NINEBLOCK
SOFTWARE

BetterHandles 1.4 Windows User Manual

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Welcome

Thank you for downloading **BetterHandles**!

BetterHandles is an Adobe® Illustrator® tool plug-in for working with the direction handles of Bézier curves. It will allow you to:

- Select multiple handles, and collectively move, extend, rotate, or retract them
- Extend or retract handles without changing their angles
- Copy and paste handles
- Edit points numerically: anchor, *in* handle, *out* handle
- Convert multiple points from corner to smooth or vice versa
- Automatically extend new handles on multiple points
- Intuitively reshape path segments, optionally constraining handle directions
- Equalize a point's handles or the handles on either side of a path segment
- See all the handles on a path when selecting it
- Work with connector points (transitions between straight and curved segments)
- Use "slow-drag" to divide the cursor movement for extremely precise moves
- Remove one or more points, keeping the curve as close to the original as possible
- Add points to multiple curves at their horizontal and/or vertical tangencies
- Split multiple paths at one or more points
- Close multiple open paths, retaining endpoint handles or not
- Remove all redundant points on multiple paths
- Snap to handles, points, or paths clearly and easily – without having to use Smart Guides

We think once you've experienced path editing with **BetterHandles**, you'll wonder how you ever got along without it.

What's new in version 1.4?

BetterHandles 1.4 introduces Smart Remove points (page 40), which removes one or more points from a path while keeping the curve as close as possible to the original. You can also automatically add points to paths where they are tangent to the horizontal and/or vertical axes (page 36), or highlight and snap to tangency points when adding points to a path manually (page 21). Connector point support (page 28) lets you work with points that transition from straight segments to curved segments. You can automatically close all selected open paths, optionally honoring any existing endpoint handles (page 35). Also, there are many improvements to let you work more quickly and accurately than ever.

Please see the Change Log on page 53 for a complete list of changes.

Installation

BetterHandles is compatible with the following versions of Illustrator:

Illustrator 10, CS, CS2, CS3, CS4 and CS5

There are separate versions of **BetterHandles** for Illustrator 10, for Illustrator CS/CS2, for Illustrator CS3/CS4, and for Illustrator CS5. Be sure you have downloaded the appropriate version. You can right-click on the plug-in file in Windows Explorer, choose *Properties…*, and then go to the Version tab to see which version of Illustrator the plug-in is meant for (Windows XP or earlier).

To install **BetterHandles**, make sure Illustrator is not running. Then copy the file "BetterHandles.aip" into Illustrator's Tools folder (which is inside Illustrator's Plug-ins folder). If you were using an older version, simply overwrite the old version. The path to this location can vary, but it is generally:

C:\Program Files\Adobe\Adobe Illustrator [version]\Plug-ins\Tools

TIP Some organizations write-protect application folders and subfolders. If this is true in your case, you must have your System Administrator or someone with write access to the plug-in folder install **BetterHandles** for you (or, in Illustrator CS3 and higher, you can set the Additional Plug-ins Folder to point to a folder for which you do have access, and copy the **BetterHandles** plug-in there).

Finding BetterHandles

Once installed, **BetterHandles** will add both a tool and a standalone palette (also referred to as a "panel" by Adobe in later versions) to Illustrator.

Tool

The tool will appear in the toolbox to the right of the Convert Anchor Point tool (in the Pen tool family). For easier access, you may want to drag and release on the tear-off triangle at the right of the Pen tool family to create a *standalone toolbar.* ▶

TIP ▶ For the *easiest* access, if you are using Illustrator CS or higher, assign **BetterHandles** a keyboard shortcut using the *Edit Keyboard Shortcuts...* menu.

Palette

The **BetterHandles** standalone palette should initially appear to the right of the tool palette. If you don't see it, go to the *Window* menu and make sure the menu item *BetterHandles* is selected (has a check next to it). See for more about the palette.

Overview

The **BetterHandles** tool is used to click on or drag direction handles, anchor points and path segments; it can also be dragged on a blank area of the document as a marquee to select handles or points. When the tool is selected and held over a blank area of the document, the cursor looks like an inverted "V," similar to the Convert Anchor Point tool, but thicker, so as to distinguish it:

The cursor will change its appearance to give you feedback, depending on several factors: what lies underneath, whether you are dragging or not, and what modifier keys are being held down.

A summary of all of the click and drag functions of the **BetterHandles** tool appears in the tables on pages 30 and 31. The subsections below discuss each behavior in detail.

Modifier Keys

When different modifier keys are held down during the clicks or drags, the tool produces different functions. The four permutations for the primary modifier keys are:

<div align="center">

None   Shift   Alt   Shift-Alt

</div>

In addition, the Ctrl key can be pressed while the mouse is being dragged for additional functionality (when the mouse is up, the Ctrl key temporarily switches to the last-used selection tool). By default, holding the Ctrl key down during a drag temporarily hides the point and its handle lines. But you can change the preferences to make it toggle slow-drag (see next page).

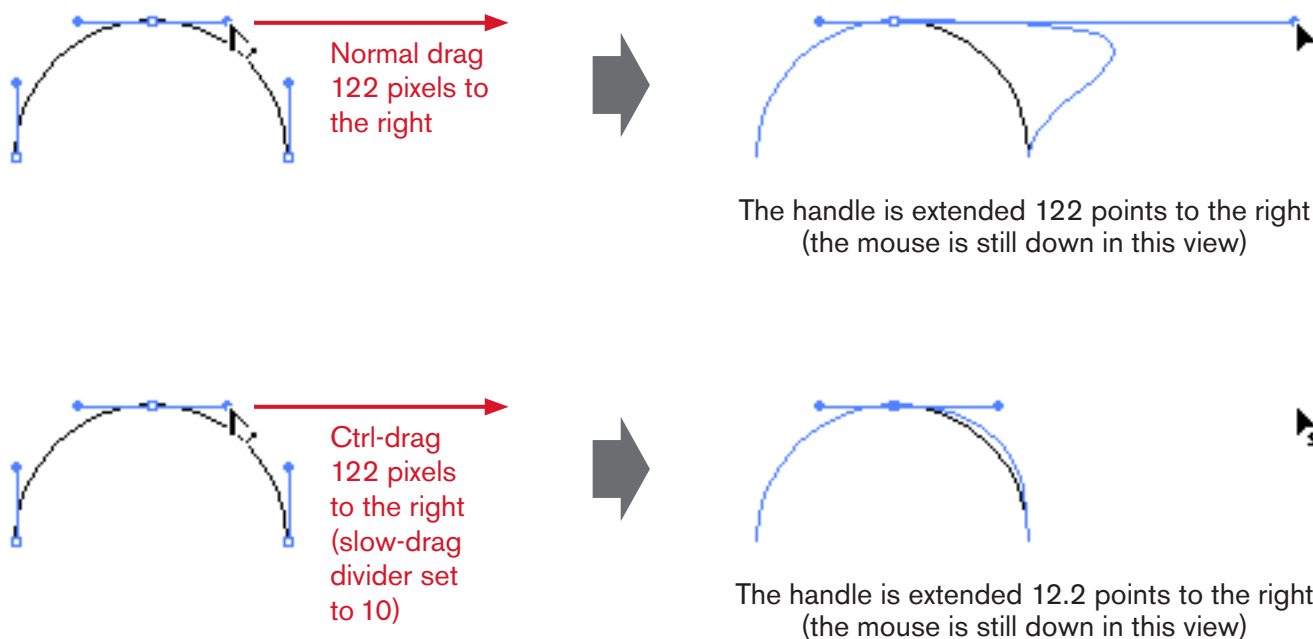You can also choose the function of the Shift key to use when clicking. By default, when clicking on handles, points and segments, the Shift key adds or subtracts from the selection, in the normal manner. But, if you'd rather trade this behavior for added functionality, you can set the preference *Shift-clicking equalizes handle lengths* (see page 49). For brevity this is referred to as the *Equalizes* preference below.

BetterHandles Tool

Slow-Drag

Making precise adjustments to handle positions with one of the Selection Tools is often frustrating because you may need to zoom in so far that you can't see everything you need to. **BetterHandles** offers a feature called "slow-drag" that can help you.

To use slow-drag, make sure the *Use Ctrl key to toggle slow-drag* preference is enabled (see page 50), and hold down the Ctrl key during a drag. The cursor will show a small "S" to remind you that you are slow-dragging. The cursor's movement will be divided by a value called the *Slow-drag divider* (settable in the preferences, see page 50). For example, at 100% View, each pixel corresponds to the unit of length of one point. You can normally move a handle, therefore, only in one-point increments at this view. But if you set the slow-drag divider to 10 and move the cursor, each pixel of movement will move the handle by only 0.1 points:

Normal drag
122 pixels to
the right

The handle is extended 122 points to the right
(the mouse is still down in this view)

Ctrl-drag
122 pixels
to the right
(slow-drag
divider set
to 10)

The handle is extended 12.2 points to the right
(the mouse is still down in this view)

Slow-drag works when dragging handles (single or multiple), points and paths, and in combination with the other modifier keys.

BetterHandles Tool

Cursor Highlighting and Snapping

Although the **BetterHandles** cursor changes to show you what you are hovering over, the distinction may be too subtle for you. For even more visible snapping behavior, **BetterHandles** can highlight the cursor when it is over an anchor point, handle or path segment by putting a red ring around it (you can enable this behavior in the preferences; see page 50).

<div style="text-align:center">
Cursor is not
over the handle

Cursor is
over the handle

Cursor is over the handle
(highlighting ring enabled)
</div>

To add additional information, you can also add text annotations to the highlighting ring, in one of two styles:

<div style="text-align:center">
Text annotations
enabled (normal style)

Text annotations
enabled (boxed style)
</div>

When Smart Guides are on, **BetterHandles** snaps as usual using the radius value set in *Illustrator Preferences > Smart Guides > Snapping Tolerance*.

When Smart Guides are off, **BetterHandles** snaps to anchor points and handles (but not paths) using the snapping radius you have set in *Illustrator Preferences > Selection & Anchor Display > Selection > Tolerance* (in Illustrator CS2 and earlier, this preference does not exist, so a value of 6 pixels is used).

BetterHandles Tool

Individual Handle Operations

Clicking

Clicking on a handle without any modifier keys will simply select the handle's associated point (the point will also become selected whenever one of its handles is modified, as below). Other paths are not affected: if they were fully- or partially-selected, they remain so. To deselect all points, click on a blank area of the document.

*Shift-clicking (Equalizes preference **off**)*

Shift-clicking on a handle will add or subtract the handle's associated point from the selection.

*Shift-clicking (Equalizes preference **on**)*

Shift-clicking on a handle with the preference set will adjust the handle's length to match the point's other handle. If the other handle is completely retracted, then the clicked handle will be retracted as well. The cursor does not move with the handle:

Corner point with unequal handle lengths   Shift-click   Corner point with equal handle lengths
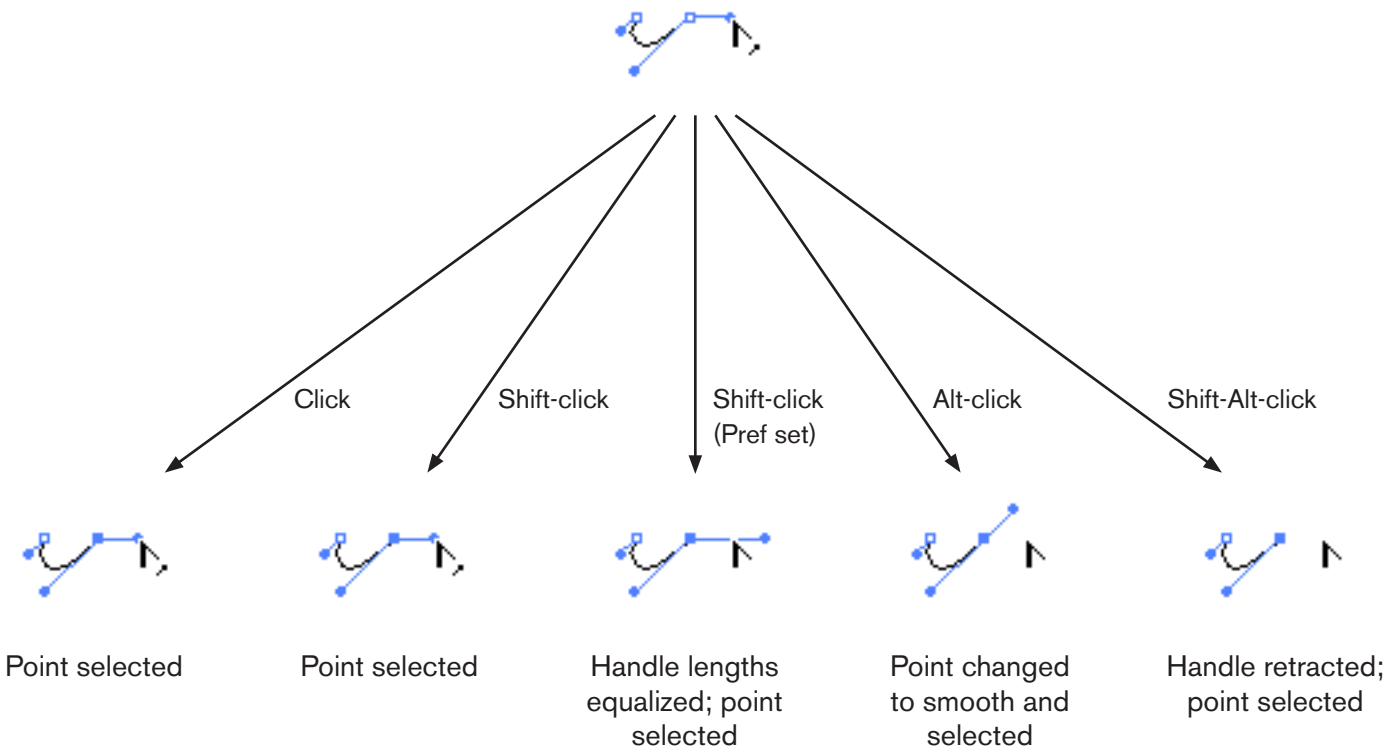
Alt-clicking

Alt-clicking on a handle will change the type of point from corner to smooth or vice versa. (You can determine a point's type by holding the cursor over it; see page 15). When a smooth point is converted to a corner point, neither handle moves. When a corner point is converted to a smooth point, the clicked handle moves, changing its angle so it is opposite the existing handle. If the other handle is retracted, the clicked handle does not move.

Shift-Alt-clicking

Shift-Alt-clicking on a handle will retract the handle. The point type remains unchanged.

Examples of clicking on a handle. The point is a corner point:

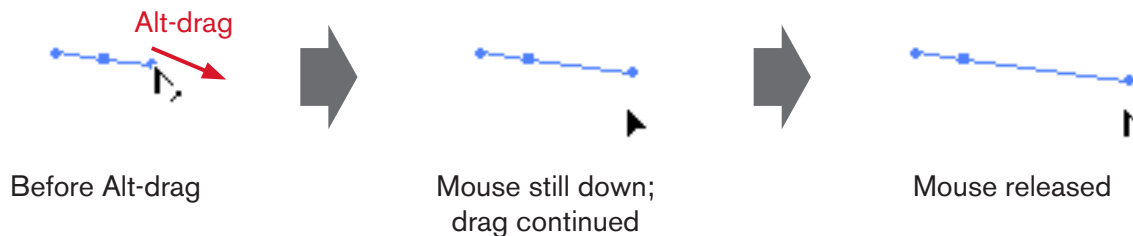| Click	Shift-click	Shift-click (Pref set)	Alt-click	Shift-Alt-click
Point selected	Point selected	Handle lengths equalized; point selected	Point changed to smooth and selected	Handle retracted; point selected

Dragging and Shift-dragging

Dragging a handle without any modifier keys or with the Shift key down will move it in the same manner as the Direct Selection Tool (unless the *Recognize connector points* preference is enabled and the point is a connector point; see page 28). One minor difference is that text-on-a-path will remain visible as you move the path's handles around with the **BetterHandles** tool, making it easier to get the text to look the way you want it. While dragging, you can hold down the space bar to move the handle's anchor point; let go of the space bar to continue moving just the handle.

