9.3.4 Insert OD chart — standard insert sizes by brand

Insert OD chart — standard insert sizes by brand

> 9.3.4 reference

Finger inserts add a consistent, replaceable grip surface inside drilled finger holes and are used by the majority of fingertip bowlers. Each insert brand and model has a defined **outer diameter (OD)** — the dimension that determines how large the hole needs to be drilled to accept the insert. Drilling to the wrong OD produces a hole that is either too tight (the insert cannot seat) or too loose (the insert spins or falls out). This chart provides standard insert OD values by brand as a quick reference for the hole size field on the spec sheet.

⚠ **Verify with Spectre team and insert manufacturers:** Insert OD specifications change when manufacturers update product lines. Verify all values in this chart against current manufacturer documentation before publishing, and establish a review schedule to keep the chart current. The values below represent commonly used sizes at the time of writing and should be treated as a starting reference, not a definitive specification.

□□ How to Use This Chart

Find the insert brand and model being used. The OD value in the chart is the hole diameter to drill — enter this value as the **finger hole size** on the spec sheet. The insert will seat at this diameter;

the bowler's finger then fits inside the insert according to the insert's inner diameter (ID), which is sized separately by the fitter from the bowler's finger measurement.

- The **hole size field** on the spec sheet should reflect the **insert OD**, not the bowler's finger measurement directly.
- The bowler's finger size determines which **insert ID** to select — the insert OD determines the hole to drill.
- When in doubt, verify the OD with the physical insert using a micrometer or caliper before drilling — manufacturer tolerances vary and individual inserts occasionally fall outside the stated specification.

Standard Insert OD by Brand

Turbo

Insert model	Outer diameter (OD)	Notes
Turbo Quad	`1"`	Most common Turbo insert. Standard hole size for the majority of fingertip fits using Turbo grips.
Turbo Quad Jr.	`29/32"`	Smaller OD version for junior or smaller-handed bowlers.
Turbo Switch Grip	`1"`	Same OD as standard Quad — designed for quick change between inserts without redrilling.
Turbo Oval Quad	Varies by size	Oval inserts — verify OD with the specific insert before drilling. Oval OD is measured at the widest point.

Vise

Insert model	Outer diameter (OD)	Notes
Vise IT Insert	`1"`	Standard Vise insert. 1" OD is consistent across the IT line.
Vise Oval IT Insert	Varies by oval size	Oval inserts — measure the specific insert. Round dimension is typically `1"`; oval adds length in one axis.
Vise Grip Tape (in-hole)	N/A — tape applied inside hole	Grip tape is applied inside an existing hole and does not change the drilled OD. No hole size change required.

Ebonite / Storm / Roto Grip (shared insert line)

Insert model	Outer diameter (OD)	Notes
Standard fingertip insert	`1"`	Shared across several brands in the same manufacturing group. Confirm with the specific insert packaging.
Small fingertip insert	`29/32"`	For smaller holes — junior and small-handed bowlers.

Brunswick

Insert model	Outer diameter (OD)	Notes
Brunswick Finger Insert	`1"`	Standard 1" OD. Confirm with physical insert — Brunswick has produced inserts at slightly varying ODs across different product generations.

Master Industries

Insert model	Outer diameter (OD)	Notes
Master Finger Insert	`1"`	Standard OD. Verify with physical insert before drilling.
Master Oval Insert	Varies by oval size	Measure individual insert — round dimension typically `1"`.

□□ OD Tolerance — Why Measuring the Physical Insert Matters

Manufacturer OD specifications are nominal values — the actual insert may be slightly larger or smaller due to manufacturing tolerance. For most inserts the variance is negligible, but for a small number of older, overstocked, or off-brand inserts, tolerance differences can affect seating. A micrometer or caliper reading of the actual insert is the most reliable input for the hole size field, particularly when:

- The insert is from a brand not listed in this chart.
- The insert is from an older product line whose specifications may have changed.
- The bowler supplies their own inserts rather than using shop stock — unbranded or import inserts vary widely.
- A previous drilling using the same nominal OD resulted in an insert that was too tight or too loose.

⚖ Fit Allowance — Drilling Slightly Larger Than OD

In practice, most pro shop operators drill the hole to a diameter slightly larger than the nominal insert OD — typically `1/64"` to `1/32"` over — to allow the insert to seat cleanly without forcing. The exact allowance depends on:

- **Ball coverstock hardness** — harder coverstocks compress less around the insert and may need a slightly larger allowance for clean seating.
- **Insert material** — softer inserts compress slightly on insertion; harder inserts do not. A softer insert may need less allowance than the nominal OD suggests.
- **Shop standard** — most experienced operators develop a consistent allowance over time. Enter this in the hole size field rather than the bare nominal OD if your shop applies a standard allowance.

Note: Enter the **actual hole size drilled** on the spec sheet — including any fit allowance — rather than the nominal insert OD. The spec sheet should reflect what was physically drilled, not the theoretical specification. A future re-drill based on the spec sheet will produce the same result only if the recorded hole size matches what was actually in the ball.

Recording Inserts in Spectre Cloud

Spectre Cloud's spec sheet hole size field accepts the drilled diameter directly. Beyond the hole size, insert details worth capturing elsewhere in the record include:

- **Insert brand and model** — record in the spec sheet Notes field. A future re-drill can replicate the same insert if this information is on file.
- **Insert colour** — optional but useful for bowlers who have colour preferences or who use colour to identify their ball in a bag.

- **Insert OD as measured** — if you measured the actual insert with a caliper and it differed from the nominal value, note both in the spec sheet notes: `Turbo Quad nominal 1" — measured 63/64" — drilled 63/64"`.
- **Arsenal entry notes** — for Arsenal Plus users, the insert brand and model can also be recorded in the ball's Arsenal entry notes for quick reference when the bowler returns for a re-drill or insert replacement.

Oval Inserts — Additional Considerations

Oval inserts require the hole to be drilled to the insert's oval dimensions rather than a simple round diameter. The hole must match both the round dimension and the oval extension of the insert:

- Measure the oval insert at its widest point (the oval axis) and at its round dimension before drilling.
- Confirm the oval orientation on the insert matches the oval cut direction configured in Spectre Cloud — an oval insert seated in the wrong orientation defeats the purpose of the oval cut.
- Record both the round and oval dimensions in the spec sheet hole size and oval fields respectively — do not record only the round dimension for an oval insert.
- For oval inserts where the OD varies by insert size, confirm the specific model's dimensions from the manufacturer's current product documentation rather than relying on this chart.

Related Sections

- 9.3.1 — Pitch suggestion chart (flexibility vs. forward pitch)
- 9.3.2 — CLT chart (lateral tilt angle vs. lateral pitch)
- 9.3.3 — 5/16 rule ring finger span distance chart
- 6.1.3 — Step 3: Set grip type and enter finger measurements
- 7.1.3 — Hole Depth option — setting desired depth for each hole
- 04.x — Spec Sheets: field reference and measurement guide

Tip: Keep a physical sample of each insert brand and model your shop stocks, mounted on a card with the OD written beside it, at the fitting counter. When a bowler brings in their own inserts or requests a specific brand, you can confirm the OD visually in seconds rather than searching through packaging or charts. A five-minute investment in a sample card at setup saves repeated lookups across hundreds of fittings.

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