Webstone
VALVE INNOVATION

HYDRO-CORE™

Thank you for choosing Hydro-Core.

This valve kit was designed to facilitate installation and regular maintenance of your boiler. It was not designed for installations exposed to subfreezing conditions. Drain valves should remain closed during normal operation. Do not rely on the drain cap to stop the water from draining. When draining, always remove drain caps slowly to ensure that no pressure exists.

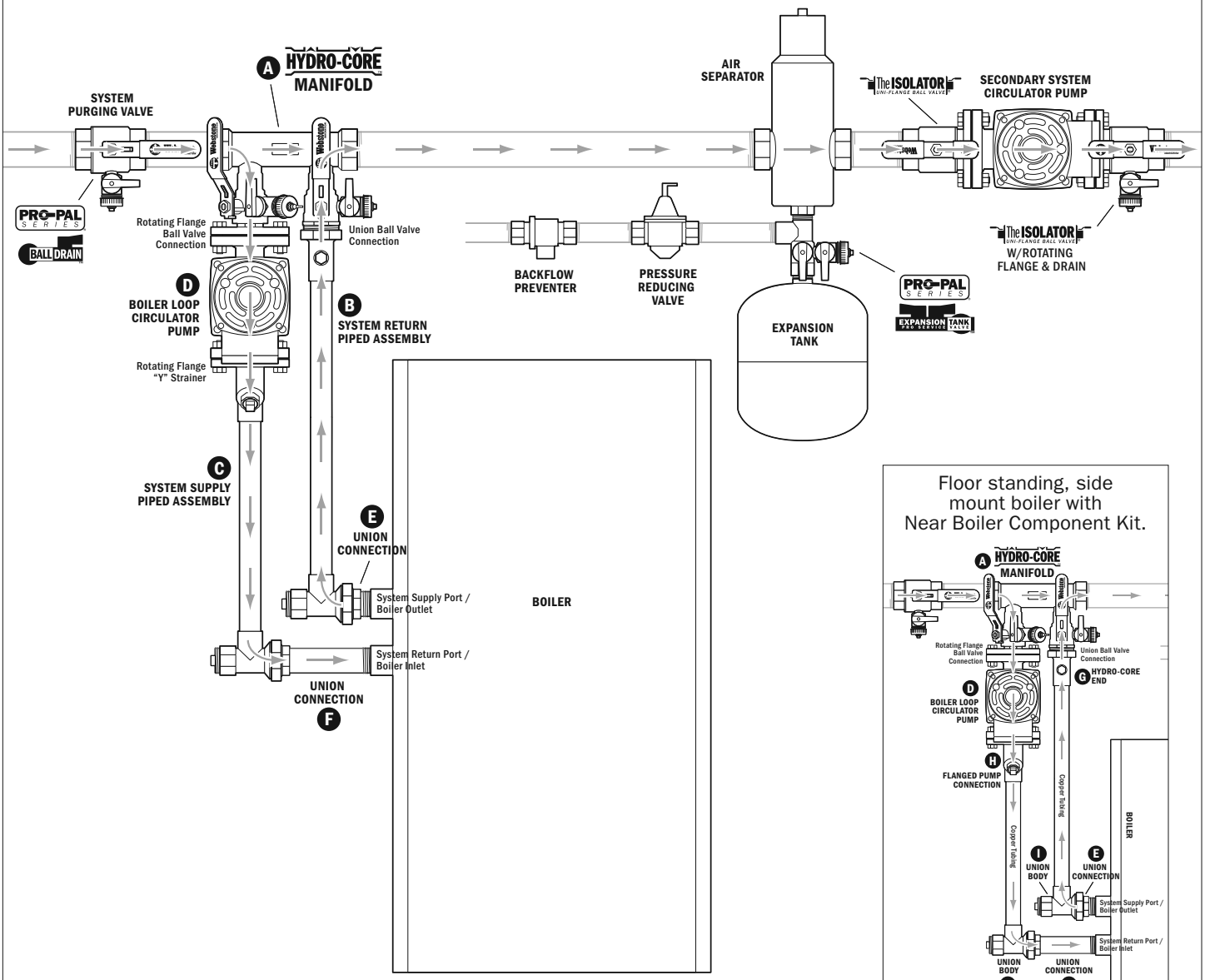
IMPORTANT: Follow all federal/national, state and local codes when installing or performing work on systems. All parts are covered by a lifetime warranty against manufacturing defects provided they are installed by a licensed plumber and operated under normal working conditions. Disassembling parts other than the unions, strainer and handle will void this warranty. If you have any questions or comments, please contact us at (800) 225-9529 or visit us on the web - www.webstonevalves.com.

INSTALLATION

SERVICING

Typical System Overview

Floor standing, side mount boiler with Complete Near Boiler Piping Kit.



Floor standing, side mount boiler with Near Boiler Component Kit.

Near Boiler Component Kit Installations

Available for select boiler models only.

