



Kegging 101

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A. What is a keg? There are many types of kegs but homebrewers normally use the term “keg” for a 5 gallon stainless steel container that the soda industry used for distribution. The soda industry switched to a “bag-in-box” system and no longer uses the kegs. The used surplus can be purchased for around \$20 each if you do some digging or \$100 new. There were a few manufactures, mainly Cornelius (hence the nickname “Corney Keg”), Champion, Challenger, and Firestone.



B. Two Keg Types: classified by the gas and liquid hook-ups used

1. Ball Lock

- Most popular and common
- Used by Pepsi and other soda manufactures
- Dimensions 26" X 8.5"

2. Pin Lock

- Only used by Coke so less common
- Shorter and fatter than ball lock kegs, taller hookups



C. Keg Anatomy: ball lock

- Lid:** most have a removable pressure relief safety valve and a 3.5" ID x 4" OD rubber O-Ring
- Posts:** unscrewed using a 7/8" deep star socket. Some take a 11/16" socket. IN and OUT usually marked on keg.
 - IN and OUT posts** are slightly different size to prevent incorrect attachment. Gas IN post usually has markings. Uses a 7/16" ID x 5/8" OD O-Ring¹
 - Poppet valves:** spring loaded and somewhat specific to keg manufacture. Replace with same brand if cracked or leaks
 - Tubes:** one short gas IN and one long dip tube for liquid OUT. Liquid tube is keyed for correct alignment. Uses a 5/16" ID x 1/2" OD Double Seal O-Ring²



D. Reconditioning. Unless your used keg has been reconditioned (cleaned and replacement of all rubber parts) by the re-seller, you need to do this before first use.

- The outside of the keg can be brightened with a scratch-free scrubby pad and Bar Keepers Friend or other stainless kitchenware polish.
- Release pressure. Most kegs are shipped pressurized to demonstrate they do not leak. Depressurize them for disassembly by using the release valve or poke a wood object in the gas IN port.
- Remove lid and give it a good rinse. **BEWARE:** Some kegs may have caustic soda in them (a strong base cleaning agent) do NOT get this on your skin!
- Fill 1/4 full with hot water and PBW. Give it a good shake a few times and allow to soak overnight.
- Remove all rubber parts and discard. Place all metal parts into the keg and let soak. Use a special long dip tube brush for a good cleaning inside the tube.
- Rinse.
- Coat new rubber parts in a silicone-based food grade lubricant (aka “keg lube” or “petrol-gel”) and reassemble keg. Be sure gas post goes on the IN side. The posts cannot be interchanged, they are different size.
- Pressure test to around 15 psi.
- Sanitize with around quarter keg of Star-San, etc. Be sure to get some into the dip tube by pressing on the poppet.
- Mark the keg with date of reconditioning and “sanitized” tag. Drain out sanitizer at kegging time via dip tube.

E. The Gas: CO2

- I suggest using a new 5 pound cylinder. The cylinders have to be pressure tested every 5 years, so most cheap used ones you find are nearing their test date. Not sure how much testing costs. The 5 pound should fit any kegerator and is easily transported. Go bigger only if you have lots of taps. It costs \$10 to get 5 pounds filled at Paintball Players MD at 1015 Oak Hill Road. You can also rent a CO2 tank from local gas suppliers. A 5 pound will last around 8 kegs or so depending on what else you use the gas for.

2. **Regulator.** Mine is a dual gauge which has a high pressure gauge that shows how much gas is in the tank and a low pressure gauge that shows the output pressure. I replaced my low pressure gauge with a lower range one (1–30 psi) for more accuracy. You can add on a gas manifold to supply multiple kegs at different pressures (handy for soda). Be sure to use a check valve to prevent liquid from backing up into the regulator.



F. Kegerator

1. **Equipment List:** In addition to a keg, CO2 Tank, and Regulator, you will need a 1" bi-metal hole saw, around 10' of 3/16" beverage line, around 5' of 5/16" braided gas line, black liquid quick disconnect, grey gas quick disconnect, faucet, faucet wrench, shank, and hose clamps (stepless Oetiker recommended). Oh, and a fridge that will hold your tanks.
2. **Drill.** The door is the safest place to put your taps. Drill a 1" hole where you want your tap. Sanitize the shank and faucet. Put the shank in and tighten. Put the faucet on. Put the keg and CO2 in the fridge and hook up the gas and liquid lines. Turn adjustment screw to serving pressure.
3. **Balancing the system:** The goal is to get a nice head on the beer but not too much foam. Foam happens when the beer goes through excessive pressure changes. To keep the pressure changes to a minimum use the narrow 3/16" beverage tubing. The tubing has a resistance of 2.2–3.0 pounds/foot. So if you carbonate your beer at 15 psi and use 7 foot of tubing, it will be flowing out the tap at near 0 (atmospheric pressure) so the bubbles stay in solution until they hit the glass. You can also buy "Foam-Free Beverage Tubing" which helps.
4. **Carbonation Chart:** The colder you go the less pressure you need for the same CO2 volume result.

TEMP	5 PSI	10 PSI	15 PSI	20 PSI	25 PSI	30 PSI
30° F	2.23	2.82				
35° F	2.02	2.52	3.02			
40° F	1.83	2.30	2.75	3.19		
45° F	1.66	2.08	2.51	2.94		
50° F	1.50	1.90	2.30	2.70	3.10	
55° F		1.75	2.12	2.47	2.83	3.18
60° F		1.62	1.95	2.27	2.60	2.92

British Ale: 1.8 to 2.2 volumes

German Lager: 2.5 volumes

American Lagers and Ale: 2.6 to 2.8 volumes

Wheat Beers: 3.0 volumes

G. Keg Gadgets

1. 8 gram CO2 cartridge fitting for portable party dispensing, along with a special faucet fitting is handy.
2. The Carbonator™ screws onto 2 Liter plastic soda bottles and hooks to a gas fitting for carbonating beer or homemade sodas.
3. Counter Pressure Filler or BeerGun™ to fill bottles with.
4. Black picnic "Cobra" tap has all sorts of uses.



H. Other Uses

1. I use my CO2 to purge my kegs/secondaries of oxygen before I do a transfer. I use the handheld bicycle inflator unit to purge growlers and bottles before filling off of the tap.
2. Store 5 gallons of sanitizer under pressure and use a cheap picnic tap (cobra tap) to dispense; same for PBW.
3. Bottle from the tap with a short length of hose attached to the faucet; or use the cobra tap and a piece of hose.
4. Use as a "Bright Tank" or conditioning tank by cutting off 1"–1.5" off the dip tube, clear beer is drawn off the sediment at the bottom. Let it rest and do not move it so you do not disturb the sediment.

References:

<http://www.northernbrewer.com/docs/html/corny-keg.html>

<http://cruisenews.net/brewing/kegging/page1.php>

Keg Seals: McMaster-Carr: <http://www.mcmaster.com/>

Dip tube seals: Pack 90025K368: Double Seal Buna-N O-Ring AS568A Dash Number 109, Packs of 100): \$4.96

Post O-Rings: Pack 9396K24: Silicone O-Ring AS568A Dash Number 111, Packs of 100 (Same as 9396K6): \$11.42

Lid O-Rings: Packs 9452K218: Buna-N O-Ring AS568A Dash Number 417, Packs of 10 (Same as 9452K342): \$12.50