Devardi Glass And The Hothead Torch
.•:*:•. **Tutorial Series** .•:*:•.

... HOW TO PULL STRINGER ...

How To Pull Stringer Inside and Outside Of The Flame

TUTORIAL OVERVIEW…

In this tutorial you will learn two ways to pull Devardi glass stringer on a Hothead Torch. The first way is by pulling stringer in and above the flame. The second way is by heating a gather of glass on the end of your rod, and then pulling it into a stringer outside of the flame.

Any torch can be used to pull stringer. If you are on a surface or pre-mixed torch you will need to make adjustment for the significant difference in heat that it produces. A Hothead torch is much cooler than other types of torches.

Please note that I show the Hothead Torch in each picture so that you can refer to the location of it as you work if you are having a problem with any given step. Realize that you are looking down at the torch, so you can't see what is below the flame and what is in it. I try to state where to hold things when it is important to the step.

I encourage you to read through the steps before you begin. Please feel free to email me at FineFolly@bellsouth.net if you need help. I always like to help if I can!

.•:*:•. ON THE IMPORTANCE OF A ROD WARMER .•:*:•.

Using a Rod Warmer to preheat Devardi glass rods makes all the difference in the world in preparing them for the flame, so if you don't have one, I STRONGLY encourage you to get a Rod Warmer. They are not that expensive and they are available from Devardi or can be purchased online from Beauty Supply sites (they are called Ceramic Heater Stoves).

You can take the time to wave and roll your cold rod in the high, back-end of the flame to warm it, and then ever-so-slowly bring it forward, rolling and heating it until you can bring it into the actual working area of the flame, but most people don't have the time or the patience to do this successfully on each rod. And it's really not cost effective to spend your time this way either. Even after doing this some people still experience shock or shattering, despite their best efforts to adequately pre-warm rods.

A Rod Warmer reaches 800-900 degrees, so you will rarely ever experience shock or shattering if you use one. Some people use a small Teflon coated Grill or Hotplate successfully by spending the extra time to make sure the rod is heated slowly in the flame at the start, but these don't come near the temperature of a Rod Warmer.

About my set-up… As you can see in the picture above, I use a medium-sized nut can (from Walmart) turned upside down to rest the ends of the rods on. It is just the right height and width. The Rod Warmer gets very hot, so I wrap a piece of Fiber Blanket around the cord at the back to act as a heat shield between the Rod Warmer and the cord, because I have the Rod Warmer in the back corner of my worktable. Ceramic tile is behind it.

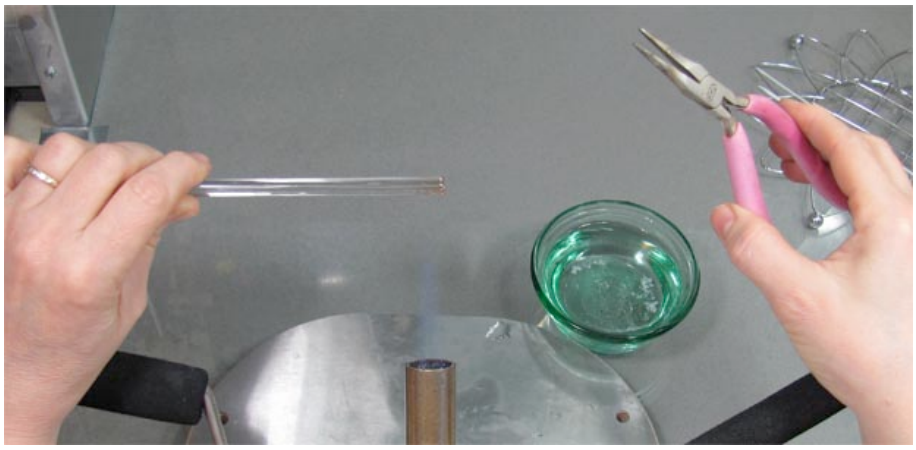
Devardi offers an inexpensive steel plate for the inside bottom of the Rod Warmer. It will protect the bottom from glass rods that get put back in the Rod Warmer to hot. They can stick to the ceramic bottom and sides if you touch them together in a molten state, so be sure to roll your rod and cool it before returning it to the Rod Warmer. The top of the Rod Warmer makes a great surface to preheat Murrini on before applying them. I have the Murrini sitting on a small piece of steel plate, also available from Devardi.

