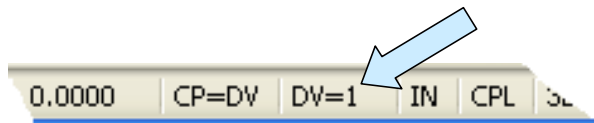
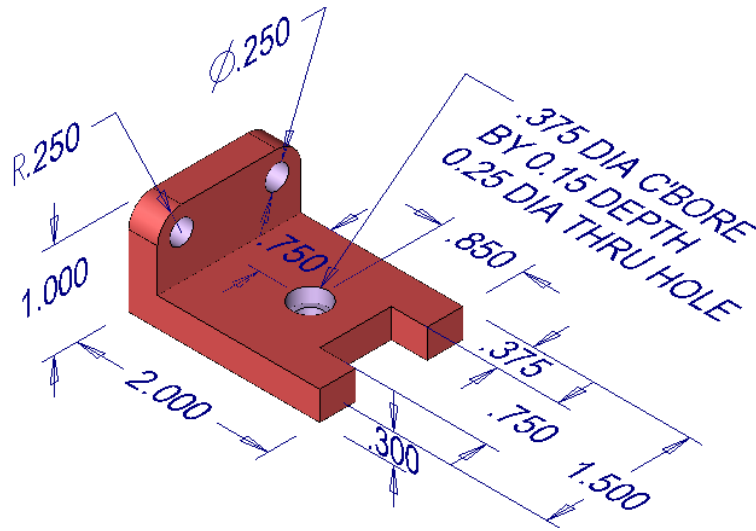


## KeyCreator Lesson KC1021 Creating a Basic “L-Bracket”

If you are new to KeyCreator this exercise will walk you through the tools used to create the “L-shaped” bracket illustrated to the right.

I’ve provided some basic dimensions so you get a feel for the size of the part.



We’ll start with a new design file in View 1. (The Top View. This is the default view that each new file starts in. You can tell which view you are in by looking at the Status Bar at the bottom of the screen. You’ll see that “DV=1.”)

We’ll use the default starting construction color green (Color#1.)

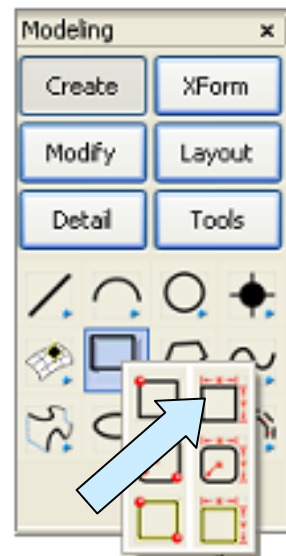
Click on the CREATE RECTANGLE BY WIDTH HEIGHT Icon.

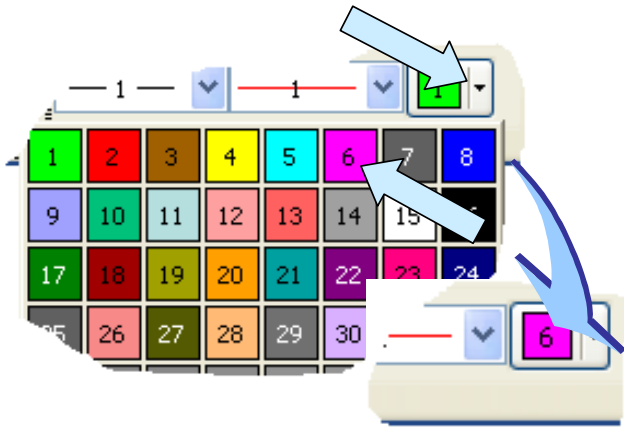
Select the MidCtr Anchor Option from the Conversation Bar options.

Type 2 for the Width and 1.5 for the Height.

Using the Cursor Option, click anywhere on the screen to place the rectangle.

Now, click once on the BACKUP Button. Type 0.75 for the Width and the Height.



