Air & Water

Water Dispensers E-Book

Learn everything you need to know about water dispensers in our 30 page guide.

http://www.air-n-water.com
What is a Water Dispenser?

A water dispenser, or water cooler is able to cool, heat and dispense water.

Generally, there is a refrigeration function that is placed within the water dispenser that cools the water.

Some versions of these coolers also provide air temperature water.

Some have heating elements within them to deliver hot water to the user.

Hot and Cold Water Dispensers

- The hot water is generally used for coffee, tea or hot cocoa.
- The water that is heated is sometimes kept in a separate tank within the dispenser, heated and then released when the lever is pressed.
- The heating elements that are found in traditional water heaters are the same in the dispensers, although much smaller. They are usually equipped with a safety valve that is able to prevent serious burns from happening accidentally.
- The levers that are placed in the front of the coolers are pressed down to release the valve inside the spout to release the water into a cup.
- A safety button may have to be pressed for hot water to be released from the dispenser and into a cup.
Benefits of Having a Water Dispenser

There are numerous benefits that come with having a water dispenser.

With free-standing water dispensers, you have less of a hassle and an easy installation wherever water may be needed. The coolers are able to be re-filled, which creates less waste in landfills compared to using many different water bottles.

The top-loading dispensers can be filled and reinserted into the dispenser.

Using a water cooler can be a better idea compared to using a refrigerator dispenser due to the fact that refrigerators that have these dispensers on them can cost $800-$1,000 more than a traditional refrigerator.

They also cost more to run, so energy bills will be much higher. By using a water cooler, you're able to have a low initial startup cost, while saving money to dispense the water and even re-fill the bottles.

Uses for Your Water Cooler

There are numerous ways that you're able to use your water cooler, whether you're at home or at an office setting. Here is a list of the many ways to use your water cooler, whether you're using the cold, room temperature or hot features in the dispenser.

- Prepare food and drinks
- Cleaning
- Prepare bottles for babies
- Making hot compresses
- Provides cleaner water that is sterilized
Places to Use Your Water Dispenser

There are various places where a water cooler could come in handy, here are some of the top places where they are currently being used. Of course, they are not restricted to these areas. You're able to use the dispensers anywhere that they are needed.

Water Dispensers are Cost Effective

Water dispensers are able to save you money because you will not be purchasing bottled water. This can also save the environment by cutting down on waste in landfills. You're able to have the bottle for the cooler refilled, as many times as you'd like.

You will no longer have to spend gas to run to the store to purchase bottled water. In fact, you will even be able to have the water jugs delivered right to your door, with ready-to-use bottles.
They will take the old bottles, clean them and refill them for a new customer. This creates a reuse and recycle method that not only saves every customer money, but also reduces waste.

**More Benefits**

- **Water on Demand**
  
  The coolers are able to produce water on demand, so you're able to have cold water or hot water to use for many different things.

- **Energy Efficient**
  
  They are energy efficient, so hot water is poured out of the spout on demand.

- **Quick Heating Element**
  
  There is a quick heating element that heats the water, holds it and dispenses it on demand. Very little energy is used for these heating elements.

**Water Dispensers VS. Your Refrigerator**

A water dispenser saves on energy, can fill water bottles that are too tall to fit in the fridge compartment, costs less to fill the water inside the jugs, and allows you to have cold, hot and room temperature water whenever it is needed. All in all, a water cooler might be the way to go depending on the needs that you have.

This is especially true because:

- Your refrigerator will need to be hooked into a plumbing installation. If one is not located by the fridge, you'll have to have one installed to use the function.
- You will also have to deal with having a smaller freezer area.
• The taste and quality of the water that comes out of the fridge may be less than what you've hoped for.

• Do you have to change a filter to get clean water? If you do, this can cost a lot of money. If there is no filter – you have to think about how you might filter the water.

• The fridge uses more energy to pour that quick glass of water compared to a dispenser. Not only that, but usually a fridge will not provide room temperature or hot water.

Filtered Water:

Not every refrigerator water dispenser uses filtered water. Some models do not have a filter that you replace. This could mean just obtaining cold water that comes from the tap, but may be collecting bacteria and other germs through the plumbing line.

However, some that do require filters create more waste and cost more money in the long run due to the fact that you have to continue to purchase filters to clean the water.