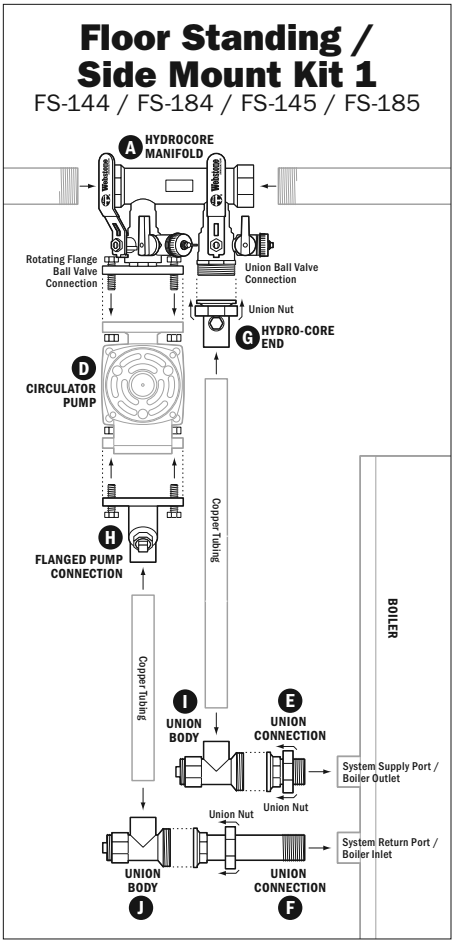
Requirements

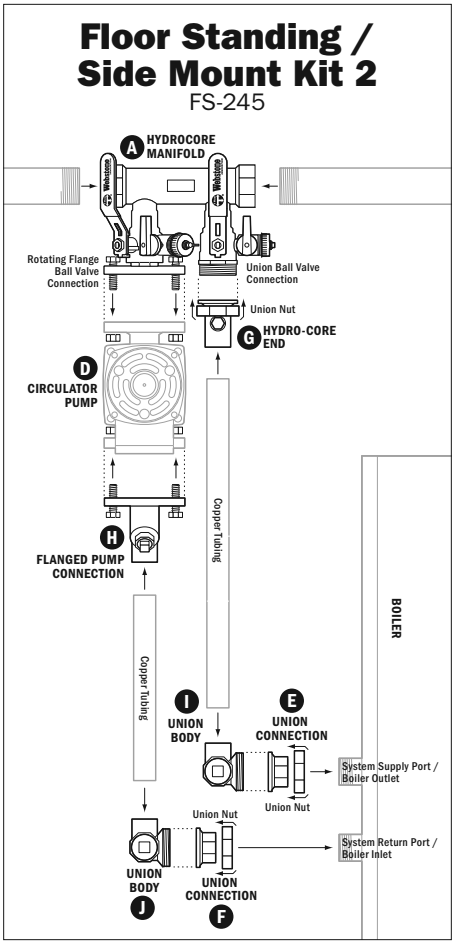
- Webstone Ⓐ Hydro-Core™ Manifold
- Webstone Near Boiler Component Kit, suitable to your particular boiler
- Ⓓ Circulator Pump *(sold separately—see boiler manufacturer for suitable models)*

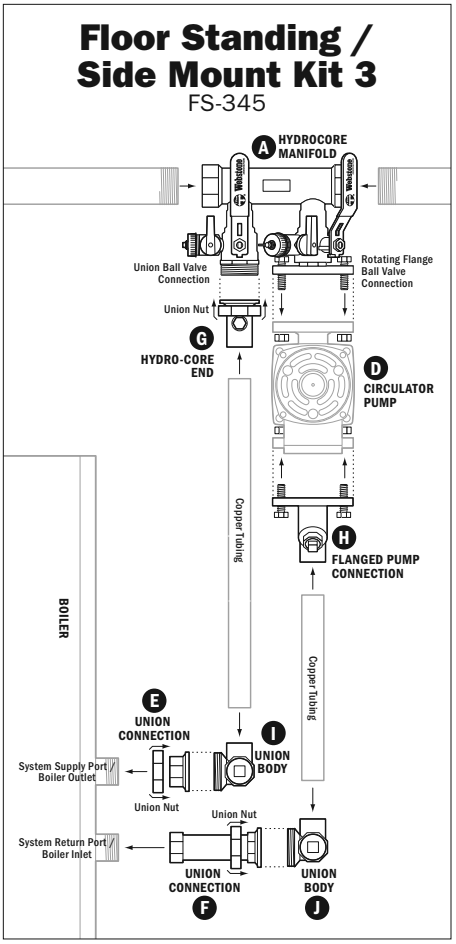
Near Boiler Component Kit

The Near Boiler Component Kit is used to field fabricate the system supply and return piping that connects the Hydro-Core to the boiler.

1. **Fabricate the System Return Piped Assembly:** Solder the Ⓗ Flanged Pump Connection and Ⓙ Union Body component to either ends of a length of copper tubing sized appropriately for your boiler's return line.
2. Remove the o-ring from the Ⓖ Hydro-Core End and save for reinstallation.
3. **Fabricate the System Supply Piped Assembly:** Solder the Ⓖ Hydro-Core End and Ⓘ Union Body component to either ends of a length of copper tubing sized appropriately for your boiler's supply line.
4. Assemble the Ⓔ System Supply Union Connection to the system supply port.
5. Assemble the Ⓕ System Return Union Connection to the system return port.
6. Loosely connect the Ⓓ Circulator to the Ⓐ Hydro-Core flanged ball valve connection. *IMPORTANT:* The Ⓓ Circulator should pump into the boiler.
7. Loosely connect the Ⓓ Circulator flange to the flange on the System Return Piped Assembly.
8. Loosely connect the union nut, o-ring and fitting on the System Supply Piped Assembly to the Ⓐ Hydro-Core union ball valve connection.
9. Connect the Ⓔ System Supply and Ⓕ System Return Union Connections to their respective piped assemblies.
10. Align the Ⓓ Circulator into the desired position. Ensure both pump gaskets are properly aligned.
11. Fully tighten the bolts to the two flanged connections.
12. Fully tighten the union nut to the Ⓐ Hydro-Core union ball valve connection.
13. Fully tighten the union nuts to the union fittings at the boiler.
14. Support the near boiler piping assembly with hangers and clamps.
15. Connect the Ⓐ Hydro-Core Manifold to the remaining hydronic system.
16. Pressure test the system to ensure that all connections are pressure tight.



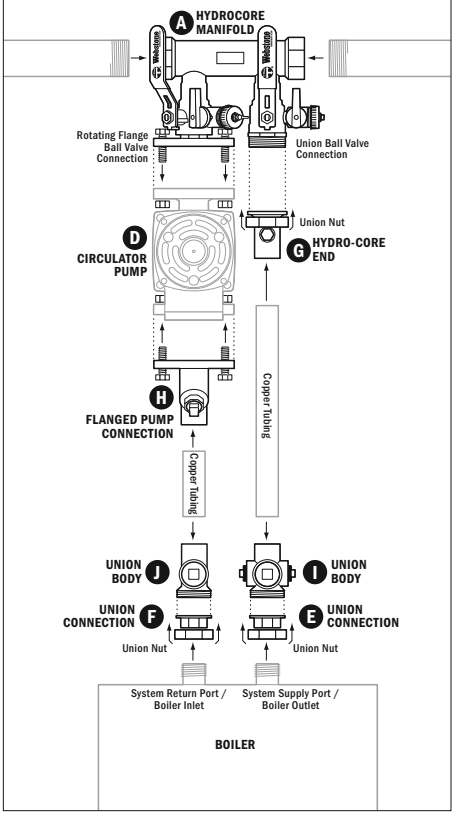




Boilers shown for illustration purposes only.

