

Ball vs. Pin Locks

As a person with hands on experience with both types of beverage tanks for over 25 years, I will try to dispel various rumors and incorrect information that have become common online.

A little history will help in the understanding of these two types of "beverage transfer tanks" as they were originally called. The earliest versions go back to the Firestone and John Wood manufactured tanks. The tanks were used in a new system started by Coke around 1957-1958, called a Post-Mix, in which the syrup was delivered to businesses that then added the water & CO2 to carbonate the drink as it was delivered to your cup. This gives you an idea how long these tanks have been around and how old some can be. Pin locks were exclusive to Coke and Ball Locks were considered general beverage, for use by anyone else.

#1 MYTH, would be that PIN LOCKS are less desirable than Ball Locks. This started out based on the availability of used ball lock tanks of which were much easier to find and the stockpiles were huge. Coke tanks were not as easy to find or purchase for quite a while. Until such time that the trend of changing over from the tanks to the now common collapsible bag in a box, the companies held on to their stockpiles for future needs. Once the era of Post-Mix ended, the beverage companies started wholesaling the tanks, with millions of them going overseas to other countries and massive amounts to China. These countries still used the Post-Mix systems, but now even they are making the change as happened here. At this time you are all finding that locating Ball Lock tanks has become increasingly difficult to find online or your local suppliers. Prices have been rising, add shipping if online, and your paying a lot more than years ago when these were \$3-\$10. Not to say you will not find a few deals here and there, but even when you hear of a small stash or good deal they go extremely quickly and then you're hunting again. It is not uncommon to see prices from \$25 to \$50 or more now depending on type, condition and whether you have to clean or replace O-rings, seals and poppet's. Local Homebrew suppliers are searching, sometimes in vain for decent tanks to sell and at a price that is reasonable. Premiums will be charged on the best-used tanks, while lower prices will soon mean rougher condition or not being exactly what you wanted.

NOTE: All used/reconditioned tanks will become very difficult to find within the years as the last major bottling plants are being disassembled in the US and Canada as I write this. My connections have been busy dismantling plants in both places all this year. The final used tanks are being rounded up and sold almost as fast as they hit the market. The last ball locks from the Pepsi plants were gone last year. The ones you find now are the last ones left, with no more large amounts to be found. Rumors will always have secret stashes here and there, but most are just rumors. We just received 1,100 tanks recently and all were pin locks. My business has a

network of connections to any remaining tanks across the US & Canada and it now takes months compared to one call and a week to 10 days for delivery, to find any decent quantities. If there were any ball locks out there, we would have bought them all. Even found a stash of 950 ball lock tanks, but upon inspection, they were little more than scrap metal. The sad part is having my best suppliers now calling me to find tanks. My estimate is that within 24 months you will be looking at new AEB tanks and possibly other imports with the used tank supply depleted. This does not mean there are absolutely no ball locks out there, or still in use. There are areas around the country where the water quality is less than desirable and local bottlers may still supply the pre-mix beverages in tanks to guarantee that the quality and taste meets their standards.

Let's be honest, we're all creatures of habit, and change is not always easy. If we all started with Pin Locks and had become used to them, we may have considered changing to Ball Locks annoying. Ball Locks can be connected wrong if forced on and are really hard to un-jam, sometimes even ruining a disconnect or the post. Having the surprise of a ball lock that did not lock all the way is an unpleasant event. Replacing costly manual relief valves might be upsetting. Either way we would have been comfortable with pin locks and like now finding the change hard to accept. Looking at Pin locks, you can see the obvious; no manual reliefs valves, and no way to accidentally connect to the wrong side. With the gas side having 2 pins and the liquid side being three, it makes such an event impossible. No way to leave the relief valve open allows a longer life. Even the cost of disconnects and replacement relief valves are less. Servicing, sanitizing, and parts availability are pretty well the same. Pin locks are not more prone to leak, lose pressure and need repairs than a ball lock. The opening on both style tanks is identical, so lids can be interchanged on most tanks. There are a few exceptions with lids from a Korean Tank manufacture having a lock lever that is wider than others and will hit the rubber section on the rubber topped tanks keeping the lever from going all the way down to lock.

#2 MYTH, the ease of releasing pressure from manually operated relief valves mounted on the lids. In truth, my observations over the years show that manual relief valve are replaced at a much higher rate than the non-manual reliefs in Coke tanks due to common mistake of leaving the manual reliefs in the open position when the tanks were empty. This habit causes the spring to be in the maximum compressed position for extended periods, which in turn also causes the amount of tension that holds pressure when closed to become less over time, resulting in pressure loss at lower and lower pressures. Now let me state that my field of expertise is in modifying these tanks for use as portable dispensers for chemical use, basically a tank sprayer. This experience has allowed to me to learn many ways to change fittings, valves, and attach many options for multiple uses. In the process I have tried many modifications that would be handy for Home brewers.

