Disclaimer:
These piping diagrams are an example of possible configurations which may not work in all applications. Local codes and authorities should be always be verified with a qualified engineer’s consultation on all installation details including piping schematics. Please consult Patterson-Kelley, LLC Boiler & Water-Heater Owner’s Manuals for correct operational standards for all P-K boilers and water-heaters. Patterson-Kelley LLC cannot, and will not, be held liable for any lack of due diligence of any party involved in the installation of its products.

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PK Condensing Boiler

Condensate

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Primary loop diagram

Notes:
1. Minimum pipe size to boiler equal to boiler supply/return connection size.
2. Return/supply header piping to be at least one pipe size larger than piping to equipment
3. Bypass loop recommended on primary-only systems to decrease heat exchanger wear during boiler off times
4. 2 way control valves necessary on primary and bypass loops, can be operated by boiler controls
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Primary loop diagram

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Header Temperature and OA Reset Schedule to Control staging

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From System

To System

Notes:
1. Minimum pipe size to boiler equal to boiler supply/return connection size.
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Primary loop diagram

Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset
Schedule to Control staging

Patterson-Kelley 1200 Thermific
Patterson-Kelley 1200 Thermific

House Pumps

System fill
Flow Meter

**Primary loop diagram**

Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset
Schedule to Control staging

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**From System**

**To System**

**House Pumps**
Primary loop diagram

- From System
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3. Bypass loop recommended on primary-only systems to decrease heat exchanger wear during boiler off times.
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Primary HYDRONIC SYSTEM PIPING®
Flow Meter

Primary/Secondary loop diagram

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From System

Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset
Schedule to Control staging

PK Condensing Boiler

Condensate

Notes:
1. Header piping should be one pipe size larger than
direct boiler piping
2. Primary Header should be 4" piping
3. Distance between 1st and 2nd tee should be no
more than 4 pipe diameters

System fill

House Pumps

To System
Primary/Secondary loop diagram

Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset
Schedule to Control staging

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1. Header piping should be one pipe size larger than direct boiler piping
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PK Condensing Boiler

System fill

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Primary/Secondary loop diagram

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Primary/Secondary loop diagram

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Schedule to Control staging

Notes:
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Three Tee Piping allows for pre-heating from Condensing Boilers to Non-condensing Boilers

Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset Schedule to Control staging

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Boiler Temperature Sensors to control Boiler Firing Rate
Header Temperature and OA Reset Schedule to Control Staging

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