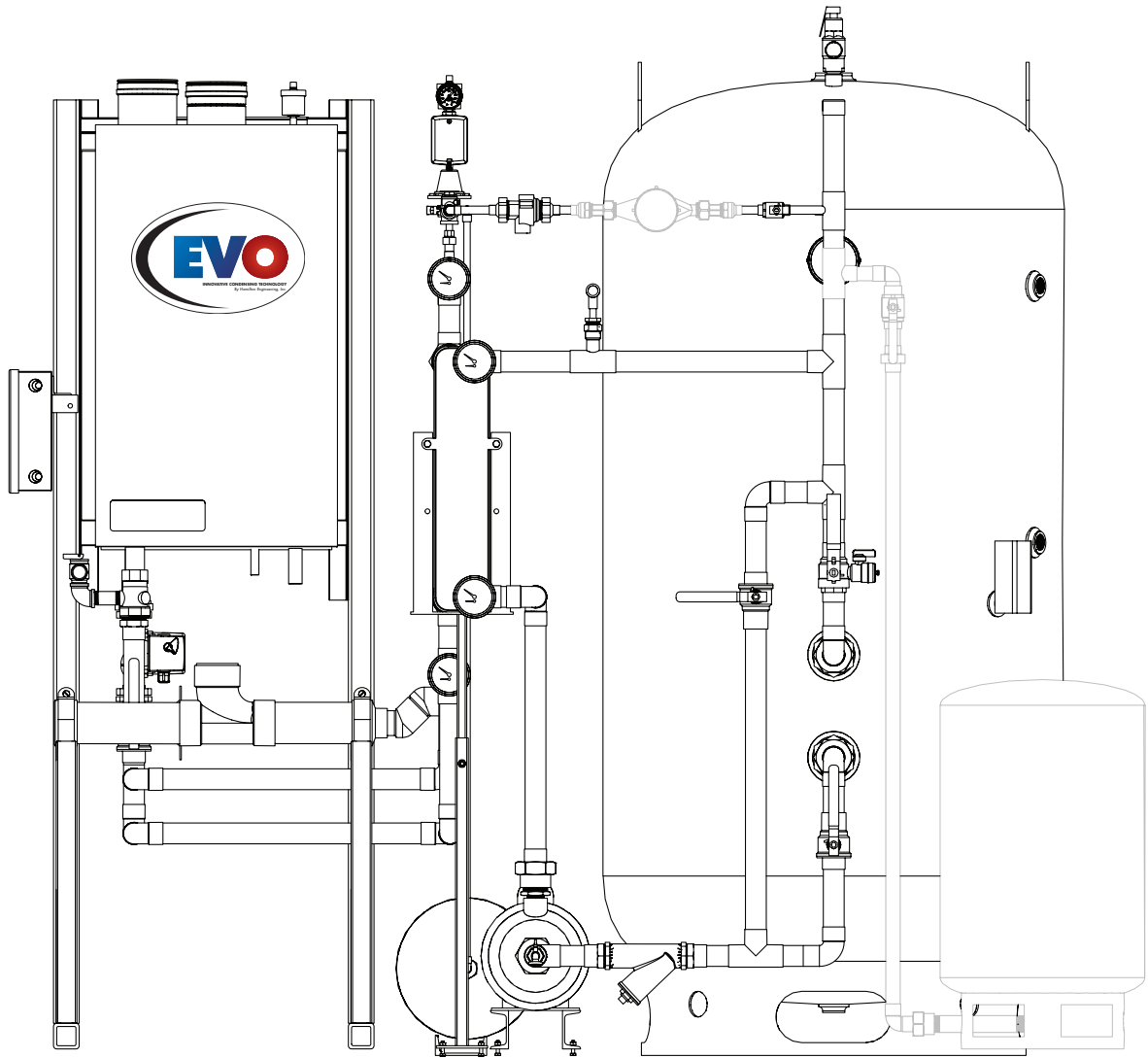


ADDENDUM TO LIT91127U

EVO 79 - 599 CONFIGURED IN ODD WATER SYSTEM™ DESIGN



WARNING

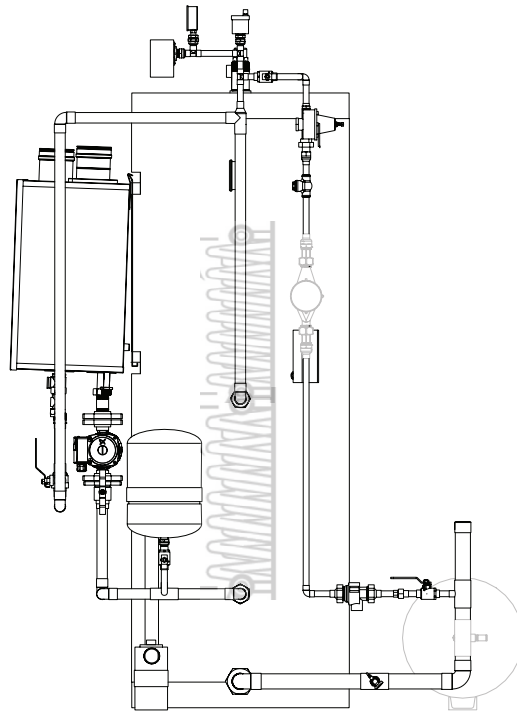
These appliances MUST be installed by a properly licensed individual in the City and State which the unit is being installed. All start up adjustments and subsequent service work must be done by a similarly licensed contractor or a factory trained service individual. Failure to comply could result in loss of warranty and or severe personal injury, death and or substantial property damage. ***These instructions are required to be kept with the appliance on the left side, in the pocket provided.***

All safety precautions referenced to in LIT91127U (EVO 79 - 599 Universal Installation and Operating Manual) should be STRICTLY adhered to!

