

WHY CHOOSE ULTRA BOR?



- ✓ **Substantially longer cutting life**
The nitro-carburized flute has an increased Rockwell hardness.
- ✓ **Cuts harder materials**
The flatter point takes a smaller chip. More torque is directed to a smaller area. This allows drilling into materials with hardness of over 30 on the Rockwell "C" scale.
- ✓ **Stops drill walking**
The split point design gives accurate starting without the use of a center punch.
- ✓ **Holds tighter hole size**
The split point design is self centering. This limits the normal oversize drilling characteristics.
- ✓ **Outstanding quality appearance**
The rich amber gold color sets it apart from commodity cutting tools.
- ✓ **Runs cooler, uses less torque**
135° point takes a smaller chip resulting in less heat. Friction is reduced by amber gold surface treatment.
- ✓ **Stops chuck slippage**
Flats on drill shanks allow easy positive chuck grip.

ULTRA BOR SUPER PREMIUM VS. COBALT

The **Ultra Bor Super Premium** drills will substantially outperform cobalt drills in work hardening stainless steel applications. This performance advantage is the result of construction differences between the two types of drills. Cobalt drills, manufactured to **Type J NAS 907** specs, have a very thick web. This web is necessary to limit breakage of the brittle cobalt steel. **Ultra Bor Super Premium** drills are made of special Hi-moly tool steel, which is much tougher than cobalt steel. The web on an **Ultra Bor Super Premium** drill can be thinned considerably due to the toughness of the steel.

A **Ultra Bor Super Premium** drill with its thin web will penetrate the work hardening stainless fast enough to continually cut beneath the chip which is hardening from deformation. This means the drill is cutting softer steel. The cobalt drill, with its thick web, cannot be fed at a fast enough rate to cut beneath the area which is hardening. As a result the cobalt drill is continually drilling into hardened steel.

STAINLESS STEEL WORK HARDENING VS. FREE MACHINING

Work hardening grades of stainless are the 300 series with the exception of 303, which is free machining. Free machining grades include the 400 series in addition to type 303. A quick way to identify work hardening vs free machining stainless is to observe the chip formation. Work hardening chips break up during the drilling process, while free machining chips are long and stringy.

COBALT APPLICATIONS

Cobalt drills are recommended for free machining stainless (400 series & 303), titanium alloys and other high tensile strength materials. These applications require the high red hardness of cobalt steel to counter the substantial heat generated in the drilling process.

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