Alt-dragging

Alt-dragging constrains the handle to its original angle, or the angle that is 180° away from the original angle (this lets you flip which side the handle is on if you drag it back past its originating point).

Alt-drag

| Before Alt-drag | Mouse still down; drag continued | Mouse released |

> **TIP** You can press Alt even if you initially started the drag without it, and the handle's original angle will be restored.
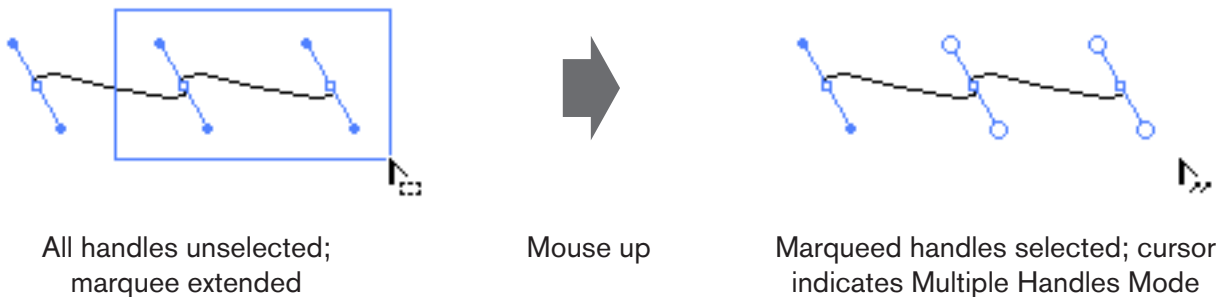
Shift-Alt-dragging

Shift-Alt-dragging is the same as Alt-dragging, except when Smart Guides are turned on. In this case the handle will snap to other items on the page while remaining constrained to its original angle. (The *Transform Tools* checkbox in Illustrator's *Smart Guides* preference must be checked.)

> **TIP** If you Alt-drag or Shift-Alt-drag a handle back towards its originating point, its angle may change slightly when the handle is very close to the point. This is due to the internal precision limitations of Illustrator.

BetterHandles Tool

Multiple Handle Operations

BetterHandles can select and edit multiple handles simultaneously. To select multiple handles, first make them visible on the screen (the easiest method is to Alt-marquee over a small section of the path, being careful not to select any points) and then marquee them with the **BetterHandles** tool by dragging out a rectangle that encloses them. (You can also select the points whose handles you wish to select and use the item *Select handles of selected points* on the flyout menu of the **BetterHandles** palette; see page 33.) Handles which are selected change from small, solid circles to larger, hollow circles (unless you're using Illustrator CS3 or higher and have changed their display):

All handles unselected;
marquee extended

Mouse up

Marqueed handles selected; cursor
indicates Multiple Handles Mode

TIP Handles made visible with Illustrator CS3/CS4/CS5's *Show handles when multiple anchors are selected* preference will not be selectable with **BetterHandles**. To avoid the problem, either turn the preference off, or only use the **BetterHandles** tool to select paths and points.

You can use the Shift key while marqueeing to add or subtract handles from the current selection. **BetterHandles** can select the handles of up to 4000 points simultaneously. To deselect all selected handles, click on a blank area of the document. To deselect one type of handle (*in* or *out*) or select the opposite handle, use the flyout menu on the palette (see page 33). The number of handles selected and their types is shown on the status line of the **BetterHandles** palette (see page 44).

If no handles fall within the marqueed rectangle, **BetterHandles** will check for and select points or path segments instead. (You can also ignore handles and only select points or segments by holding down the Alt key during the marquee operation; see page 26.)

BetterHandles Tool

When one or more handles are selected, **BetterHandles** enters "Multi-Handle Mode". The cursor changes to show an icon of two handles to remind you of this. While in this mode, you can't edit anything else, like an unselected handle or a point. You *can* Alt-click on unselected paths to show their handles. But if you switch to another tool, you will lose the handle selection. If you hold down Ctrl to temporarily switch to one of the selection (arrow) tools, and you modify a path that contains selected handles, they will become unselected.

Clicking

You can't use any of the click operations on multiple handles. However, you can use the **BetterHandles** palette to perform the same functions on them (see page 43).
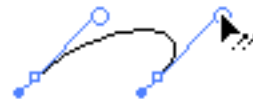
TIP If you prefer to use the palette for handle editing, you can select a single handle and do so in the same manner as multiple handles. This is also useful for copying handle attributes (see page 46).

Dragging (all types)

The **BetterHandles** tool cursor changes when you are over a selected handle in Multi-Handle Mode, indicating that you can drag the handles to move them:

Cursor is not over the handle; dragging
here will start a new marquee

Cursor is over the handle; dragging
here will move the selected handles

Additionally, as with a single handle, you can use the *Highlight cursor…* preference to draw a red ring around the cursor to help you identify when the cursor is over a selected handle.

When you drag one of a set of selected handles, the handle under the cursor moves in the same manner as a single dragged handle would (with one exception: connector points are not recognized in Multi-Handle Mode). How the other handles move is dependent on two preference settings (see below) and which multi-handle drag mode is active. There are four multi-handle drag modes: *Constraining mode*, *Normal rotation mode*, *Counter-rotation mode*, and *Group mode*.
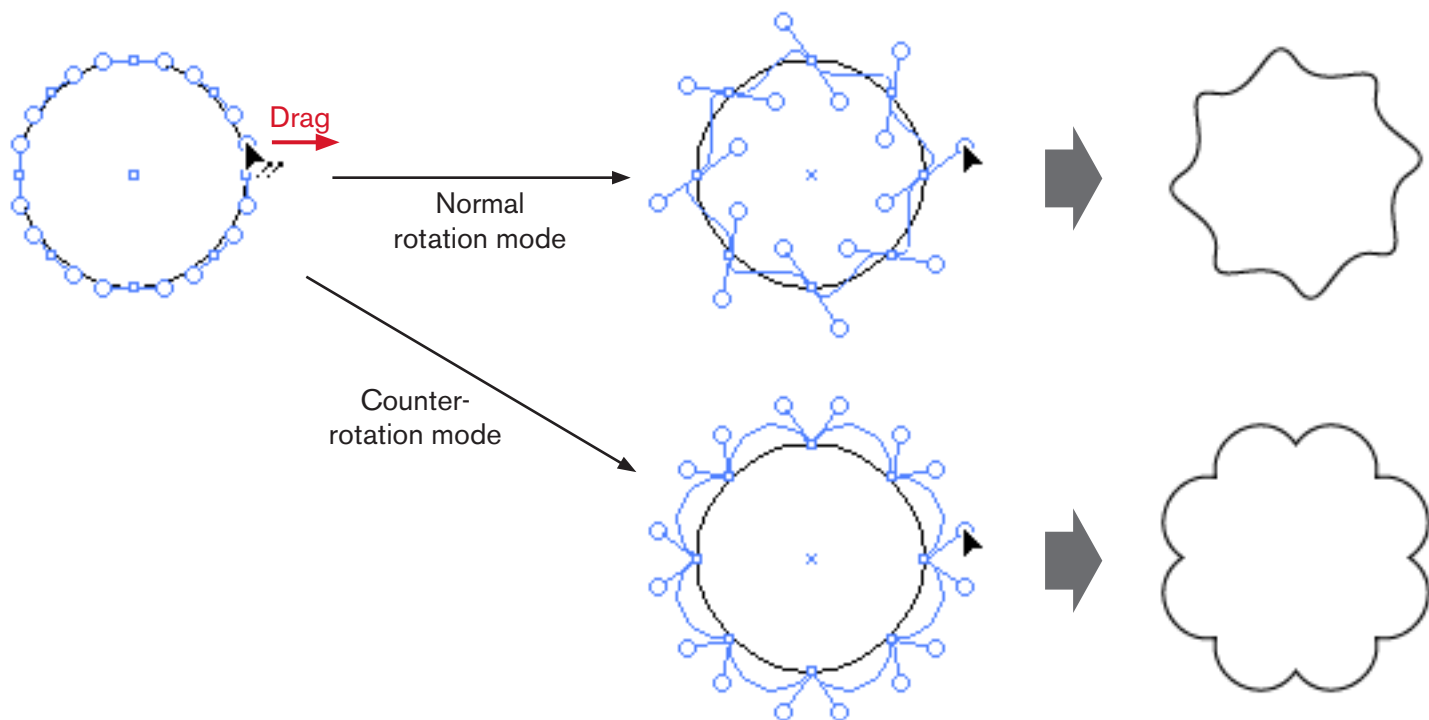
Constraining mode

If the Alt key is held down, the angles of all of the selected handles will be constrained to their original angles. Their lengths will change in the manner explained below.

Normal and Counter-Rotation modes

You operate in one of these modes unless the Alt key or space bar are held down. Which mode is active can be seen in the bottom status line on the **BetterHandles** palette as long as it is visible (see page 44), and you can toggle between these modes by pressing the "C" key when the mouse is down.

In both these modes, selected handles will rotate through the same angle as the dragged handle, but in *Counter-rotation mode*, handles of the opposite type as the dragged handle will move in the opposite direction. For example, if the dragged handle is an *in* handle and is rotated 60° clockwise, then all selected *out* handles will be rotated 60° counterclockwise:
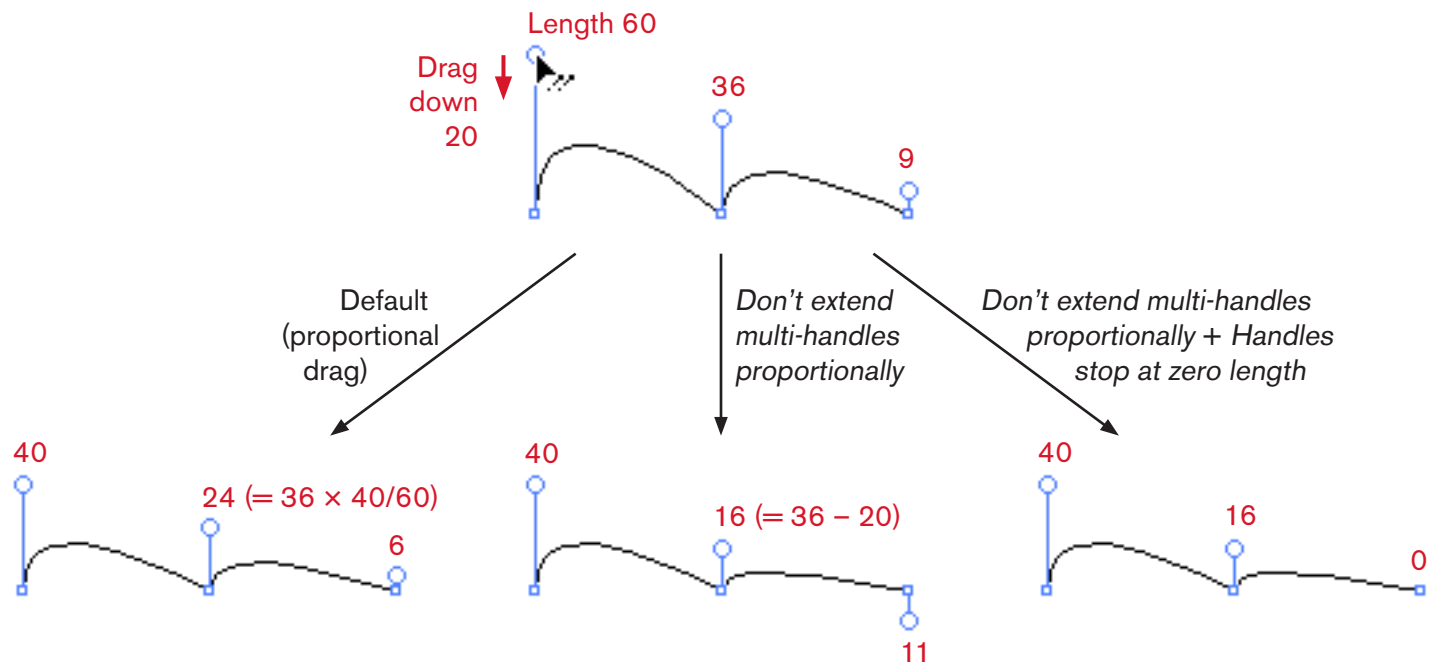
Drag

Normal
rotation mode

Counter-
rotation mode

The change in each selected handle's length depends on the *Don't extend multi-handles proportionally* and *Handles stop at zero length* preference settings (see). The default is for these settings to be disabled, and for handles to shorten or lengthen in proportion to the change in length of the dragged handle. For example, if the dragged handle was shortened to half of its original length, then all of the selected handles will be shortened to half of their original lengths.

When *Don't extend multi-handles proportionally* is enabled, selected handles shorten or lengthen by the same amount as the dragged handle. For example, if the dragged handle was shortened from 60 pts to 40 pts, then all of the selected handles will be shortened by 20 pts. What happens if some of these selected handles were already less than 20 pts in length? This depends on the *Handles stop at zero length* setting. When disabled, handles shortened beyond their original lengths simply "flip" to the opposite side and start to lengthen again. When dealing with large groups of handles of different lengths, this behavior may not be intuitive. Also be aware that this may lead to anchor points which, despite being "smooth," have both of their handles pointing in the same direction.

To avoid this, you can enable the *Handles stop at zero length* setting. Then, handles shortened beyond their original lengths simply disappear when their length reaches zero.
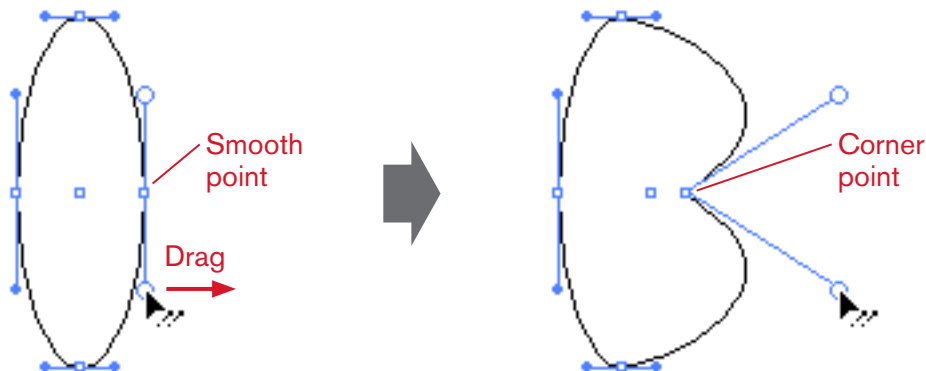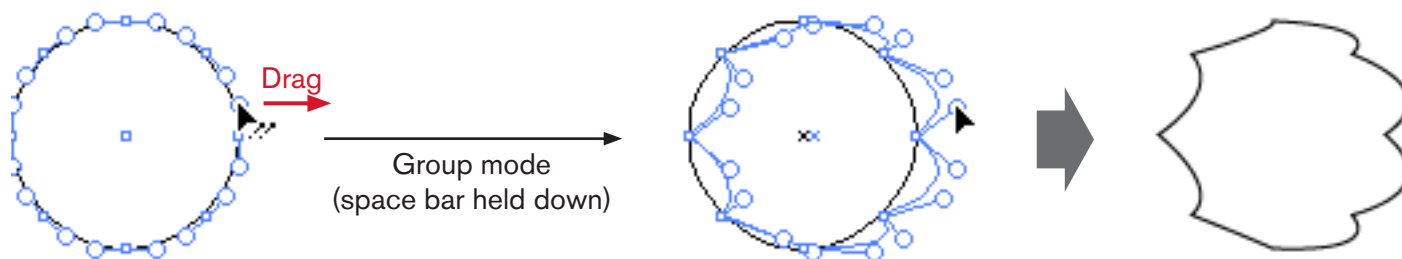
BetterHandles Tool

Multiple Handle Operations (continued)

Note that if both handles of a smooth point are selected and moved in *Counter-rotation mode*, the point automatically becomes a corner point:

Smooth point

Drag

Corner point

Group mode

Group mode is accessed by holding down the space bar while moving multiple handles. In this mode, all of the selected handles move as one unit in the same direction and distance as the dragged handle. As with *Counter-rotation mode*, if both handles of a smooth point are selected and moved, the point automatically becomes a corner point. If you begin your drag without the space bar and add it later, the angles and relative positions of all the selected handles will be restored to their original values.