There are two basic system configurations. Please determine which style you have and refer to the specific instructions where indicated. Please contact Hamilton Engineering, Inc. at 800.968.5530 if you have any questions regarding system configurations.

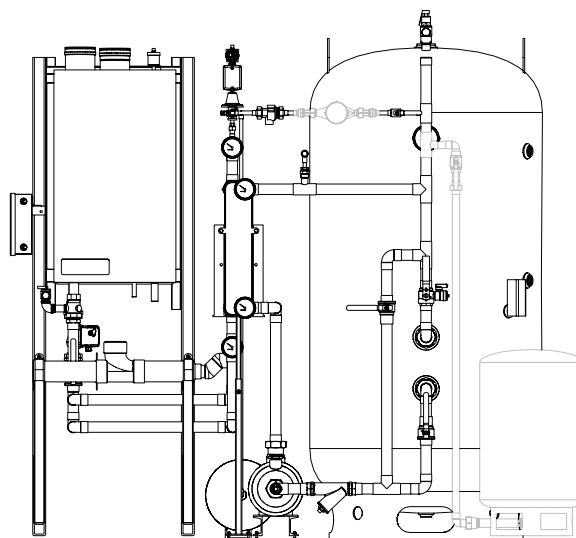
(FIGURE 1) SYSTEM DESIGN A

This system design employs a storage tank with integral heating coils and will require only one circulating pump.



(FIGURE 2) SYSTEM DESIGN B

This system design employs an external heat exchanger and requires one circulating pump for the closed loop (boiler) side and a bronze pump for the fresh water (storage tank) side.



System requirements beyond what is listed here can be found in LIT91127U (EVO 79-599 Universal Installation and Operating Manual):

Electrical:

System B: 208 – 240 volt amperage per system rating plate, 208-230 volt per stainless steel pump rating plate. Wiring diagram is located on page 9 of this Manual.

