)								
Heater Side	Front	Rear	Right	Left	Top (Outdoor)	Floor	Vent	Vent Cap (Outdoor)
Combustible Minimum	Open	12 (304.8)	1 (25.4)	1 (25.4)	0	0	1 (25.4)	12 (304.8)
Service Minimum	30 (762)	36 (914.4)	24 (609.6)	1 (25.4)	10 (254)	N/A	1 (25.4)	12 (304.8)

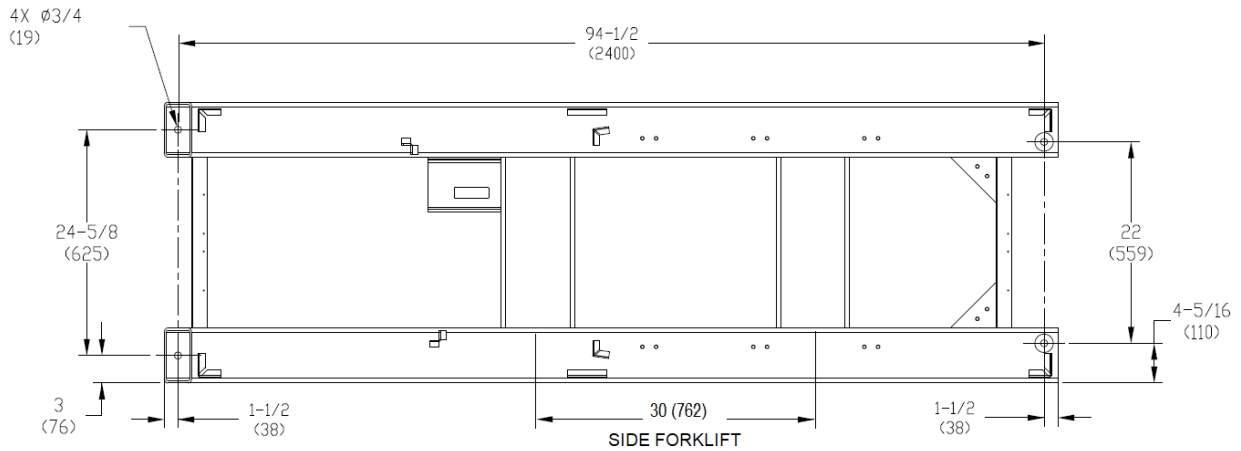
Model H7-	Boiler Current Draw - Amps	
	<input type="checkbox"/> 208VAC	<input type="checkbox"/> 240VAC
<input type="checkbox"/> 2505	16	12
<input type="checkbox"/> 3005	23	15
<input type="checkbox"/> 3505	26	17
<input type="checkbox"/> 4005	37	20

Performance capacity for injection pump, operating at full rate															
System Return Temp. °F (°C)	<input type="checkbox"/> Model 2505				<input type="checkbox"/> Model 3005				<input type="checkbox"/> Model 3505				<input type="checkbox"/> Model 4005		
	Supply Temp. °F (°C)	Flow GPM (L/min.)	Pipe Max. Equiv. Ft.		Supply Temp. °F (°C)	Flow GPM (L/min.)	Pipe Max. Equiv. Ft.	Supply Temp. °F (°C)	Flow GPM (L/min.)	Pipe Max. Equiv. Ft.	Supply Temp. °F (°C)	Flow GPM (L/min.)	Pipe Max. Equiv. Ft.		
			3"	4"										4"	4"
60 (15.5)	144 (62)	57 (216)	230	450	146 (63.3)	66 (249)	110	148 (64.4)	76 (288)	100	144 (62)	90 (341)	100		
80 (26.6)	144 (62)	74 (280)	230	450	146 (63.3)	86 (325)	110	148 (64.4)	98 (371)	100	144 (62)	119 (450)	100		
100 (37.7)	144 (62)	108 (409)	230	450	146 (63.3)	124 (469)	110	148 (64.4)	139 (526)	100	144 (62)	173 (655)	100		
120 (48.8)	150 (65.5)	158 (598)	230	450	150 (65.5)	190 (719)	110	152 (66.6)	208 (787)	100	153 (67.2)	230 (870)	100		
140 (60)	170 (76.6)	158 (598)	230	450	170 (76.6)	190 (719)	110	172 (77.7)	208 (787)	100	173 (78.3)	230 (870)	100		
160 (71)	190 (87.7)	158 (598)	230	450	190 (87.7)	190 (719)	110	192 (88.8)	208 (787)	100	193 (89.4)	230 (870)	100		

