Rinnai

Technical Bulletin 157 - Hydraulic Separation Required for Rinnai Boilers

Purpose: To announce that hydraulic separation between the boiler and heating system is required for the I-Series and M-Series Condensing Boilers (models shown in tables below) except as noted below.

I-Series Models	
Combi:	i060C, i090C, i120C
Solo:	i060S, i090S, i120S, i150S

M-Series Models	
Combi:	M060C, M090C, M120C, M160C
Solo:	M060S, M090S, M120S, M160S

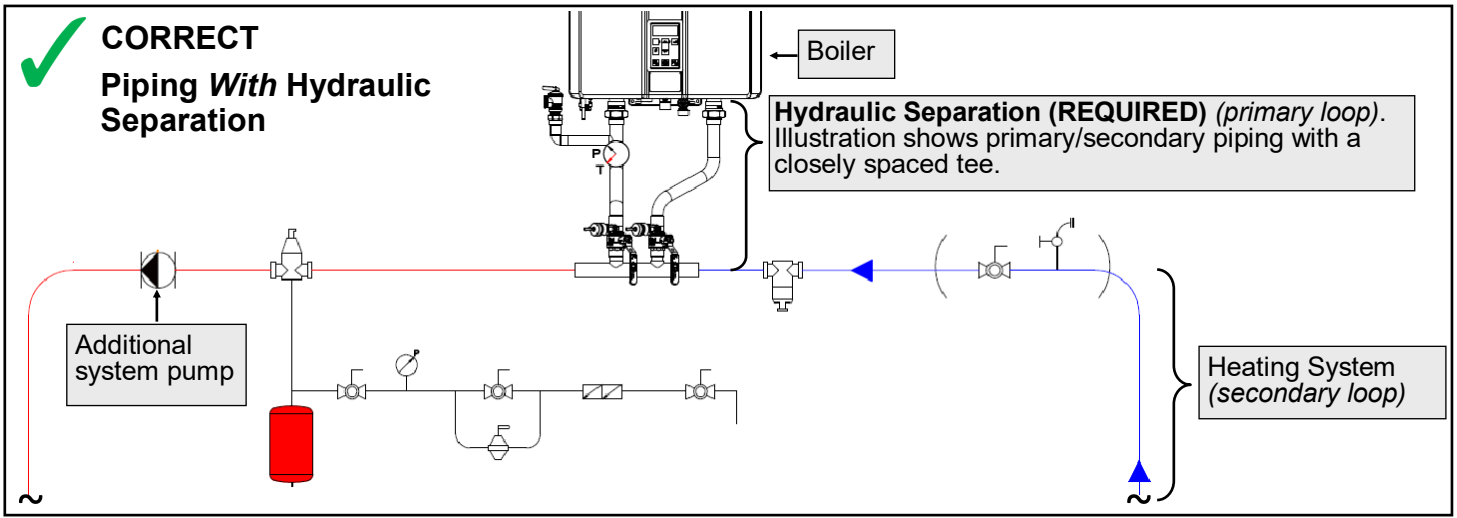
About Hydraulic Separation: Hydraulic separation uses primary/secondary piping to separate the boiler from the heating system. Primary/secondary piping creates two connected loops: a primary loop for the boiler and a secondary loop for the heating system. The boiler loop is connected to the heating system by closely spaced tees or a low loss header (illustrations on next page). **Important: Additional pump(s) are required when using hydraulic separation.** Directly connecting a boiler to a hydronic heating system (without using hydraulic separation) may cause high pressure losses and low flow conditions within the heating system, thus limiting the performance of the boiler and heating system. Hydraulic separation using primary/secondary piping helps minimize the potential of operational errors while increasing flow and improving system and boiler performance.

NOTE

The images below are not complete piping diagrams; they do not show all valves or piping components. The images are intended to show piping with and without hydraulic separation. Refer to the Rinnai Boiler Installation and Operation Manual for complete piping diagrams.

