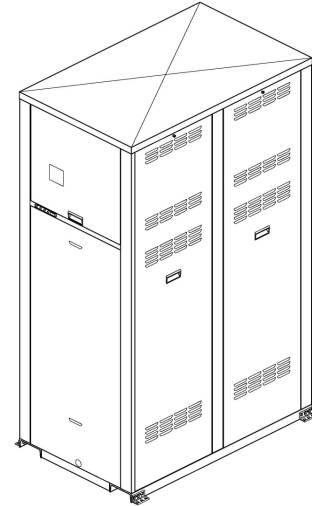



Job: _____
 Engineer: _____
 Contractor: _____
 Prepared By: _____ Date: _____
 Model: _____ Indoor/Outdoor: _____

XTherm™ - Type H

Heating Boilers
 Models 1005A-2005A

- 96% Thermal Efficiency at Full Rate; Up to 99% at Part Load
- 100% Factory Fire Tested
- VERSA IC™ Modulating Controller with LCD Display
- Full Electronic Modulation, Constant Ratio 7:1 Turndown
- Full Safety Diagnostics with History
- Status Display Lights
- Cascade up to 4 Heaters – No External Sequencer Required
- Modbus RTU BMS Port
- Maximum Outlet Water Temperature: 235°F
- Minimum Inlet Water Temperature: 50°F
- Limited Twenty-Five-Year Thermal Shock Warranty
- Limited Ten-Year Primary Heat Exchanger Warranty
- Limited Ten-Year Secondary Heat Exchanger Warranty



 Proudly Made in the USA

Heat Exchanger

- Headers
 - Cast Iron – Standard
 - Bronze – Option A-1
- ASME H Stamped; 160 PSIG MAWP
- National Board Listed
- Fin Tubing
 - Copper – Standard
 - Cupro Nickel – Option A-3
- ASME Powder-Coated Tube Sheet
- Silicone High Temp O-Rings
- ASME Pressure Relief Valve
 - 60 PSIG – Standard
 - _____ PSIG – Optional
- 150 PSI Air Vent, Auto
- T&P Gauge, Shipped Loose
- Stainless Steel Secondary Heat Exchanger
- Stainless Steel Evaporator Plate
- Boiler Pump: 120V, 1Ø, 60Hz;
 - Cast Iron – Standard
 - Bronze – Option

Control

- 120V, 60Hz, 1Ø, Power Supply
- 120/24V 60Hz Transformer
- Ignition Module
 - 3-Try – Standard
 - Single-Try – Option C-6
- Hot Surface Ignition (HSI)
- Remote Flame Sensor
- Fixed High Limit, Manual Reset, 240°F
- On/Off Power Switch
- Flow Switch
- Blocked Vent Pressure Switch
- Freeze Protection
- Alarm Dry Contact
- Pump Outputs – Pilot Duty
 - DHW Indirect
 - System
- Programmable Pump Time Delays

- LCD Display: Status, Fault and Diagnostics
- Modulating Temperature Control; 7:1 turndown
- Water Temperature Sensors (7)
- Cold Water Protection – Built In
- Blocked Condensate Switch
- Modbus RTU BMS Port (Up to 115K Baud Rate, see Cat. No. 5000.73)
- B-85 BMS Gateway, Modbus RTU to Modbus TCP, N2 Metasys, BACnet IP, or BACnet MS/TP
- B-86 BMS Gateway, Modbus RTU to LonWorks

Burner

- Radially Fired Knitted Burner

Gas Train

- Fuel
 - Natural Gas
 - Propane
- Dual-Seat Combination Valve
- Manual Shut Off Firing Valve

Construction

- Indoor/Outdoor Construction
- Enclosed Front Controls
- PolyTuf Powder Coat Finish
- Rear Connections (Water, Gas, Vent, Electrical, Comb. Air, Cond. Drain)
- Combustion Air Filter
- Design Certified ANSI Z21.13/CSA 4.9
- Front Connection Low Voltage Wiring