To work Devardi glass with the greatest ease and productivity, put your rods in the Rod Warmer about 2" to 3" deep. You only want to preheat the rod end, so that you can hold it normally and work it in the flame. When you first turn on your Rod Warmer plan to preheat your rod(s) for 5 to 10 minutes before you use them. Then, after each use, roll the tip of the rod on your marver to shape and cool it before you return it to the Rod Warmer. A glowing rod end will stick to the Rod Warmer or to other rods. Keep returning the rod to the Rod Warmer so that it is ready for the next use. Cool rods can be put into a hot Rod Warmer without shock, and used once they are fully warmed (about 5 minutes on average).

.•:*:•. HOW TO PULL STRINGER IN THE FLAME .•:*:•.

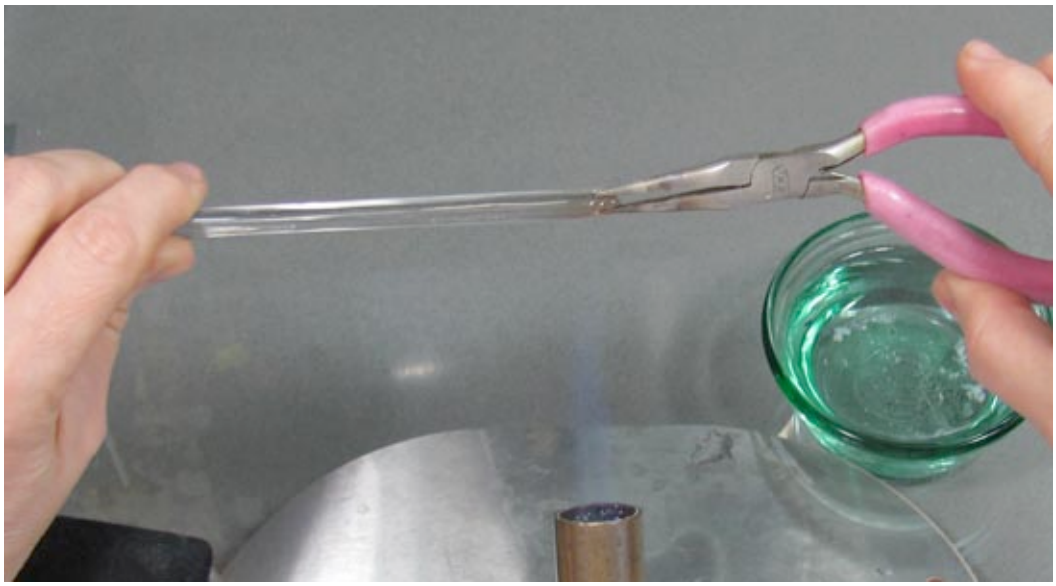
WHAT YOU NEED TO BEGIN…

Rod Warmer
Hothead Torch
Pliers
Wire Rack To Set Hot Stringers On
Rod of Clear (or Color Of Your Choice)
Bowl of Distilled Water (Distilled Water helps keep minerals from building up on your tools)



