

Pillar Drills

DT Workshop Equipment Reference — D&T / STEM resource for school workshops | Machinery & Power Tools



Photo: Photograph by Clem Rutter, Rochester, Kent. (www.clemrutter.net). — CC BY-SA 3.0 — via Wikimedia Commons (Gladstone_Pillar_Drill_3749.JPG)

A pillar drill is a fixed drilling machine with a vertical column, a height-adjustable table and a quill that feeds the chuck straight down into the work. Unlike a hand drill it produces square, accurate, repeatable holes, which makes it the standard machine for drilling wood, metal and plastic in a school workshop.

Key Features

- Chuck capacity typically 0.5-13 mm, larger models 0.5-16 mm
- Belt or electronic speed range around 200-3000 rpm
- Built-in depth stop for repeatable hole depths
- Tilting table for angled drilling
- Perspex chuck guard interlocked with the quill feed

Typical Uses in the Workshop

- Drill accurate holes in timber, MDF, acrylic and mild steel
- Countersink and counterbore using the correct bits
- Cut large flat-bottom holes with Forstner bits
- Drill stacks of identical parts using a fence or stop block

Safe Operation

1. Select the speed to match the material and bit size
2. Mark the position and centre-punch it first
3. Clamp the work to the table, never hold it by hand
4. Lower the quill smoothly and let the flutes clear the swarf
5. Stop the machine before adjusting speed, depth or the chuck

SAFETY NOTES

- Tie back long hair and remove jewellery and loose clothing
- Always clamp the workpiece securely
- Wear eye protection - swarf and broken bits can fly
- Remove the chuck key before switching on
- Report blunt or damaged bits instead of forcing them

Maintenance & Consumables

- Wipe the table, column and quill after each session
- Keep the chuck jaws clean and lightly greased
- Check that the guard and emergency stop work monthly
- Replace worn or blunt drill bits promptly
- Oil the column occasionally so the table stays easy to move

Specification & Buying Notes

Choose a robust model with a 13 mm chuck, a guard interlocked with the quill, an emergency stop and a clear speed readout. A floor-standing model with a longer column suits taller projects and stays rigid under load.