Introduction

After adding up all the time and effort wasted on bottles and cans I decided to man up and build a kegerator. I started googling, and instantly realized that kegerators are for losers, and what I really wanted was a keezer. With lots of advice from my best buddy Shawn I assembled my requirements and got started.

First, I wanted multiple taps. Plenty of googling guided me to the decision that a 7ish cubic foot freezer can comfortably handle 4 barrels, with the CO2 tank inside. I decided my four barrels would be something light, something dark, something else, and carbonated water (a favorite for myself, kids and non-drinkers). (edit: spoiler alert, I can only fit 3 sixth barrels)

Tap1 (light) I picture as some kind of pale ale (sierra Nevada, Saranac or similar). This will be a commercial sanke tap.

Tap2 (dark) will be Guinness or some other kind of nitro/beergas. Sanke tap. For the faucet, I'm using a nitro faucet. You'll notice this build DOES NOT include a nitro tank. After careful consideration, and lots of discussion with others, you can get really really really close to simulating the nitro mouthfeel with low co2 pressure and the correct faucet. The only thing you'll miss is the downward cascading bubbles. I'm over it, because this choice simplifies everything (and costs a lot less).

Tap3 (something else) this is the wildcard. Maybe a cider, maybe a pilsener, who knows. Sanke tap.

Tap4 (water). I plan on experimenting with flavoring my own waters, I'll let you know how I make out. This one I'm doing with a corny keg. The corny keg will ALSO be filled with cleaning solution and used for cleaning out my lines from time to time.

Parts List

All parts are stainless where they can be. I also opted for worm clamps instead of Oetiker clamps 'cause they are easier to repair/swap as needed. Here's the parts list (from kegoutlet):

Description	Part Number	Qty
Freezer need 7ish cu ft for 4 kegs + gas	IF71CM33NW	1
2x 2x6, stain, inside corner bracket, GE silcone 2, foam board, aluminum tape (already have all this)	n/a	1
Inkbird Itc-308 Digital Temperature Controller Outlet Thermostat, 2-stage, 1100w, w/Sensor	Itc-308	1
circulation fan		1
dehumidifier		1
Used 5 Gallon Ball Lock Corny Keg (BUY THE EXTRA O RING KIT!)	KG101	1
Ball Lock Disconnect Set - Threaded with Barbed Swivel Nuts	DC703	1
Perlick Tap	FA206	3
Nitro Tap	FA50-V3NITRO	1
CMB Beer Faucet Black Handle	CMB-H	3
Stainless Steel Draft Beer Shank, 4 x 1/8"	SK103SS	4

Faucet Wrench	FA801	1
MFL Tailpiece - 1/4" (include washer and swivel nut)	TP100	4
Beer Nut - Hex Nut	SK201	4
Taprite Sanke "D" Tap with MFL Tailpieces	HK501T	1
Hose - Beer Hose (Clear 3/16" ID X 7/16 OD)	HO101	32
Faucet Spout Plug	FA804	8
Worm Clamps	CP101	10
Hose - Gas Hose (Red 5/16 ID, 9/16 OD)	HO104	16
Primary CO2 Beer Regulator - Double Gauge - Taprite with 1/4 barb	RG000	1
Taprite Secondary Regulator - Low Pressure - 4 Body	RG384LT	1
Things I forgot above		
primary reg to secondary regulator, 5/16 swivel nuts	SW516	1
secondary reg to sanke tap, 5/16 swivel nut (reg side)	SW516	4
two more sanke taps	HK501T	2
secondary reg to sanke tap, 5/16 swivel nut (tap side)	SW516	3
sanke tap to shank, swivel nut 3/16	SW104	2
sanke tap to shank, 3/16 barb tailpiece	TP316	4
tailpiece washer	TPW100	bunch
beer washer	SK202	bunch
More worm clamps	Blah	blah

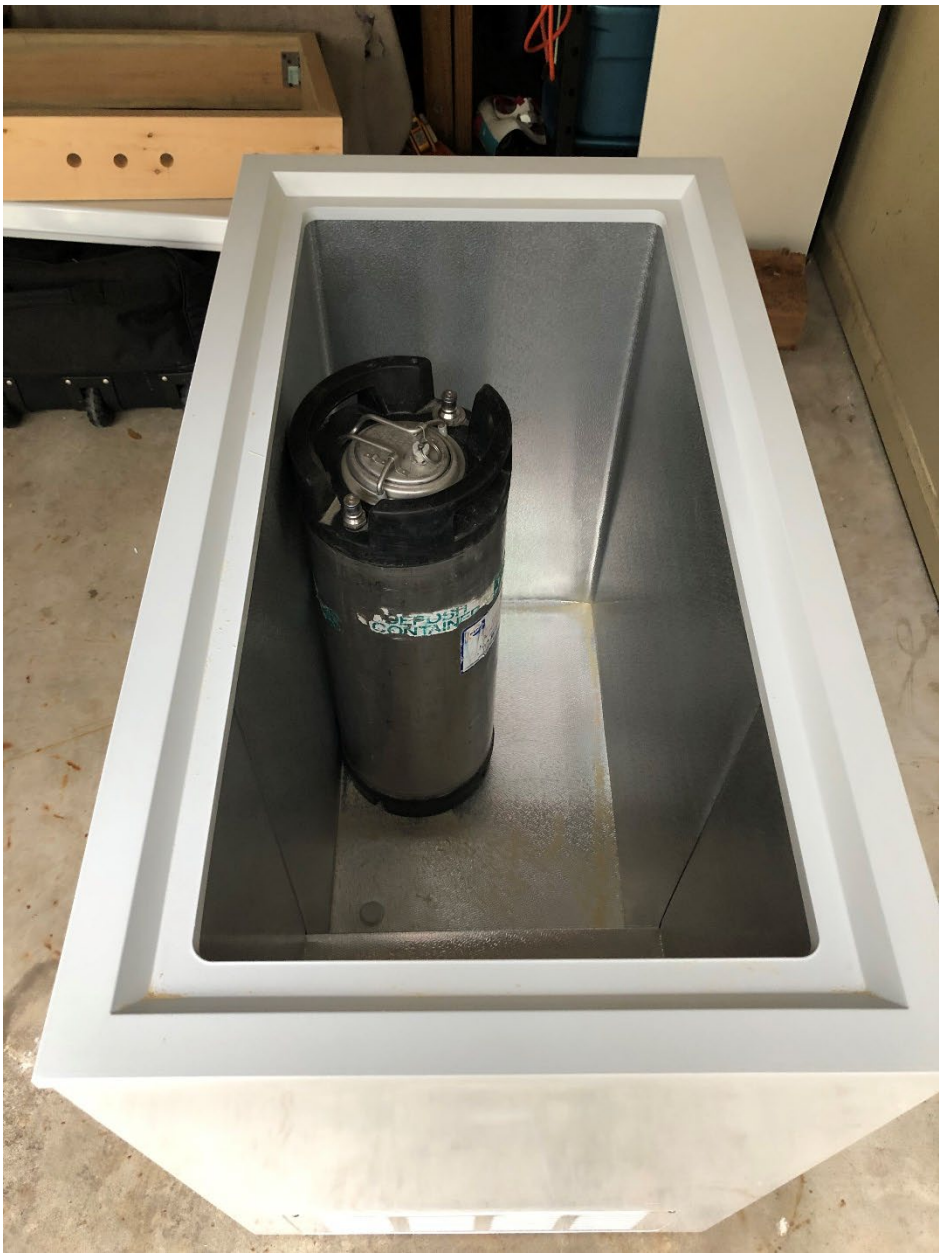
Pro-Tip (Thanks Shawn!): DO NOT BUY A NEW CO2 TANK! Airgas doesn't 'fill' tanks. They 'exchange' tanks, just like propane. You'll never see your shiny new tank again, so don't waste money there.

Freezer

Let's get started! Start with a chest freezer like this one from Lowe's. It was about $160 bucks, 7.1 cubic feet. I placed my corny keg in there and I'm a little worried that I won't be able to fit 4 kegs. We'll see what happens…

Here you can see different placements for 3 and maybe 4 kegs. Hopefully commercial kegs are a little slimmer, because I don't think I'll be able to fit 4 of these corny kegs.

It looks fine in these pictures here, but I think it will be a little crowded. I'm ok with a little shoving, but I'd rather not have to bang things around in there to make it fit.



First thing to do is take off the lid. Super easy. Back out the 4 screws on each hinge. Then lift straight up on the whole lid to remove the lid. You could take the screws out completely if you like, doesn't really make much of a difference. Carefully snap the hinge "open" when you're done to relieve the tension on that spring.

To say that this is cheap crap from China is an understatement. One of these 4 holes was tapped wrong and I couldn't put the screw back in the hole. I pitched it in the trash rather than fool around trying to fix it – 3 is enough, and these will never get used again. I hope this isn't an indication of the quality of the entire piece…

Make sure you peel of those unsightly warning labels….


