5.2 — Method A: V/H Mode (Most Common)

5.2.1 Setting up: Oval Cut Direction = V/H in Settings

Setting up: Oval Cut Direction = V/H in Settings

5.2.1 **CALC** oval method

Before using the Oval Calculator, Spectre Cloud lets you choose how oval measurements are displayed and recorded throughout the app. The **Oval Cut Direction** setting controls whether ovals are expressed as **Vertical × Horizontal (V/H)** or **Horizontal × Vertical (H/V)** — matching whichever convention your shop already uses.

□□ What Is the Oval Cut Direction Setting?

When a drilled finger or thumb hole is not perfectly round, its shape is described as an oval with two measurements: one across the short axis and one across the long axis. The order in which those two values are written — and the direction they are labeled — varies between driller conventions and regional standards.

- □ **V/H (Vertical first, then Horizontal)** — The vertical measurement (along the span direction, toe-to-heel) is listed first, followed by the horizontal measurement (side-to-side). Common in many IBPSIA-trained shops.
- □ **H/V (Horizontal first, then Vertical)** — The horizontal measurement is listed first. Preferred in some regional drilling traditions and older pro shop workflows.

Spectre Cloud uses whichever format you select here — consistently across spec sheets, oval calculations, and printed reports — so your records always match the way you speak and write measurements in your shop.

□□ How to Change the Oval Cut Direction Setting

□□ Desktop

1. Click your **Pro Shop name** (or the profile icon) in the top-right corner of the screen.
2. Select **Settings** from the dropdown menu.
3. Navigate to the **Spec Sheet** (or **Oval**) settings section.
4. Locate the **Oval Cut Direction** option.
5. Select either `V/H` or `H/V` to match your shop's convention.
6. Click **Save** (or your changes may save automatically — confirm on screen).

□□ Mobile / Tablet

1. Tap the **avatar icon** or your shop name at the top of the screen.
2. Tap **Settings**.
3. Scroll to the **Spec Sheet** or **Oval** section.
4. Tap **Oval Cut Direction** and choose `V/H` or `H/V`.
5. Confirm your selection — the setting saves automatically.

□□ V/H vs. H/V at a Glance

Format	First Value	Second Value	Example Display
V/H	Vertical (toe-to-heel)	Horizontal (side-to-side)	`1-1/16 × 1`
H/V	Horizontal (side-to-side)	Vertical (toe-to-heel)	`1 × 1-1/16`

Both formats describe the same physical hole — only the order of the two values on screen (and on printed spec sheets) changes.

□□ When to Configure This

- Set this **before** you begin entering oval measurements for the first time — changing it later will affect how new entries are labeled, but will not retroactively reformat saved spec sheets.
- If your shop is **migrating from another system** (such as Ebonite ProShop Coordinator or a paper-based workflow), match the format you previously used to keep your historical records consistent.
- For **multi-staff shops**, the setting applies account-wide — all staff members will see the same oval direction format once it is saved.

Related Sections

- 5.2.2 — Setting up: Oval Measurement Units (inches vs. millimeters)
- 5.1 — Overview of the Oval Calculator
- 5.3 — Entering Oval Measurements on a Spec Sheet
- 2.x — Settings Overview

Tip: Not sure which convention your shop uses? Check an existing paper spec sheet or your previous software — whichever value you wrote first (and labeled as the primary measurement) is your preferred direction. When in doubt, **V/H** aligns with IBPSIA standard documentation in most regions. ⚠ *Verify the exact setting name and save behavior with the Spectre team if your Settings screen looks different from the steps above.*

5.2.2 Entering Starting Bit and Oval Width — Bit Size mode

Entering Starting Bit and Oval Width — Bit Size mode

> `5.2.2` oval method

When using the Oval Calculator in **Bit Size mode**, you enter two values Spectre Cloud uses to calculate the resulting oval: the **starting drill bit size** (the diameter of the round bit used to open the hole) and the **oval width** (the amount of stretch applied beyond the original round hole). This mode is designed for drillers who think and record measurements in terms of their tooling rather than the finished hole dimensions.

□□ What Is Bit Size Mode?

Spectre Cloud's Oval Calculator offers two input modes for describing an oval hole:

- □ **Bit Size mode** — You enter the drill bit diameter used to open the hole, plus the width of the oval stretch. Spectre Cloud calculates the resulting oval dimensions for you.
- □ **Direct Entry mode** — You enter the final oval dimensions (V and H measurements) directly as measured with a gauge.

Bit Size mode is ideal when your workflow starts at the drill press rather than the gauge. If you know you used a `1"` bit and stretched the hole `1/16"`, you can enter exactly that — Spectre Cloud handles the arithmetic.

□□ The Two Fields Explained

Starting Bit Size

This is the **diameter of the drill bit** used to create the initial round hole before any oval stretch is applied. Enter the bit size in the same unit your shop uses (inches or fractions of inches in most regions). Common values range from `31/32"` through `1-3/16"` for finger holes, and up to `1-1/2"` or larger for thumb holes.

- □ Enter the bit you actually used at the press — not an estimated or nominal size.
- □ Do not enter the final hole diameter — that is a result, not an input in this mode.

