

Getting started. (Abbreviated manual. Some pages have been omitted).

Silver Well

COLLOIDAL SILVER GENERATOR OPERATING INSTRUCTIONS



Please note. This booklet tells you only how to make good quality colloidal silver. The use of colloidal silver for any purpose is entirely your own decision.

Start with good quality, pure water.

To make the safest, most effective colloidal silver you must start with the purest water so you finish with nothing but pure water containing only silver ions and colloidal silver particles. If you try to make colloidal silver with tap water for example, most of the silver ions created will immediately combine with impurities in the water to form undesirable silver compounds.

- **To use this generator in 'Automatic Mode' the water must be pure.**
- **Carefully read the Water Test guide on page 12.**

DO YOU HAVE A WATER TEST METER?

See our website for important instructions on meters

- **Water suitable for making colloidal silver should register around 0 - 3 ppm on a water test meter.**
- **If you are distilling or purifying your own water you should at least buy one bottle of high quality water so you have something to compare the results with.**

The most common problem encountered is this...

In Automatic mode the right hand indicator light initially lights up but goes within in a few seconds. This is because the water you are using already has significant 'parts per million' of impurities in it. So the answer is to always use the purest water you can find.

IMPORTANT: To re-start the generator after it has shut down automatically you will need to briefly switch off the power.

IN AUSTRALIA Steam distilled water is usually the preferred water for making CS but it's often hard to find. Refresh and Glendale are two of the better known brands available in the drinking water dept or in the laundry products aisle.

Nobles Pureau reverse osmosis drinking water is also widely available and is suitable for making colloidal silver.

Demineralised or deionised purified water is also suitable for making CS as long as its good quality. Demineralised or deionised water is available in the laundry products dept in most supermarkets. Most brands are OK although 'Superior' brand is not recommend.

(Note. Don't confuse 'pure' water with mineral or spring water. Spring and mineral water is highly mineralised and is unsuitable.)



NOTE: Manufacturers of demineralised water are usually not in the 'beverages' business so although their water is probably vastly more pure than your tap water it often carries a 'NOT RECOMMENDED FOR DRINKING' disclaimer on the label. It's entirely your own decision to follow this warning or not.

NEW ZEALAND customers have regularly commented that 'Pure Dew' water is suitable and is available in various sizes at many supermarkets.

DOMESTIC WATER DISTILLING units usually produce suitable water but do not use the post-filter satches that come with these units. Simply distil your water directly into the receiving jug.

DOMESTIC REVERSE OSMOSIS will only produce the purity required for colloidal silver if they are high quality and well maintained.

BENCH TOP or **UNDER-SINK CARTRIDGE FILTERS** do not remove dissolved salts so they do not produce suitable water for CS production.

RAIN WATER may be anywhere from 10 to 100 ppm depending on roof and tank contamination. Suitability even at very low ppm is borderline.

If you must occasionally use 'impure water' read the instructions on page 9.

Getting started...

Set up the system as pictured below. (See next page for instructions on correct placement of the electrodes).

Fill a very clean jar with pure water until it is about 1 cm below the white plastic neck of the generator. (See page 11 for notes about suitable jars. You can use any clean jar from about 500mls to 2 litres. We recommend you start with a small jar until you fully understand the operation of the generator).

The wire from the transformer plugs into the base.

The wire from the base plugs into the back of generator.

(See page 15 for more information about the thermal stirrer base.

Start the unit by turning on the power at the wall outlet and the switch on the side of the stirrer.



- The generator should now be operating in 'Automatic mode'. (The right hand light will be faintly glowing and will change color from red to green every 5 minutes and light in the base will be on.
- The generator will shut down in a few hours at around 12 parts per million (PPM) of colloidal silver.
- **If the generator shuts down too quickly (i.e. the right hand light goes out within seconds) the water is too impure to use in automatic mode. See notes on water quality - pages 2 and 12.**



Insert the long end of silver electrodes into the sockets on the bottom of the generator. (You may need to push quite firmly). Rotate the electrodes so they are roughly parallel vertically and horizontally as pictured.

When positioned in the jar the electrodes must not touch the bottom of the jar.

This light indicates the generator is making colloidal silver. If the light is ON (either red or green) it IS making colloidal silver. If the light is OFF it is NOT making colloidal silver regardless of whether the other light is on or not. Basically, this light **MUST BE ON** otherwise you are making nothing. NOTE however that this light can initially be very faint in pure water, you may even need to shade the light to see it. AND NOTE that it only lights up when it is immersed in water. In SWAP mode this light will alternate from red to green every 5 minutes. (A red light does NOT mean it has stopped!)