Service Clearances:

System B: Provide adequate access to heat exchanger for periodic acid cleaning and or removal for additional service as required

System operation:

System A – The L 4006A storage tank temperature control shall be set at the desired storage tank water temperature (per original design), on approximately a 5°F drop from desired setpoint, the SPST switch in the L 4006A will make, closing the heat enable circuit on the heating boiler. After receiving this signal, the boiler control will start the cast iron pump and initiate a firing sequence and provide the required closed loop water temperature (generally 150°F – 180°F; see system design specifications) as set by user on the red wheel located next to the temperature display on the front of the boiler, to provide the designed recovery rate through the tank heat exchanger. If there is more than one boiler providing the required BTU capacity, the setting and control wiring shall be done on the Lead labeled boiler only.

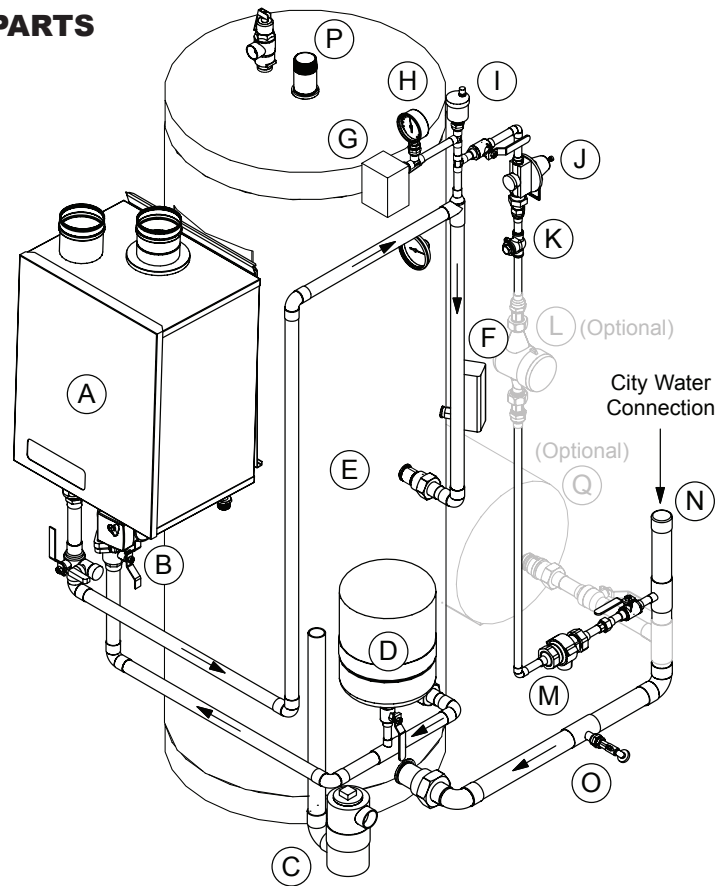
System B - The L 4006G storage tank temperature control shall be set at the desired storage tank water temperature (per original design), on approximately a 5°F drop from setpoint, the control will close both internal SPST switches, simultaneously starting the bronze circulating pump and closing the heat enable circuit on the heating boiler. After receiving this signal, the boiler control will start the cast iron pump and initiate a firing sequence and provide the required closed loop water temperature (generally 150°F – 180°F; see system design specifications) as set by user on the red wheel located next to the temperature display on the front of the boiler, to provide the designed recovery rate through the external heat exchanger. If there is more than one boiler providing the required BTU capacity, the setting and control wiring shall be done on the Lead labeled boiler only.

Filling Instructions:

The Odd Water system comes equipped with a pressure reducing fill station for the boiler (closed loop) side of the system, that is pre-piped to EVO system city water connection. Included in this package are a low pressure switch, pressure gauge, air vent, pressure reducing fill valve, expansion tank, check valve, backflow preventer, isolation valves, optional water meter, and a union for easy disassembly. Once the city water connection is made, open the air vent in the fill package and on the top of boiler(s) (models 299-599 ONLY). Once the air vent(s) is open, turn on the city water supply and open the (3) isolation valves, each located on the expansion tank, near the city water connection, and after the pressure reducing valve. When air is no longer bleeding out of the air vent(s), turn the boiler(s) on, which will cycle the pump(s), purging any air remaining in the system.

