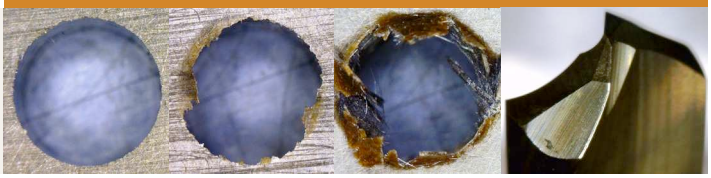
SPEED	FEED	RADIAL WIDTH	AXIAL DEPTH	WORKPIECE HARDNESS	MACHINE TYPE	COOLANT
5,000 rpm	5.0 ipm	.190"	.240"	CFRP	Vertical Machining Center	none

TOOL NO.	TYPE DESCRIPTION	TIR IN MACHINE	USAGE	INSPECTION NOTES
1	.190" CFRP drill, uncoated	.0001"	50 holes	Good hole quality for 1st 3 holes – fraying starting by 3rd hole, .0021" wear 1st hole / 3rd hole / 50th hole / After 50 holes 
2	.190" CFRP drill, diamond	.0002"	50 holes	Good hole quality all 50 holes – slight fraying, .0013" wear 1st hole / 25th hole / 50th hole / After 50 holes 

PERFORMANCE VALIDATION

A test was conducted of our CFRP drill to determine the necessity of coating when drilling Carbon Fiber material. Fifty holes were drilled using a special size .190" CFRP drill. The tool's design produces acceptable quality holes; but as shown in the photos, early edge wear on the uncoated drill resulted in holes with frayed edges. The diamond coated drill produced all 50 holes with little to no fraying and edge wear was 38% less than the uncoated drills.

The geometry of the 8 Facet drill with the Di-NAMITE coating is a necessity for additional tool life and productivity when manufacturing Carbon Fiber material.