MY JOB AS AN ENGINEER entails designing and building prototypes of parts (some of which are quite small) out of metal and plastic. Naturally I developed an interest in building small parts out of wood, and I’ve started to really enjoy making dollhouses and miniature furniture, as well as small boxes.

The Tao of Small
As my expertise (not to mention my hobby) lies in small parts, I was asked to evaluate some of Proxxon’s miniature tools. And boy, did I enjoy it. Serious model makers would be impressed with the performance of these little machines, and might even find them invaluable time-saving devices. They are not perfect, but dollar for dollar, they belong in your shop if you are building small projects of any kind.

At the time I was asked to test out these tools, I was already the proud owner of a Proxxon FKS/E table saw. I plan later to share some modifications that I believe enhance the performance of this fine tool overall. But first, the others.

The Planer
I started with the miniature planer (DH 40) and was pleasantly surprised at the amount of power it can deliver. I found that it is capable of making a maximum cut at about 0.030". This worked the machine pretty hard, so I tried a little less than half that (0.010") and it cut about everything from poplar to hickory with no problem at all. Best of all, the cuts came out really smooth, requiring almost zero sanding.

The maximum width of material you can fit through the planer is a little over 3 1/8"; maximum thickness is 1½". I found the adjustable, calibrated hand wheel to be a big plus. I used the planer to make many thin boards for dollhouse furniture and some trim for jewelry boxes.

After running it through its paces, I decided to find out what the minimum thickness of a planed board would be for this machine. I ran my test piece down to a thickness of 0.080", the planer performing flawlessly. After that, I tried gluing the leading edge of another piece to the previous piece and planed it down to see how thin
I could make the machine cut before it began to peel up the wood fiber of the top piece. The micro adjustment allowed me to reach about 0.020” before I started to notice any degradation in the surface. I used poplar for this experiment, which is fairly soft and probably would have curled up and shredded if I’d gone much farther.

If I were to add anything to the planer, it would be an outfeed support extension for planing long parts. Shown here is the end of a long piece that tipped downward at its end; as I continued to plane the part, it became progressively worse. An outfeed support might have prevented this.

One thing I found a bit confusing at first – and this is probably a little petty – was that the indicator below the crank handle shows “+” and “−” symbols which mean the opposite of what I thought they meant. Turning the handle toward the “+” removes stock and toward the “−” increases the stock opening for thickness.

The Miter Saw

Next, I worked with the miter saw (KGS 80). When I first looked at the saw, I wondered why they didn’t make it into a compound miter saw. But I quickly realized that it would not have been much use, because it is a very small saw, after all.

I was really impressed with this saw and its ability to cut small parts accurately and consistently. I especially like this saw because I have always used a 10” miter saw, which frequently means my fingers are a little too close for comfort. But the vice in this machine eliminates that situation. The vise works well on round, square or flat, thin stock.

I do have one small complaint, which arose from placing a piece in the saw with the extension bar in use to cut multiple pieces to size. When the cut finishes, the blade frequently grabs the part and slings it around until it flies across the room. During this activity, it contacts the spinning blade several times, causing considerable damage to the part. I found a way to eliminate this by placing a piece of scrap wood under the workpiece. Masking tape may also be desirable to help affix the workpiece to the scrap.

I believe they could fix this problem by making a plastic support under the saw area that could be removable and replaceable, or making the stop fit between the vise jaws and beyond to regulate part length on the vise end.

Something that puzzled me was an indicator on the extension bar stop that leads me to believe it was magnetic. But not even a paper clip would adhere to it. Maybe it’s the elusive wood magnet I have been looking for!

All in all, the miniature miter saw is a great tool for cutting small parts that are delicate and hard to handle. It could literally save your fingers when it comes to trimming small parts down to size.
The Drill Press
The drill press (TBM 115) is the one tool I would not change anything about. It is capable of performing excellent work on any level. The accuracy in the spindle was far better than I had hoped for; it registered zero movement, making it perpendicular to the base at all times. The variable speed was at least as easy (maybe easier) to change as on any larger drill press.

The optional vise really is a great addition to the drill press. It made holding small parts a breeze. The adjustable bar on the base of the drill made drilling holes in a line simple and accurate.

This small drill press has all the features of a full-size drill press and very surprising power for a small machine.

The Milling Machine
Next came the milling machine (MF 70). It too was extremely accurate and powerful for its size. It even performed effortlessly on steel. When I first used it, the gibbs needed some adjustment, but after that it did an excellent job.

The speed is adjustable from 5,000 rpm to 20,000 rpm, and the power it delivers is incredible. It is capable of performing much like a full-size mill, even on this small scale.

The table movement is about 5½" right to left by 1½" forward and back. The vertical adjustment is about 2¾", which is adequate for making small parts for lots of projects.

I gave the mill a thorough workout on the X, Y and Z axes. I then attached the vise from the drill press. It mounted a little bit forward and limited travel on the mill, but was a great addition for holding small parts.

The only thing I would change would be to knurl the adjustment handles so that you can gain a firm grip and adjust the table in small increments.

The Plunge Router
The plunge router (MOF) is the newest of the miniature tools I tested. As with the other members of its Proxxon family, it is very precise. The motor ran smoothly and had an amazing amount of power.

However, the plunger has excessively strong springs for such a small tool, resulting in a lot of error on initial contact with the work surface. Also, the slide of the plunger has a certain roughness to it – if you look closely, you can actually see the roughness on the plunger rods.

Overall, though, this is still a very handy tool to have if you are making dollhouse furniture or other detailed small pieces.

The Table Saw
Finally, I’d like to share the changes I made to my Proxxon table saw. I added a fence extension to help guide the part a little farther past the blade. This modification is not completely necessary; it just makes it a little easier to make an accurate cut.

I also made a small micro-adjuster that clamps onto the table for adjusting the fence. The ¼-20 threads on the adjustment screw really make this valuable because every full turn equals .050" and every half turn makes a .025" adjustment.

Wrapping Up
I really like what I have seen in Proxxon’s line of miniature tools. I can only imagine the possibilities for professionals such as architects, prototype builders or anyone who must perform small-scale, precision work.

I built a prototype for a new product I designed and used the tools extensively for the project. This involved not only exterior walls for appearance but also included interior support walls and functional latches, all made from ABS plastic.

I completed the project in two days. I attribute this accomplishment to the Proxxon tools in this article — especially the table saw.

— Earl K. Lewis, II, is an engineering manager for Skuttle Indoor Air Quality Products in Marietta, Ohio. His wood projects are mostly made from scrap wood salvaged from skids. He enjoys woodworking and fishing.
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