This yellow light indicates that you have programmed the generator to run for EXTRA TIME. A continuous light means extra time has been programmed to run but has not yet commenced. A flashing light indicates the automatic cycle has ended and EXTRA TIME has commenced. The number of flashes indicates approximately the number of hours left to run. (**Extra Time is optional. See page 8 for more about Extra Time**)



This switch adds EXTRA TIME that will commence once the Auto mode has completed its cycle. Each click adds 1 hour. You can add extra time any time the generator is operating with the right hand light illuminated. (To use the generator in IMPURE WATER you MUST add EXTRA TIME before the electrodes are lowered into the water. See page 9 for more in this).

The best way to learn how to use it is to play around with it. You can't hurt the generator!

You can turn the power on or off at anytime. You can remove the electrodes from the water or re-immerses them at anytime. You can experiment with pure or impure water. You can touch the electrodes with your fingers or even 'short circuit' the electrodes with a piece of metal. None of these things will damage the generator or you.

So play with the generator and get comfortable with it. For example, dip the electrodes into your tap water and see how quickly it switches off.

But remember that whenever the generator switches itself off you have to turn the power off at the stirrer or at the wall to re-start it.

If you make a programming mistake at any time simply switch the power off to clear the system and start again.

Whenever you remove the electrodes from the water, or turn off the power, the generator recommences from the PPM that it senses has already been added to the water.

It is normal for electrodes to go a darker color during the process.

You can occasionally remove the generator from the water and gently wipe the electrodes clean if you wish but this is not usually necessary. Only heavy deposits need be removed. *(Larger jars take longer to reach 'shut-down' and consequently more oxide will build up on the electrodes. Small jars will reach 'shut-down' quicker and the electrodes will stay relatively clean)*

**Note that only the generator switches off automatically.
The stirrers do not do not switch off automatically.
They operate continuously while the power is on.**

Once the generator has switched off you can use this colloidal silver immediately or bottle it. Always store colloidal silver at room temperature.

Bottling your colloidal silver.

After making a batch switch off the power and allow the water to become still. Lift the electrodes from the water slowly so that any fuzz remains adhered to the electrodes as they are raised. Some fuzzy silver oxide may settle to the bottom of the jar and specks of silver particles may be seen floating on the top. This is all harmless and looks worse than it is. The floating specks will usually disappear once the water is disturbed.

After removing the electrodes allow the water to settle for another few minutes. After the water settles, pour the top 90% directly into a storage bottle. Don't filter it. Discard the rest, or use a coffee filter to strain the last 10% into the bottle. (Before first use, run clean water through the coffee filter to remove any contaminants). The coffee filters can be re-used many times, they improve with use. For added strength put one filter inside the other. Unbleached coffee filter papers are available at most supermarkets.)

Do not refrigerate colloidal silver. Store it at room temperature.

Colloidal Silver made with a Silver Well with pure water is not particularly light sensitive, but it should be stored out of bright light. (Note. High ppm batches are more light sensitive than low ppm batches). A brown glass bottle is handy for keeping your daily supply on the kitchen bench. Larger quantities should be stored in a cupboard.

Some research also suggests that fresh CS is best, so if possible don't store more than you will use in a fortnight or two.

SUITABLE STORAGE BOTTLES:

Use any clean glass bottles, or PET or HDPE plastic bottles for storage. PET is the brittle sounding clear plastic usually used for soft drink bottles. HDPE is the waxy plastic often used for milk bottles. Well rinsed soft drink and milk bottles are perfectly fine for colloidal silver storage.



Boosting the PPM with EXTRA TIME.

In normal 'Automatic' mode using pure water the generator will switch off automatically at around 12 ppm.

The time it takes to reach 12 ppm will vary greatly depending on jar size but is usually around 3 hours per litre.

If desired you can boost the ppm by running the generator for EXTRA TIME. You can set EXTRA TIME whenever the generator is running with the right hand light illuminated, or you can set it after the generator has switched off. If you set it after the generator has switched off you must briefly switch off the power at the stirrer or the wall to 'reset' the generator before setting EXTRA TIME.

Each press of the EXTRA TIME button adds ONE HOUR to the running time. (Wait 3 seconds before setting extra time. You don't have to wait 3 seconds between subsequent clicks). The maximum number of additional hours the generator will hold in memory is 40 hours. To run longer than 40 hours you can repeat the process when the batch has finished or add extra time as the hours count down.

Each extra hour adds the following ppm to these jar sizes...

