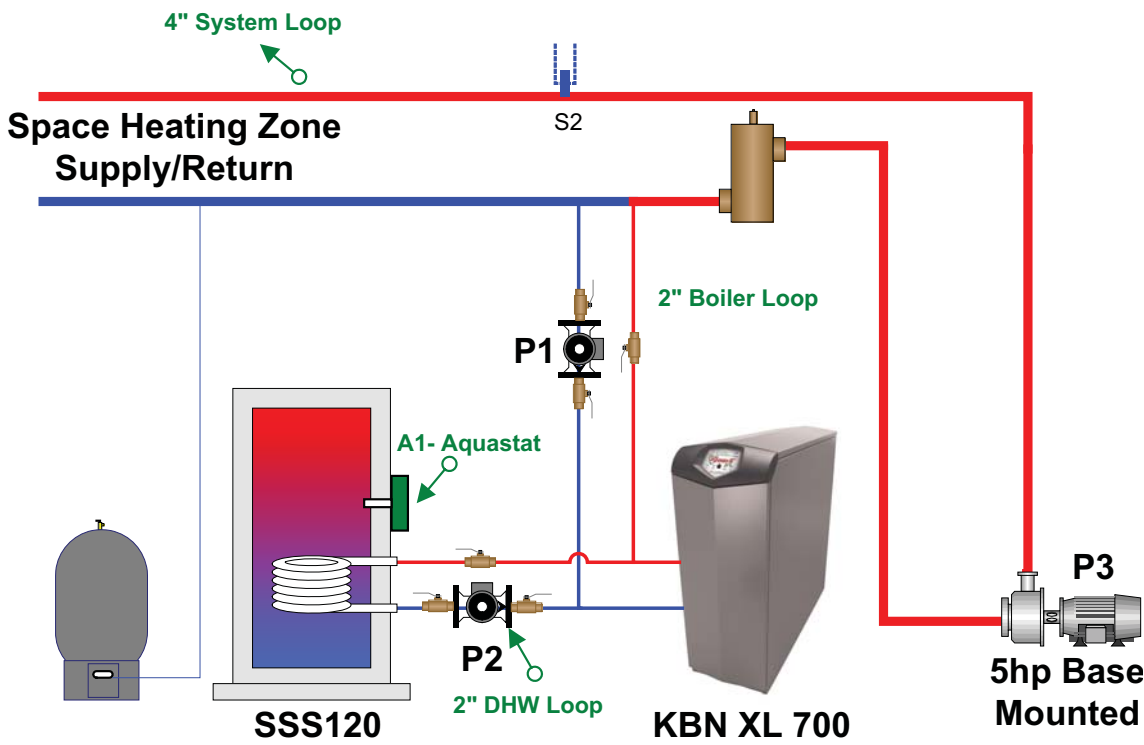


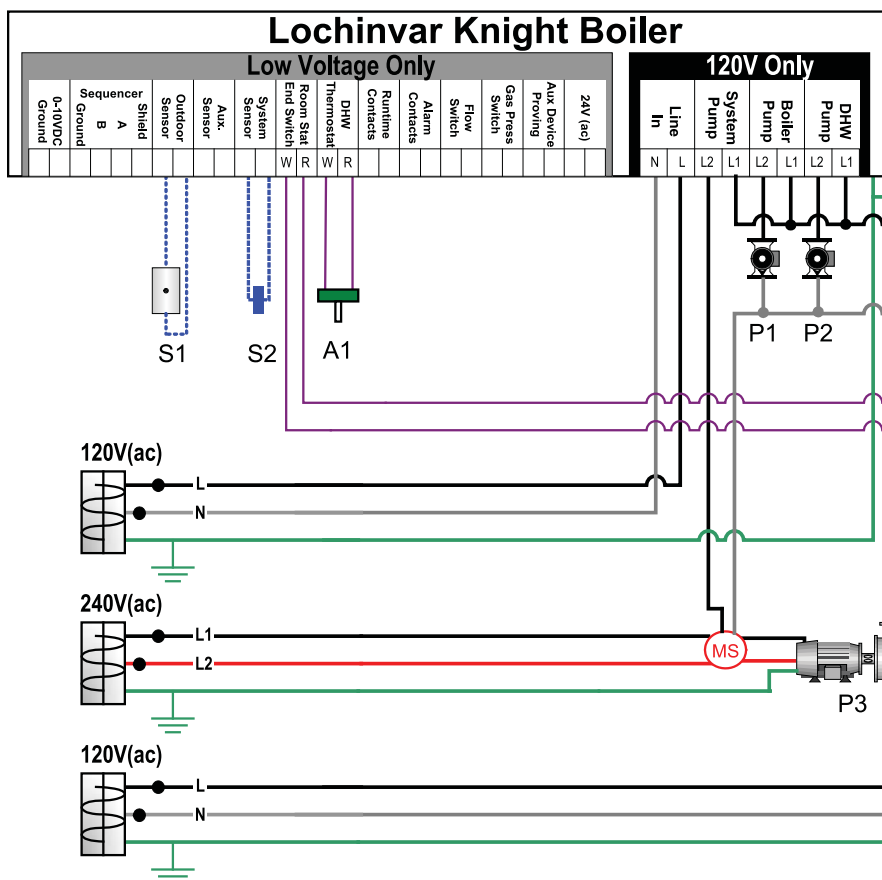
December's Correct Diagnosis



Hydronic Heating Sleuth's Challenge



KBN XL 700



Legend

S1 = Outdoor Sensor
S2 = System Sensor
A1 = DHW Aquastat
B1 = Boiler #1

P1 = Boiler #1 Pump
P2 = DHW Pump
P3 = System Pump

(MS) = Motor Starter or VFD

— = 120 V (AC)
— = Neutral
— = Ground
- - - = Sensor Wire
— = 24 V (AC)

Answer

1. Although the KBN and KBN XL terminal boards look the same, the XL series pump terminals are all dry contacts. This is a relay that you must bring a separate electrical circuit to. These larger boilers require larger pump and for that reason, you can switch power up to 30 amps.
2. The Knight XL boiler can still be used as a system control center even though the system circulator is a 5hp pump, exceeding the 3hp recommendation in the IOM. The Knight Boiler can use the system pump contacts to actuate a motor starter to run a larger system pump with a larger than 30amp maximum.
3. There was no air-separator in the flawed drawing and when air can not be evacuated it will lead to noisy operation of the pumps as they can cavitate, or the air can get partially trapped in the boilers heat-exchanger and cause a great deal of noise