A water cooler is able to create better tasting, purified water because:

• The jug is sterile.

• It is not in an open area that is prone to bacteria and other germs.

• The valves inside the cooler should be regularly cleaned and sanitized, but the jugs are already sanitized. The water comes filtered for you.

In terms of “better” water, it depends on the person, how they enjoy their water, and what they would like to get from it.
Water Temperature:

Dispensed water can come in a range of temperatures, according to the range that a specific unit is capable of. Stainless steel reservoirs also help to keep water cool.

A refrigerator will cool water by keeping the water inside a reservoir in the fridge. This then cools the water by allowing it to stay in the reservoir.

Once someone places their cup on the lever, the cool water is dispensed and then refilled inside the reservoir. This keeps a continuous amount of water inside the fridge at all times.

The refrigerator is able to take anywhere from a day for the first run through to cool the water, then six to eight hours from thereafter.

It can take shorter amounts of time depending on whether or not the doors of the refrigerator are opened often and if the water is continuously used. If the doors are opened more or the water is constantly being taken out, it can take longer.

Temperature Ranges:
Your Specific Water Needs:

Either a stand-alone water dispenser or a refrigerator can be ideal for home use. Depending on the needs that you have.

- A water cooler might take up more room, but it can provide many benefits that can take the place of this one downfall.

- When you add a water cooler to your household, you're able to provide cold water when it is needed. Whenever the fridge is not able to provide this – the dispenser is able too. You can also ensure that everyone is able to get hot water on demand, as well.

On the other hand, a refrigerator dispenser is easy to access and is out of the way, but has a few different downfalls compared to a water cooler.

- A refrigerator that dispenses water may not be able to keep up with the drinking water demands of the average household of 4 people, especially if they prefer a specific temperature.

- This is due to the fact that the reservoir is much smaller than the water needed.

- If the fridge water is dispensed slowly and those that drink it do not mind if it is room temperature, then it can keep up with the demands.
Water Dispensers VS. Public Drinking Fountain

A water dispenser is better than a drinking fountain for the simple fact that it is much more hygienic.

Many people tend to place their mouths to the spout of the fountain, whereas in contrast, a cup is used with a dispenser. This allows less germs in general to be transmitted from person to person.

If someone has a viral infection that is contagious, drinking from the fountain can lead to spreading these germs to someone else that uses the same fountain.

A cooler is also easier for a child to use and reach when water is needed, compared to a fountain that is hard to push and drink out of at the same time for small children.

Will Water Dispensers Impact Your Health?

Since the water is in a sealed, sterilized bottle, there are no risks for germs to be present inside the bottle. However, certain fungus is able to grow in the valve of the cooler if it is not properly cleaned on a regular basis.

The plastic coolers that are used to hold the water should also be BPA free.

Any plastic containers that are not, should not be used since this is a harmful chemical.

However, guidelines have made it so mostly all bottles are free of BPA. The risks of becoming sick from using a public water dispenser compared to a drinking fountain are minimal.
Which Water Dispenser is Right for You?

Types of Water Dispensers

Bottle Dispensers – Top and Bottom Loading: Top and bottom loading dispensers refer to units that require a jug as the water supply source, where the opening of the jug is placed within the cooler.

Bottom loading dispensers require you to place the jug at the base of the cooler. They slip into place with the opening at the top but require a pump to remove the water from the bottom of the bottle.

Top loading dispensers simply allow for all of the water to come out of the jug placed at the top by the force of gravity, but can require someone that is able to lift the jug easily.

NOTE: Top loading water coolers don’t have to be unsightly either. They can still compliment the home.
Wall-Mounted:

- A wall mounted water dispenser uses a reservoir or a plumbing valve to obtain the water to dispense.
- This is an easy mount that can be done, but generally are smaller compared to some of the other models.
- They can cool and heat water easily. They also are space saving when you'd like to keep the dispenser out of the walk way.

Free Standing:

- A free standing water cooler provides water through a reservoir that is within the unit.
- This unit has to be filled using a large jug, or it can go jug-less.
- This refilling needs to be done often for some of the smaller models, but larger models can be purchased so refilling is needed less often.
- This is a quick way to obtain water and is ideal to use at a home setting.
Countertop Water Dispenser:

- A **countertop water dispenser** uses a reservoir and is able to provide a desk or kitchen area with clean drinking water.

