# COOPERS BREWERY

## MICRO·BREW KIT

## INSTRUCTIONS


Congratulations on purchasing your own Coopers Brewery Micro-Brew Kit!

You will now be able to brew your own high quality, completely natural, great tasting beers in the tradition of Thomas Cooper, our Brewery's founder.

Enjoy the satisfaction of creating your own special beer variety, free from additives and preservatives. You choose the flavour (from our range of varieties) and you control the outcome.

We hope this is the beginning of years of pleasure as you discover the joys of micro-brewing.

Thank you once again for your purchase and from us here at Coopers Brewery, "welcome to the world of brewing"!

Cheers!!

Please read all of this instruction booklet thoroughly before starting your brew. By strictly following the instructions success is guaranteed.

Contact us on our Home Brew Hotline
1300 654 455 (Australia only)
or visit our Website – www.coopers.com.au

# ABOUT THE CONTENTS

Plastic Fermenter and lid:

Your beer will be brewed in this fermenter. It is specially designed to ensure an airtight seal with the lid fitted. The fermenter contains a tap fitted with a sediment reducer. This sediment reducer draws liquid from the top allowing the yeast sediment formed during fermentation to remain in the fermenter when filling your bottles. An adhesive thermometer is attached to the fermenter to allow you to keep a constant check on the temperature of your brew.

Airlock and rubber grommet:

The rubber grommet fits in the hole in the lid of the fermenter and holds the airlock in place (with an airtight seal). The airlock is half filled with water and allows $CO_2$ (formed during fermentation) to escape the fermenter while preventing any outside contaminents from entering. It is also a good measure of how your brew is fermenting, as the airlock bubbles vigorously at the beginning of fermentation and then slows down towards the end.

Little Bottler:

This is used to assist you when filling the bottles. It contains a valve which allows you to fill bottles quickly without having to continuously turn the tap on and off.

Bottles and Caps:

30 x 740ml PET bottles with screw on caps to store your beer in.


Carbonation Drops:

Used to accurately measure the sugar required to prime the bottles for secondary fermentation.
Use 1 for 375ml bottles and 2 for 750ml bottles.


Brewing Sugar:

Specifically designed to use with Coopers concentrates, brewing sugar is added to commence fermentation.

Coopers Lager Concentrate:

This contains 100% pure natural ingredients (finest two row barley malt and specially selected hops) for brewing great tasting beer at a fraction of the cost of commercial beers. One can will make 23 litres of beer.


Hydrometer:

Used for checking fermentation. Has a graduated scale which tells you when your beer is ready for bottling.

## 1. MIXING

### CLEANING

One of the most important processes in micro-brewing is cleaning and sterilising the equipment. A major cause of failure when brewing is infection due to poor cleaning or sterilising.

You will first need to clean and sterilise:
- the fermenter and lid,
- measuring jug and
- plastic spoon

The bottles and little bottler will be done later (see page 8).

Fill your sink with boiling water and place the fermenter lid, airlock and grommet, jug and plastic spoon in there to soak.

Then pour some more boiling water into the fermenter (make sure the tap is closed) and wash it about so that all the sides of the fermenter are sterilised. Then open the tap and let the water drain out through it.

After sterilising all the equipment let it drain.

You may wish to use sterilising solution rather than boiling water. If so, then follow the above steps using the sterilising solution (mixed as per the instructions) instead of the boiling water. After sterilising you will need to rinse the items with hot water (not cold) and let drain.

## PREPARING THE MALT

While the equipment is draining, take your can of Coopers Lager and remove the plastic lid, instructions and yeast sachet. Then place the can in a sink (or bucket) of hot water for 10 minutes. (This will allow the contents to soften and pour more easily).


## MIXING

Using your can opener, open the can of Coopers Lager from the bottom and using your plastic spoon, empty it completely into the fermenter. Then add 1 kg of sugar and 2 litres of boiling water. Mix for 2-3 minutes.

Once these ingredients are well mixed, add 20 litres of cold tap water to the fermenter and again mix for 2-3 minutes. (If water quality is in doubt use cooled boiled water. See page 10).

## ADDING THE YEAST

Check the temperature on the adhesive thermometer and ensure that it is between 21C-27C. Now open the yeast sachet and add the yeast to the fermenter and mix again for 30 seconds.

PLEASE NOTE: It is extremely important that the temperature is between 21C-27C when adding the yeast. If the temperature is too high the yeast will die: if the temperature is too low, fermentation may not begin.

The mix you have made is called wort (pronounced wurt). This is actually unfermented beer.

Now place the lid on the fermenter, ensuring that it is properly sealed. Take the rubber grommet and place it in the hole in the lid. Then place the airlock in the grommet. (To assist in positioning the airlock in the grommet we recommend wetting the airlock with boiled water).

