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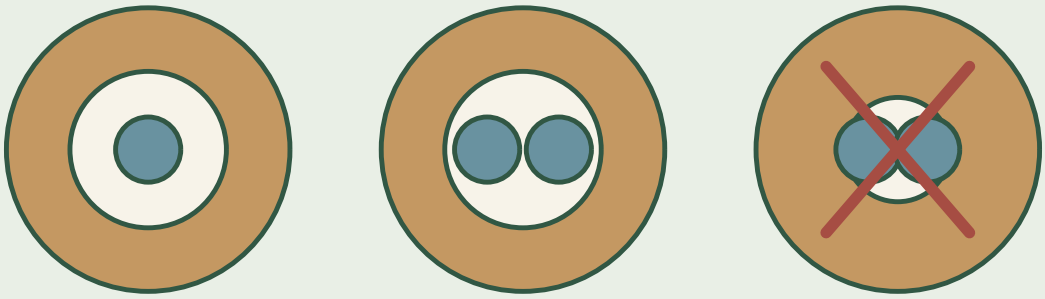
MAKE / BEADING & SMALL ACCESSORIES

Choose Bead Hole Sizes to Match Stringing Cord



Enlarged ideal geometry, not physical test results.

14 practical steps • Bead and cord fit planning

Comparison chart, threading paths and two records

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Before you start

A bead described as 8 mm wide may have a hole much smaller than 8 mm. The outside diameter affects appearance; the bore controls what can pass through. Even two beads from the same packet can differ. This exercise makes a short, removable practice strand of five to eight beads on a padded tray, not a finished necklace, bracelet, lanyard or load-bearing item. You will compare two or three labelled cords, identify the narrowest opening, and decide whether a direct pass, a return pass or a needle-assisted pass is plausible. Keep the sample on the tray; its purpose is learning, not proving a finished object's strength.

Materials: a shallow bead tray or non-slip mat, a small selection of known craft beads, two or three labelled round stringing cords, their maker instructions, a ruler or calliper for accessible dimensions, pencil, the printed comparison sheets, and adult craft scissors suitable for the chosen fibre cord. A compatible beading needle is optional only if the intended cord maker recommends one. Work in good light. Keep small parts, sharp tools and loose cords away from children and pets. Do not wear, suspend, pull-test, burn, drill or ream anything in this exercise. Use a different exercise for brittle or valuable beads.

Understand the dimensions before choosing

A nominal hole diameter H is not a guarantee that the entire bore has that width. Shape, a constriction, coating, burr, debris, or an off-centre channel may reduce the usable opening. Let d be the labelled outside diameter of a round cord. For one straight, round strand in an ideal round hole, H greater than d leaves nominal clearance. For two equal round strands side by side, the elementary geometric screen is H greater than 2d. Equality means no theoretical clearance; it is not a recommended fit. For unequal strands in an ideal circular bore, their diameters add for this screen. This is a conservative planning comparison for undeformed round strands, not a measured fit model or a universal minimum clearance rule.

Example: a nominal 1.2 mm hole and 0.5 mm round cord leave a difference of 0.7 mm for one strand and 0.2 mm for two. A nominal 1.0 mm hole with two 0.5 mm strands leaves zero difference, so do not plan that return path. Do not substitute 2d for the largest combined needle, eye, folded thread or knot envelope. A soft braid may flatten or swell, and a stiff cord cannot necessarily bend into a return path. An elastic cord must fit at its normal relaxed size, not only when stretched thin. A flat ribbon, irregular bore or tapered hole requires actual product-specific assessment instead of this simple round-section calculation. Never infer working strength from diameter alone.

Steps 01–02

1. Name the intended threading path

Sketch a short straight row of beads on paper. Decide whether the real design would need only one strand through each bead or a second strand returning through one or more end beads. Mark those particular beads with 2 in the sketch and the others with 1. A needle-assisted route is a separate path because its eye and thread may be wider than the bare cord. Do not put a knot or finishing part inside a hole unless the relevant product instructions specify that arrangement and the actual fit has been checked.