C-PENTANE
R600a
DANGER - Risk of fire or explosion. Flammable refrigerant used. To be repaired only by trained service personnel. Do not puncture refrigerant tubing.
CAUTION - Risk of fire or explosion. Flammable refrigerant used. Consult repair manual/owner's guide before attempting to service this product. All safety precautions must be followed.
CAUTION - Risk of fire or explosion. Dispose of properly in accordance with federal or local regulations. Flammable refrigerant used.
CAUTION - Risk of fire or explosion due to puncture of refrigerant tubing; Follow handling instructions carefully. Flammable refrigerant used.

Collar

For the collar I just picked cheap yeller pine 2x6s. Cheap, cheap, cheap. Didn't want to spend the money on "nice" wood. I went over each plank with some 150 grit to knock down the splinters, also be sure to sand off any markings/stamps just in case they can be seen thru the stain.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Once you get the rough edges knocked (sanded) off your wood, go ahead and measure the outer dimensions of your freezer. I elected to do a nice mitered corner (rather than those unsightly yet easy butt joints people are so fond of). Sometimes, I'm a big fan of seeing the hardware and fasteners as accents, sometimes I'm not. I like the look of metal/glass/wood together. This freezer is more sterile white and plastic so I didn't think looking at screw/lag heads would be rustic or cool. For me it would be a distraction or a displeasing juxtaposition of modern and classic. You do you.

Speaking of sterile and plastic. I originally thought I would do chalkboard paint on the lid, but I'm going to experiment with using it as a dry-erase surface. I'll let you know how it works out later in the write-up. (edit: works great!)

Regardless, just be sure to measure carefully, and flip the board around appropriately depending on which mitre angle your trying to get. You'll waste a few inches of wood getting the mitre cut the correct way – no big deal. I was very careful to keep the 'nicer' side of the board on the outside where it'll be visible. If I had a cracked, chipped or split edge, I was sure to keep that downward – none of that will matter when it gets caulked to the rim of the freezer. I was also lazy and used an inside 90 framing bracket instead of biscuits or dowels. I *did* make sure to put some caulk on the inside face of the joint – that's a great place for cold air to escape. We'll be insulating later, but it takes zero extra effort to do it right the first time.

Despite your best efforts (and because of framing corners and cheap wood) you're likely to fetch up your lovely mitres. Just sand them down as I've done here so they feel and look smooth.

Once you've got the basic collar joined, it's time to locate your faucets! I elected for this hole pattern. The first hole is 6in from the right corner (iirc) then another 6, then, 3 and 3. I wound up using a 15/16 spade bit for the holes and the shanks fit perfect. I thought about maybe going a 'steenth smaller but didn't want to deal with threading the shanks thru the wood. When I mount them permanently, I'll throw a little caulk in the hole for an air-tight seal. USE A SQUARE AND MARK THE CENTERS PERFECTLY. If you're taps aren't lined up evenly and perfectly you'll regret it. Note the rightmost hole is for the special nitro tap. It looks a little different, so it deserves its own position.


IDYLIS

In the picture here I threaded on the cheap plastic tap handles and put the rubber nipples on. That way if I drop one it won't munge it up. You can also see the nut threaded out on the upper (left) faucet. That little guy just snugs up to the collar to keep everything tight. I thought about putting a washer behind it, but I don't have one handy. I can't imagine it will make any difference.

At this point, I've been working for about an hour. Above is the fit-up, looking pretty nice even if I do say so myself. Next step, stain and finish.

Stain and Finish

Stain first. Nothing makes cheap wood look like nicer wood than a nice colored stain. I like brushing it on with a foam brush, letting it penetrate, then wiping it back off with a rag. I did the inside and bottom as well for completeness sake. The bottom will be caulked to the chest so you'll never see it, and the inside will be covered with insulation. It just felt wrong to leave part of it unfinished, even though I didn't pay as much attention to it. In the end I did three coats because I like a dark, rich color. I probably could have let the first coat or two penetrate longer but I got antsy and wanted to be done. Plus you can always go darker, but you can't go lighter!

First coat, haven’t done the inside yet.

Here's a look at the inside. I like the character of the wood here, notice the different tone at the top and bottom? Too bad I screwed this up and put it on the inside. You'll never see it, and it would have looked cool behind the faucets. Oh well.

Here are some of the pitfalls of using cheap wood. Right on the front here there's a couple spots that just REFUSE to take the stain. Looks like maybe I had some grease on my fingers or maybe somebody at the factory or home depot did. By time I got to the third coat it was looking a little better, but it's still cheap pine. Just keep repeating the apply and wipe-off-with-a-towel cycle until you get it how you want it. Hopefully the poly will refract some of the light so it's not as noticeable (the poly I have on hand has a satin finish, not sure how much that will help)

Here you can see where this plank got chewed on at the factory. If there were MORE of these teeth marks it might look cool, but this one just looks out of place. Oh well. I'll let her dry until tomorrow probably then we'll go ahead with the poly.

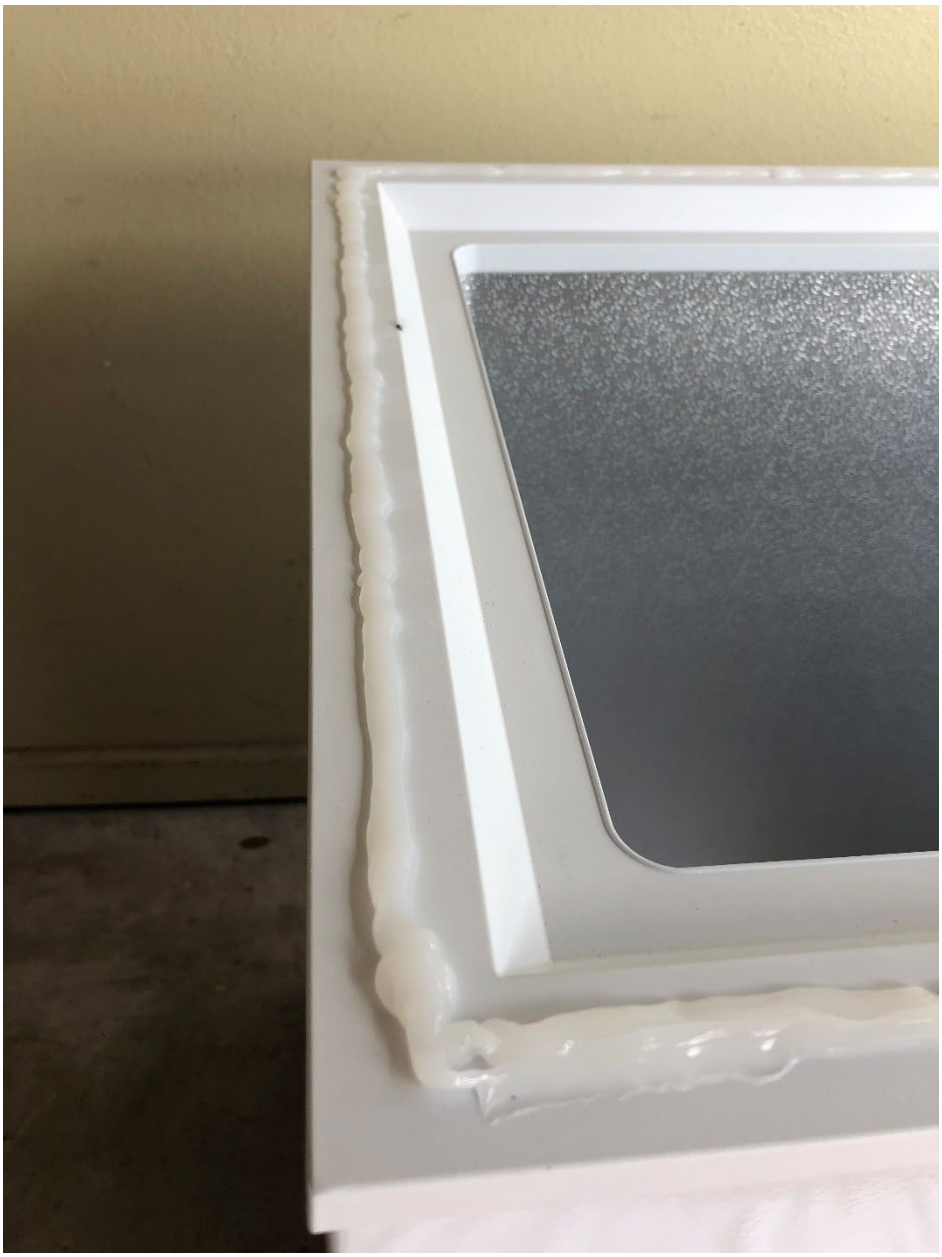
Ok. Didn't dry after a full day in my garage, so I moved it into the kitchen and it dried up nice. Put on a coat of poly and it's back to the waiting game. Now, wait till tomorrow and I'll attach it to the freezer. Gotta wait for my second round of materials to arrive anyway.

