



A Bit About Drill Bits

It's amazing how often the most costly recurring problems are caused by the smallest things - such as drill bits.

The preferred method for making from one to ten round holes along the spine of a sheet is by drilling. (This is because it is at least twice as fast as punching.)

Successful drilling must begin with a machine in good operating condition and the proper selection of drill bits. Drill bits, which are hollow, are available in sizes 5/64" to 1 1/2" in diameter and are made of varying qualities of hardened tool steel. Sometimes these bits are coated.

The dynamics of drilling through a pile of paper demands a very sharp edge and clean interior of the drill bit. The bit should also have as smooth an exterior as is possible. Look for a mirror finish.

When drill bits come from the manufacturer they should have a polished interior to facilitate the chips being expelled with ease. If you are drilling in paper with adhesives or plastics, there is a

strong likelihood that some of the material will stick to the inside of the drill bit. The popularity of recycled paper, which contains more foreign substances than virgin paper, will cause this to happen more and more. Lubricating and cleaning the interior of a drill bit can be done throughout the workday by drilling through carbon or wax paper. (Carbon paper is actually paper coated with a waxy carbon.) This can be done once every half hour of drilling. When the drilling process is finished, bits should be removed from the machine, cleaned, sharpened on the inside only and left for an overnight soak in a container of penetrating oil. Before putting bits back in the next morning, they need to be put in a solvent to clean them so they will not mark the paper.

In regard to sharpening, drill bits should be sharpened as needed, which is usually after 1 to 4 hours of usage. The sharpening tool may be: a manual hand-held sharpener, a two piece sharpener, or an electric lathe type sharpener. These all require removal of the drill bit from the machine. The most efficient method is to use a sharpener that

sits on the drill table and a carbide bit is guided up into the drill bit.

While sharpening you must be careful not to press too hard against the cutting edge of the bit. Too much pressure will cause a flaring out of the tip, which causes a larger hole to be drilled. This in turn causes larger waste chips to be forced up into the bit which will cause clogging and breakage.

As to the exterior of the drill bit, unless factory coated, it must be lubricated with non-staining silicone or drill wax. The latter leaves a residue which needs to be removed regularly. Both these compounds reduce heat and friction which are enemies to the life of the drill bit.

In recent years bits have become available with Teflon coating. While these bits solve most of the problems of external friction, they are 40 to 50% higher in cost and the coatings have a shorter life span than the drill bit itself. Extreme care should be given to these costly bits.

A good way to automatically lubricate the drill bit is to take a piece of felt and secure it to the drill head's pressure foot so that it touches the rotating bit. Lubricate the felt with non-staining oil or silicone. It is easy to maintain by adding a few drops of lubricant to the felt as it begins to dry out.

All these little daily habits eliminate a lot of big and expensive problems.

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