NOTE: There MUST be a city water supply connected that is regulated down to 12 PSI (via the PRV supplied) for the system to work properly!

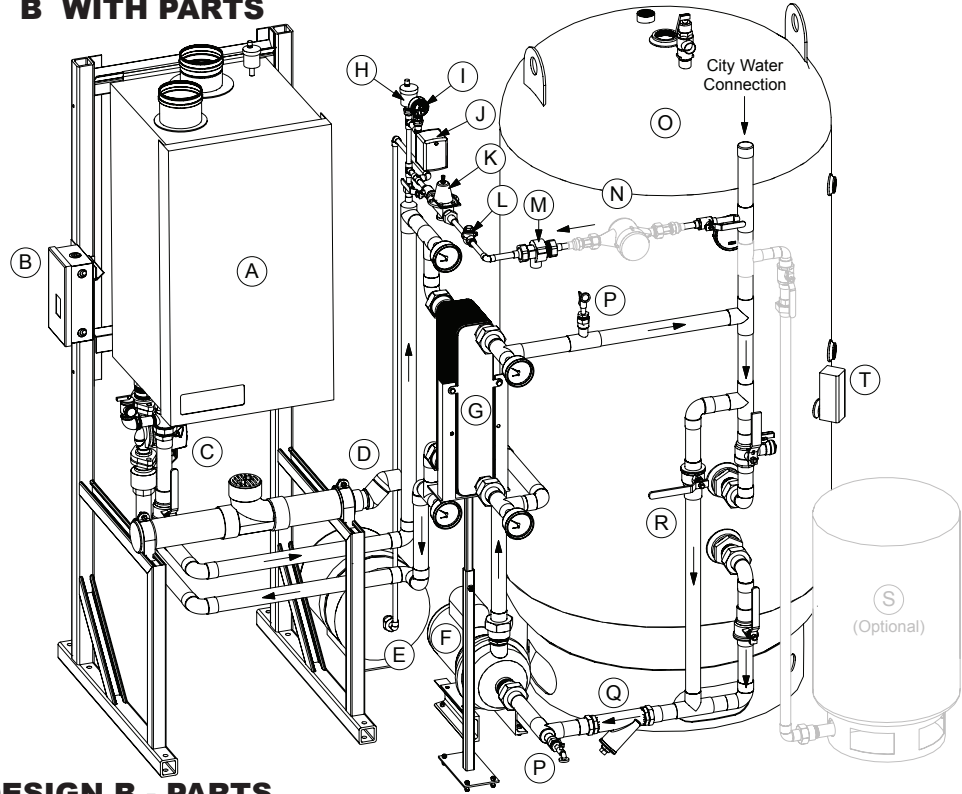
**(FIGURE 3)
SYSTEM DESIGN A WITH PARTS**



(TABLE 1) SYSTEM DESIGN A - PARTS

LETTER ON DIAGRAM	DESCRIPTION
A	EVO unit
B	Cast Boiler Side Pump
C	Condensate Neutralizer
D	Hydronic Expansion Tank - 12 PSI air charge
E	Storage Tank
F	L4006A Temperature Control
G	Low Pressure Switch
H	Pressure Gauge
I	Air Vent
J	Fill Valve
K	Check Valve
L	Water Meter (optional)
M	Backflow Preventer
N	Hot Water Connection
O	Drain Valves
P	Cold Water Connection
Q	Domestic Expansion Tank (optional)

