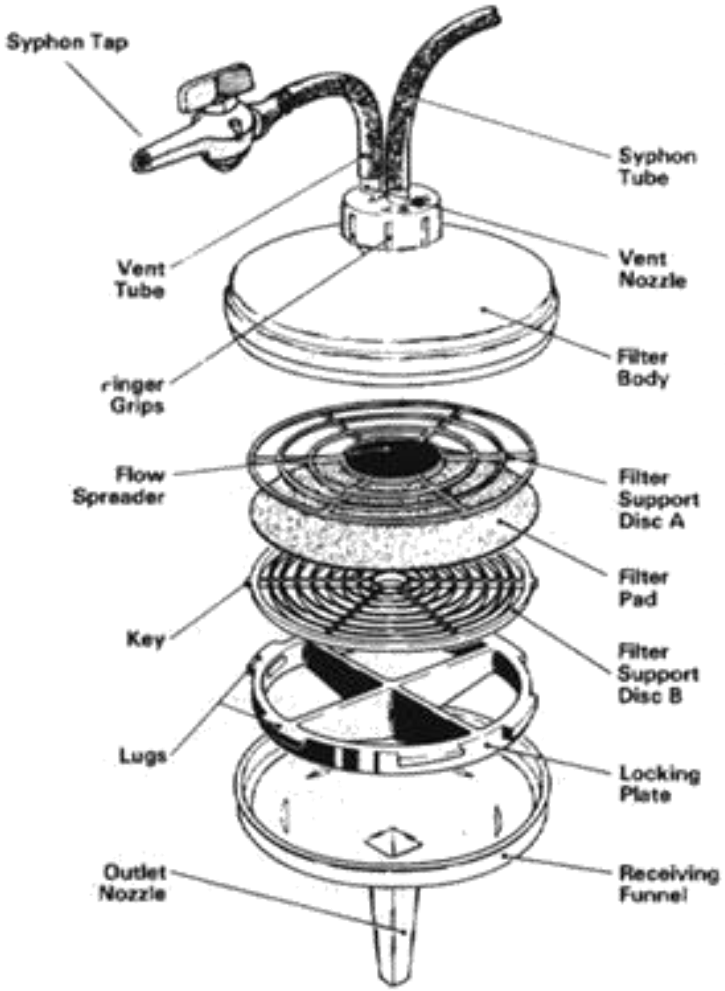
BOOTS WINEMAKERS FILTER KIT

(USING FILTER PADS)



Why Use a Wine Filter Kit

As the fermentation of a wine nears completion, the suspended solids and yeast cells gradually settle down and clarification begins. The deposit of unwanted material at the bottom of the fermenting vessel is known as the **lees**. The wine must be moved off the lees (by siphoning into a clean demijohn) to prevent the wine becoming tainted. Some wines will clear by repeated racking to brilliance naturally within a few months. In other cases complete clarification can take very much longer and some wines will remain cloudy or hazy unless remedial action is taken. Filtering is a great aid to improving the clarity of wines, but will not remove hazes that are due to the presence of pectins. Country wines are more inclined to be hazy than wines made from prepared grape juice concentrates.

Fining and/or the use of **Enzymes**, followed by **Filtration** will give a highly polished wine. Finings settle suspended solids in only a few days. Enzymes, appropriately used to treat starch, pectin or protein hazes are an important aid – these hazes cannot be moved by filtration over filter pads.

Important – the use of finings, enzymes and filtration are complementary processes. Filtration will improve the clarity of skilfully fined wines, but filtration alone is unsatisfactory because:

1. Excessive solids may clog the filter pads.
2. Pectin, starch or protein hazes cannot be removed by filtration through filter pads and require enzyme and fining treatment.
3. Wines having been clarified by filtration may develop hazes if not previously treated with enzymes and/or finings.

Fining Agents

The most common fining agents are Bentonite and Isinglass. The action of the fining agent when added to wine is to form a precipitate with any suspended particles that then sinks to the bottom of the vessel. Bentonite is very effective for the clarification of cloudy wines.

Very Hazy Wines – The Use of Enzymes

Wines based upon fruits and vegetables may be very hazy due to the presence of a group of substances known as Pectins. Broadly speaking, Pectins are a group of carbohydrates closely allied to starch. They form a gel that stabilises the haze, this may be so persistent that neither fining or filtration will completely clear the wine. The presence of pectin is easily detected by mixing a little of the wine with Methylated Spirits (one part to four parts methylated spirits) followed by vigorous shaking. If pectin is present in any quantity, a jelly-like substance will be formed. The only satisfactory way to clear pectin-clouded wines is to use a pectin destroying enzyme. After adding, the wine should then be set aside until the haze has cleared before filtration is attempted.