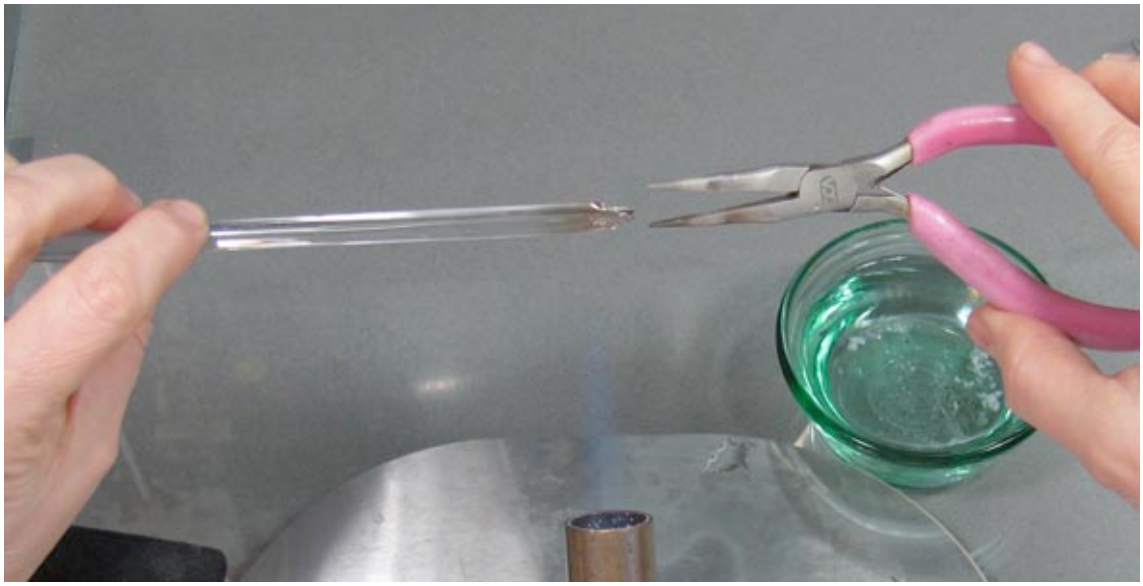
STEP 1. Light your torch and let it warm up a bit. Then adjust it to the lowest flame possible. You want your Hothead torch set to the lowest flame it can be without going out. You should be able to hold your hands (and work) 2” to 3” from the sides of the flame when it is set low enough. As you read through the steps notice how far the rod is from the torch head in the pictures. It is about 4” from the torch head to the rod tip in this first picture.

To begin, take the pre-warmed rod of clear from the Rod Warmer and roll about 1/2” of the tip in the flame - about 4 to 5” above the end of the torch. You’ll see the sharp edges of the rod begin to soften and barely glow when it’s ready to be worked.

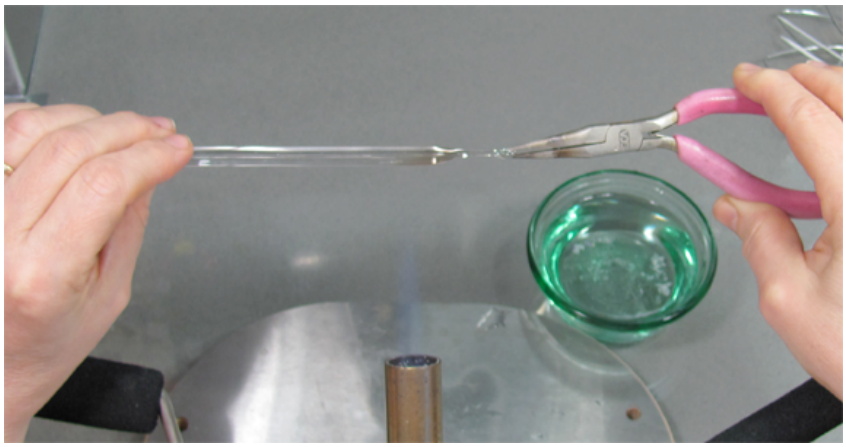


STEP 2. Use clean pliers to gently pinch the end of the rod into a cone shape. Dip your pliers in distilled water after each pinch to cool them. If you allow your pliers to get to hot they will stick to the glass, so cool them after each pinch (or as frequently as needed).

