



Cutting the Fancy Hexagonal Brilliant by Jim Perkins Test Cut by Tom Mitchell

This is a pretty straight forward design with only 61 facets total. But there are some techniques that you will have to master to be successful with this cut.

The P1 cuts are simple. But to wind up with a winning stone you will have to be extremely accurate bring all of them in to a single culet point. Remember that any faults that you make early on will be magnified when you get around to cutting the Table. Cutting the girdle facets are very straight forward. Make sure that they are the same level all the way around and of course pay close attention to the width of the stone which is measured from the 96 and 48 index position meet points..

The next thing you will need to know is that the P2 facets are only one index gear tooth away from the P1 facets and only one degree of angle different from the P1 facets, so these will come in very quickly. You may want to bring them in with a 600 or 1200 lap so that you don't over cut them.

When you transfer and remove the first dop, don't forget to do a good job of realigning the stone. When I cut the stone I had to go through the realignment process 3 or 4 times before I was satisfied that the girdle being produced with the crown C1 facets was parallel with the one produced with the pavilion P2 facets. Of course you need to pay very close attention to get the girdle thickness as close as possible to the required thickness.

As I progress through to the C2 facets I usually retire my coarse laps (180 to 360 grit) and cut the rest with either my 600 or 1200 lap. That way I can control how fast the facets come in.

The trickiest facets to cut are the C3 facets, because they are at such a steep angle. If you are not careful you will end up cutting a rounded facet. This is because as you raise and lower the quill the stone is still in contact with the lap it will continue to cut, making the facet rounded. One way to avoid this is to hold the quill as firmly as possible as you move the stone back and forth across the lap. Then when you are ready to check your progress, either raise the faceting head up or stop the lap rotation before raising the stone off of the lap. I personally prefer raising the faceting head which takes a bit of coordination.

Now, if you were very careful to make all meet points throughout the rest of the stone, when you go to cut the table it will meet every C2.C3 peak around the stone. But if not, the best thing to do is to determine which C2, C3 meet points are off and go back and recut them as a slightly steeper (cheat them in) angle so that they not only meet the table but they also meet everywhere else that they were supposed to meet. You can usually accomplish this process with your polishing lap. But remember that your recut must go completely across the facet or you will get dinged for having what are called Ghost Facets.

Good luck, but most importantly, have fun.

Tom Mitchell