

PathOffset Pro

USER MANUAL

This manual covers how to use PathOffset Pro (referred to as the tool below). It includes outer/inner path offsetting, outline shape generation, Boolean Union, Chisel 3D (3D chisel mesh OBJ export), Mesh Warp (grid warp), and the Element 3D integration workflow. For installation instructions, please refer to the separate Install Guide.

■ Video Tutorials (YouTube)

New here? Watch these short videos first to see the whole workflow.

- How to use Chisel 3D: youtu.be/rPrSrtEuiBc
- v2 new features: youtu.be/wLAE2AUMxRM

→ Before You Start

Version 2.2 adds **Text->Mask stroke support**, **Shape->Mask color separation**, **Mesh Warp (grid warp)**, and **macOS support**. The v2 flagship **Chisel 3D** is still included (generate a "roof-like beveled" 3D mesh from text/mask outlines and export it as an OBJ for Element 3D, Houdini, Cinema 4D). All existing features (Offset, Outline, Multi-Stroke, Fillet, Mirror, etc.) remain available.

→ What's New in v2.2.59

This release focuses on **Mesh Warp**. Every grid intersection now has **up/down/left/right Bezier handles**, and **16 Illustrator-style warp presets** were added (Pillow, Arc, Arch, Bulge, Shell, Flag, Wave, Fish, Rise, Fisheye, Inflate, Squeeze, Twist and more). **Undo/Redo**, **non-destructive re-editing after Apply**, **horizontal / vertical symmetric editing** and **grid copy & paste** are now supported, and grid points can no longer be dragged outside the frame beyond recovery. Fold (self-intersection) detection is now exact, so a broken mesh can never be applied. Fixed a bug where **Offset and Multi-Stroke did nothing on a layer that had Mesh Warp applied**. Operations that failed no longer report success (they previously consumed trial uses). For licensing, when the key is already in use on another PC you can switch to the current PC with a single click.

NEW / V2.2

What's New in v2.2

Text->Mask stroke support	With "Separate by color" ON, convert not just the fill but also the stroke of text into masks. Detects fill/stroke as separate masks by color
Shape->Mask color separation	With the same "Separate by color" ON, split a shape into separate masks per color (fill/stroke)
Mesh Warp (grid warp)	Warp the selected mask paths with a grid - vector paths themselves (not AE's pixel Mesh Warp). Load -> drag grid points -> Apply

macOS support	Runs on macOS in addition to Windows (license/seat management also supports Mac)
Auto Trace (any layer to mask)	Render any layer - footage, image, solid, text, or shape - and trace it by color to generate masks on a new solid layer (v2.2.16)

V2 / CHISEL 3D

The v2 flagship - Chisel 3D

The flagship feature of v2 is **Chisel 3D**, which brings 3D chisel (roof-like bevel) mesh generation and OBJ export entirely inside After Effects.

Chisel 3D	Generate a 3D mesh that rises toward the character center from text/mask outlines, and export it as OBJ (for Element 3D / Houdini / C4D)
Chisel 3D Studio	Edit, preview, and export in a separate window with a large 3D viewport (viewport on the left, controls on the right; freely resizable)
Cross-Section	Edit the edge->ridge height profile in a Houdini Ramp-style UI. Presets (V / round / cove / ogee / pillow) and 7 interpolation modes
Height / Flat Top / Clip	Live-adjust the height, the flattened top (trim from above), and the skirt clip (trim from below) with sliders
Output Back	Toggle between a watertight solid (with a back/bottom face) and a hollow shell (roof only)
Cell Size / Voxel Size	Set the preview detail (cell size in px) and the export quality (polygon density) independently
Hi-res preview for small fonts	Lower the preview cell floor so fine detail is readable even on small masks
Per-glyph settings	Save the settings to the layer on Export and auto-restore them next time you open Studio (great for sign production)

01 / OVERVIEW

What is PathOffset Pro?

PathOffset Pro is a CEP extension that brings Illustrator-like path offset operations into After Effects. Expand, shrink, or outline text and mask paths — a serious path-processing engine that runs entirely inside AE. (Because the underlying method differs, results are close to, but not identical to, Illustrator.)