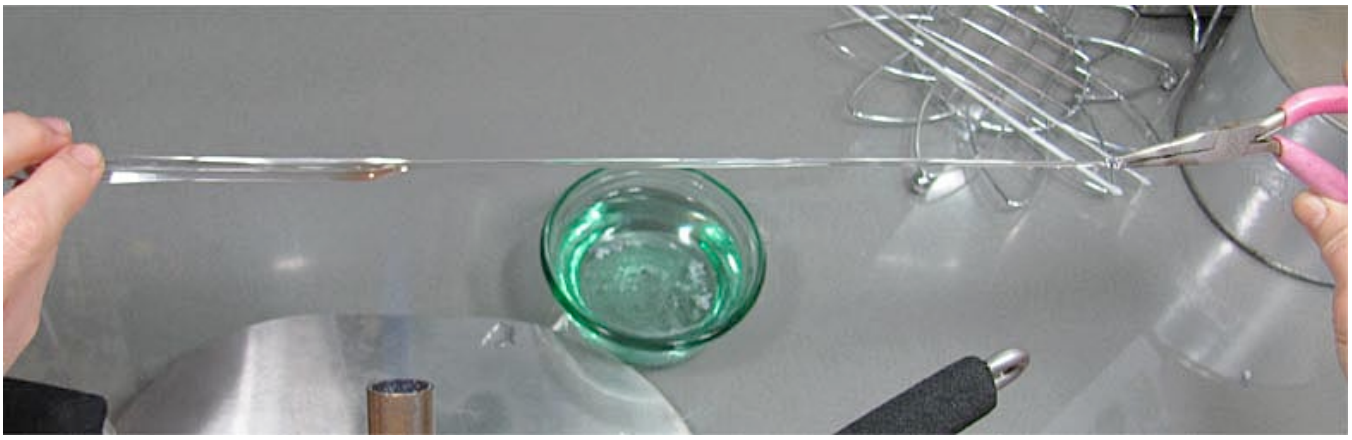
I use distilled water to avoid mineral buildup on my tools. Mineral buildup on your tools will transfer to glass eventually and leave crud on the surface of the glass, so it's worth the extra effort to buy a jug to have on hand.



STEP 3. Continue to turn the rod and use your pliers to form a cone shape on the end of the rod. For very thick or fat rods this shaping takes a bit more time and work, but for the thinner rods it is pretty quick to do.



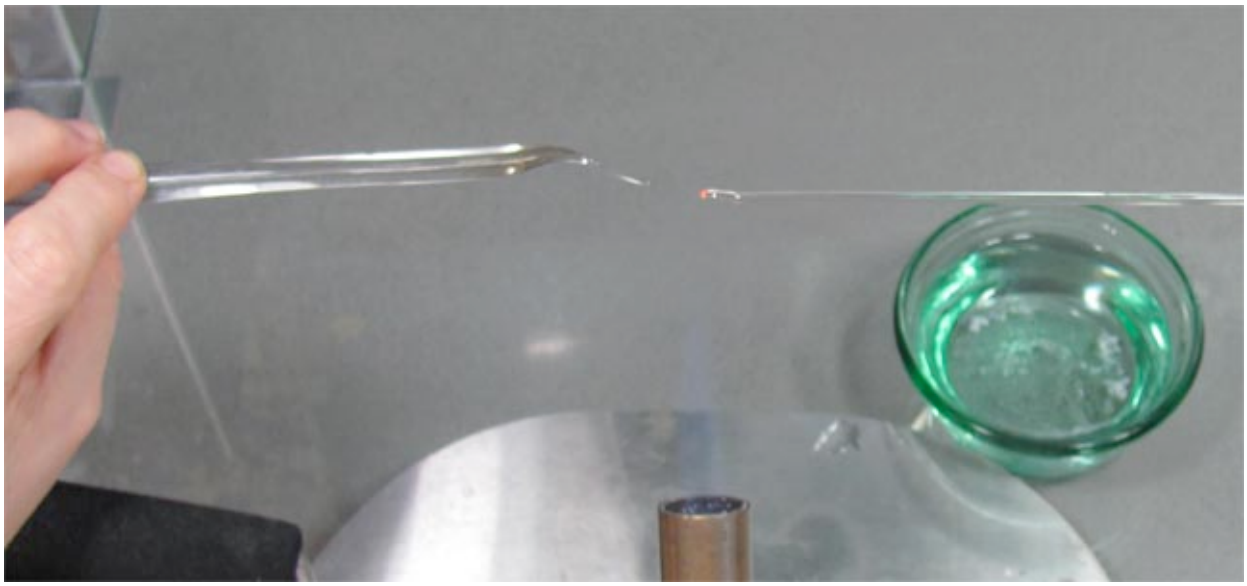
STEP 4. When you have created the rounded cone shape, heat the tip and pinch a small tab and let it rest just a second to solidify. The tab you pinch helps the glass pull evenly behind it, instead of becoming a thin thread as you pull. Start to pull slowly. Keep your cone in front of the flame between 3" to 4" away from the torch head, or where needed to keep it softly glowing so that glass is ready to be pulled from it. The thicker the rod the closer you may need to be to keep it softly glowing and ready to pull from.



