

Sit Tight

Using a laser welder to craft settings for large diamond studs

BY ROLAND AUER *Editor's Note:* This is the first in a three-part series on crafting unique settings. In this project and any other project where a laser welder is used near gems, there is always the potential risk of damaging a gemstone. Do not attempt to laser weld near expensive or irreplaceable gems if you are inexperienced. The author and MJSA do not assume responsibility for any damage that may occur when attempting the procedures outlined here.

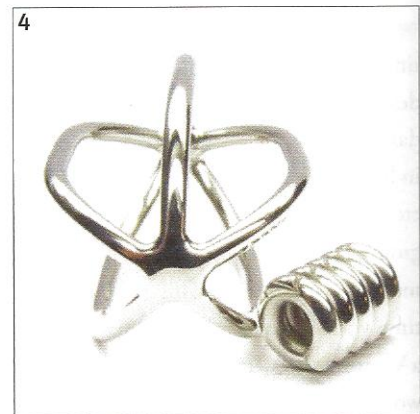
When crafting a pair of elegant studs with large gemstones, such as the 2 carat diamonds pictured here, it is important that the earrings do not stick out too far from the earlobes. When they sit close and tight to the lobes they look more attractive and tend to tip less. For gemstones weighing over 1 carat, I have developed a method for crafting a rounded prong setting using a laser welder. The laser gives me the freedom to shape the metal without using solder and customize the setting for any given stone. And by properly preparing the joints, I can ensure that the setting will be strong and withstand the test of time.

1. Begin by winding a 1 mm white gold round wire around a 15 mm diameter round steel core. Cut the wound wire into half circles and straighten the middle section of each one. This gives you wire pieces with uniform curves at the ends.

2. Weld the wires together into the star shape shown. Note the holes at the centers of the two junction points. You will need to add material of the same alloy to fill the holes.

3. I use 0.2 mm diameter round wire to fill the holes. I actually keep spools of wire in stock in various alloys for such applications.

4. After polishing the piece, take a 1 mm diameter wire of the same alloy and wind



it around a 1 mm pin to form rings.

5. Cut the rings into half circles and bend them together slightly with a pair of pliers. Check the half circles with a digital caliper to ensure they are identical in width, and weld them to the main component. Again, note the gaps on each side of the half circle where it attaches to the main piece. They will need to be filled with the 0.2 mm diameter filler wire.

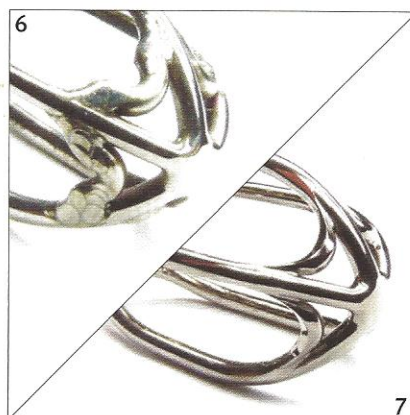
6. Address the gaps by first welding the junction points with a small diameter laser beam (approximately 0.7 mm) that reaches deep into the gaps. Next, add the 0.2 mm round wire using a slightly larger beam diameter (0.8 to 0.9 mm). Last, smooth the junction with a beam diameter of approximately 1 to 1.1 mm.

7. Shape the curves of the half circles using a ball bur and pre-polish the component with small rubber discs.

8. Cut the component in half to create the two settings and polish the insides of each. Weld the posts to the settings. (Because my customer's earring holes sit quite low, I placed the posts a little below center.)

9. Set the diamonds and give the earrings a final polish. Because of their shape, these earrings do not twist as easily on the ear as ones with a flat lower rail, so you can determine the exact position you want them in when putting them on. ♦

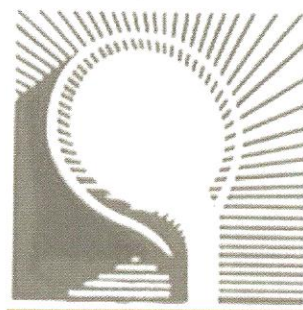
Roland Auer (roland-auer.com) is an award-winning goldsmith and freelance designer who lives outside Vienna, Austria.



Hauser & Miller

1909 - 2011

102 YEARS & COUNTING



www.hauserandmiller.com

10950 Lin-Valle Drive, St. Louis, MO 63123

(800) 462-7447

Proud to supply the best in Sterling and Karat gold products to the best Jewelry Designers worldwide.