Common use cases:

Title design	Decorative bold-outlined title creation
Element 3D workflow	Building beveled 3D typography
Motion graphics	Shape scale animations
Logo work	Logo weight adjustment and outline variations

02 / PANEL UI

Panel Layout

From the After Effects menu, select **Window > Extensions > PathOffset Pro** to open the panel. The panel is divided into the following areas:

Header	Title display, Help / License management button (?)
Amount	Offset amount input (in px)
Operations	Text > Mask / Shape > Mask / Mask > Shape / Outer Offset / Inner Offset / Outer Outline / Inner Outline / Union / Mirror H, V
Mesh Warp	Warp the selected mask paths with a grid. Load -> drag grid points -> Apply (v2.2)
Chisel 3D	Generate a 3D chisel mesh and export OBJ. Click "Open Chisel 3D Studio" for the separate editing window (v2)
Advanced	Expand to access Precision, Curve Fit, Hole Filter %, Hole Min (px ²), and other detailed parameters
Footer	Log area (with Clear log button) and trial usage counter

Note: the "Auto Union After Offset" checkbox from v1.0 has been removed. Overlapping masks are now merged automatically whenever Offset runs.

03 / FEATURES

Core Features

PathOffset Pro has 9 main features:

01 Text Layer to Mask

Select a text layer and run this to export the character outlines as mask paths on a new solid layer. Supports multiple characters. In v2.2, turning ON "Separate by color" in the Generate card also converts the **stroke** (not just the fill) into masks, detecting fill/stroke as separate masks per color.

■ Available unlimited in trial.

02 Shape Layer to Mask

Select a shape layer and run this to convert its paths into mask paths on a new solid layer. Parametric shapes (rectangles, ellipses, stars) and group transforms are composited; v1.3 also bakes the shape layer's own Scale / Rotation / Anchor / Position (plus parent transforms), so rotated or scaled shape layers convert correctly. The original shape layer is hidden. In v2.2, turning ON "Separate by color" splits the shape into **separate masks per color** (fill/stroke).

■ Available unlimited in trial.

03 Mask to Shape Layer

Select a layer with masks and run this to generate a white-filled shape layer with all mask paths grouped together. Holes (counters) are knocked out automatically using the even-odd rule. The original mask layer is hidden.

■ Available unlimited in trial.

04 Outer Offset

Expand mask paths outward by the specified px. Multiple masks and holes are handled automatically: overlapping masks are merged and holes are offset simultaneously. **Paths stay clean even after repeated runs** — results are rigorously verified internally, targeting parity with Illustrator's path offset. Output masks are named CI_fill_n / CI_hole_n.

■ Trial: max 3px, up to 15 runs. Values above 3px trigger a warning and are clamped to 3px.

05 Inner Offset

Shrink mask paths inward. Necked regions split automatically and fully collapsed shapes are removed. Uses the same engine as Outer Offset, providing stable results on complex shapes.

■ Trial: max 3px, up to 15 runs. Values above 3px trigger a warning and are clamped to 3px.

06 Outer Outline

Generate a frame (outline only) on the outside of the mask. Supports multiple and overlapping masks. Output masks draw the frame using DIFFERENCE mode combinations and are named OL_fill_n / OL_hole_n. Repeated runs add frames further outward. Ideal as bevel source material for Element 3D.

■ Locked in trial.

07 Inner Outline

Generate a frame on the inside of the mask. Repeated runs keep the existing lines and add new concentric lines toward the center, converging when the center is reached. Perfect for decorative typography and step-outline creation.

■ Locked in trial.

08 Union

Use this when you want to merge overlapping masks into a single path without offsetting. Outer / Inner Offset already merge paths automatically when they collide (and split them at pinch points) during execution — use Union when you only need the merge. For a single mask, only self-intersection resolution is performed.

■ Locked in trial.

09 Mirror H / Mirror V

Build just one side of a symmetrical shape, then mirror it across the axis through a selected vertex to create the other half and merge it into a single mask with Union. Mirror H flips left/right (vertical axis); Mirror V flips up/down (horizontal axis). For example, build a whole heart from its right half. Works with shapes that have many holes (like kanji) and self-overlapping shapes.