Ok, so everything is looking pretty good. Time-wise I've got about an hour into marking, cutting, assembling and drilling up the collar (although I can already see that I forgot a hole for the temperature probe). Then approx 30min total on stain and finish – EXCEPT- the dry time has been 3 or 4 days. Plan ahead if you want this done in time for a party. I went ahead and ordered kegs when I started the stain and finish. If today wasn't Christmas Eve, I would probably be ready for beer TODAY but my kegs wont get here until later in the week due to the holiday. No matter, I'll have my carbonated water to keep me busy in the interim.

Assembly

Now that the collar is all done, we'll attach it to the top of the freezer. First I scuffed up the rim with my trusty 150grit (trusty because that's the roughest thing I had in my toolbox). Then go ahead and put down plenty of your GE Silicone 2+ caulk (I like clear) you can always wipe off the excess. We want a nice airtight seal. I'm confident that this will hold the collar in place without the need for a mechanical fasteners or building up wooden braces inside or outside the freezer. I expect people to whine and cry that I'm wrong because silicone isn't technically an adhesive. Hey, you can build YOUR keezer however you like.

Meanwhile, I went ahead and mixed up some sanitizer and filled my corny keg w/ water to hold the collar in place while the caulk sets up (24 hours they say). The first thing I'm going to drink is carbonated water, so this is a good time to sanitize my keg anyway.



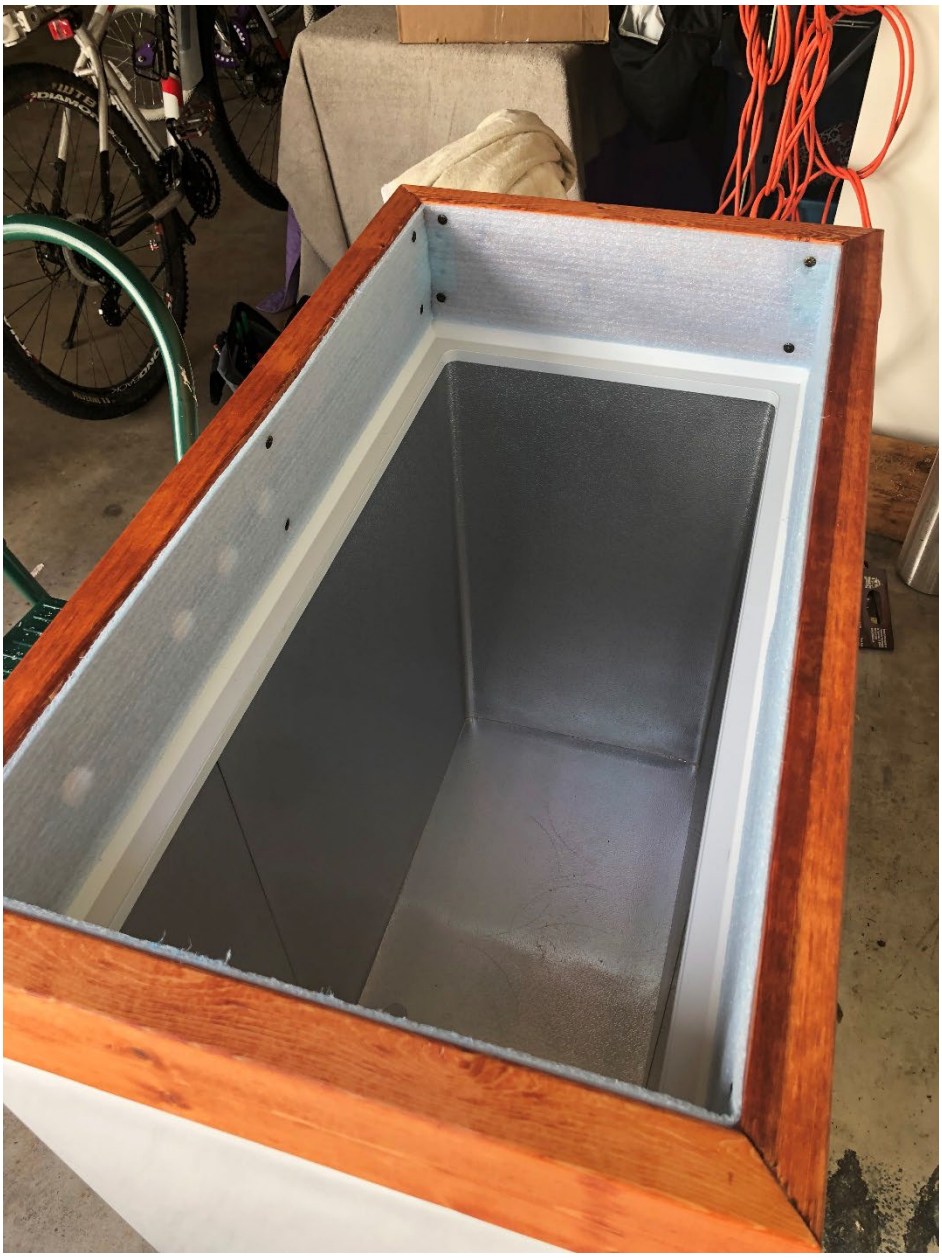
Here I reiterate how happy I am to have used clear. The collar squirmed around a lot as it got pressed down by the weight of 40lbs of corny kegged water and sanitizer. I wish I would have slowed down and THOUGHT about what I was doing. I would have taped it off like any other high-visibility joint. After wiping off the excess and removing the tape I'd be left with a PERFECT bead. I guess I was just too excited to use my brain… what a rookie movie. Oh well – it came out fine in the end.

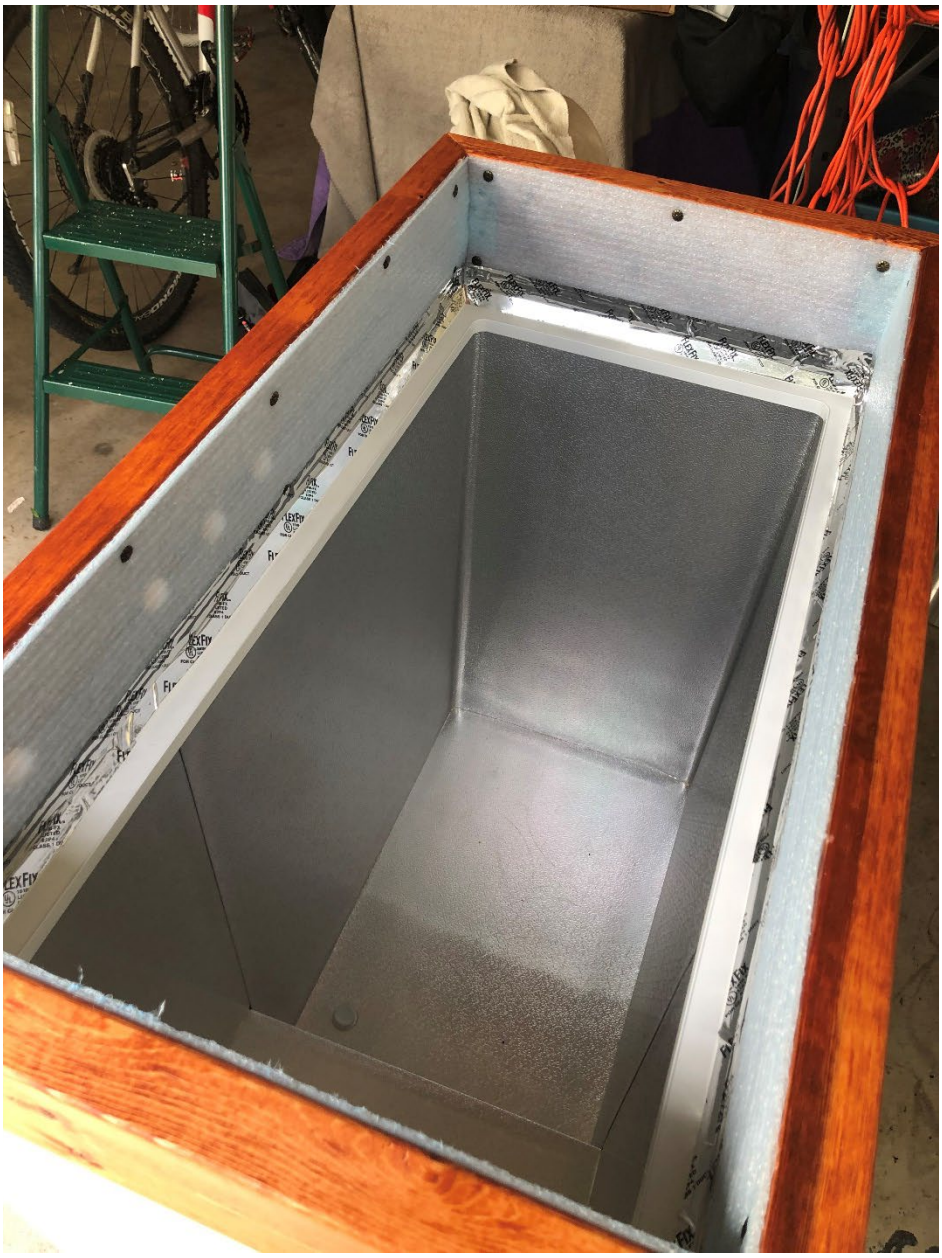
Attaching the collar probably took me 15min. We'll round up and say I've got 2 hours of labor into the project so far.