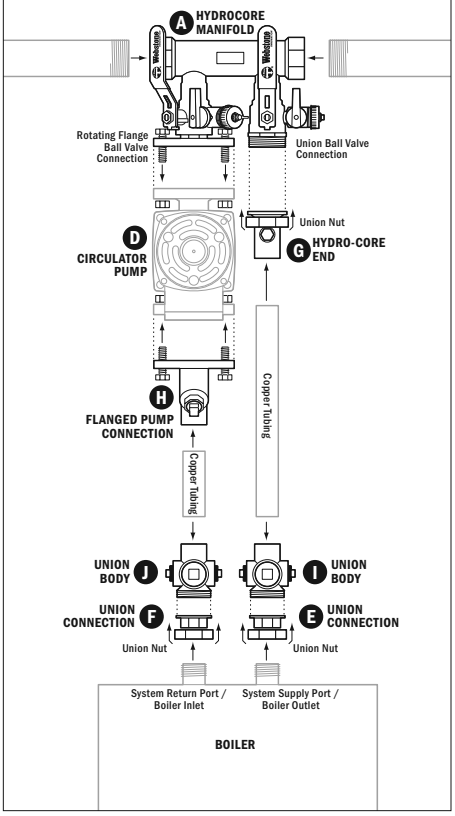
Floor Standing / Top Mount Kit 1

FT-144



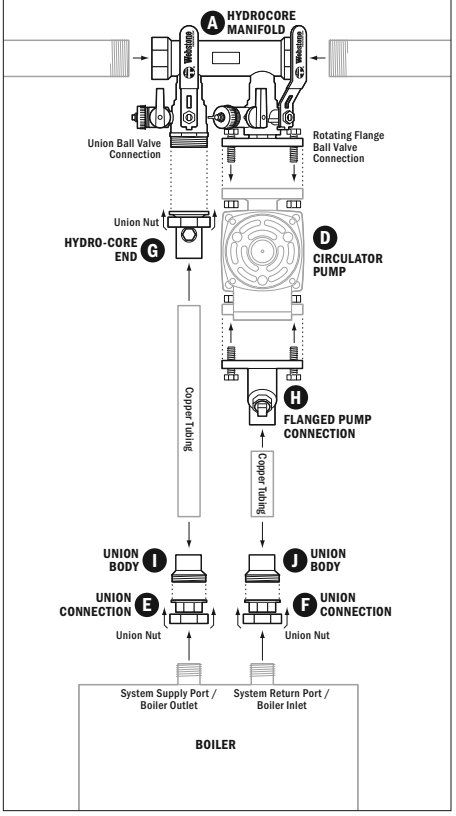
Floor Standing / Top Mount Kit 2

FT-245 / FT-2R45



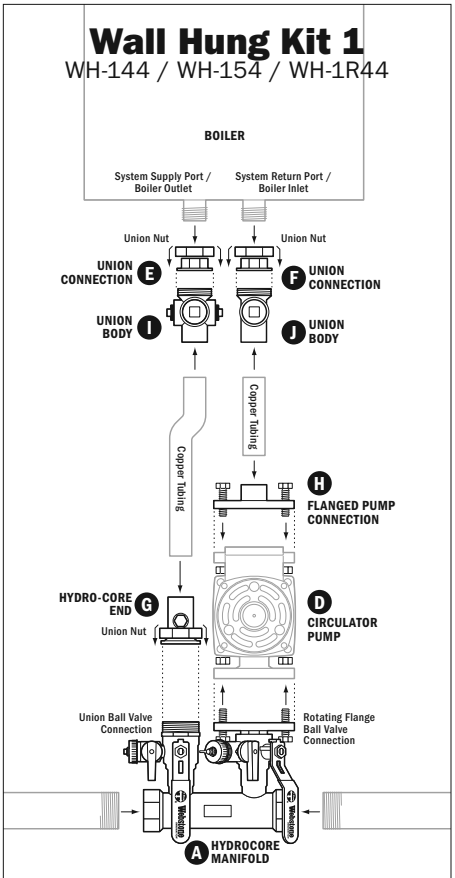
Floor Standing / Top Mount Kit 3

FT-344



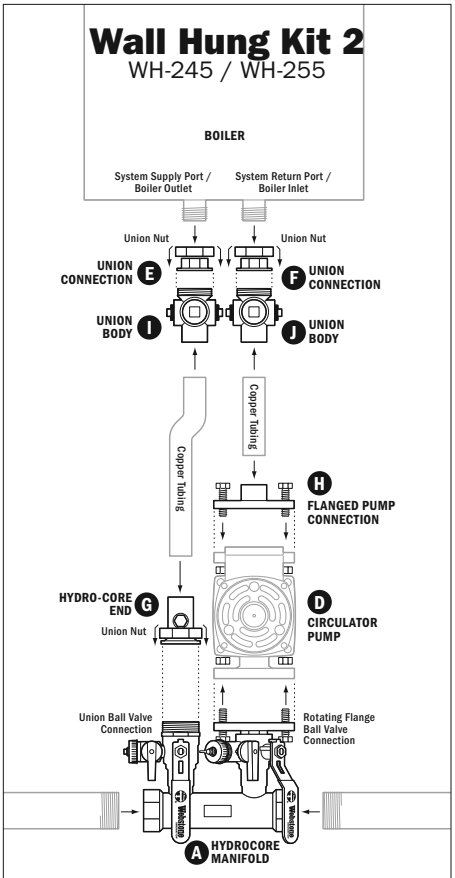
Wall Hung Kit 1

WH-144 / WH-154 / WH-1R44



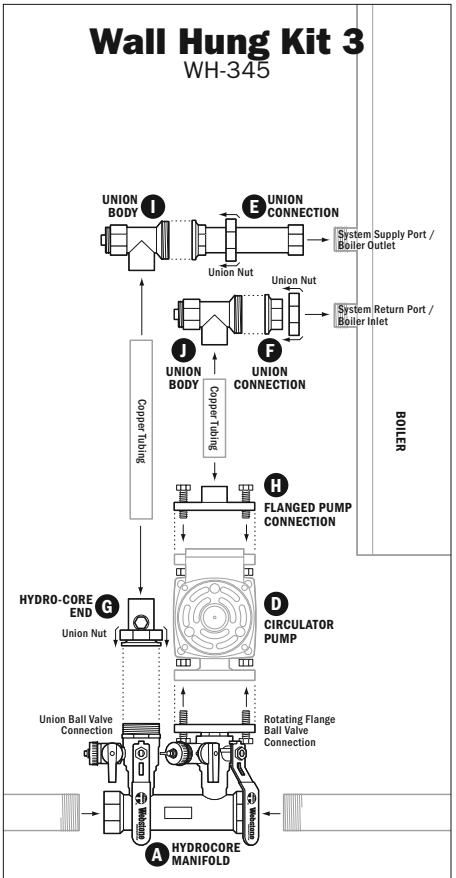
Wall Hung Kit 2

WH-245 / WH-255



Wall Hung Kit 3

WH-345



Boilers shown for illustration purposes only.

