SINCE 1908
wessels company

SUBMITTAL

NTA-SERIES

HYDRONIC EXPANSION TANKS

Models: NTA-15 thru NTA-280
Submittal Sheet No. A-1004C Date: 4/16

Job Name	Otsego Apartments	Submitted By		Date	
Location	102 Francis Street	Approved By		Date	
	Jackson, MI 49201	Order No.		Date	
Engineer		Notes			
Contractor	Paul Bengel Company				
Sales Rep.	Performance Engineering Group, Inc.				

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

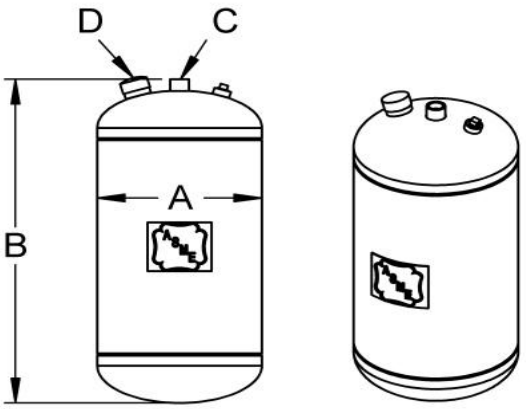
Maximum Design Temperature: 240°F
Maximum Design Pressure: 125 PSIG*
NTA 15 thru NTA 60: 150 PSIG*
NTA 80 thru NTA 280: 125 PSIG*
*200 & 250 PSIG available

Model Number	Part Number	Tank Volume (Gallons)	Acceptance Volume (Gallons)	Tagging Information	Quantity
NTA-15	29010015	7.8	6.3		
NTA-20	29010020	11	8.8		
NTA-40	29010040	25	20.2		
NTA-60	29010060	35	28		
NTA-80	29010080	45	36		
NTA-100	29010100	60	48.5		
NTA-120	29010120	70	56.5		1
NTA-144	29010144	80	65		
NTA-180	29010180	90	73		
NTA-200	29010200	115	93		
NTA-240	29010240	140	113.5		
NTA-260	29010260	158	128		
NTA-280	29010280	211	171		

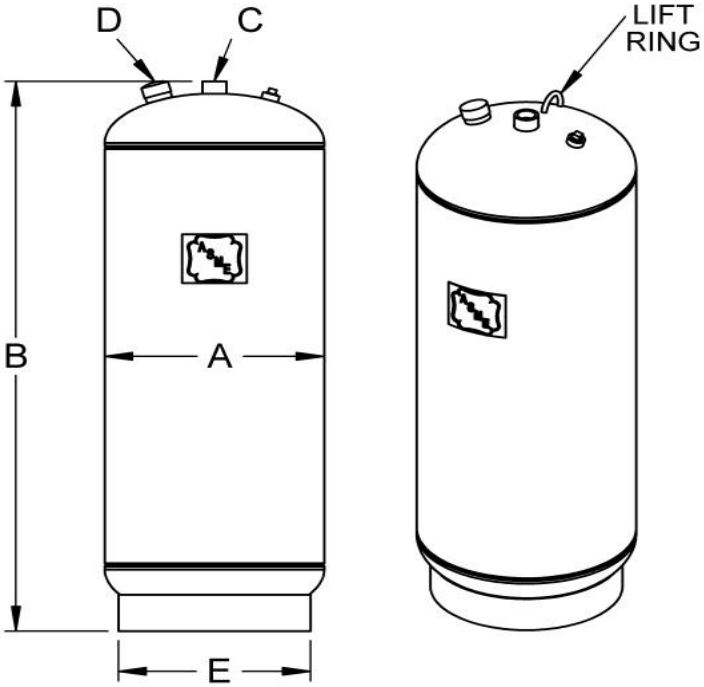
Typical Specification

Furnish and install, as shown on plans, a _____ gallon _____" diameter X _____" (high) pre-charged 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			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		78				362
NTA-260	30	63			24	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.

August 11, 2010

Mr. Charlie Brannick
Paul Bengel Company
420 East Prospect Avenue
Jackson, MI 49203

Dear Mr Brannick,

The start-up of the Raypak boilers and control system at the following location has been completed:

Otsego Apartments 102 Francis Street Jackson, MI 49201
Model Number: H7-850
Serial Numbers: 1001090160 & 0912090127

The following areas were tested and reviewed:

Boiler installation

Venting

- ☐ Complies with manufacturer's installation instructions
- ☒ Requires the following modifications:
  - ☐ Too small; required size is
  - ☐ Exceeds recommended length; correct size for this length is inches
  - ☐ Exceeds allowable number of elbows; maximum amount is
  - ☐ Requires Barometric Damper
  - ☒ Improper vent termination
  - ☐ Requires inducer/extractor
  - ☒ Other: Please Review attached paperwork.

Make-up Air

- ☒ Complies with manufacturer's installation instructions
- ☐ Requires the following modifications:
  - ☐ Undersized; the minimum required size is
  - ☐ Damper interlock not functioning
  - ☐ Obstructed inlet
  - ☒ Other: Size of F.A. opening is good, But owner Must control garden growth outside of F.A. Air Inlet Grille.