Pour some previously boiled water into the airlock until half full (see photo page 2).

## 2. BREWING

Place the fermenter in a raised position to later make bottling easier (see page 9) in an area which will maintain the wort temperature at 21C-27C. After a few hours the airlock will begin to bubble, confirming that fermentation has begun.
The brew will continue to bubble, slowing down towards the end of fermentation. Provided the temperature is kept between 21C-27C, fermentation will be complete in 4-6 days.

To check if your beer is ready to bottle, use your hydrometer to measure the specific gravity of the beer by half filling the tube with beer and checking the scale on the hydrometer. When ready, the final reading should be between 1.008-1.010 when using the Coopers/CSR brewing sugar provided in this kit.

PLEASE NOTE: It is important that the temperature is constantly kept between 21C-27C during this fermentation period to ensure that the wort is fully fermented before bottling.

## 3. BOTTLING

### WASHING THE BOTTLES

The bottles supplied in the kit are sterile and do not require cleaning before the first use. Just rinse with cooled, boiled water.

If reusing the bottles, thoroughly clean with detergent. After cleaning, the bottles must be sterilised using sterilising solution. Make sure each bottle is fully sterilised by partly filling with sterilising solution and shaking the bottle so that all the inside is covered.

Please note: Do not use boiling or hot water on PET bottles as this may damage the bottles.

After sterilising, turn the bottles upside down and allow to drain.

Also sterilise the “little bottler” now by running boiled water (or sterilising solultion) through it and then allow it to drain.

### PRIMING

Add carbonation drops to prime the bottles for secondary fermentation. Use 1 drop for 375ml and 2 drops for 750ml bottles.

FILLING

Connect the little bottler directly to the tap. Place the bottles over the little bottler. Touching the base of the bottle will open the valve and begin to fill the bottle. Fill the bottle to within 50mm (2") from the top. Continue to fill the rest of the bottles until the fermenter is almost empty (25mm (1") from the bottom). The remaining liquid can be discarded as this contains the thick yeast sediment formed during fermentation.

CAPPING

Use the screw on caps supplied in the kit to seal the bottles. After sealing, invert the bottle 4 times to mix the priming sugar and beer. Continue to seal and invert all of the bottles.

## 4. ENJOY

Store your bottles upright in an area with a temperature between 21C-27C for 4 days. After 4 days your bottles can be stored at room temperature for at least another 10 days.

After 14 days, secondary fermentation will be complete, so your beer is ready to chill and drink!

However, if you can wait, the flavour will improve if you let the beer age for up to 3 months.

Congratulations, you can now sit back and enjoy your own full flavoured, completely natural beer!

# HELPFUL HINTS

## WATER QUALITY

You will need 22 litres of water for each brew. Generally speaking, tap water is quite acceptable for microbrewing, however if your water is highly chlorinated or has a strong taste, you may wish to boil it before beginning or alternatively use filtered or bottled (spring) water.

## OBTAINING CORRECT TEMPERATURE BEFORE ADDING THE YEAST

The ratio of 2 litres of boiling water to 20 litres cold water is suggested to achieve a recommended starting temperature of 21C-27C. However, in a warm to hot climate it may be necessary to reduce the boiling water to a ratio of 1 litre boiling water to 21 litres cold water, whereas in a cold climate the ratio could be 4 litres boiling water to 18 litres cold water.

## TEMPERATURE CONTROL DURING FERMENTATION

By far the most common cause of home brewing failure is poor temperature control. Exposing the fermenting brew to temperatures outside the recommended range of 21C-27C increases the risk of infection and off taste. Home brew specialist shops stock a range of items for controlling the temperature such as heating trays and heat belts.

## USING A HYDROMETER

A hydrometer is a simple instrument used to measure the specific gravity (density) of the wort. The top part of the hydrometer consists of a graduated scale showing the specific gravity (S.G.).

Microbrew worts usually have a starting or “original” S.G. or between 1.021 and 1.038, depending on the strength of the beer to be brewed. (1 kg of added sugar will give a starting gravity of approximately 1.038). As

fermentation proceeds the S.G. of the wort falls, thus indicating the rate of fermentation. When the S.G. stops falling then fermentation has ceased. This is called the "final" gravity and should be between 1.003-1.006, if using household sugar, or 1.008-1.010 when using Coopers/CSR brewing sugar.

It is a good method of telling you what is going on in your wort, and also exactly when to bottle your beer.

## PRIMING THE BREW

Rather than individually priming each bottle you may prefer to transfer the wort to another large, sterilised container. Then dissolve 180gms of sugar in hot water, add it to the wort, stir for 30 seconds and then begin bottling. Ensure that the 180gms is measured accurately so that no extra sugar is added.

