

GOING TUBULAR

TOOLS & MATERIALS LIST

Save 5% with Otto Frei

We partnered with Otto Frei to supply the tools and materials needed for your success in this course! Use our code KRS5 and receive 5% off on all of your Otto Frei purchases over \$100!

Once you are in our paid programs, you will receive a discount code to save even more.

A note from Kent Raible

You may already have many of the tools needed for this class, and we assume you already have a good selection of basic jewelry making tools. You should have a saw, pliers, digital calipers, hand and needle files, rawhide and dead blow mallets and goldsmithing and planishing hammers.

You may need to add to your tool collection to complete the class without struggling—because there's nothing better than having the right tools for the job!

Below you will find the must-have specialty tools needed to complete the course.

I can't wait to see what you create!



WORKSHOP REQUIREMENTS

You will need a sturdy, bench-mounted vise to hold draw plates. My bench is bolted to the floor - pulling a large, thick-walled tube takes strength and requires that the vise be immovable.

If not properly secured, you may be pulling your bench around your shop! A vise on a wall mounted bench should be OK, as long as it is securely attached to the wall. **OR make your own drawbench inexpensively!** See the link to Melissa Muir's YouTube video tutorial in the 'optional tool list' below.

WISE

Otto Frei has this vise if you need one:

☐ **6" Bench vise • Part Number 158.074**

<https://www.ottofrei.com/Durston-1878-Extra-Large-6-Bench-Vise>

MATERIALS

METALS

I recommend practicing in sterling silver, because it is a soft, malleable alloy, however, if you feel confident enough, you may work in 18K or other soft alloy . I don't recommend trying this with nickel alloy white gold or 14K or 18K red/pink alloys. Malleable alloys are easier to pull into tubes and are good for setting gems as well.

You will need to invest in 2-3oz of sterling silver, sheet mostly, and a small amount of sterling silver wire. This would weigh considerably more in gold or platinum.

STERLING SHEET

For the three tubes we will make in module one, you will need:

- ☐ **Sheet, .8mm thick (20 Ga.) X 24mm wide X 45 - 50mm long**
<https://www.ottofrei.com/Sterling-Silver-Sheet-Metal-Price-Per-6-x-1-Piece>
- ☐ **Sheet, .8mm thick (20 Ga.) X 13mm wide X 30mm long**
<https://www.ottofrei.com/Sterling-Silver-Sheet-Metal-Price-Per-6-x-1-Piece>
- ☐ **Sheet, .6mm thick (22 Ga.) X 11mm wide X 45mm long**
<https://www.ottofrei.com/Sterling-Silver-Sheet-Metal-Price-Per-6-x-1-Piece>
- ☐ **Extra Sheet, .6mm sheet, (22 Ga.) 10 mm X 10 mm or more, for later needs**
<https://www.ottofrei.com/Sterling-Silver-Sheet-Metal-Price-Per-6-x-1-Piece>

For modules two, three and four you will need:

- ☐ **Bezel Wire, .5mm thick (24 Ga) X 3mm wide X 12" long • Part Number 844-180**
<https://www.ottofrei.com/Sterling-Silver-Bezel-Strip-Wire-12-Long>
- ☐ **Round Wire, 1.29mm (16Ga) 12 inches long, some of which will be drawn smaller • Part Number 844-16FT**
<https://www.ottofrei.com/Sterling-Silver-Round-Wire-Half-Hard-Sold-in-12-Lengths>
- ☐ **Sheet, 1.29mm thick sheet (16Ga) 1 X 6 inches for bezel backing and for a simple bale shape • Part Number 844-52**
<https://www.ottofrei.com/Sterling-Silver-Sheet-Metal-Price-Per-6-x-1-Piece>

There will be plenty of extra material for practice, and/or other projects.

