

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

2. Fridge Tap that is mounted through the fridge door

- Fridge tap
- 1.5 metres of beer line

Your keg system also includes the following equipment:

- 1 x Plastic beer disconnect (Black)
- 1 x 19 Litre ball lock keg.
- 1 x Double Gauge CO₂ regulator.
- 1 x Plastic gas disconnect (Grey)
- 1 x 1.5 metre length of 5 mm gas line
- 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)

Party Keg Charger (Portable dispensing solution)

Kegs

The kegs used in this system are 19 litre 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 call 132 427, 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

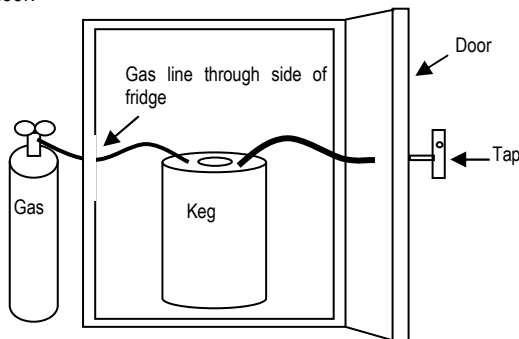
A full CO₂ bottle holds a pressure of approximately 5600 kpa (800 psi). This is more than the 100 to 300 kpa (35 - 47 psi) that you will need to pressurise your system. The regulator is the piece of equipment that reduces the pressure to workable levels. It screws onto the gas bottle and reduces the 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.

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 need to be performed by someone experienced with your particular fridge**. They will need to drill a small hole to bring the gas line from the regulator into the fridge. Whether they choose the side or back of fridge depends on your preference and the location of existing wires and plumbing. Use a 12mm drill bit to drill the hole. Insert the grommets supplied on the inside and outside wall of the fridge. Before sealing the gas line ensure there is sufficient length of line to reach the gas bottle, which will be stored outside the fridge. **CAUTION: Take care when drilling any holes through the walls of your fridge. Make sure all power is disconnected prior to drilling.**

If your keg system has a beer gun it comes supplied with the correct length of beer line and no more holes are necessary. If you have a fridge tap, you will need to drill more holes. The position of the tap is again a personal choice. If you require the tap to be fitted onto the door of the fridge then make sure there is enough beer line so that the door can be opened fully. If you decide to have the tap fitted to the door, when the back nut is tightened it may collapse the wall of the fridge door. We have found a small length of PVC pipe pushed over the shank of the tap allows the tap to be tightened so that it is secure, without damaging the wall of the door.



USING YOUR KEG SYSTEM

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 food grade siphon hose (12.5 mm will fit over a standard fermenter tap).

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 (other cleaners can corrode the kegs stainless steel causing it to rust). 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 3 teaspoons of Brewcraft Keg and Line cleaner to 3 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 to remove any build up.
- Add 3 teaspoons of Brewcraft Keg and Line cleaner, to 3 litres of warm water, fit the hatch cover and swirl contents around the keg.
- Connect up the gas disconnect to the IN post and the black disconnect to the OUT post.
- Adjust the pressure to 70kpa (10psi) and open the tap or beer gun to run some steriliser through the beer line and out the tap.
- Let it stand for 5 minutes and repeat the process to sterilise the inside of the beer line.
- Disconnect the gas inlet and release the pressure from inside the keg, drain the keg and refill with clean water.
- 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 sterilisers in your beer keg system, they may cause the stainless steel to corrode and rust.**

Transferring Your Beer to the Keg

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

- Connect the gas line to the keg and purge with beer gas by lifting the safety valve. This gas protects the beer from oxidation when it is drained into the keg.
- Disconnect the gas and release the remaining pressure.
- Open the hatch cover of the keg and transfer beer using food grade siphon hose. Place the hose to the bottom of the keg to avoid splashing the beer.

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 outlet 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 (**filling above this level may allow beer to flow back into the regulator causing permanent damage**). 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, turn the gas to 100kpa and attach the grey gas disconnect to the gas inlet post on the keg. Pull the pressure relief valve to allow the CO₂ to flow into the keg and the air will be pushed out through the pressure relief valve. This is called burping the keg and is best done in three short bursts. This is done to purge the headspace of the keg of any oxygen (replacing it with a protective layer of CO₂) to protect the beer from oxidation. You can now place your keg in the fridge for 24-48 hours to get cold for carbonating.

Carbonation

The absorption of the CO₂ into your beer depends 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.

The standard method (3 days)

Connect the gas to your keg at 240kpa continually for 3 days under normal refrigeration temperature (3°C). This should produce a correctly carbonated beer. Gently reduce the pressure to the dispensing pressure of 100kpa. Test for carbonation and leave for longer if required.

The long method (1 week)

If you are in no hurry to drink your beer you can connect your gas to the keg at 100kpa (dispensing pressure) and leave it at this pressure for a week in the fridge. By using this method you will not have to worry about over carbonating your beer.

The super quick method (1 hour)

Once your keg is cold, turn the regulator to 300kpa and push the gas connection slowly onto the beer outlet valve of the keg (**pushing the connection all the way on will cause it to get stuck**) until you hear gas going into the keg (it sounds like water boiling). With the gas line still connected rock the upright keg back and forth for about 50 seconds. This will help the beer absorb the CO₂ much more readily as it bubbles up through the beer. Next disconnect the gas and stand the keg in your fridge for one hour to let the froth settle. After an hour pull the pressure relief valve to release all pressure then connect at serving pressure (100kpa). If your keg is not carbonated as much as you would like, repeat the process but for 5-10 seconds at a time.

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.

Fixing over carbonation

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.

Dispensing

Even though the beer that you have keged 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 keged 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).**
- There is also a product called ClearCool which will help to clear the beer if it has a chill haze. It is an enzyme made from paw paw that is added at the end of fermentation.



KEGGING SYSTEMS

An overview of a draught beer system for home brewers



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