

Faceting Academy REPAIR & RECUTTING Equipment and Supplies Listing

Note that "required" means REQUIRED: You can't work without it!

REQUIRED FOR REPAIR TRAINING

Faceting Machine (bring your own)

I recommend - and represent both Facetron and Ultra Tec Faceting Machines, though many machines may be suitable for simple repair work. I do not generally recommend any of the lower-end machines with a template-style protractor. **Those bringing used or older equipment must insure it is properly functioning and calibrated. Students who buy a faceting machine from me get a \$200 discount on Academy tuition.**

Required Laps:

- [Aluminum Master Lap](#) OR [acrylic master lap](#) OR [plastic master lap](#) - for calibration, supporting toppers, etc.
- Cutting and polishing laps of choice.
- Multiple copies of laps suitable for double-charging. These include especially the [BATT](#), the [Tin+ lap](#), the [Zinc+ lap](#), various copper-clad laps you may find – or Corian laps.

Polish:

- I will supply one each standard-sized container of Voodoo Magic Diamond Carving Paste, of Diamond Pre-polish, of Diamond Polish, and of Voodoo Wet Chrome Polish.

Miscellaneous Necessary Supplies:

- Loupe 10x ([I recommend this one](#))
- Alcohol lamp ([this type, with the faceted base](#))
- [Dops \(down to 2 or 3 millimeter\)](#)
[You will need at least 3 sets of these!](#)
- Dop Block & Transfer Jig
New machines come with Transfer Jig.
Facetron comes with Dop Block; Ultra Tec does NOT
- Dop Wax ([I recommend this one](#))
- **Goose-neck lamp:**
If you have an Ultra Tec, buy their lamp [HERE](#).
If your machine does not have a mount for this lamp, [buy one HERE](#), with a [weighted base](#) and/or this [mounting kit](#).
- Any other essentials - tweezers, scales, etc.
- Spill-free swarf-collector is provided for 3/8 tube.
[If your tube is not 3/8, you must provide your own.](#)
- FINE point black sharpie pen and/or aluminum pencil (I recommend both).
- [Rotary hand tool with variable speed. You can use a Dremel, corded or cordless, a Fordham, etc. You want something that can take tools up to 1/8 inch – so many micromotors won't suffice.](#)
- [A drilled dowel or other holder for dops – something that will allow you a good grip on the dop.](#)
- [Several screw-type mandrels for your rotary tool – the kind used for cutoff wheels.](#)
- Power strip / cord
- **EYE PROTECTION IS REQUIRED.**

OPTIONAL

Optional equipment is stuff you can get by without - but that may be very helpful. Many of the items below may make your Academy experience significantly more productive and enjoyable.

Optional Laps:

- The [Greenway](#) lap is STRONGLY RECOMMENDED. Other laps especially useful for repair work include the [Creamway](#) and [Lightside](#). These are STRONGLY RECOMMENDED for the repair and recutting tool kit.
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Optional Polish:

- **Additional grades of Voodoo compounds or other polishes of your choice may be very useful.**

Miscellaneous Optional Supplies:

- Optivisor
- Loupe 20x
- Polariscope
- Dichroscope
- Refractometer
- [Cases to protect laps \(are strongly recommend\)](#)
- [Your own stones to repair or recut](#)
- Laptop computer with GemCAD & GemRAY

NOTE: When in doubt about any piece of equipment, contact me and ask. DO NOT just "hope there will be one available for purchase". This may not be the case. ASK QUESTIONS.

For other recommended tools and sources, check this page: [FACETING TOOLS](#).

Notes on specific Items:

Scales: Whether rough or cut, gems are sold by weight. So, you need to be able to weigh both rough and cut stones. Different faceters wind up with different solutions. You're going to find you want a rough scale with a 50 or more gram capacity, and a resolution of 0.01 grams. You're going to need a scale to weigh finished stones that has a resolution of 0.01 carats. My solution was two different pocket-sized scales. Don't get overly excited about your investment in this. If you are uncertain or have a very tight budget, borrow some scales from fellow students in the room and use that experience to plan your purchase for afterwards. [Here's a link to some electronic scales at Amazon.](#)

Gemological Tweezers: For handling faceted stones without coating them with finger grease, you want some gemological tweezers. You'll find these in a strange range of prices from \$5 and up. The ones with a spring-lock like this pair of Dumont-brand (\$40 ish) are popular. I recommend you buy middle-of-the-road priced ones, and based on your budget. [Here's a link to a list of them on Amazon.](#)



Gem Pickers: For handling faceted stones, this is an extra - not a substitute for tweezers. Again, you'll find these things in a wide range of prices and qualities - and with 2, 3, and 4 prongs of various styles.



