

# Constructing your Party Keg

## Disclaimers:

**#1 An Important Safety Warning:** These kegs are pressure vessels. Pressure vessels occasionally blow up or pop off a bit. It might hurt you, or it might kill you. The unmodified garden sprayers are safe enough or they wouldn't be allowed to sell them, but you are going to change it..... Do so at your own risk. I am happy that this design is safe enough for *me* to use without worrying, but *you* need to decide for yourself.





Under ***no circumstances*** should you modify or remove the keg's safety relief valve.

**#2** A warning about what to expect: At the end of this document you will have been shown how I would make a Party Keg out of a Garden Sprayer. And that's what you will end up with, a keg, not a keggering *system*. In the same way you would have to buy taps, gas, beer line etc, if you were to get a standard Cornelius keg, you will have to buy stuff to make this party keg work too. What you need to buy for using the keg will be in the document titled "Using your Party Keg". Before you go ahead and build one, you check out the other things you need, to make sure that you know what you're getting into and how much it might cost you in money and effort.

## Tools Needed

<ul style="list-style-type: none"> <li>• Power Drill</li> <li>• Hole Saw with 54mm &amp; 38mm blades (or close to that)</li> <li>• Adjustable hole saw or one able to cut a 55mm diameter disk</li> <li>• 19 mm Spade bit</li> <li>• Flat metal working file</li> <li>• A little bit of sandpaper</li> </ul>	<ul style="list-style-type: none"> <li>• Pliers</li> <li>• Small shifter</li> <li>• Workbench with C clamps or similar</li> <li>• Bike pump</li> <li>• Tyre pressure gauge</li> <li>• Screwdriver (or bit for drill)</li> </ul>
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## Parts & Materials

	Part Description	Source / Approx Cost
	<p>5 or 8 L “Aqua Pressure” Garden Sprayer or same design. These are the cheapest ones you will find in Bunnings, you might find the same sort of ones somewhere else, but you need to make sure the design is the same, or these instructions will need to be modified to match your sprayer.</p>	<p>Bunnings, \$8 – 15</p>
	<p>John Guest style push fit bulkhead fitting for 8mm OD tubing</p>	<p>AHB sponsors and other places. \$8</p>
	<p>End plug to fit bulkhead fitting</p>	<p>AHB sponsors and other places. \$1</p>
	<p>1 car tyre valve. The type used in Mag wheels. You can get them in brass, chromed brass and in Stainless. I recommend the brass versions because it's a lot easier to work with brass than stainless. There are a couple of different types of these valves... they will pretty much all work OK</p>	<p>Mag wheel specialist stores. I had no luck finding them at normal car tyre places or Autobarn etc. You might get them on e-bay as well. &lt;\$5</p>
	<p>White Nylon chopping board. The smallest one you can find will be big enough. Try for a thinner one around 8mm thick. A thicker one will still work though.</p>	<p>\$2 shops. For about \$2</p>
	<p>Approximately 30cm of 8mm OD beer line</p>	<p>Homebrew shop &lt;\$1</p>
	<p>Food grade lubricant. Handy to have for many brewing purposes. Buy the stuff that the HB shops recommend and then it wont effect the head retention etc of your beer</p>	<p>AHB sponsors and other Homebrew shops. About \$10</p>

# Construction

## 1 Preparing the Sprayer

Take apart your sprayer. Completely!! Unscrew the pump assembly from the lid. Don't pull apart the pressure relief valve, but do take it off the sprayer body.

Chuck away the hose, the pump assembly, the tap part, the dip tube, the little jigger that goes in the liquid out post. Keep the metal tube and the handle part of the pump though.

Wash everything you have left in hot soapy water to get rid of the grease. You might need to wash it a couple of times. You will be able to smell a nasty greasy smell if you haven't gotten it all.

## 2



### Constructing the Lid

We are going to cut some discs out of the chopping board to seal the lid now that the pump is gone.

Screw your chopping board to a piece of scrap timber, just one screw in two corners will be enough.

The first disc we are going to cut is ring shaped and is a spacer to deal with the lip you will see if you look on the inside of the green sprayer lid.

Take your holesaw with a 38mm blade and cut a disk out of one corner of the chopping board.

Change the holesaw blade to the 54mm one

Now use the hole left in the timber from cutting the earlier disc as your

Pilot & cut another hole. You should end up with a nice ring, as you see in the orange circle on the photo. The smaller disc is scrap and can be discarded.

Because this ring/disk is only a spacer it doesn't have to be exactly these sizes. Look below at where its going and as long as it will loosely fit where its supposed to go, that'll do. No need to go buy new blades for your holesaw.

The second disc we will cut is going to be the new seal for the keg. It will have a hole in it for fitting the John Guest bulkhead, which will be part of our liquid out assembly.

Fit your drill with the 19mm spade bit.

Making sure you leave enough distance from the edges to fit the rest of the 55mm disc, drill a hole in your chopping board.

