AFTER EFFECTS · ANIMATION TOOL

Curve Conductor

Procedural, reusable easing curves for After Effects — design timing once, apply it anywhere.

Version 1.0

User Guide

Contents

CHAPTER 1

Welcome to CurveConductor

CurveConductor is a procedural timing tool for After Effects. Instead of hand-tuning bezier handles on every property, you design an easing **control curve** once and let CurveConductor map it between your property keyframes. Change the curve later and every animation using it updates in real time.

CurveConductor separates the **easing profile** from the **property values**: you keep simple keyframes for *where* and *when*, and a reusable curve controls *how* the motion feels in between.

Core concepts

Curves

A **curve** is a reusable easing shape, normalized so it always maps the start of a move (time 0, value 0) to the end (time 1, value 100). Pick curves from a dropdown, shape them in the visual **Curve Editor**, or start from one of ten built-in **presets**.

The control layer

Curves live as Slider Control effects on a layer named `CurveConductor`, created automatically the first time you apply a curve. Because every animation references this one layer, editing a slider re-times *everything* that uses it. Press `U` on the control layer to reveal the curve sliders as 0–100 keyframes.

Three ways to apply a curve

CurveConductor offers three distinct ways to drive your animation with a curve. Each fits a different situation. The choice is made by **which button you click** when applying CurveConductor to your target property.

PRIMARY **Marker-Driven**

A whole layer reads curve names from its timeline markers and remaps every keyed property accordingly. Procedural, easy to retime, survives keyframe edits.

Triggered by: `Add Curve Marker` button, or clicking a preset with `Marker Mode` checked.

ADVANCED **Per-Segment**

Place a curve on specific keyframe pairs of a single property. Other segments use After Effects' native interpolation. Surgical control where you need it.

Triggered by: `Apply to Selected Keys`, or `Span Selection with Curve` (on a property that isn't already in Default + Exceptions mode).

ADVANCED Default + Exceptions

A single curve drives *every* segment on the property, with a master blend control. The per-segment buttons then act as **exceptions** — overriding the default curve on individual pairs or spans.

Triggered by: `Apply to All Keys on Selected Property`. Once active, `Apply to Selected Keys` / `Span Selection` / `Remove Curve` become exception overrides — they don't switch the property to Per-Segment mode.

EXPRESSIONS ON, EXPRESSIONS OFF

Expression-driven curves can slow down a heavy comp. The `Utilities` tab has a one-click `Expressions ON / OFF` toggle that fully disables the expressions — preserving their text — so you can edit keyframes at native speed, then flip everything back on instantly.

CHAPTER 2

Installation & First Run

CurveConductor is a single ScriptUI panel. Run it on demand, or dock it permanently in your workspace.

Installing as a dockable panel

0. Quit After Effects if it is open.
0. Copy the CurveConductor `.jsx` file into your After Effects `Scripts ▸ ScriptUI Panels` folder.
   - **Windows:** `C:\Program Files\Adobe\Adobe After Effects [ver]\Support Files\Scripts\ScriptUI Panels\`
   - **macOS:** `/Applications/Adobe After Effects [ver]/Scripts/ScriptUI Panels/`
0. Launch After Effects and open it from the **Window** menu.
0. Dock the panel anywhere — it behaves like any native panel.

> **ALLOW SCRIPTS TO WRITE FILES**
> Enable **Preferences ▸ Scripting & Expressions ▸ Allow Scripts to Write Files and Access Network**. CurveConductor needs this to create its control layer and manage expressions.

Running without installing

To try it without copying files, choose **File ▸ Scripts ▸ Run Script File...** and select the `.jsxbin`. It opens as a floating window for that session.