STEP 5. Once you have the stringer started, keep the rod tip faintly glowing and continue to gently and steadily pull. As you pull slowly with your right hand, your right hand should be feeling the tension in the hot glass of the cone as you pull. Being aware of this tension or rate of 'give' will allow you to see where you should keep the rod in the flame, barely moving it to the right as the hot glass is steadily pulled out. If you pull to fast your stringer will get thin. If you feel the glass cone getting soupy you can lift up a bit in the flame (with both hands at the same time) to cool things, and then lower again and start the same slow pulling when you feel the cone is glowing nicely and is ready to be pulled.

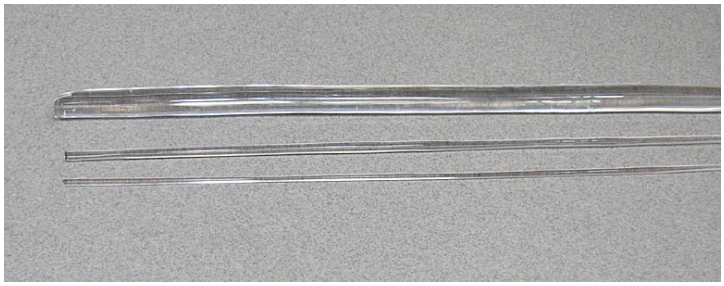
To keep the rod tip hot enough and ready to be pulled from, shift the tip of the rod to the left or right about ½". This will make it hotter and flow more easily, or it will cool it a bit as you pull. Once you get the feel for the glass going soft as you heat it, and being ready to be pulled, you can then determine the thinness of the stringer by how you fast you pull it.

Actually you are always pulling fairly SLOW, so pulling 'fast' means faster than barely moving! Pulling faster produces a thinner stringer. Pulling slowly allows the stringer to cool and stiffen and pull along the same width of glass after itself. This is what you want the glass to do.



STEP 6. When your stringer is long enough (or your hand gets tired) move the rod and stringer closer to the flame to begin the heating that will “cut” the stringer. Just as it starts to glow and get soupy, pull with your LEFT hand (to the left) to separate or ‘cut’ the stringer. Pulling the left side (or the rod) gives you a nicer Stringer tip. If you pull the stringer side away it can stretch out to a fine thread before breaking. Try it and see which you prefer.

STEP 7. When you have cut your stringer, set it on a wire rack to cool. If you set it on a cool surface it can break. Beware that the end that you held with your pliers can sometimes pop off due to uneven cooling. Be sure to angle your stringer away from you when you set it down, in case this happens. That way, if the pinched end does pop off it is angled away from you.



.•:*:•. ONE FINAL NOTE .•:*:•.