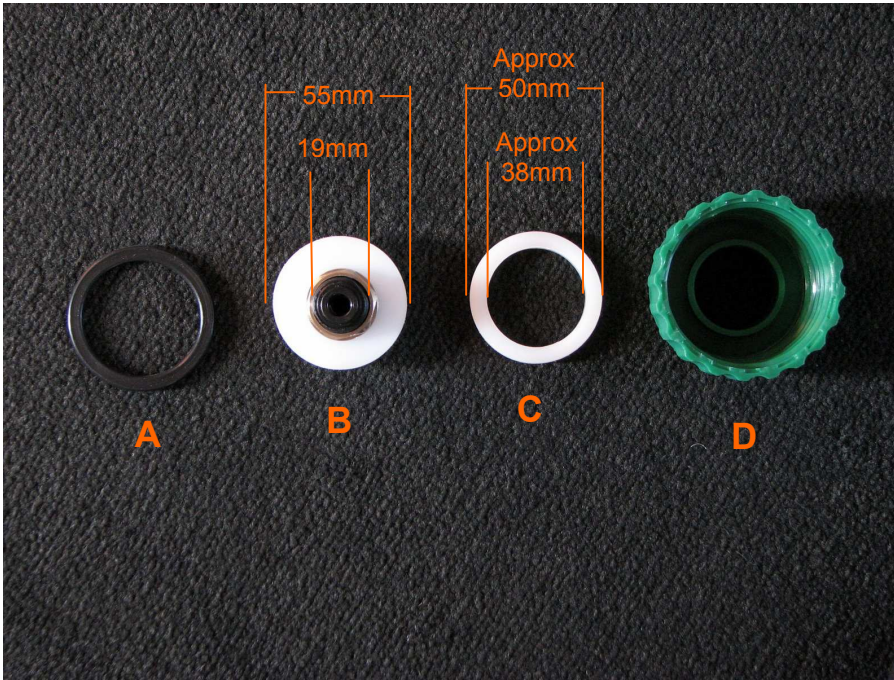
Take out the spade bit and fit the adjustable holesaw into your drill

Using the hole left in the timber from the spade bit, as a pilot, cut a 55mm disc out of the chopping board.

Clean off the burs and rough edges from your two discs with sandpaper .



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### Assembling the Lid and Liquid Out

Get your John Guest bulkhead fitting and take it apart. Smear a little food grade lubricant on the o'rings and fit it into the second disk you made to end up with your bulkhead disk (B)

Grab the lid of the sprayer and the original o'ring. You should now have A (o'ring) B (bulkhead disc) C (spacer ring) D (sprayer lid) as per the photo.

Drop C in to D so that it sits in between the lip and the outer edge.

Drop B into D on top of C (The brass nut goes towards the outside)

Push A in last, it should fit snugly and more or less hold everything in place. Smear a bit of food grade lubricant on the O'ring.

Take your 30cm of 8mm OD beer line and push it into the inside of the bulkhead fitting, now try to screw the lid onto the sprayer.

Trim the line so that when the lid is screwed down, it goes all the way to the bottom of one of the little feet on the sprayer. This is the dip-tube for your Liquid Out line.

Screw the lid onto the sprayer. The lid and liquid out part is now complete

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### The Gas-in valve

Take your car tyre valve, remove all the seals and any nuts etc so you just have the valve body.

Take the seal circled in the photo, put on a little food grade lubricant. With a little coaxing, this seal should fit perfectly into the hole in the kegs original liquid out post.

Now take the valve body and see if it will fit neatly inside the grey plastic fitting from the sprayer's original liquid out that screws down onto the post. If it does, then you are in great shape, just sit the valve on top of the seal you inserted, put the plastic fitting over the top and screw it down. Done !! If you are able, it's probably worth screwing any nuts back onto the outside, just to act as a bit of reinforcement

It should look like this. If it doesn't fit in there nicely, it will need to be modified. Go to step 5





5



### Modifying the Valve

You will need your file, some clamps and your power drill.

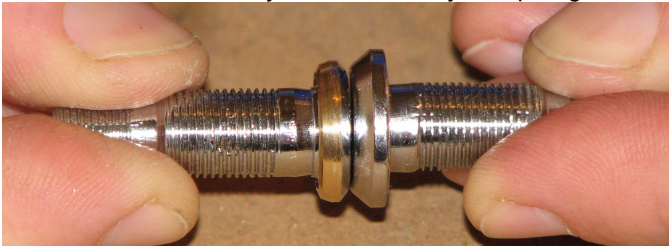
Clamp your file to the edge of your workbench, nice and firmly.

Put your valve into your power drill, as though you were going to try and drill a hole with it (you're not).

Now rev up the power drill and push the spinning valve body onto the file, machine it down till it will fit inside the grey plastic fitting.

