Synthes Drill Bits

Synthes drill bits are designed to provide efficient cutting with minimal trauma to the bone. Manufactured from heat-treated chromium stainless steel, Synthes drill bits are characterized by their hardness and resistance to wear and corrosion. Properly used and maintained Synthes drill bits will provide the highest standard of performance.

Synthes offers drill bits in various lengths, diameters and coupling mechanisms. Drill bits are available from 0.70 mm to 17.0 mm in diameter, and in total lengths ranging from 28 mm to 300 mm long. Application-specific drill bits include cannulated drill bits and three-fluted drill bits.

Design and sharpness

The effectiveness of any drill bit depends on its design and the condition of the various edges. A drill bit is characterized by its chisel edge, lips, lands and flutes.

- The chisel edge (A) is critical as it guides the drill bit and starts the cutting action. The chisel edge should appear sharp and score free to prevent slippage when starting to drill.

- The lips (B) are crucial to proper function, as they perform the actual cutting. The lips should appear sharp and undamaged. Drill bits with rounded edges, grooves or notches should be replaced immediately. Some drill bits and reamers are designed with notches to increase the cutting efficiency. These should be replaced when the notches appear uneven.

- The lands (C) do not have any cutting function, but clear the drilled canal. The edges should be smooth, as broken edges indicate previous contact with metal and will exhibit diminished performance.

- The flutes (D) transport the bone debris away from the tip, increasing the cutting efficiency of the drill bit.
**Care of Synthes Drill Bits**

**Damage to drill bits**

Damage to drill bits includes blunt edges, bent or damaged shafts and corrosion. Damage is most frequently caused by drilling into metal (implants and instruments). Dull or damaged drill bits should be replaced immediately to avoid bone necrosis. Bent drill bits should be replaced immediately to avoid breakage.

**Damage prevention**

For optimum performance, Synthes recommends single use for all drill bits and taps. If, however, the hospital makes a decision to re-use these devices, the following guidelines should be observed:

- Avoid drilling into metal.
- Always use a drill guide. The drill guide will control the direction of the drill bit, minimize intraoperative bending, and help prevent contact with the implant. The drill should only be started after the drill bit has been inserted into the guide. This will avoid unwarranted contact between the drill bit and the drill guide and prevent damage. In addition, the drill guide protects the surrounding tissue.
- Always handle and store the drill bits carefully.
- Remove the drill bit from the power tool coupling immediately after use.
- Synthes drill bits are shipped with a protective cap. The protective cap should be left on the drill bit until it is placed into the set. All protective caps should be removed prior to sterilization.

**Inspection for damage**

Drill bits should be inspected for damage or wear after each use. This can be checked by running a cotton ball or cloth over cutting edges. Uneven and scored surfaces will catch the cotton.

Bent, broken, damaged and dull drill bits should be replaced immediately. Synthes does not recommend resharpening drill bits. Resharpening calibrated drill bits will render the calibration unusable, as Synthes drill bits are calibrated from the tip.

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