- It is much smaller than some of the other coolers but easy to fill with the water that you use on a regular basis.

Point of Use (Bottle-less):

- A **bottle-less dispenser** is eco-friendly and is able to provide water without having to use a bottle.

- However, a hook up to a plumbing unit or refilling of the reservoir is needed to get the water from.

- They are generally larger than some of the other compact coolers such as the countertop ones.
Bottled Water Dispenser vs. Point-of-use Dispenser

- Save Money on Bottled Water
- Use Less Energy
- Water Jug Delivery
- Eco-Friendly – No Plastic Bottles Needed

You need a direct plumbing line for a point of use dispenser which can limit the places it is able to be used.
What Water Dispensing Capacity Do You Need?

The best way to find out how much water is needed and used on a daily basis is to measure the water that you use for a day or two.

Measuring your water intake:

- Write down what it is used for and a measurement of how much is used. If you drink eight, 8 ounce glasses a day, boil three cups of water and so on – record it.

- The next day or so you should have an idea of how much water is used daily for each person in the household.

- If you are on a city water line and that is all you've been using, then check the amount that is stated on your bill. If you use the city water in addition to water bottles record the amount on the bill and the ounces of water that you’ve purchased that month.

- The average family consumes around 300 gallons per day. This is for a family of four, all drinking water. The average person alone consumes 64 gallons per day.
Other Factors to Consider Before Buying

**Style/Color:** There are numerous styles and colors to choose from depending on the look you're going for. You can have a sleek chrome, metal look.

White can go well with office spaces and in kitchens. Black goes well for those darker kitchens in homes. Some have a push button to push your cup against to access the water, while others have a lever that you would push in to obtain the water. Some are more home friendly with easy to store capabilities, while others are made for a more professional look.

**Water Capacity:**

- You're able to find coolers that come with capacities of a gallon to five gallons. Depending on the number of people using the unit, you're able to find the right size. A benefit of having a larger water capacity is not having to switch the water out every day. Smaller capacity water dispensers make the unit easy to place on a counter or other small space.

- Water coolers that have a smaller capacity are usually those that have a direct line to the plumbing. You may think less is worse, but the dispenser is able to grab additional water from the line and fill the reservoir up quickly. So it is like having unlimited water.

- Coolers that require a water bottle generally run between three to five gallons. Large bottles of water will need to be filled, add to the top and then dispensed through the unit. This allows you to dispense water to those that are using it.

**Is there a direct water line option?:**

By having a direct water line, you do not have to worry about ordering or installing large water bottles on the top of the unit. You're able to have the water fed directly into the unit – providing an unlimited water supply.

**Side or Bottom Drain:**
- You're able to easily clean either a side or bottom drain. The process is somewhat the same as well, as long as you run the solution through the valves in the unit.

- With a bottom drain, the water naturally runs to the bottom of the unit. With a side unit, you may have to tip the unit in order to fully drain the water out.

It is important to note the type of water bottle you’re consuming your water out of. Currently, many water manufacturers do not use BPA in their plastics anymore. This is a harmful chemical.

In general, large 3-5 gallon bottles safe to consume from. However, if the plastic is left in a hot area, the chemicals that were once in the bottle can leak to the water and this can harm you.

**Features:**

- Some units that only provide cold water have a **temperature setting** that does not change. It chills the water from 35 to 50 degrees F. The models that provide both cold and hot usually have a thermostat that allows you to change how hot the hot water comes out. It ranges from 175 to 190 degrees F.

- **Locks** can be purchased to make sure that the water cooler cannot be controlled by a small child. The units that have hot water options come with a **safety lock** not only for children, but to ensure that the lever is not accidentally pushed. This can cause serious burns.

- Installation is not required on a lot of the models that use the bottle to dispense the water. **Those dispensers that need to be hooked to a plumbing unit should have a plumber hook the water dispenser up.** This is due to the fact that the pipe needs to have a direct line to the water that is used throughout the home.
• Mostly all of the units that are sold on the market are energy-efficient. They require less energy to run compared to a refrigerator model. They also are easy to set up, plug in and have all of your cold and hot water needs met.

Insulation:

• Many water coolers come with built in insulation compartments on the inside of the cooler. These can be replaced or washed to ensure that build up does not happen inside the dispenser.