PLEASE NOTE: It is extremely important that the sugar added when priming the bottles is not altered, as this may cause overcarbonation and result in exploding bottles.

## DETERMINING ALCOHOLIC STRENGTH

By modifying the amount of sugar used in the initial fermentation (point 3), the final strength of the beer can be adjusted as follows:

| *Grams of sugar added* | *Final Alcoholic Strength* |
|---|---|
| 1,000 | 4.6 |
| 750 | 4.1 |
| 500 | 3,6 |
| 250 | 3,1 |

## BOTTLES

Glass bottles may be used as an alternative to PET. If using glass ensure that the bottles are suitable for refilling and are in good condition. New bottles can be purchased from a home brew specialist shop. Make sure each bottle is fully sterilised by partly filling with boiled water (or sterilising solution) and shaking the bottle so that all the inside is covered. After sterilising, turn the bottles upside down and allow to drain.

## CONDITIONING AND STORAGE

After 14 days your beer is ready to drink. However you may prefer to store it in a cool area to continue conditioning. After 3 months the taste will improve significantly.

## CONSUMPTION

The secondary fermentation in the bottle (which naturally carbonates the beer) results in a fine yeast sediment remaining in the bottle. This sediment is completely natural and gives the beer its characteristic cloudy appearance. If you prefer your beer to be as clear as possible, we recommend storing the bottles upright in the refrigerator and serving at a temperature of 6-8C, pouring the bottle carefully so that sediment remains at the base of the bottle.

# COMMON PROBLEMS

## FLAT BEER

Most common causes of this problem are:
- Not enough priming sugar added to the bottles
- Storing bottles at low temperature will not allow secondary fermentation to take place. As indicated on our instructions, bottles should be stored between 21C and 27C for 4 days.
- Leaving the brew in the fermenter too long after the completion of fermentation.
- Allowing the bottles to get too hot, thereby killing the yeast.
- Faulty bottle seals.

## POOR HEAD RETENTION

Most common causes of this problem are:
- Polluted glassware (detergent, greasy foods, etc.) is by far the most common cause.
- Excess sterilent/detergent in bottle.
- High alcohol content. This could occur if extra sugar has been added to the wort.
- Excessive yeast in the bottle.
- Excessively rapid carbonation will not allow $CO_2$ gas to be absorbed
- Storing bottles “too warm” after carbonation, thereby killing the yeast deposit.

## GASSY BEER/EXPLODING BOTTLES

Most common causes of this problem are:

• Too much priming sugar added to the bottle. The amount added should be 3gms per 345-375ml and 6gms per 750ml bottle. It is extremely important that the sugar is measured accurately. This can be achieved using the carbonation drops contained in this kit. If using the sugar adding method outlined in "Helpful Hints", it is important to use accurate scales when measuring the 180gms.

• The beer did not fully ferment out before bottling. In this situation unfermented sugar is carried over into the bottle and when combined with the sugar already added to the bottle, an excess is created and consequently excess gas is produced. If the gas pressure is high enough the bottles will explode. (This is a very dangerous situation which can cause injury). Bottling too soon is generally brought about by brewing at low temperatures or lack of temperature control.

• **The brew has become infected.** When this occurs the beer is likely to become overgassed. (See "Beer has sour/bitter taste" section page 14).

## FERMENTATION FAILS TO COMMENCE

This is generally brought about by one of two things.

• Wort too hot when the yeast is pitched which will result in the yeast being deactivated. It can be remedied by pitching more yeast at an acceptable temperature level (ie 21-27C).

• Wort too cold when the yeast is pitched or if it is allowed to get too cold, it may start and stop or not start at all. It may be aroused by giving the fermenter a good shake or stir with a sterilised spoon and standing it in hot water. Moving the fermenter to a warmer place also helps. The yeast should be stored in a cool, dry place before being used.

## NO ACTIVITY THROUGH THE AIRLOCK

There are three possible causes for this:

• The lid and/or the airlock grommet are not adequately sealing the fermenter. Often it is incorrectly assumed that fermentation has not commenced because there is no bubbling activity through the airlock when in fact the brew is fermenting and $CO_2$ gas is escaping via a poorly sealed lid or airlock.

Another method of checking if your brew is fermenting is that when it is fermenting a frothy head will develop and collapse, leaving a residue mark on the fermenter wall above the brew.

• Wort too hot when pitching yeast (see "Fermentation fails to commence").

• Wort too cold when pitching yeast (see "Fermentation fails to commence).

## BEER HAS A SOUR/BITTER TASTE AND "OFF" SMELL

This is a sign your beer is infected. There are quite a number of factors which can cause a brew to become infected.