Oval Width

This is the **amount of stretch** applied to the hole beyond the round starting size — measured across the direction of the oval cut. For example, if you opened a `1"` hole and stretched it `1/16"` in the toe-to-heel direction, your oval width is `1/16"`.

- □ The oval width represents the *additional* material removed, not the total hole size.
- □ Common oval widths range from `1/32"` to `3/16"` depending on fit requirements.
- □ Do not enter the full oval dimension — Spectre Cloud adds the oval width to the starting bit size to compute the result.

□□ How to Enter Values in Bit Size Mode

□□ Desktop

1. Open the **Oval Calculator** from the navigation menu.
2. Confirm the input mode is set to **Bit Size**. If not, switch modes using the mode selector at the top of the calculator.
3. In the **Starting Bit** field, enter the drill bit diameter (e.g., `1` for a 1-inch bit).
4. In the **Oval Width** field, enter the stretch amount (e.g., `1/16`).
5. The calculator displays the resulting oval dimensions immediately, formatted according to your **Oval Cut Direction** setting (V/H or H/V).

□□ Mobile / Tablet

1. Open the **Oval Calculator** from the main menu or avatar icon.
2. Check that **Bit Size** mode is selected at the top of the screen.
3. Tap the **Starting Bit** field and enter the bit diameter using the on-screen input.
4. Tap the **Oval Width** field and enter the stretch amount.
5. The resulting oval is calculated and displayed automatically.

□□ Example Calculation

Input	Value Entered	What It Represents
Starting Bit	`1"`	Round hole opened with a 1-inch bit
Oval Width	`1/16"`	Stretch applied beyond the round hole
Resulting Oval (V/H)	`1-1/16 × 1`	Oval dimensions as recorded on the spec sheet

The vertical dimension grows by the oval width; the horizontal dimension remains equal to the starting bit size. (Results will display in H/V order if your shop is configured that way — see **Oval Cut Direction** in Settings.)

□ Tips for Accurate Entry

- □ **Use consistent fraction notation** — Spectre Cloud accepts standard fractional input (e.g., `1-1/16`). Enter values exactly as you would write them on a spec sheet.
- □ **Double-check your bit drawer** before entering — bit sizes stamped on shanks can wear; verify with a caliper if in doubt.
- □ **Oval width direction follows your V/H setting** — the stretch is applied along whichever axis is listed first in your Oval Cut Direction preference.
- □ **Don't mix modes mid-spec-sheet** — choose Bit Size mode or Direct Entry mode consistently across a bowler's spec sheet for clean historical records.

Related Sections

- 5.2.1 — Setting up: Oval Cut Direction (V/H) in Settings
- 5.2.3 — Entering Oval Dimensions in Direct Entry mode
- 5.1 — Overview of the Oval Calculator
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: If you are unsure whether a hole was stretched in the V or H direction, check your drill press setup notes or the physical ball before entering data — Spectre Cloud records the direction based on your Oval Cut Direction setting, so entering the correct stretch value in the correct context keeps your spec history accurate. ⚠ *Verify the exact field names, mode selector label, and fraction input format against the live app — contact the Spectre team if your calculator screen differs from the steps above.*

5.2.3 Entering Starting Bit and Oval Width — Decimal mode

Entering Starting Bit and Oval Width — Decimal mode

> 5.2.3 oval method

When using the Oval Calculator in **Decimal mode**, you enter the same two core values as Bit Size mode — the **starting drill bit diameter** and the **oval width** — but expressed as **decimal numbers** rather than fractional inches. This mode suits drillers who use digital calipers, prefer decimal-based record keeping, or work in metric-adjacent workflows where fractions feel imprecise.

□□ What Is Decimal Mode?

Decimal mode is an alternative input format for the Oval Calculator's Bit Size workflow. The underlying calculation is identical to Bit Size (fraction) mode — Spectre Cloud takes your starting bit diameter, adds the oval width, and returns the resulting oval dimensions. The only difference is how you enter those values.

- □ **Decimal mode** — Values entered as decimal numbers (e.g., `1.0625` for 1-1/16"). Ideal for shops using digital calipers or decimal drill charts.
- □ **Bit Size (fraction) mode** — Values entered as fractional inches (e.g., `1-1/16`). Ideal for shops working from traditional fraction-based bit sets.

Both modes produce the same oval result — choose whichever matches how your tooling is labeled and how your team communicates measurements.

□□ The Two Fields Explained

Starting Bit Size (Decimal)

Enter the **diameter of the drill bit** used to open the initial round hole, as a decimal value. If your caliper reads `1.031"`, enter exactly that. Common decimal bit sizes used in bowling drilling fall roughly between `0.968"` and `1.500"` depending on hole type and bowler fit.

- □ Read the value directly from your digital caliper or decimal drill chart for best accuracy.
- □ Enter as many decimal places as your measurement tool provides — Spectre Cloud handles the precision.
- □ Do not convert to fractions before entering — that introduces rounding error. Enter the decimal as measured.

Oval Width (Decimal)

Enter the **amount of stretch** applied beyond the starting round hole, as a decimal value. A stretch of 1/16" is `0.0625"`; a stretch of 3/32" is `0.09375"`. Typical oval widths in decimal terms fall between `0.031"` and `0.187"`.