• The water cooler is able to maintain its temperature as it is cooling and heating water. This is through vents that are placed strategically throughout the units.

Built-in Ice Maker:

If you choose a model that provides a built in ice maker, you’re able to get ice and then the water to cool it even further or keep it cool longer. This means you do not have to go to a freezer to grab ice cubes, they are right in the system.

UV Protection: Choosing a unit that is UV protected will provides you with a dispenser that will never become rusty. This protection keeps the system running smoothly, while also blocking out harmful components that might get into the drinking water. Mostly all of the coolers provide this feature.

Bottle Spike: If the dispenser is one that needs a water bottle, it will come with a spike feature that punctures the end of the bottle. This helps the water come out and get dispensed. Those that do not require a water bottle do not have this feature because it does not need it.
**Water Filter:** The cooler, as long as it does not have a jug, comes with a filtration system built in it. Those that use jugs have filtered water inside the jugs. The filter inside the dispenser is able to be replaced after the specified amount of time easily.

**Stainless steel reservoir:** This keeps your water cool longer. With a plastic reservoir, they are easier to clean but may be harmful if it is heated up too much since the chemicals can get into the water that you drink. Plastic reservoirs might also provide a plastic taste to the water sometimes.
Benefits of Having a Water Dispenser That Filters Water

**FDA approval** is essential for any products that consumers will be using on a daily basis. By being FDA approved, the water coolers and jugs are free of chemical additives that could be harmful to your health. Anything that the FDA does not approve can be harmful to your health because it has chemicals within it that are not good for your system. **FDA approved dispensers are all free from BPA** and other chemicals that can be found in plastic products.

They are also made out of materials that are environmentally friendly, do not give off harmful fumes and will not cause health problems when the water inside the product is consumed.

**Benefits of a Water Filter**

- The filters remove chemicals and chlorine that are in the water. Lead is also removed, which can be harmful to smaller children and older adults if consumed on a daily basis.
- By removing the chlorine and by products from the water, you're reducing your chances of getting many different cancers.
- Filtered water can cut down the amount of bacteria found in regular water. This can boost children's immune systems and keep everyone safe from gastrointestinal problems.
- Filtered water costs much less than bottled water in the long run.
- You do not need to boil water to purify it.
- Water tastes and smells better.
- A filter is able to provide a healthy, balanced pH for the water levels.
Setup, Maintenance and Troubleshooting

Setup and Installation

For the more compact kinds of water dispensers that have a small reservoir, pouring water into them and plugging them into an outlet is all that is needed. They are a quick and easy way to get hot or cold water throughout the day.

The coolers that require a water jug will need to be plugged into an outlet, then the jug has to be added to the top of the machine. Then it needs time to cool or heat up the water from the jug.

Those dispensers that require a plumbing hook up need to be added to a plumbing hose, while also being connected to an outlet in the wall. These require some time to boot up since the water from the pipe has to go into the reservoir and then heated or cooled to the desired temperature.

- Initial cleaning is not required, but may be helpful if the cooler has been sitting for a while. This is just to clean out any dust that might have accumulated throughout the machine.

- Some dispensers will need a direct connection to a water line. These should be installed by plumbers if you're unsure of where one is. Not only that, but if it is for home use and you do not have a plumbing water line where you need one – you might have to have one installed in the home to use the cooler.

Prepping the Cooler for First Use

1. Make sure that the cooler is not plugged in at all before you begin the process. You can plug it in once the process is complete.

2. Remove the top from the dispenser and remove the baffle inside the reservoir. This is a tube assembly that should lift right out of the reservoir.

3. Make sure to cork or plug the hot water faucet side. You do not want to get chemicals in this one since it will be hard to get the taste out of the hot water once it is put in it.

4. Use mild soap and water to wash and thoroughly clean out the inside of the reservoir and
make sure to rinse it and dry it completely out.

5. Use a gallon of water and a teaspoon of bleach. You can get unscented bleach to use for this process.

6. Use a towel to dip in the solution and thoroughly clean out around the tank and in the faucet for the cold water. Let it sit for around five minutes. Make sure to clean down the baffle, but watch out for the air filter -- you do not want to get this wet. Rinse it off and set it to the side to dry.

7. Wash the solution out by putting in water and draining it through the faucet. Do this three times with clean water before using it to ensure it is all cleaned and rinsed out.

