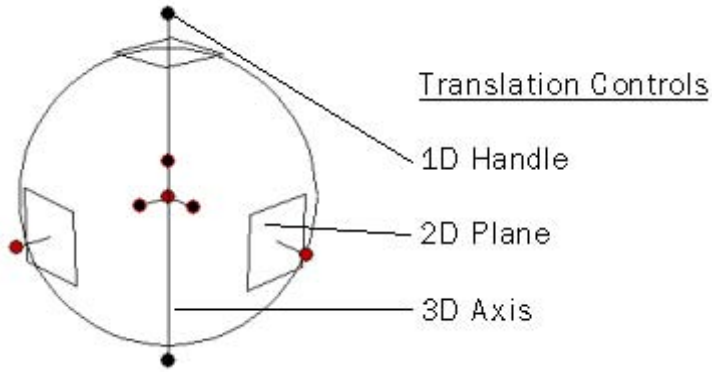
TriBall Translation Controls (Outer sphere)

The TriBall translation controls consist of three handles and three planes on its surface that allow you to move a part along or around any of its axes.



The following paragraphs explain how to move an object in any dimension:

- **1D (line movement)**. Drag a 1D handle to move an object along an axis. As you drag, a distance value appears beside the handle, indicating how far the object has been moved from its original location.
  To specify a distance for movement, right-click the distance value, choose Edit Value from the resulting pop-up menu, and enter the desired distance value in the dialog box. Keep this feature in mind, in addition to SmartDimensions, when you require precise distances between objects.
- **2D (plane movement)**. When you place the cursor inside a plane, the cursor is displayed as four arrows, indicating that the shape or part can be dragged up, down, left, or right along the 2D plane. As you drag, a distance value for each direction in the plan will appear indicating how far the object has been moved from its original location.
- **3D (rotation)**. When you click a 1D handle, its axis of rotation is selected and highlighted. To rotate an object around the selected axis, move the cursor within the TriBall. When the cursor changes to a hand and arrow, click and drag to rotate the object around the axis. As you drag, the current angle of rotation is displayed in degrees.
  To specify a precise angle of rotation, right-click the angle value, choose Edit Value from the resulting pop-up menu, and enter the desired angle value in the dialog box.

If movement relative to a particular axis or plane isn't necessary, the shape or part can be rotated in other ways:

- **Rotation around the center**. To rotate the object around the center point of the TriBall, place your cursor on the TriBall's circumference. When its color changes to yellow and the cursor becomes a circular arrow, click and drag around the circumference of the TriBall.
- **Rotation around all three axes at once** This option is disabled by default. To enable it, right-click within the TriBall and select the Allow Unconstrained Rotation option from the resulting pop-up menu. Move the cursor inside the TriBall until it changes to four curved arrows and then click and drag freely to rotate the TriBall in any direction.

To select a different handle or axis, first left-click outside the TriBall to deselect the current selection.

Reposition shapes using the TriBall's translation controls

1. Select a shape/part in the scene and select the TriBall from the Standard toolbar.
2. Drag the shape/part to a new location

   To do this, place the cursor in one of the TriBall's 2D planes. When the cursor changes to four arrows, drag the shape or part to reposition it.

   Right-click and drag on the plane for options to Move, Copy, Link, or Create Rectangular Pattern of the selected shape while maintaining the 2D plane orientation.

   Right-click on the plane for options to Move to Point or Move to Center-Point. Move the cursor over a point on the host shape that displays its green SmartSnap dot and left-click. Optional: Right-click on the placement point for options to Move, Copy, or Link.

3. Select one of the TriBall's 1D handles to display its associated axis of rotation
4. Click and drag the selected 1D handle to reposition the shape or part.

   Rotate the selected shape/part, as desired.

