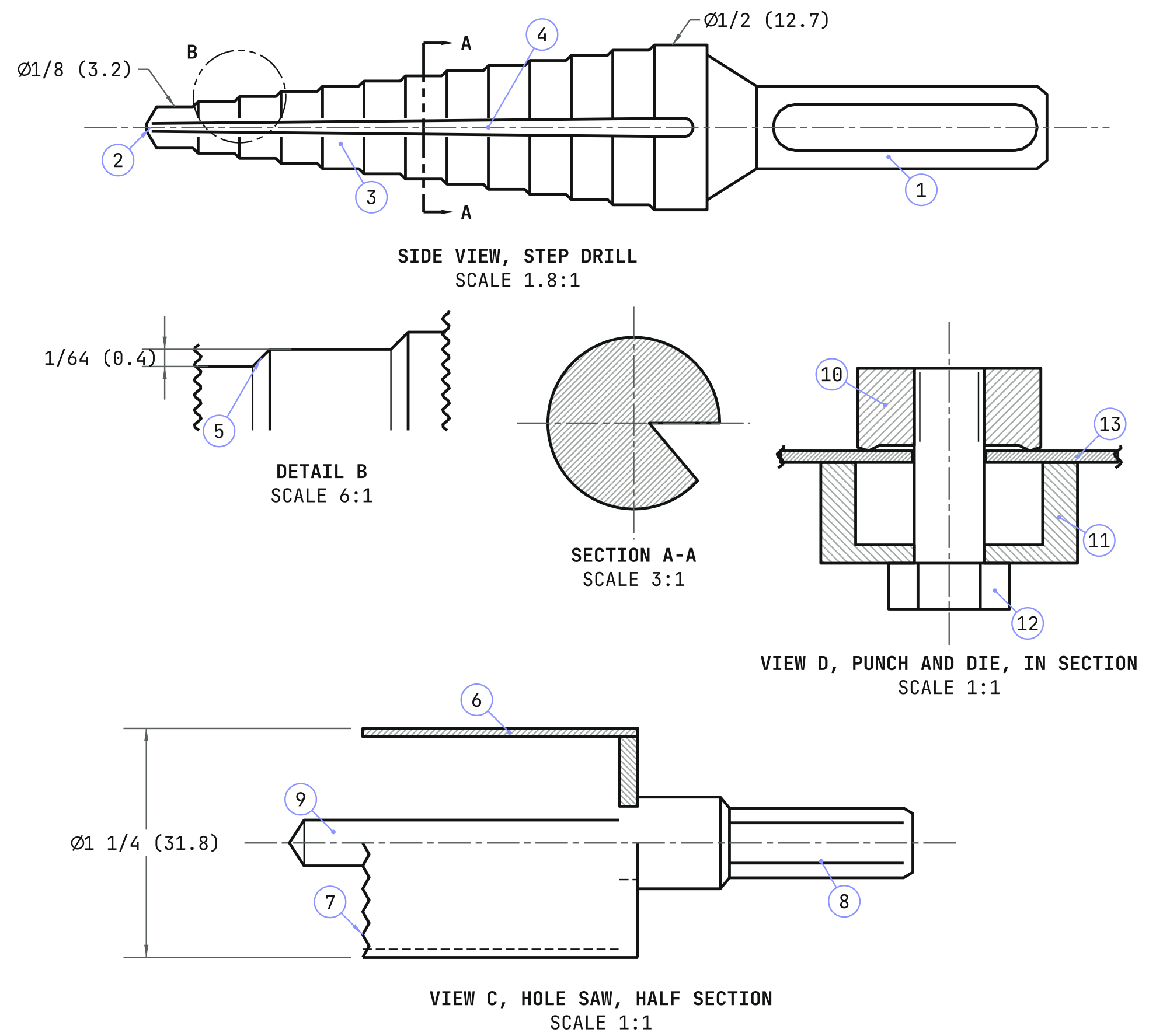
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Step Drills, Hole Saws and Hole Punches

Large holes in thin sheet, for access, wiring, tubes and lightening, need a different tool than a rivet hole.



STEP DRILLS	
RANGE IN	STEP
1/8-1/2	1/32
1/4-3/4	1/16
13 AND 9 HOLES	

HOLE SAW ARBOR	
THREAD	SAWS IN
1/2-20	9/16-1 3/16
5/8-18	1 1/4 AND UP

NOTES
1. DIMENSIONS IN INCHES (MM).
2. STEP DRILL: PILOT POINT FIRST, STOP ON THE STEP FOR THE SIZE.
3. STEP DRILLS: SOFT METALS AND THIN SHEET.
4. CLAMP THE SHEET AND BACK IT WITH WOOD.
5. LIGHTENING HOLES: FILE THE EDGE SMOOTH.

13	SHEET
12	DRAW SCREW
11	DIE
10	PUNCH
9	PILOT DRILL
8	ARBOR
7	TEETH
6	HOLE SAW CUP
5	STEP BEVEL
4	FLUTE
3	STEP
2	PILOT POINT
1	SHANK, 3 FLATS
ITEM	DESCRIPTION
TOOLS, LARGE HOLE	
SHEET 1 OF 1	
DWG TAP-TG-059	REV A
SCALE 1.8:1	

Types and sizes

Type	Size, inches (mm)	Use
Step drill, 1/32 in steps	1/8 to 1/2 (3.2 to 12.7), 13 holes	Holes between drill sizes in thin sheet; deburring
Step drill, 1/16 in steps	1/4 to 3/4 (6.4 to 19.1), 9 holes	Wiring, grommet and access holes in thin sheet
Hole saw on 1/2-20 arbor	9/16 to 1-3/16 (14 to 30)	Tube and grommet holes
Hole saw on 5/8-18 arbor	1-1/4 (31.8) and up	Lightening and access holes
Hole punch, punch and die with draw screw	Each punch marked with its size	Clean round holes without chips, also on the aircraft
Fly cutter	Adjustable	Lightening holes; drill press only

What to check when buying

Check	What to look for
Steps	1/32 or 1/16 in increments, each step marked with its size
Shank	Three flats so it cannot slip in the chuck; 1/4 in on the 1/8 to 1/2 in bit, larger on bigger bits
Material	High-speed steel for aluminum; cobalt for stainless steel and titanium
Hole saw teeth	Bi-metal teeth, a pilot drill you can replace and an arbor thread that matches the saw
Punch capacity	Sheet thickness and alloy marked on the set; punch, die and draw screw as a matched set
Fly cutter	Balanced body and a lockable arm; for a drill press only

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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Accessories

Item	What it is for
Arbor with pilot drill	Holds the hole saw; 1/2-20 or 5/8-18 thread
Spare pilot drills	A dull pilot walks and spoils the start
Cutting fluid	Cooler cut and longer teeth in aluminum and steel
Wood backing block	Supports thin sheet so it does not tear
Half-round file and deburring tool	Smooth edge on every large hole
Flanging dies	Flange lightening holes to restore stiffness

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