- □ Measure the actual stretch applied at the press — do not estimate.
- □ The oval width is the *additional* material removed, not the full hole size.
- □ Do not enter the total oval dimension — Spectre Cloud adds the width to the starting bit to compute the result.

□□ How to Enter Values in Decimal Mode

□□ Desktop

1. Open the **Oval Calculator** from the navigation menu.
2. Use the mode selector at the top of the calculator to switch to **Decimal** mode.

3. In the **Starting Bit** field, type the bit diameter as a decimal (e.g., `1.0625`).
4. In the **Oval Width** field, type the stretch amount as a decimal (e.g., `0.0625`).
5. Spectre Cloud calculates and displays the resulting oval dimensions immediately, formatted per your **Oval Cut Direction** setting (V/H or H/V).

□□ Mobile / Tablet

1. Open the **Oval Calculator** from the main menu or avatar icon.
2. Tap the mode selector and choose **Decimal** mode.
3. Tap the **Starting Bit** field and enter the decimal diameter using the numeric keyboard.
4. Tap the **Oval Width** field and enter the decimal stretch amount.
5. The resulting oval displays automatically below the input fields.

□□ Common Fraction-to-Decimal Reference

Fraction	Decimal Equivalent	Typical Use
`1/32"`	`0.03125"`	Minimum practical oval width
`1/16"`	`0.0625"`	Common light oval stretch
`3/32"`	`0.09375"`	Moderate oval stretch
`1/8"`	`0.125"`	Heavier oval stretch
`3/16"`	`0.1875"`	Maximum common oval width
`1"`	`1.0"`	Typical round starting bit size
`1-1/16"`	`1.0625"`	Common finger hole bit size
`1-1/8"`	`1.125"`	Larger finger or thumb bit size

□□ Example Calculation

Input	Value Entered	What It Represents
Starting Bit	`1.0625"`	Round hole opened with a 1-1/16" bit
Oval Width	`0.0625"`	1/16" stretch applied beyond the round hole

Input	Value Entered	What It Represents
Resulting Oval (V/H)	`1.125 × 1.0625`	Oval dimensions recorded on the spec sheet

The output may display in fractional or decimal format depending on your Spectre Cloud display settings. If your shop records spec sheets in fractions, confirm your output format preference in **Settings** before entering measurements on live spec sheets.

Tips for Accurate Decimal Entry

- **Use a digital caliper** set to inches for the most reliable decimal readings — avoid estimating decimal equivalents from fraction markings on analog tools.
- **Confirm your decimal point** before saving — entering `10.625` instead of `1.0625` will produce an obviously wrong result, but smaller errors (e.g., `1.625` vs. `1.0625`) can be harder to catch at a glance.
- **Oval width direction follows your V/H setting** — the stretch is applied along whichever axis is listed first in your Oval Cut Direction preference, same as in fraction mode.
- **Don't round prematurely** — enter the full decimal your caliper displays. Rounding `1.031"` to `1.03"` before entry introduces a small but cumulative error across a bowler's spec history.

Related Sections

- 5.2.1 — Setting up: Oval Cut Direction (V/H) in Settings
- 5.2.2 — Entering Starting Bit and Oval Width — Bit Size mode
- 5.2.4 — Entering Oval Dimensions in Direct Entry mode
- 5.1 — Overview of the Oval Calculator
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: Decimal mode and Bit Size (fraction) mode are interchangeable — use whichever your calipers or bit set naturally produces. If your shop uses both analog and digital tools across staff members, pick one mode and standardize it in your onboarding process so spec sheets stay consistent over time. ⚠ *Verify the exact mode selector label, decimal input format, and output display options against the live app — contact the Spectre team if your calculator screen differs from the steps above.*

5.2.4 Reading the DIFF (decimal difference) auto-calculation

Reading the DIFF (decimal difference) auto-calculation

> `5.2.4` oval method

Whenever you enter oval measurements in the Oval Calculator, Spectre Cloud automatically computes the **DIFF** — the decimal difference between the two oval dimensions. You do not need to calculate this manually. Understanding what the DIFF value represents and how to read it helps you interpret your oval results quickly and record accurate spec sheet data.

□□ What Is the DIFF?

The DIFF is the **arithmetic difference between the two oval measurements** — the larger dimension minus the smaller dimension — expressed as a decimal number. It represents how far the hole deviates from perfectly round: a DIFF of `0.000` means the hole is a true circle, while a larger DIFF indicates a more pronounced oval shape.

- □ **DIFF = Larger dimension − Smaller dimension**
- □ Always expressed as a positive decimal value (e.g., `0.0625`, `0.094`)
- □ A DIFF of `0.000` means the hole is perfectly round — no oval
- □ A larger DIFF means a more elongated oval shape

Where the DIFF Appears

Spectre Cloud displays the DIFF value automatically as soon as both oval dimensions have been entered or calculated. Depending on the input mode you are using, this happens slightly differently:

Input Mode	When DIFF Appears	What Triggers It
Bit Size (Fraction)	Immediately after both fields are filled	Starting bit + oval width entered
Decimal	Immediately after both fields are filled	Starting bit + oval width entered as decimals
Direct Entry	Immediately after both V and H values are entered	Both oval dimensions entered directly

No button press or confirmation is needed — the DIFF updates in real time as you type.

