ALICE WaterSmart

fact sheet

Evaporative Cooling

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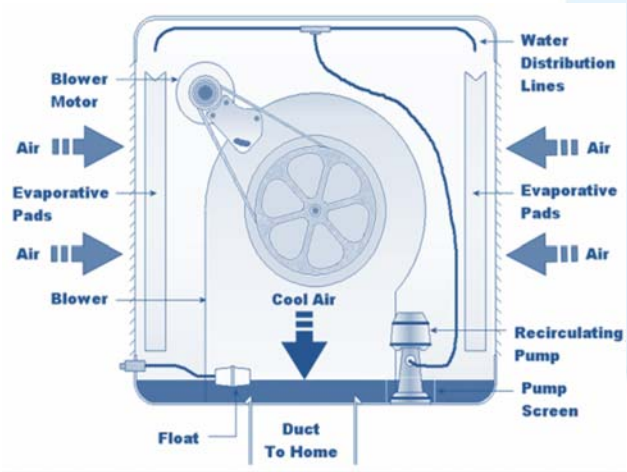
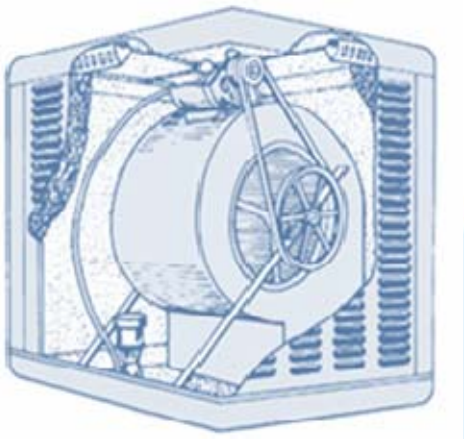
Using an evaporative air conditioner or "swampy" is a good way to keep cool in the dry Central Australian climate. Although they are a more energy-efficient way to keep cool than a refrigerative air conditioner, swampies can use a lot of water.

There are several ways you can reduce water consumption with proper maintenance of your A/C. This fact sheet provides tips on how to get the coolest air from your swampy without wasting water.

How do swampies work?

A fan draws air through water soaked pads, evaporating the water and cooling the air, which is then blown into the room. Cooling takes place as heat is transferred to the atmosphere through evaporation of water. For this reason, swampies work best in areas of low humidity.





The cooling process uses water in two ways:

1. **Evaporation:** Water evaporates in the cooling process. Evaporative air conditioners typically evaporate 30 L/hour in the summer months but this is dependent on fan speed, current temperature, and humidity.

2. **Bleed:** As water passes through the system salts concentrate within the unit. Water is drained out to dilute the salts. Bleed rates can be set at different levels and have been found to be as high as 100 L/hour in Alice Springs.

- **Your air conditioner may use as little as 10L/hr or as much as 100L/hr depending on fan speed and current temperature.**
- **Check your bleed rate is running at 10-15L/hour.**

Supported by the Australian Government's *Water for the Future* initiative

How to maintain your swampy and lower your water use.

To keep your swampy running optimally, it is necessary to release water out of the unit via the bleed. Releasing water out of the unit will dilute the concentration of dissolved solids, such as calcium, and slow down the build-up of these materials on the pads. Calcium build-up will reduce the effectiveness of the cooling process, as it reduces the amount of water that can be held in the pads.

It is best to follow the manufacturer's recommendations for bleed rates. In lieu of that, Alice Water Smart recommends setting your bleed rate to **10-15 L/hour**. This rate still allows for dissolved solids to be bled off without wasting water.

An annual service, which includes replacing the pads, is recommended. Alternatively you can clean the unit and replace the pads yourself following DIY guides found on the net.

Measure the bleed rate – The bucket test

To measure the bleed rate, put a bucket under where your bleed comes out.

In half an hour it should be half full (this works out to be around 10L/hour). If it is—great, if it's not then adjust the bleed if you know how, or call Alice Water Smart for assistance.

Actions for your evaporative air conditioner

- ☐ **Clean or replace the pads** – if evidence the pads have accumulated salts and have lost surface area.
- ☐ **Check the bleed rate** is adjusted to 10-15L/hour.
- ☐ Use rainwater in the swampy to reduce calcium build-up.
- ☐ **Check for leaks**.
- ☐ **Install fans to compliment your air conditioner.** You can also reduce the hours of operation.
- ☐ **Reuse the bleed off water** to top up pools and spas or to water plants.
- ☐ **Install a new system** if more efficient systems are available and existing system is due for replacement.
- ☐ **Maintain an air flow through the house** by leaving small openings at doors and windows.
- ☐ **Close vents** in rooms that aren't being used to increase the air flow to other rooms. You can also adjust the angle of the air vents.
- ☐ **Shade the swampy** on the outside and it won't have to work as hard to cool the air.
- ☐ **Fully insulate your buildings and paint roofs white** to reduce energy adsorption.
- ☐ **Contact Alice Solar City** to help with thermal efficiency.

For further information
Contact Alice Water Smart
info@alicewatersmart.com.au
08 8951 7323