Complete Near Boiler Piping (NBP) Kit Installations

Available for select boiler models only.

Requirements

- Webstone Ⓐ Hydro-Core™ Manifold Flange Right (487 Series / 587 Series)
- Webstone Complete NBP Kit, suitable to your particular boiler (floor mount boiler shown)
- Ⓓ Circulator Pump *(sold separately—see boiler manufacturer for suitable models)*

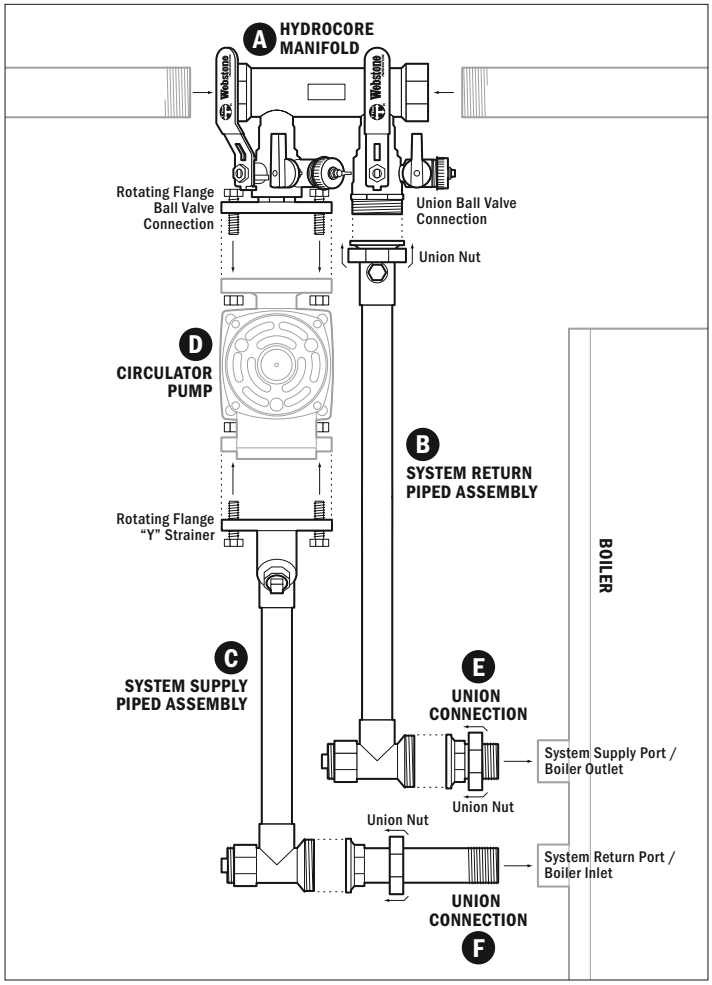
  Webstone Complete NBP Kits are designed to accommodate 6 1⁄2" long circulators.

