

CUTTING OVALS

By Ralph Westen

The cutting instruction sequence for ovals has been designed to achieve a specific length/width ratio to establish the correct geometry. Once the correct geometry has been established, there is no reason to adhere to the cutting sequence.

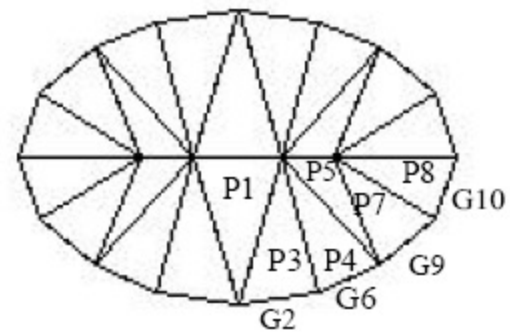
The length of each girdle facet and the index number used, determines the exact shape of the oval. It is therefore important that the initial sequence for the 'coarse' cut of the

pavilion is in strict adherence to the cutting instructions. The three laps mentioned in the article are:

- 270 grit 'coarse' (60u) cut copper lap
- 1200 grit 'greasy' (15u) pre-polish copper lap.
- 100.000 ultra fine (1/4u) grit type metal polishing lap.

The stones used in preparation for this article were cut from Cubic Zirconia. The ovals illustrated in this article are from the Mix & Match Series, Vol 1. Facet Design Ovals by Robert Long and Norman Steele.

PC02049 LAZY OVAL PAVILION					REMARKS
Step	Design Angle			Bearing Index	
	39.00	41.00	43.00		
G2	90.00	90.00	90.00	94-02	46-50
P1	39.00	41.00	43.00	96-48	
P3	40.40	42.40	44.50	94-02	46-50
P4	40.30	42.30	44.30	90-06	42-54
P5	39.00	41.00	43.00	87-09	39-57
G6	90.00	90.00	90.00	90-06	42-54
P7	40.00	42.00	44.00	85-11	37-59
P8	39.50	41.50	43.50	77-67	19-29
G9	90.00	90.00	90.00	85-11	37-59
G10	90.00	90.00	90.00	77-67	19-29
Depth	40.50	43.50	48.60		
					Depth = % of width



THE LAZY OVAL - PAVILION

1. Cut pavilion on coarse lap according to cutting instructions to establish the correct geometry. A common mistake found after the coarse cut is a big step on the girdle at one end. This is understandable when we realise that if we are only 0.02 mm or 20 microns out in our meetpoints, we may have an accumulated error of 0.3mm or more. The immediate reaction is to give a mighty tweak on the cheater and this is where all our trouble starts. The first thing to do is to check all groups of girdle facets, in particular 85-11-37-59 that they are the same length in each group. Do not use the coarse lap for making adjustments and ignore the step for the time being.

2. Pre-polish all girdle facets on 91°

3. Polish all girdle facets on 90° It is advantageous, whenever possible, to work towards a finished row of facets.

4. Pre-polish all break facets P3-P4-P7-P8. In the following sequence. Start at 94-02, then 90-06, followed by 85-11. Then 77-67 and 19-29. Continue with 37-59, followed by 42-54, and finish with 46-50. It is important to establish a level girdle at this stage. By following this sequence we do not jump from one side of the stone to the other, not knowing if we are on the same level. Also, it is easier to eliminate the step on a long side of the stone than the ends. Ignore the meetpoints at the culet. They will come later.

5. Pre-polish P1, 96-48, making sure the tops of the break facets are well clear from the culet. see illus. Prepolish P5. 87-09-39-57, making sure the junctions between P1 and P5 make good meetpoints. The culet or chisel line should make a straight line. (See illustration)

6. Polish P1 and P-5. Establish proper meetpoints on culet. This is essential. Leave a small gap between P3 facets at the girdle sufficient for polishing of break facets. Do the same with P4 and P5.