■ Locked in trial.

■ Offset / Outline outputs do not inherit the original mask names or keyframes (the path topology changes during processing). Note: Offset/Outline now record the cumulative offset amount in the layer name (e.g. Name_Offset_+5px), and Text->Mask preserves the original font name & weight in the layer Comment.

NEW / V2.1

New in v2.1

10 AE Composite Map Export

Bake a range of AOV maps from the Chisel 3D mesh height field for AE compositing: Height, AE Displacement, Normal (tangent-space), Curvature, Slope (surface angle), UV Mask, Coverage, and more. Use them for fake lighting, edge highlights, groove shadows, and color-correction masks.

11 16-bit PNG & EXR (32-bit float)

High-bit-depth output that removes gradient banding. PNG can be 8 or 16-bit; EXR is 32-bit float (AE-native, HDR / negative values). Combine multiple AOVs into one multi-channel EXR (extract in AE with EXtractor), with lossless ZIP compression.

12 Curvature (4 types) & Slope mask

Curvature comes as Signed (convex = white / concave = black) plus Convex (edges) / Concave (grooves) / Absolute, each a separate map (soften with Blur). The Slope (surface angle) mask separates front faces from slopes using normals, adjustable via Strength / Contrast / Blur / Invert. Normal maps support both OpenGL and DirectX.

13 Map presets (Basic / Full) & export options

Turn on a common map set with one click (Basic / Full), or pick maps individually. Set an output folder to export directly without a save dialog, and choose the resolution (1024-4096 px).

14 Material-separated OBJ (top / bevel / side / back)

The OBJ separates the mesh into top / bevel / side / back materials via g / usemtl, so you can assign a different material to the top, bevel, side, and back of the chisel in Element 3D / Houdini.

15 Surface Smoothing & junction smoothing

Surface Smoothing (0-12, edge-preserving) levels voxel stair-stepping on slopes while preserving ridges and corners as much as possible (like Houdini VDB Smooth). Junction smoothing sinks the bump and ugly highlight at the merge point of compound characters into a smooth valley.

16 A greatly improved Chisel 3D Studio

The viewport takes a big leap from v2. Drag the mesh directly with a TRS gizmo (Move / Rotate / Scale via T / R / E keys, plus plane handles for two-axis moves); switch cameras with Space+1-5 (perspective / top / front / right / flat UV view); work along a node chain (Input -> Shape -> Transform -> Export, showing only the active node parameters); undo / redo inside the viewport (Ctrl+Z / Ctrl+Y); toggle Wireframe / Grid; and use Move Centroid to Origin / Drop To Floor. Checking and positioning your 3D is far faster.

NEW / V2.2

Features Added in v2.2

17 Mesh Warp (grid warp)

Warp the selected layer's mask paths non-linearly using a grid. Unlike AE's built-in Mesh Warp (which distorts pixels), this warps the **vector paths themselves**. Workflow: Load to grab the selected masks -> drag the grid points -> Apply to write them back. Set the grid as 2x2 / 3x3 / 4x4 or by rows x columns. **Every intersection has up/down/left/right Bezier handles**, so edges can be curved freely (by default only the 4 handles of the selected point are shown; turn on the show-all-handles option to see them all. Handles mirror each other, and holding Alt breaks the pair). **Presets** (Pillow, Arc, Arch, Bulge, Shell, Flag, Wave, Fish, Rise, Fisheye, Inflate, Squeeze, Twist and more - 16 in total) can be dialed in with the Strength slider and then fine-tuned by hand. Symmetric editing (horizontal / vertical) mirrors your edits, and Undo / Redo walk the history. A copied grid can be reused on another mask either by fitting it to the target size, or by pasting the original position and size so that **every band gets exactly the same deformation** (useful for Multi-Stroke bands of the same artwork). Apply changes **only the Mask Shape** (Mask Mode / Inverted / Feather / name / mask count are untouched), and re-editing after Apply is **non-destructive** - repeated Applies never degrade the shape. Cells where folding (self-intersection) occurs are shown in red and block Apply (keyframed / expression masks and locked layers are not supported).