Insulate

The next step (for me) was to insulate the 2x6 on in the inside. I'm not sure how important his is, but it didn't take hardly any effort to do, so I did it. The blue stuff is a roll of foam that's meant to lay on top of the last course of blocks before you put down the sill plate. It fits a 2x6 perfect. I went ahead and used silicone to hold it down, and also threw in some carpet tacks I had laying around. It was a good excuse to actually use these things… they've been floating around my tools for years. I went ahead and laid down some silicone on the inside of the mitres while I was at it. I also happened to have some

aluminum tape laying around, so I taped the bottom seam of where the freezer meets the foam. We'll see how much of a difference this makes over time.





This step took another 15min, but we'll put the total labor at 2.5hrs.

Co2 and lines assembly

I started by locating the tank, primary reg and secondary reg (the 4-way job). I ran into a little trouble with the secondary. It's taller than it looks, so the gauges would stick out the top and collide with the lid if I mounted them directly on the 2x6 collar. Plus, the barbs sticking downward from each gauge hit the lip of the freezer. The fix was to use a scrap of wood as blocking to get everything just right. Fits like a glove, and the angle I have it at makes it juuuust a little easier to read the gauges.

Started with the co2 side and got everything cranked down nice and tidy. You can see my three taps and one ball-lock fitting all set and ready. After that (no pictures) I went ahead with the beer line side. Really not much to look at there, just more hoses (clear this time) connecting to the commercial sanke taps. Couple things to note. I bought the sanke taps with MFL fittings, not sure if that was worth it or not. The swivel nut and nylon washer are one more thing to leak, so we'll see how it works out. Also, pay particular attention to which end of the sanke tap you attach the co2 and beer lines to. On mine, there's a little arrow that shows the directly of flow that was pointing INTO the tap (iirc). That means that is where the co2 goes INTO the tap, so I hooked up the co2 line there. The top is where the beer comes out (no arrow) so I hooked up the beer line there. Oh, you can also see the co2 wrench dangling from the primary regulator. I bought that on a whim from keg outlet and now I never have to worry about not being able to find a wrench when I need to EMERGENCY REPLACE my co2 tank. The wrench

came with a little press pin attached. There's a little hole on the side of the wrench where you insert the pin after slipping it over the primary regulator nut. The pin prevents the wrench from being able to be passed back over the nut so it's permanently (not really, you can pull the pin) attached to the primary regulator – can't lose it – unless you're an idiot. Just snug up the coupler nut, then back the wrench off and let it dangle.

Circulation Fan

I also took this opportunity to build a little stand for my circulation fan. Basically just a block of wood with the fan mounted on it. It doesn't much matter where this sits, but I've got it sitting on the shelf beside the co2 tank. This thing will run 24/7 and keep the cool air circulated – I'm told it really helps. I thought about ONLY having it run when the freezer is turned on, and I might go back to that. For right

now though, I don't have an outlet doubler so it's 24/7. It uses basically no electricity and this way I can be assured that all the beer will always be at the same temperature (the tops of the kegs wont be warmer). I also thought about plugging the fan into the HEAT side of my temperature controller but then it might never turn on. My setpoint is 40degrees and the controller has a 2degree buffer. Therefore it doesn't start cooling again until the internal temperature rises to 42deg. Likewise for heating, the 'heat' outlet wont engage until the internal temperature reaches 38 degrees. Presumably this will never happen so the heat relay will never engage. The only con I think of to running the circ-fan 24/7 is that it might shorten the lifespan of the fan, and, it might force cold air out of leaks in the keezer construction. I'm much more concerned about cold air escaping than anything else. The way to fix that is to grab an outlet doubler next time I'm out and about and only running the circ-fan when the keezer is cooling.

Oh, one other thing. I left my temp probe dangling in air about even with the secondary regulator gauges. I did some reading. By locating the probe further down in the keezer, the freezer should turn on less often, because cold air sinks. Presumably the circulation fan keeps the air at the bottom and top of the keezer all at the same temperature, so this shouldn't really matter – especially since my fan runs 24/7. I also read that you should put the probe in water, or tape it to a beer, to minimize temperature swings. Temperature swings happen when you open and close the lid because air heats/cools much faster than a can of beer or bowl of water. I'm definitely not putting a bowl of water in my keezer (huge pain, and I'm trying to keep the interior DRY) so I might wind up taping my probe to a beer for a little ballast. Just gotta get around to it.

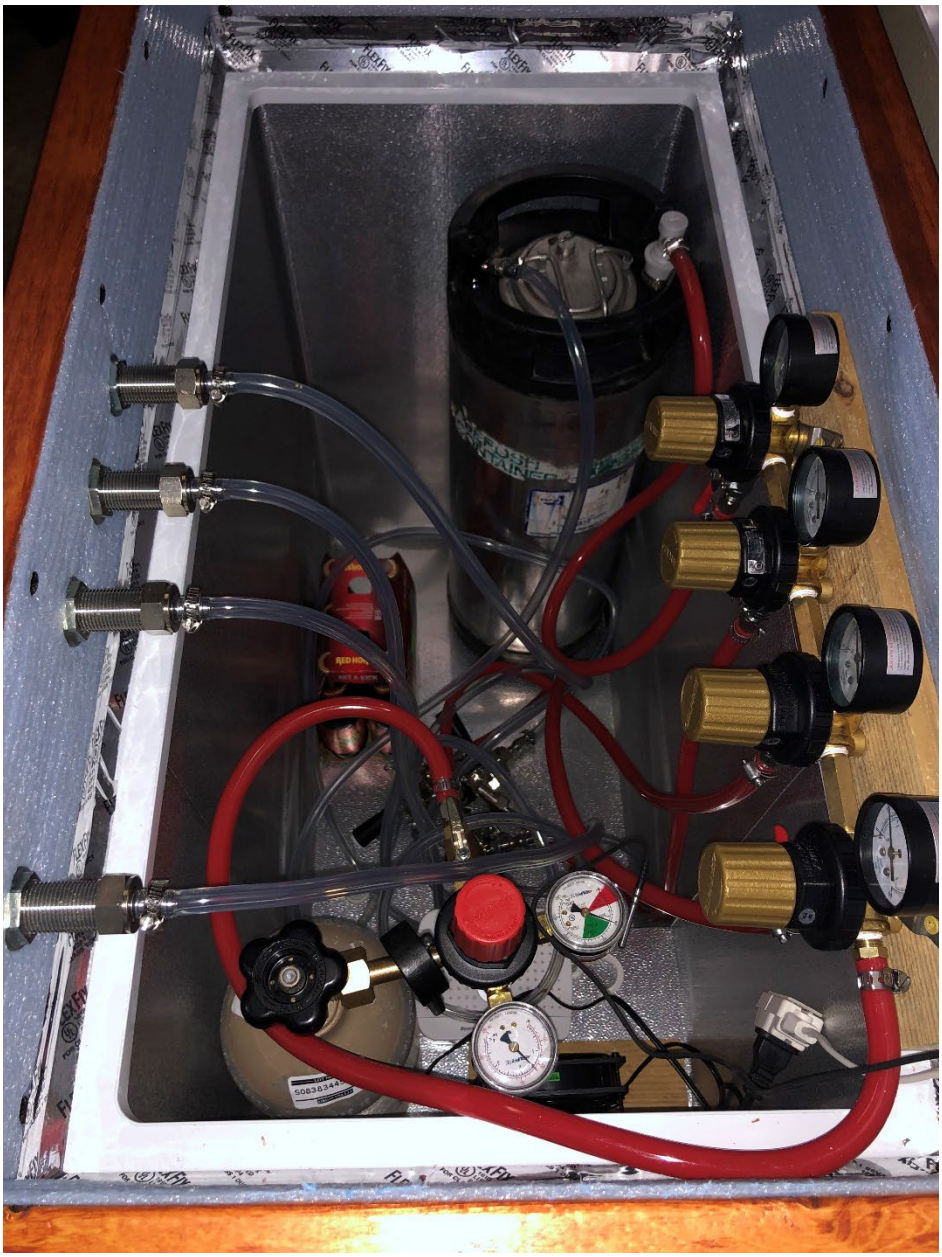
Reattaching the Lid

After that, it was time to put on the lid. Easy enough. I went ahead and put my 40lb water keg on the top to make sure the lid closed in a natural, neutral position. The weight held the lid in place as I carefully lowered the hinges and screwed them in place. Screwing down the hinges without the lid in place and weighted might not let the lid close evenly (maybe?). Here you can also see the hole I drilled to get an extension cord (for the circulation fan) and the temperature probe through. Note that I had to cut the extension cord in order to keep the hole as small as possible. I confess, I wish I would have thought this though a little more. The hole should have been located between the two hinges so when this is up against a wall, the hinge (and trim cover) help hide the cord. In order not to hit the secondary regulator, it would have had to be over toward he left side of the keezer and I'm not sure I would have liked that much because the cords would kinda be in the way. The RIGHT WAY to do this would have

been to move the secondary reg and blocking a few inches to the left so I could put the hole just on the inside of the one hinge AND deconflict with the secondary reg.

