

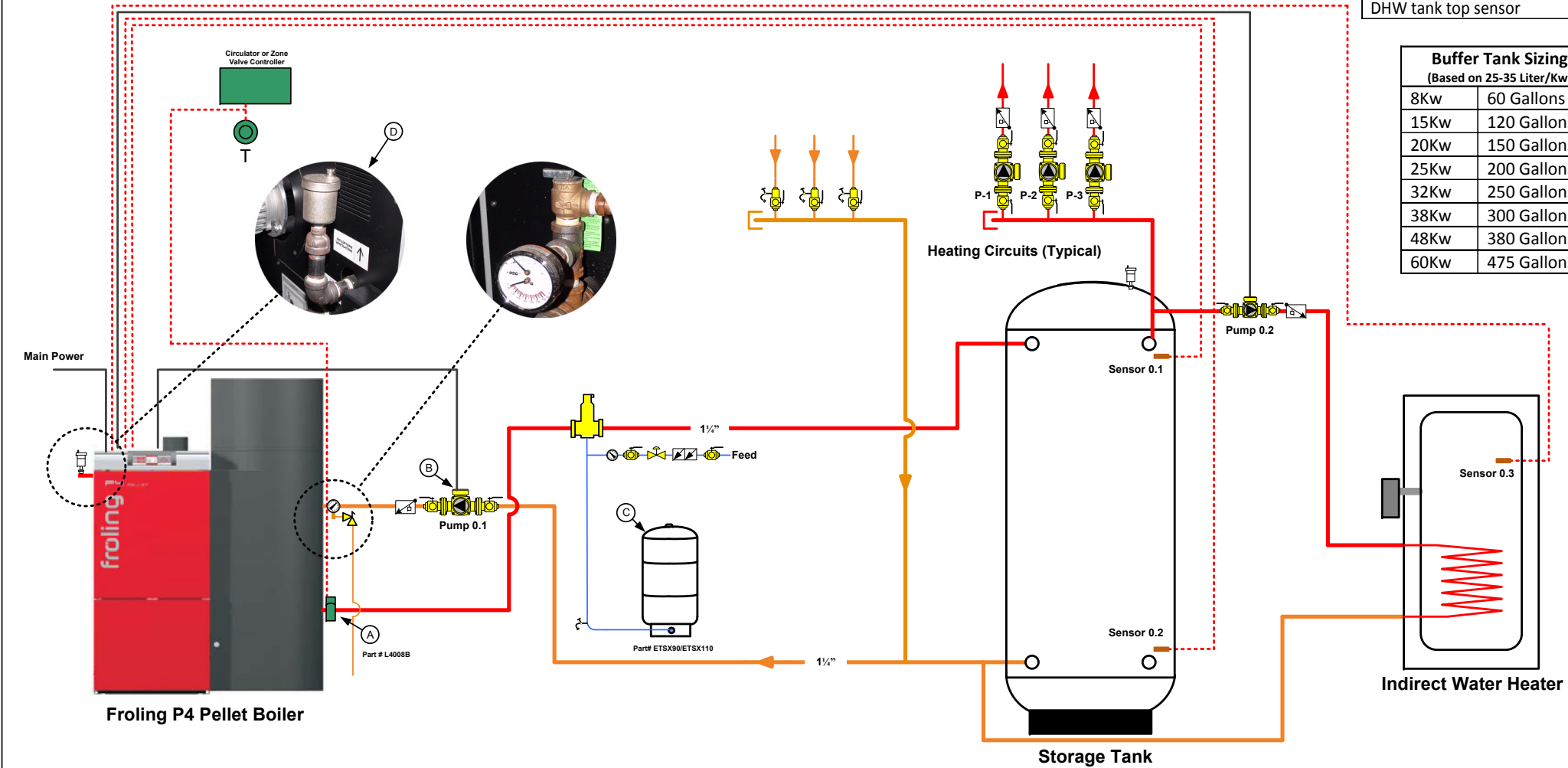
BioHeatUSA 4 Britton Lane Lyme, NH 03768	BioHeatUSA Piping Layout Concept Diagram		
	Froiling P4 Pellet Boiler Plumbing Schematic For Use With Hydraulic System 1		
Drawn by: TSP	Date 12-28-2009	DWG NO System 1.P001	REV 3
Checked by:	SCALE N/A	SHEET 1 OF 1	

System Notes	
A	Honeywell L4008B overhear aquastat set to 200° F. Connected to the largest heating circuit.
B	Boiler circulator is sized to boiler output rating and system requirements. Set minimum start speed. Refer to Section 4.4.4 in the Lambdatronic P3200 Operating Manual. The speed is set to 15% above minimum start speed. A variable or multi-speed pump should not be used.
C	Expansion tank sizing 1-2 Tanks use an Amtrol SX90V or equivalent 3 Tanks use an Amtrol SX110V or equivalent
D	It is important to install the included auto-vent to prevent flashing in the boiler from trapped air.