■ Available in trial.

18 "Separate by color" (stroke support / color split)

Turning ON "Separate by color" in the Generate card makes Text->Mask / Shape->Mask use a **render + built-in trace path**, detecting fills / strokes as **separate masks per color** (multiple ADD masks on one layer). This lets you convert a text **stroke** into a mask and split shapes by color. Adjust corner sharpness with "Trace sharpness" (0 = favor curves, 100 = straight edges / sharp corners). OFF (default) reads only the fill area as vectors, as before.

■ Available in trial.

19 Auto Trace (any layer to mask)

Select **any layer** (footage, image, solid, text, shape, etc.), render it, and **trace it by color** to generate masks on a new solid layer. Unlike Text->Mask / Shape->Mask, it does not care what kind of layer is selected - it is a dedicated button that **always separates by color**. Corner sharpness follows the Advanced "Trace sharpness" setting. Handy for turning a logo image, photo, or pre-rendered artwork directly into masks (v2.2.16).

■ Works best on simple layers with a handful of solid colors. Complex layers with smooth gradients (e.g. photos) may take significantly longer to process.

NEW / V2

Chisel 3D (3D Chisel Mesh)

Chisel 3D generates a "roof-like beveled (chisel)" 3D mesh that rises toward the character center from text or mask outlines, and exports it as an OBJ file. You can build sign-style 3D lettering (like a router-bit cross-section) entirely inside AE - no round trip to Illustrator.

The exported OBJ imports directly into **Element 3D**, **Houdini**, and **Cinema 4D** (Y-up, triangulated, with normals, at real-world scale).

→ Chisel 3D must be unlocked

Chisel 3D is included in the **Full edition**. If you use the **Lite edition**, purchase the separate "Chisel 3D Unlock" and enter the unlock key from the panel's "?" button. See the "License" section of the Install Guide for details.

Main controls (Chisel 3D Studio):

Cross-Section	The cross-section profile - how height rises from the edge (left) to the ridge (right). Drag points / click the curve to add / Ctrl+click to delete / Ctrl+Z to undo. Presets (V/round/cove/ogee/pillow) and 7 interpolation modes
Height	The maximum height (amount of rise)
Flat Top	How much to trim the ridge flat (0 = full point/round, closer to 1 = flatter top)
Flat Top Edge Smoothing	Also round and smooth the boundary between the flat top and the slope (v2.2.54)
Clip	How much to trim the skirt (bottom). Use it to remove a thin base
Output Back	ON = with a back/bottom face = watertight solid / OFF = roof only = hollow shell (half the polygons)
Crease Priority	Prioritize crease sharpness (default ON = the classic look). Turning it OFF lets Surface Smoothing act more strongly, at the cost of rounder creases
Junction Smoothing	Smooths the small bump where strokes merge, for characters with junctions. Note: it does nothing while Surface Smoothing is 0, and it eats into the ridge on curve-heavy glyphs such as O or S - leave it OFF for those
Model Only	Export the OBJ (model) only and skip all map generation. Faster when you just need the geometry
Normal based Curvature	Compute the curvature map from surface normals (default ON). Turn it OFF to base it on the cross-section profile instead
Legacy shape output (pre-2.2.20)	Reproduce the pre-v2.2.20 shape. Use it only when you need to match geometry you created earlier; otherwise leave it OFF (quality-improved version)
Cell Size	The viewport preview cell size, entered directly in px. Smaller = finer but heavier

Voxel Size

The export quality. Smaller = finer but more polygons. Use the px value you entered in Cell Size as a guide so the export matches the preview (guide: light 2 / standard 1.2 / fine 0.7)

CHISEL / WORKFLOW

Chisel 3D Basic Workflow

STEP 01 Prepare an outline mask

Select a text layer and run "Text Layer to Mask" to convert the glyph outlines into masks (shape layers or layers with masks also work). Chisel 3D uses these mask outlines as input.

STEP 02 Open Chisel 3D Studio

Open the "Chisel 3D" card in the panel and click "Open Chisel 3D Studio". A separate window with a large 3D viewport opens and previews the selected masks automatically.