Drag

Group mode
(space bar held down)

BetterHandles Tool

Point Operations

The **BetterHandles** cursor changes when it is over an anchor point, showing you the point's type:

Cursor is not over a point	Cursor is over a smooth point	Cursor is over a corner point	Cursor is over a corner point (text annotation)

All of the click operations on points are directly analogous to the click operations on a single handle, except both handles are affected. For example, whereas a Shift-Alt-click on a handle retracts only that handle, a Shift-Alt-click on a point retracts both handles (assuming they both exist).

Clicking

Clicking on a point selects it and deselects all other points on the path. Other paths are not affected: if they were fully- or partially-selected, they remain so. When a single point is all that is selected, you can numerically edit it using the **BetterHandles** palette (see page 32).

*Shift-clicking (Equalizes preference **off**)*

Shift-clicking on a point will add or subtract the point from the selection.

*Shift-clicking (Equalizes preference **on**)*

When the *Shift-clicking equalizes handle lengths* preference is checked, Shift-clicking on a point will make the lengths of the point's handles equal. The point's type does not change:

Smooth point with unequal handle lengths	Shift-click	Smooth point with equal handle lengths

If both handles exist, the new length for each is determined by averaging the lengths of the handles. If one of the handles is retracted, a new handle is created opposite the existing handle in angle and equal to it in length. If both handles are retracted, Shift-clicking a point does nothing.
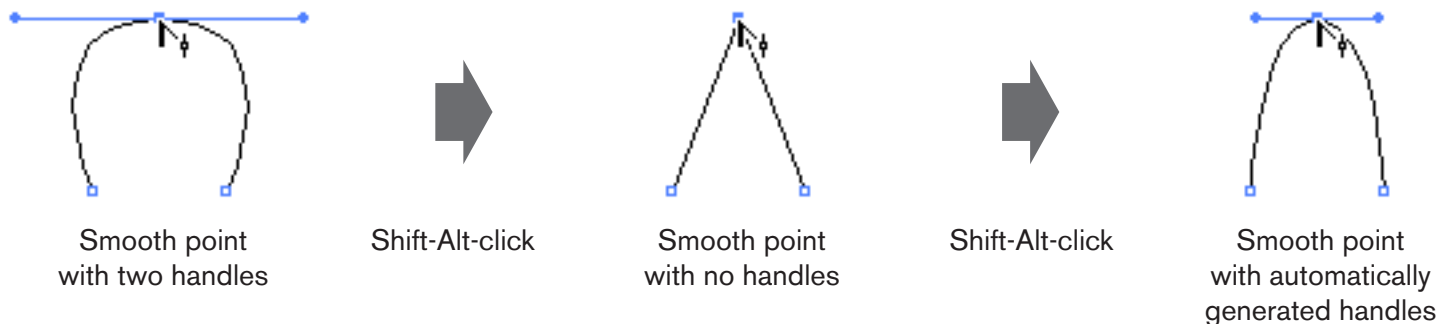
Alt-clicking

Alt-clicking on a point will convert its type from corner to smooth or vice versa. When a smooth point is converted to a corner point, neither handle moves. When a corner point is converted to a smooth point, and both handles exist, each handle swings away from the other in equal amounts until they are 180° apart:

Corner point with
handle angles of 180°
and 45°

Alt-click

Smooth point with
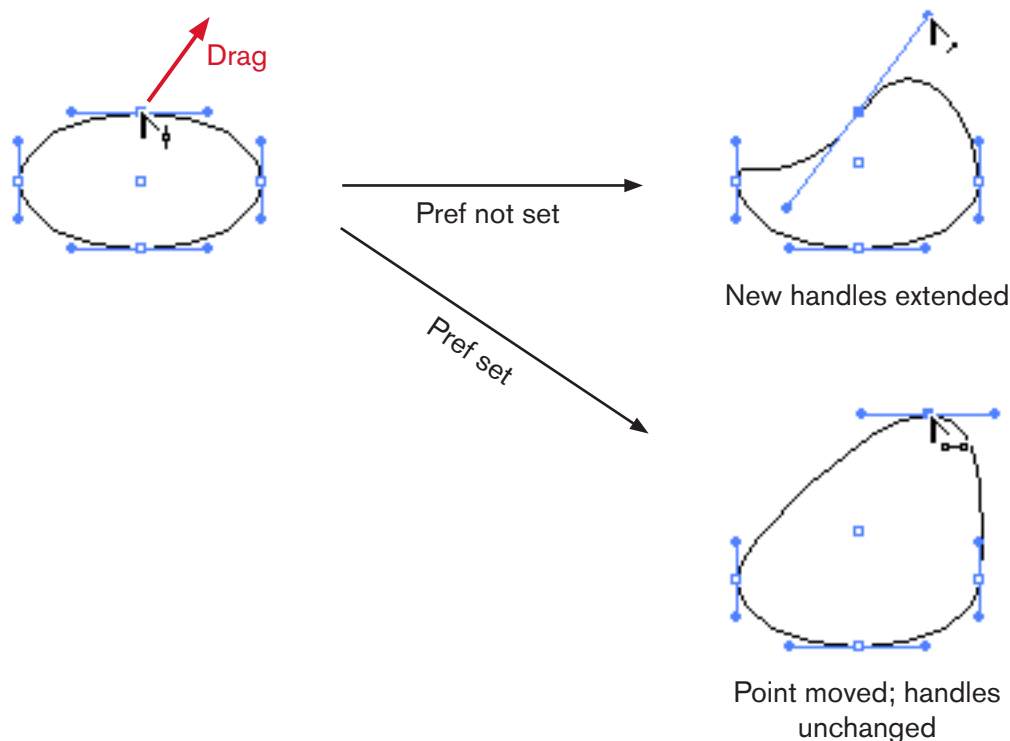handle angles of 22.5°
and 202.5°

Shift-Alt-clicking

Shift-Alt-clicking on a point will retract its handles. The point type remains unchanged. If both handles are already retracted, then Shift-Alt-clicking creates two new handles, using the algorithm described for the **BetterHandles** palette (see):

Smooth point
with two handles

Shift-Alt-click

Smooth point
with no handles

Shift-Alt-click

Smooth point
with automatically
generated handles

BetterHandles Tool

Dragging and Shift-dragging

The result of dragging or Shift-dragging a point is dependent on the *Enable anchor point dragging* preference. When the preference is off, one or two new handles (depending on how many already exist, see below) are extended. When on, the point is moved, along with its handles:

Drag

Pref not set

Pref set

New handles extended

Point moved; handles unchanged

In both of these cases, Shift has the effect of constraining the angle of the handle(s) or point to 45° increments. The constrain angle is honored. Further discussion below assumes the *Enable anchor point dragging* preference is off.

TIP When the *Enable anchor point dragging* preference is off, choose the Direct Selection Tool before the **BetterHandles** tool. Then you can still move anchor points while using the **BetterHandles** tool by holding down Ctrl to temporarily switch to the Direct Selection Tool. Alternatively, you can click-and-hold on a handle and hold down the space bar to move the point.
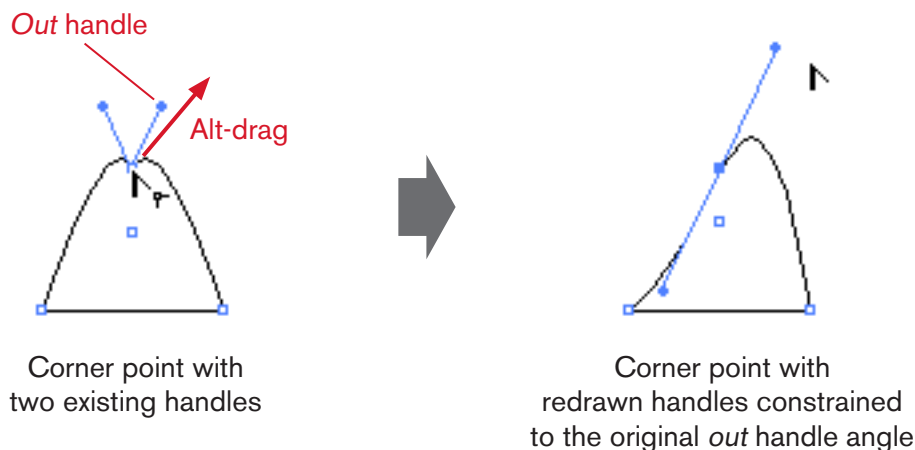
When both handles already exist, dragging and Shift-dragging extends two new handles, 180° apart, regardless of point type (which stays unchanged). This is similar to the Convert Anchor Point Tool, although that tool always leaves the resulting point as a smooth point.

When one handle already exists, a single new handle is extended. The existing handle on a corner point is not disturbed. When no handles exist, two new handles are extended from a smooth point, but only the *out* handle is extended from a corner point.

Alt-dragging and Shift-Alt-dragging

Alt-dragging an anchor point extends one or two new handles like regular dragging, but constrains their angles to their "original" angles. This behavior occurs even when the *Enable anchor point dragging* preference is on, so you can still extend new handles from points by Alt-dragging and then releasing the Alt key. Adding Shift enables snapping, when Smart Guides are turned on.

When both handles already exist, the "original" angle is the angle of the *out* handle. The cursor controls the *out* handle, while the *in* handle stays 180° opposed:

Corner point with
two existing handles

Corner point with
redrawn handles constrained
to the original *out* handle angle

When one handle already exists, the "original" angle for a smooth point is the angle of the existing handle plus 180°. For corner points, or when no handles exist, the "original" angle is set to the tangent angle of the path at the point.
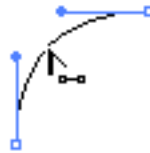
BetterHandles Tool

Path Segment Operations

The **BetterHandles** cursor changes when it is over a path to indicate this. When you enable the highlighting ring over path segments (see page 51), it will show you the path's direction with a small arrow. If text annotations are also enabled, it will also report the closed/open state of the path:
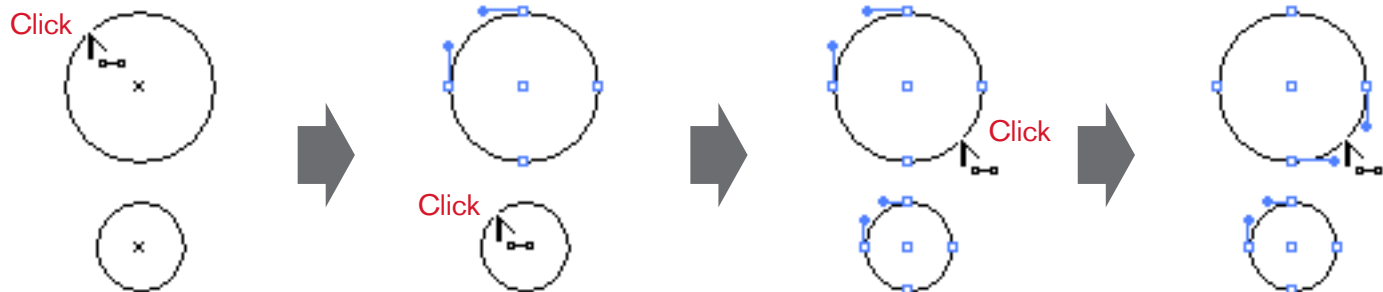
Cursor is not over the path   Cursor is over the path   Cursor is over the path (highlighting ring and text annotations enabled)

Clicking

Clicking on a path segment selects it, causing its handles (*in* handle at one end, *out* handle at the other end) to become visible (if they exist), and hiding other handles on the same path. Other paths are not affected: if they were fully- or partially-selected, they remain so.

If the *Show all handles on selected paths* preference is enabled (see page 49), all of the path's handles will become visible, not just the one segment's.

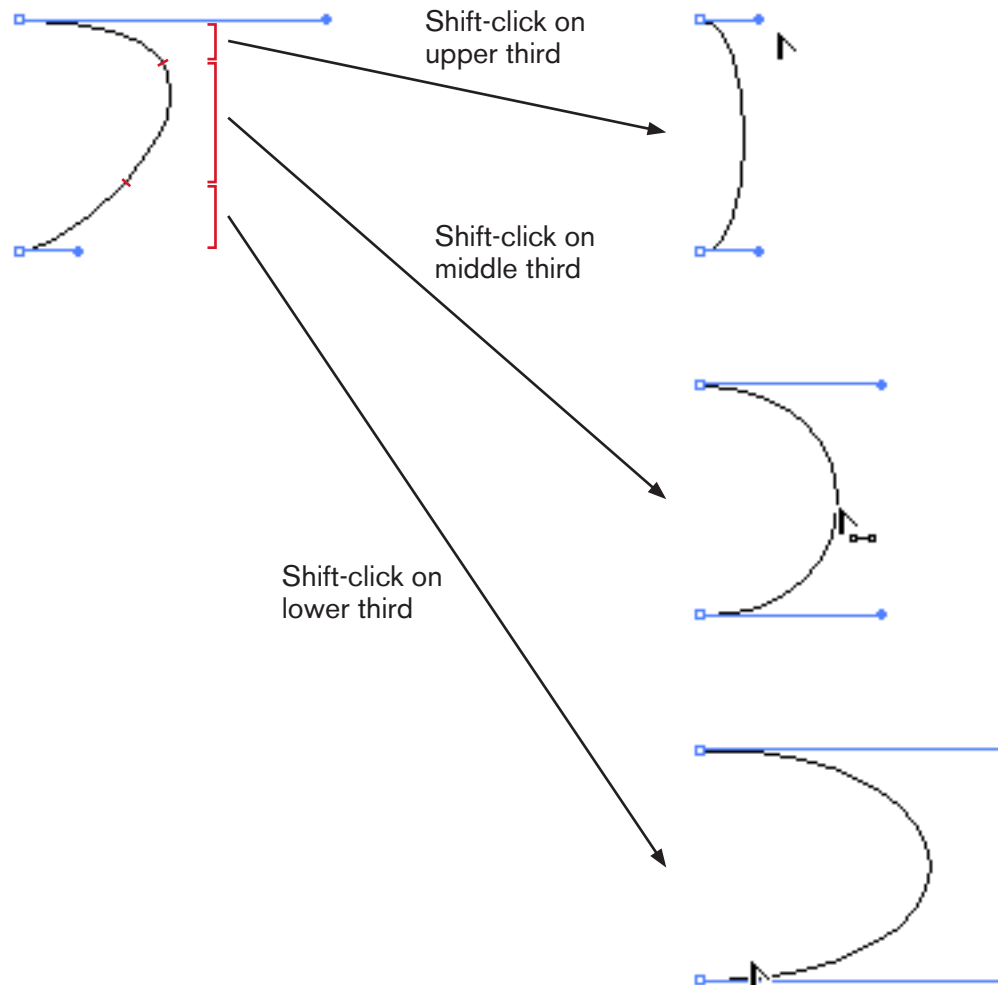*Shift-clicking (Equalizes preference **off**)*

Shift-clicking on a path segment toggles its handles' visibility state without affecting any other handles, whether on the same path or a different one. If the *Show all handles on selected paths* preference is enabled, Shift-clicking won't do anything.