How to Read the DIFF Value

The DIFF is always shown as a decimal, regardless of which input mode you used to enter the oval. If you entered fractional values, Spectre Cloud converts internally and displays the DIFF as its decimal equivalent.

Oval Dimensions (V/H)	DIFF Calculation	DIFF Value	What It Means
`1-1/16 × 1`	1.0625 − 1.0000	`0.0625`	Light oval — 1/16" stretch
`1-1/8 × 1`	1.1250 − 1.0000	`0.1250`	Moderate oval — 1/8" stretch
`1-3/16 × 1-1/16`	1.1875 − 1.0625	`0.1250`	Moderate oval on a larger hole
`1 × 1`	1.0000 − 1.0000	`0.0000`	Perfectly round — no oval

How the DIFF Is Used in Practice

- **Spec sheet documentation** — The DIFF is recorded alongside the oval dimensions on the bowler's spec sheet, giving future drillers an at-a-glance summary of hole shape without needing to do the math themselves.
- **Fit consistency checks** — Comparing the DIFF across a bowler's spec history lets you see whether the oval has grown, shrunk, or remained stable over multiple drillings — a useful indicator of fit drift over time.

- **Cross-hole comparison** — When a bowler has different oval stretches on their ring and middle finger holes, the DIFF for each hole makes the difference immediately visible without reading raw dimensions.
- **Communication between drillers** — Saying "the DIFF is 0.0625" is faster and less ambiguous than reading two full fractional dimensions aloud, especially when fitting over the phone or handing off a job.

Important Notes on DIFF Precision

- The DIFF is computed from the **decimal equivalents** of your oval values — if you entered fractions, Spectre Cloud converts them before subtracting, so the DIFF is always precise to the decimal.
- Spectre Cloud displays the DIFF to a **consistent number of decimal places** — do not round this value when transcribing it to paper records, as small differences (e.g., `0.0625` vs. `0.063`) matter over a bowler's long-term fit history.
- The DIFF does **not** indicate the direction of the oval (vertical vs. horizontal) — that information comes from the V/H or H/V dimension pair itself and your **Oval Cut Direction** setting.
- A DIFF of `0.000` does **not** mean no hole was drilled — it means the hole that was drilled is round. Always read the full oval dimensions alongside the DIFF.

Related Sections

- 5.2.1 — Setting up: Oval Cut Direction (V/H) in Settings
- 5.2.2 — Entering Starting Bit and Oval Width — Bit Size mode
- 5.2.3 — Entering Starting Bit and Oval Width — Decimal mode
- 5.2.5 — Entering Oval Dimensions in Direct Entry mode
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: The DIFF is one of the most useful values on a spec sheet for long-term bowler fit tracking — even a small change from `0.0625` to `0.0938` across two drillings can signal that a finger hole is being stretched during use and may need attention. Get in the habit of reviewing the DIFF alongside the raw dimensions whenever you re-drill a ball for a returning bowler. ⚠ *Verify the exact label Spectre Cloud uses for this field (it may appear as "DIFF", "Difference", or "Decimal Difference") and confirm the number of decimal places displayed — contact the Spectre team if your Oval Calculator screen differs from the description above.*

5.2.5 Adding oval cut rows using the + button

Adding oval cut rows using the + button

> 5.2.5 oval method

The Oval Calculator in Spectre Cloud is not limited to a single hole calculation at a time. Using the **+ button**, you can add multiple oval cut rows within the same calculator session — one row per hole — so that an entire ball's finger and thumb ovals can be calculated, reviewed, and applied to a spec sheet together without resetting or re-entering common values between holes.

What the + Button Does

Each time you tap or click the **+ button** in the Oval Calculator, Spectre Cloud adds a new blank input row to the calculator. Each row is independent and holds its own set of values:

- Its own **starting bit size** (fraction or decimal, depending on your mode)
- Its own **oval width**
- Its own **DIFF**, calculated automatically as soon as both values are entered
- Its own **resulting oval dimensions**, displayed in your configured V/H or H/V format

Rows are displayed stacked vertically in the calculator, making it easy to compare the ovals across multiple holes at a glance before committing any values to a spec sheet.

How to Add and Fill Oval Cut Rows

Desktop

1. Open the **Oval Calculator** and enter the values for your first hole in the initial row.
2. Review the calculated oval and DIFF for that row.
3. Click the **+ button** to add a new row for the next hole.
4. Enter the starting bit size and oval width for the second hole in the new row.
5. Repeat for each additional hole — ring finger, middle finger, thumb, or any combination your spec sheet requires.
6. Once all rows are complete, apply the results to the spec sheet as a set.

Mobile / Tablet

1. Open the **Oval Calculator** and complete the first row's values.
2. Tap the **+ button** — a new row appears below the existing one.
3. Scroll down if needed to reach the new row, then enter its bit size and oval width.
4. Continue adding rows until all holes for the ball are accounted for.
5. Review all rows together before applying results to the spec sheet.

Example: Three-Hole Ball

Row	Hole	Starting Bit	Oval Width	Resulting Oval (V/H)	DIFF
1	Middle finger	`1"`	`1/16"`	`1-1/16 × 1`	`0.0625`
2	Ring finger	`1"`	`1/16"`	`1-1/16 × 1`	`0.0625`
3	Thumb	`1-3/16"`	`1/8"`	`1-5/16 × 1-3/16`	`0.1250`

In this example, all three rows were built up using the + button before anything was applied to the spec sheet — letting the driller confirm that the finger ovals match and the thumb oval is appropriately wider before committing.