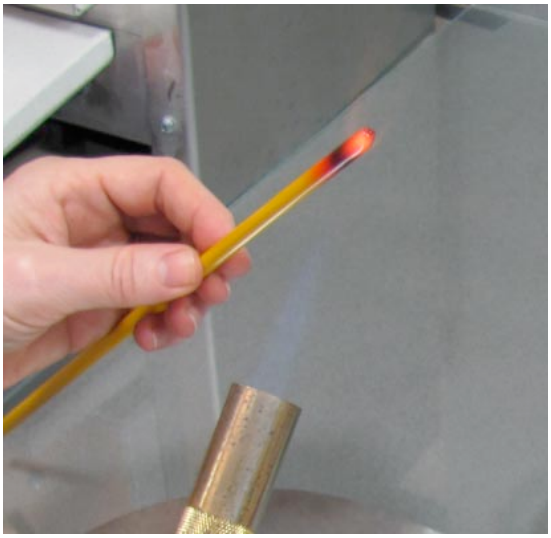
Remember that glass is softer or stiffer depending on the type of glass it is (opaque, semi-opaque, transparent). Even within a set type of glass, different colors can have a different stiffness.

The stiffness or softness affects the pulling tension and where you need to hold the rod tip in the flame to be ready to be pulled. I encourage you to practice making stringer in different thicknesses, with one type of glass, before changing to another glass. The difference in softness or stiffness can make you feel like a beginner all over again when you are not used to it.

.·:*:·. HOW TO PULL STRINGER OUTSIDE THE FLAME .·:*:·.

WHAT YOU NEED TO BEGIN…

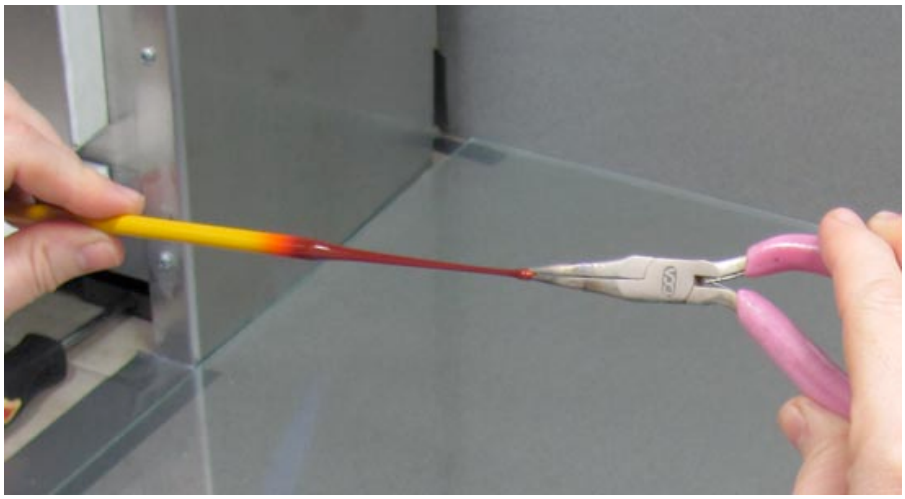
Rod Warmer
Hothead Torch
Pliers
Wire Rack To Set Hot Stringers On
Opaque Rod (Color Of Your Choice)
Bowl of Distilled Water (Distilled Water helps keep minerals from building up on your tools)



STEP 1. Remove the pre-heated rod from your Rod Warmer and begin to roll it in the flame, turning it until it glows. Hold the rod in an upright position in front of your torch, in case the rod gets soupy and wants to droop.

