

Generating Section Planar Curves with the MicroScribe in Rhinoceros

Section Planar Curves

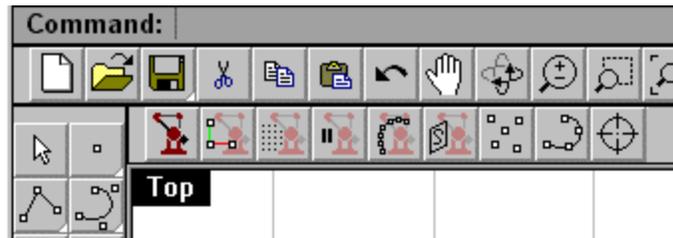
The Section Planar Curve tool allows users to define a series of virtual planes that slice through an object. Then, to collect data with the MicroScribe in the form of curves, polylines or points along the planes.

Launch a Toolbar to Access the Feature

 To see the Section Planar Curves icon launch the 3-D Digitizing or MicroScribe Toolbars by choosing *Tools > Toolbar Layout > Edit* from the top menu. From the list click on *3-D Digitizing* or *MicroScribe*, then click the *Show* button.

A checkmark will appear next to the name to indicate that it has been chosen. Click the *Close* button to close the Toolbars dialog box.

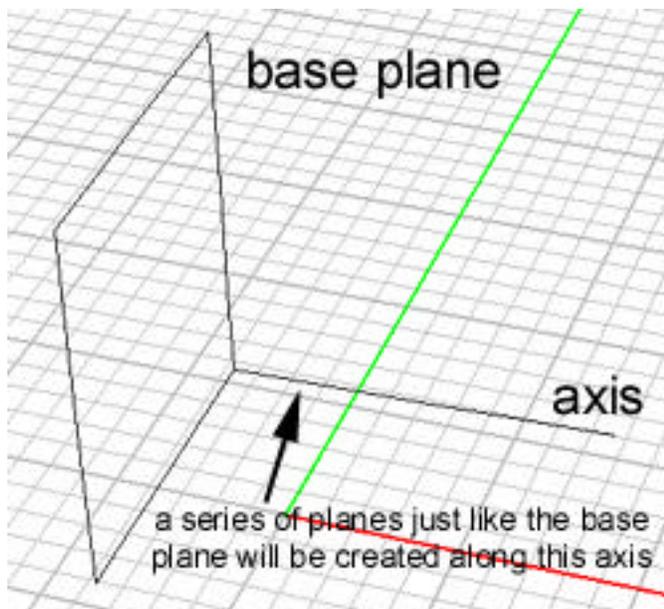
The toolbars can be left floating and dragged around the screen, or they can be anchored near the top, as shown to the right:



By default when toolbars are shown they float. To anchor a toolbar, click on the top bar and drag it towards the top of the screen, just under the standard toolbar. It will expand and snap into place.

To float the toolbar again click in the gray space just to the left of the left-most icon. Crosshairs with arrows will appear. Click and drag the toolbar to the new desired position.

The 3-D Digitizing Toolbar offers two more icons than the MicroScribe Toolbar:



Left-click: Begins the Section Planar Curve process. The user inputs three points for a base plane that defines the size and shape all the planes will be. This plane should extend past the edges of the object to be digitized.

Next, an axis is defined that should run from the base plane and extend in the direction the other planes in the series will be created in.

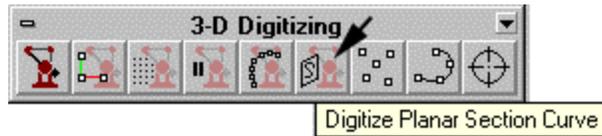
Then, the user defines what form of data should be collected: curves, points, or polylines.

A simple analogy for the way this feature works is to think of a loaf of bread that is sliced. The heelpiece would represent the base plane. The axis would need to run from the base plane along the side of the loaf of bread. If the tool is set up in this way then

data would be collected at every slice in the bread.

To use this tool:

Right-click: Click on the Section Planar Curve icon in the 3-D Digitizing Toolbar



At the *First point on plane* prompt place the MicroScribe stylus tip at point that will define the base plane. Click the hand switch or foot pedal to input the point.

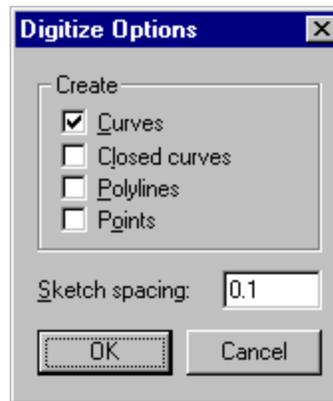
At the *Second point on plane* prompt place the MicroScribe stylus tip at point that will define the width of base plane. Click the hand switch or foot pedal to input the point. You will see a dynamic onscreen representation of the plane you are defining.

At the *Third point on plane* prompt place the MicroScribe stylus tip at point that will define the length of the base plane. Click the hand switch or foot pedal to input the point. A plane will be created onscreen.