Here we are at the end of our adventure. The dry erase on the top seems to work OK, except you accidentally touch it nearly every time you go to close the lid. The white thing in front of the circ-fan is a chemical dehumidifier. Not sure how well they work, but I'm told they help. I'll add about how often I need to recharge the humidifier in the future.


WATER
LAZY MAGNOLIA
SOUTHERN PECAN
PENSACOLA BAY
LIGHTHOUSE PORTER



Lessons Learned

Overall I'm pretty happy with the keezer. We'll see how it holds up over time. Here are some things I wish I did better or differently.

1. Parts list took me two orders. I spent some time trying to figure out oetiker clamps, and I failed to order everything I needed the first time – mostly because I didn't understand the barbs, MFLs and sizes.
    a. Lessons Learned
        i. You need TWO 1/4in (thread) 3/16in barb swivel nut (and nylon washer) for each run of 3/16 ID beer line.

ii. You need TWO 1/4in (thread) 5/16in barb swivel nut (and nylon washer) for each run of 5/16 ID co2 line.
iii. Oetiker (see below)
    1. the 1/2in pex clamp (home depot) should work on the co2 line (I incorrectly thought this would work for the beer line)
    2. I want to try the next size smaller pex clamp (home depot) on the beer line. Future update maybe?
iv. Also not sure if I need a nylon flare nut for the corny keg attachment. They have a plastic tip so I don't think I *need* it. I'll find out once I check my co2 in a few days to see if I'm running thru it too fast. (edit: don't need the nylon nut)

2. I picked MFL and swivel nuts everywhere because it thought it would give me flexibility, particularly when cleaning lines. I think that might have unnecessarily complicated things. As long as I don't have leaks, who cares.
3. I hope my freezer fits 4 kegs… if not, I'll try to find a smaller water keg. The alternative would be a 3tap system (which is probably enough anyway). I also hope this inexpensive Chinese freezer isn't a cheap piece of crap.
   Update: it definitely doesn't fit 4 kegs.
4. I wish I didn't use cheap crap 2x6 pine studs. I also wish I wasn't too lazy to get out my corner clamps and do a little nicer job.
5. I wish I didn't BUY corner brackets because I found a bunch of them in my tools when I was looking for something else.
6. I wish I would have taped off the seams so I'd have perfect beads on the collar. Nobody will know but me (and you) but that's TWO things i should have been a better craftsman about.
7. I wish I would have located the hole for the circulation fan and the temp probe inside the two hinges. That's THREE lazy uncraftsmanlike mistakes.
   Update: I fixed this on a subsequent modification.
8. New lesson learned Make your co2 lines longer BECAUSE when you go to force carb a keg you probably wont have room to shake it inside your freezer. More details below at Day + 20ish

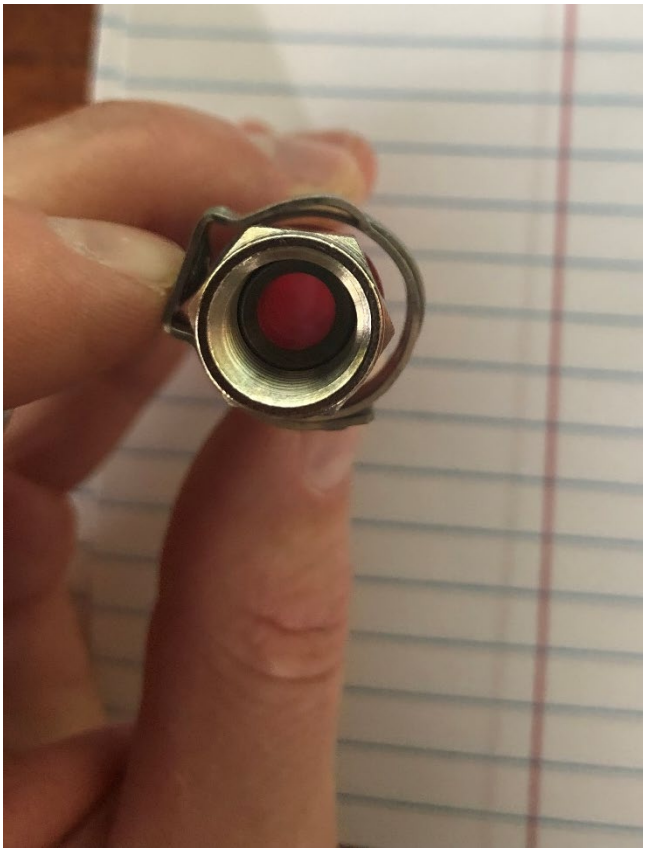
Oetiker Clamps

A few (lots) notes on oetiker clamps. I spent a bunch of time figuring these out, and then was wildly wrong when I tried to put my engineering expertise into practice. The red text is my edits after figuring it out.

For some reason, I didn't put 2 and 2 together that oetiker clamps are the same as PEX clamps until last night. I've already got the crimper thanks to a lot of remodeling on my current and former houses so I'm going to try to leverage that. The tricky part is, I think PEX clamp sizes might not marry up well with the oetiker sizes kegoutlet says I need (https://www.kegoutlet.com/oetiker-clamps.html). Let's find out.

Here's a look at the 5/16 barb on co2 line (red) and the 3/16 barb on beer line (clear). That's a half inch pex clamp in the picture, and you can see how much space is between the hose and the clamp in each picture. I clamped down a spare ring to see how far it contracted and it looked PRETTY FAR, but then I

thoughtlessly tossed it in the trash instead of including it in the picture (sorry). Judging from this non-scientific test, the layman in me thinks that the 1/2in clamps will be fine for both red and clear hose (this will turn out to be incorrect. The 1/2in clamp is fine for the beer line, but not the co2 line. 2d edit: this too will turn out to be incorrect. A 1/2in clamp from home depot is NOT a 13.3mm clamp from kegoutlet. A 1/2in clamp from home depot is in fact a 15.7mm clamp according to the chart below.



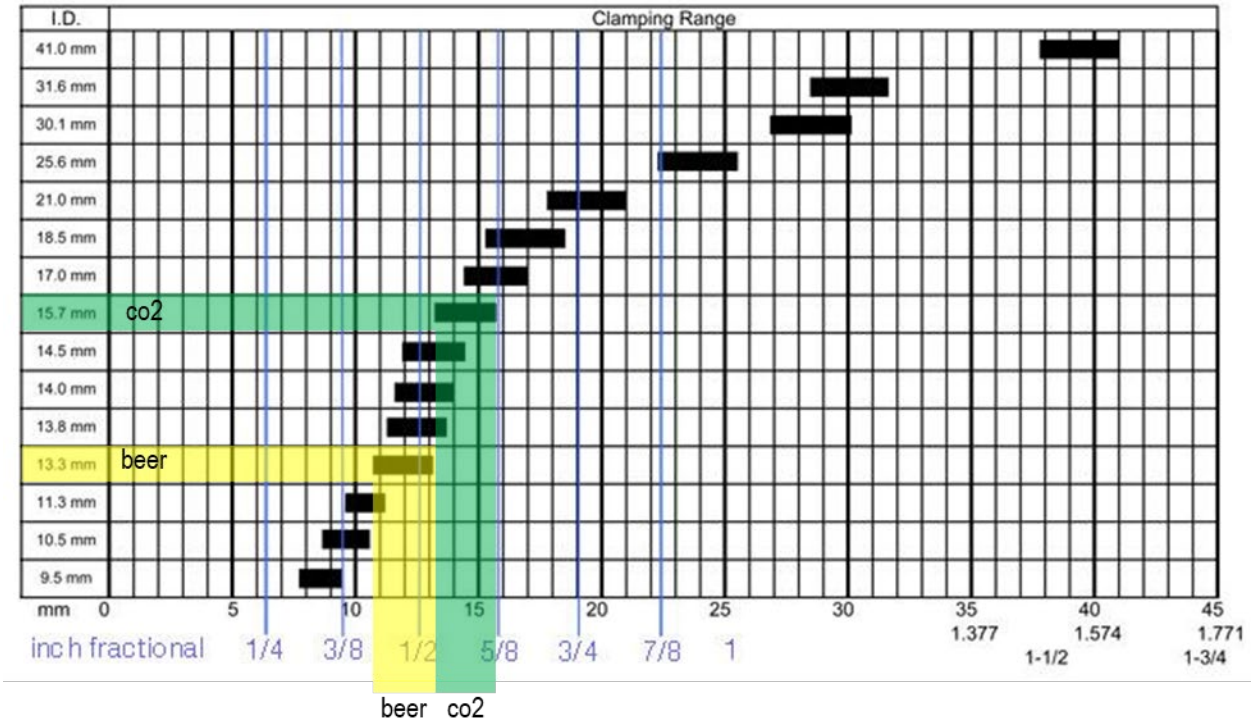
My co2 hose is 5/16ID (7.9mm), 9/16OD (14.3mm). Kegoutlet says to use the 13.3 size clamp (not sure what size this is from home depot, or if they have it in stock. The whole point is that I don't want to have to ORDER cheap pex clamps online and pay the shipping etc when I can get them from the hardware store).

My beer hose is 3/16ID (4.8)mm , 7/16OD (11.1mm). kegoutlet says to use the 15.7 size clamp (turns out this is the 1/2in pex clamp from home depot, see my picture below. I measure this as a shade under 5/8in which is close enough to 15.7mm)

Just to test the wisdom of kegoutlet, lets read this off the chart to make sure it makes sense. Now this chart is a little tricky to read, but we'll go thru it slowly and use the chart a few different ways. The ID on the left side is the Inner Diameter of the CLAMP (the clamp 'size' if you like). The black bar corresponds to a range of 'acceptable clamping' and you read the values off the bottom. Kegoutlet has also gone ahead and put the SI units on the bottom to help (thanks!). The typical PEX 1/2in clamp in my picture in metric is 12.7mm (wrong, it's the 15.7mm), so we'll go ahead and use the 13.3 line on the chart (highlighted yellow). As we can see, the 13.3mm (half inch) clamp look like it can clamp anything from about 11-13mm and be good to go.

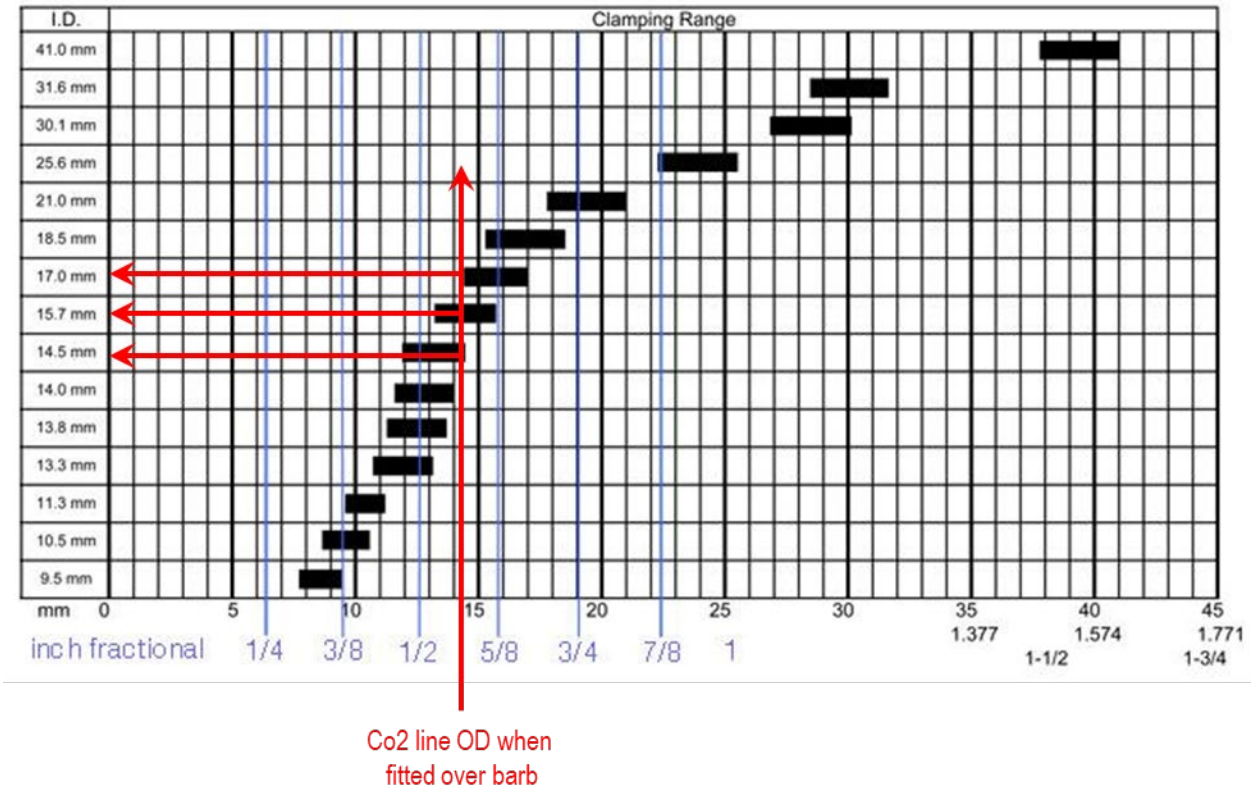
Now 12.7 is kinda between 11.3 and 12.7. So why did we pick 13.3? It looks like 11.3 might work (Following the black bar down I read the acceptable clamping range as approx. 9.5 to 11mm). The clear hose expands a little bit to fit around the barb. The original unexpanded OD of the clear hose is 11.1, so, after it expands to fit over the barb I think the 11.3mm clamp might be a little too small. I'd stick with the 13.3mm for the beer lines, per the recommendation.

OETIKER CLAMP SELECTION CHART KEG OUTLET



Now for the co2 line. The OD of that line is 14.3mm, and the hose barely (if at all) expands when slipped over the barb, so we'll call it an even 14.3mm. Reading up from the bottom of the chart at 14.3mm, we're looking for where the red line intersects a black bar. Looks to me like the only candidate clamps are 14.5mm, 15.7mm and 17.0mm. The kegoutlet recommendation of 15.7 (5/8 inch) is probably best (this is the 1/2in PEX clamp from home depot) So, this CONTRADICTS my layman's estimate above. The 1/2in clamp WILL NOT work on the co2 line – it's too small. Edit: the 1/2in clamp from home depot which is truly a 15.7in clamp on the chart WILL WORK on the co2 line.

OETIKER CLAMP SELECTION CHART KEG OUTLET



Now for the bad news. I got thru this whole exercise, and I realized that homedepot and lowes don't have the 5/8 clips in stock. (Erma gerd, I can't gert the oetiker clermp I nerd). Bummer. Turns out I don't *need* the 5/8in clamp because it would be too big for everything. I need the 1/2in clamp for the co2 line and something smaller for the beer line.

TLDR Facts (Updated to be completely correct)

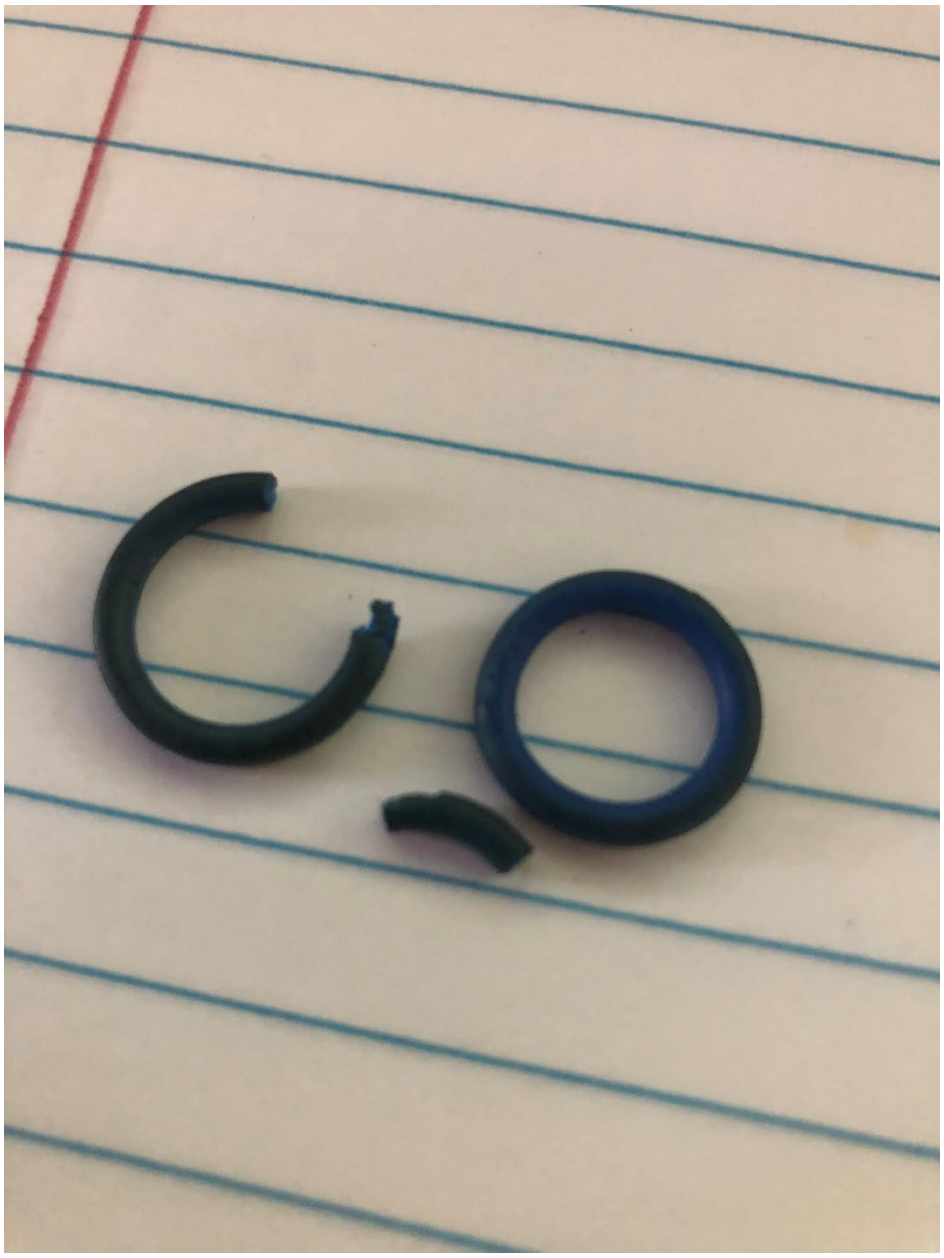
1. Sharkbite/PEX oetiker clamps from the hardware store that are called 1/2in are in fact size 15.7mm according to the chart. Use these for your red co2 line with the 5/16in barbs and 1/4in swivel nuts with 5/16in barb.
2. I need to check home depot for a Sharkbite/PEX oetiker clamps from the hardware store. I think I remember seeing a smaller size bag at Lowe's, but I cant remember. Use these for your clear beer line with the 3/16 barb and 1/4in swivel nuts with 3/16 barb.
3. Update to the update 10Jan19. Here is the answer to the oetiker clamp mystery in picture form.


