



Hydronic Systems (Australia) Pty Ltd

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General care and maintenance

Air bleeding

1. It is important that all the air in the pipework, radiators and boiler be removed when the system is installed.
2. Air trapped in the system during its operation should also be removed by periodically checking.
3. To allow air to remain in the system will bring about poor performance of the system and premature failure of components.
4. The use of a boiler additive is recommended on all steel panel systems.
5. Switch off heating system and allow the water to settle preferably overnight.
6. Go to each radiator in turn opening the small air vent using a special air bleed key. (Available from Hunt Heating the **Picobello (Part #004 KEY)**. This little tool helps stop dirty water from marking carpets, floors and walls. It's built in reservoir collects the bleed water making the job easy and fast).
7. Use a **Picobello** to catch any water that may bubble out. The water may be black in colour and could stain any surface contacted.
8. As soon as the air bubbles cease turn off the valve. It should not be necessary to run water from the radiator to clear the air.
9. Check for any automatic air bleed valves that may be in the system, in the boiler or at any high points in the piping system.



Problem solving

1. A panel radiator needs a continuous flow of hot water to work effectively.
2. If the radiator is hot at the bottom but cold at the top - bleed the air out.
3. If the radiator flow pipe is hot but the return pipe is cold - increase the flow of water by re-balancing the system
4. If the radiator or the pipe work is noisy, check for air in the system. Switch the boiler / circulator off and allow the air to settle to the top of the radiators. Then bleed the air from the radiator. Displacing air from the radiators may mean the system requires re-pressurisation, call your installer/service man for further instructions.
5. A radiator may be hot only at maximum heat output. A warm radiator may indicate that the boiler has switched off, modulated to a lower heat rating or the thermostatic valve, if fitted, has adjusted the output down to suit the required room conditions.
6. Noise coming from the boiler usually indicates that the water flow is very low or that there is a blockage. The blockage can be caused by sludge or all the valves turned down or off. Called kettling, the noise starts off as banging in the heat exchanger and can be heard all around the house. Turn off immediately and call your service technician. Very dangerous to boiler, house and personnel. Must be fixed before turning on again.
7. A noisy thermostatic valve is usually caused by the water flowing in the wrong direction through the valve. Fix by changing the valves over, there should be hot water in through the control valve and out (cooler) through the lockshield valve.



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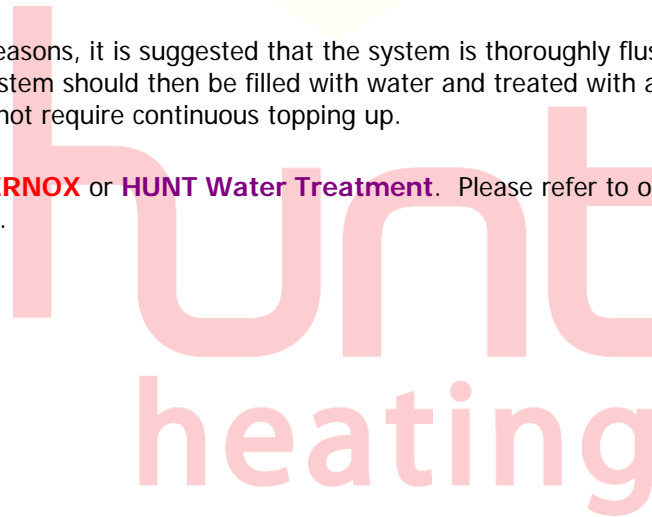
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System water treatment

1. There is a basic need to treat the water contained in all heating systems that have steel panel radiators, as there will always be some corrosion in a steel panel radiator system even though the system is sealed.
2. In particular, the water in an **OPEN VENTED SYSTEMS** should be treated. This is because the water is not completely sealed off from the atmosphere. The same header tank that is used to fill the system provides the capacity for the water expansion when hot. When the system cools down, this water is drawn back into the system taking with it a small quantity of dissolved oxygen. Even without any leakages from the system, there will also be some evaporation losses from the surface of the tank depending on the ambient temperature.
3. Water in a **SEALED SYSTEM** may still promote corrosion unless the initial charge of water is correctly treated.
4. In practice, the development of corrosion in a system reduces the transfer of heat through the formation of black iron oxide sludge. This corrosion process causes noises from the boiler and circulator eventuating in the premature failure of the radiators, circulator and boiler.
5. With all sealed systems connected to the mains water supply, a suitable back flow prevention valve and auto fill valve should be fitted.
6. For all the above reasons, it is suggested that the system is thoroughly flushed through at the time of installation. The system should then be filled with water and treated with a stable water treatment solution that does not require continuous topping up.
7. We recommend **FERNOX** or **HUNT Water Treatment**. Please refer to our technical department for further information.





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System water pressure

All hydronic systems require a supply of water to fill and maintain water pressure in the system. There are two basic types.

1. **Sealed systems.** A sealed system (also known as un-vented or pressurised system) is always fitted with a pressurised expansion vessel. This allows the water to expand and contract in volume without being lost. The make up water is supplied by mains pressure through a non-return valve (backflow device) and pressure reduction valve (auto fill valve) to feed the water at a nominal 1 Bar (100kPa) water pressure.
2. **Open system.** An open system (also known as an open vented or header tank system) has a copper header tank placed at the highest point in the system. The water as heated or cooled expands in or contracts out of the tank. A float valve maintains water level. The tank needs to be at least 3 metres above the highest radiator or boiler.

Note:

All modern gas fired boilers such as **SIME BOILERS** are usually fitted internally with an expansion vessel. Very large systems should be checked to see if the fitted tank is adequate for the system.

With solid fuel systems, it is usual to have an open vented system, but this should be checked with the manufacturer or supplier.