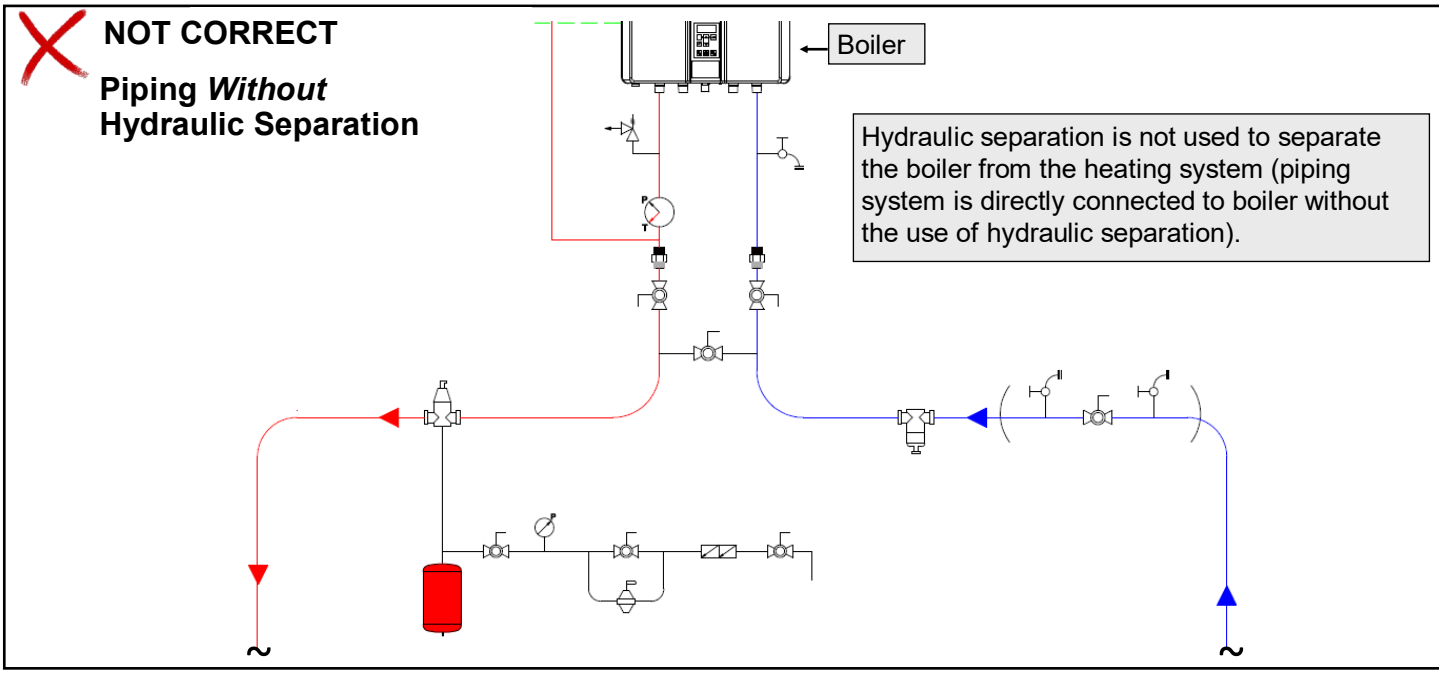
CORRECT

Piping *With* Hydraulic Separation



NOT CORRECT

Piping *Without* Hydraulic Separation



Additional information on next page

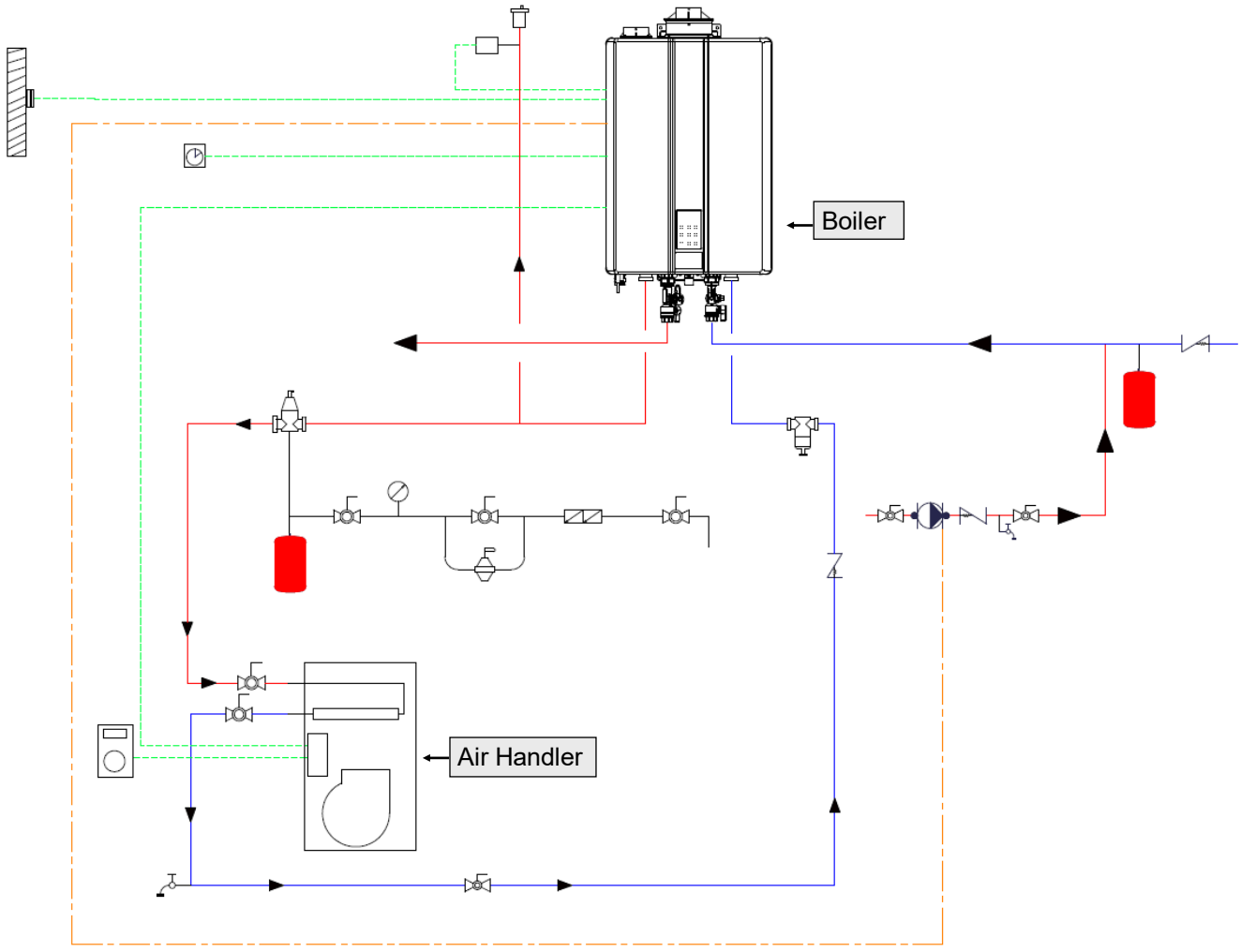
NOTE

- When Rinnai I-Series boilers are in use with Rinnai air handlers, please refer to the Rinnai air handler Installation and Operation Manual for installation and performance details.
- When an alternate air handler is used with a Rinnai I-Series boiler with no additional heat emitters or an indirect tank:
  - It is not required to utilize primary/secondary piping.
  - A minimum of 3 GPM (11 L/min) flow is needed for proper operation of the system.

Air Handler Applications Only

Piping *Without* Hydraulic Separation

Hydraulic Separation may not be required when an I-Series boiler is used with an air handler. See the Rinnai Hydronic Air Handler Installation and Operation Manual for installation and performance details.

