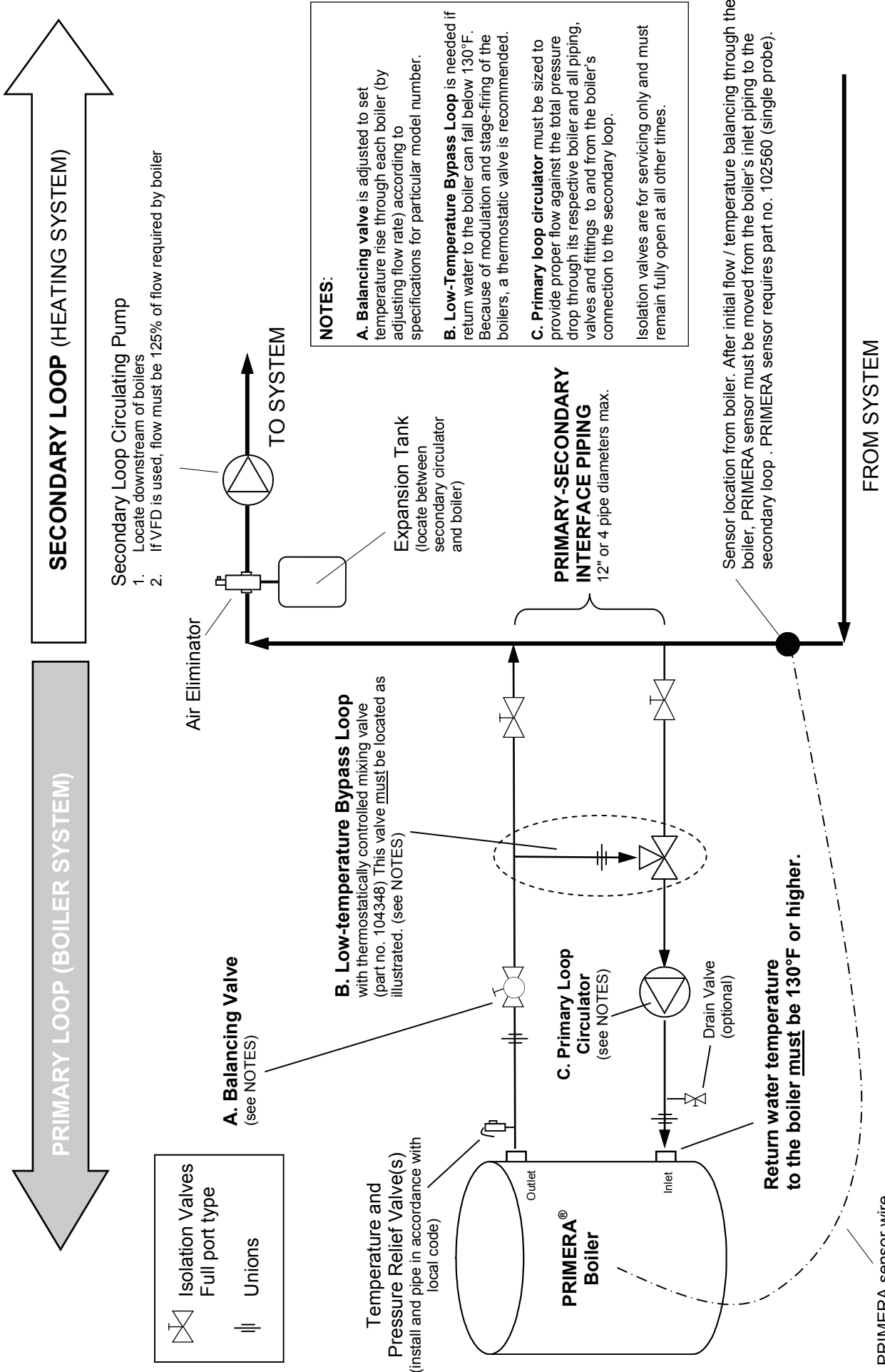


**SINGLE BOILER PIPING SCHEMATIC - REQUIRES PRIMARY/SECONDARY PIPING**  
**For proper boiler operation, installer should follow the concepts presented in this schematic.**



Isolation Valves  
Full port type

Unions

Temperature and Pressure Relief Valve(s)  
(install and pipe in accordance with local code)

**A. Balancing Valve**  
(see NOTES)

**B. Low-temperature Bypass Loop**  
with thermostatically controlled mixing valve (part no. 104348) This valve must be located as illustrated. (see NOTES)

**C. Primary Loop Circulator**  
(see NOTES)

**Return water temperature to the boiler must be 130°F or higher.**

Secondary Loop Circulating Pump

1. Locate downstream of boilers
2. If VFD is used, flow must be 125% of flow required by boiler

Air Eliminator

Expansion Tank  
(locate between secondary circulator and boiler)

TO SYSTEM

**PRIMARY-SECONDARY INTERFACE PIPING**  
12" or 4 pipe diameters max.

Sensor location from boiler. After initial flow / temperature balancing through the boiler, PRIMERA sensor must be moved from the boiler's inlet piping to the secondary loop . PRIMERA sensor requires part no. 102560 (single probe).

FROM SYSTEM

**NOTES:**

- A. Balancing valve** is adjusted to set temperature rise through each boiler (by adjusting flow rate) according to specifications for particular model number.
  - B. Low-Temperature Bypass Loop** is needed if return water to the boiler can fall below 130°F. Because of modulation and stage-firing of the boilers, a thermostatic valve is recommended.
  - C. Primary loop circulator** must be sized to provide proper flow against the total pressure drop through its respective boiler and all piping, valves and fittings to and from the boiler's connection to the secondary loop.
- Isolation valves are for servicing only and must remain fully open at all other times.