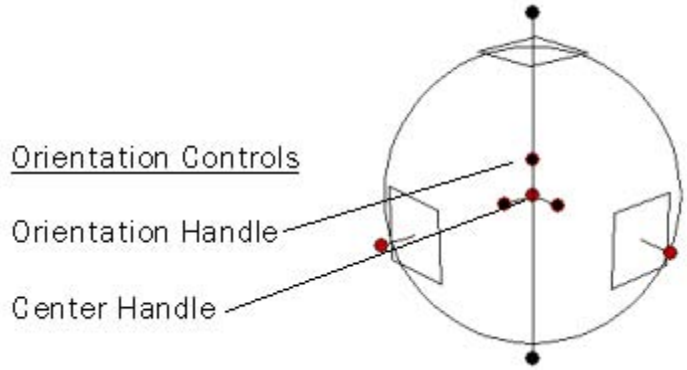
   To do this, again select one of the TriBall's 1D handles. When its axis of rotation is highlighted, move the cursor inside the TriBall. When the cursor changes to a hand and arrow, click and drag to rotate the shape or part around the axis. Optional: Right-click and drag to rotate with options to Move, Copy, or Link.

   Additional options in the Move, Copy, and Link are available like Step Up and rotate.

   If you'd like to fine-tune your positioning, right-click the angle of rotation value and choose Edit Value from the resulting pop-up menu. In the Edit Rotation dialog box, edit the angle value, as desired.

TriBall Orientation Controls (Inner sphere)

In addition to the outer translation controls, the TriBall tool has orientation controls at its center. These tools offer quick axis positioning of an object relative to selected surfaces, edges, or points on another object. Positioning with these controls can be accomplished relative to any of an object's three axes, just as with the translation controls.



After selecting an axis, specific positioning behavior is determined by right-clicking the axis and choosing from the following options on the resulting pop-up menu:

- **To Point.** Choose this option to align the selected axis of the TriBall parallel to an imaginary line extending from the TriBall's center to a selected point on a second object.
- **To Center Point.** Select this option to align the selected axis of the TriBall parallel to an imaginary line extending from the TriBall's center to the center of an end or side surface of a cylindrical object.
- **Point to Point.** Choose this option to align the selected axis of the TriBall parallel to an imaginary line between two selected points on a second object.
- **Parallel to Edge.** Choose this option to align the selected axis of the TriBall parallel to the selected edge of a second object.
- **Perpendicular to Face.** Choose this option to align the selected axis of the TriBall perpendicular to the selected face of a second object.
- **Parallel to Axis.** Choose this option to align the selected axis of the TriBall parallel to the axis of a second, cylindrical object.
- **Reverse.** Choose this option to reverse the current position of the TriBall, relative to the specified axis.
- **Mirror.** Choose from the following options to define the Mirror operation:
    - **Move.** Choose this option to mirror the current position of the TriBall, relative to the specified axis, and move the object.
    - **Copy.** Choose this option to mirror the current position of the TriBall, relative to the specified axis, and create a copy of the object.
    - **Link.** Choose this option to mirror the current position of the TriBall, relative to the specified axis, and create a linked copy of the object.

From the same pop-up menu, you also can choose:

- **Edit Direction.** Choose this option to set the desired coordinates for the direction of the selected TriBall handle.

You also can position an object relative to the center handle of the TriBall by selecting one of the following options from its pop-up menu:

- **To Point.** Choose this option to align the center of the TriBall with a selected point on a second object.
- **To Center Point.** Choose this option to align the center of the TriBall with the center point of an end or side surface of a cylindrical object.

- **To Midpoint.** Choose this option to position the center of the TriBall to the midpoint of an edge, midpoint between two points, or midpoint between two faces.

Right-clicking on the placement point on the above items will allow options to move, copy, or link.

From the same pop-up menu, you also can choose:

- **Edit Position.** Choose this option to set length, width, and height values to define the center position of the TriBall, relative to the scene grid axes. To freely reposition the center point by editing its position values, make sure that no axis is selected before right-clicking on the TriBall's center point.