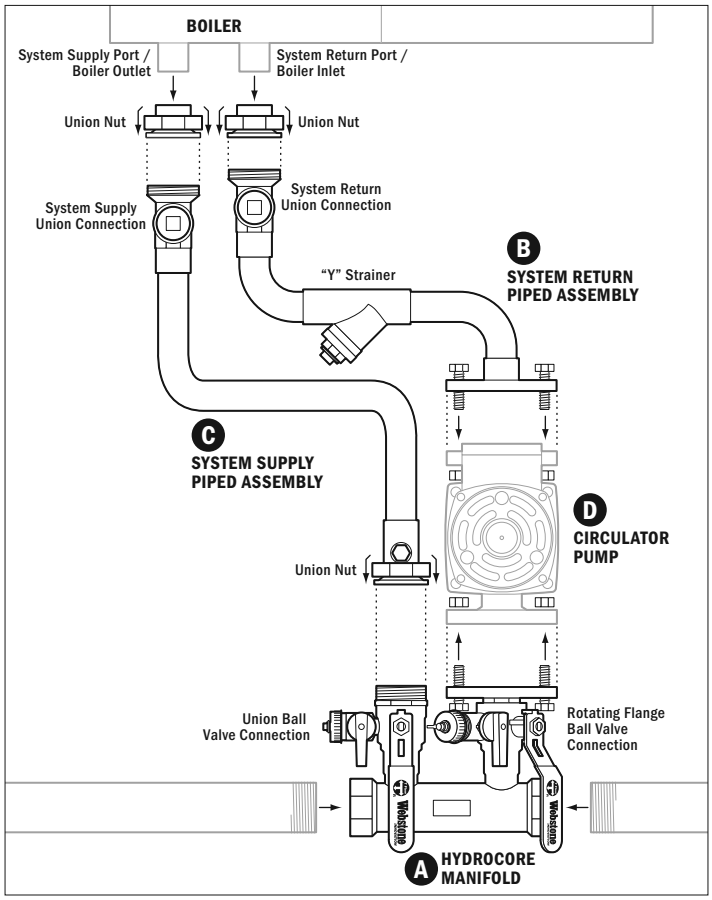
Webstone Complete NBP

1. Ensure that the Ⓔ System Supply and Ⓕ Return Union Connections are disassembled from their respective piped assemblies.
2. Assemble the Ⓔ System Supply and Ⓕ System Return Union Connections to their respective boiler ports.

   Floor mount boilers: The system return union connection is longer than the system supply union connection.

   Wall Mount Boilers: Parts are interchangeable.
3. Loosely connect the Ⓓ Circulator to the Ⓐ Hydro-Core flanged ball valve connection. *IMPORTANT:* The circulator should pump into the boiler.
4. Loosely connect the circulator flange to the flange on the Ⓒ System Return Piped Assembly.
5. Loosely connect the union nut, o-ring and fitting on the Ⓑ System Supply Piped Assembly to the Ⓐ Hydro-Core union ball valve connection.
6. Connect the Ⓔ System Supply and Ⓕ System Return Union Connections to their respective piped assemblies.
7. Align the Ⓓ Circulator into the desired position. Ensure both pump gaskets are properly aligned.
8. Fully tighten the bolts to the two flanged connections.
9. Fully tighten the union nut to the Ⓐ Hydro-Core union ball valve connection.
10. Fully tighten the union nuts to the union fittings at the boiler.
11. Support the NBP assembly with hangers and clamps.
12. Connect the Ⓐ Hydro-Core manifold to the remaining hydronic system.
13. Pressure test the system to ensure that all connections are pressure tight.





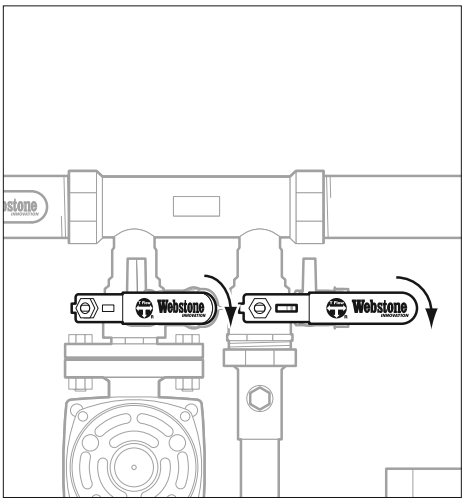
Boilers shown for illustration purposes only.

Secondary System Purging

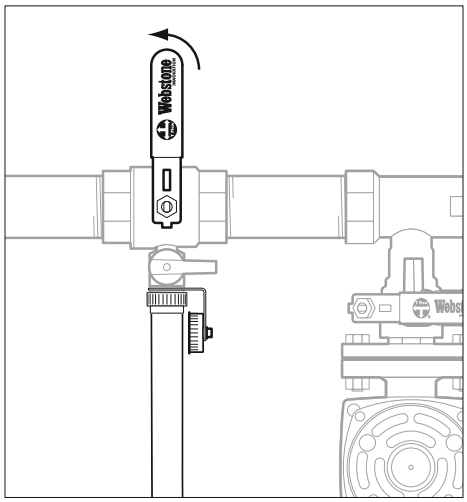
Typically boiler manufacturers want to make sure that any foreign matter (dirt, shavings, PTFE thread tape, etc.) is flushed out of the Hydronic Piping System before fluid begins to flow between the boiler and the piping system.

To purge the secondary system the following is needed:

- A hose w/ 3⁄4” hose thread connection
- A water source
- Power to the circulator pump in the secondary loop



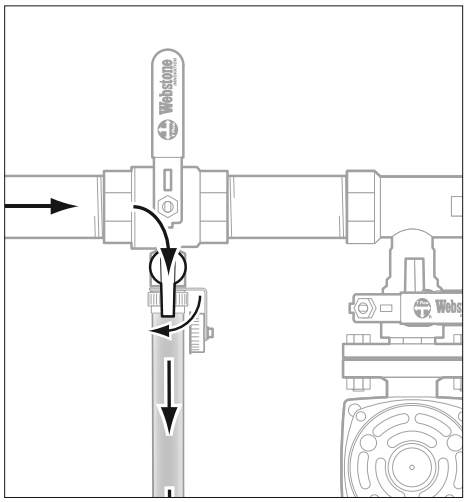
1. Turn the lever handles on both Hydro-Core ball valves so that they are parallel to the flange and the main valves are in the closed position. This will prevent any debris from entering the near boiler loop during flushing. If multiple circuits are present, repeat for each circuit.



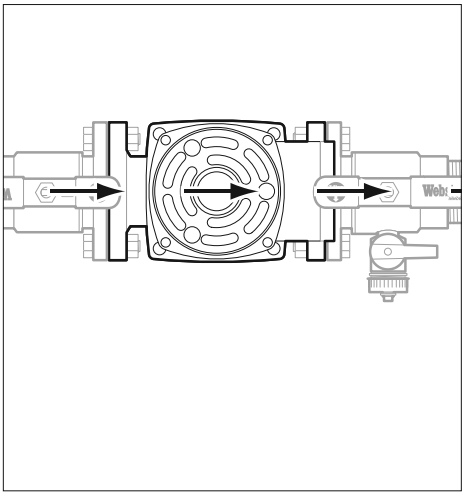
2. Close the main valve and remove the cap from the drain valve in the secondary loop.