Removing a Row

If you add a row by mistake or need to remove a hole from the session, each row includes a **remove or delete control** (typically a trash icon or an ✕ button) on the right side of the row. Removing a row does not affect any other rows already entered.

- Remove a row at any point before applying results to a spec sheet.
- Removing a row recalculates the remaining set — no stale data is left behind.
- Removed rows cannot be recovered — if you delete a row in error, re-enter its values manually.

Tips for Working with Multiple Rows

- **Add all rows before applying to a spec sheet** — entering all holes as a complete set lets you cross-check ovals and DIFFs together, catching mismatches before they reach the bowler's record.
- **Label or order rows intentionally** — enter rows in the same order your spec sheet lists holes (e.g., middle, ring, thumb) so the results map cleanly when you apply them.
- **Mix input modes with care** — if your calculator session allows switching between fraction and decimal input per row, be consistent within a session to avoid unit confusion when reviewing results side by side.
- **Don't leave partial rows** — a row with only one value entered will not display a DIFF or result. Complete each row fully or remove it before applying the set to a spec sheet.

How Many Rows Can You Add?

Spectre Cloud supports enough rows to cover all holes on a standard bowling ball — typically up to three finger/thumb holes plus any balance or vent holes that require oval documentation. For unusually large spec sheets or specialty drilling configurations, add rows as needed.

Note: The exact maximum number of rows per calculator session has not been independently confirmed — if you are working with a non-standard hole count, test the limit in a draft session before building a live spec sheet. ⚠ *Verify the row limit, the exact label and position of the + button, and the remove/delete control appearance against the live app — contact the Spectre team if your Oval Calculator screen differs from the description above.*

Related Sections

- 5.2.2 — Entering Starting Bit and Oval Width — Bit Size mode

- 5.2.3 — Entering Starting Bit and Oval Width — Decimal mode
- 5.2.4 — Reading the DIFF (decimal difference) auto-calculation
- 5.2.6 — Applying Oval Calculator Results to a Spec Sheet
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: Think of the multi-row Oval Calculator as a scratch pad for the entire ball — build out all your holes first, confirm the DIFFs and oval dimensions look right as a set, then apply everything to the spec sheet in one go. This is faster and more accurate than calculating one hole, applying it, returning to the calculator, and repeating.

5.2.6 Entering V and H cut values (positive and negative)

Entering V and H cut values (positive and negative)

> 5.2.6 oval method

When recording oval cuts in Spectre Cloud, each hole's oval is described by two directional values — a **V (vertical) cut** and an **H (horizontal) cut**. These values can be entered as **positive or negative numbers**, reflecting the direction of the oval stretch relative to the hole center. Understanding how positive and negative cut values work ensures your spec sheet accurately captures not just the size of the oval but the direction it was applied.

□□ What V and H Cut Values Represent

The V and H fields do not simply record the finished hole dimensions — they describe the **directional offset** of the oval cut from the center of the starting round hole. The sign of each value (positive or negative) indicates which side of center the cut was made toward.

- □ A **positive V value** indicates the oval cut was made toward one vertical direction (e.g., toward the bowler's toe)
- □ A **negative V value** indicates the cut went the opposite vertical direction (e.g., toward the heel)

- A **positive H value** indicates the oval cut was made toward one horizontal direction (e.g., toward the inside of the hand)
- A **negative H value** indicates the cut went the opposite horizontal direction (e.g., toward the outside)
- A value of `0` in either field means no cut was made in that direction — the hole is round on that axis

Together, the V and H values describe the full oval shape and orientation for a given hole, giving any driller who opens the spec sheet enough information to reproduce the cut exactly on a future ball.

Positive vs. Negative: The Sign Convention

The positive and negative convention in Spectre Cloud follows a consistent directional reference for each axis. Cuts made in the **primary direction** of each axis are entered as positive; cuts made in the **opposite direction** are entered as negative.

Field	Positive (+)	Negative (−)	Zero (0)
V (Vertical)	Cut toward toe / forward direction	Cut toward heel / reverse direction	No vertical oval — round on V axis
H (Horizontal)	Cut toward inside / thumb side	Cut toward outside / pin side	No horizontal oval — round on H axis

Note: The exact directional reference (which physical direction maps to positive vs. negative) may vary depending on your shop's conventions and how Spectre Cloud is configured. ⚠ *Verify the positive/negative sign convention against your Spectre Cloud setup and confirm with the Spectre team if the directional labels in your app differ from those described above.*

How to Enter V and H Cut Values

Desktop

1. In the Oval Calculator, locate the **V** and **H** input fields for the row you are working on.

2. Click the **V field** and enter the vertical cut value. Type a minus sign (`–`) before the number if the cut was made in the negative direction (e.g., `-0.0625`). Leave as a positive number or omit the sign for a positive cut (e.g., `0.0625`).
3. Click the **H field** and enter the horizontal cut value using the same sign convention.
4. Spectre Cloud updates the DIFF and oval result automatically once both values are entered.
5. If either axis has no oval cut, enter `0` in that field — do not leave it blank.