SOLDER

I use mostly medium, but you may want to use hard, medium and easy for the hinge project in module 4. Wire or sheet will do. If you need buy some, Otto Frei has assortments ready to go:

- ☐ **Silver Wire Solder Kit • Otto Frei • Part Number 804-444**
<https://www.ottofrei.com/Silver-Wire-Solder-Kit>
- ☐ **Silver Sheet Solder Kit • Otto Frei • Part Number 804-415**
<https://www.ottofrei.com/Silver-Solder-Sheet-Kit>

GEMSTONES

We will be doing a lot of bezel setting - I suggest practicing with CZ's or synthetic sapphires, or other inexpensive stones you can afford to damage as you practice your skills. I recommend you have on hand 3-6 each of:

- ☐ **5mm square faceted** • Part Number CZ 903-005

<https://www.ottofrei.com/Square-Faceted-Cubic-Zirconia>

- ☐ **6mm round faceted** • Part Number 900-600

<https://www.ottofrei.com/Round-Cubic-Zirconia>

- ☐ **6mm Round Cabs** •

https://www.ottofrei.com/search?keywords=cabochon#filter:custitem_of_sca_shape:Round

- High dome cabs, preferably a 6mm round bullet, but any steep walled stone will do. These you can find on Etsy or wherever
- Three or four other cabs for bezel forming practice, various shapes.

RECOMMENDED TOOL LIST

BASIC HAND TOOLS

We assume that you already have most of these. You will need a good selection of files, saw frame, digital calipers, pliers, a torch for silver soldering and a flex shaft/micromotor, and most basic goldsmithing tools.

RECOMMENDED FILES

- ☐ **Round Tapered cut 4 • Part Number LP1660-6-4**
<https://www.ottofrei.com/Glardon-Vallorbe-Round-Pointed-Precision-Files-LP1660>
- ☐ **Half-Round cut 4 • Part Number LP1560-6-4**
<https://www.ottofrei.com/Glardon-Vallorbe-Half-Round-Precision-Files-LP1560>
- ☐ **Assortment of cut 4 needle files • Part Number 131.678**
Contains Square, Flat, Half-round, Round, Triangle & Barrette shape files
<https://www.ottofrei.com/Needle-File-Set-of-6-160mm-Cut-4>

REQUIRED TOOL LIST

In addition to basic jewelry tools, you will need the following:

BENDING BLOCK

You will need a set of various cylindrical punches with this block or, you can buy the bending block as a set with punches and a stand:

- ☐ **No Stand • Part Number 125.163**

<https://www.ottofrei.com/Italian-Steel-Bending-Block-with-12-Half-Round-Slots>

- ☐ **With Stand • Part Number 125.164**

<https://www.ottofrei.com/Italian-Steel-Bending-Block-with-Matching-Punch-Set-on-Stand>

Round draw plates for making tubing and wire

For most tubing/hinge/wire needs, you will need consecutive round holes from 9mm down to .5mm, this can be done with three draw plates, or you can fill in between plates you already have (there should be one hole for every 1/10th mm change in hole diameter-don't get fooled into buying cheap draw plates!)

- ☐ **Round Italian Draw Plate 9 mm To 6 mm 31 Holes • Part Number 019.002-96**

<https://www.ottofrei.com/Draw-Plate-Round-9mm-to-6mm-31-Holes>

- ☐ **Round Italian Draw Plate-6 mm to 3 mm-31 Holes • Part Number 019.004**

<https://www.ottofrei.com/Drawplate-Round-6-3MM-31-Holes>

- ☐ **Round Italian Draw Plate 3mm to 0.5mm 31 Holes • Part Number 019.007**

<https://www.ottofrei.com/Drawplate-Round-3-0-5MM-31-Holes>

For measuring and accurate filling

- ☐ **Jig Vise Mitre Cutter** • French one-the one I use, don't go for the cheap pakistan model • Part Number 126.499
<https://www.ottofrei.com/Asic-French-Made-Jig-Vise-Miter-Cutter>
- ☐ **German Machinist Square with Foot** • Part Number 135.070G
<https://www.ottofrei.com/German-Machinist-Square-100mm-X-70mm-2-75-Inch-With-Foot>