Gas Piping/Pressure

- ☐ Complies with manufacturer's installation instructions
- ☒ Requires the following modifications:
  - ☐ Gas pipe undersized; the minimum required size is
  - ☐ Gas pressure too low; the minimum pressure is
  - ☒ Gas pressure too high, the maximum pressure is 10.5" W.C.
  - ☐ Gas vent lines not terminated outside building
  - ☐ Gas vent lines too small; correct size should be
  - ☐ Gas vent line/bleed lines combined – not allowed by fuel gas code
  - ☒ Other: NOTE: Static pressure was 10.4" WC and Max is 10.5"WC. Hi Press Gas Safety is set at 10.5" WC. This is a very close tolerance. You cannot change the safety setting. Doing so will void equipment warranty. Supply press needs to be set a little lower.

Water Piping/Pumping for Boiler

- ☒ Complies with manufacturer's installation instructions
- ☐ Requires the following modifications:
  - ☐ Pipe size too small; proper pipe size is
  - ☐ Improper pump location; relocate to
  - ☐ Improper piping arrangement; see attached drawing
  - ☒ Other: Bldg System pumping is being up-dated. Old pumps still in at start-up.

Equipment Access

- ☒ Complies with manufacturer's installation instructions
- ☐ Requires the following modifications:
  - ☐ Improper clearance to combustibles
  - ☐ Improper service access; minimum access required is inches
    - ☐ Front ☐ Right side ☐ Left Side ☐ Rear
  - ☐ Other:

Electrical

- ☒ Complies with manufacturer's installation instructions
- ☐ Requires the following modifications:
  - ☐ Inadequate voltage supply, proper voltage is
  - ☐ Improper ground
  - ☐ Inadequate circuit size, minimum circuit is amps
  - ☐ Other:

Controls

- ☐ Complies with manufacturer's installation instructions
- ☐ Requires the following modifications:
  - ☐ Improper sensor location
  - ☐ Improper sensor wire used; correct wire is
  - ☒ Other: System does not have a separate boiler control. Boiler connections "TT" were jumpered to provide a constant call for heat and in doing so, boiler pumps will run continuously.

Please contact me regarding the above issues so that we may forward the completed start-up report to the owner/engineer as required. SEE NOTE AT BOTTOM.

Respectfully,

James I. Turnquist
Performance Engineering Group, Inc.

NOTE:

I have included some documentation and pictures from the job site. Hoping this will help for the correction of a venting termination issue. We are also returning two (2) screens which are factory provided for the vent termination tees. They were sent to us, believing they were extras.

Performance Engineering Group
XFyre Start-Up Form

Start-Up will not be done, IF there is any major issue with Water Flow, Gas Supply or Venting.

Priority S1 P1 P2 P3

Job Name	Location	Phone Number	Start-up Date
Ostego Apts.	102 Francis st. Jackson, MI 49201		8-6-10

Contact Person	Phone Number	Installer	Phone Number
Carl	517-202-0124	Paul Bengel Company	

Equipment Manufacturer	Model Number	Serial Number	Application of Equipment	Control Type
Raypak	H7-850	10010901160 (Master)	Heating	NONE

Boiler & System Startup Data and Specifications

Condition of Equipment / Installation	What Type of Environment is Equipment In?	Is the Equipment Serviceable?
Good	Good (Humid/Hot) Wet Condensation Leaks	yes

EXHAUST & COMBUSTION AIR PIPING - (Pages 23 – 31 in manual)

Material Type	Size Exhaust	Size Intake	Total Length Exhaust	Total Length Intake	Total # of Elbows Exhaust	Total # of Elbows Intake	Termination Point	Term-Type	Condensate Neutralizer Installed	Duct work Pitched back Towards boiler?
PVC	6"	Room Air	24'	Room Air	4x90 1x45	NA	Wall ☑ Roof ☐		Yes ☑ No ☐	Yes ☑ No ☐

CONTROL SETTINGS

Control System Set-point	Auto Reset High Limit (Fixed)	Manual Reset High Limit	175 deg	200 deg	Cascade System	Number of Boilers
			☐	☐	☑	2

GAS TYPE	Pipe Size Secondary Regulator Model #	PRESSURE RELIEF VALVE	Drip Leg Installed	System Working Pressure	BOILER OPERATION
Nat ☑ LP ☐	3" → 1½"	1,100,000 BTU PSI 60	yes	30	Light ☐ Moderate ☐ Heavy ☑ Sudden Loads ☐

GAS PRESSURE Fan Hi Fire = -0.24 Man HF = -3.01 LF -.15

Static Pressure	Inlet Pressure at High Fire	Inlet Pressure at Low Fire	Mfg's Spec.	Appearance of Flame	Boiler Level
10.40	10.06	10.30	Man Hi -3.2 ±.3 Lo -0.2 ±.3	good	Yes ☑ No ☐

SAFETY CONTROL TESTS (Check all that apply & NOTE SETTING)

Flow Switch	Low Water Cutoff	Auto High Limit	Manual Reset High Limit	Ignition Control Lockout	Blocked Drain Switch	Other
☑	☐	☑	☑	☑	☑	☐

COMBUSTION ANALYSIS – See Pages 42 & 43 in the Manual for Instructions on Setting the Gas Valve

CO_2 High Fire	CO_2 Low Fire	CO High Fire	CO Low Fire	Are Mfg's Specs met?	NOX
8.6	8.5	103	8	Yes ☑ No ☐	PPM =