3. Connect the hose to the purging port on the drain valve in the secondary loop.

4. Direct the other end of the hose into a bucket or drain.

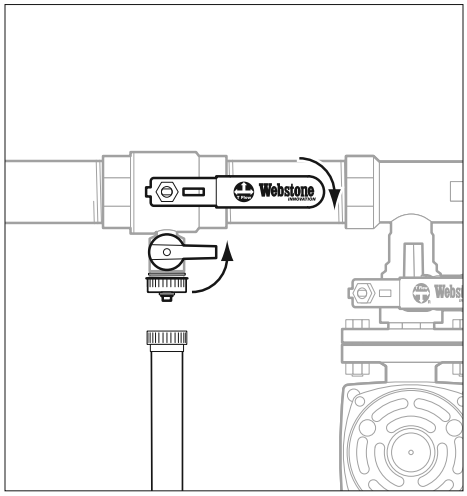


5. With the main water supply on and flowing into the system, open the purging valve on the drain in the secondary loop.



6. Turn on the circulator pump in the secondary system to purge the entire loop with fresh water.

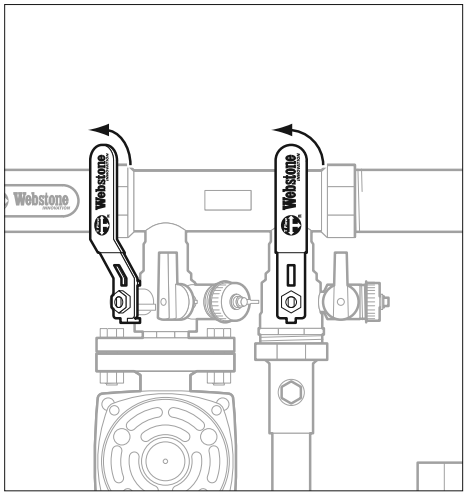
7. Once the debris has been purged out and the drainage from the hose runs clear, turn off the circulator.



8. Close the purging valve on the drain in the secondary loop.

9. Remove the hose and replace the cap.

10. Open the main valve on the drain valve in the secondary loop.



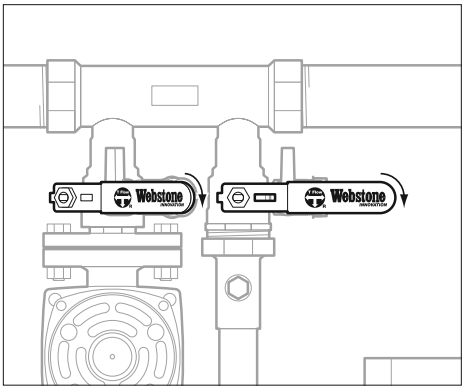
11. Return the lever handled ball valves on the Hydro-Core manifold to their normal operating position (handles perpendicular to the flange). Repeat for each circuit.

Filling/Power Purging

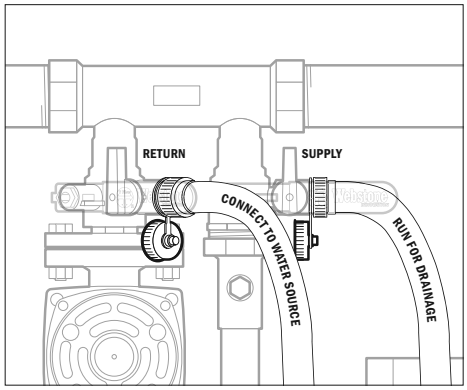
The Hydro-Core and associated NBP offers several beneficial features for a system's startup and future maintenance. At startup the boiler can be isolated from the remaining hydronic system and the trapped air in the boiler and associated piping can be power purged out.

To Power Purge and/or fill the boiler the following is needed:

- Two hoses w/ 3⁄4" hose thread connection
- A water source
- Power to the circulator pump in the NBP Loop
- 5 gallon bucket (for glycol filling only)



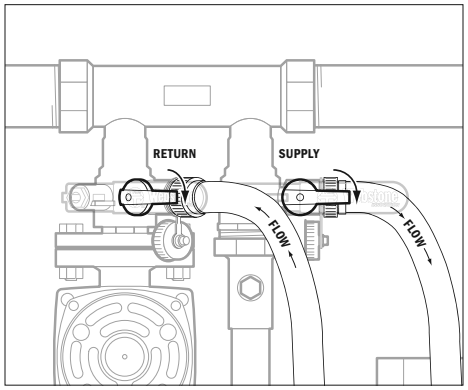
1. Turn the Lever Handles on both Hydro-Core ball valves so that they are parallel to the flange. The T-Flow handle logo indicates the flow pattern inside the valve. The logo should indicate that flow can go through the purging valve and both the supply and return piped assemblies.



2. Remove both purging valve caps

3. Using a hose, connect a water source to the system return purging valve (located above the flange connection).

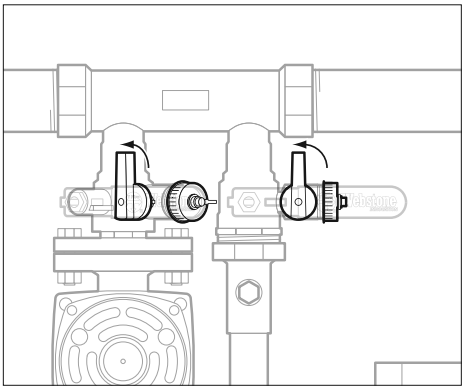
4. Connect a hose to the system supply purging valve for drainage.



5. Turn the drain handles on both the system return & system supply purging valves into the open position (drain handles parallel with the flange).

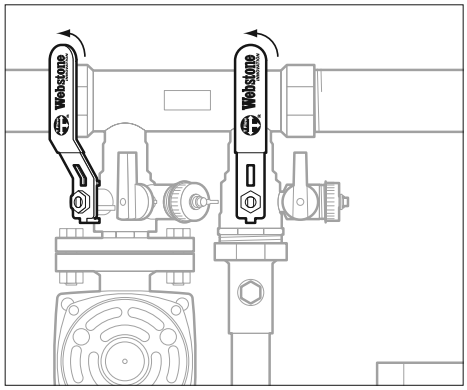
6. Turn on the water source and allow water to flow into the circulator from the hose.