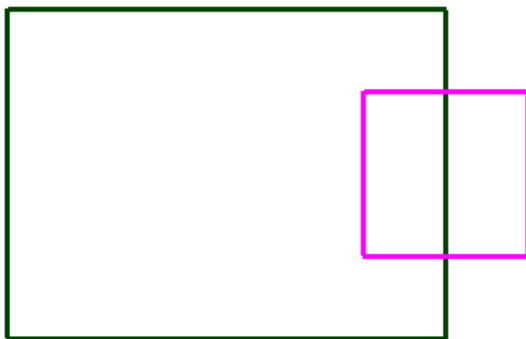
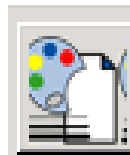


This time, select the CtrMid Anchor Option on the Conversation Bar.

Before you place the rectangle, select a different Construction Color. (I'm going to use MAGENTA (Color6.)

You can click on the Color Swatch Pulldown to select a new color.

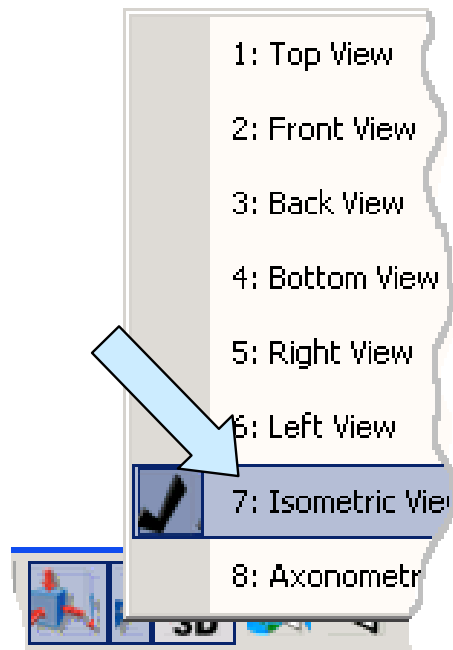
You can also click on the SET ATTRIBUTE Icon to get a more extensive Dialog Box that provides options for colors, line styles, weights, etc.



With Magenta selected as the construction color, use the CtrMid Anchor Option and click on the right side of the first rectangle.

Your screen should now look like this:

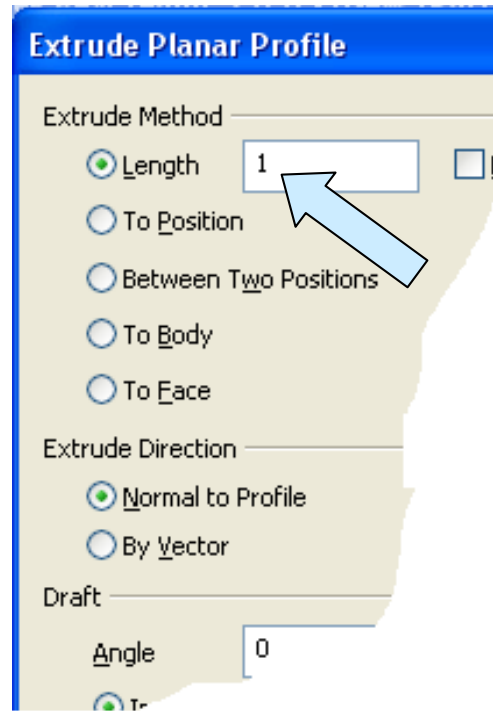
Let's switch to the Isometric View. (View 7. You can click on the Pulldown Arrow to the right of the View Icon to see a list of Views in your file.)





Now, click on the EXTRUDE Icon.

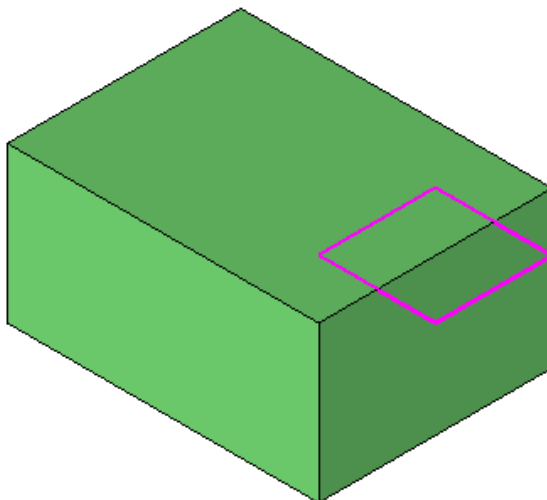
A Dialog Box appears. We're going to do a simple extrude, normal to the profile with zero draft angle, so just type 1 for the Length and hit the ENTER Key.