**(FIGURE 4)
SYSTEM DESIGN B WITH PARTS**



(TABLE 2) SYSTEM DESIGN B - PARTS

LETTER ON DIAGRAM	DESCRIPTION
A	EVO unit
B	Electrical Disconnect
C	Cast Boiler Side Pump
D	Condensate Neutralizer
E	Hydronic Expansion Tank - 12 PSI air charge
F	Stainless Steel Domestic Hot Water Pump
G	Brazed Plate Heat Exchanger
H	Air Vent
I	Pressure Gauge
J	Low Pressure Switch
K	Fill Valve
L	Check Valve
M	Backflow Preventer
N	Water Meter (optional)
O	Storage Tank
P	External Heat Exchanger Cleaning and Draining Ports
Q	Brass Wye Strainer
R	Normally Closed Cleaning Bypass Valve
S	Domestic Expansion Tank (optional)
T	L4006G Temperature Control

Both system designs are completely factory assembled and tested prior to shipping, following assembly at the installation site, however, filling the system requires that proper practices be followed:

The boiler is designed to operate in a closed-loop system. As such, the system should be tight and not require make-up water. A high percentage of untreated make-up water may cause premature failure due to buildup of scale; such failure is not covered by warranty.

Scale can also reduce efficiency. For example, a scale thickness of 1/16" will result in a 12.5% loss of efficiency.

NOTE: Minimum system fill pressure is 12 PSI!

Water pH

The pH of the hydronic system fluid must be between 6.5 and 7.5, for **untreated water only**. A periodic check of the system pH should be conducted to ensure these pH levels are maintained.

IMPORTANT!

Glycol and other additives must be approved by the chemical manufacturer for use in 316L stainless steel boilers as well as the circulating pumps used with the boilers and heating system, and you must maintain the required pH levels as recommended by the glycol or treatment chemical manufacturer to prevent damaging the boiler and or pumps.

If the water quality exceeds our known safe thresholds, *we wave the red flag of caution:*

- Water hardness can be no more than 12 grains (205 ppm or mg/l)
- TDS (Total Dissolved Solids) can be no more than 450 ppm (mg/l)
- PH - below 6.5 or above 7.5

For total combined hardness over 15 grains (250 ppm or mg/l) or longer pipe lengths, contact Hamilton Engineering for correct pump sizing. Combined, the hardness and TDS can be no more than 450 ppm. *Our internal term for this is the TCH (Total Combined Hardness).*

The amount of oils, fats, grease, and other organic matter should be limited to 10 ppm. Consult your water conditioning or chemical treatment supplier for analysis and recommendations.

Flushing the System

Before filling the boiler, flush the system to remove any debris from construction or maintenance. Clean and flush old piping thoroughly before installing the boiler.