□□ Mobile / Tablet

1. Tap the **V field** for the row. The numeric keyboard appears.
2. To enter a negative value, tap the **+/− toggle** or type the minus sign before your number, depending on how Spectre Cloud presents the input on your device.
3. Enter the cut value and tap **next** or tap the **H field** to move to the horizontal entry.
4. Repeat for the H field, applying a negative sign if needed.
5. The oval result and DIFF update automatically once both fields are filled.

□□ Example V and H Entries

Hole	V Value	H Value	What It Describes
Middle finger	`+0.0625`	`0`	Oval cut in positive vertical direction only — round on H axis
Ring finger	`-0.0625`	`0`	Oval cut in negative vertical direction — round on H axis
Thumb	`+0.0625`	`+0.0625`	Equal oval cuts on both axes — a balanced oval on both V and H
Thumb (asymmetric)	`+0.125`	`-0.0625`	Larger positive vertical cut, smaller negative horizontal cut
Any hole (round)	`0`	`0`	No oval — perfectly round hole on both axes

□ Tips for Entering Cut Values Accurately

- **Establish a sign convention for your shop and stick to it** — the positive/negative system only produces useful spec history if every driller in your shop uses the same directional reference. Document your convention and include it in staff onboarding.
- **Enter `0` explicitly for axes with no cut** — a blank field and a zero are not the same thing in a spec record. Always enter `0` to confirm a round axis was intentional rather than accidentally skipped.
- **Double-check the sign before saving** — a positive and negative value that are otherwise identical describe cuts in opposite directions. A sign error on a spec sheet can send a future driller the wrong way.
- **Do not enter absolute hole dimensions in the V and H fields** — these fields capture directional cut offsets, not finished hole sizes. Entering the full hole diameter here will produce incorrect oval and DIFF results.
- **Do not leave both fields at zero unless the hole is genuinely round** — if you drilled an oval and enter `0 / 0`, the spec sheet will record a round hole and the DIFF will show `0.0000`, losing the oval data entirely.

How V and H Values Relate to the DIFF

The DIFF displayed by Spectre Cloud is always a positive decimal representing the total magnitude of the oval — it does not carry sign information. Two holes with V/H entries of `+0.0625 / 0` and `-0.0625 / 0` will produce the same DIFF (`0.0625`), but their spec sheets tell a different story about which direction the cut was made. Always read the V and H values alongside the DIFF — the DIFF tells you *how much* oval there is; the V and H signs tell you *which way* it goes.

Related Sections

- 5.2.1 — Setting up: Oval Cut Direction (V/H) in Settings
- 5.2.4 — Reading the DIFF (decimal difference) auto-calculation
- 5.2.5 — Adding oval cut rows using the + button
- 5.2.7 — Applying Oval Calculator Results to a Spec Sheet
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: If your shop is setting up Spectre Cloud for the first time, take five minutes to drill a practice hole, measure it with a gauge, and enter the V and H values both ways — positive and negative — to confirm you understand which direction each sign represents in your setup before it matters on a live bowler's spec sheet.

5.2.7 Confirming cuts using the arrow-down key

Confirming cuts using the arrow-down key

> 5.2.7 oval method

After entering V and H cut values for a row in the Oval Calculator, Spectre Cloud provides a quick keyboard shortcut to **confirm the entry and move to the next field or row** — the **arrow-down key**. Rather than clicking or tapping between fields manually, the arrow-down key lets you move through the calculator fluidly, keeping your hands on the keyboard and your focus on the numbers.

⌨ What the Arrow-Down Key Does

Pressing the **arrow-down key** while a V or H cut field is active confirms the value currently entered in that field and moves focus to the next input in the sequence. This allows you to work through an entire set of oval cut rows — across multiple holes — without reaching for a mouse or tapping the screen between entries.

- **Confirms** the value in the active field
- **Moves focus** downward to the next field in the calculator
- **Triggers recalculation** — if the confirmed value completes a row, the DIFF and oval result update immediately
- Works across all input modes — Bit Size (fraction), Decimal, and Direct Entry

□□ Typical Arrow-Down Workflow

The most efficient way to work through a multi-row oval session using the keyboard is to enter values top to bottom, using the arrow-down key to step through each field in sequence.

□□ Desktop — Step by Step

1. Click into the first field of the first row (e.g., **Starting Bit** or **V cut**).
2. Type your value.
3. Press **↓ (arrow-down)** — focus moves to the next field in that row (e.g., **Oval Width** or **H cut**).
4. Type the next value.
5. Press ↓ again — if this completes the row, the DIFF and oval result appear automatically. Focus moves to the first field of the next row if one exists, or remains ready for a new row.
6. Continue pressing ↓ to step through subsequent rows in the same way.
7. When all rows are complete, review the full set of results before applying to the spec sheet.

□□ Field Navigation Order

The arrow-down key follows the natural top-to-bottom, field-by-field order of the calculator. The exact sequence depends on which input mode is active:

Input Mode	Field 1	Field 2	Result (auto)
Bit Size (Fraction)	Starting Bit	Oval Width	Oval dimensions + DIFF
Decimal	Starting Bit (decimal)	Oval Width (decimal)	Oval dimensions + DIFF
V/H Direct Entry	V cut value	H cut value	Oval dimensions + DIFF

After the final field in a row is confirmed with arrow-down, focus advances to the **first field of the next row** if one has been added via the + button. If no next row exists, focus behavior depends on the app — it may rest on the result display or remain in the last field.