2. Identify the beads and cord materials

Write down bead type, supplier, package description, lot if available, nominal hole size and outer size separately. Record each cord's product name, labelled diameter, material and recommended use. Cotton, waxed braid, nylon, elastic and coated stringing wire can behave differently even at the same diameter. Select a known craft cord suitable for this low-risk learning sample; coated wire is a comparison category, not a substitute for fibre cord in this exercise. Keep the original packaging or its current instructions beside the tray.

Steps 03–04

3. Make a safe, contained work area

Lay a light-coloured, shallow tray on a stable table and put a textured mat inside so beads cannot easily roll away. Place beads in small labelled groups rather than pouring them loose. Keep scissors closed when not in use. If using a needle, use the maker-compatible tool and a designated place to park it, never your mouth or clothing. Stop if you find chipped glass or a sharp exposed edge; isolate that bead without handling the damaged area. Collect scraps and loose beads at the end of every session.

4. Separate external size from the usable opening

Read the supplier's stated hole diameter first. If a ruler or calliper can assess an accessible outside cord diameter without compressing it, record that reading separately from the nominal value. Do not put calliper jaws, a metal pin or a drill bit into a bead to determine its bore. A visible entrance does not reveal a narrower internal section. Record an unknown hole as UNKNOWN rather than estimating it from the bead's outer diameter. A larger outside bead is not automatically a better match.

Steps 05–06

5. Identify the limiting bead in the design

Sort the beads by their documented hole size, material and shape. Inspect both entrances in good light without probing or scraping the bore. Put visibly damaged, irregular, blocked or sharp-edged beads aside. Within each group, include the smallest-looking usable opening in your candidate check, but do not assume it is definitely the smallest internal bore. A spacer, accent or return bead can be the limiting component. If a smaller bead cannot be replaced and no compatible route is known, revise the design rather than forcing a pass.

6. Compare nominal hole and cord diameters

Use Pattern 1 to compare H and d in the same unit, millimetres. For one pass calculate H minus d; for two equal round strands calculate H minus 2d. A positive difference means only that the ideal geometry leaves room; zero or negative means do not plan that ideal combination. Record the value rather than labelling a numerical match safe. When a package gives inches, use its millimetre value or convert consistently before comparing. If either size is unknown, write UNKNOWN and rely on a gentle compatible trial or obtain better supplier information.

Steps 07–08

7. Shortlist a cord suited to the intended use

Choose a small number of plausible candidates instead of the thinnest cord that happens to thread. Check each cord manufacturer's intended use, handling and finishing guidance. A tiny cord may slide easily yet be unsuitable for the final design; a thick cord can jam or stiffen the row. Beadalon's guidance for its coated beading wire relates diameter to the smallest bead hole, flexibility, abrasion and matching finishing components. It is not a universal instruction to use the thickest textile or elastic cord. Do not mix cord and wire finishing methods.

8. Prepare the actual threading end

Cut a short working length of a selected fibre cord with the correct adult scissors, following its maker instructions. Keep the cord unstretched. Inspect the end for fraying, spreading or a bulky coating. If the maker approves a compatible needle or tip treatment, include the resulting end profile in your plan; otherwise leave the end as specified by the maker. Do not melt it with a flame or improvise a solvent, metal point or adhesive. A temporarily flattened or stretched end does not establish that the rest of the cord fits.

Steps 09–10

9. Check a single pass through one candidate bead

Place the bead in the tray where it is stable and easy to see. Guide the cord into the hole with gentle alignment, without squeezing the bead hard, using pliers or levering the cord. Feed only a short length through; the cord should move without persistent snagging, scraping or visible damage. If it stops, withdraw gently in the reverse direction if possible. Do not push harder. Record FREE, SNAG, NO FIT or UNKNOWN for the actual pair. A free passage is a fit observation, not a strength or abrasion rating.

10. Check the full return path separately

If the design requires a return, leave the first cord strand in the bead and guide a second section of the same cord through the intended entrance and direction. Use a spare short cord segment if that is easier to handle; it reproduces only the two-strand occupancy, not the complete bend. Also check the actual planned bend and threading route separately without forcing them. Do not fold a cord tightly to make it fit. If two relaxed strands, the needle profile or the bend cannot pass freely, choose another cord or a larger compatible return bead. A one-pass observation does not establish a two-pass fit.