BOILER TEMPERATURE RISE

At Full Fire 30 Comments: In 50 Delta T 30 Out 80

BOILER PUMP

Manufacturer	HP	Amp Draw Running	Location
Grundfos		4.08	Inlet

Model	Voltage Phase	Mfg. Amp Spec
UPS 40-80/2F	115	4.45

SYSTEM PUMP

i.e. Grundfos, Taco, B&G — Manufacturer: changing to VFD's — HP — Location

PUMP MODEL, NOT MOTOR INFO — Model (i.e. UP26-99F) — Voltage Phase — Amp Draw Running — Mfg. Amp Spec Maximum

POWER SOURCE TEST -120VAC -1-60Hz	Boiler	Minimum Service Clearances
Hot to Neutral =	108Vmin/132Vmax 120.4	Rear 24 Inches
Hot to Ground =	108Vmin/132Vmax 199.9	Top 24 Inches
Ground to Neutral =	<1Vmax 28 MV	Front 24 Inches
Phasing of power supply is critical:	Especially for multiple cascade systems	

Does voltage test meet specs? Yes ☑ No ☐

Performance Engineering Group
XFyre Start-Up Form

Start-Up will not be done, IF there is any major issue with Water Flow, Gas Supply or Venting.

Priority S1 P1 P2 P3

Job Name	Location	Phone Number	Start-up Date
Ostego Apts.	102 Francis st. Jackson, MI 49201		8-6-10

Contact Person	Phone Number	Installer	Phone Number
Carl	517-202-0124	Paul Bengel Company	

Equipment Manufacturer	Model Number	Serial Number	Application of Equipment	Control Type
Raypak	H7-850	0912090127 (Follower)	Heating	NONE

Boiler & System Startup Data and Specifications

Condition of Equipment / Installation	What Type of Environment is Equipment In?	Is the Equipment Serviceable?
Good	Good (Humid/Hot) Wet Condensation Leaks	Yes

EXHAUST & COMBUSTION AIR PIPING - (Pages 23 – 31 in manual)

Material Type: PVC | Size Exhaust: 6" | Intake: Room Air | Total Length Exhaust: 30' | Intake: NA | Total # of Elbows: 4x90 1x45 | Termination Point: Wall ☑ Roof ☐ | Term-Type | Condensate Neutralizer Installed: Yes ☑ No ☐ | Duct work Pitched back Towards boiler? Yes ☑ No ☐

CONTROL SETTINGS

Control System Set-point: | Auto Reset High Limit (Fixed): | Manual Reset High Limit: | 175 deg ☐ | 200 deg ☐ | Cascade System ☑ | Number of Boilers: 2

GAS TYPE

Nat ☑ LP ☐

Pipe Size Secondary Regulator Model #: 3" → 1½"

PRESSURE RELIEF VALVE

1,100,000 BTU | PSI: 60 | Drip Leg Installed: yes | System Working Pressure: 30

BOILER OPERATION

Light ☐ Moderate ☐ Heavy ☑ Sudden Loads ☐

GAS PRESSURE Fan Hi fire = -0.24 Manifold HF -3.0 Lo -0.10

Static Pressure	Inlet Pressure at High Fire	Low Fire	Mfg's Spec	Appearance of Flame
10.48	10.21	10.40	Man Hi -3.2 ± .3 Low -0.2 ± .3	good

Boiler Level: Yes ☑ No ☐

SAFETY CONTROL TESTS (Check all that apply & NOTE SETTING)

Flow Switch ☑ | Low Water Cutoff ☐ | Auto High Limit ☑ | Manual Reset High Limit ☑ | Ignition Control Lockout ☑ | Blocked Drain Switch ☑ | Other ☐

COMBUSTION ANALYSIS – See Pages 42 & 43 in the Manual for Instructions on Setting the Gas Valve

CO_2 High Fire	CO_2 Low Fire	CO High Fire	CO Low Fire	Are Mfg's Specs met?	NOX
8.7	8.5	118	7	Yes ☑ No ☐	PPM =

BOILER TEMPERATURE RISE

At Full Fire: 31 | Comments: In 46 Delta T 31 Out 77

BOILER PUMP

Manufacturer	HP	Amp Draw Running	Location
Grundfos		4.03	Inlet

Model	Voltage Phase	Mfg. Amp Spec
UPS 40-80/2F	115	4.45

SYSTEM PUMP

i.e. Grundfos, Taco, B&G

Manufacturer	HP	Location
Changing to VFD's		

PUMP MODEL, NOT MOTOR INFO

Model (i.e. UP26-99F)	Voltage Phase	Amp Draw Running	Mfg. Amp Spec Maximum

POWER SOURCE TEST -120VAC -1-60Hz	Boiler	Minimum Service Clearances
Hot to Neutral =	108Vmin/132Vmax 120.1	Rear 24 Inches
Hot to Ground =	108Vmin/132Vmax 120.0	Top 24 Inches
Ground to Neutral =	<1Vmax 24 MV	Front 24 Inches
Phasing of power supply is critical:	Especially for multiple cascade systems	

Does voltage test meet specs? Yes ☑ No ☐

master

OTHER EQUIPMENT/DEVICES:

Water Sensor Location: Supply Loop — Air Sensor Location: South wall

Software Version # — Cascade Communication: yes

MISCELLANEOUS

Was a service manual present on the job site? Yes ☑ No ☐ — Was an owner representative present on startup? Yes ☑ No ☐ Name

ADDITIONAL COMMENTS

No Control hooked in. TT is Jumpered to give a Continouse Call
Loop always circulates, boilers and Cooling tower use the Same Piping
boilers are valued off in Summer and Cooling tower in winter.
Tunning of boilers OK. gas static is at high limit but drops when
other boilers are working. (city Sometimes has Issues with pressure drops)