Venting

- Vent Termination, Cat IV
 - Outdoor or Indoor, Vertical – Option D-11
 - Indoor, Horizontal – Option D-15
- Extractor – Optional, Cat II
 - By others

Not required

Options

- D-32 PVC Vent Adapter (Includes 162°F Manual High Limit) (Factory installed only)
- D-33 Centrotherm™ Polypropylene Vent Adapter (Includes 180°F Manual High Limit) (shipped loose)
- F-10 Low Water Cut-Off, Remote Probe
- I-1 High Limit, Auto Reset, Adj., 100-240°F
- I-2 High Limit, Manual Reset, Adj., 100-240°F
- S-1 Low Gas Pressure Switch, Manual Reset
- S-2 High Gas Pressure Switch, Manual Reset
- Z-12 Condensate Neutralizer Kit

Regulatory Agency Requirements

Multi-Boiler Digital Temp Controllers

- B-36 TempTracker Mod+ Hybrid, 2-4 Boilers, OA Reset
- B-37 TempTracker Mod+ Hybrid, 5-10 Boilers, OA Reset
- B-38 TempTracker Mod+ Hybrid, 11-16 Boilers, OA Reset
- B-39* EMS 4-20 mA Remote Setpoint Interface Module
- B-62* BACnet MS/TP Interface Module (*only used with B-36 to B-38)



Raypak®

A Rheem Company

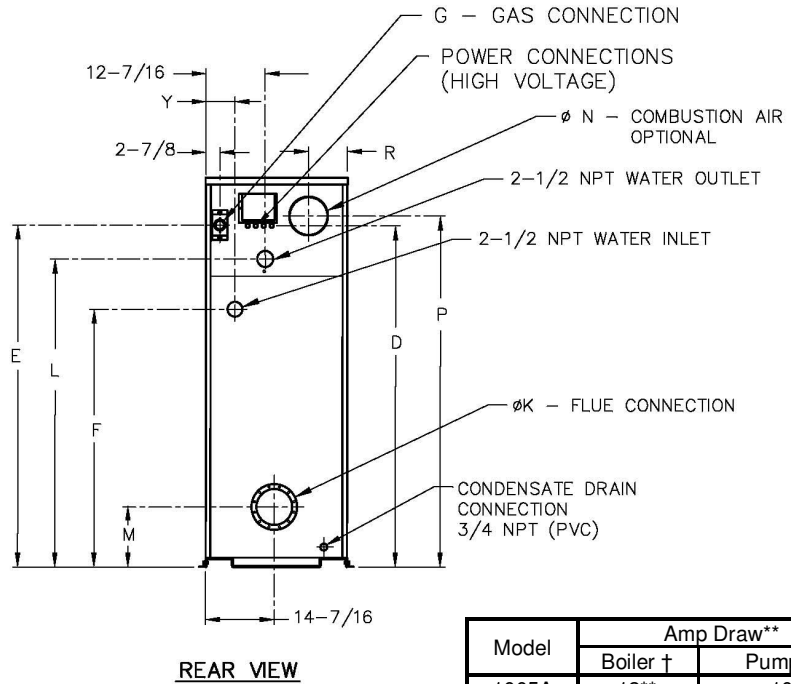
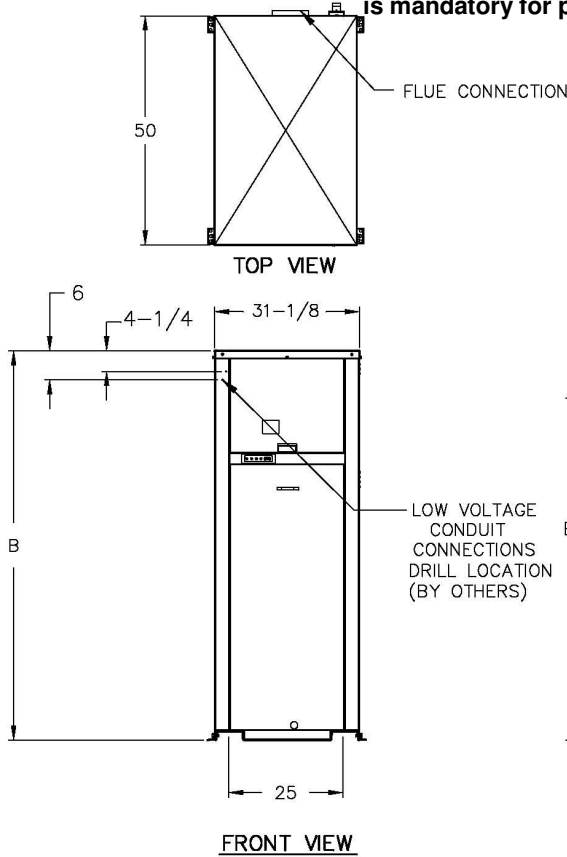
XTherm – Type H Models 1005A-2005A