Lambdatronic Settings for System 1.P001 Plumbing Schematic	
System Selection	Hydraulic System 1
Middle Storage Tank Sensor Installed	No
DHW Priority	YES
Additional freely programmable differential control	No
Sec. circ. Installed	No
Assigning Pumps and Sensors	
Storage tank top sensor	0.1
Storage tank bottom sensor	0.2
Storage tank circulator	0.1
DHW tank top sensor	0.3

Buffer Tank Sizing (Based on 25-35 Liter/Kw)	
8Kw	60 Gallons
15Kw	120 Gallons
20Kw	150 Gallons
25Kw	200 Gallons
32Kw	250 Gallons
38Kw	300 Gallons
48Kw	380 Gallons
60Kw	475 Gallons

Symbol Key	
	Central Air Separator
	Pressure Reducing Valve
	Pressure Relief Valve
	Union
	Drain Valve
	Temperature Gauge
	Circulator w/ Isolation Flanges
	Ball Valve
	Purging Valve
	Weighted Check Valve
	Backflow Preventer
	Thermostat



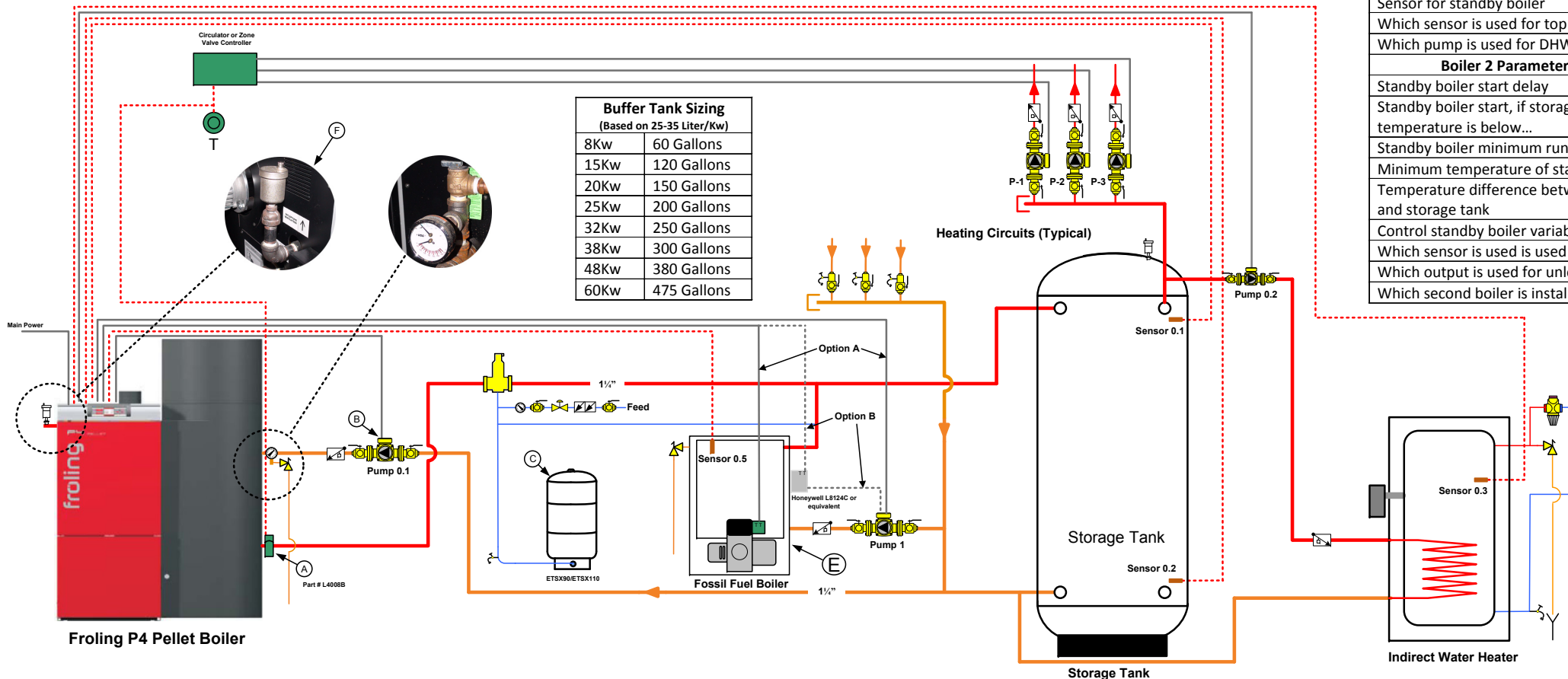
This is only a **concept** drawing. Final design, installation and code compliance details are the responsibility of the designer/installer of the system.

BioHeatUSA 4 Britton Lane Lyme, NH 03768	BioHeatUSA Piping Layout Concept Diagram			
	Fröling P4 Pellet Boiler Plumbing Schematic For Use With Hydraulic System 2			
Drawn by: TSP	Date: 12-18-2009	DWG NO: System 2.P001	REV: 2	
Checked by:	SCALE: N/A	SHEET: 1 OF 1		

System Notes	
A	Honeywell L4008B overheat aquastat set to 200° F. Connected to the largest heating circuit.
B	Boiler circulator is sized to boiler output rating and system requirements. Set minimum start speed. Refer to Section 4.4.4 in the LambdaTronic P3200 Operating Manual. The speed is set to 15% above minimum start speed. A variable or multi-speed pump should not be used.
C	Expansion tank sizing 1-2 Tanks use an Amtrol SX90V or equivalent 3 Tanks use an Amtrol SX110V or equivalent
D	BioHeatUSA Switch Control Part # BLTCONTROL
F	It is important to install the included auto-vent to prevent flashing in the boiler from trapped air.
E	There are two options for controlling the back-up boiler. Option A- The TT Terminal on the burner control is wired to the burner relay on the core module. Pump 1 is wired to the core module through a RIB relay or equivalent. Option B- The TT on the boiler control is wired to the burner relay on the core module. Pump 1 is wired to the boiler control.

LambdaTronic Settings for System2.P001 Plumbing Schematic	
System Selection	Hydraulic System 2
Is any second Boiler installed?	Yes
Middle Storage Tank Sensor Installed	No
Standby boiler blocking off	No
Isolating valve installed	No
DHW Priority	Yes
Additional freely programmable differential control	No
Network pump installed	No
Sec. circ. Installed	No
Assigning Pumps and Sensors	
Storage tank top sensor	0.1
Storage tank bottom sensor	0.2
Storage tank circulator	0.1
Sensor for standby boiler	0.5
Which sensor is used for top DHW tank 1	0.3
Which pump is used for DHW tank 1	0.2
Boiler 2 Parameters (Under temperatures and service)	
Standby boiler start delay	10-15 m
Standby boiler start, if storage tank top temperature is below...	Assign temperature
Standby boiler minimum runtime	Rec. setting 10 m
Minimum temperature of standby boiler	Assign temperature
Temperature difference between standby boiler and storage tank	Rec. setting 10-20° C
Control standby boiler variably to the set-point	Yes
Which sensor is used is used for standby boiler	0.5
Which output is used for unloading follow-up boiler	Pump 1 (Option A)
Which second boiler is installed?	Choose Type

Buffer Tank Sizing (Based on 25-35 Liter/Kw)	
8Kw	60 Gallons
15Kw	120 Gallons
20Kw	150 Gallons
25Kw	200 Gallons
32Kw	250 Gallons
38Kw	300 Gallons
48Kw	380 Gallons
60Kw	475 Gallons



