

Deep Hole Drilling

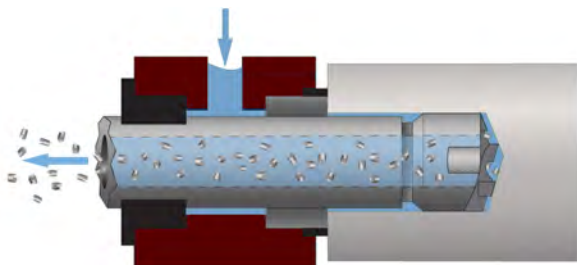
What is Deep Hole Drilling?

A deep hole is classified by having at least a 10:1 depth-to-diameter ratio. Deep hole drilling is used in many industry applications, however its origin traces back to the need for drilling highly accurate and straight gun barrels, where the depth-to-diameter ratio can exceed 20:1. The two primary methods of deep hole drilling are BTA drilling and gun drilling.

BTA Drilling

BTA drilling is a deep hole drilling method which was created by the Boring and Trepanning Association in the 1940's. It comprises of a special hollow tooling that allows pressurized coolant to flow into the hole on the outside of the drill, and evacuates chips through an internal hole in the drill.

Depending on the depth and diameter of the hole needing to be drilled, the BTA tooling will consist of a hollow drill tube that it attached to a threaded indexable cutter head. BTA drilling has an effective diameter range of 20-200mm (0.80"-8.00") and can reach depths of up to 400mm (16.00").



Gun Drilling

Gun Drilling is a deep hole drilling method which uses a long, thin cutting tool to produce highly accurate and straight holes in work pieces beyond what conventional style drills are capable of. Gun drills differ from conventional drills by having a single straight flute cutting edge and a single internal coolant hole. Pressurized coolant is fed through the internal hole and chips are evacuated through the single flute along the shank.

Depending on the depth-to-diameter ratio of the hole, some gun drilling processes can be completed on a standard CNC machine. However the majority of gun drilling applications are done on a specialized machine and in some cases can reach extreme depth-to-diameter ratios of up to 400:1.