Model _____

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

CLEARANCES (in.)

	Front	Rear	Right	Left	Top	Floor	Vent
Certified Minimum	24	12	1	1	0	0	1
Minimum Service	24	36	24	1	10	N/A	N/A



Model	Amp Draw**	
	Boiler †	Pump †
1005A	12**	10
1505A	12**	14
2005A	18**	17

† Separate power connections are factory supplied and separate supply breakers must be field supplied.
** Current draw is for boiler only (Supply breaker must have delayed trip).

Model (H7-)	MBTUH		Dimensions (in)											Ship Weight (Lbs.)	
	Input	Output	B Height	D	E	F	G* NPT	K Flue Ø	L	M	N C/A Ø	P	R		Y
<input type="checkbox"/> 1005A	999	959	55-1/8	45	47-1/8	36-1/2	1-1/4	6	40-1/16	11-1/2	6	47-1/8	8-1/16	6-1/16	1065
<input type="checkbox"/> 1505A	1500	1440	67-1/8	57	59-1/16	38-1/2	1-1/4	8	52-1/16	12-5/8	8	59-1/8	8-3/16	6-1/16	1234
<input type="checkbox"/> 2005A	1999	1919	81-1/8	71	71-3/16	38-1/2	2	8	64-1/16	12-5/8	8	73-1/8	8-3/16	6-1/4	1461

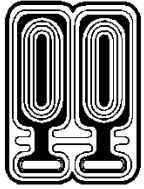
Note: Ratings shown are for elevations up to 4,500 feet. For installations at elevations above 4,500 feet, please consult the factory for additional instructions.

* For Propane Gas, all models are 1" NPT

System Return Temp (°F)	<input type="checkbox"/> Model 1005A				<input type="checkbox"/> Model 1505A				<input type="checkbox"/> Model 2005A			
	Supply Temp (°F)	Minimum Pipe Size ²		Supply Temp (°F)	Minimum Pipe Size ²		Supply Temp (°F)	Minimum Pipe Size ²				
		<80' eq	80-200' eq		<80' eq	80-200' eq		<80' eq	80-200' eq			
60	138	2" NPT	2-1/2" NPT	147	2" NPT	2-1/2" NPT	154	2" NPT	2-1/2" NPT			
80	138	2" NPT	2-1/2" NPT	147	2" NPT	2-1/2" NPT	154	2-1/2" NPT	3" NPT			
100	138	2-1/2" NPT	3" NPT	147	2-1/2" NPT	3" NPT	154	2-1/2" NPT	3" NPT			
120	145	2-1/2" NPT	3" NPT	158	2-1/2" NPT	3" NPT	170	2-1/2" NPT	3" NPT			
140	165	2-1/2" NPT	3" NPT	178	2-1/2" NPT	3" NPT	190	2-1/2" NPT	3" NPT			
160	185	2-1/2" NPT	3" NPT	198	2-1/2" NPT	3" NPT	210	2-1/2" NPT	3" NPT			

¹ – Approximate high fire heater outlet temperature based on the standard heater pump and recommended connecting pipe size.

