

CAMPING STOVES

Spirit Stoves

The popularity of the spirit stove, which serves as a stove and canteen, is easy to understand. They are well designed, light and compact, with the stove and the canteen all packing together in a single unit. They are stable with their broad base and moderate height and do not scorch the grass. Simple to use and clean, free from the oil and odors associated with petrol and paraffin stoves, they are easy to light and use fuel efficiently - 50g of fuel will boil around a litre of water. Stoves are easy to shield from the wind and it is possible to regulate them to a certain extent by turning them around in relation to the wind direction and using a built-in regulator ring. They are relatively inexpensive, fuel is readily available and not too expensive when purchased in bulk, and they do not have the restrictions associated with the storage of petrol.



Spirit stove with gas adaptor - simple and well shielded.

When used with care, spirit stoves are capable of providing years of safe and trouble-free service.

Methylated spirits is available on the Continent under a variety of names: France - alcool à brûler; Germany - denaturierte spiritus; Holland - brandspiritus; Spain - alcohol desnaturalizado or metanol and Italy - alcool denaturato.

Spirit stoves are so simple to operate that training is frequently not as thorough as it used to be with paraffin and petrol stoves. The few accidents that do occur are usually associated with spirit stoves though there are many hundreds of thousands in use. The dangers arise from the fuel. **Methylated spirits is highly volatile, has a low flash point and in strong sunlight burns with a virtually invisible flame.** Many people fail to appreciate how quickly the volatile vapours can spread. There have been instances when fuel has been added to a stove, which was still too hot, or the spirit has been added to a stove in strong sunlight where the practically invisible flame has not been detected.

Such action may lead to disastrous consequences with the fuel container catching fire and acting as a flamethrower. Tents have been burnt down with injuries to the occupants, or companions in the vicinity have been burnt. Practically every accident, which has occurred, has been the result of a failure on somebody's part, with the person who has caused the accident escaping without injuries. **These accidents must be eliminated by better training and a disciplined, responsible procedure in the use of stoves and their fuel.**

A safety routine for spirit stoves:

- **Stoves must not be filled from a bulk container such as a one-gallon can or plastic container. (It is permissible to sell and store methylated spirits in a plastic container).**
- **The spirit must be carried in one or more bottles specifically designed for the purpose. These should normally be around half a litre in capacity and the stoves should be filled from these bottles.**
- **One person should carry the stove or the spirit cup downwind, away from the tents and it should be fuelled, or refuelled, in a place where there are no naked flames in the vicinity. The screw cap on the spirit bottle must be replaced immediately and the bottle returned to a safe place. Some bottles specially designed for carrying fuel have a pouring hole in the screw cap, which only needs to be slackened to fuel a stove. Pouring spouts are available for some makes of fuel bottles.**
- **Do not refill a stove until you are sure that the flame is completely extinguished and the stove has cooled. If the stove is too hot to handle, then it is too hot to be refuelled. Remove the pan and carefully place a hand over the spirit cup or hold a sheet of paper just above the burner. This will indicate how hot the stove is as well as shading it from any strong light.**
- **The stove must be placed on a firm level surface, at least one metre away from the tent, in a place where it cannot be knocked over.**

Practical lessons should take place out of doors where possible and the above routine carefully observed. Where lessons have to take place indoors, only one stove must be in use.

Spirit stoves are directional with ventilation holes on one side. By turning the holes towards the wind draught is increased. If the cooker is exposed to a very strong draught, the flame may be increased to such an extent that it will melt the base of the stove.

Conversion kits are available to convert some spirit stoves to gas. Those wishing to convert a spirit stove to gas should make sure that it will accept the conversion kit. Older spirit stoves may not.

Gas Stoves

In the past gas stoves have caused as many accidents as spirit stoves. This problem has been largely eliminated by the introduction of the valved, self-sealing cartridge. **All gas stoves used on Award ventures should be of the type, which use self-sealing cartridges/cylinders.**

Traditional gas stoves also suffer from design problems and there are many of them still in use. They are tall with the burner sitting on top of the gas cartridge and the pan on top of the lot; with their narrow base they tend to be unstable and easily overturned. They are very difficult to shield from the wind and a great deal of the heat is wasted. Modern gas stoves have been improved in design - they are lower, more stable and easier to shield from the wind. Modern windshields are made of heavy aluminium foil that can be bent to the required shape.



Gas stoves need protection from wind and draughts - windshields are important

Gas stoves, with their disposable cartridges, are clean, reliable and extremely simple to operate. Butane cartridges do not vaporise very well in cold weather, but propane cartridges or butane/propane mixes are available. This should not be a problem during the expedition season.