- In 250 mls - Each hour adds 16ppm.
- In 500 mls - Each hour adds 8 ppm.
- In 750 mls - Each hour adds 5 ppm.
- In 1 litre - Each hour adds 4 ppm.
- In 1.5 litres - Each hour adds 2.5 ppm.
- In 2 litres - Each hour adds 2 ppm.
- In 3 litres - Each hour adds 1.5 ppm.
- in 4 litres - Each hour adds 1 ppm.

EXAMPLE: To boost a 1 litre batch by 8 ppm run the generator for an additional 2 hours. This will boost the batch up to a total of 20 ppm.

To add extra hours to a batch that has already been boosted you will have to add the hours BEFORE lowering the electrodes into the water because the generator treats it as 'impure water' and may switch off automatically. (See page 9).

IMPORTANT. Dissolved silver has a saturation point in pure water of only about 25 ppm so anything above that will not stay in suspension indefinitely. If the batch goes yellow, it's still OK to use, but you may want to back off the next time so the CS remains stable and colorless. Colorless (clear) is best. Pale yellow is next best... still very good. Various environmental factors and contaminants can make CS turn colors. Excessive consumption of high ppm colloidal silver is not recommended.

Only clear or the palest yellow are acceptable colors for drinkable colloidal silver. Never drink cloudy white/grey colloidal silver. Do not drink large quantities of colloidal silver that has made with impure water or tap water. Argyria (grey skin) has been known to occur when people have consumed large quantities of poor quality colloidal silver over a long period.

You cannot use a water test meter to measure high ppm colloidal silver. The only way to determine the strength of high ppm colloidal silver is to use the guide on the facing page. And see pages 20/21 for more about information about the shortcomings of meters.

Using EXTRA TIME in impure water.

For this purpose 'impure water' is any water that is not distilled or demineralised OR HAS ALREADY BEEN BOOSTED.

In impure water the generator will switch off automatically within a few seconds. So, to dissolve silver into impure water you must set the generator to run immediately in EXTRA TIME.

You do this by turning on the power and clicking the EXTRA TIME button for the required hours BEFORE lowering the electrodes into the water.

The amount of silver dissolved into the water (i.e. the ppm) is the same per hour as in the table on the opposite page but of course the water will not already have the 12 ppm that would have been present had the generator previously run in auto mode in pure water.

With a Silverwell you can often make perfectly clear very high ppm colloidal silver in ordinary tap water. this is suitable for topical use or plants or animals only.

The benefits or otherwise of colloidal silver made with impure water are not well established. (It is often stated however that running a generator in impure water will at least sterilize it, although we can't state that for a fact ourselves.

What is PPM?

PPM is an abbreviation for 'parts per million'. The amount of silver in colloidal silver is commonly measured in PPMs. It is the same as 'milligrams per litre'. So 10 ppm for example is the same as 10 milligrams of silver per litre of water. Note that PPM describes the total combined mass of the silver in the water - it does not literally mean that there are 10 particles of silver per litre of water. The 10 PPM could be made up from a few big bits of silver or, more likely, billions of small bits of silver.

Speeding up the process.

You can speed up the process by adding a small amount (about 20%) of clear colloidal silver from a previous batch to the new jar of distilled water. This raises the initial water conductivity and shortens the 'start-up' time. This is often called 'seeding' the batch. This is especially recommended if you are making large batches, or using extremely pure water with a 0 TDS reading. Never add any other ingredients to the water.

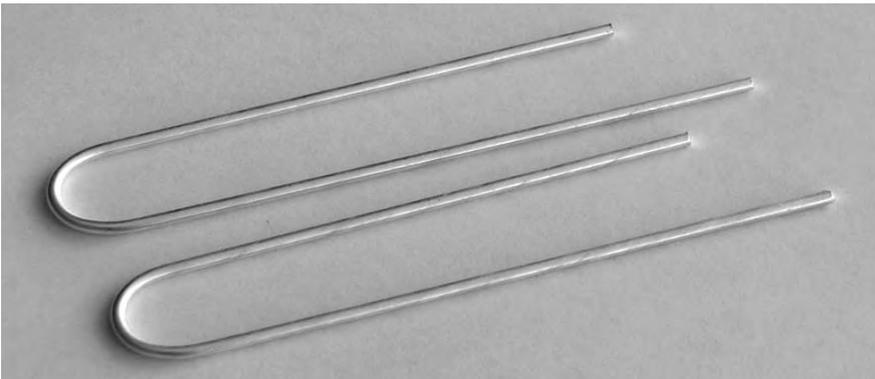
Cleaning the generator and electrodes.

