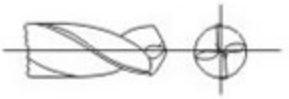
DRILLING TECHNIQUES/TROUBLE SHOOTING

Point Characteristics

Type	Performance Benefits*	Comments
Conventional Point (118°) 	• General purpose • Widely available • Acceptable drill life • Best suited in mild steel and aluminum	• Not self-centering; "walking" can occur on hard surfaces • May produce burrs on breakthrough
Split-Point (118° and 135°) 	• Self centering • Excellent for portable drilling • Longer drill life • Good for drilling on curved surfaces • Improved penetration rates • Requires less effort • Breaks up chips • Best suited in alloy steels	• Difficult to regrind

*Depends on application.

How to Drill Effectively

Successful drilling involves three elements:

1) forming a chip

2) accommodating a chip

3) evacuating a chip

Drill Geometry Use the shortest drill possible.

Use a split-point drill if possible. Split-points begin removing material on contact and drill more efficiently.

WARNING: Two-flute drills should not be used to enlarge pre-existing holes.

Drilling the Hole

Use the proper feed rate (see p. 56).

Avoid the tendency to overspeed and underfeed.

Use low speeds and light feeds for hard materials.

Use higher speeds and heavy feeds for soft materials.

To decrease drilling effort required, use a split-point drill.