

4.6 — Oval Thumb

- [4.6.1 Selecting an oval thumb: starting bit, oval width, oval degree, and taper](#)
- [4.6.2 Entering the oval inputs \(step-by-step\)](#)
- [4.6.3 How the system calculates the oval cut from your inputs](#)

4.6.1 Selecting an oval thumb: starting bit, oval width, oval degree, and taper

4.6.1

oval

An oval thumb hole needs four inputs beyond the standard thumb measurements. Together they define the shape, orientation, and profile of the finished oval so Spectre Cloud can generate the drilling sequence. The calculation mechanics live in the **Oval Calculator (Book 05)** — this page covers what the four inputs are and where they go on the spec sheet.

☐☐ The Four Oval Inputs

- ☐ **Starting Bit** — the diameter of the round pilot hole drilled before any oval cuts. It fits within the oval's narrowest dimension so the oval passes open the hole outward from it.
- ☐ **Oval Width** — the finished width of the thumb hole (the larger of the two oval dimensions), including the appropriate fit clearance.
- ☐ **Oval Degree** — the orientation of the oval's width axis, set as an angle around the hole. It matches the oval to the thumb's natural resting angle.
- ☐ **Taper** — how much larger the top of the hole is than the bottom, matching the thumb's profile so it seats fully without binding at the base or feeling loose at the tip.

☐☐ Entering the Oval Inputs

1. In the thumb section, set the shape to **Oval** (see 4.5.1).
2. Enter the **starting bit**, **oval width**, **oval degree**, and **taper**.
3. Review all four before proceeding — an error in any one changes the drilling sequence.

⚠ **Verify with your Spectre team:** confirm the degree convention, the unit taper is entered in, and whether an oval depth field is required in addition to width.

Related Sections

- 4.5.1 — Selecting the thumb hole shape (Round or Oval)
- 4.6.2 — Entering the oval inputs (step-by-step)
- 4.6.3 — How the system calculates the oval cut
- 05 — Oval Calculator (full mechanics and derivation)

Tip: Oval degree is the most judgement-dependent of the four inputs — observe the bowler's thumb in a round hole before committing to an angle, and record your observation in Notes for future visits.

4.6.2 Entering the oval inputs (step-by-step)

4.6.2

oval

This page is the step-by-step companion to 4.6.1. The four oval inputs — **starting bit**, **oval width**, **oval degree**, and **taper** — are defined in 4.6.1, and the calculation that turns them into drilling movements is covered in 4.6.3 and the **Oval Calculator (Book 05)**.

1. Set the thumb shape to **Oval** (4.5.1).
2. Enter the **starting bit** diameter.
3. Enter the **oval width** (finished width, including clearance).
4. Enter the **oval degree** (orientation of the width axis).
5. Enter the **taper**.
6. Confirm all four values, then review the calculated oval cut (4.6.3) before drilling.

Related Sections

- 4.6.1 — The four oval inputs, defined
- 4.6.3 — How the system calculates the oval cut
- 05 — Oval Calculator

Tip: Print or display the spec sheet at the press before you start — having the four inputs and the calculated output visible throughout the cut prevents errors from misremembering a value mid-drill.

4.6.3 How the system calculates the oval cut from your inputs

4.6.3

oval

Once the four oval inputs are entered, Spectre Cloud calculates the drilling instructions — a set of **x-axis and y-axis offset movements** that tell you how to reposition the ball relative to the bit to open the round pilot hole into the correct oval. Rather than working out the geometry by hand, you read the offsets off the sheet. The full derivation lives in the **Oval Calculator (Book 05)**.

⚙ What the System Outputs

- □ The **x value** — the horizontal distance to move the ball relative to the bit.
- □ The **y value** — the vertical distance to move the ball relative to the bit.
- □ Together, x and y define a straight line through the pilot hole center at the angle set by the oval degree; the hole is elongated along that line to the oval width.
- □ The output pairs each distance with a **direction indicator** — read both the value and the direction before adjusting the press.

⚠ **Verify with your Spectre team:** confirm how direction is indicated in the output (signs, arrows, or text labels) and whether taper is output as separate values or integrated into the offset sequence.

□ Quick Sanity Check Before Cutting

- □ Oval degree near $0^\circ/180^\circ \rightarrow$ x near zero, y carries the travel.
- □ Oval degree near $90^\circ \rightarrow$ y near zero, x carries the travel.
- □ Oval degree near $45^\circ/135^\circ \rightarrow$ x and y roughly equal.

- ☐ A non-cardinal angle that produces a zero on either axis means something was entered incorrectly.

Related Sections

- 4.6.1 — The four oval inputs, defined
- 4.6.2 — Entering the oval inputs
- 05 — Oval Calculator (full derivation)
- 06 — Drilling Your First Ball

Tip: If your press has a digital readout for lateral positioning, zero it after drilling the pilot hole so the x and y offsets can be dialled in directly from the Spectre Cloud output.