7. Allow water to run until all excess air has been purged from the boiler and the water coming from the drainage hose appears clear. If needed, turn on the circulator pump to force water through the system.



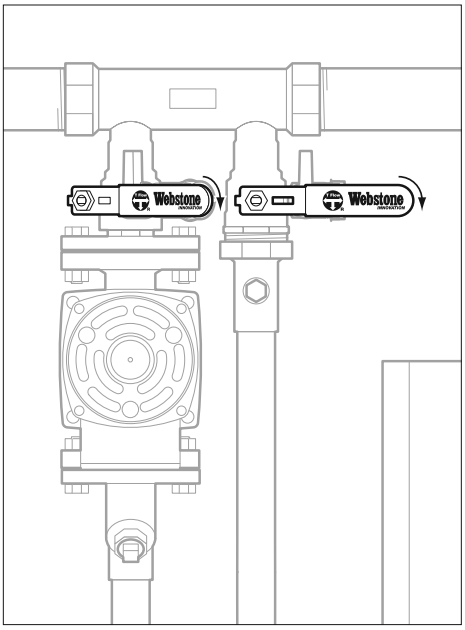
8. Once the air has been purged out and the drainage runs clear, turn off the circulator, close the two purging valves, remove the hoses, and replace the drain caps.

9. The boiler and NBP loop will now be filled with clean fresh water. If a glycol solution is preferred, see steps 2–14 on the next page and follow the instructions for "Descaling the Boiler Heat Exchanger" utilizing glycol rather than a descaling solution.

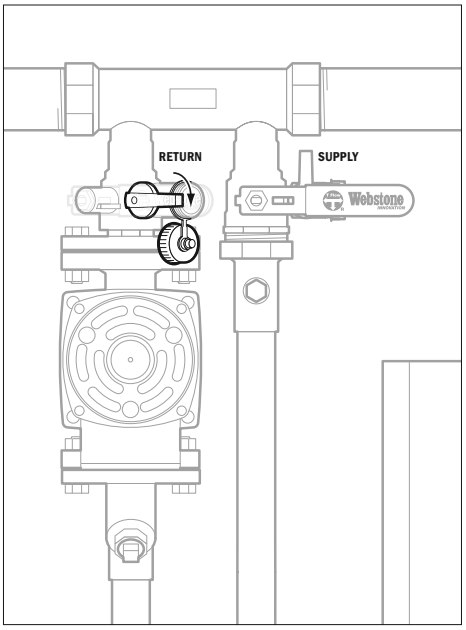


10. Return the lever handled ball valves to their normal operating position (handles perpendicular to the flange).

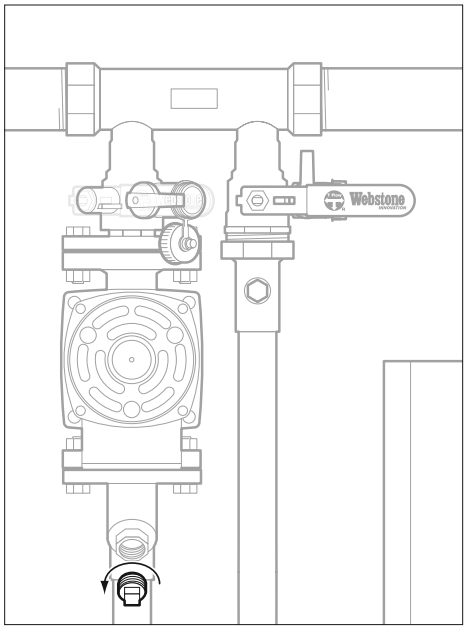
Strainer Servicing



1. Turn the lever handles on both Hydro-Core ball valves so that they are parallel to the flange. The T-Flow handle logo indicates the flow pattern inside the valve. The logo should indicate that flow can go through the purging valve and both the supply and return piped assemblies.

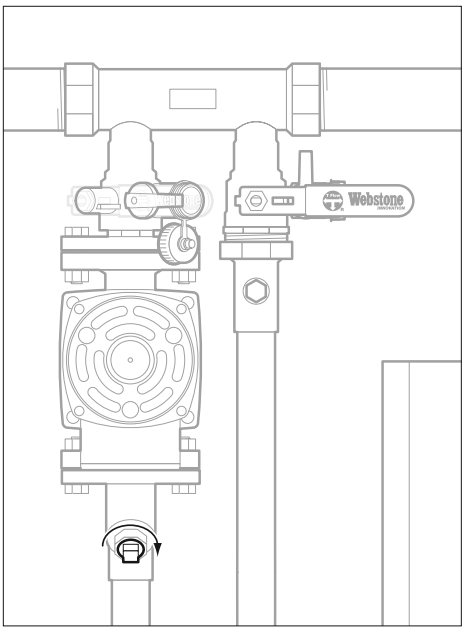


2. Release internal pressure by removing the system return purging valve cap and turning the drain handle on the system return purging valve into the open position (parallel with the flange). Pressure release should emit a small amount of fluid.

