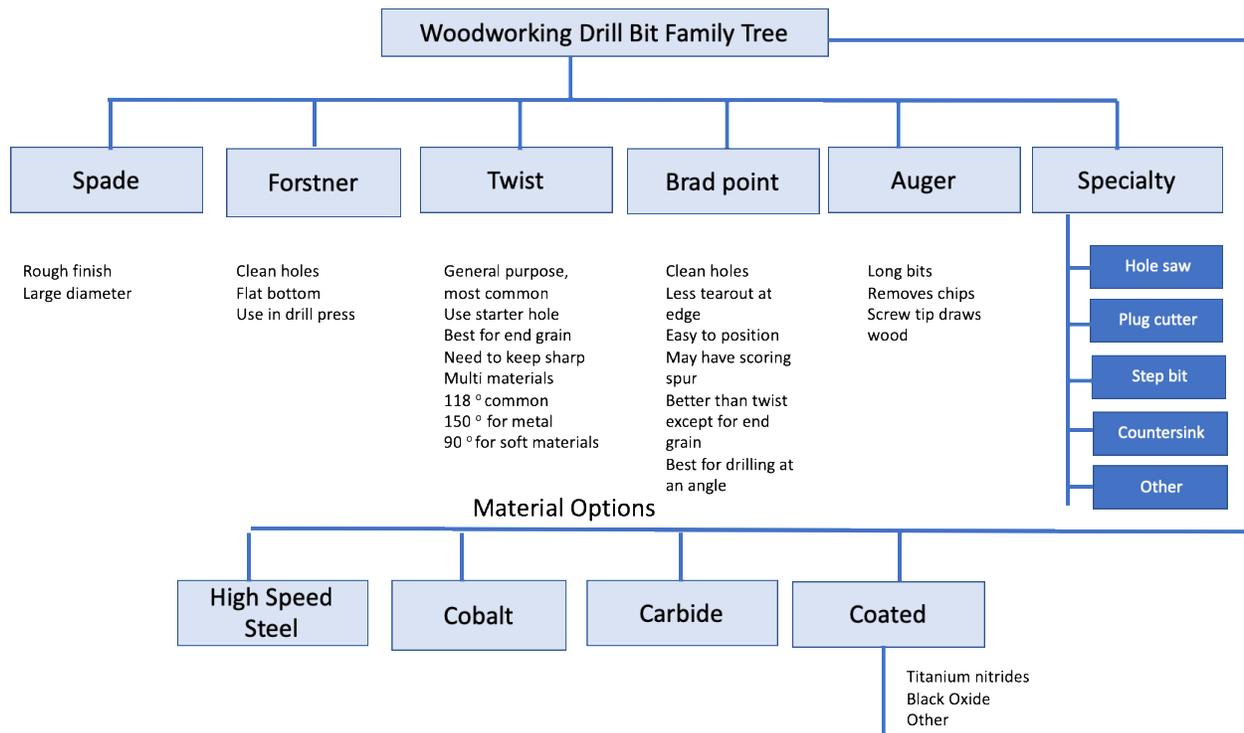


Drill Bits 101

I've used dowels in a variety of woodworking projects having bought myself a pretty decent doweling jig a few years ago. The jig itself came with a twist drill bit for each of the three dowel sizes. For my dowel joinery I often need to drill holes of two different depths; so sometimes it is handy to have two bits of the same diameter with stops set at the different depths. One day I inadvertently was using both a twist bit and a brad point bit and noticed very different results. For example, drilling into end grain was far more difficult with a brad point bit than with the twist bit. All of this got me wondering about the different types of woodworking drill bits. Hence my investigation into the family tree of woodworking drill bits. Note that many drill bits may be multi-purpose, but generally speaking there are different families of bits for plastic, metal(s), tile, and masonry, etc.



The basic job of a drill bit of course is to stay centered and not wander, cut the wood to form a round hole, and eject the chips. Seems simple, but not so perhaps, which is why there are so many types of drill bits and even options on lips, lands, flutes, margins, and other design elements – details beyond the scope of Bevel Cut. Of all the types, the common twist drill, invented by Steven Morse in 1863 and covered in US Patent 38119 is the simplest. The V-angle of the tip can vary from 60 to 118 degrees, with the latter being most common in today's hardware stores according to my own research. The sharper the angle the better the fit centers and the cleaner entry and exit the bit will make. The sharper the angle, however, will reduce the usable depth of a hole. Twist bits are great but poor choices when drilling at a severe angle.

The brad-point bit is basically a twist drill with a modified ed. The design addresses two shortcomings of the twist drill bit when used in wood – it overcomes the tendency to walk at the start of a hole and it reduces tearout at the perimeter. Hence, better cutting in wood in most cases, with the exception of drilling into end grain. Most of the “drill kits” I've encountered are brad-points.