

# Torch Firing Beads and Pendants

*Torch-Fired Enamel Jewelry* has taken the craft world by storm! In this excerpt, author Barbara Lewis, through simple to follow step-by-step photos, introduces you to the basic techniques for torch firing beads and pendants.

You'll also find great information on how to torch fire safely (common sense will get you through, and being cautious, or even overly cautious, is never wrong), tips for greater success right out of the gate (like the importance of an even application of enamel and heating and cooling tips), and a troubleshooting checklist that is sure to address any problems you might encounter. This sneak peek of *Torch-Fired Enamel Jewelry* is sure to pique your interest in this fascinating craft!

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To learn more about or purchase *Torch-Fired Enamel Jewelry* by Barbara Lewis, [click here](#).

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*Torch-Fired Enamel Jewelry* is published by North Light Books, an imprint of F+W Media, Inc.

## Torch-Firing Beads

When torch-firing a bead with enamel, we want to seek out the “sweet spot” of the flame. The sweet spot is the hottest part of the flame and lies just at the tip of the blue cone of the flame. The coolest part of the flame is the area closest to the torch nozzle. If you

move your bead inward toward the torch nozzle, you will hear a loud rumbling sound, which means your bead is in the coolest part of the flame. Move your bead out to the hottest part of the flame to obtain successful results.



**1** Slide a metal bead onto a mandrel.



**2** Quickly rotate the bead in the flame for even heating. Watch for the bead to glow bright orange. Even heating is the secret to an even application of enamel.



**3** When the bead glows, quickly dredge the bead through the enamel. For the first dip, tilt the enamel container to meet the bead. After you have a layer of enamel on the bead, the bead will be temporarily stuck to the mandrel, which makes it easier to rotate and dip the bead. Totally immerse the entire bead in the enamel. Tap the mandrel on the side of the enamel container to remove any excess enamel. Reheat the bead.

### How Much Enamel?

Three coats of enamel will adequately cover the metal and produce a rich color. When I use a transparent enamel, I fire two coats of opaque onto the metal and finish with one or two coats of transparent. Hot transparent enamel takes a few seconds longer to cool than opaque, so wait a bit longer before removing the bead from the mandrel.

**TIP:** The part of the bead that enters the enamel first will have the heaviest application of enamel because it is the hottest part. As you rotate the bead in the enamel, the bead begins to cool. A cooler section of the bead will not pick up the enamel as readily as a hotter section. If you want a fairly even application, be quick!





**4** Throughout the firing, try to keep the bead about ¼" (6mm) from the end of the mandrel. This will prevent a buildup of enamel on the mandrel. Excess molten enamel on the mandrel will make the bead a little more difficult to remove.

To slide the bead back to the tip of the mandrel, place the mandrel in a notch of the BPS with the bead on the interior of the wall. Pull the mandrel toward you. The bead will slide down the mandrel toward the tip.



**5** Reheat the bead and dip it into the enamel. After three dips and firings, the bead is ready for removal.



**6** For beads with large holes, place the mandrel in the notch of the BPS with the bead on the outside of the wall—the side closest to you. Push your hand forward. Slide the bead 2"–3" (5.08cm–7.62cm) from the tip of the mandrel. This will break the enamel connections that have formed between the bead and the mandrel. Bring the bead back to the flame to sear off any glass threads that have formed at the end of the bead.

**TIP:** For filigree beads with holes, simply remove the bead from the mandrel; no pushing or pulling movements are necessary.



**7** Return the bead to the flame, spinning the mandrel to lightly heat it. Do not bring the bead to a glowing state. Bring the mandrel to the notch of the BPS again. Place the mandrel in a notch of the BPS with the bead on the interior of the wall. Pull the mandrel toward you. Pull the bead nearly off the mandrel. Allow the bead to cool a second or two. Continue to pull your hand toward you and the bead will fall onto the nonflammable cushion of vermiculite. There is no need to cover the bead with vermiculite. Allow at least ten minutes for the bead to cool before handling it.



## Torch-Firing Pendants and Charms

The technique for firing pendants, charms and other flat pieces is similar to that of firing beads, with the exception that the flat piece of metal will dangle from the mandrel. Try to heat the shape evenly before dipping it into the enamel. However, this may not always be possible. In that case, heat the metal in sections. If heating in sections, give the piece a good overall heating before removal. For large pieces, two torches may be used. Beady Bangle (see page 30) demonstrates the use of two torches. If the enamel has cooled on a pendant and removing it from the mandrel is not possible, simply reheat the area around the hole of the pendant and try again.