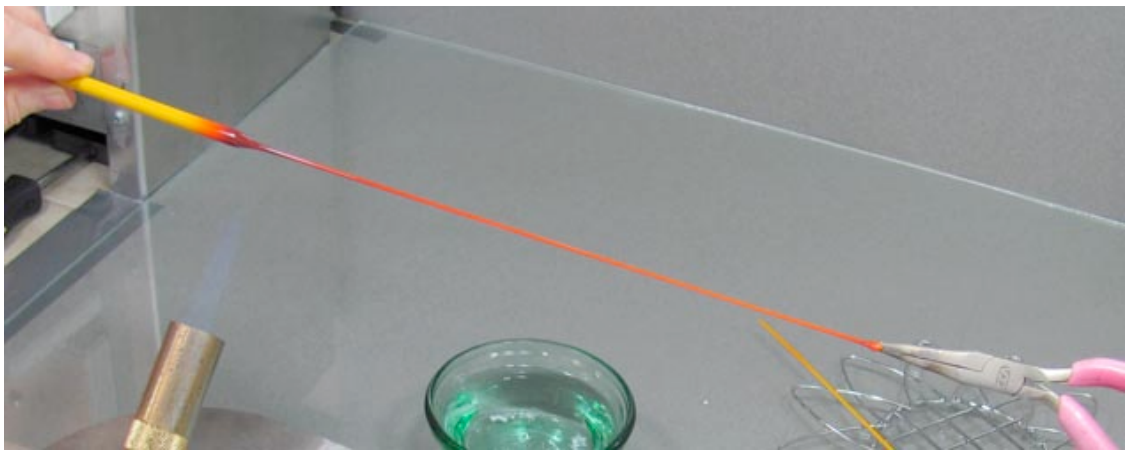
STEP 2. Keep turning the rod to form a gather the size of a large pea. If you are using a stiff glass it may not form this pea shape, but will softly glow when it is ready to be pulled.

STEP 3. When you have a large pea-sized gather, remove it from the flame. It will quickly loose the glow and "skin" over (change color). Use your pliers to pinch a tab on the end when you see it change color. Pinching this tab will help your pull begin evenly. If you pinch a large tab, it will give you a large stringer if you pull slowly and watch that the same thickness follows as you pull.



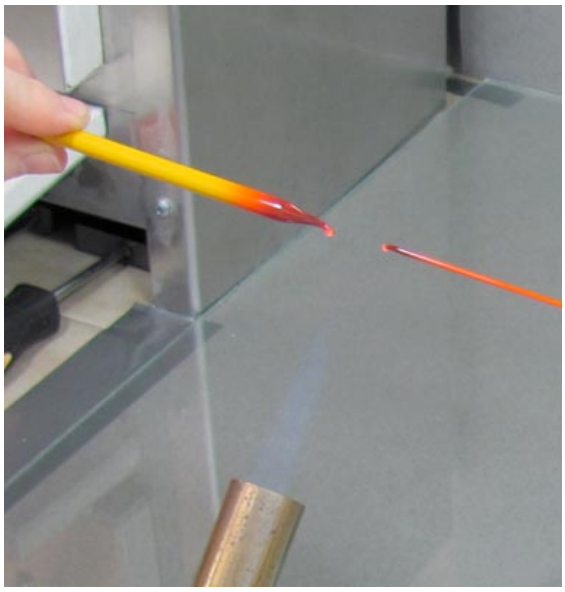
STEP 4. Start to pull, and pull at an even rate. You have a limited amount of time to pull because the glass is cooling. You want to pull the gather out fully by the time it all stiffens, so that your stringer is the same thickness from end to end.

A NOTE ON DIFFERENT PULLING METHODS: Some people like to quickly move away from the torch and cock their left hand up in the air and then pull with both hands. Heat rises, so this gives a little extra time in the pull. They usually do this when they have heated a larger gather than pea size – more like a grape size. I don't like to pull stringers that long, so I usually just pull sideways to about twice or three times the finished length I like to use. You can snap long stinger into sections after it gets cool. You can also pull stringer to the length you like to use each time. It's up to you.

