

Product Information Report

Preventing Drill Failure



Overview

Drills Perform Three Functions When Making A Hole:

- **Forming the chip**
The point of the drill digs into the material and pushes up a piece of it.
- **Cutting the chip**
The cutting lips take the formed chip from the tip and cut the chip off the material.
- **Evacuating the chip**
The flutes take the formed, cut chip and guide it up and out of the hole.

Common Causes of Drill Failure

- Using a two flute drill to enlarge a hole
- Not using cutting fluid
- Improper speed/feed
- Improper hole enlargement
- Cutting with the flutes
- Failure to reduce speed/feed at breakthrough
- Improper chucking
- Improper length selection

Proper Drill Use

The most important thing to remember is to let the drill do the work. Apply only enough pressure to guide the drill through the material.

Operating Speed Depends On:

- Composition and hardness of material to be drilled
- Depth of hole
- Type of drilling equipment
- Efficiency of the cutting fluid
- Quality of hole required

Getting The Most From Your Drill

- Use a drill motor with the proper speed and adequate power for the job or set the drill to the proper speed.
- Align the flats with the jaws.
- Install the bit properly, tightening the chuck at all three chuck key points.
- Put the drill in contact with the workpiece and align squarely before starting the drill motor (hand drilling only).
- Position your body to give you maximum control of the drilling operation (hand drilling only).
- Exert steady, even pressure during drilling and release pressure at breakthrough.
- Use a cutting fluid to improve your drilling operation.