8. Add the baffle back inside the container. You can then remove the plug from the hot water and replace the top.

9. Add your jug of water to the top and you're ready to go!

Maintenance

The only maintenance that needs to be done on the unit should be regular cleaning and replacing of the air and water filters located on the inside of the unit.

- Every three months are when you should clean out the inside, as well as replace the filters.

- When the unit is not cleaned out then this could lead to bacteria and other fungal growth inside the tank, jug and in the faucets that the water comes out of. This could get the user sick. It can also clog the air and water filter which will then lead to a poor faucet that does not provide water quickly, but will be sluggish instead.

- By adding new filters, you can ensure that the water is always clean and ready to drink.

“By regularly cleaning and sanitizing, you're able to have a good working dispenser that can provide cold or hot water, as needed.”
With old filters, the water is not going to be cleaned since the filter is not able to do its job.

- Must keep out of direct sunlight – this is due to the fact that the water bottle, when heated can put off harmful chemicals. The same reason you should keep bottled water out of the direct sunlight of the day. Keeping it in a cool place also ensures that the dispenser is able to maintain a neutral, room temperature that it can easily operate in without becoming too hot.

**Cleaning**

How to Clean the Unit:

- Make sure that the cooler is not plugged in at all before you begin the process. You can plug it in once the process is complete.

  ![Note: It is very important to always unplug your unit before attempting any kind of maintenance or cleaning.]

- Remove the jug from the dispenser at the top. Make sure that the water has been completely removed out of the jug to ensure that it does not end up all over the floor.

- Remove the top from the cooler and remove the baffle inside the reservoir. This is a tube assembly that should lift right out of the reservoir.

- **Make sure to cork or plug the hot water faucet side. You do not want to get chemicals in this one since it will be hard to get the taste out of the hot water once it is put in it.**

- Use mild soap and water to wash and thoroughly clean out the inside of the reservoir and...
make sure to rinse it and dry it completely out.

- Use a gallon of water and a teaspoon of bleach. You can get unscented bleach to use for this process.

- Use a towel to dip in the solution and thoroughly clean out around the tank and in the faucet for the cold water. Let it sit for around five minutes. Make sure to clean down the baffle but watch out for the air filter. You do not want to get this wet. Rinse it off and set it to the side to dry.

- Wash the solution out by putting in water and draining it through the faucet. **Do this three times with clean water before using it to ensure it is all cleaned and rinsed out.**

- Add the baffle back inside the container. You can then remove the plug from the hot water and replace the top.

- Add your new, filled jug of water to the top and you're ready to go!

**Additional cleaning information:**

The unit should be cleaned every three months with the above method mentioned.

**What about units with self-cleaning functions?**

- Self-cleaning is when air bubbles are used to flush out any bacteria that might build up in the system. This is done usually 4-6 times a day to ensure that the tank is clean. It can also allow you to have cleaner tasting water.

**Sanitizing** the unit is recommended, even for the self-cleaning models. This is done with the bleach solution mentioned above. You can use this as an alternative to soap and water.
Storage

In order to store the unit, these steps should be taken to ensure the proper storage of the unit:

1. Thoroughly clean the unit, as mentioned above and do not forget to sanitize it.

2. Make sure that all of the water is completely drained out of the faucets. This can be moved along by running hot water through both of the faucets.

3. Completely dry all of the parts and put them back in place.

4. Store the cooler in a dry, mild temperature area. Do not place a new bottle on the unit if it is going to be stored. Keep the jugs of water separately or do not store them.

**KEEP IN MIND**

Even during storage, keep your cooler away from direct sunlight.

**ANTI-FREEZE:**

Absolutely do not use anti-freeze in the dispenser if you're going to be storing it for winter. Anti-freeze is dangerous and can be fatal if ingested.

Just make sure that the water has completely been drained out of the system. You also want to thoroughly dry the unit. If you need to, let it sit taken apart for two or three days to ensure that the water is completely gone. Then wrap the cooler up and store it carefully.
Troubleshooting

Here are common problems and fixes that go along with them, so you’re able to troubleshoot on your own. If all else fails, ask the manufacturer of the specific model that you own.

NO WATER FROM FAUCETS

1. Unfiltered tap water can lead to mineral build-up in your dispenser and lead to calcium build-up on in the reservoir and the dispensing faucets. Clean them out for proper water flow.