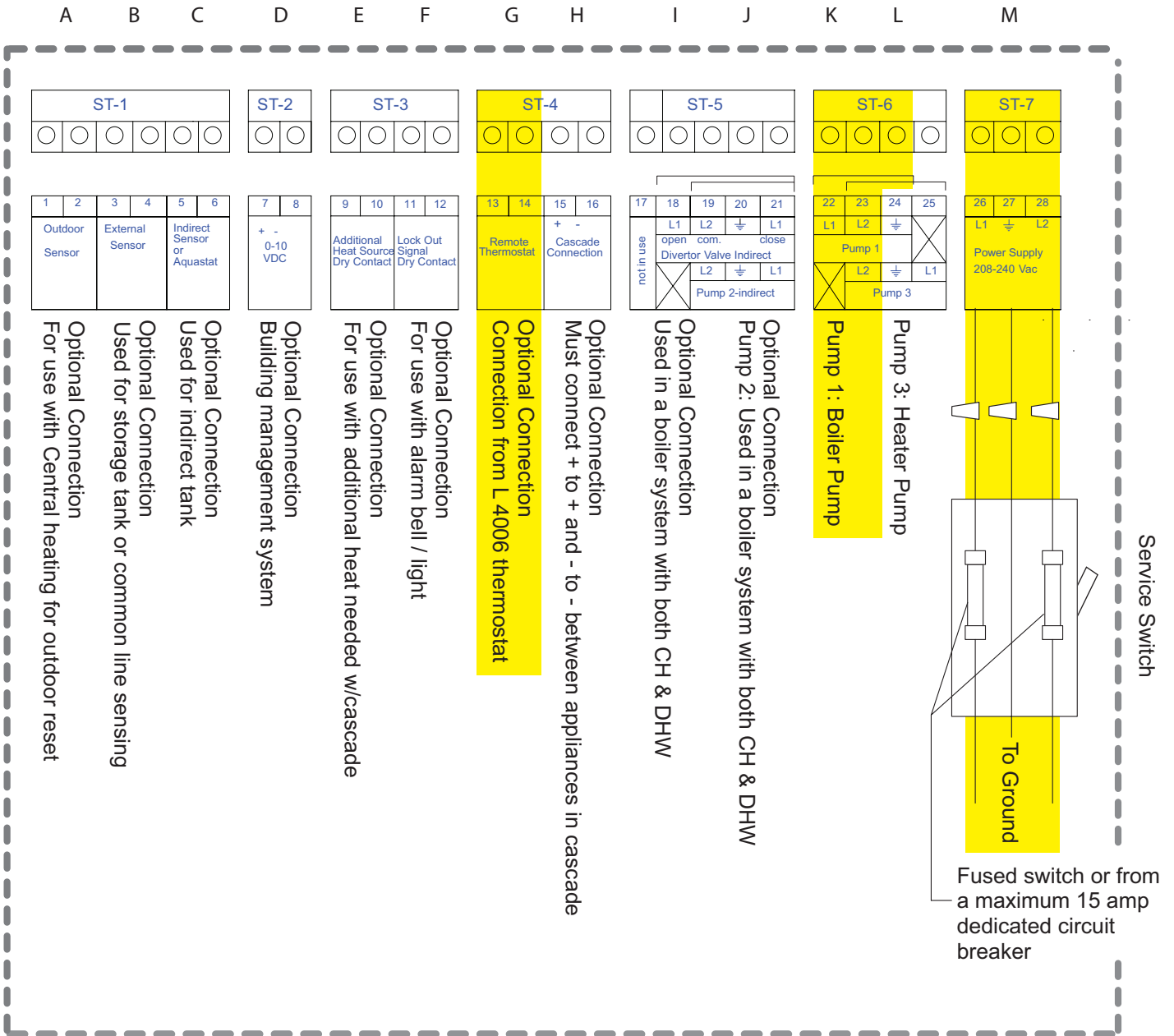
IMPORTANT!

Under no circumstances should the hydronic system be flushed while the boiler is attached to the system since the debris or corrosion products could accumulate in the boiler and plug the boiler heat exchanger.

