

Aircraft Tools

Non-stocked Specials that have been custom manufactured

Drill Reamer



Drill Reamer



8-Facet Drill



Drill Router



Drill Countersink



Crystallume DCC rotating tools were developed in a NIST (National Institute of Science and Technology) program that involved a research partnership with Boeing Aircraft and three other large manufacturing companies. Some of the information gained in that program is presented here.

The material was 8-276 carbon fiber laminate 0.30" thick. Test tools were .191 and .251 diameter drill countersinks. The graph compares the number of holes drilled vs. the thrust required. The test was concluded at 50 lbs. of thrust when breakout and haloing became unacceptable. Carbide lasted about 200 holes, PCD lasted 1,500 holes and Crystallume DCC lasted 2,700 holes. Also, note that the sharper carbide tool started with the lowest thrust while the PCD and Crystallume DCC started with about the same thrust (even though the PCD is a ground edge and the Crystallume DCC is a coated, faceted edge). These test lab results were repeated on the production floor.

Since the conclusion of this program Crystallume has coated various tools (as pictured here) to use in aircraft applications. Contact one of our engineers to discuss your application and possible solutions using Crystallume DCC.

DCC Drill Test Results in Carbon Fiber Reinforced Composites



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Decimal Equivalent	Tolerance from Nominal Minimum	Tolerance from Nominal Maximum	Flute Length	OAL	Type or Point	Part Number
0.0980	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100345-1
0.1285	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100334-1
0.1655	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100335-1
0.1915	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100336-1
0.2210	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100346-1
0.2510	+0.0000	-0.0005	1.400	2.700	4FCT	P810-100337-1
0.3125	+0.0000	-0.0005	1.500	2.700	4FCT	P810-100338-1
0.3765	+0.0000	-0.0005	1.500	2.700	4FCT	P810-100341-1