Planter In front of CA out side.
need to add TEE To vent termination

This equipment has been properly started and is operating satisfactorily at this time. Yes ☐ No ☐

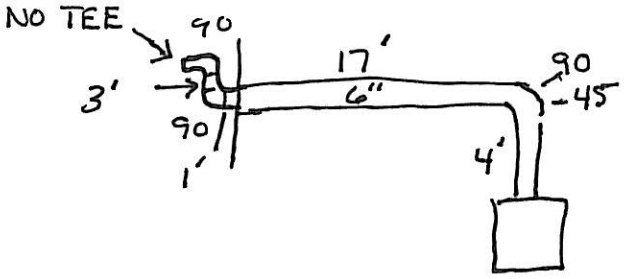
Technician's Signature X Scott Stevens Date 8-6-10 Owner/Rep's Signature X Carl Cousins Date

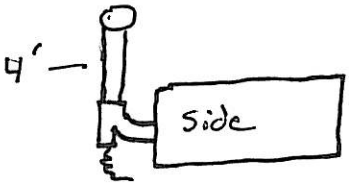
IN THE BLANK SPACE BELOW PLEASE:

Sketch Venting and Air Configurations; MUST INCLUDE Size, Length, Termination Style & Clearances

Below, please document any special Xfyre Control Settings

	Screen** # - Setting	
UM	Casc Loop	180
UM	Diff	30
IM	7	75°F
	8	5°F
	9	190°F
	10	75°F
	11	95°F
	12	90°F
	13	0
	15	0
	16	off
	18	off
	23	ALG26





Venting Req:

- ☐ Comb Air Openings
- ☑ Bird Screens Installed
- ☐ Code Issues
- ☐ Manufacturer Issues
- ☐ Potential Issues
- ☐ OTHER-Explain

** 3 Possible Screens + Number (#):

User Menu = UM#, Status Menu = SM# and Installer Menu = IM#

Lag 1

OTHER EQUIPMENT/DEVICES:

Water Sensor Location: Supply Loop — Air Sensor Location: South wall

Software Version # — Cascade Communication

MISCELLANEOUS

Was a service manual present on the job site? Yes ☑ No ☐ — Was an owner representative present on startup? Yes ☑ No ☐ Name

ADDITIONAL COMMENTS

Lag 1 Looks ok

Need to add TEE To vent termination

This equipment has been properly started and is operating satisfactorily at this time. Yes ☐ No ☐

Technician's Signature X Scott Stevens Date 8-6-10 Owner/Rep's Signature X Carl Comins Date

IN THE BLANK SPACE BELOW PLEASE:

Sketch Venting and Air Configurations; MUST INCLUDE Size, Length, Termination Style & Clearances

Below, please document any special Xfyre Control Settings

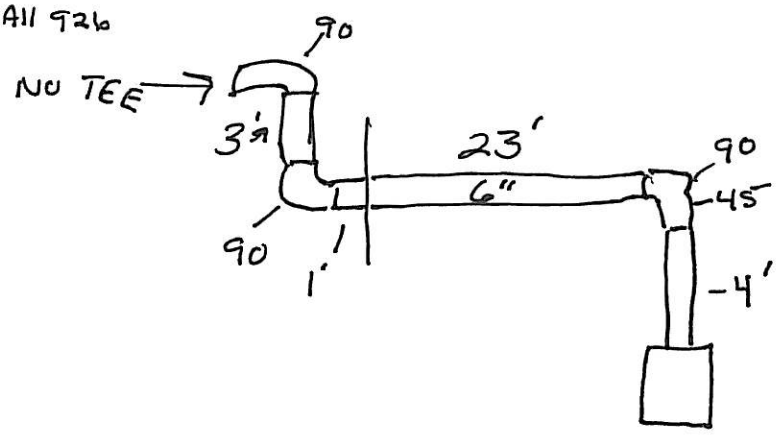
Screen** # - Setting
Heat Loop 180
HL Diff 30
Hydronic
out Door CU 75°
8 5°F
9 190°F
10 75°F
11 95
12 90
13 0
15 1

UM HW 140 Dif 5 IM

23 All 926

16 off

18 off



Venting Req:

☐ Comb Air Openings

☑ Bird Screens Installed

☐ Code Issues

☐ Manufacturer Issues

☐ Potential Issues

☐ OTHER-Explain

** 3 Possible Screens + Number (#):

User Menu = UM#, Status Menu = SM# and Installer Menu = IM#

PERFORMANCE engineering group

32995 Industrial Road
Livonia, MI 48150-1617
Phone 734.266.5300 Fax 734.266.5310

Service Order

Our Customer Name	Job Location		Date
OSTEGO APTS	102 FRANCIS		10-25-16
City / State / Zip	Time In	Time Out	Total Time
JACKSON MI	10:00	3:30	5½ HRS
Contact Person	Phone Number	Service Requested By	Warranty In ☐ Out ☐
Equipment Manufacturer	Model Number	Serial Number	Installed By
XFYRE	850		
Complaint			Date Installed
NO HEAT			

Billing Information

Company:	Attention:
Address:	City / State / Zip:

Description of Labor Performed

Boiler #1 low WATER ISSUE. Flow Switch good. PUMP ISN't working
INSPECTED and VACCUMED cleaned & inside BURNER CHAMBERS - VERY DIRTY.
NEEDS BURNER DOOR GASKET & TEMP SENSOR, SIT Controller (013183F)