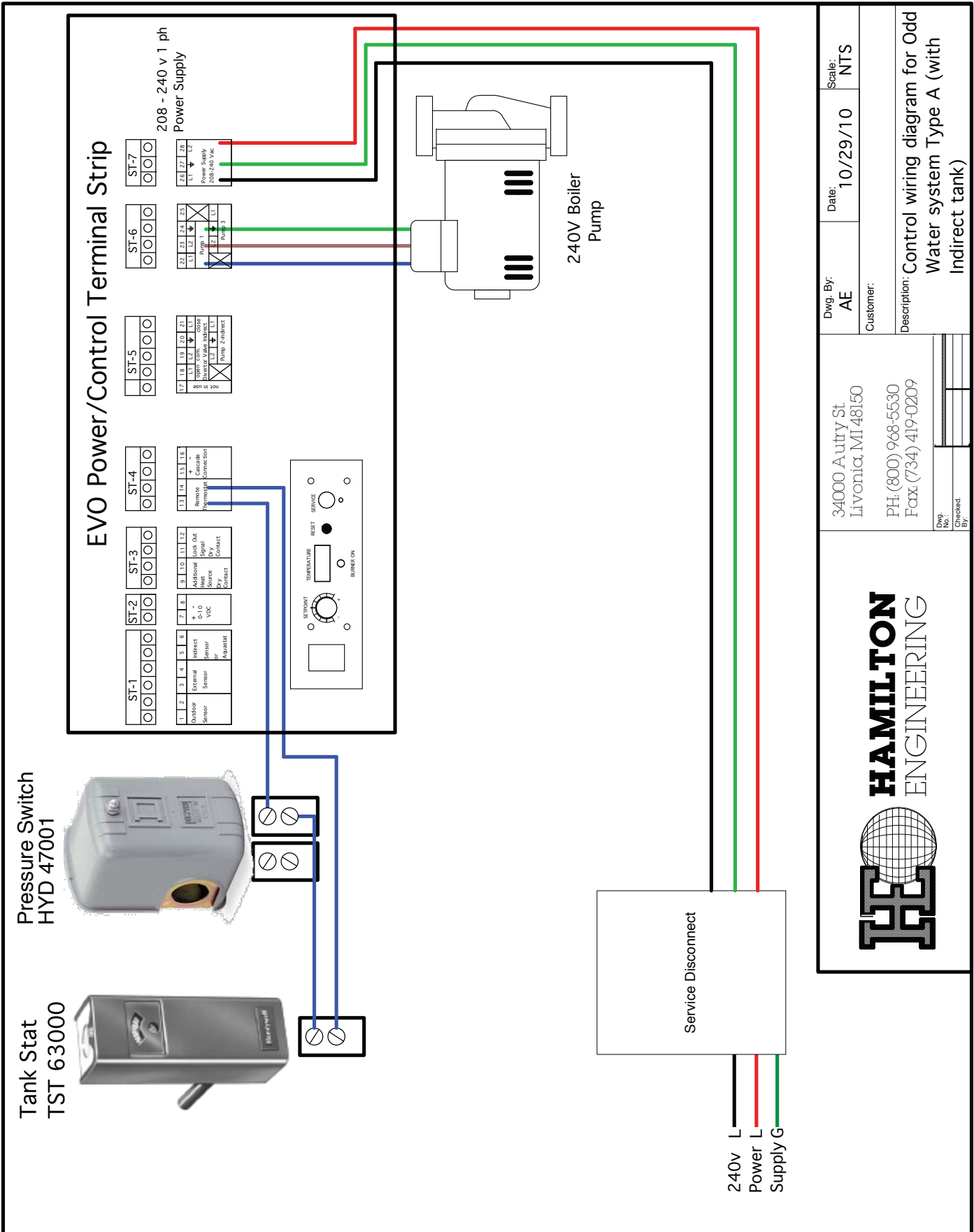
IMPORTANT!

If the piping system attached to this unit will be chemically cleaned, the boiler must be disconnected from the system and a bypass installed so that the chemical cleaning solution does not circulate through the boiler. Following chemical cleaning, the system should be thoroughly rinsed to remove cleaning agents prior to reconnecting the boiler to the system.