*Shift-clicking (Equalizes preference **on**)*

When the *Shift-clicking equalizes handle lengths* preference is enabled, Shift-clicking on a path segment equalizes its handle lengths (handle angles are not affected). How the length is calculated depends on where you click along the path. Shift-clicking on the inner third will average the handle's lengths together. Shift-clicking on either of the outer thirds will change the length of the handle nearest the click to match the other handle:

Shift-click on
upper third

Shift-click on
middle third

Shift-click on
lower third

BetterHandles Tool

*Alt-clicking (Alt-clicking adds new point to path preference **off**)*

Alt-clicking on a path segment makes all of the handles on the entire path visible. You can do this even while in Multi-Handle Mode (see page 11). Other paths are not affected.
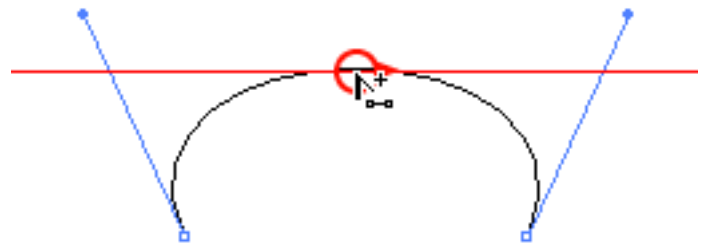
*Alt-clicking (Alt-clicking adds new point to path preference **on**)*

When the *Alt-clicking adds new point to path* preference is enabled (page 49), Alt-clicking on a path segment will add a new smooth point to the path at the clicked point. The cursor shows a "plus" sign.

If the preference *Snap to tangencies* is enabled, the cursor will snap to vertical, horizontal and diagonal tangencies on the path segment (the constrain angle is honored). A red guide will appear when the cursor is snapping to show you the tangent direction:

About to add a point

About to add a point and snapping
at horizontal tangency

Additionally, you can choose to highlight all of the tangencies on the current path segment with a small magenta dot by enabling the *Highlight tangencies* preference:

About to add a point with *Highlight tangencies* preference enabled
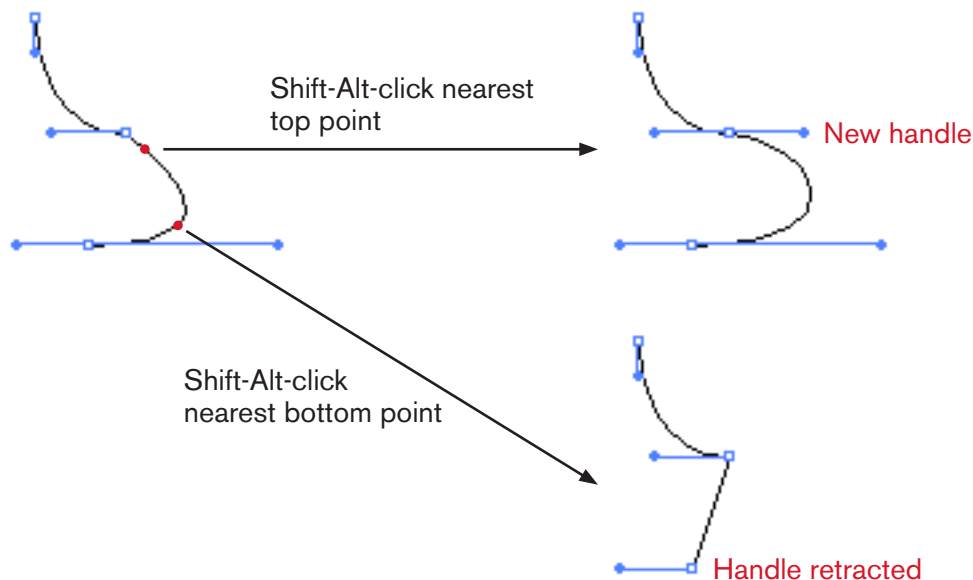
TIP When the *Alt-clicking adds new point to path* preference is enabled, you can still show all of a path's handles by either Shift-Alt-clicking on it (if it is not selected and you are not using the *Shift-clicking equalizes handle lengths* preference) or Alt-marqueeing (see) over a small section of the path (as long as you do not enclose any anchor points). When Alt-marqueeing, other paths will be deselected unless you also press Shift.

*Shift-Alt-clicking (Equalizes preference **off**)*

Shift-Alt-clicking on a path segment toggles the visibility state of all the handles on the entire path. If a path has only some of its handles visible, Shift-Alt-clicking on the path will hide them.

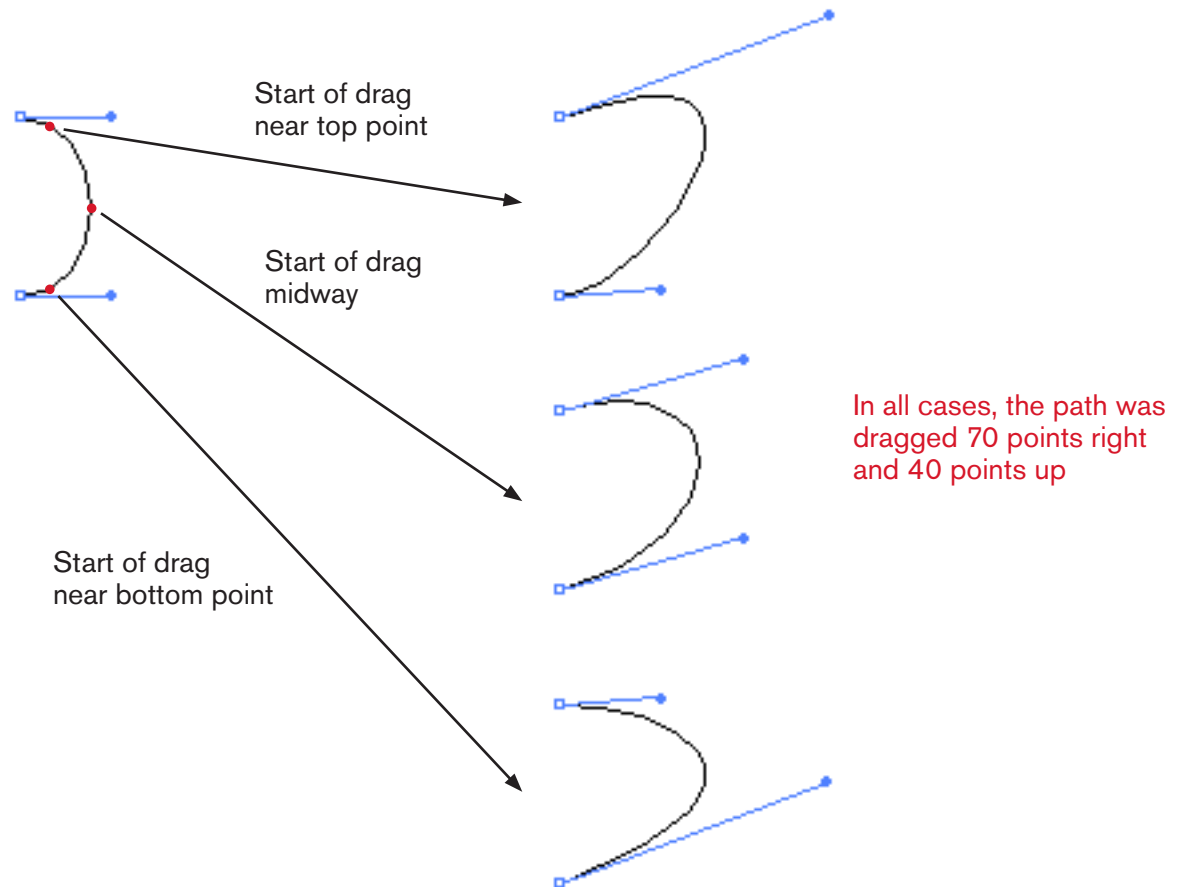*Shift-Alt-clicking (Equalizes preference **on**)*

When the *Shift-clicking equalizes handle lengths* preference is enabled, Shift-Alt-clicking on a path segment will retract or extend new handles. If the handle nearest the click exists, both handles will be retracted; otherwise, new handles are created where they don't already exist. In both cases, adjacent path segments are not affected.

Shift-Alt-click nearest top point

New handle

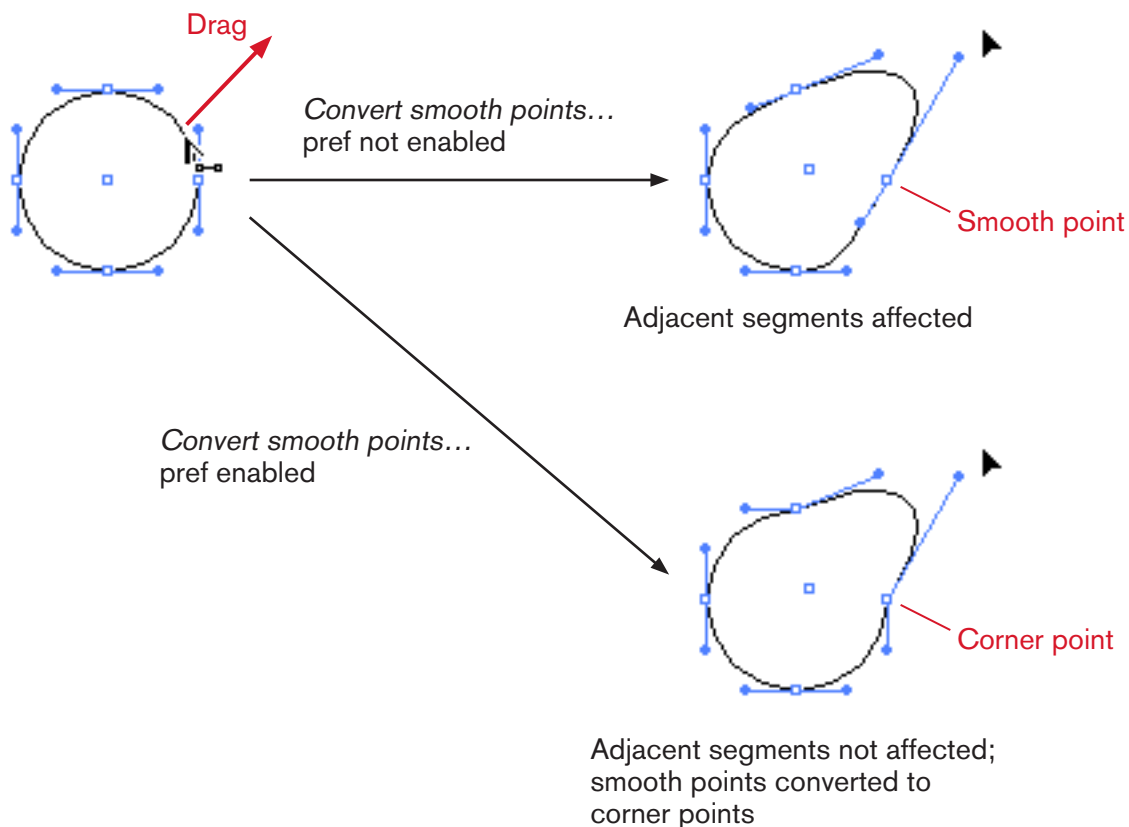Shift-Alt-click nearest bottom point

Handle retracted

Dragging

Dragging a path segment reshapes it. Unlike the Direct Selection Tool, the **BetterHandles** tool allows the segment's handles to both move and change angles, making path reshaping more intuitive (but you can use Alt-dragging to replicate the Direct Selection Tool's angle constraining ability, see page 26). The closer the initial mouse-down is to one point, the more that point's handle movement is affected by the cursor movement and the less the other handle is affected. Starting the drag midway between the points affects both handles equally.

Start of drag
near top point

Start of drag
midway

In all cases, the path was
dragged 70 points right
and 40 points up

Start of drag
near bottom point

If either of the segment's handles does not exist at the start of the drag, new ones will be created. Their location is affected by the *Smoothing ratio* preference.

Normally, adjacent segments will be affected when you drag a segment if its endpoints are smooth points, since the opposing handles must change angles to remain 180° away from the moved handles. If you'd rather only affect the dragged segment, you can enable the *Convert smooth points to corner points when dragging path segments* preference:
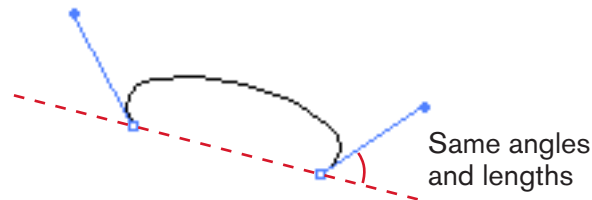
Drag

Convert smooth points…
pref not enabled

Smooth point

Adjacent segments affected

Convert smooth points…
pref enabled

Corner point

Adjacent segments not affected;
smooth points converted to
corner points

TIP When you are using *Recognize connector points*, segments with connector points at one or both ends are affected differently by unmodified and modified drags (see page 28), since a connector point can have only one handle at a fixed angle.

Shift-dragging

Shift-dragging a path segment reshapes it while keeping it symmetric. Symmetric means that both handles are the same length and form the same angle to the imaginary line running through the endpoints of the path segment:

Same angles
and lengths

The initial lengths and angles for the symmetric curve are determined in the same way as Shift-clicking a path: the existing curve is divided into thirds, and mouse-downs on the outer thirds change the nearest handle to match the other one. Mouse-downs on the center third average the existing handles together.

If you release the Shift key (or if you start dragging without it) and later hold it down, the curve will become symmetric by averaging the lengths and angles of the handles as they exist at that moment.

Alt-dragging

Alt-dragging a path segment reshapes it while constraining the angles of the handles to their original values (±180°), i.e. it acts in the same manner as the Direct Selection Tool. If you have the *Alt-clicking adds new point to path* preference enabled, you must hold down Alt *after* you hold down the mouse button, or you will inadvertantly add a point to the path. But even if you begin to drag without the Alt key, holding it down afterwards will set the angles of the handles to the angles they had when you originally moused down on the path.

TIP If your initial Alt-drag mouse-down was close to one of the ends of the segment, the segment will probably be very sensitive to movement of the cursor. You can gain better control of the final segment position by using slow-drag in this situation (see).
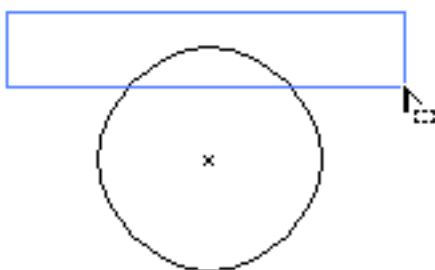
Shift-Alt-dragging

Shift-Alt-dragging a path segment reshapes it with the following constraints: the handle lengths are kept equalized, and the handle angles are constrained to their original values. As with Alt-dragging, handle angles will be set to the original angles *unless* Shift is held down first (which makes the curve symmetric). This allows you to first symmetrize a curve until the handles are at the angle you like, and then lengthen or shorten them without losing the symmetry.

When Shift and Alt are both held down before you drag, neither the *Shift-clicking equalizes handle lengths* nor *Alt-clicking adds new point to path* preferences apply.
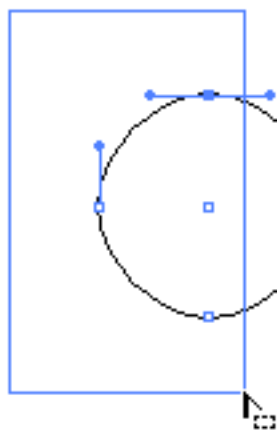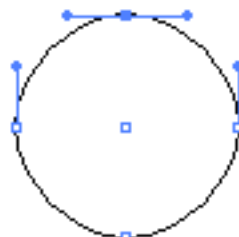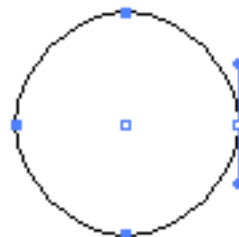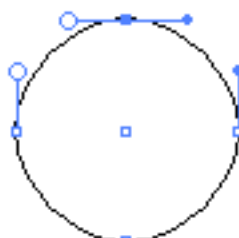
BetterHandles Tool

Marqueeing Operations

Starting at a area with nothing under the cursor, you can click and drag with the **BetterHandles** tool ("marqueeing") to draw out a rectangle that selects anchor points and path segments. Although points and segments can also be selected by clicking on them, multiple handles can only be selected by marqueeing. Additionally, handles take priority over points and segments (unless the Alt key is down, see below); i.e., **BetterHandles** will always look for and select handles before selecting points or segments. You can cancel a marquee in progress by pressing the "Escape" key.

First marquee (with or without modifier keys)

Second marquee

(No modifiers)

(Alt key down)

Marqueeing and Shift-marqueeing

When marqueeing or Shift-marqueeing, the **BetterHandles** tool selects like the Direct Selection Tool (except, of course, if handles fall within the marquee, in which the case the handles are selected or deselected).