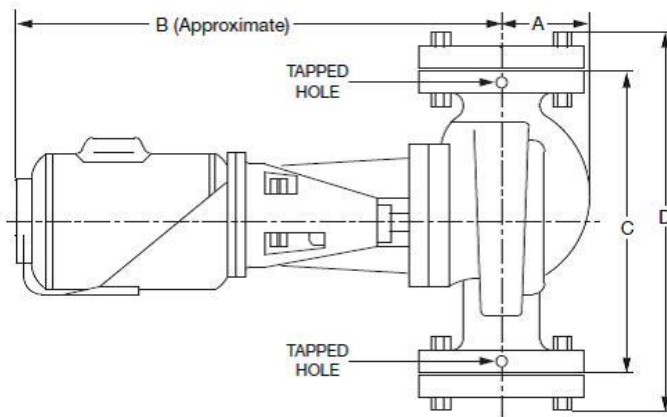
*Pipe size is determined by velocity not to exceed 7.5 ft. per second.

NOTE: Primary/Secondary plumbing arrangement is mandatory for proper operation.

Base Anchor Bolt Pattern Models H7-2505 TO -4005

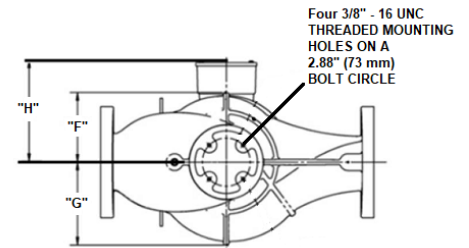
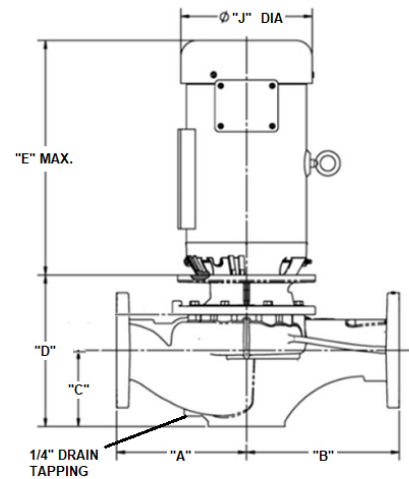


External Injection Pump - Field Installed on Inlet Piping



H7-2505 TO -3005

2-1/2" (64 mm) NPT Flanges Included



H7-3505 TO -4005

3" (76 mm) ANSI Flange - By others

Model H7-	HP External Injection Pump*	Dimensions - Inches (mm)								
		A	B	C	D	E	F	G	H	J
2505	1.0	3-1/2 (88.9)	19 (482.6)	13-1/2 (342.9)	16-1/8 (409.6)					
3005	1.5	3-5/8 (92.1)	21 (533.4)	16-1/2 (419.1)	19-1/2 (495.3)					
3505	1.5	10 (254)	10 (254)	6-5/16 (160.3)	11.29 (286.7)	12.25 (311.1)	5.42 (137.6)	6.55 (166.3)	6.87 (174.4)	11.07 (281.1)
4005	1.5									

Pumps are 240VAC/1PH

* External injection pump ships loose for field installation.

NOTE: Primary/Secondary plumbing arrangement is mandatory for proper operation.