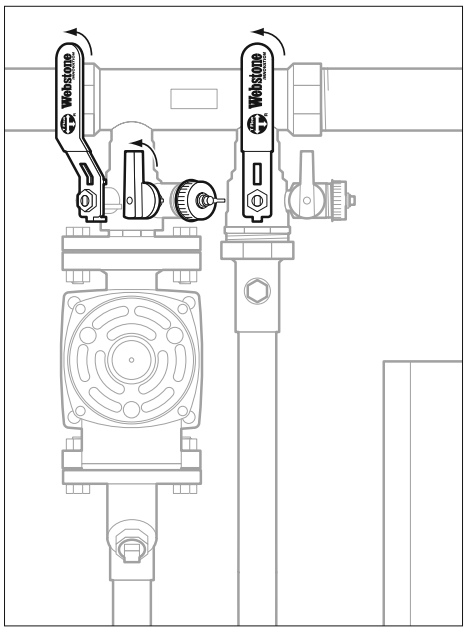


3. Remove the strainer plug by turning it counterclockwise.

4. Clean out the strainer.



5. Reinstall the plug, ensuring that it is seated properly in the strainer cap.



6. Close the purging valve (drain handle perpendicular to the flange).

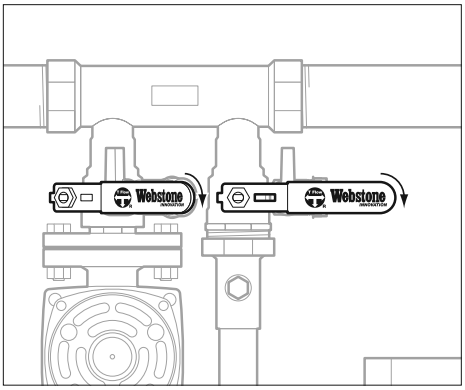
7. Return the lever handled ball valves to their normal operating position (handles perpendicular to the flange) and replace the cap.

8. Pressure test the system to ensure that all connections are pressure tight.

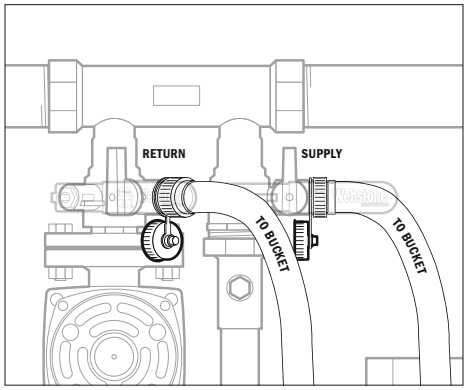
Boiler Heat Exchanger Descaling/Cleaning

To Descale/Clean the boiler the following is needed:

- Boiler Manufacturer Maintenance Instructions
  Should there be a discrepancy or conflict with these instructions, follow the Boiler Manufacturer's instructions.
- Descaling/cleaning solution
- 2 hoses
- Bucket
- Ability to activate the NBP System Circulator



1. Turn the lever handles on both Hydro-Core ball valves so that they are parallel to the flange. The T-Flow handle logo indicates the flow pattern inside the valve. The logo should indicate that flow can go through the purging valve and both the supply and return piped assemblies.



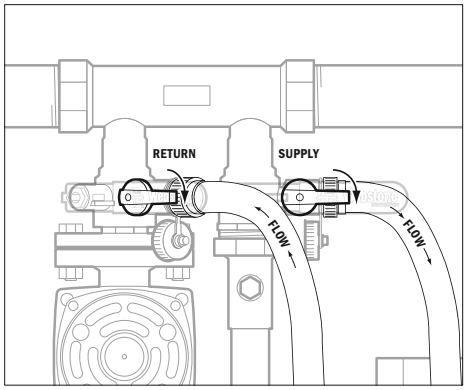
2. Remove both purging valve caps.

3. Connect one of the hoses to the system return purging valve (located above the flange connection).

4. Connect the other hose to the system supply purging valve.

5. Fill a 5 gallon bucket with the boiler manufacturer's recommended cleaning/descaling solution.

6. Place the ends of both hoses into bucket of solution.

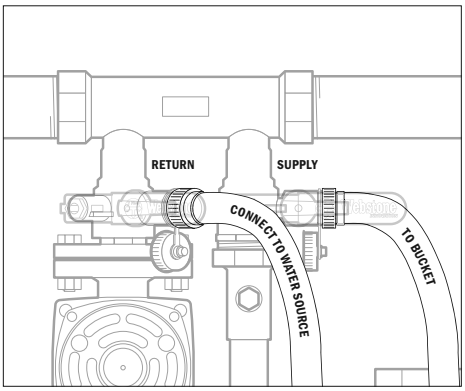


7. Turn the drain handles on both the system return & system supply purging valves into the open position (drain handles parallel with the flange).

8. Turn on the circulator pump in the NBP Loop and allow the solution to flow into and out of the NBP System.

9. See boiler manufacturer maintenance instructions to determine when system is sufficiently cleaned.

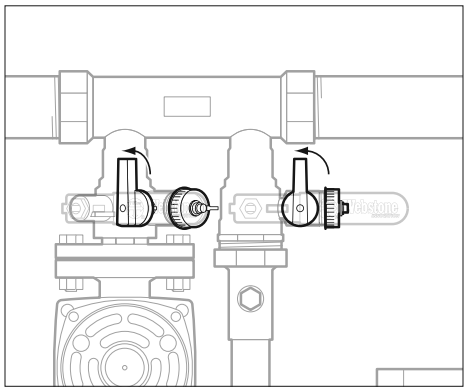
10. When boiler is sufficiently cleaned, remove the hose connected to the system return's purging valve from the bucket (system return is the side with the flange connection).



11. Connect system return purging valve hose to a water source.

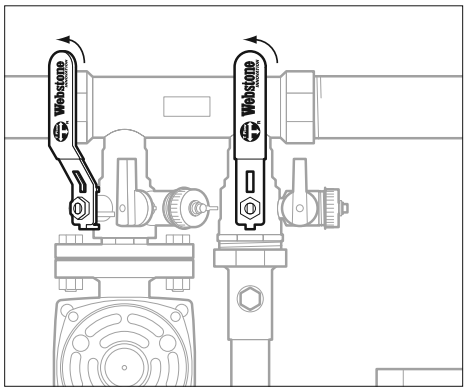
12. Turn on the water source and allow water to flow into the circulator to purge the entire loop with fresh water. If needed, turn on the circulator pump to force water through the system.

13. Once the solution has been purged out in the bucket and the drainage from the hose on the system supply purging valve runs clear, turn off the circulator.



14. Close the two purging valves, remove the hoses, and replace the caps.

15. The boiler and NBP loop will now be filled with clean fresh water. If a glycol solution is preferred, repeat steps 2–14 above with glycol rather than a descaling solution.



16. Return the lever handled ball valves to their normal operating position (handles perpendicular to the flange).