

The Preventive Maintenance Series

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Shop Tips for Drilling

The following information has been obtained from multiple sources over the years; tips that have been passed on to me by those much wiser, including my father and numerous professional writers on the subject. Opinions will vary however, so feedback is welcome on the subject.

Products:

- For HD shop work, a variable speed, reversible, ½” inch keyed chuck is top choice. The hammer drill option is well worth the cost if you ever might want to drill an anchor hole in masonry, and a 3/8” chuck that closes to zero in a cordless drill is a good companion for light work. A low speed air drill is a great investment also; they have a lot of low speed torque. The hand-tightened chuck is proving to be a poor choice for heavy duty work as you will probably have to buy special bits to stop them from turning in the chuck.
- Investing in bits is like everything else, you get what you pay for. “Made in China” means light duty only, so look for the good stuff. A 135-degree split point with a Titanium Nitride coating is first class, and the price reflects that. The split point has four cutting edges instead of two, making the bit self starting, and the gold colored Titanium Nitride works cooler. Brand name 118-degree bits will work fine for most jobs. For drilling and tapping, have a set of numbered and lettered bits – the taps will specify the drill size. You can also use them as gages.
- Left hand drill bits are available for removing broken off bolts and work very well. Get a set from Snap-On, Craftsman or another brand name. They can unscrew the broken part as you drill into it.
- The *Drill Doctor* bit sharpener is a worthwhile investment if you do a lot of drilling work. Mine will only sharpen 118-degree bits, but used properly it does a perfect job.
- Having a drill press, even a small one, will be appreciated when you need straight holes in smaller items.

Technique:

- When you tighten your chuck, use the key on all three holes. Each one tightens against one of the jaws, so you need to use all three for the best grip with even pressure.
- **Drill metal at low speed** and use cutting oil on everything but cast iron and brass. High speed and no oil will quickly ruin bits.
- Do not center punch metal to start a drill; you will “work harden” the metal by compressing it at the point where the bit tries to cut. Instead, buy a split point bit mentioned above, or use a small Dremel type grinding tool to scuff the spot and remark it before drilling.