Alt-marqueeing

Holding down Alt while marqueeing forces **BetterHandles** to ignore handles and only select points or segments. If no points are selected, all of the path's segments will be selected (showing all the path's handles).

Shift-Alt-marqueeing

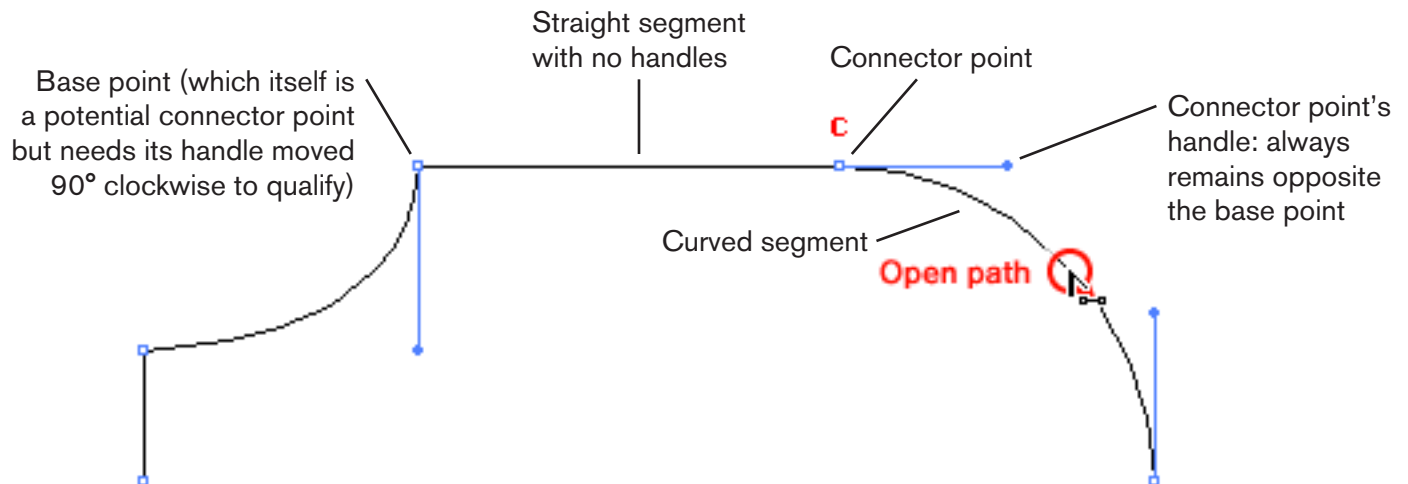Same as Alt-dragging but adds to or subtracts from the current point/segment selection.

Connector Points

When the *Recognize connector points* preference is enabled (see page 51), **BetterHandles** can recognize and work with *connector points:* points that act as transitions between straight segments and curved segments.
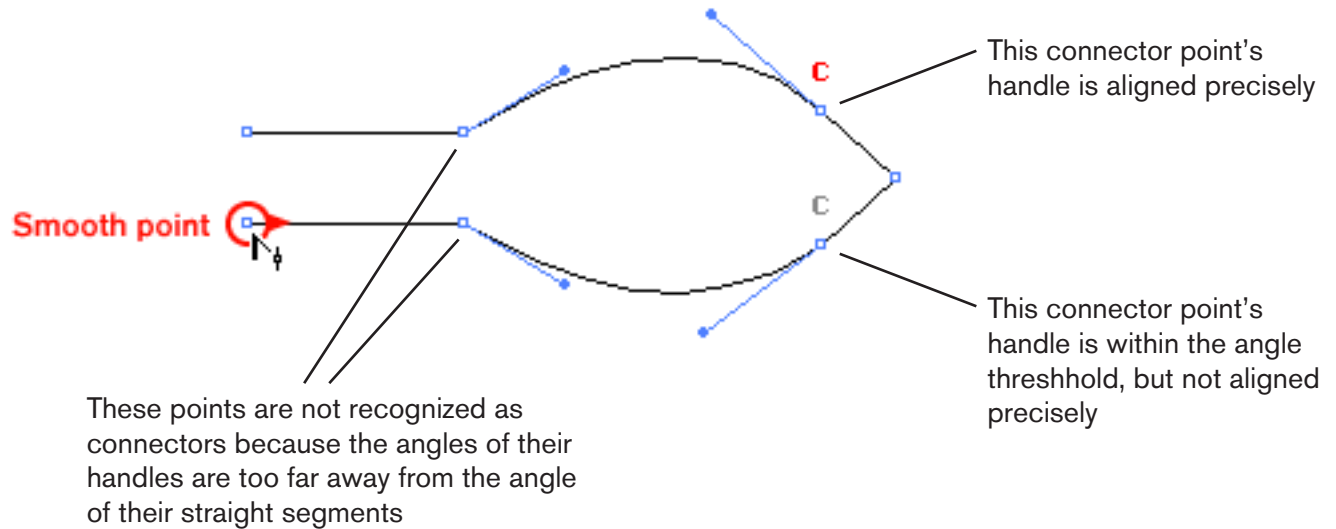
A connector point:

- Can be either a smooth or corner point, but not an endpoint of an open path;
- Must have a single handle that faces directly away from another point (the *base point*);
- Must be adjacent (on its non-handle side) to a segment with no handles

Additionally, for **BetterHandles** to recognize a point as a connector, its handle must be lined up with the straight segment. The amount that its handle can be off and still qualify as a connector is called the *angle threshhold*. It has a default value is 5° but can be set in the preferences dialog.

Base point (which itself is a potential connector point but needs its handle moved 90° clockwise to qualify)

Straight segment with no handles

Connector point

Connector point's handle: always remains opposite the base point

Curved segment

Open path

BetterHandles Tool

Connector Points (continued)

Hovering the cursor over a path will identify all of the path's recognized connector points by putting a small "C" above them. The color of the "C" indicates whether a connector is within the angle threshhold but not perfectly lined up (gray) or aligned precisely (red):

This connector point's handle is aligned precisely

Smooth point

This connector point's handle is within the angle threshhold, but not aligned precisely

These points are not recognized as connectors because the angles of their handles are too far away from the angle of their straight segments

You can also use the flyout menu item *Detect and adjust connector points* to align all recognized connector points on selected paths. Also, nearly all clicks and drags with the **BetterHandles** tool on a connector point, its handle, the segments next to it, or the points adjacent to it, will automatically align (if not already), and keep aligned, the connector point's handle. (Exceptions include Multi-Handle drags and Shift-Alt-clicks that retract or extend new handles.) When a connector point is being automatically aligned during an edit, a red "C" will appear above it. If the edit removes the connector's points handle (such as dragging its handle back until it is of zero length), the "C" will disappear.

TIP Since other tools will not see connector points any differently from non-connector points, any edits other than those that affect the entire path (moving, rotating, scaling) should only be done using the **BetterHandles** tool or the connector point handles may be disturbed.

BetterHandles Tool   Summary of Click Operations

	Click	Shift-click (*Equalizes* preference off)	Shift-click (*Equalizes* preference on)	Alt-click	Shift-Alt-click
Smooth, ≥1 handle	Selects point	Toggles point selection	Equalizes handle lengths (clicked handle changes)	Converts to corner point (handles remain)	Retracts handle
Corner, ≥1 handle	Selects point	Toggles point selection	Equalizes handle lengths (clicked handle changes)	Converts to smooth point (only clicked handle moves)	Retracts handle
Smooth, 2 handles	Selects point	Toggles point selection	Equalizes handle lengths (handles average)	Converts to corner point (handles remain)	Retracts handles
Corner, 2 handles	Selects point	Toggles point selection	Equalizes handle lengths (handles average)	Converts to smooth point (handles average)	Retracts handles
Smooth, 1 handle	Selects point	Toggles point selection	Equalizes handle lengths; new handle matches existing (not connector points)	Converts to corner point (handle remains)	Retracts handle
Corner, 1 handle	Selects point	Toggles point selection	Equalizes handle lengths; new handle matches existing (not connector points)	Converts to smooth point (handle remains)	Retracts handle
Smooth, 0 handles	Selects point	Toggles point selection	No change	Converts to corner point	Extends two new handles using multihandle algorithm
Corner, 0 handles	Selects point	Toggles point selection	No change	Converts to smooth point	Extends two new handles using multihandle algorithm
Path Segment	Shows handles for segment	Toggles handles for segment	Equalizes segment handle lengths (lengths depend on click location)	Shows handles for entire path (or adds a new smooth point to the path if pref set)	Toggles handles for entire path (*Equalizes* pref on: retracts/creates segment handles)
Blank area	Deselects any selected handles (first click) or points (second click)	Deselects any selected handles (first click) or points (second click)	Deselects any selected handles (first click) or points (second click)	Deselects any selected handles (first click) or points (second click)	Selects all handles of selected points and enters Multi-Handle Mode

BetterHandles Tool

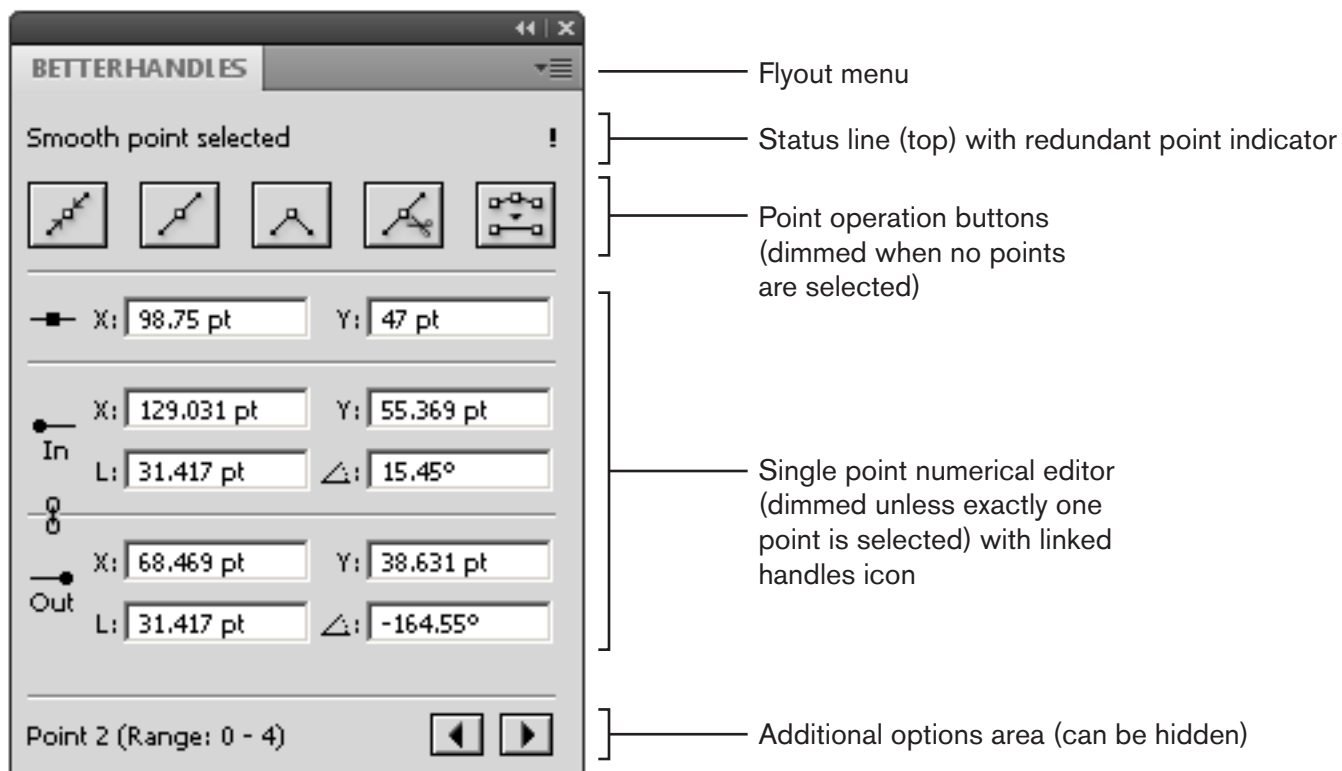|	Drag (*Anchor point dragging* off)	Drag (*Anchor point dragging* on)	Shift-drag (*Anchor point dragging* off)	Shift-drag (*Anchor point dragging* on)	Alt-drag	Shift-Alt-drag
Smooth, ≥1 handle Corner, ≥1 handle	Moves handle freely (all drags also apply to the dragged handle in a group of multiple handles)		Moves handle constrained in 45° increments		Moves handle at original angle	Moves handle at original angle and snaps (when using Smart Guides)
Smooth, 2 handles	Re-extends both handles freely	Moves point	Re-extends both handles constrained in 45° increments	Moves point constrained in 45° increments	Re-extends both handles at original angle	Re-extends both handles at original angle and snaps
Corner, 2 handles	Re-extends both handles freely	Moves point	Re-extends both handles constrained in 45° increments	Moves point constrained in 45° increments	Re-extends both handles at angle of out point	Re-extends both handles at angle of out point and snaps
Smooth, 1 handle	Extends new handle freely	Moves point	Extends new handle constrained in 45° increments	Moves point constrained in 45° increments	Extends new handle 180° from existing handle	Extends new handle 180° from existing handle and snaps
Corner, 1 handle	Extends new handle freely	Moves point	Extends new handle constrained in 45° increments	Moves point constrained in 45° increments	Extends new handle at path tangency angle	Extends new handle at path tangency angle and snaps
Smooth, 0 handles	Extends two new handles freely (180° apart)	Moves point	Extends two new handle constrained in 45° increments	Moves point constrained in 45° increments	Extends two new handles at path tangency angle	Extends two new handles at path tangency angle and snaps
Corner, 0 handles	Extends new "out" handle freely	Moves point	Extends new "out" handle constrained in 45° increments	Moves point constrained in 45° increments	Extends new "out" handle at path tangency angle	Extends new "out" handle at path tangency angle and snaps
Path Segment	Reshapes path (all drags may affect adjacent segments if points are smooth)		Reshapes path while keeping curve symmetric (when one or both of the endpoints are connector points, the curve may not be symmetric)		Reshapes path (keeps angles of handles like Direct Selection Tool)	Same, but keeps handle lengths equalized
Blank area	Marquees, selecting multiple handles (points and/or path segments, if no handles are active or within the marquee area)		Adds or subtracts from multiple handle or point selection		Marquees, selecting multiple points/path segments only	Adds or subtracts from multiple point/path segment selection

BetterHandles Palette

The **BetterHandles** palette allows you to numerically edit anchor points and their handles, as well as perform certain operations on one or more points. Its flyout menu also allows you to select and dese-lect handles, perform certain path operations, and bring up the **BetterHandles** Preference dialog.

The palette consists of a topmost status line, a flyout menu, a middle section that changes de-pending on whether you are in Multi-Handle Mode (see page 11), and, at the bottom, an optional additional options area.

You can show or hide the **BetterHandles** palette using the appropriate menu command under the *Window* menu. You can also group or dock the palette as usual.

Point Mode

If no handles are selected, the palette appears in Point Mode:

Flyout menu

Status line (top) with redundant point indicator

Point operation buttons
(dimmed when no points
are selected)

Single point numerical editor
(dimmed unless exactly one
point is selected) with linked
handles icon

Additional options area (can be hidden)

BetterHandles Palette

Flyout menu

The palette flyout menu in Point Mode is shown at right.