Although enzyme preparations can be used for clearing with Pectin stabilised hazes, it is preferable to avoid encountering such difficulties at such a late stage in the production of the wine. It is advisable to remove Pectin prior to the completion of fermentation. Those wines that are likely to prove troublesome are listed below and there are definite advantages of adding pectin destroying enzymes to most country wines. Pectolytic Enzyme preparations can contain secondary systems that break down both starch and protein hazes; if starch alone is suspected then a starch reducing enzyme may be used, such as amylase.

Some Problem Wines

Pectin: Apricot, Plum, Damson, Sloe, Peach, Parsnip, Potato
Starch: Banana, Grain, Root Vegetables

Suggested method of preparing your wine for filtration

As soon as fermentation has finished, rack the wine into a clean jar. Ann one crushed Campden Tablet per gallon followed by the fining agent. Cork the jar tightly and store in a cool dark place. The Campden Tablet stops bacterial growth and stabilises the wine by preventing further fermentation. After a few days the wine will clear and there will be a deposit at the bottom of the jar. Rack the wine into a clean container.

How to Use Your Filter Kit

Instructions for assembly

Please read these instructions carefully before attempting to assemble your Filter Kit.
The filter housing and plastic tubing should be thoroughly washed and sterilised. In order to do this dismantle the unit as follows:

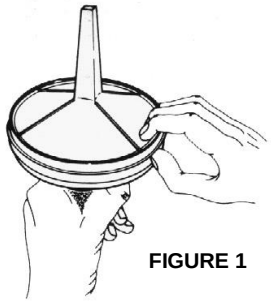


FIGURE 1

1. Separate the funnel and filter body using the thumb as shown in Figure 1. Do not use sharp implements.

FIGURE 2

2. Invert the filter body and unscrew the locking plate anti-clockwise as shown in Figure 2.
3. The filter support discs can then be lifted from the housing.

Wash all parts in warm (but not hot) water with a little washing-up-liquid added. Rinse in clean cold water and then sterilise by placing all the parts in sterilising solution made with Sodium Metabisulphite, according to the instructions. After sterilisation rinse in clean cold water and dry.

CAUTION – AVOID INHALING THE SULPHUR DIOXIDE FUMES FROM THE STERILISING SOLUTION, THESE CAN CAUSE IRRITATION TO THE EYES, NOSE AND THROAT. USE IN A WELL VENTILATED ROOM.

To load the unit, proceed as follows:

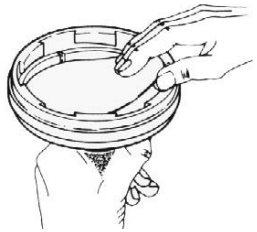


FIGURE 3

1. Place the smaller of the filter support discs (A) in the recess in the upper filter body and position a filter pad over the disc, (flat side of disc facing pad).

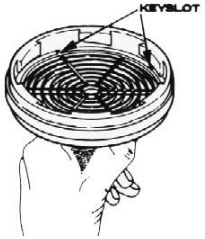


FIGURE 4

2. Insert the filter support disc (B) ensuring that the two keys fit into two of the key slots provided. See Figure 4.
3. Place the locking plate into position with the flat surface towards the filter support disc and align the lugs on the plate with those on the housing as shown in Figure 5. Twist clockwise to lock the plate securely, **but do not over-tighten**.
4. Position the receiving funnel over the flange on the filter housing and push securely into place.
5. Attach the shorter length of clear tubing with tap to the vent nozzle on top of the unit. Attach the long length of smaller diameter tubing to the inlet nozzle. One end of this tube is designed to minimise the likelihood of sediment being siphoned up. The filter unit is now assembled.

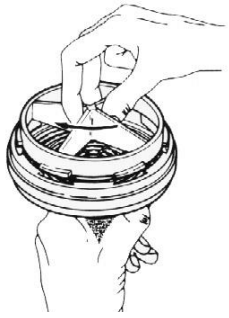


FIGURE 5

Pre-Flushing

We recommend that the unit be pre-flushed with clean water just prior to use. This ensures that any free material is completely removed from the filter before use. Do this as follows:

1. Half fill a demijohn with clean tap water.
2. Place the demijohn in an elevated position, and empty demijohn at a lower level.
3. Push the end of the longest piece of tubing into the half filled vessel in the manner for siphoning.
4. Now hold the filter unit below the level of the half filled vessel using the right hand.
   Place one finger of the left hand over the outlet nozzle (the "square" tube beneath the housing). Gently suck on the short vent tube with the tap open until the liquid enters the unit. See Figure 6.
5. Immediately that siphoning begins remove finger from the outlet nozzle, close the tap on the vent tube and place the unit over the empty receptacle. The filter will rest securely with the filter outlet nozzle placed in the neck of the demijohn.
6. Once the filter is siphoning release air from the vent tube by opening the vent tap until water reaches the underside of the tap. Close the tap.
7. Transfer all of the water through the filter unit into the second vessel. (See Figure 7.). Allow the filter to drain thoroughly.
8. Ensure that the locking plate is still adequately tightened. Re-tighten if necessary.

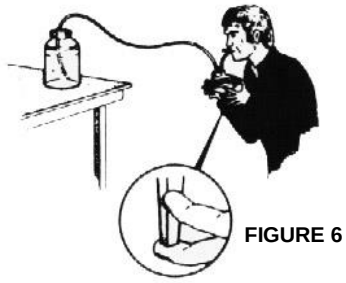


FIGURE 6

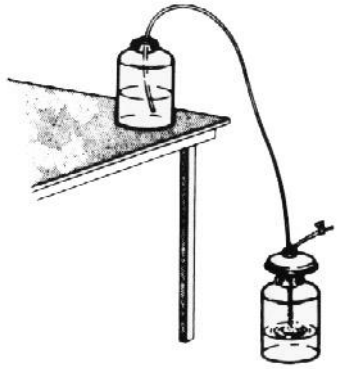


FIGURE 7

Filtering you wine

1. Place the end of the siphon tube into the vessel containing the wine and fill the unit exactly the same manner described for pre-flushing and sterilising (above).
2. Place the unit in the neck of the clean receiving demijohn and leave the wine to filter.
   A drop in flow rate of the filtered wine will be experienced towards the end of filtration as the filter pads become loaded. The filter performance is dependent on the condition of the wine but each filter pad will filter one to two gallons of correctly prepared wine.

Important Notes

When filtering and handling wine in general, gas bubbles may be given off as the wine is disturbed and a back pressure may build up in the recovery vessel. The Boots Wine Filter Kit has been designed to enable you to relieve any gas pressure through the venting tube and tap (see diagram). We also recommend that:

1. After fermentation has ceased, add Campden Tablets, and leave the wine to stand for at least one week before filtering. This will reduce the tendency for gassing to occur.
2. When starting to siphon, suck on the vent tube sufficiently long to completely fill the tubing. Remove air from the main filter body by venting through the tap. Keep fluid level within 1-2" of the tap on the vent tube by periodic venting during the siphoning process.
   If there is a lot of movement, more gas will be released, so handle the wine carefully during filtration.

Cleaning the Unit After Use

Always clean your filter kit immediately after use.
When filtration is complete, disconnect the siphon and vent tubes from the housing. Discard the spent filter pads. Place all the components in a bowl of warm (**but not hot**) water containing a little washing-up-liquid. Wash thoroughly and rinse in clean cold water, then dry.
Remember to sterilise your Filter Kit before using it again.

Useful Hints

1. When possible avoid a prolonged boiling of the wine ingredients because this extracts a greater quantity of Pectin and also destroys natural Pectinases. Root vegetables have to be boiled, but for fruit, pressing or cold water extraction procedures may be used.
2. Add Pectolytic Enzyme whenever the presence of Pectin is suspected.
3. Always cover the must to keep out mould and bacteria that will subsequently spoil the wine.
4. Keep fermentation vessels topped up and use sterilising solution, or a fraction of a Campden Tablet in water, in the fermentation lock.
5. Most wines recover from the slight exposure to air encountered during filtration. Oxidation during filtration can be prevented by replacing the air in the receiving vessel with carbon dioxide. To do this, connect a piece of plastic tubing to the outlet of an airlock fitted to an actively fermenting wine. Insert the other end into a receiving demijohn and push it down to the bottom. The carbon dioxide is heavier than air and will therefore displace the air in the empty demijohn. One or two hours should be allowed for this to be completed, then filter as usual.
6. Only use Boots Winemakers Filter Kit Pads with this filter. Other pads and papers will not function satisfactorily.
7. One pad will on average filter one gallon of wine. If the wine is very sedimented, filtration efficiency may be impaired.
8. Ensure that a new pad is used for each filtration. Do not leave a pad in the kit after use as this may lead to contamination.
9. Ensure adequate venting always takes place.