**SETTING UP YOUR KEG SYSTEM**

**The Equipment**

You have the choice of the following systems:

1. **Stainless Steel Beer Gun**
   - Hand held beer gun
   - 3 metres of beer line
   - Black beer disconnect

2. **Fridge Tap that is mounted through the fridge door**
   - Fridge tap
   - 1.5 metres of beer line
   - Black beer disconnect

Your keg system also includes the following equipment:

- 2 x 19 Litre ball lock kegs.
- 1 x Double Gauge CO₂ regulator.
- 1 x Plastic gas disconnect (Grey)
- 1 x 1.5 metre length of 5 mm gas line
- 1 x stainless hose clamp (To attach the gas line to the regulator)
- 1 x 250g Brewcraft Keg and Line cleaner
- 2 x Grommets for fridge wall

You will need to arrange the following:

- CO₂ bottle
- Converted fridge to hold your keg/s

**Optional Extras**

**Clearing cube(s)**
**Guinness Aerator for Beer Gun (to pour creamy heads)**

**Kegs**

The kegs used in this system are second hand post-mix kegs. They are stainless steel with a hatch cover for easy cleaning and filling. They include gas in and beer out valves as well as a safety release valve.

**Disconnects**

The kegs are fitted with ball lock (snap lock) fittings. The disconnects are made from hardened plastic and work on the same principal as your standard garden hose fittings; they click on and off for easy connection and disconnection of the beer and gas lines from the keg. The grey disconnect is the gas connection and the black disconnect is for dispensing the beer.

**CO₂ Gas Bottle**

A gas bottle has not been supplied with your keg system however they can be hired from your local CO₂ supplier (e.g. BOC, AirLiquide etc). The gas bottles come in various sizes. The most common and easiest to handle is the “D” size bottle. Other sizes are available but you may find them heavy, difficult to move and unsightly.

**Regulator**

A full CO₂ bottle holds a pressure of approximately 5600 kpa (800 psi). This is more than the 250 to 300 kpa (35 - 47 psi) that you will need to pressurise your system. The regulator is the piece of equipment that reduces the pressure to workable levels. It screws onto the gas bottle and reduces the pressure to safe levels. The regulator is adjusted by turning the knob. There are two gauges on the regulator, one displays the gas bottle pressure and the other displays the pressure inside the keg. The CO₂ in the bottle starts out as a liquid. The pressure of the gas in the headspace of the bottle will be between 5000 - 5600 kpa (700 and 800 psi) depending upon the temperature of the bottle. The pressure gauge on the regulator that shows the high pressure from the gas in the bottle will only begin to fall when all the liquid is gone. Therefore the best way to determine how much CO₂ remains in the bottle is by weight not pressure, so weigh your bottle when you first get it. The bottle will be weighed and stamped when empty. The empty bottle weight is on a tag around the neck of the bottle.

**Fermenting your Beer**

Ferment your beer in the normal way. When fermentation is complete add Brewcraft beer finings and stand in a cool place or place in the fridge (If you are using a heater pad or similar, make sure it is turned off at this point). It will usually take 2 days to settle and the beer to become bright.

When the beer is clear you can transfer it to the keg using a Fermtech Auto Siphon. **Note:** Using DCL yeasts will also aid in the clarification of the beer.

**Cleaning and Sterilising Your Keg:**

Once fermentation is complete you must clean and sterilise the keg. We recommend that you use Brewcraft Keg and Line cleaner. The following outlines how to clean and sterilise your keg system:

- **Release any pressure in the keg by operating the pressure relief valve**
- **Remove the lid and rinse out any remaining beer from the previous batch.**
- **Add 5 teaspoons of Brewcraft Keg and Line cleaner to 5 litres of warm water and swirl around the keg. Leave to stand for 5 minutes.**
- **Empty the keg and scrub the inside surface with a demi-john brush so that the water in the keg replaces all the steriliser in the line.**
- **Reconnect the gas and set at 70kpa (10psi) and now open the tap so that the water in the keg replaces all the steriliser in the line.**
- **Disconnect the gas and empty out any water from the keg.**

Your keg and beer line are now ready for use. **Note:** Do not use other sterilizers in your beer keg system.

**Transferring Your Beer to the Keg**

The follow outlines how to transfer your beer to the keg.

- **Connect the beer gas line to the keg and purge with beer gas by lifting the safety valve.** This gas protects the beer when it is drained into the keg.
- **Disconnect the gas and release the remaining pressure.**
- **Open the top of the keg and transfer beer using Fermtech Auto Siphon.** This siphon fills the keg from the bottom without splashing the beer.

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**Preparing the Fridge**

The easiest way to protect and serve your beer is to store the keg in a fridge. Your fridge may need to be rearranged to fit the system. Please ensure that it is on a level base. Some fridges have wiring or plumbing in the internal walls of the fridge therefore the following procedure will apply.