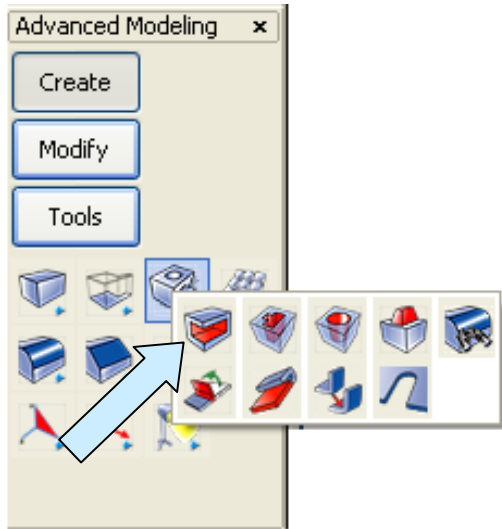
Click on the ALL DSP Option on the Conversation Bar and then on the BY TYPE Option.

Select the GREEN Color Option in the Masking Dialog Box that appears and hit the ENTER Key twice.

A double-headed vector appears on the green profile. Click on the downward-facing vector.

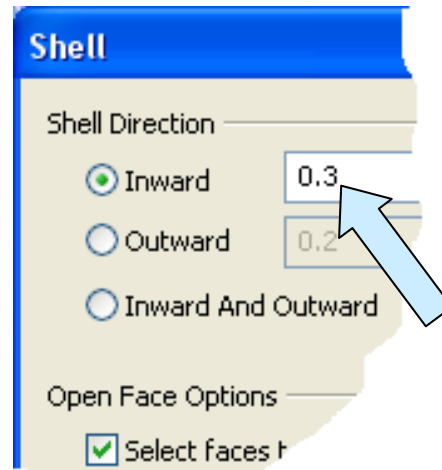


You will now have a simple green solid block on the screen.



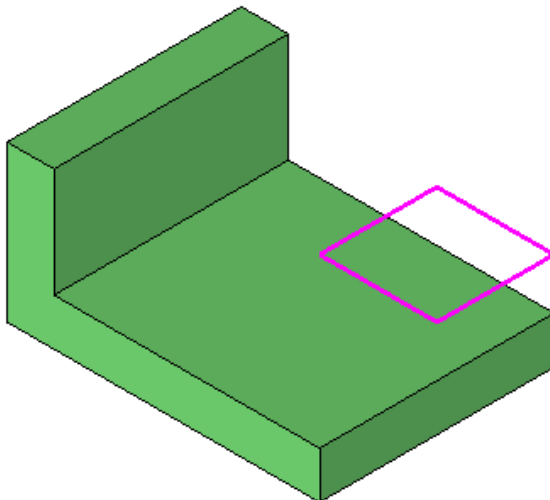
Now, click on the SHELL Icon.

A Dialog Box appears.



Use the Inward Option and type 0.3 for the shell thickness. The Select Faces to Be Opened Option should be checked. Hit the ENTER Key.

Now move the cursor over the front face of the block and click on it when it highlights. Next, click on the right side face and the top face.

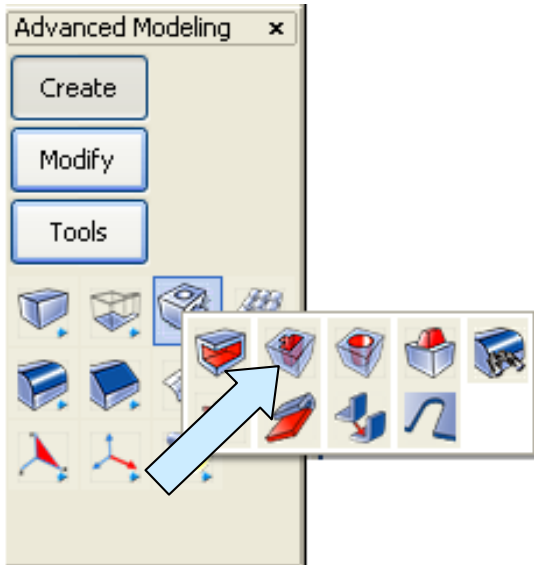


Finally, select the hidden, rear face. To do this, move the cursor over the face and touch the SPACEBAR or TAB Key once to index the Face Selector to the hidden face.