Requirements

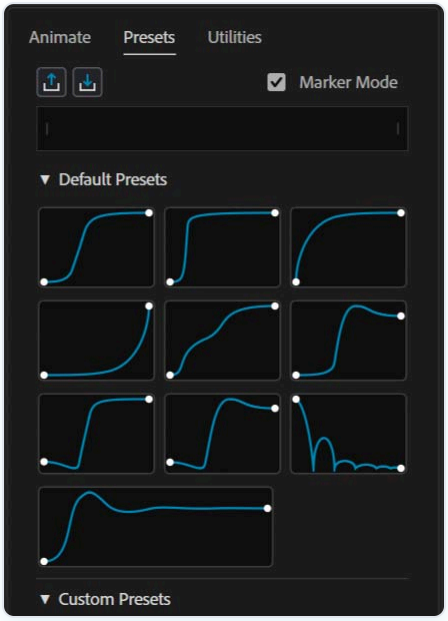
- ✓ After Effects 2022 and later with ExtendScript / ScriptUI.
- ✓ The expression engine enabled (default).
- ✓ A composition with at least one keyframed property to work on.

CHAPTER 3

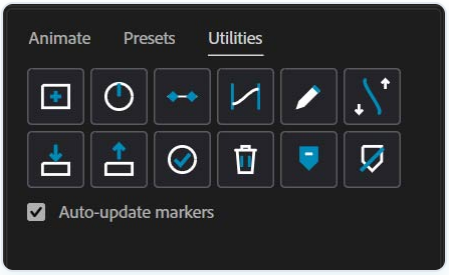
The Panel at a Glance

CurveConductor has three tabs. You'll live mostly in **Animate**; **Presets** is the fastest way to drop a look; **Utilities** holds maintenance tools.

Animate



Presets



Utilities

The three tabs

Tab	Purpose	Key controls
Animate	Select, edit, and apply curves; the visual editor lives here.	Curve dropdown, play preview, the two marker buttons, Velocity Match, the Curve Editor, and the Advanced apply buttons.
Presets	One-click application of ten built-in looks, plus your own custom presets.	Marker Mode toggle, Export / Import buttons, preview strip, preset palette (built-in & custom).
Utilities	Control-layer management, baking, diagnostics, markers.	One block of housekeeping buttons (Chapter 10) plus an auto-update markers checkbox.

Animate tab

- **Curve:** dropdown — choose the active curve (defaults to **Smooth Ease**). The **play** button ▶ beside it previews the motion profile before you apply it.
- **Add Curve Marker** and **Add Native Marker** — the two buttons at the heart of marker-driven mode (Chapter 5).
- **Velocity Match** — modifies how a curve hands off to the surrounding motion (**Off**, **Start/End**, **Start**, **End**).
- **▼ Editor** — show/hide the visual Curve Editor (Chapter 6).
- **▶ Advanced** — reveals keyframe tools, per-property apply buttons, and the **Blend** panel (Chapters 8 & 9).

Two settings that modify everything

Two controls don't *do* anything on their own — they change how every other apply button behaves. They're sticky, which means if you leave them on, your next click can produce wildly different results than you expect.

CHECK THESE BEFORE EVERY APPLY

- **Velocity Match** (Animate tab) — blends curve speed with the surrounding motion. Leave on, and a routine "apply" can balloon into wild overshoots in places you only wanted a clean curve.
- **Direct to Keys** (Advanced section) — switches every apply button from writing an expression to *baking* the curve into permanent keyframe easing. Forget it's on, and you'll end up with destructive keyframe edits when you expected procedural ones.

Both modifiers apply to the marker buttons *and* the per-property buttons. Glance at them before you click apply.

CHAPTER 4

Quick Start: Your First Curve

This five-minute walkthrough applies a polished, fully procedural easing look to a simple animation using Marker-Driven mode — the recommended way to work.

Drop your first curve marker

0. Create a few keyframes on a property — say **Position** with two or three moves. Leave them as plain Linear keyframes.
0. In CurveConductor's **Animate** tab, pick a curve from the **Curve:** dropdown (start with **Smooth Ease**). Click the play button to preview its motion.
0. Confirm **Velocity Match** is set to **Off** (and that the Advanced section's **Direct to Keys** is unchecked, if you've expanded it).
0. Select the property (or its keyframes), then click **Add Curve Marker**.
0. CurveConductor builds the **CurveConductor** control layer automatically and drops a marker named after the curve. The curve now maps between every pair of keyframes.
0. RAM-preview. Your moves ease smoothly — driven by the curve, not the keyframe handles.

> **ITERATE WITHOUT RE-KEYING**
> Select the control layer and press **U** to see the curve as a 0–100 slider. Open the **▼ Editor** in the panel, reshape the curve, hit the ✓ **Update Curve** button, and every animation referencing it re-times live — no need to touch your keyframes.

Change one segment's look

0. Move the playhead to (or just before) the segment you want to change.
0. Go to the **Presets** tab and confirm **Marker Mode** is on.
0. Click a different preset — for example **Anticipate + Overshoot**.
0. A new marker is added; from there forward, that segment (and the ones after it) use the new curve. The marker just needs to sit *at or before* the segment it should affect.

That's the whole loop: **pick a curve → drop a marker → refine the curve**. The next chapter unpacks Marker-Driven mode in full.

CHAPTER 5

Marker-Driven Mode

This is the primary way to use CurveConductor. A layer reads curve names from its timeline markers; the expression maps the named curve between every pair of keyframes after each marker. Two buttons and the Velocity Match dropdown do most of the work.

The two marker buttons

Button	What it does
Add Curve Marker	Adds a marker at the playhead carrying the selected curve's name. All keyframed properties on the layer use that curve from the marker forward.
Add Native Marker	Adds a marker that returns to After Effects' original keyframe interpolation from that point — no curve remapping. Applied to every selected layer.

Applying a curve with a marker

0. Select the property (or properties) you want to drive.
0. Choose a curve in the **Curve:** dropdown; preview it with the play button.
0. Position the playhead and click **Add Curve Marker**.
0. The control layer is created if needed, and a marker appears whose name matches the curve's slider. The expression maps that curve between every keyframe pair.
0. To change the look mid-timeline, drop another curve marker (or click a preset with **Marker Mode** on) at or before the segment you want to affect.

> **MARKERS SIT AT OR BEFORE THEIR SEGMENT**
> A curve marker affects the segments that follow it. Place it on or before the first keyframe of the span you want it to control.

Velocity Matching

The **Velocity Match** dropdown blends a curve's incoming and/or outgoing speed with the surrounding motion. It's what lets a curved move hand off *seamlessly* into a section of native After Effects animation.

Setting	Marker tag	Effect
Off	—	Use the curve's own velocity (default).
Start/End	`(VM)`	Match speed at both ends of the segment.

Start	`(VMS)`	Match the incoming speed only.
End	`(VME)`	Match the outgoing speed only.

Set Velocity Match *before* clicking the marker button — the choice is written into the marker text (e.g. `Smooth Ease (VM)`). Re-click the marker button after changing it to update the tag.

> **VELOCITY MATCH MODIFIES EVERY APPLY**
> This dropdown also changes how the per-property buttons in Chapter 8 behave (and how **Direct to Keys** bakes). Leave it on by accident and your next apply may not look anything like you expected.

Native markers

The Marker-driven CurveConductor expressions take their cue from the marker labels applied to the layer containing the target properties. This means that if, for example, you want a curve applied to a specific two-key segment, but not to every subsequent two-key segment, you'll need to drop a new marker at or before those subsequent segments. Otherwise, the expression will assume you want to repeat the same curve across every two-key segment. The marker labeled `Native` tells the expression to revert to AE's native keyframe animation.

Grey vs. cyan markers

Both colors of marker show up on layers driven by CurveConductor, and they mean different things:

Marker	Source	Role
Grey	After Effects native marker	**Drives the expression.** The text is the curve name (optionally with a `(VM)` tag). Marker-Driven mode reads these to decide which curve to apply, and where the property switches between curves or back to native motion.
Cyan	Added by CurveConductor	**Labels only.** Cyan segment markers show each segment's start, duration, and curve name so you can see your timing at a glance. They don't affect the expression. These marker labels are not meant to be applied to a layer using Marker-driven mode.

Retiming & renaming curves

Because timing and easing are separate, you can drag keyframes freely to retime a move. Just keep each grey curve marker *at or before* the keyframes it drives.

To line a curve's editing range up with a specific move, select those keyframes, pick the curve, and run **Utilities ▸ Fit Curve to Keys**. The curve's slider is laid right over the keyframe span, so reshaping it updates the move in real time.

Reusing & renaming curves

Build a library by duplicating curves on the control layer (`Ctrl` / `⌘` + `D`). A freshly duplicated curve isn't referenced yet, so you can rename it directly.

ALWAYS USE `RENAME CURVES` IN MARKER-DRIVEN MODE

Once a curve is referenced by a marker, its *name* is what the expression looks up. Renaming the slider directly will silently break every marker that points at it. Use **Utilities ▸ Rename Curves** and CurveConductor updates the slider, every expression, and every marker text together — nothing breaks.

CHAPTER 6

The Curve Editor

The Curve Editor is a visual bezier canvas for shaping easing. Open it from the `▼ Editor` disclosure on the Animate tab. The horizontal axis is normalized time (0 → 1); the vertical axis is value (0 → 100).

Two ways to edit a curve

The panel's Curve Editor and the control-layer slider keyframes are **two views of the same data**. Edit in either place and the other reflects your change.

- **Through the panel:** open `▼ Editor`, reshape the curve visually, and click `✓ Update Curve` to commit the change to the active slider — or `+ Add As New Curve` to save your edit as a fresh slider, leaving the original untouched.
- **Directly on the control layer:** select the `CurveConductor` layer, press `U` to reveal the curve sliders, and edit the 0–100 keyframes in After Effects' graph editor exactly as you would any other property. Whatever you sculpt here is what the panel's editor shows next time you select that curve.

Both paths are first-class. Use the panel editor for quick visual passes; jump to the graph editor when you want native fine-tuning, snapping, or to copy/paste handles between sliders.

Reading the canvas

- **Nodes** are diamonds along the curve — think of them as *curve nodes* you sculpt, not animation keyframes. White nodes are selected; gray nodes are not.
- **Handles** are the tangent lines from a node, controlling curvature into and out of it.
- The **first and last nodes are locked** to (time 0, value 0) and (time 1, value 100), so the curve always spans the full move. You can still adjust their handles.

Editing with the mouse

Action	Result
Click a node	Select / deselect it.
`Shift` + click node	Add to / remove from a multi-selection.
Drag a node	Move it (middle nodes only).
Drag a handle	Adjust the tangent curvature for that segment.
Drag the curve line	Pull the curve, adjusting both surrounding handles at once.
`Ctrl` / `⌘` + click empty canvas	Add a node at the nearest point on the curve.

`Ctrl` / `⌘` + click a node	Delete that node.
`Alt` / `⌥` + click a broken node	Re-link its in/out tangents (average their directions).

NEW NODES CAN OVERSHOOT
When you add a node, CurveConductor extends it along the direction of the previous node — so a steep approach may introduce a little overshoot. Drag the node or its handles to taste.

Editor buttons & sizing

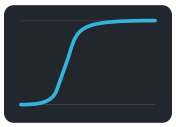
- **Update Curve** — write the current editor shape back to the selected curve. Everything using it re-times.
- **Add As New Curve** — save the editor shape as a brand-new curve on the control layer (this comp only), leaving the original untouched.
- **Save as Preset** — save the current editor shape as a reusable **custom preset**. It appears alongside the built-in presets on the Presets tab and is available in every comp and project (Chapter 7).
- **Undo** — step back through edits made *inside the editor*.
- `S` / `M` / `L` set the editor height; the zoom icons / adjust vertical scale (helpful for overshoot/anticipation beyond the 0–100 range), with a reset button.

EDITOR UNDO ≠ AE UNDO
The editor's **Undo** only reverts changes within the editor. Use After Effects' own `Ctrl`+`Z` for applies, removes, blends, and bakes. Closing the panel does not roll back unsaved editor edits — commit them with **Update Curve** or **Add As New Curve** first.

CHAPTER 7

Preset Reference

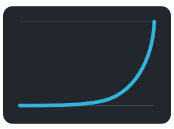
The `Presets` tab offers ten ready-made easing looks. Hover any thumbnail to preview it in the strip, then click to apply. With `Marker Mode` checked, clicking a preset drops a curve marker onto a selected layer; with it off, the preset applies per-property to your selected keys.



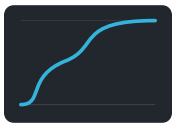
Smooth Ease
Classic ease-in-out S-curve. The reliable default for most motion.

Snap
Near-instant move with a shallow settle. Punchy and direct.

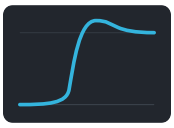
Fast Start
Rapid launch, gradual finish (ease-out). Energetic departure.



Fast Finish
Gentle build, rapid arrival (ease-in). Decisive landing.



Slow Middle
Quick ends, lingering middle. Adds weight to a hold.

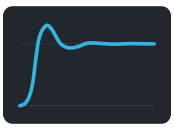


Overshoot STANDARD
Shoots past the target, then settles back. Lively, mechanical.

Anticipate STANDARD
Pulls back before launching forward. A wind-up before the action.

Anticipate + Overshoot STANDARD
Wind-up, launch, and overshoot combined. Maximum character.

Bounce
Lands and bounces with decreasing height. Playful, physical.



Elastic STANDARD
Springy oscillation that settles to rest. Toy-like, snappy.

Custom presets

Beyond the ten default presets, you can save your own curves as **custom presets**. Unlike a curve added to the control layer (which only exists in that comp), a custom preset is stored at the user level — it shows up in the Presets tab in *every* comp and project. Custom presets appear in their own collapsible `Custom Presets` section in the preset palette, alongside the built-ins.

Save a curve as a preset

0. Open the `▼ Editor` on the Animate tab and shape the curve you want — or load an existing curve from the dropdown and reshape it.
0. Click `★` `Save as Preset` in the editor's button row.

0. Name the preset (CurveConductor suggests `My [CurveName]`, or adds a numeric suffix to avoid collisions). Hit Save.
0. The new preset appears in the **Custom Presets** section of the Presets tab, ready to apply like any other.

Delete a custom preset

Right-click a custom preset's thumbnail in the Presets tab to delete it. Built-in presets can't be deleted. The tooltip on a custom preset reminds you with *(Custom — right-click to delete)*.

Share presets — Export & Import

Two icon buttons at the top-left of the Presets tab, next to the **Marker Mode** checkbox:

- **⤓ Export Custom Presets** — save *all* your custom presets to a `.json` file. Use this to back up your library or share it with a teammate.
- **⤒ Import Custom Presets** — load presets from a `.json` file. If a name is already in use, the incoming one is renamed with a numeric suffix (e.g. `My Snap (2)`) — nothing is overwritten. After import, the **Custom Presets** section auto-expands so you can see what came in.

> **BUILDING A PROJECT-WIDE LIBRARY**
> Develop a set of go-to curves on a real comp, save each as a preset, then **Export** them as a `.json`. Exporting presets is a great way to share curves with other animators.

CHAPTER 8

Advanced: Per-Property Modes

Toggle `▶ Advanced` to reveal a second family of buttons. Where marker mode applies a curve to *every* property on a layer at once, these buttons work *per property*. They come in two flavours — **Per-Segment** and **Default + Exceptions** — and the same button can do different things depending on which flavour is already active on the property.

> **CHECK THE MODIFIERS FIRST**
> Both `Velocity Match` (Animate tab) and `Direct to Keys` (Advanced section) silently change how every button below behaves. A forgotten setting is the most common source of "wait, why did it do *that*?" results.