One new item I have tested is a conversion kit that turns a pin lock tank into ball lock tank. This kit has tank plugs made of stainless steel, universal poppets and new O-rings for the plugs and dip tubes. The kit costs more than the disconnects and has limitations. It only converts tanks that had the 9/16-18 threads. For those of you familiar with a well-written article explaining the

differences in tank styles, thread sizes and fittings by Mike Dixon,
http://www.dresselbrew.com/Keg_Info.htm

Can tank plugs from ball lock kegs be used to convert pin lock tanks? YES, but with limitations. Knowing and recognizing tank plug types and thread sizes makes this possible on some, but not all models. Most buyers have heard of tanks nicknamed "RACE TRACK" tanks or lids. These were an early style taken out of service about 30 years ago. The lids and tanks are not interchangeable with any other tanks. The tank plugs and thread sizes were also unique to those tanks. As they are fairly rare to come across, I will not spend any further time with details. Another rarity is finding plastic lids and any tanks, another early design that was removed from service decades ago. If you have any, it was recommended to replace them as they become brittle and fracture over time. Not something you want to deal with.

Getting back to swapping tank plugs, you will find 3 main thread sizes, starting with the smallest, 9/16"-18, then 19/32"-18 and the larger 5/8"-18. On the gas side you could find corresponding thread sizes in ball & pin lock plugs, but on the liquid side you will only find two ball lock sizes of 19/32"-18 & 5/8"-18. No 9/16" ball lock liquid plug was offered by the original manufactures. This eliminates the FIRESTONE A, FIRESTONE R, JOHN WOOD RA AND JOHN WOOD RC, pin lock tanks which had 9/16"-18 threads on both sides. The only option would be one of the new conversion kits or stick with the original pin locks. There is truly no real reason not to keep the pin locks. I can guarantee that you'll never mistake the hookups or have a disconnect pop off when locked into position. On pin lock tanks with two thread sizes, you can easily find and change the plugs to ball lock if desired. There are no ill effects in doing so. As long as the thread sizes match and the O-rings & poppets are in good shape, the swap will work well.

Recognizing the tank plug styles and sizes takes a little practice and experience. First thing to know is that all gas connections have a defining notch on the sides/edges, the easiest gas plug to identify has a 16 point base instead of 6 like a standard nut. From experience, all of the 16 point gas plugs are 19/32"-18 thread. An easy way to identify the 5/8"-18 size plugs is that on one of the smooth surfaces close to the base, you will be able to see very small letters stamped into the surface, usually with the name "Hansen" on them. These are all the 5/8"-18 thread plugs and are always a liquid plug. 9/16"-18 plugs in ball locks were gas side only and just a quick look at the small size threads make them pretty easy to identify. I went to a local hardware store and bought one 5/8"-18 and one 9/16"-18 thread bolts, which are also called fine thread, to help when check thread sizes when I had less experience. Don't bother looking for a 19/32"-18 thread bolt as you'll never find one. This size thread is almost totally exclusive to these beverage tanks. Just mentioning that size at a hardware store, will bring strange, bewildered looks. All new AEB and Korean manufactured tanks have the 19/32"-18 threads now which has become the international standard for these tanks.

Tank dimensions can play a roll in your choice also. Most if not all ball lock tanks are 25" tall by 8.5" diameter. Pin Lock tanks (aka Coke tanks) have two basic sizes, 21" and 23" tall. The tall Coke tanks have raised letters in the metal sides, which make them easy to spot, the shorter

tanks are helpful in situations where your wanting to stack inside a fridge. These tanks normally have a 9" diameter. All this comes into play when evaluating the space available in your cooler/fridge. Once these tanks have been cleaned sanitized, have good seals and your connectors are all set, you should have little to no problems with any style tanks for the foreseeable future. The tanks themselves should last a lifetime. A little cleaning and maintenance and you never have to replace these. This should help you when your looking to purchase tanks and think that spending more than 20 bucks is too much. How long would you expect 20-dollar tires to last? Probably not a lifetime. Now that there are no longer millions of these tanks sitting around for the taking, you may wish to find the best you can and as soon as you can. Once the supply dries up, you can plan on roughly 125 to 150 for new tanks, considering, none are manufactured in this country any longer. You're paying for importing, and all the import duties, fees, taxes, shipping and other regulated fees that add to the cost. Cornelius, Spartanburg, Sharpsville and others all farmed out the manufacturing overseas years ago, and there are no plans to bring production back to the states anytime soon. Firestone Alloy became Spartanburg, who contract built the tanks for Cornelius, and then sold out to become Sharpsville, which contracted all the 2.5, 3, & 5 gallon tanks to be made in Europe by AEB. The Korean manufacture does not contract directly with any of the US manufactures. They do build tanks for Coke & Pepsi for use over there. Our company has purchased the Korean tanks and they were extremely well made. The quality was top notch, but the logistics of buying directly was challenging.

PS: Sharpsville makes 10 & 15 Gallon Ball lock tanks still, right here in the USA.

I hope this long-winded rambling has helped answer a few questions and possibly make deciding how to proceed a little easier.

Tankmaster

Important update: Checking recent emails and our discussions with all major bottling plant dismantlers in the US & Canada, there are no known beverage plants with any large quantities of used ball lock tanks available, this has been known by resellers since late 2009. Pepsi & general beverage distributors have ceased using ball lock tanks. The only newly released batches of used tanks will be Pin Locks, with the supply of used tanks to be gone within 12 to 24 months. After this period only new tanks will be available or very small amounts being sold by individuals.