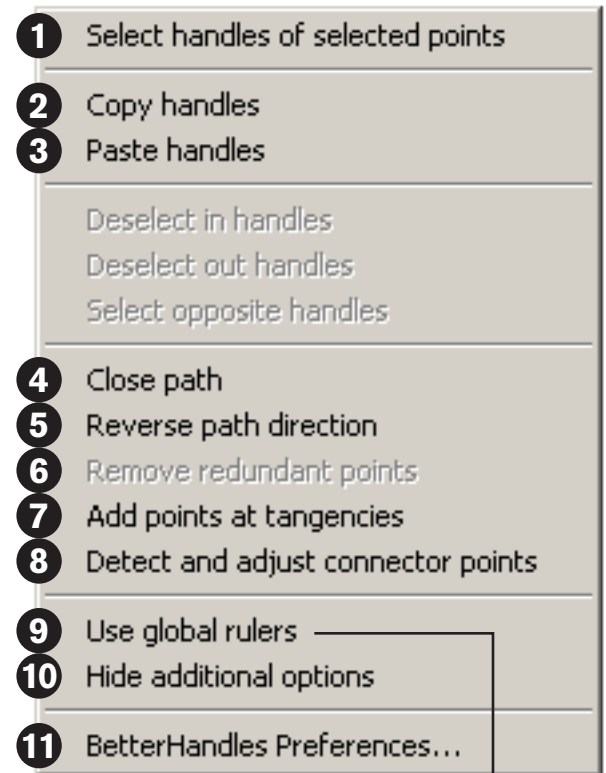**1** *Select handles of selected points*

When there are one or more points selected, this menu item selects all of the handles on all of the selected points and enters Multi-Handle Mode.

TIP You can use *Select handles of selected points* even if you don't have the **BetterHandles** tool selected. The tool will automatically be selected afterwards so you can work with the selected handles.

Holding down Alt or Ctrl while activating the flyout menu will change the menu item to *Select in handles of selected points* and *Select out handles of selected points*, respectively.

TIP Shift-Alt-clicking on a blank area of the document does the same thing as choosing *Select handles of selected points* but is much easier.

1 Select handles of selected points
2 Copy handles
3 Paste handles

Deselect in handles
Deselect out handles
Select opposite handles

4 Close path
5 Reverse path direction
6 Remove redundant points
7 Add points at tangencies
8 Detect and adjust connector points

9 Use global rulers
10 Hide additional options

11 BetterHandles Preferences…

Illustrator CS5 only

Select handles of selected points

Copy handles
Paste handles

❷ *Copy handles*

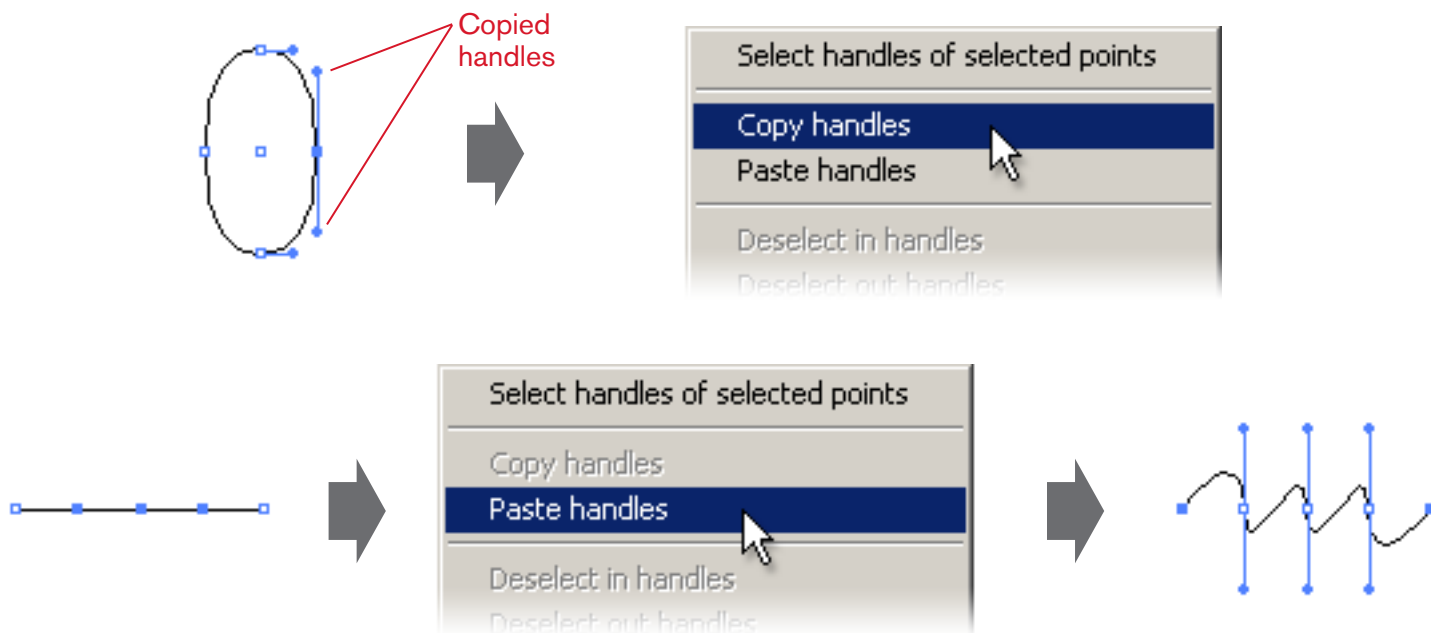This menu item lets you copy the direction and length of a single handle, or, as long as they are the *in* and *out* handles of a single point, two handles. When both handles of a point are copied, the point type (corner or smooth) is also retained. The menu item is available when a single point is selected, or in Multi-Handle Mode when one handle or the *in* and *out* handles of a single point are selected. The **BetterHandles** tool does not need to be active when copying both handles from a single point. Copied handle and point type data is stored in an internal clipboard which is cleared only when Illustrator is quit.

❸ *Paste handles*

This menu item lets you change both handles on any selected points (or specific, selected handles when in Multi-Handle Mode) to match the handle(s) that were previously copied with *Copy handles*. You can paste to multiple points on multiple paths, and the **BetterHandles** tool does not need to be active. If a single handle was copied, then its data will be pasted to any selected handles, regardless of type (*in* or *out*), and any affected points will become corner points. If both

handles of a single point were previously copied, then selected *in* handles will receive the copied *in* handle's data, and selected *out* handles will receive the copied *out* handle's data. If a point gets two new handles from two handles that were previously copied, then the previously-copied point type (smooth or corner) is also applied to it.

❹ *Close path*

When there are one or more open, non-single-point paths selected, this menu item closes them. Handles on the ends of the path are retained. To close a path without retaining the endpoint handles, hold down Alt while choosing the menu item. The menu text changes to *Close path (ignore endpoint handles)*.

❺ *Reverse path direction*

This menu item reverses the direction of any selected paths or subpaths. This will generally only produce a visible change if a subpath of a filled compound path is reversed or if the paths are being painted by a nonsymmetric brush:

❻ *Remove redundant points*

This menu item will be dimmed unless any of the wholely- or partially-selected paths actually have redundant points. When there are redundant points, an exclamation point will appear at the far right of the top status line (see page 32) to alert you of this fact without having to check the status of the menu.
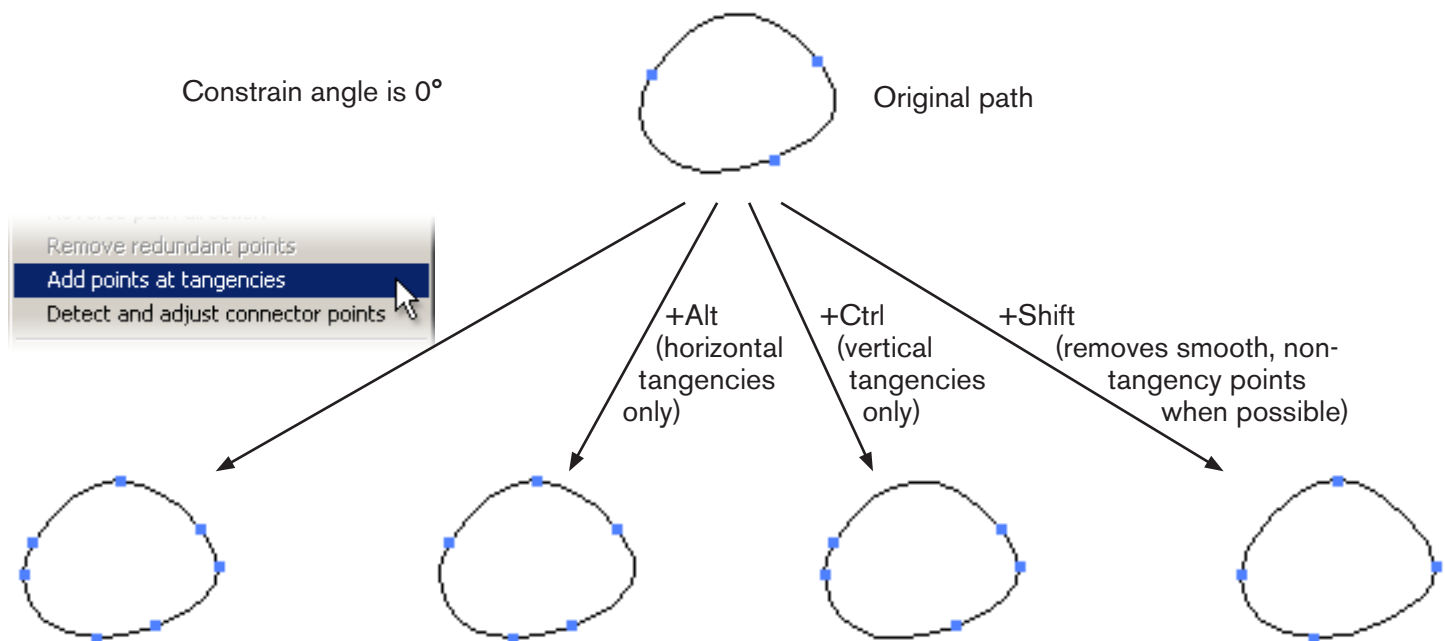
A redundant point is defined as the latter of two consecutive points on a path that have exactly the same X and Y coordinates and don't have handles in the (zero-length) segment between them. Despite reducing its number of points, the function produces no visible change to the path.

TIP ▸ Redundant points are often created after using the PathFinder functions, or after using Object > Path > Outline Stroke.

7 *Add points at tangencies*

This menu item adds anchor points to one or more selected paths at their horizontal and vertical tangencies (the constrain angle is respected). Holding down Alt or Ctrl while activating the flyout menu will change the menu item to *Add points at horizontal tangencies* and *Add points at vertical tangencies*, respectively. Adding Shift while activating the flyout menu will change the menu item to *Move points to [horizontal/vertical] tangencies*. This adds tangency points and then removes any original smooth points (using Smart Remove, see) which, when removed, result in a minimal change to the shape of the path. This operation is processor-intensive and may take sev-

Constrain angle is 0°

Original path

Remove redundant points
Add points at tangencies
Detect and adjust connector points

+Alt
(horizontal tangencies only)

+Ctrl
(vertical tangencies only)

+Shift
(removes smooth, non-tangency points when possible)

eral seconds or longer depending on the speed of your machine and how many anchor points are in the selected paths.

8 *Detect and adjust connector points*

Enabled when the *Recognize connector points* preference is enabled, this menu item scans any selected paths for connector points and, if found, adjusts their handles (see).

9 *Use global rulers / Use artboard rulers*

This menu item appears only when using Illustrator CS5. Although **BetterHandles** knows when you switch between global and artboard rulers, it can't always detect which kind of ruler is active to begin with. As a result, point and handle coordinates may appear in the coordinate system of the other kind of ruler. If this happens, select this menu item to tell **BetterHandles** which ruler system you are using.

TIP ▸ When using artboard rulers and switching artboards, click the artboard before selecting points or handles to ensure that their coordinates are updated.
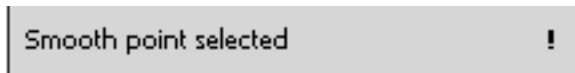
10 *Hide/Show additional options*

This menu item expands the **BetterHandles** palette to show the additional options area, which consists of a bottom status line and (when a single path is selected) *Show point 0* or *Previous/Next point* buttons. By default, this area is visible, but if you have no use for its information and function, and want to make the palette slightly smaller, you can hide it here.

11 *BetterHandles Preferences…*

This menu item brings up the Preferences dialog (see). It is equivalent to double-clicking on the **BetterHandles** tool in the tool palette, or pressing *Enter* while the tool is active.

Status line (top)

Smooth point selected	!

In Point Mode, the status line will tell you how many points you have selected. If a single point is selected, it will also indicate the type of point (smooth or corner). If you have enabled the *Recognize connector points* preference and the point is a connector point, this will be indicated in parentheses as well. The status line will also indicate what you are editing during a drag operation. An exclamation point will appear at the far right when there are one or more redundant points in the current selection (see).

TIP The status line can be useful in detecting points that lie directly over each other – what looks like a single point, when marqueed, will show "2 points selected" on the status line. It's also a quick way to see how many points are on a path – simply select the entire path (by marqueeing over it or selecting it with the selection tool.

Point operation buttons

The point operation buttons act on one or more selected points, on any number of paths. The **BetterHandles** tool does not need to be active. If there are no points selected, the buttons will be dim and unclickable. Holding the cursor over the button will cause a tool tip to appear.

Retract handles button: retracts all of the handles on the selected points. The point's type is not changed.
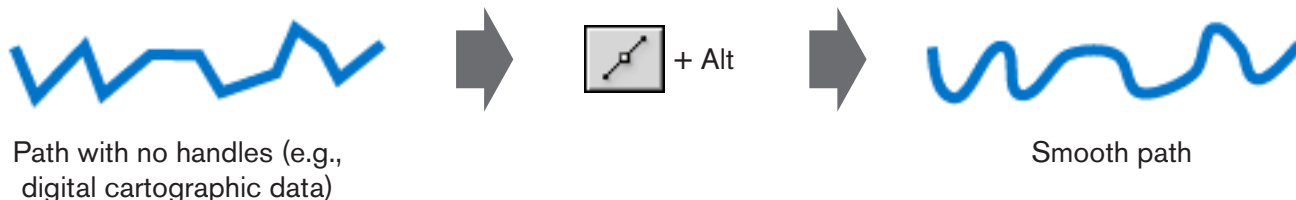
Holding down Alt while clicking the button activates an alternate function: it swaps the positions of the *in* and *out* handles on each selected point.

Convert to smooth point button: converts all of the selected points to smooth points. Corner points with two existing handles are converted to smooth points by averaging the handle angles, just as in Alt-clicking a point (see).

Holding down Alt while clicking the button activates an additional function: as well as changing the points to smooth points, it adds handles to the selected points so they all have two handles. This is very useful in creating a path that runs smoothly through all of the points:

Path with no handles (e.g., digital cartographic data)

+ Alt

Smooth path

The algorithm that **BetterHandles** uses to create new handles is as follows: If a point already has one handle, its second handle is created by mirroring the existing handle. If a point has no handles, the new handle angle is calculated by bisecting the angle formed by the previous point, point in question, and next point, and taking its perpendicular. The new handle length is calculated by taking the lesser of the distances from the point in question to the previous and next points, and multiplying by the *Smoothing ratio* (set in the Preferences dialog, see page 50). Handles of end points of open paths, if created, are adjusted to aim towards the next/previous handle.

TIP The smoothing ratio can range from 0.1 to 0.5. Values around 0.333 generally give the smoothest looking curves. A value of 0.3905 will convert a square to a circle.

You can add handles *without* changing point type by Shift-Alt-clicking.

Convert to corner point button: converts all of the selected points to corner points. No handles are created or changed.
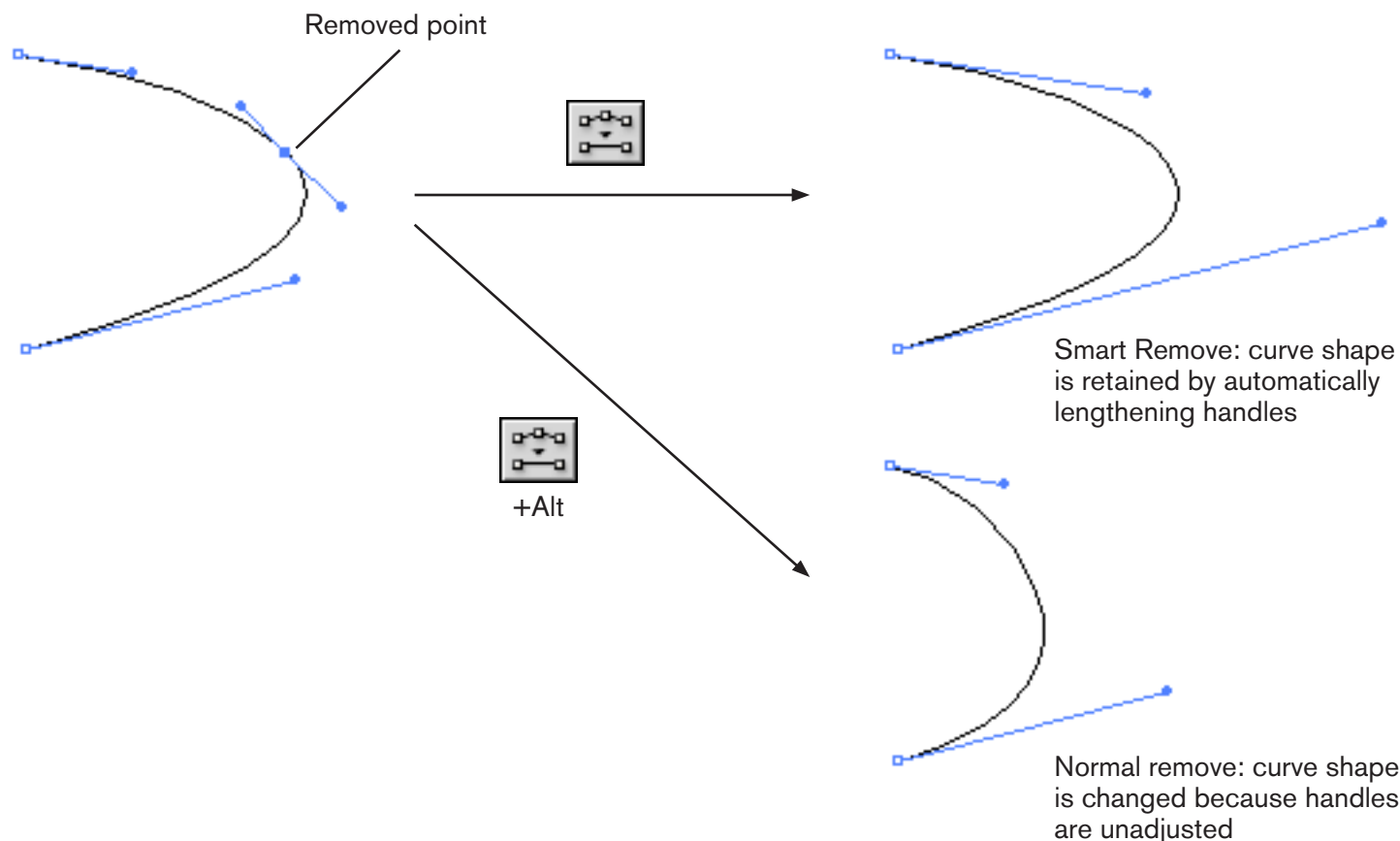
Split path button: splits the path(s) at the selected points, just as clicking on them with the Scissors tool would. Both new endpoints get a copy of the original point's handles.
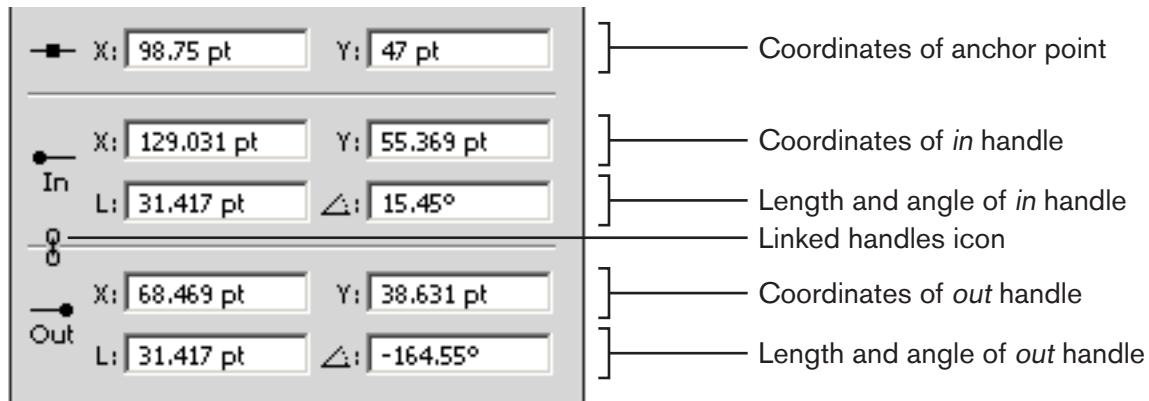
Smart Remove points button: removes the selected points from their paths while attempting to keep the curve as close as possible to its original shape. To do a regular, normal remove, such as clicking a point with the Delete Anchor Point Tool would do, hold down Alt while clicking the button. When anchor points are selected, you can use the right bracket key ("]") as a shortcut for the Smart Remove points button (Illustrator CS3 and up).

Smart Remove points will produce the best results when the path is smoothly curving. It only adjusts the length of the handles on either side of the removed points, never their angle. This ensures that adjacent path segments remain unaffected.

Removed point

+Alt

Smart Remove: curve shape is retained by automatically lengthening handles

Normal remove: curve shape is changed because handles are unadjusted

BetterHandles Palette

Numerical point editor

X: 98.75 pt Y: 47 pt	⎤ ——————— Coordinates of anchor point
X: 129.031 pt Y: 55.369 pt	⎤ ——————— Coordinates of *in* handle
In L: 31.417 pt ∡: 15.45°	⎤ ——————— Length and angle of *in* handle
(linked handles icon)	——————— Linked handles icon
X: 68.469 pt Y: 38.631 pt	⎤ ——————— Coordinates of *out* handle
Out L: 31.417 pt ∡: -164.55°	⎤ ——————— Length and angle of *out* handle

When the selection consists of exactly one point, the numerical point editor becomes active and its fields reflect the X and Y coordinates of the anchor point and the coordinates, lengths and angles of the two direction handles. You can make edits to any of the fields by simply typing in a new value and pressing *return*, *enter*, or *tab*. Like other numerical entry fields in Illustrator, you can use any units you'd like (except in the angle fields) and one math operator.

The linked handles icon appears when editing a smooth point to remind you that editing one handle will affect the other handle (unless you only change its length).
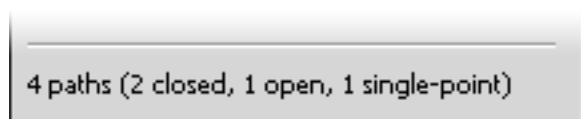
You can choose the number of digits that are displayed after the decimal point in the numerical point editor's fields through the *Precision* preference (see).

BetterHandles Palette

Additional options area

In Point Mode, the additional options area has three different looks:
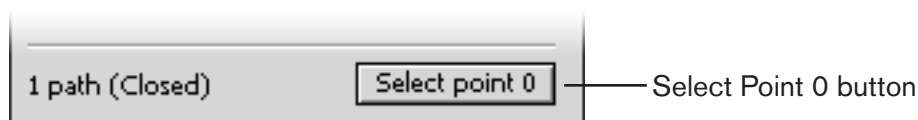
When the selection consists of more than one path, the status line shows the number of selected paths and how many there are of each type (closed, open, or single-point).

4 paths (2 closed, 1 open, 1 single-point)

TIP Each individual subpath of a compound path is reported separately.

Additional options area when multiple paths are selected.

When the selection consists of a single path, but either no points or multiple points on the path are selected, the status line shows the type of path and a *Select Point 0* button. Clicking the button will, as implied, select the first point on the path.

1 path (Closed)   Select point 0 ———— Select Point 0 button

Additional options area when multiple points or no points on a single path is selected.

When the selection consists of a single point on one path, the status line shows the number of the point and the range of numbers on that path. Illustrator numbers points starting at zero and continuing consecutively in the direction of the path. To move to the previous or next point along the path, click the *Previous point* or *Next point* button. Clicking the *Next point* button or *Previous point* button while the last point of an open path is selected will wrap around to the other end.

Point 2 (Range: 0 - 4)   ◀ ▶

Additional options area when a single point is selected.

Next point
Previous point

Holding down Shift while clicking the *Next point* or *Previous point* buttons will move ahead or back 10 anchor points (if the path has more than 10 points).

Multi-Handle Mode

If one or more handles are selected, the **BetterHandles** palette switches to Multi-Handle Mode:

Flyout menu

Status line (top)

Relative adjustments section

Absolute adjustments section

Additional options area (can be hidden)

BetterHandles Palette

Flyout menu

The palette flyout menu in Multi-Handle Mode is shown at right.

❶ *Copy handles*

❷ *Paste handles*

The *Copy handles* and *Paste handles* menu items work like they do in Point Mode (page 34), except that you cannot copy handles if the handles of more than one anchor point are selected.

❸ *Deselect in handles*

This menu item removes all *in* handles, if any, from the selection.

❹ *Deselect out handles*

This menu item removes all *out* handles, if any, from the selection.

❺ *Select opposite handles*

For anchor points with only a single handle selected,
this menu item will change the selection so that the opposite handles are selected. Anchor points with both handles selected are not affected.

❻ *Use global rulers / Use artboard rulers* (Illustrator CS5 only)

❼ *Hide/Show additional options*

❽ *BetterHandles Preferences…*

These three menu items act exactly like they do in Point Mode (see page 37).

The flyout menu shows:

Select handles of selected points

❶ Copy handles
❷ Paste handles

❸ Deselect in handles
❹ Deselect out handles
❺ Select opposite handles

Close path
Reverse path direction
Remove redundant points
Add points at tangencies
Detect and adjust connector points

❻ Use global rulers
❼ Hide additional options
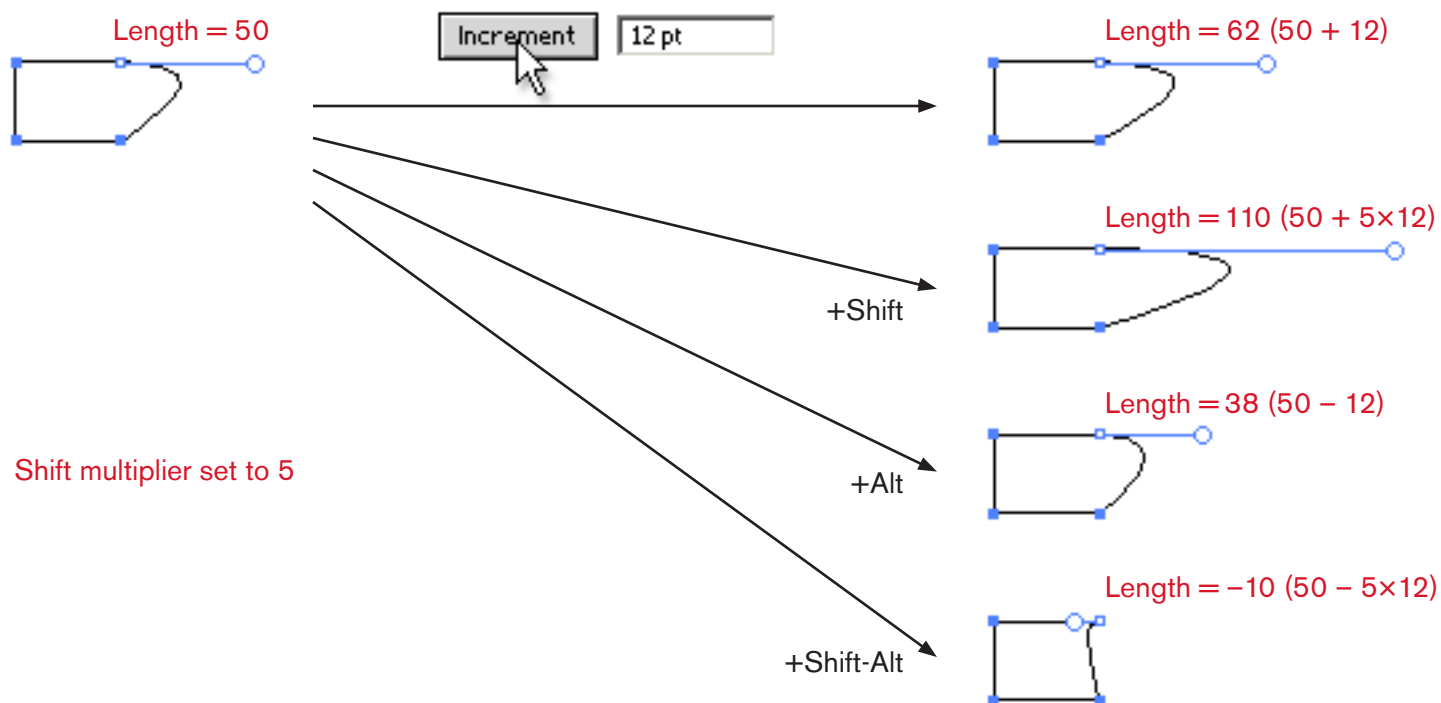
❽ BetterHandles Preferences…

Illustrator CS5 only

Status line (top)

2 handles selected (1 in, 1 out)

In Multi-Handle Mode, the status line will tell you how many handles you have selected, and how many are of each type (*in* and *out*).

Relative adjustments

The relative adjustment buttons (*Increment, Scale, and Rotate*) transform handles relative to their current lengths and/or angles. The values you enter are retained from use to use. You can either enter a value and click on the button next to it, or enter a value and type *return* or *enter*. If you click the button, you can simultaneously hold down Shift to multiply the effect of the transformation by the *Shift Multiplier*, which is set in the preferences (see page 49). You can also hold down the Alt key to reverse the effect of the transformation. Holding down Shift and Alt does both.

Length = 50

Increment   12 pt

Length = 62 (50 + 12)

Length = 110 (50 + 5×12)

+Shift

Shift multiplier set to 5

Length = 38 (50 − 12)
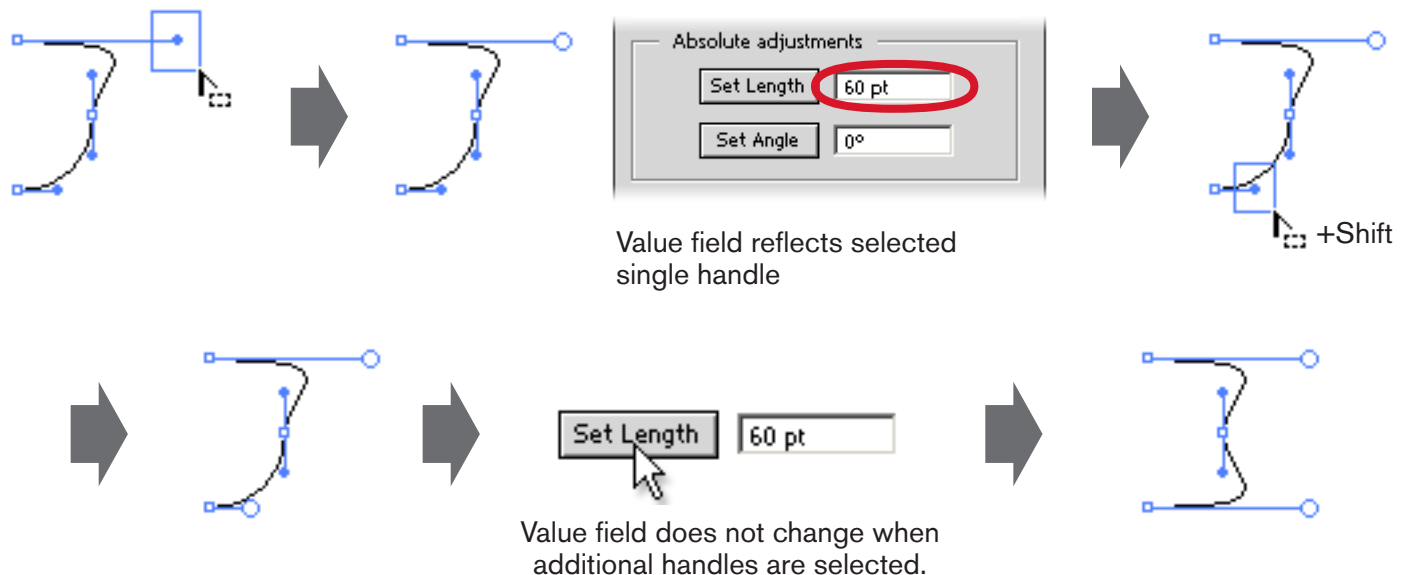
+Alt

Length = −10 (50 − 5×12)

+Shift-Alt

When using Alt with the *Scale* button, the reciprocal of the scale value is used (e.g. if a handle is scaled 80%, Alt will change the scale to $(1/0.80) = 1.35 = 125\%$). Also, when using Shift with *Scale* values of less than 100%, the new value is calculated as value$^\wedge$(shift multiplier).