Some of the more common causes are:

• Whilst the use of a scouring pad, stiff brush etc. may greatly assist in removing the sediment from the inside surface of a plastic fermenter, such items do leave minute scratches on the walls. Although these scratches may appear to be insignificant they do create an ideal place for bacteria to harbour, thereby very much increasing the chance of the brew becoming infected. The inside of the fermenter should only be cleaned with a soft cloth, and the hardened pieces soaked off rather than scrubbed.

• Once the brew has been mixed, ie. concentrate/water/sugar, there should not be any delay in adding the yeast. Often brewers use too much hot water and then wait for the wort temperature to fall below 27C to pitch the yeast. The blend of hot and cold water should be such that the temperature is within the range of 21-27C immediately. The longer this is delayed the more likely the brew will become infected. In warmer climates with high ambient water temperatures it may be necessary to add only 1 litre or less of hot water, or it may be necessary to further cool some of the "cold" by chilling it in the refrigerator.

# TRADITIONAL RANGE
## 6 GREAT VARIETIES AVAILABLE!

### LAGER

*Coopers Lager is produced using the finest Australian premium malted barley and Tasmanian Hops. When fermented these ingredients combine to produce a full-bodied Australian Lager that is distinctive and refreshing to the taste.*

### DRAUGHT

*A full and flavoursome beer displaying a clean crisp taste with a subtle "bitter" flavour. Coopers Draught displays a good head with a fresh bright colour. This style is sometimes better described as a Draught Bitter.*

### REAL ALE

*Real Ale displays a solid head and a distinctive, full-bodied flavour, enhanced by a soft, fruity character. A true ale in style and colour.*

### STOUT

*The Stout is a fine example of the robust, full-flavoured stout family. The unique, rich and dark texture of this product is produced by a specially roasted black malt. A full bodied dry stout.*

### BITTER

*Styled in the old-English tradition, Coopers Bitter is made using aromatic hops and more malt than other beers. Darker in colour than lager style beers, its strong refreshing flavour has made it a popular choice among those who appreciate the quality of this ruby coloured traditional bitter beer.*

### CLASSIC OLD DARK

*Classic Old Dark is produced from a selection of superior roasted malts, which are produced from the finest South Australian two-row barley. This combination of roasted malts and specially selected hops from Tasmania, provides the full and flavoursome taste, for those who prefer a darker beer style.*

## BREWMASTER* SERIES
## 4 GREAT VARIETIES AVAILABLE

### PILSNER

*Pilsners are historically golden and clear, with a notable degree of bitterness and hop character. With a blend of lager malts providing a delicate palate, Coopers Pilsner is true to the style, combining malt characters with a subtle hop aroma and dryness of finish.*



### NUT BROWN ALE

*Brown ales are typically English in origin, ranging from the darker London style to the more malty (nutty) Northern style, all being rich and full bodied, and with a softness reflecting the local water. Coopers Nut Brown Ale has that characteristic deep amber colour with a medium sweet malt-driven palate, and a wonderful nutty dryness.*

### WHEAT BEER

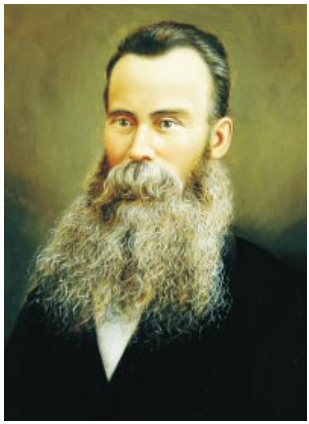
*Wheat beer is typically characterised by the Wiesse (white) beer of Germany. Wheat beers are light and refreshing, with a quenching tartness and occasional spicy flavour. Coopers Wheat Beer has all these essential characteristics as more than 50% of the extract is derived from wheat, the majority of which is from malted wheat.*



### INDIA PALE ALE

*Pale ale originated from Burton, England, which shipped beer to the Empire (especially India, therefore India Pale Ale), and was originally heavily hopped. Coopers Pale Ale retains the style which is based on pale ale malt and a prolonged mashing time. The malty fulness and fruity esters are balanced by lingering hop bitterness.*

* Brewmaster Series not available in all countries



# COOPERS BREWERY

## Traditional brewers of fine ales and stouts for 5 generations

When Thomas Cooper first began brewing
his now-famous ale in 1862,
South Australia was only 26 years old.

His exceptional talents soon found him
producing the world-renowned
Coopers Sparkling Ale
and Coopers Best Extra Stout
for a growing band of customers.

Thomas Cooper delivered
direct to his customers' homes,
a tradition that continued until the 1920's.

Coopers Brewery, still controlled
by the Cooper Family, continues to supply
fine ales and stouts to its customers
throughout the world.

Today, Coopers Brewing Kits
allow brewers the world over to brew
beer in the Thomas Cooper tradition.