² – Minimum pipe size based on total equivalent feet of supply and return piping between the system loop and heater.



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SUBMITTAL

NTA-SERIES

HYDRONIC EXPANSION TANKS

Models: NTA-15 thru NTA-280

Submittal Sheet No. A-1004C

Date: 4/13

Job Name _____	Submitted By _____	Date _____
Location _____	Approved By _____	Date _____
_____	Order No. _____	Date _____
Engineer _____	Notes _____	
Contractor _____		
Sales Rep. _____		

Description

Wessels NTA series are ASME fixed diaphragm type pre-charged expansion tanks. They are designed to absorb the expansion forces and control the pressure in heating/cooling systems. The system's expanded water (fully compatible with water/glycol mixtures) is contained in heavy-duty diaphragm that prevents tank corrosion and waterlogging problems. All NTA expansion tanks can be installed vertically or horizontally.

Construction

Shell: Carbon Steel
 Bladder: Heavy Duty Butyl
 System Connection: Carbon Steel

Performance Limitations

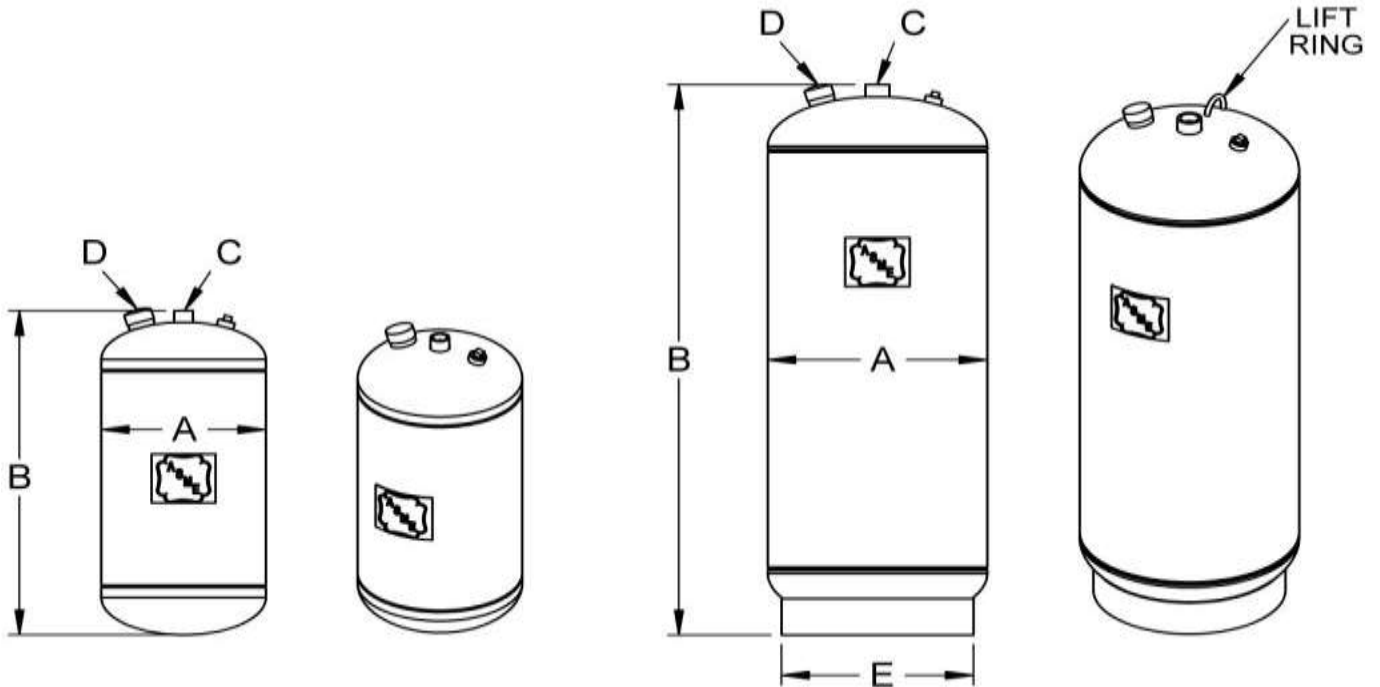
Maximum Design Temperature: 240°F
 Maximum Design Pressure:
 NTA 15 thru NTA 60: 150 PSIG*
 NTA 80 thru NTA 280: 125 PSIG*
 *200 & 250 PSIG available