2. Make sure that your bottle of water or reservoir has water in it. If it does not, add water and try again.

3. Check to see if the flipper that you push is working. Sometimes these small parts can malfunction. This piece can be replaced to fix the problem.

4. Check to see if there is ice built up around the faucet. This can prevent the water from coming out in a steady flow. You will want to thaw down and break up the ice to fix the problem.

5. If you haven’t changed the filter in some time, if you have a filtered model, make sure to do this. This can be a problem that causes the water to come out much slower.
Troubleshooting continued

**DOES NOT PROVIDE HOT OR COLD WATER**

1. **IF THE UNIT WAS JUST FILLED WITH WATER, YOU WILL NEED TO WAIT AT LEAST 20-30 MINUTES FOR THE WATER TO FULLY HEAT OR BECOME COLD. TRY AGAIN AFTER THIS TIME.**

2. **MAKE SURE THAT THE UNIT IS PLUGGED IN CORRECTLY. IF IT IS THEN CHECK THE BREAKERS AND MAKE SURE THAT OUTLET IS GETTING ELECTRICITY.**

3. **THE COMPRESSOR MIGHT NEED TO BE REPLACED IF NONE OF THESE WORK AND YOU ARE STILL NOT GETTING COLD WATER. MAKE SURE TO CONTACT THE COMPANY THAT YOU PURCHASED IT FROM IF IT IS WITHIN THE WARRANTY TIME.**

4. **IF THERE IS NO HOT WATER, MAKE SURE TO CHECK TO SEE IF THE BAFFLE IS IN THE RIGHT PLACE. THIS IS A COMMON THING TO HAPPEN WHEN A NEW JUG IS PUT IN THE UNIT. BY PLACING THE BAFFLE BACK IN THE CORRECT SPOT – YOU SHOULD BE ABLE TO GET HOT WATER AGAIN.**

5. **MAKE SURE THE ON SWITCH ON THE BACK OF THE TANK IS ON. THIS IS WHAT CONTROLS THE HOT WATER ON THE TANK.**
Troubleshooting continued

**LOUD NOISE**

1. **WHEN THERE IS A DIRTY FILTER, WATER IS NOT ABLE TO COMPLETELY GET THROUGH. THIS CAUSES THE UNIT TO WORK EVEN HARDER. YOU WILL WANT TO ENSURE THAT YOU'RE REPLACING THE FILTER WHEN NEEDED.**

2. **IF YOUR DISPENSER IS ONE THAT IS HOOKED UP TO THE PLUMBING, THEN MAKE SURE TO CHECK THE WATER PIPE THAT IT IS CONNECTED TOO. YOU WANT TO MAKE SURE THAT THE WATER IS COMING OUT. CHECK THE VALVE, AS WELL TO ENSURE THAT THIS IS NOT WHERE THE SOUND IS COMING FROM.**

3. **CHECK THE INSIDE OF THE DISPENSER TO FIND OUT IF ANYTHING, SUCH AS THE BAFFLES OR THE SPIGOTS HAVE BECOME LOOSE AND THIS IS WHERE THE SOUND IS COMING FROM.**

*If you have any other questions, contact our customer care team today on 1-800-734-0405*
Troubleshooting continued

Safety

- One of the biggest safety concerns with a unit that also dispenses hot water is the concern of burns. When someone does not use the unit, as intended, they can become seriously burned from the water that comes out. This is mostly more of a concern with children.

- This is why safety features now come on the dispensers and are provided to those that request them. These preventative measures ensure that not only children are safe, but if anyone accidentally hits the lever, that hot water will not come out if they do not mean it too.

- For models with built-in ice makers -- Do not touch the freezing ice as it is forming
because it can cause burns. This is one that is less of a concern since it is happening within the unit. If someone was to take the unit apart then put their fingers in it without unplugging it or letting it melt, they could get burned. They could also get electrocuted. This is why safety measures should be taken when it comes to cleaning and sanitizing the unit.

- Turning your cooler off at night is a personal preference. It can cause more electricity to be used if it is left on during the night, but not much. It however, will take a longer time to heat and cool the water within it when it is plugged back in when it is morning.

- Those that are afraid of the water leaking out of the dispenser and by the outlet should unplug their system and troubleshoot the cause of the leak prior to using it again.