



Hot water heat pumps: licence requirements

Heat pumps are an energy efficient technology for providing heating and cooling services for a range of uses.

Hot water heat pumps that take heat from the outside air to heat water for household hot water or pool heating are becoming more common. They are vapour compression devices, similar to refrigerators but operating in reverse. Heat pumps consume on average one-third the electricity of resistive electric storage hot water services.

Many hot water heat pumps run on refrigerants controlled by the Australian Government, which are potent greenhouse gases that contribute to global warming. Some systems also use refrigerants that present safety risks, including hydrocarbons (highly flammable) or CO₂ (high pressure).

There are 3 main configurations available in Australia, **all of which require a licensed plumber to install the water heating unit.**

1. Integrated systems, which include a self-contained refrigeration system (typically on top) and a combined water tank and heat exchanger all in one, only requiring electrical and water connections.
2. Integrated pool heater systems, which integrate the refrigeration system and heat exchanger into a single unit but do not have a water tank as they supply heated water directly into a pool. They also require only electrical and water connections.
3. Split systems, which comprise 2 components: an outdoor unit that contains the refrigeration compressor, evaporator and fan; and a separate water tank containing the condenser (heat exchanger). These systems have refrigeration pipes between the two components. They typically utilise flared connections to complete the refrigeration circuit, which can be a leak source.

The first 2 types are self-contained, small charge systems, commonly referred to as sealed systems. These sealed systems are employed in appliances that contain a refrigerant charge of 2 kg or less, and do not require any work to be done on the refrigeration system at the time of installation.

The third type requires a technician with the appropriate skills and training to handle refrigerant, since installation, servicing and decommissioning involves working with refrigerant and refrigerant-containing components.



Two-part heat pump hot water system (ARCTick licence required).

If a split system is designed to hold a controlled refrigerant, it requires a technician with an appropriate refrigerant handling licence from ARC trained in the environmental risks of emissions and how to prevent them.

If a split system contains a refrigerant with a hazardous safety rating, the installer should also have appropriate training to handle such refrigerants.