Please note:

- **Using DCL yeasts will also aid in the clarification of the beer.**
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**Gas line through side of fridge**

- **Door**
- **Tap**

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You will notice that there is a tube in the keg running from the top of the keg to the centre at the bottom. This is called the Dip Tube and is the tube used to draw the beer from the keg. There is also another tube that is quite short in length. This is the CO₂ inlet, where the CO₂ is injected into the beer. Your keg should be filled to approximately 50 mm (2 inches) from the bottom of this tube. Any remaining beer can be bottled using 1-heaped teaspoon of castor sugar per 750 ml bottle and seal securely.

Once the keg is full, replace the hatch cover and move keg to the prepared fridge. Connect the gas line to the gas bottle. Turn the gas bottle on and set the pressure on the regulator to between 70 and 100 kpa (10 - 15 psi) and connect the gas line to the keg.

**Priming the Keg with CO₂**

You need to purge the headspace of the keg of any oxygen to protect the beer from oxidisation. By releasing the pressure release valve, the CO₂ will flow into the keg and the air will flow out through this valve. This is called burping the keg and is best done in three short bursts.

**Carbonating**

The absorption of the CO₂ into your beer depends mainly on the temperature of the beer, the pressure at which it is applied and the length of time pressure is applied. The CO₂ will be absorbed at a faster rate when the beer is cold so if you apply 240kpa (35 psi) continually for 3 days under normal refrigeration temperature (3°C) your beer should be gassed correctly. Reduce the pressure to the dispensing pressure of 100kpa (15psi) and test for carbonation.

**Note:** To reduce the pressure in the keg, first turn down the pressure on the regulator by unscrewing the adjuster. Then slowly vent the keg to reduce excess pressure. Finally, slowly screw the adjuster in until the new pressure is achieved. **Note:** If liquid is forced back into the regulator then it may be damaged beyond repair.

When you are satisfied with the level of carbonation leave the keg at the dispensing pressure. It will not absorb any more gas even under refrigeration. The amount of carbonation your beer needs is dependent on several factors; dispensing temperature, beer style, personal preference and the type of tap used. Your exact situation may need some trial and error to find what is best for you, eg. For an English style bitter you may prefer a lower rate of carbonation as compared to a more effervescent style such as a German Weizen. The rate of carbonation is a matter of personal choice.

**Note:** If you have over carbonated your keg then gas can be removed from the keg by doing the following:

- **Turn off the gas bottle and vent the gas from the headspace by releasing the pressure relief valve.**
- **Leave the gas bottle off and let it stand for 1 hour while you repeatedly release any gas from the headspace.** This will release some of the gas that is dissolved in the beer.
- **When you have removed enough gas you can again turn on the gas and test. Repeat if necessary.**

**CARBONATING WITH BOC GASES CELLAMIX 55**

This gas is ideal for stouts and dark ales. The fridge temperature should be set at 3°C (Use a Brewcraft stainless steel thermometer). Allow 3 days at 300kpa to carbonate the beer.

To serve the beer, turn off the gas and slowly release a portion of the gas. Pour the beer at approximately 200 kpa.

**Dispensing**

Now for the good part pulling that first beer! First reduce your keg from carbonating pressure to dispensing pressure by turning the knob on the regulator. If the pressure doesn’t come down as you turn the screw you may have to vent the keg using the safety relief valve to release the excess pressure. A suggested dispensing pressure is 100kpa (15 psi).

Even though the beer that you have kegged may have been clear you will still get some sediment at the bottom of the keg so the first glass may be a little cloudy. We suggest pulling a couple of glasses through until it clears. Whether using a gun or a tap always dispense with it fully open, if it is only partway opened you will end up with all froth and no beer.

**IMPORTANT POINTS**

- **Beer matures quicker in kegs than in bottles.**
- **The beer will keep indefinitely in the keg as long as you have been careful with cleaning and sterilising. As the beer is dispensed it is replaced by sterile CO₂, this protects the beer while dispensing.**
- **To further improve the clarity of your kegged beer, transfer the cleared beer into a clearing cube and store in a fridge for 3 days prior to transferring to the keg. This should be done at the time that you add the finings. This will further reduce any sediment that may be transferred into your keg.**
- **To convert kpa to psi divide kpa by 7 (7 kpa = 1psi).**

**OPTIONAL GASSING METHODS**

A quicker alternate way of gassing your keg is as follows. First fill the keg with beer from your fermenter and seal the lid. Secondly connect the gas line to the inlet valve of the keg and turn the regulator to between 250 and 300 KPA. You will hear the gas going in, it sounds a bit like water boiling. When the noise stops, disconnect the gas line and place the keg on the floor on its side and roll it quite vigorously under your foot for about 10-15 seconds. This will mix the gas with the beer. Repeat this process three times, then stand the keg in your fridge without the gas connected for 24-36 hours to chill the beer down. Then reconnect the gas at between 80-100 KPA and pour yourself a beer.

**KEGGING SYSTEMS**

An overview of a draught beer system for home brewers

Describes the equipment required and how you do it