Utility Tweezers: You don't want to put gemological tweezers into a plumber's torch or even an alcohol lamp. And, the work you'll be doing with these will go more easily in most cases, if they're spring-loaded. You can get bent-nose models like this photo - or a straight-nosed model. They're usually pretty cheap, and one of the places you can usually get away with a bargain-basement version of a tool.



Calipers: You need the ability to measure both rough and cut gems. And, you want a tool that won't scratch or chip them. Stay away from steel: It will chip stones. Better to use brass, carbon fiber or plastic. I do not like electronic ones: The battery will die when you most need it. Something like this will work for the class, and they're relatively inexpensive. [Here's one link](#) to an example at Amazon. [Here's another.](#) You can buy larger and more expensive dial calipers if you wish. I use both types in my shop.



Dop Blocks: You absolutely MUST have a way to store and organize your dops - especially the ones with stones on them. If you leave them on the table, I promise you they will roll off and knock the stone off. That kind of fall will also damage the dops, causing them to foul or moot the precision of your several-thousand-dollar precision machine. Facetron ships a small wooden dop block with their kits. Ultra Tec does not provide (or even sell) dop blocks. A dop block can be as simple as a block of wood with the correct-sized holds drilled in it with a hand-drill - or as elaborate as you like.



If you make your own, use material that's at least 5/8 inch thick, and use a 17/64 or 9/32 size drill bit to make the holes. (Facetron and Ultra Tec dops are 1/4 inch, and you want them to slide easily but not wobble too much). DO NOT drill all the way through, because you want to be able to move the block without the dops falling through! I like to make my dop blocks out of HDPE from a local scrap house. Here's a photo of one of mine. You may also like to try commercial products like this [bur holder](#), or like this [driver bit holder](#). I have not tested either of those, but believe they would work.

Lamps: At the Academy, we'll show that lighting your work is more than half the battle in learning to make good meets and polish. Ultra Tec users are advised to buy the lamp offered by Ultra Tec and sold by us [here](#). The Facetron does not come with a lug on the base for mounting a lamp. You need a lamp that will allow you to reposition it precisely above your work area - and at least 3 inches above the top of the mast. The industry standard for task lighting is the [Moffatt light](#). **You want the 24-inch length.** This light has a quick-coupler. So, you MUST have something to couple it to. You can purchase a [mounting kit](#) - and then drill holes into the wooden part of your base to screw or bolt it on. Or, you can [purchase a weighted metal base](#) to attach it to. **We won't have time to drill and mount things to your base in the room. So, I recommend the weighted base.** The mounting kit is something optional for you to do at home later.



Fiber Optic Flashlight attachment: This item is very helpful in the rough evaluation portion of the event. We'll teach you some very specific ways to use it. Remember to get a matching flashlight to go with it. Here are three examples ([one](#) [two](#) [three](#)).



A general comment on equipment: You will not necessarily get (as much as) what you pay for. But, you will definitely not get more than you pay for. Use your budget wisely to acquire the best tools you can afford.

If you have questions about specific items, ask them by e-mail and I'll continue to update and expand this section of this document.

Recommended Publications & Memberships:

Memberships / Guilds:

There are a number of Guilds for Faceters. I happen to belong to the Columbia Wilamette Faceter's Guild (CWFG) and the United Kingdom Facet Cutters' Guild (UKFCG). I strongly recommend membership to both these organizations, not least for their fine publications.

CWFG publishes "Facets" – a monthly newsletter that includes some new designs every month, along with informative articles on machines, techniques, history, and rock-hounding of specific interest to faceters. Individual membership is only \$25, and includes a subscription to the newsletter.

You can contact CWFG by e-mailing Jerry Bartlemay at jerrbarlemay@cs.com or by writing to the Guild at: Columbia- Wilamette Faceters Guild, P.O. Box 2136, Portland, OR 97208-2136.

UKFCG publishes "Stone Chat" – a bi-monthly full-color newsletter that is delivered to the U.S. electronically (pdf format). It contains new designs every month, as well as articles on machines, techniques, history, and international news relevant to faceters. Individual membership is only £22, and includes a subscription to the newsletter. For an extra £10 they'll include all back-issues on a CD-ROM.

I also highly recommend their "Training Cuts Novice to Advanced Cutter" booklet, which includes a number of designs with detailed instructions and comments designed to help the starting cutter to advance rapidly. This publication is available to Guild members for the price of only £2.50 from Mike Richardson.

You may reach the UKFCG Membership Secretary Jim Finlayson at jcf12@breathe.com; Keith Tucker, editor of the UKFCG newsletter, may be reached at ukfcgeditor@talktalk.net. Mike Richardson may be reached at JRich633@aol.com.