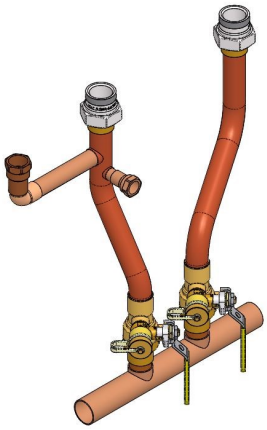


Additional information on next page

Hydraulic Separator Options

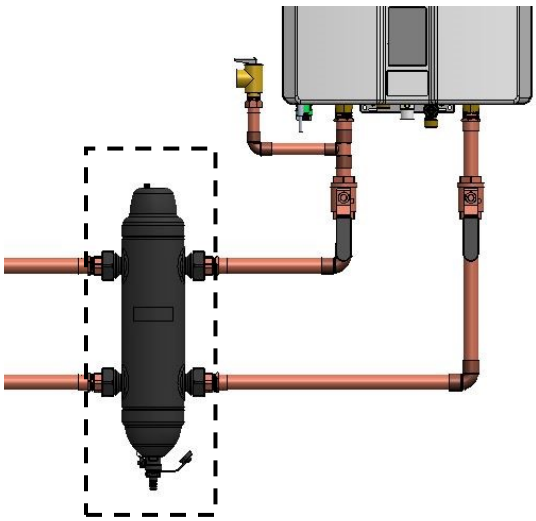
1 Primary-Secondary Heating Kit

Designed specifically for Rinnai I-Series and M-Series boilers.



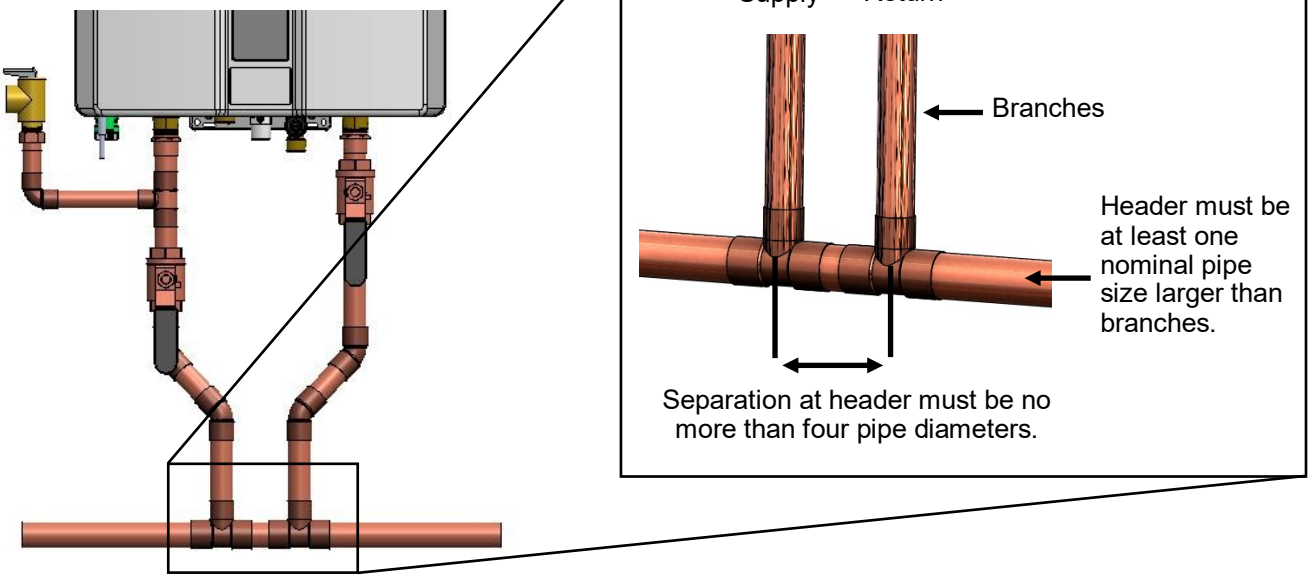
Primary-Secondary Heating Kit Description	Part #
I-Series Boiler (Combi Models)	807000212
I-Series Boiler (Heat-Only Models)	807000213
M-Series Boiler (Combi and Heat-Only Models)	803000023

2 Low Loss Header (Field-Supplied)



3 Closely Spaced Tee (Field-Supplied)

Assembled with field components.



Above illustrations are examples only

Rinnai America Corporation • 103 International Drive, Peachtree City, GA 30269
Toll-Free: 1-800-621-9419 • Phone: 678-829-1700 • www.rinnai.us