□□ Mobile and Tablet Behaviour

On touchscreen devices, a physical keyboard arrow-down key functions the same way when a hardware keyboard is connected (e.g., a Bluetooth keyboard paired with an iPad or Android tablet). Without a hardware keyboard, the equivalent action is tapping **Next** or **Return** on the on-screen

keyboard, or tapping the next field directly.

- Hardware keyboard connected — arrow-down behaves identically to desktop
- On-screen keyboard only — use the **Next** key or tap between fields manually
- On a tablet with a keyboard case, the arrow-down shortcut is particularly useful for high-volume sessions with many rows

Tips for Efficient Keyboard Entry

- **Stay on the keyboard throughout a multi-row session** — combine the arrow-down key with the + button shortcut (if one exists in your browser) to add and fill rows without touching the mouse at all.
- **Watch the DIFF update as you confirm each row** — the real-time recalculation that fires on arrow-down is a built-in accuracy check. If the DIFF looks wrong immediately after confirmation, correct the field before moving on rather than catching it later.
- **Use arrow-down to confirm, not just to navigate** — pressing arrow-down on a field that has not been changed still confirms its current value, which is useful when reviewing an existing session and stepping through rows to verify entries.
- **Do not use arrow-up to edit a confirmed field without re-checking the result** — navigating back up and changing a previously confirmed value will trigger a recalculation, which is correct behaviour, but make sure to review the updated DIFF before applying results to a spec sheet.

Arrow-Down vs. Tab vs. Enter

Spectre Cloud's Oval Calculator is designed around vertical field progression, which makes arrow-down the most natural key for moving through entries. Tab and Enter may also move focus between fields in some browsers, but their exact behaviour can vary by browser and operating system. Arrow-down is the most consistent and intentional shortcut for this workflow.

Key	Behaviour in Oval Calculator	Recommended For
↓ Arrow-down	Confirms value, moves to next field below	Primary navigation through calculator rows
Tab	May move focus to next field — browser dependent	Secondary option if arrow-down is unavailable
Enter / Return	May confirm entry or submit — context dependent	Use with caution — behaviour varies
↑ Arrow-up	Moves focus to previous field	Reviewing or correcting a prior entry

Related Sections

- 5.2.5 — Adding oval cut rows using the + button
- 5.2.6 — Entering V and H cut values (positive and negative)
- 5.2.8 — Applying Oval Calculator Results to a Spec Sheet
- 4.x — Spec Sheets: Recording Hole Measurements

Tip: For high-volume shops drilling multiple balls per day, mastering the arrow-down workflow pays off quickly — entering a full three-hole oval session entirely from the keyboard is noticeably faster than clicking or tapping between fields. If you are onboarding new staff, make the arrow-down shortcut part of their first Oval Calculator walkthrough. ⚠ *Verify that arrow-down is the confirmed shortcut key in the current version of Spectre Cloud and that Tab and Enter behave as described — keyboard shortcut behaviour can vary between browser versions. Contact the Spectre team if the navigation does not match the description above.*

5.2.8 Worked example: full V/H oval from start to finish

Worked example: full V/H oval from start to finish

5.2.8 **TIP** example

This page walks through a complete, real-world oval calculation from first opening the Oval Calculator to the finished values recorded on a spec sheet. It brings together all the concepts covered in this chapter — cut direction settings, input modes, V and H values, the DIFF, multiple rows, and keyboard navigation — in a single worked example you can follow step by step.

□□ The Scenario

A returning bowler, **Maria**, is having a new ball drilled to match her existing fit. Her previous spec sheet shows a three-hole layout with ovals on all three holes. You are re-drilling to the same oval specifications. Before opening the Oval Calculator, you have confirmed the following in Settings:

- □ **Oval Cut Direction:** `V/H` (vertical first, then horizontal)
- □ **Input mode:** Bit Size (fraction)

Maria's three holes and their target values are:

Hole	Starting Bit	V Cut	H Cut
Middle finger	`1"`	`+1/16"`	`0`
Ring finger	`1"`	`+1/16"`	`0`
Thumb	`1-3/16"`	`+1/8"`	`+1/16"`

□□ Step 1 — Open the Oval Calculator and Check Settings

1. Navigate to the **Oval Calculator** from the main menu.
2. Confirm the mode selector at the top shows **Bit Size (Fraction)**. If not, switch modes before entering any values.
3. Confirm the cut direction indicator shows **V/H**. If your shop is configured for H/V, the column order in your results will be reversed — go to Settings and update **Oval Cut Direction** before proceeding if needed (see **5.2.1**).

The calculator opens with one blank row ready for input. You will use the **+ button** to add the remaining two rows after completing the first.

