9.2.1 Why is my oval cut showing unexpected values?

Why is my oval cut showing unexpected values?

> 9.2.1 FAQ

If the Oval Calculator is producing values that look wrong — a cut size that seems too large or too small, an angle that does not match your expectation, or V/H values that appear to be reversed — there is almost always a specific, identifiable cause. Unexpected oval output is rarely a system error. It is usually a settings mismatch, a measurement entry issue, or a configuration that has not been verified against the physical press. This page works through the most common causes in order of likelihood, giving you a clear path to diagnosing and resolving the issue.

□□ Step 1 — Check the Oval Calculator Settings

The most frequent cause of unexpected oval output is a mismatch between the Oval Calculator settings and either the intended calculation or the physical press setup. Before looking at measurement values, confirm each of the following in **Settings → Oval Calculator**:

Oval Calculation Method

Confirm whether **EDGE** or **CENTER** is selected. Switching between these methods moves the pitch anchor point and changes the output values even when all measurements are identical. If you

expected EDGE output and CENTER is selected — or vice versa — the values will be consistently off by a predictable amount tied to the oval size.

- Check which method is configured and confirm it is the one you intended to use for this spec sheet.
- If the method was recently changed by another staff member, the spec sheet in question may have been calculated under a different method than the one currently selected.
- See sections 5.6.1–5.6.5 for a full explanation of EDGE vs. CENTER behaviour and what values each produces.

Add Pitch Thumb

If **Add Pitch Thumb** is enabled and you were not expecting thumb pitch to influence the finger oval calculation, this setting is a likely cause of unexpected output — particularly if the bowler has significant thumb pitch values.

- Confirm whether Add Pitch Thumb is on or off and whether this matches your intended configuration.
- If the thumb pitch values on the spec sheet are unusually large or were entered in error, Add Pitch Thumb will amplify the effect on the finger ovals.

Oval Degree Increment

If oval angles are appearing as round multiples of 5 when you expected single-degree precision — or vice versa — confirm the **Oval Degree Increment** setting matches the resolution you need.

- Switch between 1° and 5° in Settings and re-run the calculator to see how the output changes.

Flip V/H

If the V and H values appear to be swapped — the larger value is on the axis you would expect to carry the smaller, or the oval orientation does not match the physical result at the press — the **Flip V/H** setting is almost certainly the cause.

- Check the current Flip V/H state and confirm it matches your press axis convention.
- Run the worked example in section 5.7.2 to confirm which configuration produces the correct output for your press.
- Drill a test hole on a scrap ball or plug after correcting the setting to verify the change before returning to customer equipment.

□□ Step 2 — Check the Pitch Values on the Spec Sheet

The Oval Calculator derives oval cut values from the pitch values entered on the spec sheet. An unexpected oval output very often traces back to an unexpected pitch value — either entered incorrectly or not matching the fitting intention.

Pitch sign — forward vs. reverse

A pitch value entered with the wrong sign — forward entered as reverse, or vice versa — produces an oval cut that is orientated or sized for the opposite fitting intent. This is one of the most common entry errors and one of the hardest to spot by looking at the oval output alone.

- □ Read each pitch value on the spec sheet explicitly as "*X forward*" or "*X reverse*" — not just as a number.
- □ Compare against the bowler's previous spec sheets if available — a pitch sign that differs from every previous drilling without explanation is almost certainly an entry error.

Pitch magnitude

A pitch value that is plausible but larger or smaller than intended — for example, `3/8"` entered where `1/8"` was intended — directly affects oval cut size. At larger oval sizes the effect is more pronounced; at smaller sizes it may fall within the rounding tolerance of the degree increment setting and be less immediately obvious.

- □ Re-read the pitch values on the spec sheet carefully, including the unit — a decimal entry where a fractional value was intended can produce a significantly different calculation.
- □ Cross-check against auto-suggestions if available — a pitch value far outside the suggestion range for the entered measurements is a flag worth investigating.

Thumb pitch affecting finger ovals

If Add Pitch Thumb is enabled, an incorrectly entered thumb pitch value will flow through to the finger oval calculation. Check the thumb pitch fields on the spec sheet as part of the pitch review, not just the finger pitch fields.

□□ Step 3 — Check the Span Values

Span values affect the context in which pitch values are interpreted by the Oval Calculator. A span entered in the wrong unit, or with a span type that does not match how the measurement was taken, can produce oval output that is technically correct for the entered values but wrong for the intended fit.