SharkBite®
Plumbing Solutions
3/8"
Clamp
Serrage | Abrazadera
THEFT PROTECTED

Log of Stuff

Day + 0

I was leaking co2 bad right from the get-go. I could hear gas escaping on the co2 input of my corny keg. I traced the problem to the o-rings that came with my corny keg. These things were brittle and cracked right off. You SHOULD be able to pinch it with your fingers and stretch it on or off. This one basically cracked off in my fingers. Go ahead and replace both since you're there. I *should* have replaced the main opening o-ring as well, but I didn't. I'll do it next time.

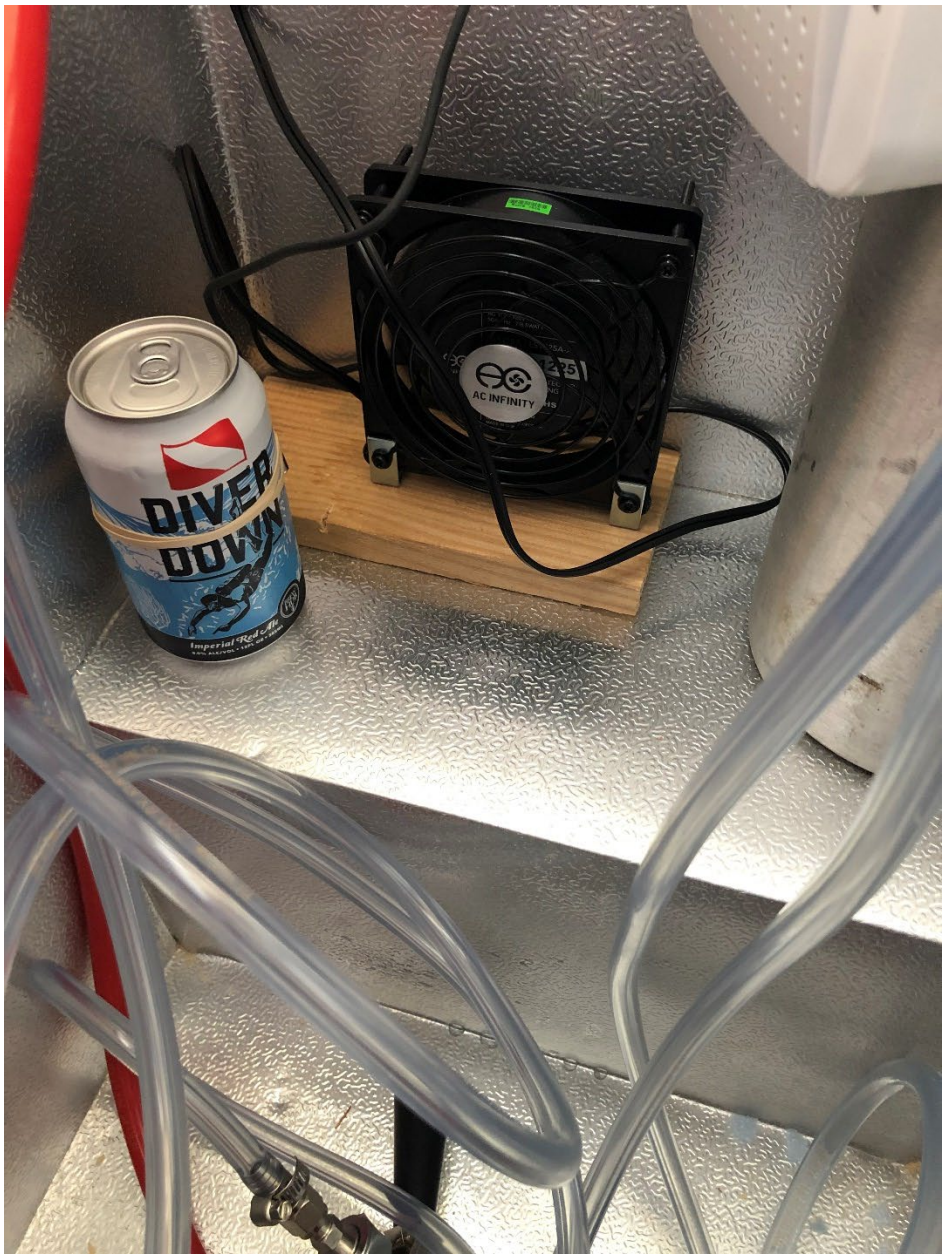


Day + 1

First upgrade (I remembered I have a smart outlet I use with apple home to auto lock and unlock my front door! Now I can see how often this thing runs and how much electricity it's costing me). Edit: I can't see how often this thing runs, it says 24/7 (see below).

Also Day + 1. I went ahead and attached my temperature probe to a beer to prevent temperature swings. I happened to have the ‘diver down’ beer in my fridge (it’s not great anyway and I hate those high ABV beers) and the subject matter felt particularly relevant.


DIVER
DOWN
Imperial Red Ale
BREW HUB

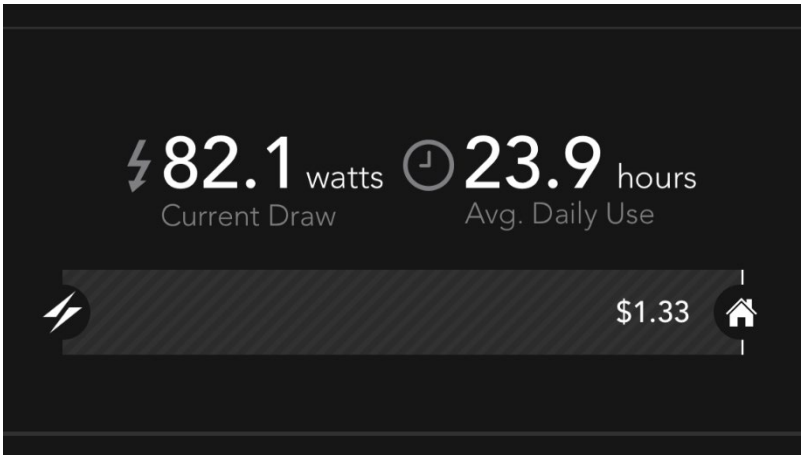


Day + 2

My little smart-switch gave me startling news this morning: average daily use was 23.9 hours. That means this thing was basically running 24/7. That's bad. I feel like I've got a good seal around the top of the collar and I have the temperature set to 40deg F which doesn't seem unreasonable.

The outlet claims that it's using 0.37kwh per day (based on only one day so far). 0.37 * 365 = 135.05kwh per year. The energy guide for this freezer lists an estimated yearly energy use of 248 kwh. So based on one day I'm at about 50% of the estimate. I'll collect a few more days worth of data and check again. I went ahead and unplugged the circulation fan and we'll see if that has any effect on the average daily use – my theory is that the fan is forcing cold air out.

Edit after *thinking* instead of *guessing*. The inkbird is plugged into the smart outlet. It must not draw enough so it displays as 0 watts on the 'curent draw' meter on my phone. When the compressor is engaged it says it's drawing 82.1watts – so it looks like it has 1/10 of one watt resolution. The inkbird must draw less 1/10watt that so it reports as 0watts, but it's enough to for the smart outlet to consider it as 'in use' which contributes to 24/7 use counter. What I'd like to see is a graph of temperature readings inside the keezer but the inkbird doesn't do that. I guess the best I can do is compare the actual kWh reported by the smart outlet to the estimate. Also, don't freak out about the 23.9 avg daily use counter – it's artificial. I suppose I could plug the smart outlet into the inkbird, but then I think it would interfere with my home automation scenes.