For Bezel Setting you will need

BURS

- ☐ **Setting: 1mm** • Part Number B118.720
<https://www.ottofrei.com/Busch-Fig-413-Setting-Burs-1-00mm-3-70mm>
- ☐ **Setting: 2.5mm** • Part Number B118.726
<https://www.ottofrei.com/Busch-Fig-413-Setting-Burs-1-00mm-3-70mm>
- ☐ **Wheel: 2.90mm** • Part Number B118.231
<https://www.ottofrei.com/Busch-Fig-2-Wheel-Burs-60mm-2-90mm>
- ☐ **Hart 70 Degree: 0.9mm** • Part Number F118.599
<https://www.ottofrei.com/Fox-Fig-446-Shallow-Hart-70-Degree-Burs-90mm-2-30mm>

TWIST DRILLS

- ☐ **Pack of 6 Busch Fig 77-006 Twist Drills on 3/32" Shanks .6mm** • Part Number 128.585
<https://www.ottofrei.com/products/busch-fig-77-tungsten-vanadium-twist-drills-on-3-32-shanks-50mm-2-30mm>

OR

- ☐ **Pack of 6 Busch Fig 77-007 Twist Drills on 3/32" Shanks .7mm • Part Number B128.586**

<https://www.ottofrei.com/Busch-Fig-77-Tungsten-Vanadium-Twist-Drills-on-3-32-Shanks-.50mm-2.30mm>

For Hammering Bezels

I recommend a Badeco 222 Hammer handpiece (see optional tool list), but if you want to go cheaper, you may use a Chasing hammer with setting punches, and setter's pitch. I set my gemstones with pitch and punch for over 25 years, but it is much slower and a bit dirtier.

Setting Punch (only needed if you do not have a Hammer Handpiece: A setting punch with a rectangular polished end will do for both setting and compacting. I make my own and you can too. They are easily fashioned from a chasing tool or 4mm tool steel rod (there may be a suitable punch in your set already). The rectangular end should measure between 1 mm X 2 mm to 1.5 mm X 2.5 mm.

It should be highly polished, and the edges relieved to prevent scratching of stone. The tool should be 4" to 4 ½" long.

- ☐ **Compacting Punch Otto Frei •** This tool is for compacting bezels around steep sided, or bullet cabs • Part Number 125.294

<https://www.ottofrei.com/Kent-Raible-Pruitt-Tall-Bezel-Setting-Punch>

- ☐ **Black German Setter's Pitch Otto Frei •** This is a hard pitch at room temperature, not chasing pitch! This is useful when not using a hammer handpiece. I still use this for special setting situations • Part Number 112.245

<https://www.ottofrei.com/German-Black-Setters-Cement-1-Kilo>

TRADITIONAL GRAVERS FOR SETTING, BRIGHT CUTTING

Traditional Type gravers (Need to be processed for length and cut from scratch)

- ☐ **Carbon Steel Flat 40 or 41** • Part Number 136.140 or 136.141
<https://www.ottofrei.com/Glardon-Vallorbe-LO0401-WS-Flat-Gravers-Carbon-Steel>
- ☐ **Carbon Steel Knife 2.2mm** • Part Number GRS 102.672
<https://www.ottofrei.com/GRS-HSS-New-Traditional-Gravers-Knife-Sizes-K-0-to-K-7>
- ☐ **Graver Handle or similar (one for each graver)** • Part Number 137.858
<https://www.ottofrei.com/Graver-Handle-1-2-Head-Short-Made-in-France>

OR

PRE-CUT TYPE GRAVERS

Already cut to a 60 degree angle, less time needed for dressing.