- □ Confirm the **span type** selected on the spec sheet matches how the span was physically measured — Full Span, Cut to Cut, or Oval. A span measured Full Span but entered as Cut to Cut introduces a systematic offset into the calculation.
- □ Confirm the span values are in the expected range for the bowler's hand size and grip type. A span value significantly outside the normal range for a bowler of this profile is a flag worth verifying against the physical measurement.
- □ Confirm the unit — if the shop uses imperial measurements and a metric value was accidentally entered, the span will be interpreted as a very different distance from the one measured.

□□ Step 4 — Check Whether the Calculator Was Re-Run After a Change

If pitch or span values were updated after the Oval Calculator was last run, the displayed oval output reflects the old values — not the current ones. This is a particularly common issue when a spec sheet was cloned and values were adjusted without re-running the calculator.

- □ Re-run the Oval Calculator any time a pitch or span value is changed, without exception.
- □ If you are unsure whether the calculator output is current, re-run it regardless — the recalculation takes seconds and eliminates any doubt.
- □ When reviewing a cloned spec sheet, treat the oval values as stale until confirmed by a fresh calculator run.

□□ Step 5 — Check the Oval Cut Direction Setting

If oval output is appearing without directional labels when you expected F/B or L/R labels — or directional labels are appearing when you expected none — the **Oval Cut Direction** setting does not match the expectation.

- □ Confirm the Oval Cut Direction setting in **Settings → Oval Calculator** and verify it matches your shop's configuration intent.
- □ A direction setting of NONE suppresses directional labels on the output regardless of what the calculator computes — this is correct behaviour for NONE mode, not an error.
- □ See sections 5.5.1–5.5.3 for guidance on which direction setting is appropriate for different shop setups.

□□ Diagnostic Summary — Unexpected Oval Output

Symptom	Most likely cause	Where to check
Oval size seems too large	Pitch value too high, or EDGE vs. CENTER mismatch	Spec sheet pitch fields; Settings → Oval Calculation Method
Oval size seems too small	Pitch value too low, or wrong span type	Spec sheet pitch and span fields; Settings → Span Type
V and H values appear swapped	Flip V/H misconfigured	Settings → Flip V/H on Oval Cuts
Oval angle unexpected	Pitch sign error, or degree increment mismatch	Spec sheet pitch fields; Settings → Oval Degree Increment
No directional labels shown	Oval Cut Direction set to NONE	Settings → Oval Cut Direction
Output unchanged after editing pitch	Oval Calculator not re-run after the change	Re-run the Oval Calculator on the spec sheet
Finger ovals affected by thumb pitch	Add Pitch Thumb enabled unexpectedly	Settings → Add Pitch Thumb
Output inconsistent with previous spec sheets	Settings changed since previous spec sheets were created	Compare current Settings against the method used when previous sheets were created

⚠ When the Output Is Correct but the Fit Is Wrong

Occasionally the oval output is technically correct — the calculator has done exactly what it was configured to do — but the finished hole does not produce the intended fit. In this case the issue is upstream of the calculation:

- **The pitch value is correct but the fit intention was wrong** — the measurement was right, but the pitch choice was not optimal for this bowler. Adjust the pitch value based on the bowler's feedback and re-drill.
- **The oval size is correct but the direction is wrong for the bowler's release** — consider whether the Oval Cut Direction setting reflects how this bowler actually releases the ball.
- **The settings are correct but the press was set up incorrectly** — a correct spec sheet value set on the wrong axis at the press produces the same result as a Flip V/H error without the setting being the cause. Verify the physical press setup against the spec sheet output independently.

Related Sections

- 5.5.1 — Setting up: Oval Cut Direction = NONE in Settings
- 5.6.1 — EDGE method explained
- 5.6.2 — CENTER method explained
- 5.6.5 — Choosing EDGE vs. CENTER: which method fits which bowler
- 5.7.1 — Using Flip V/H on oval cuts to match your machine's axis
- 5.7.2 — Worked example: how flipping V/H changes the output numbers
- 9.1.1 — Recommended Settings configuration for a new pro shop

Tip: The fastest diagnostic path for any unexpected oval output is to work backwards from the symptom to the setting. V/H swap → Flip V/H. Size unexpectedly large → pitch too high or EDGE vs. CENTER. No directional labels → Oval Cut Direction is NONE. In most cases the cause is identified within sixty seconds of looking at the right setting. If none of the settings account for the output, re-enter the spec sheet values from scratch on a new spec sheet and compare — a data entry error that is hard to find in an existing sheet is often immediately obvious when the values are re-entered fresh.

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