Boiler #2 INSTALLED NEW SIT CONTROLLER & REWIRED FOR STAND ALONE
inspected & cleaned, VACCUMED inside BURNER Chamber.
Also INSTALLED NEW Ignitor. BURNER DOOR GASKET NEEDS REPLACING

Qty	Part Number	Description	Price
1	013183F	PC Board CPW 850	
1	013167F	Igniter	

☐ In Warranty Replacement

☐ RMA #_____

VISA / MasterCard / AmEx / Discover From billing statement:

Prior Authorization: _____ Street #: _____

Expiration Date: ___/___ Zip Code: _____

Three digit authorization number: ☐☐☐

Card Holder's Name

Total Materials:	
Sales Tax:	
Total Labor:	
Shipping:	
Total:	

Technician's Signature	Date	Customer's Signature	Date
	10-25-16		

Performance Engineering Group, Inc.
32995 Industrial Road
Livonia, MI 48150-1617
Phone 734.266.5300 Fax 734.266.5310

Service Order

Our Customer Name: Ostego APTS	Job Location: 102 FRANCIS ST			Date: 11-14-16
City / State / Zip: JACKSON MI		Time In: 11:00	Time Out: 3:00	Total Time: 4hrs
Contact Person: KiP	Phone Number:	Service Requested By: KiP		Warranty: In ☐ Out ☐
Equipment Manufacturer: RAYPAK	Model Number: H7-850	Serial Number:		Installed By:
Complaint: RETURN VISIT TO INSTALL NEW PARTS				Date Installed:

Billing Information

Company: Attention:

Address City / State / Zip

Description of Labor Performed

INSTALLED NEW BURNER DOOR, 2 - AIR FILTERS & NEW PC BOARD
BOTH BOILER RUNNING GOOD

Qty	Part Number	Description	Price
1	013159F	BURNER DOOR	
2	012553F	AIR FILTER	
1	013183F	PC BOARD	

☐ In Warranty Replacement

☐ RMA# _____*
___ Warranty Return
*Attach RMA form to order

☐ Visa Authorization
☐ MasterCard Authorization
From billing statement:
Street #: _____
Expiration Date: ____ / ____
Zip Code:
Three digit authorization number:
Card Holder's Name

Total Materials: _____
Sales Tax: _____
Total Labor: _____
Shipping: _____
Total:

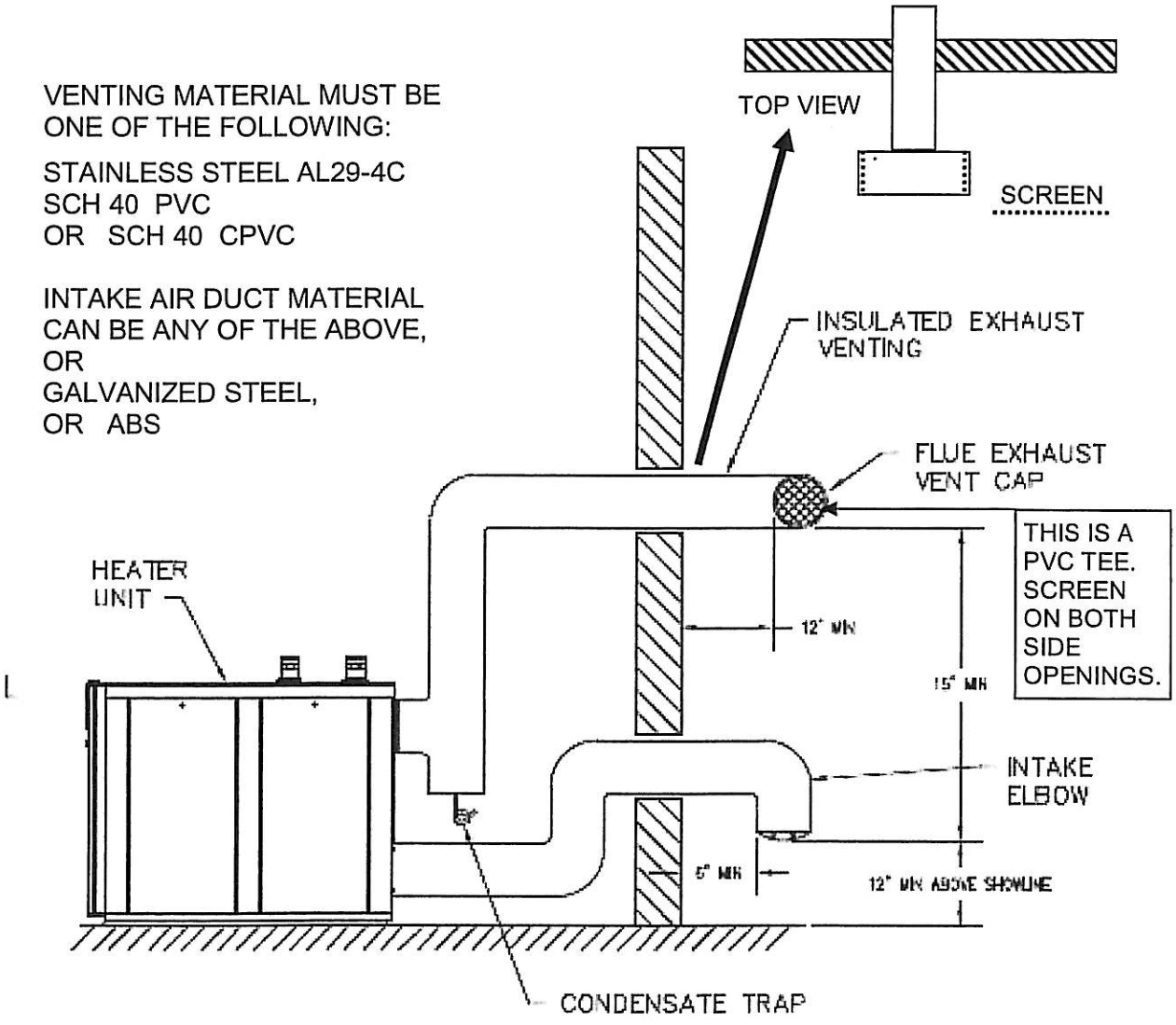
Technician's Signature Date

Customer's Signature Date

XFYRE VENTING REQUIREMENTS

In all of Raypak's Boiler Manuals, they show the same requirement for horizontal venting of a boiler. This requirement is pointed out in the illustration below which is from the Xfyre Boiler's Installation Manual. The flue exhaust vent cap is just a Sch 40 PVC Tee which has a screen in either side of the run of the tee (screens provided with boiler). The Tee is to be installed in a horizontal position (run of tee) and to be in an open area which will allow for free distribution of the flue gases. Multiple boilers should not terminate on the same plane which could inhibit their function.

Page 30 shows a typical installation of Raypak's stainless steel termination hood (typically called a chicken roaster). I know it is not part of this job and not your problem, but you may want to make your customer aware of the fact that it is installed wrong too.

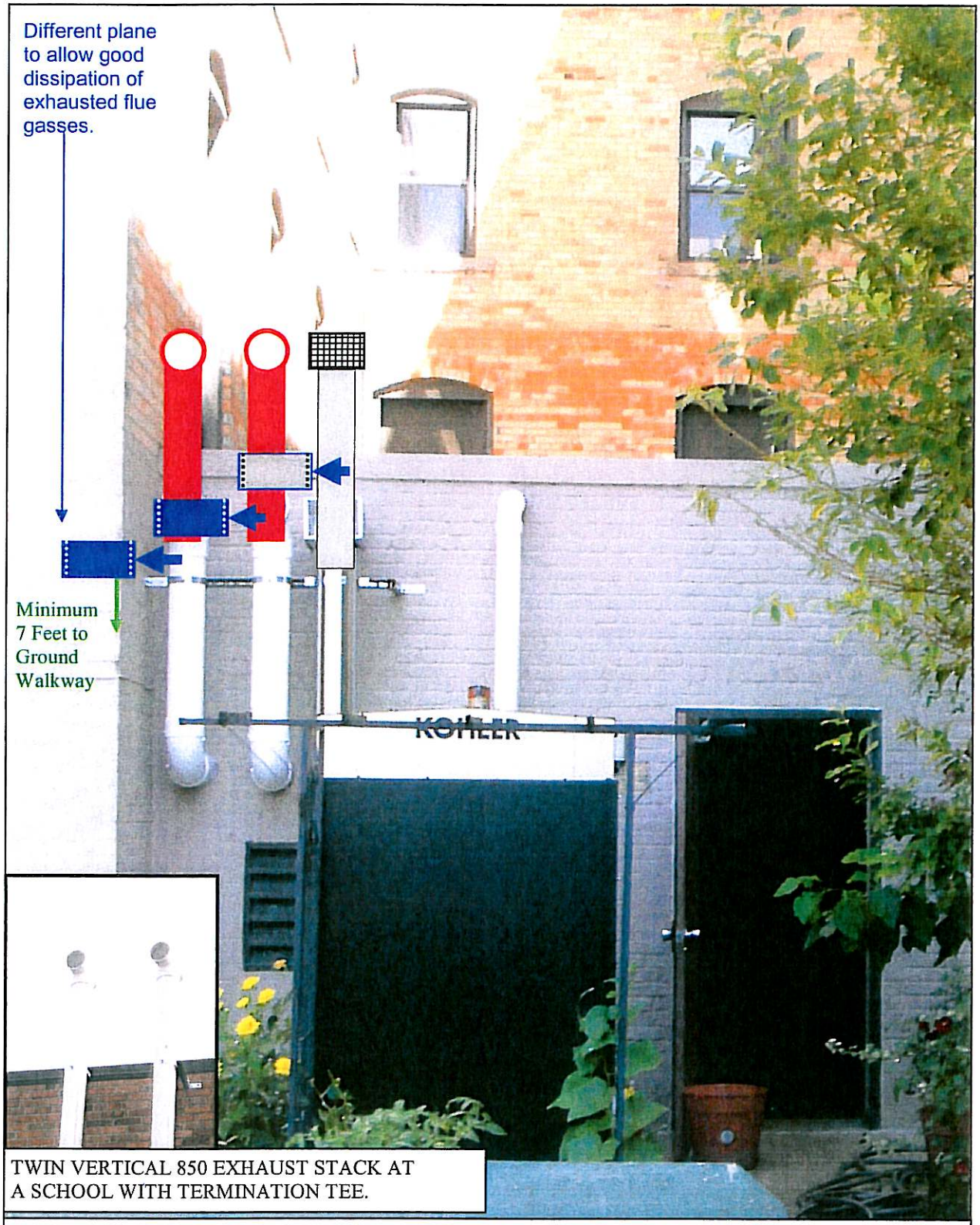


Refer to Table F and local codes.

