

▶ CASE STUDY

CUSTOM KNIFE MANUFACTURER

DUNCAN CUSTOM KNIVES

About 40% of Pocket NC machines are used in industry to prototype, run small production batches or produce custom one-off products. In this case study we explore Duncan Custom Knives and how Brad, the owner, has integrated the Pocket NC into his custom knife making process. Brad made the knife liners shown in Figure 1 on the Kickstarter Pocket NC machine, really pushing the limits of this first generation machine. We were so impressed by both the materials he was cutting and his results.



▲ Figure 1: Final product from Duncan Custom Knives, the liners on the handles were machined on the Pocket NC. Image courtesy of Duncan Custom Knives.



▲ Figure 2: 3D profiling a handle liner on the Pocket NC, image courtesy of Duncan Custom Knives

BACKGROUND

Brad has been in machining and manufacturing for over 30 years. He is the son of a machine shop owner and said that he never wanted to do anything but follow in that line of work. In 1999 he started his own custom knife business, took a brief break in the late 2000s to work as a manufacturing engineer before returning to the custom knife making business again.

REVOLUTIONIZING THE PROCESS

When he started out in custom knife making he learned that the custom knife industry did not utilize the available technology and therefore did not utilize his machining skills, so he decided to set his own path to incorporate machining into his knife making business, this proved to be a decision that helped him build a very successful business.

THE WORK

As you can see in Figure 2, Brad machines the handle liners on the Pocket NC machine and customizes them with 3D profiling cuts. His knives are made out of titanium, Damascus and a variety of super alloys. Some of his feedback on the Pocket NC machine is *"your machine eats 6Al-4V titanium for lunch. The rigidity is so awesome, rivaling Okuma in my opinion. I have worked on hundreds of machines and yours is the best bang for the buck. The only drawback is I really need an extra 2 to 3 inches of travel in X and Y."*



You can find more information on Brad's custom knife business (www.duncancustomknives.com)