Drilling Your Own Sea Glass or Sea Pottery

For over three years I have been drilling sea glass and sea pottery. I was very fortunate to find many different resources on the internet that I was able to combine and modify in to an easy and successful technique. Additionally, I sourced relatively inexpensive but high quality tools so I did not have to struggle with trial and error. I hope this tutorial will provide you with the information you are seeking to have a very pleasant and fun experience drilling your own pieces.

Equipment

Dremel Rotary Tool Ideal Specifications:

- Corded (NOT handheld battery operated)
- Variable Speed
- Electronic Feedback

My first Dremel was the 400 XPR model that I had gifted to my husband for Christmas many years back. It performed beautifully! When my husband wanted it back I made the mistake of purchasing the 3000 Variable Speed Rotary Tool. I realized then how important and convenient the electronic feedback feature is of the higher end models. Electronic feedback allows the drill to maintain consistent speed despite friction and pressure as you drill.

Dremel 4000 High Performance Rotary Tool

Lesson learned! I currently use the 4000 High Performance Rotary Tool and love it just as much as the older 400 XPR model.

Accessories for your Dremel:

- 220-01 WorkStation – The WorkStation allows your handheld Dremel to become a drill press. I find this essential to a successful and easy drilling experience.

- 4486 Dremel MultiPro Keyless Chuck When purchasing your Dremel take care to determine if the package includes this style of chuck. You will need this for easily attaching the drill bits that have small shanks.

4486 Keyless Chuck

220-01 WorkStation

Drill Bits:

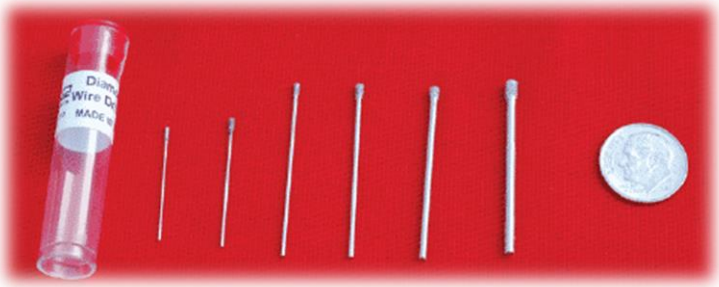
1. **Diamond Coated Drill Bits**

Diamond coated drill bits are essential to successful drilling! I have also seen tungsten carbide bits recommended for drilling glass however, I have not seen successful examples of their use with sea glass or sea pottery. They are often recommended for softer materials such as fiberglass or metals.

I was very fortunate to have found Lasco Diamond Products when I began my drilling experience. They are a well-established company in California and have been manufacturing diamond instruments since 1963.

Bit Sizes

Lasco manufactures a wide variety of diamond drill bit sizes. I have used each of their sizes in the Small Diamond Drill category (.75mm-2.5mm) as well their 3.5mm Diamond Core Drill.



Multi-Size Diamond Drill Set: "comes with 2 pieces each of the following sizes: (0.75mm, 1mm, 1.25mm, 1.5mm, 2mm, and 2.5mm) for a total of 12 pieces."

2. **Starter Size:** I highly recommend the **1.5mm Small Diamond Bit** for first time drilling. The shank diameter of the smaller bits are so thin that you can easily bend the shank due to wobble while drilling if you are not comfortable.

Sea glass drilled with 3.5mm Core Bit

- **Large Holes:** I have had great success with the 3.5mm core drill bit. This drill bit is more expensive per bit but well worth the investment if you wish to drill larger holes.

Lasco offers an excellent multi-size set of their Small Diamond Drills (see photo above) and excellent prices on 10 packs of all sizes. A 10 pack will provide you with drill bits costing less than $2 a piece!

If you want to purchase individual bits of any size call at 1-800-621-4726.

They are wonderful over the phone and if they have a current coupon code they will apply it to your order!

How many pieces of sea glass can I drill with each bit?

My experience is approximately 50 pieces of sea glass before discarding the bit.

This will vary with the type and thickness of your sea glass pieces.

Other Equipment:

3. **Plastic Tupperware-type container –** I use a square shaped container, approximately 6 x 6 inches and 1.5 to 2 inches deep.

4. **Wooden block –** A block of scrap wood that can fit inside the plastic container. No more than ¾ inch thick. My husband attached the wood block to the bottom of the container with a single screw so it would not float. Silicone was used to seal around screw to ensure water does not leak from the underside of the container.

5. **Desk lamp or other portable light –** You will want a bright light source that can be moved to shine light on your work area in the container as you drill. This helps see through the glass piece and the water as it becomes murky from glass dust. I love working with the DeWalt DW 919 Cordless Flexible Floodlight as there are many 18V batteries in my garage. However, there are many more cost effective options.

6. **Pitcher and bucket for water –** Since drilling your sea glass underwater is important for success I like to have a large pitcher (2 quart plastic juice pitcher) of clean water at my work area and a large bucket (5 gallon) for dumping murky water. This allows me to drill many pieces without having to leave my space to dump water and refill my container with clean water.

Top: Plastic container with wood secured to bottom.

Bottom: Underside of container & close-up. Notice silicone between bottom of container and wood.