- ☐ **GRS 022-440 Pre-Cut QC HSS 10 #40 (1.00mm) Flat Graver** • Part Number 136.009
<https://www.ottofrei.com/GRS-Pre-Cut-Quick-Change-High-Speed-Steel-Flat-Gravers>
- ☐ **GRS 022-470 QC HSS Pre-Cut Knife KO-18 Size 1.8mm - 2.0mm Graver** • Part Number 136.019
<https://www.ottofrei.com/GRS-Pre-Cut-Quick-Change-High-Speed-Steel-Knife-Gravers>

ARKANSAS STONE

For grinding/polishing graver

- ☐ **Arkansas Stone** • Part Number 110.551
<https://www.ottofrei.com/Arkansas-Stone-4-X-2-In-Box-Fine>

OPTIONAL

These three swiss-made wheels are another possibility for sharpening your gravers

- ☐ **Diamond sintered coarse, for fast cutting of hard tool steel • Part Number 111.075**
<https://www.ottofrei.com/Diamond-Sintered-Diamond-Throughout-Square-Edge-Wheel-Eden>
- ☐ **Blue medium Ceragloss, medium polish • Part Number 110.107**
<https://www.ottofrei.com/Jura-Swiss-Ceragloss-Blue-Medium-Diamond-Polishing-Wheel>
- ☐ **Yellow Fine Ceragloss, fine polish • Part Number 110.113**
<https://www.ottofrei.com/Jura-Swiss-Ceragloss-Yellow-Fine-Diamond-Polishing-Wheel>

HAMMER HANDPIECE

If you have done a lot of setting, you probably have one, if not, you may substitute with setting punch and chasing hammer (see below), and use setter's pitch to hold your work while setting (You will need both hands to set this way, with a hammer handpiece, one hand is freed up to hold the work and stone in place, often eliminating the need for pitch.)

I use a flexy Badeco #222 with my Foredom. If you have a micromotor, some brands also offer optional hammer handpiece attachments.

- ☐ **Badeco 222 with Duplex Spring • The best, industry standard. Going Tubular 7 • Part Number 134.751**
<https://www.ottofrei.com/Badeco-Swiss-Hammer-Handpiece-222-Heavy-Spring-Strength>
- ☐ **Foredom Hammer Handpiece with Duplex Spring • Foredom Hammer Handpiece with Duplex Spring • Part Number 134.235**
<https://www.ottofrei.com/Foredom-H-15D-Hammer-Handpiece-with-Duplex-Spring>
- ☐ **Rectangular Tip • Needs to be ground down to shape-works with Badeco too • Part Number 134.3015**
<https://www.ottofrei.com/Foredom-Tips-For-Hammer-Handpieces>
- ☐ **Badeco Rectangular Tip • Right size, ready to go but more expensive • Part Number 134.763**
<https://www.ottofrei.com/Badeco-Tips-for-Hammer-Handpieces>

SOLDERING TRAY

I get asked about this rotating soldering tray quite often

- ☐ **Rotating Soldering Table • Part Number 154.116**

<https://www.ottofrei.com/Rotating-Soldering-Table-With-4-1-2-Silquar-Soldering-Board>

OPTIONAL TOOL LIST

DRAW BENCH

If you don't have a lot of upper body strength or are unable to secure a vise to bolted down or wall mounted bench, a draw bench is essential for pulling large, thick-walled tubing.

Here is one youtube link for how to make your own inexpensively, there are other options online.

- ☐ **VIDEO: How To Make A Table Top Draw Bench For Under \$75 - By Melissa Muir**

<https://youtu.be/KsRfRJDSiU>

OR

You can order one of these from Otto Frei:

- ☐ **Durston Table Top Draw Bench • Part Number 127.205DURS**

<https://www.ottofrei.com/Durston-Table-Top-Draw-Bench>

- ☐ **Durston Drawbench 54" Usable 36" • Part Number 127.208**

<https://www.ottofrei.com/Durston-Drawbench-1400>

- ☐ **Durston Drawbench 72" Usable 54" • Part Number 127.210**

<https://www.ottofrei.com/Durston-Drawbench-1800>