LEAD OR SINGLE BOILER ONLY - SYSTEMS A & B



LEAD OR SINGLE BOILER ONLY - SYSTEM A



Dwg. By: AE

Customer: 34000 Autry St, Livonia, MI 48150

PH: (800) 968-5530

Fax: (734) 419-0209

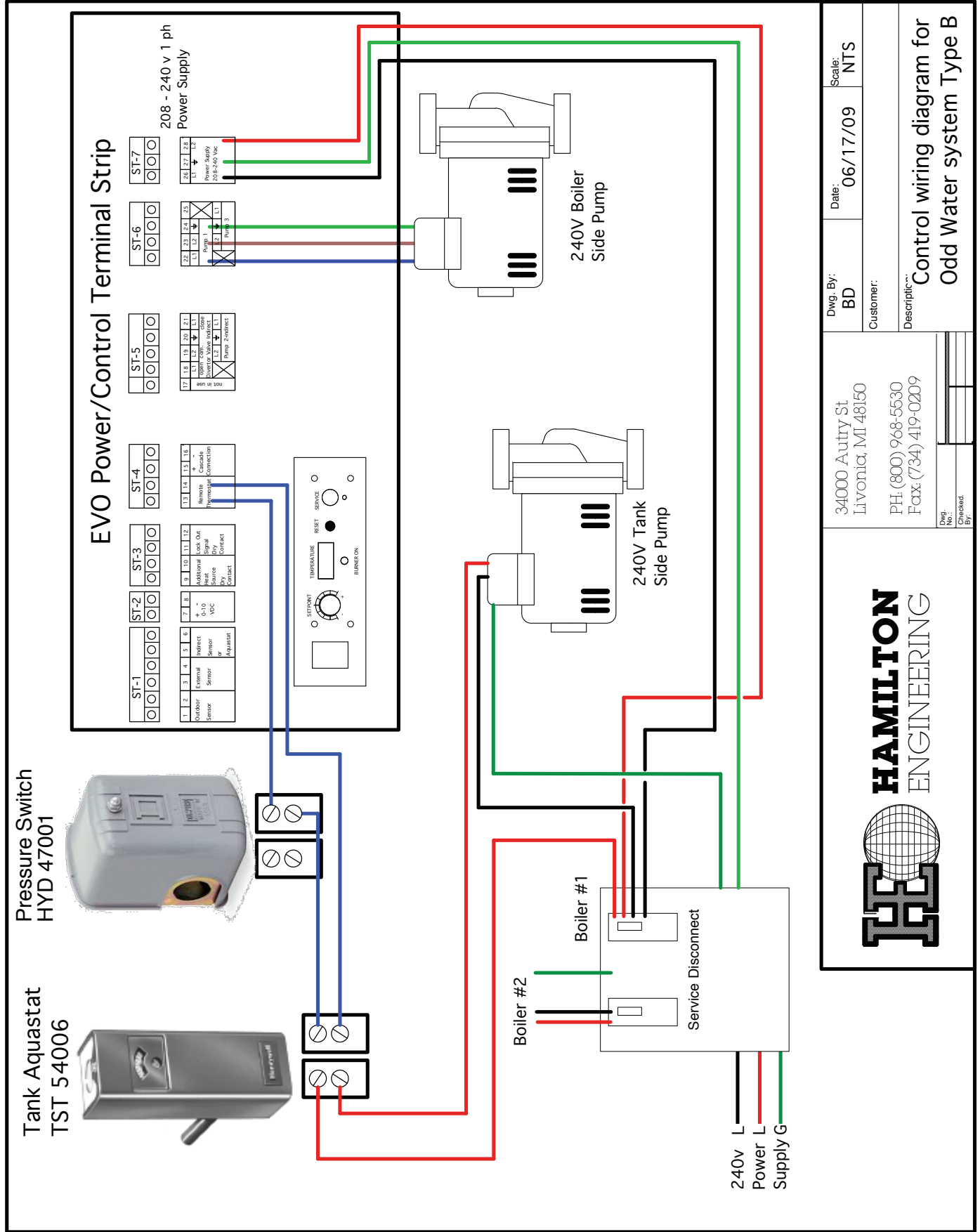
Date: 10/29/10

Scale: NTS

Description: Control wiring diagram for Odd Water system Type A (with Indirect tank)

HAMILTON
ENGINEERING

LEAD OR SINGLE BOILER ONLY - SYSTEM B



Dwg. By: BD	Date: 06/17/09	Scale: NTS
Customer:		
Description: Control wiring diagram for Odd Water system Type B		

34000 Autry St
Livonia, MI 48150
PH: (800) 968-5530
Fax: (734) 419-0209