Per-Segment mode

Apply a curve to specific keyframe pair(s) on a property. Everything else on that property uses After Effects' native interpolation. Best for fine, surgical control — e.g. a motion path where one specific move needs a curve while the rest drifts naturally.

Button	What it does	Selection
`Apply to Selected Keys`	Applies the active curve to each selected keyframe pair.	2+ keyframes
`Span Selection with Curve`	Stretches one curve evaluation across the whole selected range; intermediate keys are ignored. Ideal for motion-path arcs.	3+ keyframes
`Remove Curve from Selected Keys`	Strips the curve so the selected segments drift with native interpolation.	2+ keyframes
`Create Curve from Selection`	Samples the easing of the selected keys and saves it as a new reusable curve, normalized 0–100 with straightened handles.	2+ keyframes

Default + Exceptions mode

Set one curve as the property's default — every consecutive key pair uses it — and a master blend control governs how the curves overlap. Best when the property is mostly uniform and only a few pairs need to differ.

- `Apply to All Keys on Selected Property` — establishes the property's default curve and creates a paired blend slider on the control layer.

THE PER-SEGMENT BUTTONS BECOME EXCEPTIONS

Once a property is in Default + Exceptions mode, clicking `Apply to Selected Keys`, `Span Selection with Curve`, or `Remove Curve from Selected Keys` on that property adds an *exception* to the default — overriding the default curve on those keys only. It does **not** switch the property to Per-Segment mode.

To go back to Per-Segment mode, remove the default first (e.g. `Remove Curve from Selected Keys` over the whole property, or strip the expression manually).

Worked mix-and-match

A typical sequence on one property: apply `Smooth Ease` to all keys (default + blend); then on a single pair override with `Anticipate + Overshoot` via `Apply to Selected Keys`; then on a quiet section run `Remove Curve from Selected Keys` so it drifts natively. The rest of the property keeps the default Smooth Ease.

The keyframe-index gotcha

Per-property expressions track keyframes by index (1, 2, 3, …). Adding or removing a keyframe with native tools *before* existing curve calls in the expression shifts those indices and throws the mapping off.

- **Safe:** adding or removing keyframes *after* all the keys the expression already references. The earlier indices are untouched.
- **Breaks the expression:** inserting or deleting keyframes *earlier* than existing curve calls. Every index after the change shifts by one.

ADD & REMOVE KEYS THE SAFE WAY

Use the `+ Add Keyframe` and `− Remove Keyframe` buttons in the Advanced section whenever you're editing inside or before an existing curve range. They insert or delete a key *and* update the expression's indices, so nothing breaks. If you've already edited keys natively and the expression has gone wonky, reselect the range and re-apply the curve.

Direct to Keys

Check `Direct to Keys` before applying to bake the curve straight into keyframe easing — no expression, no control-layer link. CurveConductor inserts the needed keyframes and writes the timing into their handles. The result is permanent: edit it and you'll re-apply.

Turn on `Start/End` velocity matching before baking to match the incoming and outgoing speed at the segment edges while preserving the curve's interior shape — handy when a baked segment meets hand-tuned drift.

CHOOSE DIRECT TO KEYS WHEN…

…you want a clean file with native keyframes, or you're handing work to someone who doesn't have CurveConductor. For procedural, editable timing, leave it unchecked.

PERFORMANCE: TURN OFF THE EXPRESSION GRAPH

The *Expression Graph Editor* recalculates in the background even when you're not looking at it, which makes dragging laggy. Toggle it off and scrubbing/dragging gets snappy again.

CHAPTER 9

Blending Curves

Blending lets adjacent curve segments overlap so each move begins before the previous one fully finishes — the curves feel like they're responding to each other rather than reading as separate, disjointed beats.

Per-junction blends

0. Apply curves to consecutive keyframe spans (Curve A on keys 1→5, Curve B on 5→10).
0. In the **Blend** panel, set **Curve Overlap (s):** — type a value or drag the slider (0 – 5 seconds).
0. Select the shared junction keyframe and click **Apply Blend**.
0. To undo, select the junction and click **Remove Blend**.