Once you have all four faces selected, hit the ENTER Key.

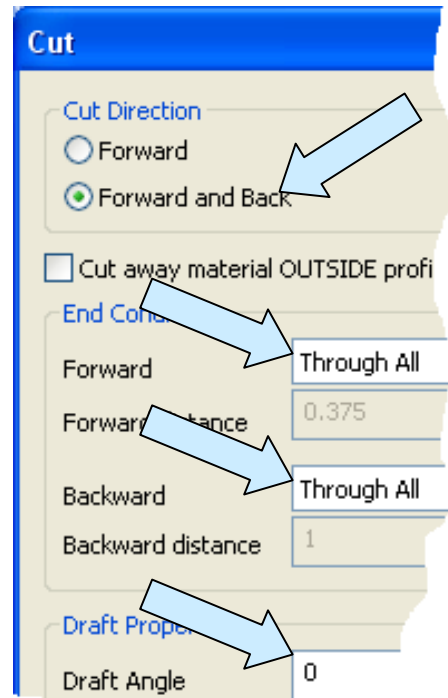
Your screen should now look like this:

I call the technique we just used “Fast Shell.” While many users would make this part by creating an “L-shaped” profile in the Front View (View 2.) and then extruding it, this approach is much faster, especially since we had to create the other magenta profile in View 1. You can make any “U-shaped” or “L-shaped” part quickly using this approach.



Now, click on the CUT Icon.

A Dialog Box appears.



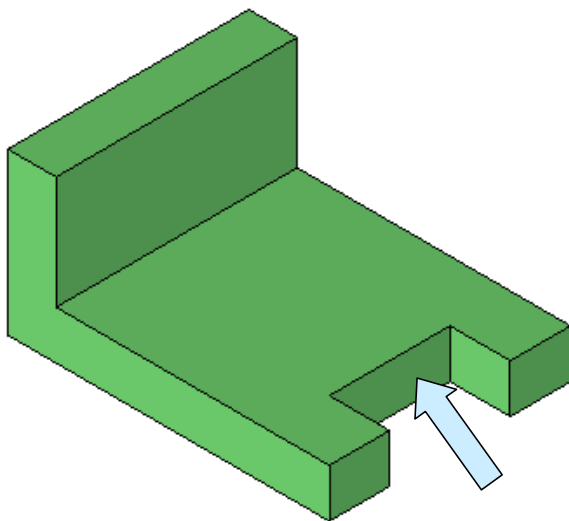
Select the Forward & Back Option.

You should Have Through All selected for both End Conditions and a 0 Draft Angle.

Hit the ENTER Key.

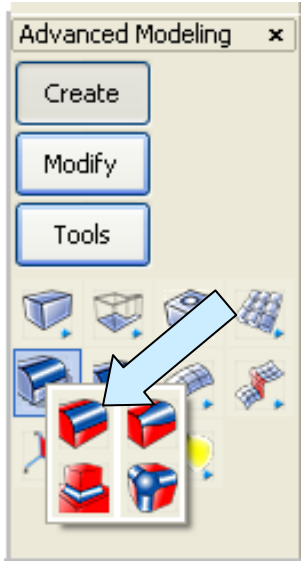
Now, select the solid green part.

Click on the ALL DSP Option and then on the BY TYPE Option.