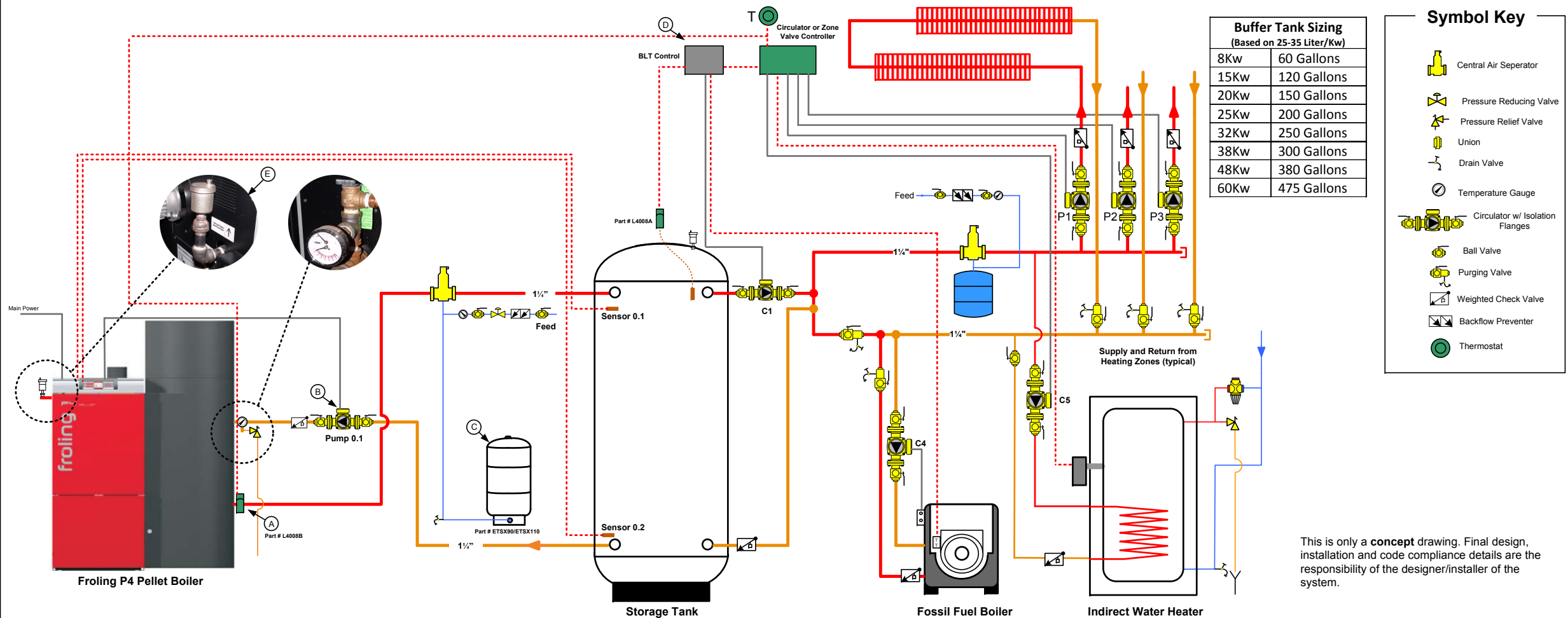
Symbol Key	
	Central Air Separator
	Pressure Reducing Valve
	Pressure Relief Valve
	Drain Valve
	Circulator w/ Isolation Flanges
	Ball Valve
	Purging Valve
	Weighted Check Valve
	Backflow Preventer

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BioHeatUSA 4 Britton Lane Lyme, NH 03768	BioHeatUSA Piping Layout Concept Diagram		
	Fröling P4 Pellet Boiler Plumbing Schematic For Use With Hydraulic System 1		
Drawn by: TSP	Date 12-17-2009	DWG NO System 1.P003	REV 2
Checked by:	SCALE N/A	SHEET	1 OF 1

System Notes	
A	Honeywell L4008B overheat aquastat set to 200° F. Connected to the largest heating circuit.
B	Boiler circulator is sized to boiler output rating and system requirements. Set minimum start speed. Refer to Section 4.4.4 in the Lambdatronic P3200 Operating Manual. The speed is set to 15% above minimum start speed. A variable or multi-speed pump should not be used.
C	Expansion tank sizing 1-2 Tanks use an Amtrol SX90V or equivalent 3 Tanks use an Amtrol SX110V or equivalent
D	BioHeatUSA Switch Control Part # BLTCONTROL
E	It is important to install the included auto-vent to prevent flashing in the boiler from trapped air.

Lambdatronic Settings for System 1.P003 Plumbing Schematic	
System Selection	Hydraulic System 1
Middle Storage Tank Sensor Installed	No
DHW Priority	No
Additional freely programmable differential control	No
Sec. circ. Installed	No
Assigning Pumps and Sensors	
Storage tank top sensor	0.1
Storage tank bottom sensor	0.2
Storage tank circulator	0.1



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BioHeatUSA 4 Britton Lane Lyme, NH 03768	BioHeatUSA Piping Layout Concept Diagram		
	Fröling P4 Pellet Boiler Plumbing Schematic For Use With Hydraulic System 1		
Drawn by: TSP	Date 12-17-2009	DWG NO System 1.P002	REV 3
Checked by:	SCALE N/A	SHEET 1 OF 1	

System Notes	
A	Honeywell L4008B overheat aquastat set to 200° F. Connected to the largest heating circuit.
B	Boiler circulator is sized to boiler output rating and system requirements. Set minimum start speed. Refer to Section 4.4.4 in the Lambdatronic P3200 Operating Manual. The speed is set to 15% above minimum start speed. A variable or multi-speed pump should not be used.
C	Expansion tank sizing 1-2 Tanks use an Amtrol SX90V or equivalent 3 Tanks use an Amtrol SX110V or equivalent
D	BioHeatUSA Switch Control Part # BLTCONTROL
E	Check valve should be a swing check and not a weighted check valve to prevent ghost flow to heating circuits.
F	It is important to install the included auto-vent to prevent flashing in the boiler from trapped air.

Lambdatronic Settings for System 1.P002 Plumbing Schematic	
System Selection	Hydraulic System 1
Middle Storage Tank Sensor Installed	No
DHW Priority	No
Additional freely programmable differential control	No
Sec. circ. Installed	No
Assigning Pumps and Sensors	
Storage tank top sensor	0.1
Storage tank bottom sensor	0.2
Storage tank circulator	0.1

