

Kim's New Year's Star
USFG 2019 SSC Pre-Master Design
Designed by Jim Perkins
Test Cut by Dan Lynch



The selection for the 2019 Pre-Master gem is a beautiful gem from cutter and designer Jim Perkins. Jim has designed many stones and has several books of his patterns published. The material for the stone this year is CZ any color, width is 12 mm with a girdle width target of 0.3 mm. I generally cut and recommend lighter colors for competition cutting.

Overall the pattern is straight forward and should allow those that spend the time needed to produce an excellent stone and meet the pre-master criteria. You'll need to take your time and work on meets and dimensions. CZ is relatively hard at 8-8.5 on the hardness scale so diamond is needed for your pre-polish and polish.

In cutting the pavillion I pre-formed my material on a lapidary wheel to save time, stopping 2-3 mm larger than my desired final stone. I dopped with wax (generally always unless the material is heat sensitive which CZ is not). Steps I took for the pavillion was a series of laps from a 250 Hyperedge (cuts more like a 1200), moving to a 1000 Hyperedge (cuts more like a 3000), then pre-polish and final polish at 50K diamond. Consistency in touch and pressure is required to hit your meets and set up the gem for success.

Cut all P1s to a center point. This step is important as your P2s are only 1.5 degrees less. Make sure you aren't using too much pressure, or it will show up later. Next cut your girdle facets to size – your target is 12 mm with a variance of 0.3 mm.

Shoot for as close to 12 mm as possible without going under. I used two laps to cut to final dimensions and then I do polish the girdle.

P2s – I waited till my HE1000 (3000 equivalent) to cut these in. They require a light touch and if you were heavy handed at all on your P1s it will show up at this step. In cutting the sample stone I had used a bit too much pressure, so backed up and recut the P1s then P2s. Next up is a solid pre-polish – work out any small scratches and pits you can see under 7-10 power magnification. You should have a polish at this stage that matches most overseas cut gems, but it's not good enough for competition or precision faceting.

I finished with a 50K diamond polish. In past competition stones I've even gone an extra step to 100K (generally on the crown), but the key is working to make sure your final meets are all on target and you remove any final polishing issues under 10 power magnification leaving an excellent finish.

Time to transfer. With Wax I generally always follow the same method, taking a strip of wet paper towel and wrapping the side of the stone that is currently dopped. This keeps the gem cool and dop connection to the stone solid. During the dopping process I then wrap the opposite side of the gem/dop before heating to remove the gem from the initial dop. This added step helps assure no movement of the stone during transfer.

Cutting the crown, I found to be straight forward. Bring the C1 facets down to the target dimension for girdle thickness. Target is 0.3 mm with a variance of +/- 0.1 mm. This is a significant variance so take your time and work to get as close to 0.3 mm as possible. My advice is to try hard to not go under, use your variance on the wider side if you need. Take time to make sure all of your girdle facets are even and create a matched line all the way around the stone – this step sets you up for success on the crown. As a measurement you can pick up a small piece of metal at any hardware store, measure it and use it as a guide. There are also magnifiers available online that have scales built in.

After bringing your C1s to size, cut your C2s followed by C3s to meet points. I again found the main challenge here is bringing each into an exact meet. Don't overcut the C2s and C3s with your initial laps, allow a slight variance and bring them in with your final pre-polish. I pre-polished my crown facets and table with 8K diamond on a zinc lap and then finished again with 50K diamond.

After your crown is cut and polished, cut your table taking care not to over cut your meets. I used my Hyperedge 250 and 1000, followed by pre-polish and final polish.

Overall a beautiful stone that should allow for those spending the time and attention to detail to qualify at the pre-master level.