

Power Drill/Driver

v2, Updated Feb 2018

Identify:

Trigger (go button), chuck, battery, direction button, clutch and speed settings, various drill and screw bits (notice X drive shape in screw bits, aka Phillips head)

Accompanying Tools:

Goggles, clamps, marker, bits, spade bits, screws

Safety:

- Use goggles.
- Does not require immediate supervision once trained.
- Drill straight in and straight out to avoid snapping delicate drill bits.
- Lay drill on its side when not in use, do not stand it up.
- Body position with shoulder above tool and second hand on the back of the tool.

Operation:

- Identify depth of material, compare to drill bit or screw length.
- Clamp material down, with protective layer between material and table if necessary.
- Make dot or X where hole will be drilled.
- Insert correct bit.
- Check direction button. Arrow on pushed-in side identifies direction. Righty tighty, lefty loosey.
- Hold grip with dominant (drawing) hand, other hand presses from butt of drill.
- Position body with shoulder above tool.
- Pull trigger and control speed. Press straight in line with hole direction with non-dominant hand, body weight directly over tool if needed.
- Do not let go of drill while bit is in wood.
- Control the tool, if it binds and moves you, you are probably pressing too hard.
- Avoiding wiggling drill while bit is in wood.
- Friction can cause overheating of drill bit. Be careful of high temperatures when multiple holes have been drilled.
- Back out bit after the desired depth is achieved. Press reverse switch, then trigger.



Drilling Holes:

- Set speed switch to 2.
- Use correct size drill bit.
- To remove drill bit from hole, squeeze trigger again pull straight back on the bit.
- Place drill in “drill” mode (symbol of a drill bit next to the clutch numbers).
- Predrill holes for efficient screw placement and to prevent splitting wood.

Putting in Screws:

- Set speed switch to 1.
- Check length of screw against side of material.
- Make pilot hole first with appropriate bit (optional sometimes, but recommended, especially in small/delicate material or near an edge).
- Insert screw bit into chuck.
- Insert screw into pilot hole and twist with fingers until finger-tight.
- Match screw drive to bit.
- Squeeze trigger gently and press with non-dominant hand. Going slow and squeezing in brief pulses gives better control.
- If bit keeps “chattering” and slipping out of the screw drive, stop and readjust, making sure you're pushing hard enough and that driver is in line with screw.
- To remove a screw, change the direction button, and push down with non-dominant hand as the screw backs out.

Impact Driver:

- Uses only hex impact bits. Primarily used for putting in screws.
- Is louder and has more torque. Good for longer screws that are difficult to insert.
- Bits are held by a collet instead of a chuck. Pull collet outwards, put in bit, release collet.

Regarding spade bits:

- This type of bit requires a lot of strength to maintain the drill position, particularly if the bits have a screw tip. As soon as the spade engages with the material, the drill itself will try to spin, and if you don't have a good grip on it, or have it braced against your body, the drill will spin around and hit your hands. Smaller tinkerers may need your help to drill these type of holes, or you can set it up on the drill press.