Some oxide fuzz will usually build up on the electrodes during the process. This is normal but it should be gently wiped off after each batch.

To clean the electrodes, remove them from the generator and wipe them firmly with a piece of cloth or paper towel. A scrub pad can be used occasionally to give the electrodes an extra clean but Silver is very soft so be gentle. You don't have to scrub the silver to a shiny finish. A satin grey color is fine.

2 electrodes make about 150 to 200 litres of 10 PPM colloidal silver. (If you make it stronger you will get less litres. They can be used until they are too thin to handle.)

Do not place the generator upside down while wet. Colloidal silver that dries on the underside of the generator can upset the operation of the generator. If the underside of the generator becomes significantly dark grey clean it with a cloth and methylated spirits.



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Water Test

1] Plug everything in and turn the power on.

2] Lower the electrodes into a jar of ordinary tap water. The right hand 'production light' will glow brightly then go out within seconds. The green light will be very bright almost as soon as the electrodes touch the water. This is because ordinary tap water is relatively impure, and highly conductive. Seeing a bright light the instant the electrodes touch the water indicates the water is too impure to use.

3] Remove the generator from the water and reset it by switching the power off then on again.

4] Now see what happens when you lower the electrodes into a jar of distilled water. When the electrodes first touch the water the light will barely glow. (It may be hard to see even in a darkened room). As you lower the electrodes further into the water it will glow slightly more but still not as brightly as when you used tap water. This dim light that barely changes as you raise and lower the electrodes is an indication that the water is suitable to use.

If the water is suitable for making colloidal silver it should take around 3 or 4 hours to make a batch in a 500 ml jar.

• In very pure water this light on the generator will barely glow when the electrodes touch the water. It may be hard to see even in a dark room. It will only get slightly brighter as you lower the generator into the water.

• In poor quality water, such as ordinary tap water, the light will be bright the instant the electrodes touch the water. In 'automatic mode' the light may even go out within a few seconds.



TROUBLE SHOOTING ...

SW10

This system is supplied with a 24v DC output power supply. Usage of any lower voltage may result in slower batches or cause the thermal stirrer bulb to appear dull. The first step when problem solving is to check that you have not accidentally plugged in an incorrect power supply. (Read page 16 carefully if you are using alternative power supplies.)

PROBLEM: The generator has been working fine but my batches are not as good as they used to be. It might be going excessively yellow.

- This is usually because your pure water quality has changed or your jars and electrodes need a good clean. The quality of purchased water is not always consistent even if you always use the same brand. You may need to change brands.
- Yellowing will also be caused if you are trying to make it too strong.

PROBLEM: The power is on but the right hand red/green LED light on top of the generator isn't glowing.

- This is usually because the generator has automatically switched off and needs to be re-set before it will operate in 'auto' again. Re-set the generator by briefly switching off the power at the wall or the stirrer base. If the light goes out again then the water is impure. You will need to use better water or use EXTRA TIME.

Note that In very pure water the light is initially very faint and hard to see. Read the Water Test information on page 12 and familiarise yourself with the automatic off function of the generator.

- Other possible causes are a transformer failure or a broken connection. If a faulty connection is suspected, the plug on the end of the wire from the stirrer is the most likely culprit. Unscrew the black sleeve to ensure both wires are securely soldered and separated.

Note. When disconnecting plugs, always grasp and pull the plug, not the wire.

Test the generator (without the stirrer) by plugging the transformer directly into the generator. (As illustrated on page 14)

PROBLEM: The generator has been running for ages and won't switch off.

Note. Only the generator (on top of the jar) switches off automatically. The stirrers do not switch off automatically. They run as long as the power is turned on. You can leave them running all day, or overnight.

- The main cause of very long running times is the use of slightly impure, or extremely pure water. If the water is slightly impure the the silver dissolving off the rods combines with impurities to form particles that do not raise the conductivity of the water. (Its the rising conductivity that shuts the generator off). On the other hand, sometimes distilled or demineralised water is so pure that the generator will never reach the shut-off point even in auto mode. This is because the extended running time causes the build up of an insulating coating on the electrodes that captures ions as fast as they are produced. Usually, cleaning the electrodes will allow the batch to finish automatically.

About 3-4 hours per litre is an average running time but long running times are not unusual and do not indicate a malfunction. If a particular brand of water continually produces excessively long running times (anything over 8 hours per litre) then the best solution is to seed the water with about 20% of colloidal silver from a previous batch. This is especially recommended for large batches.

Silver Well

For more information visit
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