STEP 03 Adjust the cross-section and height

Use Cross-Section to shape the profile (V / round / ogee, etc.) and Height / Flat Top / Clip to adjust the height and how much is trimmed. Changes update live in the viewport. Drag = rotate / wheel = zoom / middle-drag = pan.

STEP 04 Export the OBJ

Click "Export Chisel OBJ" and choose a destination. Load the exported OBJ into Element 3D Custom Layers, Houdini, etc. The settings used at export are saved to the layer and restored next time you open Studio for that layer.

→ Viewport navigation (Houdini-style)

Left-drag = rotate (tumble) / wheel or right-drag = zoom (dolly) / middle-drag = pan (track). If the preview feels heavy or coarse, adjust Cell Size (the export quality is set separately via Voxel Size).

→ Choosing the Voxel Size (use the Cell Size value)

The px value you enter in Cell Size is the preview's effective voxel size. Change Cell Size until the preview looks as detailed as you like, then enter that px value into the "Voxel Size" field for Export to get OBJ output that matches what you see. Smaller = finer, but the polygon count (and weight) increases.

CHISEL / MAPS

Chisel Map Export (for AE compositing)

Chisel 3D exports not only the OBJ but also a range of **AOV maps** baked from the height field. Use them in AE compositing for fake lighting, edge highlights, groove shadows, and color-correction masks. Pick the maps you need under "Export maps", or turn on a common set with a preset (Basic / Full).

Height / Displacement	Height (white = high / black = low). AE Displacement uses 50% gray = no displacement as its baseline
Normal	Tangent-space normals in both OpenGL and DirectX formats (choose to match your target app)
Curvature	Signed (convex = white / concave = black) plus Convex (edges) / Concave (grooves) / Absolute variants
Slope / Surface Angle	A front-face vs slope mask (invertible). For chisel-face highlights and slope color correction
UV Mask / Coverage	A matte of the glyph area. Coverage comes in Baked / Silhouette / Front Face
Format (PNG / EXR)	PNG (8 / 16-bit) or EXR (32-bit float). EXR can combine multiple AOVs into one multi-channel EXR with ZIP compression (extract channels in AE with EXtractoR)
Presets	Basic / Full turn on a common map set in one click. The bit-depth selector appears only for PNG (EXR is fixed 32-bit float)

→ **Use 16-bit / EXR to remove banding**

If you see banding in gradients, export as **16-bit PNG** or **EXR (32-bit float)**. On the AE side, set the project to 16/32 bpc to see the benefit.

04 / OPTIONS

Advanced Parameters

Expanding "Advanced" at the bottom of the panel enables finer adjustments.

Amount	Offset distance in px. Trial version: max 3px (higher values warn and clamp)
Precision	Bezier subdivision precision. Smaller = more precise but slower. Default usually works fine
Curve Fit	Curve refitting tolerance (0.1–3.0 px ² , default 0.3). Lower = hugs curves, more vertices / higher = smoother, fewer vertices
Miter Limit	With Join=Miter, auto-bevel corners whose ratio ($1/\sin(\theta/2)$) exceeds this limit. Default Off (keep sharp). Manual entry (v1.3)
Merge Verts	Tolerance (px) for merging nearby vertices. Applied via the "Merge Vertices" button (v1.3)
Hole Filter %	Remove holes smaller than the specified percentage of the original path area. Useful for auto-removing small holes
Hole Min (px²)	Remove holes smaller than this absolute area. Use for removing noise-like small holes

05 / BASIC WORKFLOW

Basic Workflow

STEP 01 Prepare a text or mask layer

Select a text layer or a layer with masks in AE. For text layers, first run "Text Layer to Mask" to convert to masks.

STEP 02 Enter Amount

Input the offset amount in px. For complex shapes, lowering Precision under Advanced increases accuracy.

STEP 03 Select and execute an operation

Click one of Outer Offset / Inner Offset / Outer Outline / Inner Outline. Multiple masks, holes, and self-intersections are handled automatically.

STEP 04 Union if needed

To merge masks without offsetting, click the Union button. Since Offset already merges overlapping masks automatically, this step is usually unnecessary.