Fig. 23: Horizontal Through-the-Wall Direct Venting

MINIMUM OF 2 FEET ABOVE ROOF LEVEL AND THE RUN OF THE TERMINATION TEE MUST BE PARALLEL TO THE WALL. NOTE: The improperly installed Hi-Delta termination should be raised too, to correct its proper functioning.

FOR THIS OPTION, THE TERMINATION TEE MUST PROTRUDE OUT PASSED THE WALL AND EACH VENT'S TEE, MUST BE A LITTLE HIGHER THAN THE ONE NEXT TO IT FOR PROPER DISIPATION OF GASSES. LOWEST TERMINATION MUST BE AT LEAST 7 FEET ABOVE A PUBLIC WALKWAY.



TWIN VERTICAL 850 EXHAUST STACK AT A SCHOOL WITH TERMINATION TEE.

Raypak also voiced a concern about the availability of good cross winds for this corner installation. Worry is that flue gasses could build up and linger in the area which could affect the upper roof area and the lower ground area.

Please advise customer that this fresh air inlet grille needs to be free and clear of anything which could potentially block the availability of incoming combustion air. Highly suggest maintaining at least a 2 foot clearance in front of the opening at all times.

speed. Do not operate summer exhaust fan. Close fireplace dampers.

4. Place in operation the appliances being inspected. Follow the manufacturer's instructions for lighting each appliance. Adjust thermostat so appliance will operate continuously.

5. Check the pressure at a pressure tap located 12 in. above the bottom joint of the first vertical vent pipe. Pressure should be anywhere between -0.01 and -0.08 in. WC.

6. After it has been determined that each appliance remaining connected to the common venting system properly vents when tested as outlined above, return doors, windows, exhaust fans, fireplace dampers and other gas burning appliances to their previous conditions of use.

7. Any improper operation of the common venting system should be corrected so that the installation conforms with the NFGC (U.S.) or B149.1 (Canada). When re-sizing any portion of the common venting system, the common venting system should be re-sized to approach the minimum size as determined using the appropriate tables in Appendix G in the NFGC (U.S.) or B149.1 (Canada).

Horizontal Through-the-Wall Venting (Category III)

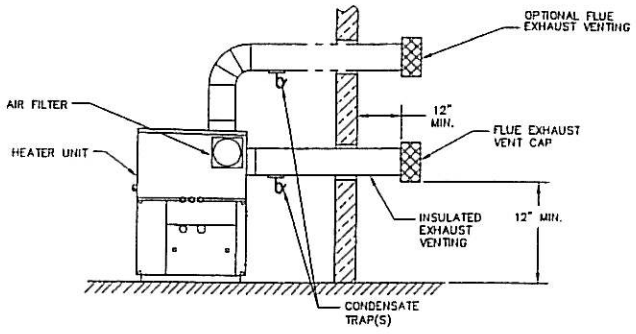


Fig. 25: Horizontal Through-the-Wall Venting (Category III)

Installation

These installations utilize the heater-mounted blower to vent the combustion products to the outdoors. Combustion air is taken from inside the room and the vent is installed horizontally through the wall to the outdoors. Adequate combustion and ventilation air must be supplied to the equipment room in accordance with the NFGC (U.S.) or B149.1 (Canada).

The total length of the horizontal through-the-wall flue system should not exceed 70 equivalent ft in length. If horizontal run exceeds 70 equivalent ft, an appropriately sized extractor must be used. Each elbow used is equal to 10 ft of straight pipe. This will allow installation in one of the four following arrangements:

- 70' of straight flue pipe
- 60' of straight flue pipe and one elbow
- 50' of straight flue pipe and two elbows
- 40' of straight pipe and three elbows

The vent cap is not considered in the overall length of the venting system.

The vent must be installed to prevent flue gas leakage. Care must be taken during assembly to ensure that all joints are sealed properly and are airtight. The vent must be installed to prevent the potential accumulation of condensate in the vent pipes. It is required that:

1. The vent must be installed with a slight downward slope of not more than 1/4 inch per foot of horizontal run to the vent terminal.

2. The vent must be insulated through the length of the horizontal run.

For installations in extremely cold climate, it is required that:

1. The vent must be installed with a slight upward slope of not more than 1/4 inch per foot of horizontal run to the vent terminal. In this case, an approved condensate trap must be installed per applicable codes.

2. The vent must be insulated through the length of the horizontal run.

Termination

The flue direct vent cap MUST be mounted on the exterior of the building. The direct vent cap cannot be installed in a well or below grade. The direct vent cap must be installed at least 1 ft above ground level and above normal snow levels. The Raypak-approved stainless steel flue direct vent cap must be used (sales order option D-15).

WARNING: No substitutions of flue pipe or vent cap material are allowed. Such substitutions would jeopardize the safety and health of inhabitants.

XFYRE CONTROL CONFIGURATIONS: D.N.C. = Factory Set: Do Not Change OSTEGO APTS

Lag 1 H7-850 0912090127 **XFYRE CONTROL - REFERENCE / PROGRAMMING CHART**

Screen No:	Default Setting (options)	Programmed Setting	Screen No:	Default Setting (options)	Programmed Setting
S-1 Operate Mode	HYDRONIC	NO OPTIONS	S-19 Indirect Temp.	180F (119F - 190F)	DF
S-2 DHW CombiMax	149F (104F - 149F)	NOT USED	S-20 WPS Input	Flow Switch (D.N.C.)	DF
S-3 DHW Tnk Max	180F (95F - 185F)	DF	S-21 ErrorOutdSensor	OFF (OFF / ON)	DF
S-4 Offset	36F (1 - 45F)	NOT USED	S-22 MaxFanSpeed	100% (50% - 100%)	DF
S-5 DHW DIFF	5F (1 - 18F)	DF	S-23 CascadeConfig	OFF/VIS3 (OFF/All926)	ALL 926
S-6 DHWPmpDelay	0 Min (0 - 10 Minutes)	DF	S-24Cascade Rotation	24hrs (0 - 240hrs)	DF
S-7 OutdoorCutOff	68F (41F - 122F)	75°F	S-25 CasDHW Config.	DHW Entire Cascade	DF
S-8 ResetMinOut	5F (-49 - 32F)	DF	S-26 SysPmpFreeze	Protect Off (Off-104F)	DF
S-9 ResetMaxTemp	190F (77F - 190F)	DF	S-27 SysSenseFault	ON (ON - OFF)	DF
S-10 ResetMaxOut	68F (32F - 95F)	75°F	S-28 FreezeProtect	ON (ON - OFF)	DF
S-11 ResetMinTemp	95F (32F - 190F)	DF	S-29 DHWDemandStart	MAX (MAX - MIN)	DF
S-12 HydMinTemp	90F (32F - 190F)	DF	S-30 Extra Boiler	OFF (OFF / 50-100)	DF
S-13 HydPmpDelay	0 Min (0-10 Minutes)	DF	S-31SingBoilCascade	OFF (ON - OFF)	DF
S-14 DHWPriority	30Min (0-60 Minutes)	DF	S-32MaintenanceMode	OFF (Off/RunHrs/Date)	DF
S-15 CascadeAddr	0 (1 - 7)	1	UM#1 Cascade Loop	159°F (50-190°F)	180
S-16 0-10V Config	DHW Thermister	off	UM#2 Cascade Diff	30°F (2-45°F)	DF
S-17 0-10V Mode	Temperaturre	DF	UM#3 DHW Set pt.	140°F (95-185°F)	DF
S-18 Step Mod	ON (ON - OFF)	off	UM#4 DHW Diff	5°F (1-18°F)	DF

^ Screens 33, 34, 35 & 36 are not active, "Unless" Screen # 32 has been set for RunHours or Date, Then these screens are use for programming the selected mode (see manual).

Please make a copy of this page and fill it out for every XFYRE installation.

XFYRE CONTROL CONFIGURATIONS: D.N.C. = Factory Set: Do Not Change Ostego Apts

Master H7-850 1001090160 **XFYRE CONTROL - REFERENCE / PROGRAMMING CHART**

Screen No:	Default Setting (options)	Programmed Setting	Screen No:	Default Setting (options)	Programmed Setting
S-1 Operate Mode	HYDRONIC	NO OPTIONS	S-19 Indirect Temp.	180F (119F - 190F)	DF
S-2 DHW CombiMax	149F (104F - 149F)	NOT USED	S-20 WPS Input	Flow Switch (D.N.C.)	DF
S-3 DHW Tnk Max	180F (95F - 185F)	DF	S-21 ErrorOutdSensor	OFF (OFF / ON)	DF
S-4 Offset	36F (1 - 45F)	NOT USED	S-22 MaxFanSpeed	100% (50% - 100%)	DF
S-5 DHW DIFF	5F (1 - 18F)	DF	S-23 CascadeConfig	OFF/VIS3 (OFF/All926)	ALL 926
S-6 DHWPmpDelay	0 Min (0 - 10 Minutes)	DF	S-24Cascade Rotation	24hrs (0 - 240hrs)	DF
S-7 OutdoorCutOff	68F (41F - 122F)	75°F	S-25 CasDHW Config.	DHW Entire Cascade	DF
S-8 ResetMinOut	5F (-49 - 32F)	DF	S-26 SysPmpFreeze	Protect Off (Off-104F)	DF
S-9 ResetMaxTemp	190F (77F - 190F)	DF	S-27 SysSenseFault	ON (ON - OFF)	DF
S-10 ResetMaxOut	68F (32F - 95F)	75°F	S-28 FreezeProtect	ON (ON - OFF)	DF
S-11 ResetMinTemp	95F (32F - 190F)	DF	S-29 DHWDemandStart	MAX (MAX - MIN)	DF
S-12 HydMinTemp	90F (32F - 190F)	DF	S-30 Extra Boiler	OFF (OFF / 50-100)	DF
S-13 HydPmpDelay	0 Min (0-10 Minutes)	DF	S-31SingBoilCascade	OFF (ON - OFF)	DF
S-14 DHWPriority	30Min (0-60 Minutes)	DF	S-32MaintenanceMode	OFF (Off/RunHrs/Date)	DF
S-15 CascadeAddr	0 (1 - 7)	0	UM# 1 Cascade Loop	159°F (50-190F)	180
S-16 0-10V Config	DHW Thermister	off	UM# Cascade Diff	30°F (2-45F)	DF
S-17 0-10V Mode	Temperaturre	DF	UM# DHW Set pt.	140°F (95-185F)	DF
S-18 Step Mod	ON (ON - OFF)	OFF	UM# DHW Diff	5°F (1-18°F)	DF

^ Screens 33, 34, 35 & 36 are not active, "Unless" Screen # 32 has been set for RunHours or Date, Then these screens are use for programming the selected mode (see manual).

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