Model Number	Part Number	Tank Volume (Gallons)	Acceptance Volume (Gallons)	Tagging Information	Quantity
NTA-15	19010015	7.8	6.3		
NTA-20	19010020	11	8.8		
NTA-40	19010040	25	20.2		
NTA-60	19010060	35	28		
NTA-80	19010080	45	36		
NTA-100	19010100	60	48.5		
NTA-120	19010120	70	56.5		
NTA-144	19010144	80	65		
NTA-180	19010180	90	73		
NTA-200	19010200	115	93		
NTA-240	19010240	140	113.5		
NTA-260	19010260	158	128		
NTA-280	19010280	211	171		

Typical Specification

Furnish and install, as shown on plans, a _____ gallon _____" diameter X _____" (high) pre-charged steel expansion tank with a fixed heavy-duty butyl diaphragm. The tank shall be equipped with a NPT system connection, and a 0.302"-32 charging valve connection (standard tire valve) to facilitate the on-site charging of the tank to meet system requirements. The tank must be constructed in accordance with most recent addendum of Section VIII Division 1 of the ASME Boiler and Pressure Vessel Code.

Each tank shall be Wessels model number NTA-_____ or approved equal.



NTA 15 & NTA 20

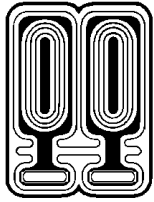
NTA 40 thru NTA 280

Dimensions & Weights

Model Number	Dimensions in Inches					Approx. Ship Weight (lbs)		
	A	B	System Connection	Charging Valve	E			
			C	D				
NTA-15	12	19	3/4	0.302" -32NC	-	42		
NTA-20		25				52		
NTA-40	16	33	1		14	84		
NTA-60		44				97		
NTA-80	20	38			1 1/2	18	148	
NTA-100		49					175	
NTA-120	24	46				1 1/2	22	259
NTA-144		49						268
NTA-180		52	283					
NTA-200		66	325					
NTA-240	30	78	1 1/2				24	362
NTA-260		63						591
NTA-280		81		752				

Notes

- Tanks are factory pre-charged at 12 psi and field adjustable.
- California code-sight glass is available upon request.
- Available with mounting clips.



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SUBMITTAL

**TYPE: SEVERE SERVICE – STAINLESS STEEL
 AIR SEPARATOR WITH STRAINER**

MODELS: SPA 2S-SS TO SPA 30S-SS

SUBMITTAL SHEET No. SPASS-111

Date: 5/03

JOB _____ Wessels Representative _____

Unit Tag No. _____ Order No. _____ Date _____

Engineer _____ Submitted By _____ Date _____

Contractor _____ Approved By _____ Date _____

DESCRIPTION

Wessels **Severe Service SPA** Vortex type Air Separators are designed for systems that require more corrosive resistance than standard carbon steel. SPA separators eliminate air quickly and efficiently from open and closed loop heating/cooling, and potable water systems. Water enters and exits through unique "tangential" connections, which promote a low velocity swirling effect in the center of the unit. Natural centrifugal forces allow the heavier air-free water to move towards the outer edges while entrained air is captured within the "eye" of the vortex and released out the top of the separator. The water then exits near the bottom of the unit, bubble free, protecting the system against the noise, corrosion, and damage commonly caused by entrained air. SPA shall have a system strainer.