Steps 11–12

11. Include needles, knots and finishing components in the plan

If a needle is actually required, examine its widest loaded profile, including the eye and folded thread, not only its shaft. Use the maker-approved needle and follow its handling directions. Do not force or twist a rigid needle through a bead or attempt to clear a hole with it. A knot, cord tip, clasp attachment or finishing part may need more space than the strands. Keep those elements outside this removable practice strand; record the specific maker-compatible finishing method required for a future project and check each component's own instructions before that project begins.

12. Compare the shortlisted pairs across the actual bead group

Repeat gentle direct or return checks as appropriate on representative beads, including the apparent narrowest opening and each planned return bead. Inspect the actual cord afterwards for visible flattening, fibres pulled loose, coating damage or persistent kinks. Reject that combination if it snags or is damaged. Keep a bead with uncertain bore geometry out of the sample. Record the observations individually; one smooth bead does not prove every bead in a packet fits. Avoid prolonged repeated sliding intended to simulate wear: this is not a durability test.

Steps 13–14

13. Lay out a removable five-to-eight-bead practice strand

Choose the candidate that passed the required path observations and matches its manufacturer's intended use. Lay five to eight lightweight beads in the planned order on the tray. Thread them gently one at a time, leaving the ends resting in the tray rather than attaching a clasp, forming a wearable loop or lifting the sample. Note whether the whole row can be positioned without jamming or excessive stiffness. If it cannot, stop and rearrange or change the limiting component. Remove the beads gently over the tray when done; do not wear, hang or pull the strand.

14. Record the selection and preserve the supplies

Complete Record 2 with the actual cord and bead group, required pass count, needle use if any, observed fit and any rejected pair. Mark CANDIDATE, CHANGE or HOLD. CANDIDATE means suitable for further design planning on the basis of the observed fit only, not an approved finished item. Keep the beads sorted, protect cord from damage, count loose small parts back into closed containers, and park any needle safely. Review the chosen cord, finishing components and relevant instructions again before making a wearable or functional object. This guide makes no claim about load, wear life, skin compatibility or child safety.

Fix, care and preserve

The hole size on the packet is missing. Do not infer it from the bead diameter or a photograph. Ask the supplier, or record UNKNOWN and use only a gentle actual fit observation on a known, undamaged craft bead and maker-compatible cord.

The first strand fits but the second does not. Revisit the two-strand screen and the actual occupied bore. Use a larger-hole return bead or an appropriate thinner cord that still meets the maker's intended use, or change the design so no second pass is required. Do not stretch elastic thinner or lever a needle through.

The bare cord fits but the threaded needle stops. The loaded eye may be the limiting profile. Select a compatible needle or a maker-approved direct-threading method; if neither is confirmed, hold the design. Do not push on a needle with pliers.

The cord frays or the bead catches. Stop. Discard the damaged working length according to the material guidance and isolate the rough or damaged bead. Choose another bead or cord route; do not drill, ream or polish the bore in this exercise.

The hole looks large but the strand bends badly. The whole path includes the bend, the bead row and the finish. A straight-through geometric comparison cannot predict drape or turning behaviour. Revise the layout or choose a maker-compatible cord with more appropriate flexibility.

Source & evidence boundary

Original Steadleaf English prose, nominal diameter arithmetic, illustrations and printable records. Technical context: Beadalon Learning Center FAQ (wire-specific diameter, abrasion and finishing advice); Fire Mountain Gems and Beads, Cording - Stringing (threading soft cord through close-fitting holes and differences in cord diameter). Current maker instructions govern any actual bead, cord, needle or finishing product. References:

- Beadalon Learning Center FAQ: https://www.beadalon.com/products/learning_center_FAQs.asp

- Fire Mountain Gems and Beads, Cording - Stringing: https://www.firemountaingems.com/learn/categories/ask-the-experts/CA52-ask-the-experts.html

No proprietary image, chart or instructional passage is copied. No actual bead hole, cord, needle, fit, pull, abrasion, fatigue, finished jewellery, print or physical safety trial was performed by the publisher. All numerical examples are ideal geometry only. This publication is for adult tabletop decorative craft planning, not a physical safety, strength or finished-product certification.

Nominal round-hole compatibility chart

Each cell shows one-strand / two-strand nominal difference (mm). Positive values are planning candidates, not a fit or strength rating.