Absolute adjustments

The absolute adjustment buttons (*Set Length* and *Set Angle*) transform handles using the values in the fields adjacent to them. As with relative adjustments, the Shift and Alt keys can be held while clicking the buttons to scale or invert the transformation. However, the keys have a slightly different meaning with the *Set Angle* button: Shift + *Set Angle* reflects the handle across the horizontal axis passing through the point; Alt + *Set Angle* reflects the handle across the vertical axis. Shift-Alt + *Set Angle* reflects the handle across both axes (which is the same as rotating it 180°).

When a single handle is selected, its length and angle values are copied into the value fields of the Absolute adjustments section. This enables you to easily "pick up" a handle's attributes and copy it to one or more other handles (of course, if you want to copy both attributes, it's easier to use the *Copy/Paste Handles* menu items,). To do this, select only the handle whose attribute(s) you wish to copy. Then, holding down Shift, marquee-select the other handles and click the appropriate buttons to duplicate either the length or angle:

Value field reflects selected single handle

+Shift

Value field does not change when additional handles are selected.

You can also hold down the Ctrl key when clicking the Set Length button to change the length to zero (retract the handles). Or, even easier, press the right bracket key ("]") (Illustrator CS3 and up).
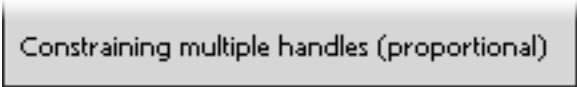
Additional options area

In Multi-Handle Mode, the additional options area consists of a bottom status line that tells you which multi-handle drag mode (see page 11) you are currently in (if the mouse is not down) or what mode is active (when the mouse is down).

Counter-rotation mode (press 'C' to toggle)

Bottom status line with mouse down, showing
Counter-rotation mode active

In addition, when you are constraining multiple handles (by holding down the Alt key while dragging), the bottom status line will indicate whether you are using the proportional method of handle extension or the absolute method (see page 13).

Constraining multiple handles (proportional)

Bottom status line during a constrained drag,
showing that the proportional method of
handle extension is in force.

BetterHandles Preferences

Double-clicking on the **BetterHandles** icon will bring up the preferences dialog. You can also choose *BetterHandles Preferences…* from the flyout menu of the palette or simply hit the *Enter* key when the **BetterHandles** tool is selected.

BetterHandles Preferences

Palette Preferences:

1 Precision: [3 ▼] digits

2 Shift multiplier: [⇕ 5 ▼]

Tool Preferences:

3 ☐ Shift-clicking equalizes handle lengths

4 ☐ Alt-clicking adds new point to path
5   ☑ Snap to tangencies
6   ☑ Highlight tangencies

7 ☐ Show all handles on selected paths

8 ☐ Don't extend multi-handles proportionally
9   ☐ Handles stop at zero length

10 ☐ Convert smooth points to corner points
       when dragging path segments

11 Smoothing ratio: [⇕ 0.333 ▼]

12 ☐ Slow-drag is default

13 ☑ Use Ctrl key to toggle slow-drag

14 Slow-drag divider: [⇕ 5 ▼]

15 ☑ Enable anchor point dragging

16 ☑ Highlight cursor when snapping
17   ☑ Highlight over path segments too
18   ☑ Show text annotations
19   ☐ Boxed style

20 ☐ Recognize connector points
21   Angle threshhold: [⇕ 5 ▼] degrees

[Cancel]   [OK]   **22** [About...]

BetterHandles Preferences (continued)

Palette Preferences

1 *Precision:* Changes the number of digits displayed in the numerical point editor section of the palette. You can choose 2, 3 or 4; the default is 3.

2 *Shift multiplier:* Sets the amount by which the value is multiplied when holding down Shift while clicking a Multiple Handle edit button (see page 45). Allowed values range from 1 to 100; the default is 5.

Tool Preferences

3 *Shift-clicking equalizes handle lengths:* Changes the functionality of the Shift key when used with clicks. When enabled, Shift-clicking on points and handles no longer toggles the point selection but instead equalizes the handles of the point (see pages 7 and 15); Shift-clicking on a path no longer toggles the handles for that segment but equalizes the handles (see page 20); Shift-Alt-clicking on a path no longer toggles the handles for the entire path but retracts or extends handles for that segment (see page 22).

4 *Alt-clicking adds new point to path:* Changes the functionality of the Alt key when used with clicks on paths. When enabled, Alt-clicking on a path no longer shows all of the path's handles but instead adds a new smooth point to the path (see page 21). When Alt is down and the cursor is over a path, a "plus" sign appears in the cursor to show that a point will be added.

5 *Snap to tangencies:* When adding a new point to a path, the cursor will snap to the points on the path segment which are tangent to the horizontal, vertical or diagonal axes (see page 21).

6 *Highlight tangencies:* When adding a new point to a path, small magenta dots will appear over the path segment's tangencies to help you locate them (see page 21).

7 *Show all handles on selected paths:* Normally when a point or path segment is selected, only its handles and (for points) the closest handles of adjacent points are shown. When this preference is enabled, all of the handles on the path that can be shown are shown (when multiple points are selected on one path, their handles are not shown unless you are using Illustrator CS3 or higher and have enabled *Show handles for multiple selected anchor points*).

BetterHandles Preferences (continued)

8 *Don't extend multi-handles proportionally:* When enabled, multiple handles are extended using the absolute method instead of the proportional method (see page 13).

9 *Handles stop at zero length:* When enabled, handles shortened using the absolute method will disappear when they reach zero-length, rather than flipping to the other side. (see page 13).

10 *Convert smooth points to corner points when dragging path segments:* When enabled, ensures that dragging a segment will only affect that segment by changing any smooth points to corner points to unlink the handles (see page 24).

11 *Smoothing ratio:* Sets the length of automatically-generated handles, as a fraction of the smaller of the distances from the point to adjacent points. Allowed values range from 0.1 to 0.5; the default is 0.333. A value of 0.3905 will convert a square to a circle. (see page 39).

12 *Slow-drag is default:* When enabled, all drags start in slow-drag mode but can be changed to normal drags (assuming the *Use Ctrl key to toggle slow-drag* preference is enabled) by holding down the Ctrl key (see page 5).

13 *Use Ctrl key to toggle slow-drag:* When enabled (the default), the Ctrl key is used to toggle slow-drag on or off instead of hiding the handles and points during a drag.

14 *Slow-drag divider:* Sets the factor by which the cursor movement is divided during a slow-drag (see page 5). Allowed values range from 1 to 100; the default is 5.

15 *Enable anchor point dragging:* When enabled (the default), drags and Shift-drags on anchor points move the point (with its handles) instead of extending new handles. You can still extend new handles by using Alt-drag. When disabled, you can still move anchor points by holding down the space bar when dragging a single handle.

16 *Highlight cursor when snapping:* When enabled (the default), a red ring will appear around the cursor (in addition to the small symbols that appear next to the cursor) when it is over an anchor point or handle (see page 6). If you don't use Smart Guides, this added visibility generally results in fewer "misses."

17 *Highlight over path segments too:* When enabled (the default), the red highlighting ring appears over path segments in addition to anchor points and handles.

18 *Show text annotations:* When enabled (the default), a text label appears next to the red highlighting ring, informing you exactly what the cursor is over (In handle, Out handle, Smooth point, Corner point, Closed path, or Open path). See page 6.

19 *Boxed style:* Changes the style of the text annotations to appear in a small box to the right of and below the cursor.

20 *Recognize connector points:* When enabled, the **BetterHandles** tool will give special treatment to points that transition between straight segments and curved segments (see page 28).

21 *Angle threshhold:* Specifies the number of degrees that the angle of a potential connector point can deviate from the ideal and still be recognized as a connector point. Allowed values range from 1° to 180°; the default is 5°.

22 *About…:* Brings up the *About BetterHandles* dialog box, which displays the version and your registration data. If the plug-in is unregistered, it allows you to register it (see next page).

Registration

BetterHandles is distributed as a fully-functional, time-limited demo. You can evaluate all of its features for nine minutes after you launch Illustrator. Also, after 50 uses, **BetterHandles** will begin to remind you to register it. The more you continue to use it, the more it will remind you.

We hope you'll find **BetterHandles** useful enough to purchase and register, which you can do at our web site: http://www.nineblock.com. Registration entitles you to free tech support by e-mail, free upgrades to all 1.x versions, and a substantial discount on any 2.0 or higher versions.

After registering your copy of **BetterHandles**, you will receive a registration code keyed to your specific name and (optionally) organization. To enter it, click on the "About…" button at the lower right of the preference window, which will bring up the *About BetterHandles* window:

Then click on "Register…" to enter your registration information. After successfully doing so, you'll see your personalized details in the About window, and the time limitation/reminders will disappear.

Support

If you are having trouble with **BetterHandles**, you should first check the Support page of our web site by going to http://www.nineblock.com and clicking on "Support". A list of frequently-asked questions with answers will be kept there. If that does not answer your question, you can get technical support by following the link to the "Contact" page and filling out the form. Include as much information about the problem as you can, and be sure to include your operating system and which version of Illustrator you are using.

Change Log

Version 1.4 (30 July 2010)

- Now compatible with Illustrator CS5 on both platforms
- New feature: Smart Remove points will attempt to keep the shape of the curve as close as possible to the original after removing one or more points from the path (page 40)
- New feature: You can now add automatically add points to the currently selected path(s) at their horizontal and vertical tangencies (page 36)
- New feature: Connector points (points between straight segments and curved segments) can be recognized and their handles automatically kept in alignment (page 28)
- New feature: You can now automatically close all selected open paths, optionally honoring any existing endpoint handles (page 35)
- Improvement: With Smart Guides off, the snap radius for anchor points and handles now matches the value set in Illustrator Preferences > Selection & Anchor Display > Selection > Tolerance (page 6)
- Improvement: After entering a new value in one of the single point fields on the palette, the tab key will automatically highlight the next field
- Improvement: When hovering over a path with the snapping ring enabled, a small arrow shows you the path's direction (page 19)

Change Log (continued)

- Improvement: The annotation text next to the red snapping ring now ghosts the background for better visibility
- Improvement: You can now use smaller, boxed-style annotation text (page 6)
- Improvement: You can Ctrl-click on the "Set Length" button (in Multi-Handle Mode) to remove the handles (make them length zero)
- Improvement: In Illustrator CS3 and higher, the right bracket key is a shortcut for Smart Remove points (when anchor points are selected) or retracting handles (in Multi-Handle Mode)
- Improvement: A selection change with the **BetterHandles** tool no longer counts as an Undo
- Improvement: When dragging a point, both handles on adjacent points are shown instead of just the handles nearest the point
- Improvement: When mousing down on an unselected point or path, or adding a point to any path, the surrounding handles immediately become visible
- Improvement: A button now lets you select the first point of a path when none, or more than one, of its points are selected (page 42)
- Improvement: When adding a point to a path, you can highlight and snap to the path's horizontal, vertical or diagonal tangencies (page 21)
- Improvement: When docked and collapsed, the **BetterHandles** palette now displays a custom icon
- Improvement: When reporting selected path types, single-point paths are now listed separately from open and closed paths
- Improvement: The native Info palette now displays the cursor position when the BetterHandles tool is selected
- Improvement: When moving a single handle or anchor point, the handles on adjacent points (if any) are now shown
- Improvement: When a smooth point is selected, a "link" icon now appears in the BetterHandles palette between the "in handle" and "out handle" icons (page 41)

Change Log (continued)

- Improvement: Illustrator CS3 and higher's anchor point and direction handle size preferences are now respected when using the **BetterHandles** tool
- Improvement: When moving a handle and constraining its angle with the Alt key or Shift key, the point can now be moved freely (instead of in a constrained manner) with the space bar
- Improvement: When "Allow anchor point dragging" is enabled, and Alt-dragging a point has extended new handles, you can now release Alt and continue to freely drag the handles
- Improvement: When Shift-dragging points or handles, Illustrator's constrain angle is now honored
- Improvement: You can now select the handles on up to 4000 points simultaneously
- Improvement: Alt-dragging over a path segment (when no points are selected) selects all of a path's segments
- Improvement: When extending a new handle from a point that has no handles, or from a corner point that has only one handle, the new handle will be initially constrained to the tangent direction of the path at that point rather than horizontally
- Bug fix: The redundant point indicator now shows up properly all the time
- Bug fix: Shift-clicking on an anchor point (with the "Equalize handles" preference off) no longer selects/unselects points that lie directly under it

Version 1.31 (3 June 2009)

- Improvement: Document-specific units setting is now honored, as well as Application-wide setting (version CS3 and higher)
- Bug fix: Pasting a single handle now properly changes the anchor point type to corner
- Bug fix: Changing units now properly updates the Info Palette

Version 1.3 (10 February 2009)

- Now compatible with Illustrator CS4 on both platforms
- New feature: Ability to copy and paste handles
- New feature: Alt-clicking on a path can optionally add a point to the path instead of showing the path's handles

Change Log (continued)

- Improvement: An indicator lights if there are any redundant points on any selected paths
- Bug fix: Handles will Shift-snap to 45-degree increments using Smart Guides even when Illustrator's *Transform Tools* preference is off
- Bug fix: Deleting points from type paths now removes the correct number of points (version CS and higher)

Version 1.2 (11 March 2008)

- New feature: Optional red highlighting ring around the cursor when it is over a point, anchor or path, with optional text annotations
- New feature: *Remove redundant points* menu item
- New feature: While dragging a handle, you can now move its associated point by holding down the space bar
- New feature: Additional status line showing the point number, number of paths selected and their types, or the multi-handle drag mode
- New feature: *Previous/Next point* buttons let you move between points on a path, for quick numerical editing
- New feature: New multi-handle drag modes let you easily create symmetrical designs
- Improvement: Cancel the current marqueeing operation with the "Escape" key
- Improvement: Single-point numerical palette values now update in real time on the Mac too
- Improvement: You can now marquee over one or more path segments to select them
- Improvement: Marquee-deselecting all selected handles no longer deselects the entire path
- Bug fix: Fixed memory leak during cursor movement
- Bug fix: Fixed selection state when deselecting a segment between two fully-selected points

Version 1.01 (12 July 2007)

- Now compatible with Illustrator CS3
- New feature: When clicking/dragging a path or anchor point, already-selected paths will take precedence over unselected paths, even if they lie below them in the stacking order

Change Log (continued)

- New feature: Shift-Alt-clicking on a blank area of the document is a shortcut for palette flyout menu item *Select handles of selected points*
- New feature: *Reverse path direction* menu item
- Improvement: *Select handles of selected points* palette flyout menu item can be modified with Alt and Ctrl to select only *in* or *out* handles
- Bug fix: Units properly update in Multi-Handle Mode palette

Version 1.0 (4 December 2006)

- Initial release

Feedback

We strive to continually improve our products. We welcome your comments and suggestions for ways we can do so. Use our contact form by going to http://www.nineblock.com and clicking on "Contact".

Legal

While we have worked hard to ensure that **BetterHandles** is bug-free, the plug-in is supplied as is. Nineblock Software disclaims all warranties, expressed or implied, including, without limitation, the warranties of merchantability and of fitness for any purpose. Nineblock Software assumes no liability for damages, direct or consequential, which may result from the use or misuse of **BetterHandles**.

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