→ About repeated runs

Running offset repeatedly on an already-offset mask **no longer degrades the path quality** — results are rigorously verified internally, targeting parity with Illustrator's path offset. Note that paths merge when they collide and split at pinch points during execution. On shapes with very fine details, for example, the first offset may fuse nearby vertices together — offsetting back in the opposite direction afterwards will not restore the original shape. For the best results, revert to the pre-offset state (e.g., AE's Undo, Ctrl+Z) before running again. Outline also supports repeated runs: Outer adds frames outward, Inner adds lines inward.

06 / ELEMENT 3D

Element 3D Integration

PathOffset Pro shines when combined with Video Copilot's Element 3D. Build beveled 3D typography entirely inside AE, without round-tripping to Illustrator.

STEP 01 Convert text to mask

Select a text layer and run PathOffset Pro's "Text Layer to Mask". Character outlines are exported as mask paths.

STEP 02 Generate outline with Outer Outline

Specify an Amount and run "Outer Outline" on the generated mask. An outer outline shape for bevel use is generated.

STEP 03 Load into Element 3D

In Element 3D's Custom Layers, specify the layer containing the masks. Use Edit Custom Path to extrude the mask paths into 3D.

STEP 04 Add depth with bevel settings

Adjust bevel depth and shape in Element 3D's Bevel settings. Using shapes generated by Outer Outline enables more complex bevel expressions.

→ TIP: Reusing path data

Generated masks are standard AE masks, so they can be copy-pasted to other layers or shape layers for reuse. Keeping the same path on separate layers for animation and Element 3D gives you more editing flexibility.

07 / TIPS

Useful Tips

→ Complex shapes are resolved automatically

Shapes with sharp concave corners (e.g., stars, brush-style characters, complex kanji) have their self-intersections detected and resolved automatically. If a result ever looks corrupted, revert to the original shape and try again with a smaller Amount.

→ About merging multiple masks

Overlapping masks are merged automatically whenever Offset runs. Use Union when you only want to merge without offsetting.

→ Using Hole Filter effectively

For shapes with many holes (e.g., letters like "O" or "8"), increase Hole Filter % to remove small inner holes. To preserve intentional holes, set it to 0%.

→ Combining with Element 3D textures

Register shapes generated by Outer Outline as a sub-group in Element 3D to apply different materials to the body and outline. Perfect for effects like metal-framed text.

→ Performance guide

Typical characters finish instantly (tens of milliseconds). Brush-stroke-level complex shapes may take about 0.5–1 second per operation.

→ Conversions are based on the fill shape

For the Text Layer to Mask / Shape Layer to Mask / Mask to Shape Layer conversions, strokes on text or shapes are ignored by default — the fill outline is used instead. With stroked text or shapes, the result follows the fill edge rather than the outer edge of the stroke (this is by design). In v2.2, turning ON "Separate by color" also converts strokes into masks and splits by color. To include the stroke, outline or expand it into a fill before converting.

08 / TROUBLESHOOTING

Troubleshooting

→ Nothing seems to change when I run it

With Outline, if the specified amount exceeds the thickness of the shape, the entire shape becomes the frame — which can look like nothing changed (a NOTE appears in the log). Try a smaller Amount.

→ Inner Outline doesn't add a new line

A new inner line needs interior space of roughly twice the Amount (gap + line width). Thin strokes without enough remaining width won't receive a new line (by design). A smaller Amount will fit.

→ Masks disappear

Running Inner Offset with a large value can fully collapse the shape and trigger auto-removal. Try again with a smaller value.

→ Results don't match expectations

Extremely complex intersections may rarely produce unexpected results. Try a different Amount, or adjust Precision and Curve Fit under Advanced.

→ **Outer Outline shape looks unnatural**

Lowering Precision (finer subdivision) or lowering Curve Fit (hugging the curves) may improve results.

→ **Path passed to Element 3D looks messy**

Resolving mask self-intersections with Union before using Outline functions produces cleaner extrusions in Element 3D.

For questions or feedback about PathOffset Pro, please contact us at takecinema.support@gmail.com.