Drilling Technique

Before Starting Your Drill:

1. Select several practice pieces of sea glass or sea pottery.
    - Tip: You can use a larger piece that you do not care too much about to drill practice holes of several sizes in and then label with a fine tip Sharpie. I find this comes in handy if I want to have a visual of my hole sizes later when I select a drill bit size.
2. Make sure you have a good supply (2 quart pitcher) of fresh clean and **cold** water.
    - Cold water is important as water serves two purposes while drilling:
        1. Keeping your sea glass piece and drill bit from overheating and
        2. Providing lubrication for your drill bit.
3. Insert and tighten a drill bit in your chuck.
    - You want your drill bit to be fully tightened so using the small wrench that comes with your chuck is advisable. Finger tight is not tight enough in my experience.
4. Place your container (without water in it) on your WorkStation. You may have to tilt your container to get it under your drill bit. This step is important to gauge the height you want your drill to be at while drilling. Lower the drill (while not running) and bring it back up to see if you can comfortably reach the block of wood in your container. You can see in the image to the right the block of wood serves not only as a riser in your container, but also a buffer when you drill through your pieces; lots of drill nicks in my trusty ol' dish!

Close-up of nicks in the wood in the dish

Drill bit at level so dish can slide on and off work area without tilting.

- **Tip**: If you have to tilt your container to move it under your drill bit you may want to raise your drill slightly. I like to keep my drill at a height where I can remove a full container of dirty water without tilting it or worrying about bumping my drill bit.

5. Fill your container with water until it is almost full, about 1/4 inch from the top.

6. Place your sea glass in the center of the dish, making sure it is fully submerged. If it is not add more water until your sea glass piece is covered by at least 1/8 inch of water.

Start Your Drill:

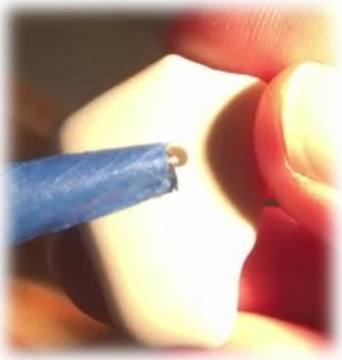
1. Set your drill speed between 5,000 and 10,000rpm. Often times this is the lowest setting on a variable speed drill. If you have a drill that does not have rpm indicators on the switch or dial I recommend consulting the user manual to check the specifications of the speed range.
2. Hold on to your piece of sea glass under the water very securely with your fingers. **Don't worry about touching your fingers with the drill bit.** A diamond tipped drill bit will only file your nail or buff your skin a little if you touch it.
3. Lower your drill slowly and steadily. When your drill bit touches the piece of sea glass maintain steady and gentle pressure. The initial "bite" into the glass is always the most nerve wracking but it will become very comfortable the more you drill.
4. **Maintain steady gentle pressure for no more than 5-10 seconds.** Lift the drill allowing water to fill the hole you have started and then repeat with steady gentle pressure. I swish my piece gently in the water to clear some of the dust so I can see the indentation more clearly before lowering my drill again.
5. Continue drilling with steady and gentle pressure for no more than 5-10 second at a time, allowing the drill to do the work of cutting through the glass. Depending on the thickness of my glass piece I start to flip it over and look at the other side after my second or third pass with the drill. With good light and a wet sea glass piece you will the hole through the other side of the glass.
6. **IMPORTANT! Counter drilling is one of the most important parts of drilling sea glass or sea pottery!** When you are slightly more than half-way through your piece of glass flip it over and begin drilling from the other side. **If you do not flip and counter drill you will have a "blow out" on the other side of your piece!**

Left: Clean hole on initially drilled side of sea glass. Right: "Blow out" from drilling all the way through without counter drilling.

Drilling Tips:

1. **Different types/colors of glass and pottery have different density** and may be slower to drill through. I have found pale green-blue glass, typically from older Coca-Cola bottles and ceramic/dinnerware pieces to be much denser and therefore slower to drill.
2. **You can increase your drill speed** as you become more comfortable with drilling. I have read suggestions of up to 20,000rpm however, I recommend beginning with lower speeds until you feel more confident and comfortable with the drilling process.
3. **Don't forget to change your bit!** I am notorious for leaving my bit in longer than I should. If you notice it takes much longer to drill through a white/clear or brown piece than you think it should chances are your bit has become dull. A fresh drill bit is your best friend, especially if you are drilling a rare or important piece!
4. **Drilling sea pottery** can be more difficult than sea glass as it is not transparent when placed in water and you cannot see where to counter drill.

   When I drill sea pottery I start with one side and drill about half way through. Dry the piece with a towel, then use a needle nose pliers with making tape on the tip to grasp the piece of sea pottery, placing the tip of the pliers over the hole. While holding the piece make a small mark on the other side with a Sharpie right next to the tip of the pliers. I then counter drill on that mark, flip over to the initial drill side to drill a bit more and then flip, drill, flip, drill. Sea pottery can be very difficult to achieve a straight hole through especially if the piece is not flat. Any remaining Sharpie marks can be easily removed with with rubbing alcohol.





Left: Initially drilled side of sea pottery. Right: Counter drilled side of sea pottery showing slight irregularity of hole dimension.