Hole H	0.3 mm	0.5 mm	0.8 mm	1.0 mm
0.8 mm	**+0.5** +0.2	**+0.3** -0.2	**0.0** -0.8	**-0.2** -1.2
1.0 mm	**+0.7** +0.4	**+0.5** 0.0	**+0.2** -0.6	**0.0** -1.0
1.2 mm	**+0.9** +0.6	**+0.7** +0.2	**+0.4** -0.4	**+0.2** -0.8
1.5 mm	**+1.2** +0.9	**+1.0** +0.5	**+0.7** -0.1	**+0.5** -0.5
2.0 mm	**+1.7** +1.4	**+1.5** +1.0	**+1.2** +0.4	**+1.0** 0.0

Top number: H – d | Bottom number: H – 2d

Green positive = ideal geometry leaves room. Red zero or negative = do not plan that ideal route. Equal strand diameter d only; for unequal round strands compare H with their sum.

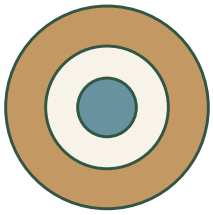
Example: H = 1.2 mm, d = 0.5 mm. The one-strand difference is +0.7 mm; two strands leave +0.2 mm. Neither number establishes actual clearance through a constricted bore, a loaded needle eye or a bend.

Record UNKNOWN if a label is missing or a profile is nonround. Use the actual intended route and do not force a pass. All values are computed examples; no physical bead or cord was measured.

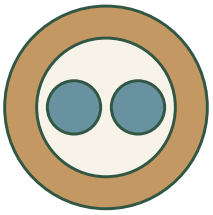
The complete threading envelope

Enlarged schematic views, not to scale. A positive nominal difference never guarantees that the actual end, eye, bend or entire bore will fit.

A / ONE ROUND STRAND



B / TWO ROUND STRANDS

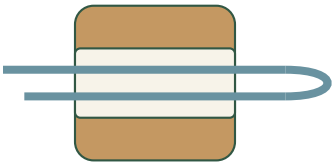


C / LOADED NEEDLE EYE



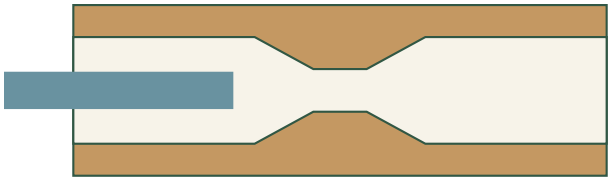
Check the widest loaded profile.

D / RETURN PATH



Check occupancy and bend separately.

E / THE ENTRANCE IS NOT THE ENTIRE BORE



An internal constriction may stop a cord.

Inspect the actual products, not just the illustrations. Do not force a cord or needle, or use a sharp tool to alter a bore. Fit is not a load or abrasion rating.

Beads, cord and intended path

Use labels and maker instructions for nominal values. Record actual observations separately. Mark UNKNOWN rather than estimating the internal bore.

Project / intended use

Bead product / supplier / lot

Outer bead size / nominal hole size (mm)

Smallest documented opening / planned return bead

Cord candidate A: product / material / nominal d

Cord candidate B: product / material / nominal d

Cord candidate C (optional): product / material / d

Intended route (1 or 2 passes / needle if required)

H – d / H – 2d (if applicable) / UNKNOWN

Loaded needle or end profile / intended finishing method

Candidate / change / hold — reason

Actual fit and selection

Observation codes: FREE / SNAG / NO FIT / NOT CHECKED / UNKNOWN. Disposition: CANDIDATE / CHANGE / HOLD. CANDIDATE is not finished-product approval.

PAIR A

Bead ID / cord product / route:

Single pass / return or loaded needle:

Visible cord and bead condition afterwards:

Disposition / reason:

PAIR B

Bead ID / cord product / route:

Single pass / return or loaded needle:

Visible cord and bead condition afterwards:

Disposition / reason:

PAIR C

Bead ID / cord product / route:

Single pass / return or loaded needle:

Visible cord and bead condition afterwards:

Disposition / reason:

Limiting component / changes for next time

Sample disassembled? YES / NO; future finish to verify