4.5.1 Selecting "Oval" thumb hole on the spec sheet

Selecting "Oval" thumb hole on the spec sheet

4.5.1 **KEY** oval

Drilling an oval thumb hole requires more setup information than a round hole. In addition to the standard thumb measurements, Spectre Cloud needs four oval-specific inputs to generate the correct drilling sequence: the **starting bit size**, the **oval width**, the **oval degrees**, and the **taper** . Together these four values define the shape, orientation, and profile of the finished oval hole so the drill press operator knows exactly where and how to make each cut.

□□ Starting Bit

The starting bit is the diameter of the initial round pilot hole drilled before any oval cuts are made. It must fit entirely within the narrowest dimension of the intended oval — typically the depth — so that all subsequent oval passes remove material outward from the pilot hole without cutting outside the intended oval boundary.

- □ Select the largest round bit that fits comfortably within the oval's narrowest dimension (usually the depth measurement).
- □ A larger starting bit means less material to remove on the oval passes, reducing the risk of tearout or an uneven finish.
- □ Do not select a starting bit larger than the oval's narrowest dimension — it will cut outside the intended oval shape before the oval passes begin.

- Do not select a starting bit so small that an excessive number of oval passes are needed — this increases drilling time and the risk of the ball shifting in the fixture.

Tip: A starting bit sized to the depth measurement (the narrower axis for most thumbs) is a reliable default. If depth and width are close in value, size down by `1/32"` to give yourself a clean margin on the oval passes.

↔ Oval Width

The oval width is the finished width of the thumb hole — the larger of the two oval dimensions, measured across the thumb at the point of insertion. This is the target dimension the oval passes will open the starting pilot hole out to.

- Oval width should include the appropriate fit allowance above the raw thumb width measurement — the same `1/32"` to `1/16"` clearance used for round hole sizing.
- The difference between the oval width and the starting bit diameter determines how much material the oval passes must remove on each side.
- Do not confuse oval width with the starting bit size — they are different values. The starting bit is always smaller than the oval width.

Verify with Spectre team: confirm whether Spectre Cloud also requires a separate oval depth entry field in addition to oval width, or whether depth is derived from the starting bit size and the width entry together.

Oval Degrees

Oval degrees define the **orientation** of the oval cut — the angle at which the width axis of the oval is positioned relative to the thumb hole, using the hole as a 360° circle with `0°` / `360°` at the top, toward the fingers.

Because the thumb does not sit perfectly vertical in the hole — it rests at a natural angle unique to each bowler's hand — the oval must be oriented to match that angle rather than defaulting to a horizontal cut.

Degree value	Clock position equivalent	What it means
`0°` / `360°`	12:00	Oval width axis points directly toward the fingers — cuts made at top and bottom of the hole
`45°`	~1:30	Oval width axis rotated 45° clockwise from top

Degree value	Clock position equivalent	What it means
`90°`	3:00	Oval width axis runs horizontally — cuts made at left and right of the hole
`135°`	~4:30	Oval width axis rotated 135° clockwise from top — a common angle for right-handed bowlers whose thumb naturally rests toward the lower-right quadrant
`180°`	6:00	Oval width axis points directly away from the fingers

How to determine the correct oval degrees for a bowler

1. Ask the bowler to place their thumb into a round hole of approximately the correct size — either a fitting gauge or a previously drilled ball of similar sizing.
2. Observe the natural resting angle of the thumb inside the hole — specifically, which direction the thumb presses most firmly against the hole wall.
3. Identify the clock position that corresponds to that contact point — this is the direction the oval width axis should face.
4. Convert the clock position to degrees using the 0° = 12:00 convention and enter the value in Spectre Cloud.

Tip: For most right-handed bowlers, the thumb naturally rests toward the lower-right of the hole — oval degrees in the `120°`–`150°` range are common starting points. For left-handed bowlers, the natural resting angle typically mirrors this toward the lower-left — `210°`–`240°`. These are starting references only; always observe the individual bowler's thumb position directly. *Verify with Spectre team: confirm whether Spectre Cloud's degree convention is clockwise from 0° at top-toward-fingers, as described here.*

□□ Taper

Taper describes how much larger the top of the thumb hole is compared to the bottom. The thumb is not a uniform cylinder — it widens toward the base, and the amount of widening varies significantly between bowlers. A hole with the correct taper allows the thumb to seat fully at its natural depth without binding at the base or feeling loose at the tip.

- □ A bowler with a **meaty or thick thumb base** — where the thumb widens significantly below the first knuckle — requires **more taper**. Without it, the base of the thumb will bind against the narrower lower portion of the hole before the thumb is fully seated.

- A bowler with a **slender or tapered thumb base** — where the thumb stays relatively consistent in diameter from tip to base — requires **less taper**. Excess taper on a slender thumb produces a hole that feels sloppy at insertion depth.
- Taper is assessed visually and by feel during the fitting — observe how the bowler's thumb narrows or widens from the insertion point toward the base.

Verify with Spectre team: confirm the unit in which taper is entered in Spectre Cloud — whether it is expressed in degrees, as a measurement difference between top and bottom diameter (e.g. `1/16"` *larger at top than bottom), or as a categorical selection (e.g. none / light / standard / heavy). Also confirm the typical range of taper values entered in practice.*

Entering All Four Values in Spectre Cloud

1. In the spec sheet thumb section, confirm `Oval` is selected as the hole shape.
2. Enter the **starting bit** diameter — the largest round bit that fits within the oval's narrowest dimension.
3. Enter the **oval width** — the finished width of the oval hole including fit allowance.
4. Enter the **oval degrees** — the orientation angle of the oval width axis, measured clockwise from `0°` at top-toward-fingers.
5. Enter the **taper** value — the amount by which the top of the hole is larger than the bottom, per the bowler's thumb profile.
6. Review all four values before proceeding — an error in any one of these inputs will affect the drilling sequence generated by Spectre Cloud.

Tips for Oval Input Accuracy

- Take your time with oval degrees — it is the most judgement-dependent of the four inputs and the most common source of oval thumb fit complaints. When in doubt, observe the bowler's thumb in a round hole before committing to a degree value.
- Record your fitting observations in the **Notes** field alongside the entered values — e.g. `Thumb rests at approx. 4:30 position. Meaty base, standard taper applied.` This context is invaluable on future visits.
- For a bowler's first oval thumb fitting at your shop, consider scheduling extra time — the observation and measurement steps take longer than a standard round fitting.
- Do not estimate oval degrees without observing the bowler's thumb in a hole. The natural resting angle varies enough between individuals that a default assumption will produce a poor fit for a meaningful proportion of bowlers.

Related Sections

- 4.5.1 — Selecting "Oval" thumb hole on the spec sheet
- 4.5.3 — How the system calculates the oval cuts from your inputs
- 4.5.4 — Entering the span with an oval thumb
- 4.4.1 — Selecting "Round" thumb hole on the spec sheet
- Book 05 — Oval Calculator

Tip: An oval thumb hole, done well, is one of the most significant fit improvements you can offer a competitive bowler. The extra inputs and observation time are an investment in a result that round drilling simply cannot match for bowlers whose thumbs do not sit symmetrically in a circular hole.

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