Also Day + 2. I tried force carbing my keg of water. Cranked it up the 30psi, swapped the gas and liquid connectors and gave it 100 good shakes. Did it again a few hours later, and it seemed to go from barely detectable to high carbonated. I like this method. Not sure what pressure is good for serving. I'll experiment…

Day + 3

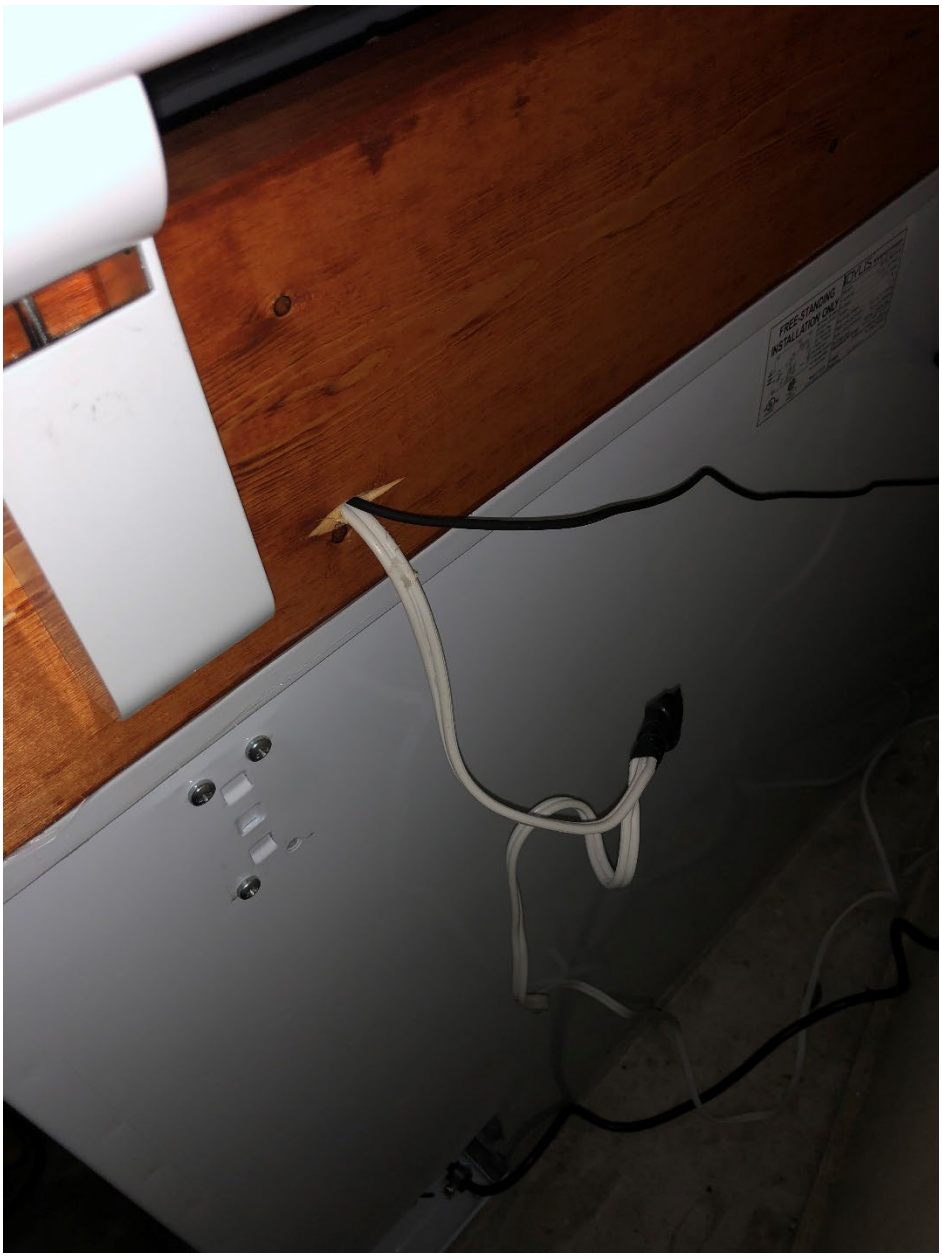
I'm getting some pretty for real sweating on the outside of the collar. I live in FL and it's winter. If I don't get this resolved, I'm gonna be screwed by the time summer rolls around. According to these guys (https://www.homebrewtalk.com/forum/threads/condensation-on-keezer-collar.567599/) I need some foam board insulation. I'll get this fixed asap….

…A couple hours later…

Welp, that wasn't too hard. Just get you some foam board insulation from lowes or home depot. I picked the kind with the best r2 value that had foil on one side. I'm certain the foil makes no difference, but one guy in the link above DID say NOT TO GET THE TYPICAL WHITE STYROFOAM. I'm sure he's right. I made a big enough mess with this expanded polystyrene. When you make your cuts got ahead and hold your knife at a 45 and you'll get a nice corner like I have here. Make sure you use a straight edge! The 45 for me, fit like a glove over the 45deg angle lip of the freezer. I also cut a 45 on the top to deconflict with the lid coming down, which has a 45 on I too.

I used some screws with fender washers to hold the foam in place until the caulk sets up. Overall I like this better than the thin foam roll I started with – we'll see how it performs.

Since I was at it, I went ahead and moved the secondary regulator over and put my cord hold between the two hinges (remember how I bitched about that earlier?). If only I didn't blow out the hole. At least it's in the back and wont be seen.



Finally, here's a look at the hole works with 3 kegs inside. Unfortunately, there's NO WAY to fit a fourth keg in there. I might could find an extra small keg to try to squeeze in there, but I think it's MORE likely that I'll wind up moving the nitro tap from it's position of honor over a slot, and put a bottle opener over it's hole. Three might be the right size for a 7.1 cu ft freezer if I can't find a narrower corny.

Day + 10

After upgrading the insulation, the condensation problem is…. Still there. I think I'll have to just live with it. It's worst right around the faucets and the faucets themselves. It has been especially cold and clammy lately though, so we'll see what happens. Anyhow, the CMS magnetics things make excellent drip trays. Also just checked my average electricity usage. I'm averaging 2.71kwh per week. Multiply by 52 and we're talking 140ish for the year – that only 56% of the yearly manufacturers estimate.

Day + 20ish

I posted the definitive update on the oetiker clamps up above. Go to home depot and buy 3/8 for the beer lines, and 1/2 for the co2. Easy. The reason I did this update is that despite my best efforts I could not fit 4 barrels. I MIGHT have been able to wedge one in next to the co2 tank, but it would have to be a half corny keg (short?). And, in order to get it in and out, I would have to remove all barrels. The way my components are situated, you have to load a keg in the front left, and the tetris it to the right. You can't put one directly in on the right-hand side (if it's already full of kegs) because there are too many hoses/lines, regulators cords and taps in the way. It MAYBE could be done, but it's such a pain in the neck I elected to just pull out one of the taps and cover it with a bottle opener.

Three is really plenty anyway.

Now the whole reason I did this last update is because I like to have carbonated water. This ran out way before my beer, so I had to make a new keg (read: pour it out of the faucet). When I went to force carb the keg I shake the heck out of it so it takes on the co2 faster, but the freezer was too full of beer for me to shake! Then, to my dismay, I found that my co2 line was too short to shake it OUTSIDE the keezer. When I removed my 4th superfluous faucet, I went ahead and extended my co2 line with a barb/barb adapter (thanks home depot). I also took this opportunity to confirm what size oetiker clamps work.

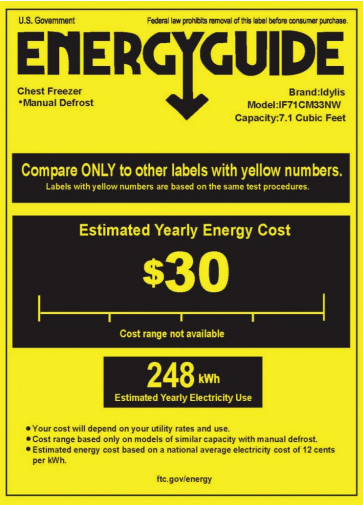
Day + 200 something

Just got back from a deployment. We drank all the beer and water before I left, and the only "preventative maintenance" I did was to shut off the CO2 at the regulator (not the bottle). Everything was still working FLAWLESSLY. I put in a new keg of water and ordered some more beer. This is easy!

The dehumidifier said is was FULL WET, so I plugged it into an outlet to dry it off. Still not sure how effective or useful this is, but heh, I already paid for it so I might as well keep the party going.

As a quick check, the average monthly consumption is 16.18 kWh per month (728 hours). The manufacturer says I can expect to use 248kWh per year. Multiplying this out 12(16.18) = 194.16. So, I'm running fairly efficiently at 78% of what the manufacturer expects. Granted the kegerator didn't get

opened ONCE while I was gone, but it was still turned on and keeping empty space cold in a hot garage from March thru November (a hot Florida Summer). These things are pretty efficient.



Epilogue

Hopefully you found this useful! Go build a keezer!