Self-sealing cartridges may be removed from the stove for travelling, and partly used cartridges may be replaced by full cartridges before embarking on a venture. Cartridges that have been partly used should be marked with a spirit marker to avoid confusion.

Non Self-sealing Cartridges or Cylinders (valveless)

The use of valveless cartridges or cylinders, which are not self-sealing, should be avoided in Award ventures. Many distributors no longer market stoves, which do not use self-sealing cartridges.



An assortment of gas cylinders or cartridges with self-sealing valves

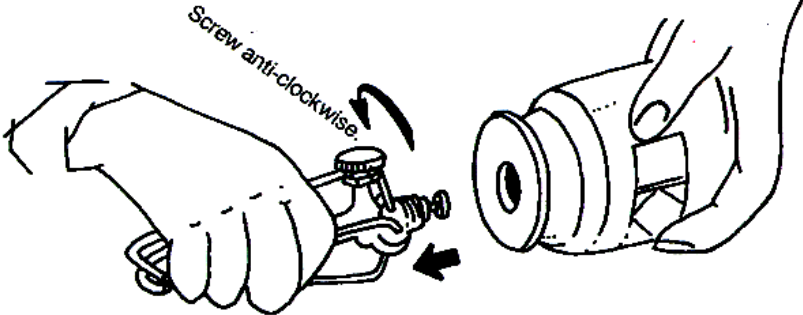
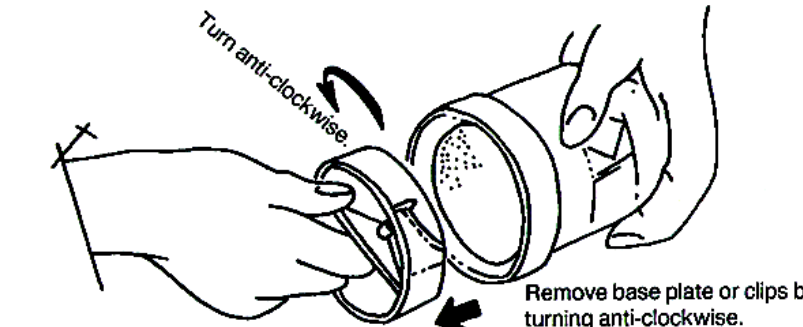
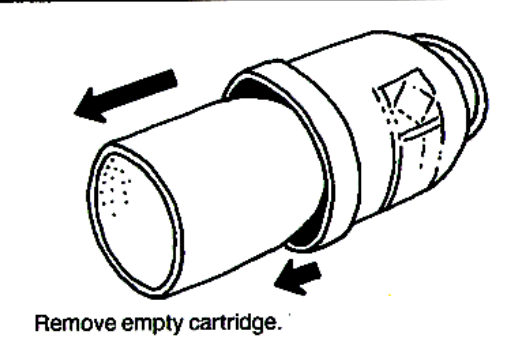
The danger with the older type of gas stove arose from the cartridges not being self-sealing. A spike in the burner head pierces the cartridge. Because so many of the older type of gas stoves and lanterns are still around, instructions for changing the non self-sealing cartridges are included in this *Guide*.

Instructions for changing pierceable cartridges without a self-sealing valve:

- Make sure the cartridge is completely empty by burning off any remaining gas.
- Close the valve on the burner by turning clockwise.
- One person should then take the stove away from tents, other people and any naked flames.
- Remove the burner head completely by unscrewing anti-clockwise and place on the ground.
- Remove the clips or the baseplate by unscrewing anti-clockwise, and then remove the empty cartridge.

- Insert the new cartridge, fasten the clips securely or replace the baseplate, twisting clockwise, making sure that it is properly and securely seated.
- Replace burner head by screwing on clockwise, making sure that it is not cross-threaded at the start.

**CHANGING PIERCIBLE CARTRIDGES
WITHOUT A SELF-SEALING VALVE**

1	
2	 <p>Remove base plate or clips by turning anti-clockwise.</p>
3	 <p>Remove empty cartridge.</p> <div data-bbox="917 1243 1204 1601" style="border: 1px solid black; padding: 5px; text-align: center;"> <p>CAMPING GAS STOVES</p> </div>
4	<p>Replace with new cartridge and replace base plate or clips. Turn clockwise to fasten.</p>
5	<p>Check to ensure clips or base plate are properly secured.</p>
6	<p>THEN and ONLY then: Screw in burner head, making sure that it is not cross threaded.</p>