

Drill Encyclopedia Article

Drill

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The drill, which dates back to the Stone Age, was first used to start fires. A slender piece of wood was rotated between the hands to create a flame, through friction. This device became the bow drill by the addition of a bow-shaped stick and a simple cord attachment that allowed for increased rotation.

As early as the eighth century B.C., drills were used by the Greeks for hole-cutting, and this remains their primary purpose today. By the third century B.C., the Chinese found that drills could be used to bore through the earth to tap oil deposits. Heavy drilling through rock was accomplished by means of metal or weighted attachments to systematically pound and penetrate.

Drills developed little until well into the nineteenth century. They were most extensively used in clockmaking, an application which required only that the drill bit be sharp enough to puncture thin metal. The clockmaker's drill press was operated either by hand crank or foot treadle. In 1835, Joseph Whitworth, a British mechanical engineer, introduced a heavy-duty vertical drill that represented a huge advance over previous presses in both speed and stability. Innovations that followed included the portable electric drill, the radial drill (for aligned drilling over large surfaces), and the pneumatic drill (especially useful for tunneling work).

Lightweight cordless drills have severed the link to the electrical outlet and offer easy use in almost any situation. Improvements in the nickel-cadmium battery technology used in these tools, and other design refinements have made the cordless drill the most popular of cordless tools.

Drill bits typically contain spiral-shaped grooves, though some bits have straight cutting edges. These grooves enable waste material to be channeled away from the cutting surface. Closely related to the drill is the boring machine. Together these two machine tools facilitate the manufacture and assembly of countless objects of varying shape, size, and use.