# Single-Line Contour Drawing of a Cylindrical Battery

Original tasks 1, 2 / complete keys

Task 1

Draw a side-view contour of a battery 40 mm tall with a 4 mm terminal bump and a 0.8 mm outward seam step on the left side. Describe your line path.

Answer: Start at the left base rim, go up the left side, make a small outward step of 0.8 mm (hypothetical) at the seam, continue to the flat top, rise 4 mm over the terminal, drop to the flat top on the right, go down the right side to the right base rim, then draw across the base back to the start point, closing the loop.

Reason: The single continuous closed line must include the terminal bump and the seam step without lifting; the prompt specifies an outward step on the left side, so the answer follows that direction and returns to the start point.

Check: Trace the line for continuity; confirm bump and step are present; confirm no shading.

Task 2

Draw a side-view contour of an upright cylindrical battery 50 mm tall with a 5 mm raised terminal and a 1 mm inward casing-seam step. A practice sheet also shows a small closed circle inside the casing side. Draw the outer contour, then identify whether that circle belongs to the contour.

Answer: Draw one closed side silhouette that includes the raised terminal and the seam step. The small circle inside the casing is an internal surface mark, so it does not belong to the outer contour and should be left out of the contour-only drawing.

Reason: A contour traces the boundary between the battery and the surrounding space from the chosen side view. An enclosed mark inside the casing does not change that outer boundary.

Check: Trace the outside path once from the base rim, over the terminal profile, down the opposite casing side, and back across the base. Confirm the seam step is included and no interior circle is joined to the closed outline.

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Original tasks 3, 4 / complete keys

Task 3

Draw a side-view contour of a battery with a 6 mm-high raised terminal and one casing-edge step. Explain how both fit the single outer contour.

Answer: Draw one closed outer contour: rise along the casing side, make the small casing-edge step, continue to the top, rise 6 mm over the terminal bump and return to the top, then descend the opposite side and close the base. The raised terminal is part of the side-view silhouette, not a separate inner circle. Do not add shading.

Reason: In side view, a raised terminal changes the battery’s top outline, so the bump can be integrated into one continuous silhouette. From above, a centered terminal lies inside the casing outline and would need a separate inner mark; this exercise uses the side view to keep the one-contour convention coherent.

Check: Trace the outer contour as one closed loop; confirm the terminal bump joins both sides of the top edge and the casing step is part of the profile. Do not draw a separate terminal loop or add shading.

Task 4

Measure a real battery: record height, terminal width, and seam step. Draw the contour and label your numbers as hypothetical examples if not measured.

Answer: Example: height 50 mm, terminal 5 mm, seam step 1 mm (hypothetical). Draw single line with bump and step; label numbers as hypothetical if not from measurement.

Reason: Measurement grounds proportions; labeling avoids claiming invented standards.

Check: Compare drawn proportions to recorded numbers; verify checklist items.

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Source rubric / reflection

- [ ] One continuous contour line from start to end.
- [ ] Terminal bump clearly integrated into the line.
- [ ] Casing edge seam shown as a small step.
- [ ] Base rim included and closed.
- [ ] No shading or cross-contour volume lines.
- [ ] Line weight consistent throughout.
- [ ] Drawing contains the requested outer contour without irrelevant lettering, shading, or cross-contour marks.

Reflection: What did you check, what did you change, and what will you try next?