CONSTRUCTION

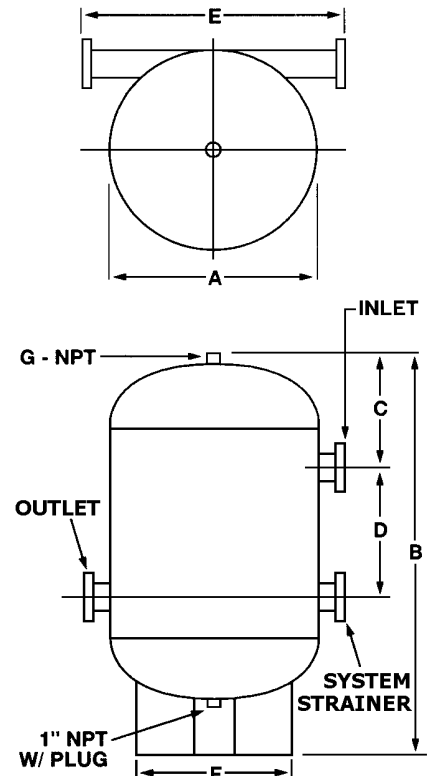
Shell: 304 stainless steel
 Heads: 304 stainless steel

316L stainless available

PERFORMANCE LIMITATIONS

Maximum Design Pressure: 125 PSIG
 Maximum Design Temperature: 450°F

Model Number	Max GPM	Conn. Size	Type	Dimensions (Inches)							Approx Lbs.
				A	B	C	D	E	F	G	
SPA 2S-SS	56	2"	NPT	12	22-1/2	5-1/2	7-1/2	16-5/8	9-1/2	1-1/4	55
SPA 2-1/2S-SS	90	2.5"	NPT	12	22-1/2	5-1/2	8-1/2	16-5/8	9-1/2	1-1/4	61
SPA 3S-SS	190	3"	FLANGED	12	23	6	8	19-3/4	9-1/2	1-1/4	66
SPA 4S-SS	300	4"	FLANGED	14	32	9-1/8	10-3/4	21-3/4	11-1/2	1-1/2	99
SPA 5S-SS	530	5"	FLANGED	14	32	9-1/8	10-3/4	21-3/4	11-1/2	1-1/2	163
SPA 6S-SS	850	6"	FLANGED	20	44	13-1/4	14-1/2	28	18	2	210
SPA 8S-SS	1900	8"	FLANGED	20	44	13-1/4	14-1/2	28	18	2	417
SPA 10S-SS	3200	10"	FLANGED	30	60-1/2	19	20	41	24	2	658
SPA 12S-SS	4800	12"	FLANGED	30	60-1/2	19	20	41	24	2	1042
SPA 14S-SS	6100	14"	FLANGED	36	78	22	31-1/2	46-3/8	30	2	1848
SPA 16S-SS	8000	16"	FLANGED	48	108	30	40	60	38	2	2530
SPA 18S-SS	9700	18"	FLANGED	54	124	33	50	66	44	2	3559
SPA 20S-SS	12000	20"	FLANGED	60	137	35	60	72	50	2	5610
SPA 22S-SS	15000	22"	FLANGED	66	150	38	66	78	56	2	6765
SPA 24S-SS	17000	24"	FLANGED	66	150	38	66	78	56	2	7931
SPA 30S-SS	27000	30"	FLANGED	72	150	38	72	84	60	2	9321



TYPICAL SPECIFICATION

Furnish and install as shown on plans, a vortex type air separator Model SPA _____ with system strainer, sized for _____ GPM, with _____" (NPT / Flanged) tangential connections, as manufactured by Wessels Company. The air separator shall be designed in accordance with the latest revisions of the ASME Code for Boilers and Pressure Vessels, Section VIII, Division 1, and shall be constructed and stamped for 125 PSI working pressure @ 450°F. A blowdown connection shall be provided to facilitate routine cleaning of the unit.

Each air separator shall be Wessels SPA _____ or approved equal.