If you have a large buildup of enamel at the tip of the mandrel, the excess may prevent you from removing the piece. There are two solutions. One is to allow the enamel to cool for several seconds, then use chain-nose pliers with teeth to crack the enamel off the mandrel. You can then continue the removal process, heating at the hole if necessary. A second solution would be to place the mandrel in the notch of the BPS with the piece on the outside of the wall. Push your hand forward until the piece reaches the midpoint of the mandrel. Grab the mandrel with pliers behind the piece, on the side with the excess enamel. Move the mandrel to a perpendicular position over the vermiculite and shake the piece off the mandrel.

## A Few Words About Safety

When enameling, ventilation is very important. A ventilation hood over my workspace vents the gases outside, while keeping cold air out in the winter. Do research and check lampworking sites for ventilation ideas. There are plenty of resourceful people with ingenious ways to protect their lungs.

Torch-firing enamel does not produce the bright light of lampworking. If you want to wear welding glasses, make sure they are not so dark as to prevent you from seeing the flame. Polarized sunglasses are another solution.

When enameling, common sense is required. Being cautious, or even overly cautious, is never wrong. As you become more comfortable with an open flame, your movements around the flame will reflect your comfort level. Feel free to move your hands to the sides of the torch, under the torch, above the torch—just not in front of the torch!

## Enameling Tips

- The key to an even application of enamel is to evenly heat the bead and quickly rotate it in the enamel.
- On an oxygen/propane torch, a reduced flame can be created by increasing the propane or reducing the oxygen.
- Before igniting the flame, make sure the vent holes are open.
- When creating a reducing flame while firing, make sure to use pliers to open and close the vent holes because the metal on the torch will be hot.
- Before removing the bead from the mandrel, make sure that it has cooled sufficiently so that the vermiculite will not stick to the hot enamel. If the bead is difficult to remove, reheat it slightly, focusing on the area where the bead comes in contact with the mandrel, and try again.
- Remember to dip the mandrel into water to cool it between beads.
- To prevent a buildup of enamel on the mandrel, heat the tip of the mandrel and dip it into a jar of water. Use a synthetic scrubbing pad to remove any loose enamel.
- For large beads, you may have to pull the bead several times at the BPS to remove it. Reheat the bead slightly in between pulls.
- Beginners often have a tendency to overheat the bead. Once the bead glows orange or red and the enamel looks glassy, stop heating it.
- When a bead is stuck on the mandrel, it can only be removed by heat.



# Troubleshooting

PROBLEM	CAUSE(S)/SOLUTION(S)
The enamel chips off.	<ul style="list-style-type: none"><li>• The metal was not heated sufficiently for the enamel to adhere (typically on the first coat).</li><li>• The bead was dropped onto a cement floor.</li><li>• The heating of a large object was uneven.</li><li>• The metal is incompatible with the enamel.</li></ul>
The bead sticks to the mandrel.	<ul style="list-style-type: none"><li>• Reheat the bead and try to remove it; try again if needed. Do not continue to pull on the mandrel or the mandrel will bend. Heat is the answer!</li></ul>
The enamel pulls from one end of the bead and has sharp edges.	<ul style="list-style-type: none"><li>• Remember to push the bead away from the tip of the mandrel prior to removing it.</li><li>• Sear the glass threads from the end of the bead.</li></ul>
The enamel applies unevenly.	<ul style="list-style-type: none"><li>• Heat the bead evenly.</li><li>• Dredge the bead through the enamel more quickly.</li></ul>
There are bubbles in the enamel.	<ul style="list-style-type: none"><li>• The enamel has been overfired or underfired. You can tell which by evaluating the firing process. If the bead became smooth and shiny and you continued to fire it, it is overfired. Otherwise, assume that it is underfired.</li></ul>
The enamel is dry.	<ul style="list-style-type: none"><li>• The enamel applications were too thin or the bead was not fired hot enough to pick up enough enamel.</li></ul>
The bead hole is filled with enamel.	<ul style="list-style-type: none"><li>• The bead was not kept close enough to the tip of the mandrel during firing, and the enamel built up on the end of the mandrel. As the bead was pulled from the mandrel, the excess enamel filled the bead hole.</li></ul>