□□ Step 2 — Enter the Middle Finger Oval (Row 1)

1. Click into the **Starting Bit** field of Row 1. Type `1`.
2. Press **↓ (arrow-down)** — focus moves to the **V cut** field.
3. Type `1/16` (positive — no minus sign needed).
4. Press **↓** — focus moves to the **H cut** field.
5. Type `0` — Maria's middle finger has no horizontal oval.
6. Press **↓** to confirm. Spectre Cloud calculates immediately:

Field	Value
Resulting oval (V/H)	`1-1/16 × 1`
DIFF	`0.0625`

The DIFF of `0.0625` confirms a 1/16" stretch on the vertical axis only. Row 1 is complete.

□□ Step 3 — Add and Enter the Ring Finger Oval (Row 2)

1. Click the **+ button** to add Row 2.

2. Click into the **Starting Bit** field of Row 2. Type `1`.
3. Press ↓ — focus moves to the **V cut** field.
4. Type `1/16`.
5. Press ↓ — focus moves to the **H cut** field.
6. Type `0`.
7. Press ↓ to confirm. Results for Row 2:

Field	Value
Resulting oval (V/H)	`1-1/16 × 1`
DIFF	`0.0625`

Row 2 matches Row 1 exactly — both finger holes share the same oval, which is consistent with Maria's previous spec sheet. This match is a good sign before proceeding to the thumb.

□□ Step 4 — Add and Enter the Thumb Oval (Row 3)

1. Click the **+ button** to add Row 3.
2. Click into the **Starting Bit** field of Row 3. Type `1-3/16`.
3. Press ↓ — focus moves to the **V cut** field.
4. Type `1/8` (positive).
5. Press ↓ — focus moves to the **H cut** field.
6. Type `1/16` (positive — the thumb has a smaller oval cut on the horizontal axis as well).
7. Press ↓ to confirm. Results for Row 3:

Field	Value
Resulting oval (V/H)	`1-5/16 × 1-1/4`
DIFF	`0.0625`

The thumb oval is larger than the finger holes overall (a wider starting bit plus cuts on both axes), but the DIFF is the same `0.0625` — because the difference between the two thumb dimensions (`1-5/16` minus `1-1/4`) is also 1/16". This is a good illustration of how the DIFF reflects the *spread* of the oval, not its overall size.

□□ Step 5 — Review the Complete Set

With all three rows complete, the Oval Calculator now shows the full picture for Maria's ball before anything is committed to the spec sheet:

Row	Hole	Starting Bit	V Cut	H Cut	Oval (V/H)	DIFF
1	Middle finger	`1"`	`+1/16"`	`0`	`1-1/16 × 1`	`0.0625`
2	Ring finger	`1"`	`+1/16"`	`0`	`1-1/16 × 1`	`0.0625`
3	Thumb	`1-3/16"`	`+1/8"`	`+1/16"`	`1-5/16 × 1-1/4`	`0.0625`

Before applying these results to the spec sheet, run through this quick checklist:

- ✅ Both finger holes show identical ovals and DIFFs — consistent with Maria's previous spec
- ✅ The thumb starting bit (`1-3/16"`) is larger than the finger bits (`1"`) — as expected for a thumb hole
- ✅ All DIFF values are positive decimals — no anomalous zeroes or unexpected results
- ✅ No rows have blank fields — all entries are complete
- ✅ Cut direction is V/H throughout — matching Maria's existing spec sheet format

🗂️ Step 6 — Apply Results to the Spec Sheet

1. With all rows confirmed and the review checklist passed, proceed to apply the oval data to Maria's spec sheet.
2. Transfer each row's oval dimensions and DIFF to the corresponding hole fields on the spec sheet — middle finger, ring finger, and thumb in order.
3. Save the spec sheet. Maria's new ball is now documented with a complete, accurate oval record that any driller in your shop can reproduce in the future.

🎯 What This Example Demonstrates

- 🔧 **Settings first** — confirming cut direction and input mode before entering data prevents format mismatches on the spec sheet
- ⌨️ **Arrow-down navigation** — stepping through all fields with the keyboard keeps entry fast and reduces click errors

- **Multi-row review before committing** — seeing all three holes together makes consistency checks easy and catches mistakes before they reach the spec sheet
- **DIFF as a sense check** — identical DIFFs across the finger holes confirmed the entries matched Maria's previous record before the thumb row was even started
- **Positive and negative signs** — all cuts in this example were positive, but the same workflow applies when negative values are needed; the sign is entered in the V or H field and the DIFF remains a positive decimal regardless

Related Sections

- 5.2.1 — Setting up: Oval Cut Direction (V/H) in Settings
- 5.2.2 — Entering Starting Bit and Oval Width — Bit Size mode
- 5.2.3 — Entering Starting Bit and Oval Width — Decimal mode
- 5.2.4 — Reading the DIFF (decimal difference) auto-calculation
- 5.2.5 — Adding oval cut rows using the + button
- 5.2.6 — Entering V and H cut values (positive and negative)
- 5.2.7 — Confirming cuts using the arrow-down key
- 5.3 — Applying Oval Calculator Results to a Spec Sheet

Tip: Save a copy of this worked example — or adapt it with your own shop's most common hole sizes — and use it as a training exercise for new staff. Running through a three-hole oval session on a test bowler profile before going live is the fastest way to build confidence with the Oval Calculator workflow. ⚠ *The oval dimensions and DIFF values shown in this example are calculated from standard fraction-to-decimal conversions and should be accurate, but verify the exact display format and field labels against your live Spectre Cloud instance before using this page as a staff reference.*