The master blend (Default + Exceptions)

When you put a property into Default + Exceptions mode with **Apply to All Keys on Selected Property**, CurveConductor adds a master blend slider on the control layer, named after the default curve (e.g. `Smooth Ease blend`). Raising it stretches *every* curve to the right at once, so no curve finishes before the next takes over. The final curve isn't stretched — there's nothing after it — so you can time that last keyframe freely.

> **RETIMING WITH BLEND**
> With blending active, pack your moves closer together and let the last one run longer. The overlapping curves keep the motion feeling continuous and uniform. After retiming, run **Utilities ▸ Update Markers** to refresh the cyan labels.

CHAPTER 10

Utilities

The Utilities tab is one block of housekeeping buttons (plus an auto-update markers checkbox). They're listed below in the order they appear in the panel.

Icon	Button	What it does
	**Create Control Layer**	Creates the **CurveConductor** control layer if it doesn't already exist. It's also created automatically the first time you apply a curve.
	**Expressions ON / OFF**	Disables or re-enables all CurveConductor expressions in the active comp. OFF preserves the text so keyframe editing runs at native speed; ON re-enables everything instantly.
	**Bake to Keys**	Converts selected curve expressions to permanent keyframe easing — a non-destructive path to the same result as **Direct to Keys**.
	**Fit Curve to Keys**	Lays the selected curve's slider keyframes over the selected property's keyframe span. The curve shape is preserved — only the time range changes. Reshaping the curve then maps cleanly in real time in the graph editor.
	**Rename Curves**	Renames a curve everywhere it's used — slider effects on the control layer and on local layers, every expression that references it, and every marker text in Marker-Driven mode. Always use this instead of renaming a slider directly.
	**Invert Curve**	Flips the selected curve's values (v → 100−v). Click again to toggle back.
	**Localize to Layer**	Copies curve and blend sliders from the control layer onto the selected layer(s) and re-points their expressions to the local copies — for one-off overrides that shouldn't affect other layers using the same curve.
	**Re-link to Control**	Reverse of Localize. Switches localized layer(s) back to the shared control layer and removes the local tag.
	**Health Check**	Scans selected layers for CurveConductor expressions with stale key indices or missing curve references, and reports what needs re-applying.
	**Remove Unused**	Deletes curve sliders on the control layer that no expression references. Built-in preset references that are still in use are preserved.
	**Update Markers**	Writes/refreshes the cyan segment labels on selected layers. Run this after retiming or to restore labels you've cleared.
	**Clear Markers**	Removes the cyan CurveConductor segment labels from selected layers. Grey curve-driving markers in Marker-Driven mode are not touched.

Below the button grid sits one checkbox:

- **Auto-update markers** (on by default) — keeps the cyan segment labels current whenever Apply, Blend, or Remove changes a layer.

CHAPTER 11

Settings & Defaults

CurveConductor has no separate preferences dialog — its options live inline and persist with the panel's docked state.

Setting	Default	Options / range
Active curve	Smooth Ease	Any built-in or custom curve
Velocity Match	Off	Off · Start/End · Start · End
Marker Mode (Presets)	Checked	On / Off
Direct to Keys	Unchecked	On / Off
Auto-update markers	Checked	On / Off
Curve Overlap (blend)	0 s	0 – 5.0 seconds
Editor size	Medium	S (compact) · M · L (large)
Editor vertical zoom	Default	Zoom in / out / reset

Inline settings and their defaults. Selections are remembered between sessions via the panel's docked state.

CHAPTER 12

Tips & Troubleshooting

I clicked apply and got something completely unexpected

Check the two modifier settings first: **Velocity Match** on the Animate tab, and **Direct to Keys** in the Advanced section. Both are sticky and change how every apply button behaves — leaving them on by accident is by far the most common cause of surprise results.

My animation didn't change after dropping a marker

Confirm you selected the property (or its keyframes) before clicking **Add Curve Marker**, and that expressions are enabled — check the **Expressions ON / OFF** toggle on the Utilities tab.