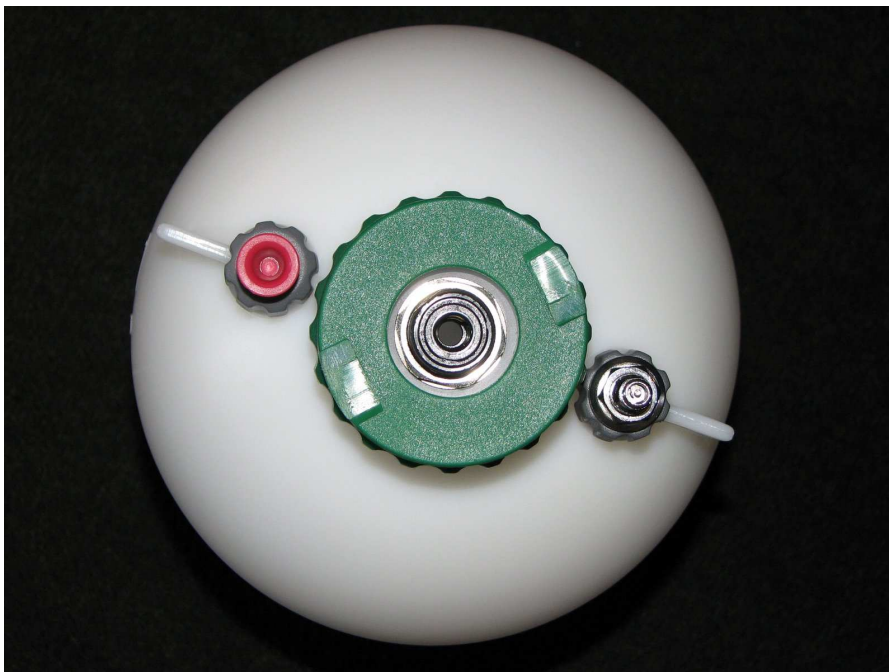
You won't have to machine off too much, but make sure you get enough. You don't want to have it too wide and putting unnecessary strain on the plastic fitting.

For the same reason try to knock of any sharp edges and leave it a little rounded.



Screw it all into place as per step 3

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### Final Assembly

Your completed Lid should be screwed down firmly.

Your Gas in Valve should be screwed firmly into place

Your pressure relief valve should be screwed firmly into place (with a little lubricant added)

Your John Guest End Plug should be inserted into the Bulkhead fitting

This should give you a pressure tight vessel, ripe for filling with lovely lovely beer.

## 7 Pressure Testing

Attach your bike pump to the gas in valve and pump a little bit of pressure into the keg. Check for leaks with soapy water. It might be perfect first time, or it might take a couple of goes to get the hang of sealing the keg up properly. Lubricant on all the o'rings will really help with a good seal.

Once the keg isn't leaking, its time to test how it holds working pressures.

Pump your bike pump for a little while; use the pressure gauge on the car tyre valve to test how much pressure is in there. Pump till you get it up to 12psi. Check for leaks.

Now, keep on pumping, we are going to test the pressure relief valve to make sure its working and to find out it's release point. Don't go too far, too fast, check the pressure often, wait till you hear the relief valve start to vent pressure check with the gauge to determine at what level it activates. Note this down. You will need it when you start using the keg.

**Safety Note:-** if the keg gets much over 25psi... stop adding pressure. The relief valve should kick in somewhere around 25psi, if it doesn't, then something might be wrong with it and it might get dangerous. De-pressurise the keg, remove the valve and check it to make sure its working and hasn't become clogged up. Make sure your pressure relief valve is working. Really *really* do!

Now, de-pressurise your keg till it's at about 12 psi and go and have a beer. Leave it for an hour, or better yet overnight. Test the pressure in the morning. Still 12psi. Success !! If it lost pressure overnight, jiggle it a bit, you'll get it to seal up eventually. Trust me.

**Safety Note:-** Never try to open the keg or remove a fitting from it while there is *any* pressure in the keg. Even a couple of psi is enough to shoot fittings or beer across the room. I once unscrewed the lid of mine while it had only 3psi in it. I figured it would just go whoosh when I opened it.... Well instead, it stayed sealed until the lid had almost reached the end of the threads and then popped off, through my hands, across the room and in a truly cartoon-esque moment, smashed an expensive vase. It wasn't my face... but it could have been.

## 8 Finishing Touches

If you want too, you can cut up the handle of the pump to use as a carry handle for your keg. Just chop off the handle bit and cut a notch out of it to fit over your liquid out assembly. Then it should just grab onto the little hooks on the lid for nice easy carrying.

The metal tube that I suggested you don't throw away... has no purpose in the keg, but they can be fashioned into a variety of things that might be useful to a homebrewer. I use mine as a thermowell for temperature sensors.

That's it.... Your keg is finished and ready to use. See the "How to Use Your Party Keg" document for... well.... how to use it.