



L = 1.5W L = 2.0W L = 2.5W L = 3.0W L = 4.0W L = 4.5W

WIDTH		OFFSET in mm for a given LENGTH to WIDTH RATIO					
mm	in.						
2.0	0.078	0.62	1.50	2.62	4.00	7.50	9.62
3.0	0.118	0.94	2.25	3.94	6.00	11.25	14.44
4.0	0.157	1.25	3.00	5.25	8.00	15.00	19.25
5.0	0.197	1.56	3.75	6.56	10.00	18.75	24.06
6.0	0.236	1.87	4.50	7.87	12.00	22.50	28.87
7.0	0.276	2.18	5.25	9.18	14.00	26.25	33.68
8.0	0.315	2.50	6.00	10.50	16.00	30.00	38.50
9.0	0.354	2.81	6.75	11.81	18.00	33.75	43.31
10.0	0.394	3.12	7.50	13.12	20.00	37.50	48.12
11.0	0.433	3.43	8.25	14.43	22.00	41.25	52.93
12.0	0.472	3.74	9.00	15.74	24.00	45.00	57.74
13.0	0.512	4.06	9.75	17.06	26.00	48.75	62.56
14.0	0.551	4.37	10.50	18.37	28.00	52.50	67.37
15.0	0.591	4.68	11.25	19.68	30.00	56.25	72.18
16.0	0.630	4.99	12.00	20.99	32.00	60.00	76.99

To repeatedly recreate fancy shaped stones without having to revise the angles and settings, requires accurate preforms. Several mechanical devices have been marketed to simplify reproducing preforms for the navette, heart, and oval. The "Sapphire Offset Head Assembly" and the "Prismatic Auto-Curve" are two of these. Although they differ in detail, both use the same principle...to off-set the center of the dop so that the girdle of the stone will be turned to an adjustable (and predictable) circular arc when the assembly is mounted on the facet head and rotated in the usual way. If the "off-set" center is moved further from the lap, the arc will have a greater radius and less curvature. If the "off-set" center, is moved closer to the lap, the arc will have less radius and more curvature. If the "off-set" center is not in line with the "true" center and at 90 degrees to the lap at the closest distance the relationship of the arc to the "true" center will be changed. Consequently, with these devices many fancy shapes can be approximated by circular arcs with different radii and orientation with respect to the stone's true center.

The simplest design which can be easily cut with this system is the Navette. It is simple because the dop only needs to be rotated once 180 degrees during the cutting process. The two arcs have the same radius. The columns listed "Offset" give the number of millimeters by which the radius must be increased to cut the Navette shapes shown in the sketch and with the width shown in column "width".