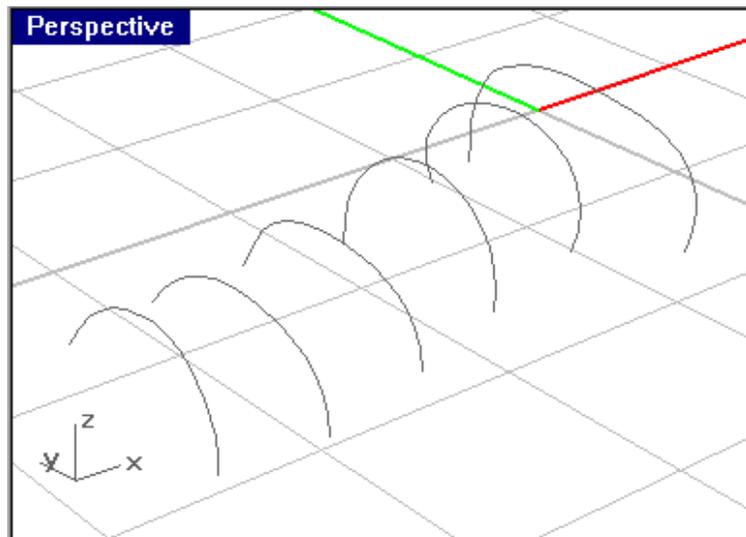
At the *Start of axis* prompt place the MicroScribe stylus tip at a point where the axis or 'spine' of the plane series should start. Click the hand switch or foot pedal to input the point.

At the *End of axis* prompt place the MicroScribe stylus tip at a point where the axis or 'spine' of the plane series should end. You will see an onscreen representation of the axis in relation to the plane. Click the hand switch or foot pedal to input the point.

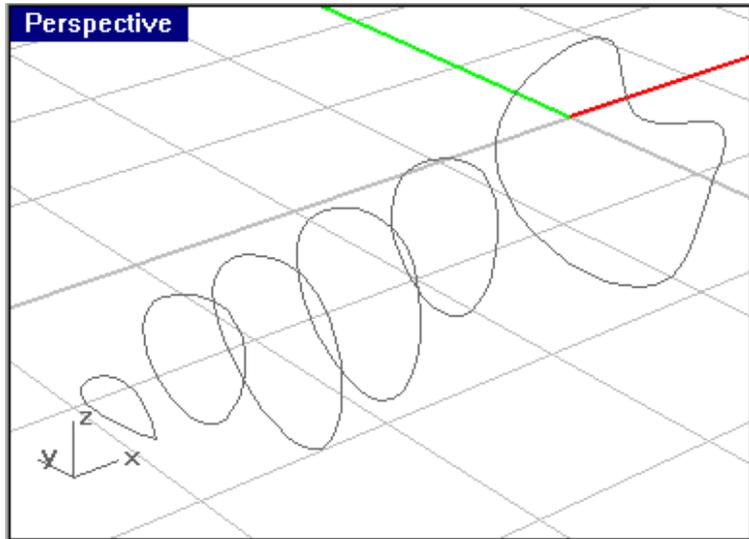
At the *Push and hold the pedal to sketch* prompt type O and press *Enter* to see the tool options.



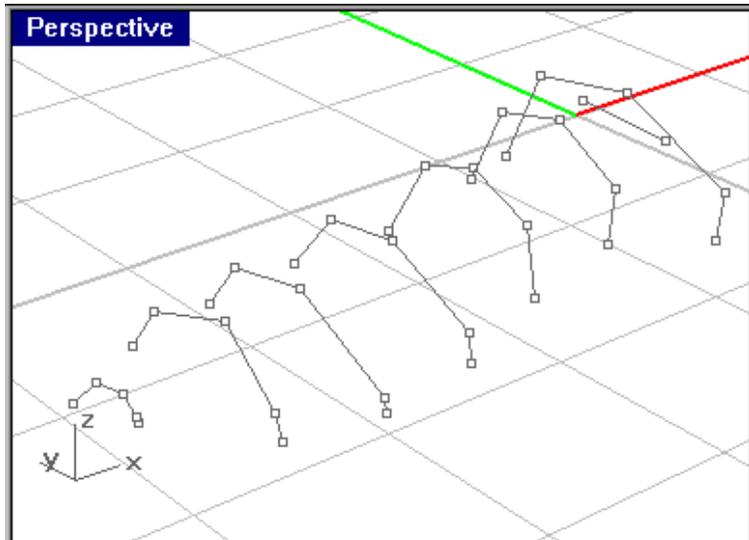
Choosing *Curves* will generate curves through the points captured along each plane:



Choosing *Closed Curves* will create closed curves from the points captured along each plane:



Choosing *Polylines* will create closed straight segments between the points captured along each plane:



Choosing *Points* will simply capture points along each plane:

