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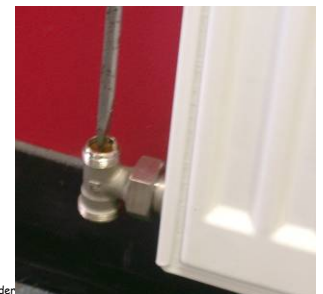
## Commissioning the system

### Filling the system

1. When the installation is completed it is time to carefully fill the system with water. Check for water leaks, and eliminate all air from the system by the following method.
2. Do not turn on the boiler, **GAS OFF, POWER OFF**. Do not fit any thermostatic heads to the valves.
3. Close all the valves on all the radiators.
4. Turn on the reduced pressure water supply. **DO NOT WATER TEST WITH MAINS PRESSURE WATER**. This could damage the radiator.
5. Check that there are no leaks in the pipe work and connections to the radiator valves or boiler.
6. Bleed air from the top of the boiler via its air bleed valve.
7. Open the flow valve of the radiator furthest from the boiler and bleed the air out of the radiator through the air bleed valve in the top of the radiator.
8. Open fully the lockshield valve on this radiator and check for leaks at all connection points.
9. Repeat this process moving closer to the boiler until all radiators have been bled.
10. Check any high-level air bleeds in the pipe work for overhead pipe work.
11. Turn on the power to the boiler, set the room thermostat to **"MANUAL ON"**.
12. Allow the boiler circulator to operate until the water in the system is flowing quietly.
13. Commission and run the boiler to the manufacture's specifications to heat the water.

### Balancing the system

1. Of the three methods of plumbing only the most popular method (Parallel) requires balancing. The series method cannot be balanced and the reverse return is self-balancing and should not require balancing.
2. The reason the parallel method requires balancing is due to the propensity of the water to take the easiest path, and short circuit through the radiators closest to the boiler.
3. By adjusting the lockshield valves on each radiator, the water flow can be made to flow equally to all radiators.
4. All lockshield valves should be fully open, all thermostatic heads should be removed.
5. Starting with the radiator closest to the boiler, lightly hold the flow pipe and return pipe. At 80°C the flow pipe can be held very briefly.
6. Checking the difference in temperature of the inlet (flow) and outlet (return) pipes on the radiator gives a sufficiently accurate indication of water flow through the radiator.
7. A surface contact thermostat is best but the fingers are usually sensitive enough to feel a temperature difference.
8. There should be a detectable difference in temperature between the flow and return.
9. Check all radiators moving away from the boiler. Making a note of each radiator as you go.



Hunt Heating reserve the right to vary products at any time without prior notice to make improvements without affecting the basic characteristics. Therefore this information cannot be considered



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10. It is expected to find the return pipes progressively cooler. This indicates the water is taking the shortest (easiest) path back to the boiler and not travelling to the furthest radiators in sufficient volume.
11. All flow pipes should be the same temperature.
12. Balance the system by using the lockshield valves to give equal flow to all radiators.
13. The lockshield valves closer to the boiler should be progressively closed to force the water further around the system.
14. The closer to the boiler the more they can be closed.
15. Go back to the first radiator and turn the lockshield towards the closed position enough to restrict the flow of water to this radiator and increasing the flow to all others.
16. Go to the second radiator repeat but slightly less turn off. Repeat for third, fourth etc as needed. The last should always be fully open.
17. The idea is to equalise the resistance to water flow of all radiators and their pipe work.
18. Check that the return temperature on the last radiator has increased to equalise the first radiator. If not repeat the process until it does. This may take five or more "rounds" of checking.
19. If the flow temperatures vary significantly at a radiator this indicates that the flow pipe is too small for the task, or is partially blocked. This problem should be fully investigated and remedied immediately.
20. Replace all thermostatic heads and set the room thermostat back to automatic.
21. When the system has been commissioned consider adding a water treatment to the system.

**Enjoy the wonderful warmth**

hunt  
heating