Velocity matching makes everything bounce wildly

Velocity matching tries to reproduce the curve across every following segment. Where you want native motion (a drift), add a **Native Marker** so the curve hands control back to After Effects. See the camera-rig example in Chapter 5.

A segment lost its curve after I retimed keyframes

In marker mode, keep each grey curve marker *at or before* the keyframes it drives. In Per-Segment or Default + Exceptions mode, edits *before* existing curve calls shift indices; use the **+ / −** keyframe buttons (not native add/delete) when editing inside or before an existing range — or reselect and re-apply.

I renamed a slider and now markers don't work

Marker text references curves by name. Renaming the slider directly leaves markers pointing at a name that no longer exists. Use **Utilities ▸ Rename Curves**, which updates the slider, every expression, and every marker text together.

Scrubbing and dragging are slow

Turn off the *Expression Graph Editor* — it recalculates in the background.

I deleted the control layer by accident

The next apply recreates the **CurveConductor** layer automatically. Existing expressions that referenced its curves may need re-applying — run a **Health Check**.

WORKFLOW HABITS THAT PAY OFF

- Reach for Marker-Driven mode first — it's procedural and survives keyframe edits.
- Glance at **Velocity Match** and **Direct to Keys** before every apply.
- Keep a small library of named curves on the control layer and reuse them across a project for a consistent feel.
- Use **Fit Curve to Keys** so the curve you're editing lines up with the move you're watching.

APPENDIX A

Mouse & Keyboard Reference

All within the Curve Editor canvas. CurveConductor's panel buttons are click-driven; there are no global keyboard shortcuts.

Input	Action
Click node	Select / deselect
`Shift` + click node	Add to / remove from multi-selection
Drag node	Move (middle nodes only; ends are locked)
Drag handle	Adjust segment curvature
Drag curve line	Pull curve — adjusts both handles
`Ctrl` / `⌘` + click empty	Add node at nearest curve point
`Ctrl` / `⌘` + click node	Delete node
`Alt` / `⌥` + click broken node	Re-link in/out tangents
`Ctrl` / `⌘` + `D` (control layer)	Duplicate a curve slider to build a library

APPENDIX B

Glossary

Curve	A reusable easing shape, normalized from time 0 / value 0 to time 1 / value 100.
Control layer	The layer named **CurveConductor** holding curves as Slider Control effects. Visible by default; hide it if you prefer.
Marker-Driven mode	The primary workflow: a layer's keyed properties read curve names from its timeline markers (Chapter 5).
Per-Segment mode	Advanced per-property mode: a curve is placed on specific keyframe pair(s); other segments use native interpolation. Triggered by **Apply to Selected Keys** or **Span Selection with Curve** on a fresh property.
Default + Exceptions mode	Advanced per-property mode: one curve drives every segment, with a master blend. Triggered by **Apply to All Keys on Selected Property**. Per-segment buttons then act as exceptions, overriding the default on specific keys.
Grey marker	An After Effects native marker whose text drives Marker-Driven mode (curve name + optional VM tag).
Cyan marker	A CurveConductor segment label — for orientation only, doesn't affect the expression.
Native marker	A marker returning a layer to native keyframe interpolation from that point.
Velocity Match	Blending a curve's edge speed with the surrounding motion for a seamless hand-off (tags `VM` / `VMS` / `VME`). A modifier — it changes how every apply button behaves.
Direct to Keys	A modifier that switches apply buttons from writing an expression to baking the curve into permanent keyframe easing.
Span	Stretching one curve across an entire selected key range, ignoring intermediate keys.
Blend	Overlapping adjacent curve segments so each starts before the previous finishes.
Localize	Copying curves from the control layer onto a single layer for an independent override.
Custom preset	A curve saved as a preset via **✎ Save as Preset** in the editor. Stored at the user level, so it appears in the Presets tab in every comp and project. Export / Import lets you share them as `.json` files.