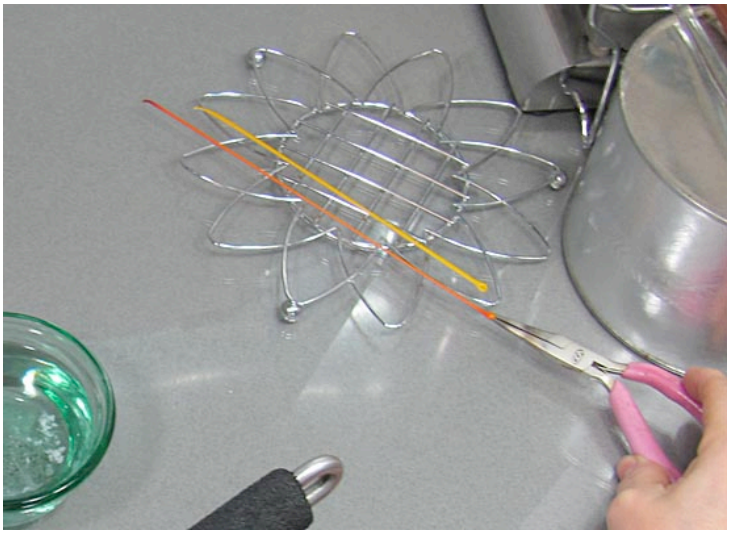


STEP 5. Pull your stringer to the length you want it, or as far as the gather of glass allows before it gets to stiff to pull, and then flame cut it (see the next step) or you can gently snap/break it with your pliers at the rod end.

I like to flame-cut the end, but some people prefer to use their pliers to gently grip the stringer close to the rod and then gently snap the rod off (for a blunt end). If you snap it at the rod, grip the stringer firmly but gently, so that your pliers still hold the stringer when the rod breaks free. You then set the stringer down on a safe surface or rack to cool (depending on how long it is). This takes some finesse! Just stay aware of your torch flame's location and remember that the stringer is red hot at this point. Try it both ways to see which you prefer.

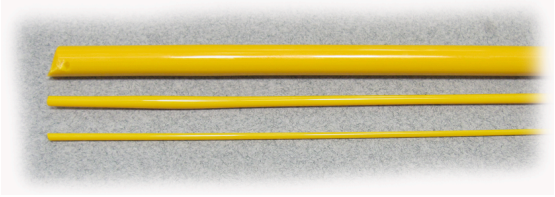


STEP 6. If you decide to flame-cut your end, lower the rod and stringer into the flame and pull your LEFT hand (to the left) as it is cut. That way any stretch happens on the rod end, and it leaves you with a nicer stringer end.



When you have cut your stringer, set it down on a wire rack to cool. If you set it on a cool surface it can break. Beware that the end that you held with your pliers can sometimes pop off due to uneven cooling. Be sure to angle your stringer away from you when you set it down in case this happens. That way if the pinched end pops off it is angled away from you.

Good work - now make stringer in different thicknesses. You can never have to much stringer on hand, and you want to practice pulling it in any thickness you like!



.·:*:·. Stringer Possibilities .·:*:·.

Just think of the items that you will make with the stringer you have pulled – dots, vines, lines, swirled line designs twisted with a clear stringer… the possibilities are endless.

To draw with stringer, gently preheat the working area on the bead surface, and then set your stringer on the bead – holding it to the right side of the flame to start. You want to find the place beside the flame that causes your stringer to relax just enough to draw with it. Move closer to the flame until you feel the slight 'give' start and then get busy drawing! When you find this special 'spot' near the flame you should be able to put gentle pressure on the stringer to draw as you like (while it stays stiff in your hand) yet glides onto your bead at the tip – not to hot, not to cool!

To make dots, gently preheat the working area on the bead surface, and then preheat the tip of your stringer to form a tiny dot on it. Then set the dot on your bead where you want it, moving closer to the flame to cut it as you pull the stringer away. Once you have applied your dot(s) be sure to reheat the dots in the flame. Heat them enough to 'seat' them on the bead so that they don't pop off, or have undercut area that can get hooked on something.

If your glass stringer is to stiff to form a dot on it's tip, then heat the tip and set it on the bead and flame cut as you pull. In this case, press the stringer to the bead to get the size dot base you want, and pull off slowly or quickly to leave the amount of glass you want in the dot. Put the dot right back in the flame to round it if you are using a stiff glass.

You can go back and touch a cool dot with a hot stringer tip to add more glass to the dot. If you do it the other way around you remove glass from the dot.

In closing, here are nearly matching bracelets done in different colors. I used the same dot, swirl and rake techniques on each one. If you like them, feel free to make them for yourself or to sell. These tutorials always allow you to make and sell any item or pattern shown.