

2018 USFG SSC Pre-Master Cutting Remarks

When I first learned that “Trottola” by Marco Voltolini was going to be the 2018 USFG Pre-Master design, I was intrigued. The pattern seemed very familiar to me. A little research and I soon found out why. The United Kingdom Facet Cutters Guild (UKFCG), of which I am a member, had recently announced that the same pattern, albeit under a different name, was their choice for the 2018 UKFCG REGULAR COMPETITION. This really sparked my interest and a little further research showed that the pavilion is VERY similar to at least two previous designs. One by Fred Van Sant in 64 index and one by Evan Williams in 96 index. Those of you who have access to Data-Vue or facetdiagrams.org can look up numbers 07.105 and 07.113 and see the patterns. Also, Marco’s crown was of interest. It is radial symmetry. The plan view of a radial design cut using a clockwise index gear WILL NOT look like the same design cut using a counter-clockwise index gear. This can be very confusing to new cutters, or any cutter for that matter, not familiar with this concept. Just be very mindful of which index gear you have, which pattern sheet you have (pattern for CW or CCW), as well as where your next target meet point is. The USFG has decided that either Plan View will be acceptable for this year’s competition.



I had not cut any YAG in a long time so I decided to cut this design and see what happens. The only YAG that I had was emerald green in color. A little darker than I would normally use for a competition stone but ya use what ya got. Now, the cutting order is not the same on all the patterns for this pavilion so I will just say how I cut it. I looked up YAG to refresh my memory on the RI and hardness. I had forgotten how hard it is, but that’s good for me. I started with a 600 sintered lap and cut 96,24,48,72 to a center point at 41.50 degrees. I then cut the same indexes at 90 degrees to get a level girdle and to size my stone. I believe this is the simplest way to accomplish several goals (1) establish a center point along the axis of the dop, (2) establish a level girdle line around the stone, and (3) establish the size of the stone (leaving enough material for pre-polish and polish). I then cut the remainder of the tier one facets to the center point. The corner facets at 90 degrees were next. Tier 4 at 60 degrees was next to complete the pavilion to 600 grit. I then pre-polished all the pavilion and girdle facets using 3000 diamond on a Batt. The girdle was pre-polished to .1mm shy of my target width. I used 100,000 diamond spray on a ceramic lap for my final polish and it looked great. I normally use 200,000 Italdo diamond spray on ceramic for my final polish but I had some 100k and it worked.

After transfer, I most always have to adjust my radial dial indicator (cheater) slightly to get a level girdle. My normal method of doing this is to use a 600 sintered lap and chain cut the first tier of crown facets around the stone then check. Make any adjustments needed then go back around and check. I do this until the girdle is level. In this case I cut A @ 96, E @12 and 84, A @24 and 72, E @ 36 and 60, A @ 48. I made a slight adjustment to the cheater and then cut in the opposite order back around. Girdle was level. Now I know this sounds like a lot of work to some but it really doesn’t take long once you make it

part of your routine. I then cut to a girdle thickness of .6mm using the 600 grit. I also cut tiers B and C to meet points using 600. I pre-polished in the same order using 3000 on a Batt to a girdle thickness of .4mm. Then polished in the same order with 100k on a ceramic, to a final girdle thickness of .3. Cutting the table requires removing the dop from the quill, thus it was cut last. After installing the 45 degree table adapter and readjusting the radial dial indicator (cheater that I adjusted after transfer) I installed the dop and cut, pre-polished and polished the table using the same laps and grits as before.

WOW, surprise, surprise. I must have done things right. The table meet points meet. No adjustment necessary. I did however, have to make slight adjustments to the top of the E tier facets to make that meet point. This was noted by the author on the diagram. He is right.

In summation, this design is quick and a pleasure to cut as long as you keep in mind that it is a radial design and that your plan view may vary. Also, there are only 9 meet points on the pavilion and 8 of those are on the GIRDLE line. So, how important is the LEVEL GIRDLE LINE? Very! I found that YAG was very easy to work with and polished well. The piece that I chose is darker than I would normally use for competition but the ladies that have seen it so far all really like it. Oh well, what do I know? I can say that if anyone is looking to certify as a pre-master, here's your chance.

Jim Clark