

DRILL BITS

HOW EACH BIT CUTS · WHAT IT'S FOR · HOW FAST TO SPIN IT — DT WORKSHOP GUIDE

WORKSHOP POSTER 01

TURNING CUTTING SPEED → MATERIAL



Twist Drill HSS

Two cutting edges shear the material; the spiral flutes screw the waste (swarf) up and out of the hole.

METAL **WOOD** **MED**

The all-rounder — sets come in 1–13 mm. 118° point angle.



Brad Point

The centre spur bites first so the bit can't wander; the twin spurs score the rim for a clean exit hole.

WOOD **MED**

Go-to for dowel joints and accurate furniture holes.



Spade Bit

The flat paddle spins and scrapes a wide hole fast; the centre point guides it into the wood.

WOOD **FAST**

Cheap and quick — rough exit, so back it with scrap wood.



Forstner Bit

The ring of rim teeth cuts the circle, inner cutters shave the face — a flat-bottomed hole, even overlapping.

WOOD **SLOW**

Hinge recesses & shelf-pin holes. Clamp the work!



Auger Bit

The screw tip pulls the bit into the timber; the spiral flight lifts the waste out. Deep, clean holes.

WOOD **MED**

The screw does the pulling — you just guide. 6–25 mm.



Hole Saw

The ring of teeth saws a circle while the centre pilot drill keeps it on target — big holes fast.

WOOD **METAL** **SLOW**

Door locks, pipes, cables. Don't force it — clear the plug.



Countersink

The cone-shaped cutter matches the screw-head angle so the head sits flush with — or below — the surface.

ALL **SLOW**

82° = standard countersunk screw. Drill before screwing.



Step Drill

The stepped cone is many sizes in one bit; the edges shear sheet material cleanly, with no grabbing.

METAL **PLASTIC** **MED**

Drill to the step you need — no bit changes. Great for boxes.



Masonry Bit

The tungsten-carbide tip smashes and grinds the material — and only works with the hammer action on.

CONCRETE **HAMMER**

Plain drilling just rubs. Needs a hammer drill.



Glass & Tile Bit

The spear-shaped carbide scrapes a hole at low speed. No hammer — it would shatter the tile.

TILE **V. SLOW**

Add a dab of water or coolant; let the bit do the work.

SAFETY & TECHNIQUE

- ▶ **Clamp the work** — a bit can snatch and spin the piece.
- ▶ Wear eye protection — swarf and dust fly everywhere.
- ▶ Start slow, then feed steadily — let the bit cut.
- ▶ Pilot hole first for big bits; back wood with scrap.
- ▶ Never force it: sharp bit + steady pressure = clean hole.

PICK BY MATERIAL

- **Wood:** brad point / spade / Forstner / auger
- **Metal & plastic:** HSS twist / step drill
- **Brick & concrete:** masonry bit + hammer action
- **Tile & glass:** spear bit, slow, no hammer

RULE OF THUMB

- Small hole** → twist drill · **big hole** → spade / hole saw
Flat bottom → Forstner · **flush screw** → countersink
Deep in timber → auger · **clean wood hole** → brad point