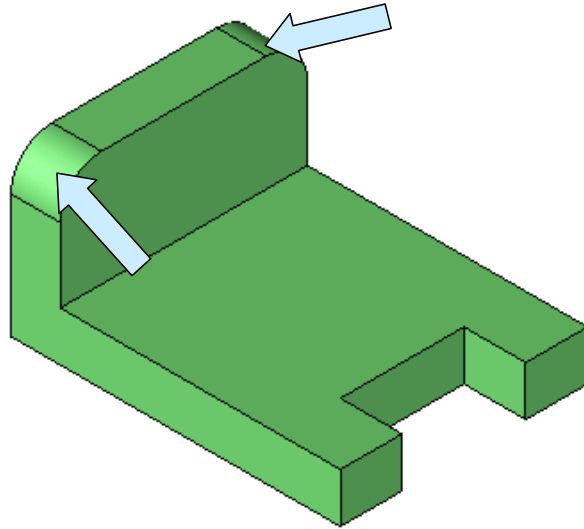
When the masking Dialog Box appears, select the MAGENTA Color and hit the ENTER Key Twice. (Note that by using a unique color for the cutting profile we made it easy to quickly select the profile. In general you want to use unique colors for your different constructions in KeyCreator to take advantage of the masking menu.)

Your part will now have a notch in the right end.



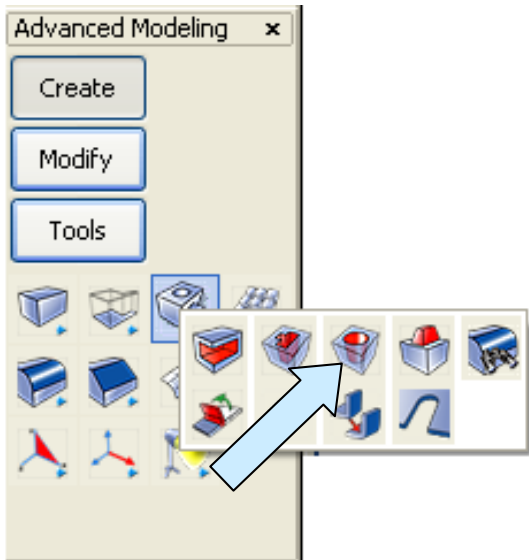
Next, click on the CONSTANT RADIUS BLEND Icon.

A small Dialog Box appears. Type 0.25 for the Radius and hit the ENTER Key.

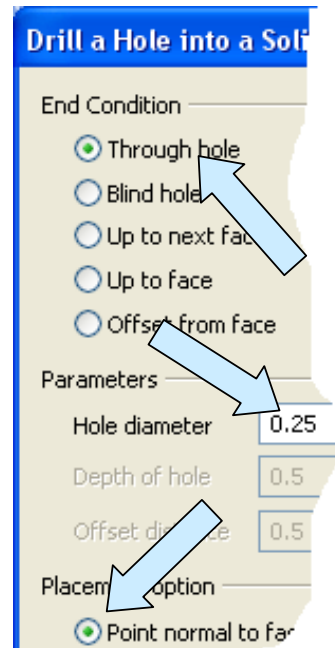


Click on the two, short edges at the top of the left leg on the part and hit the ENTER Key.

Your part will now look like this:

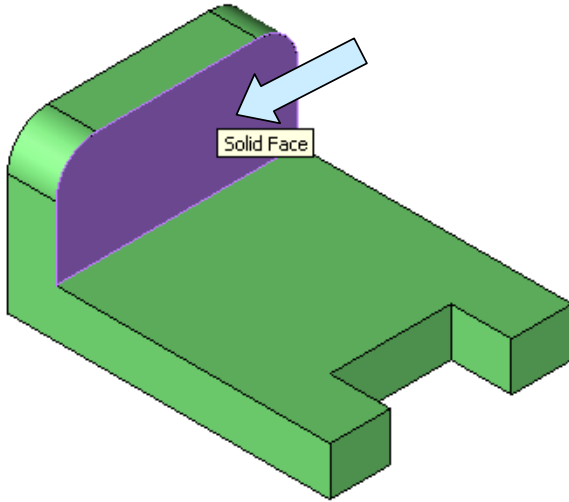


Now, click on the DRILL Icon.



A Dialog Box appears. Select the Through Hole Option.

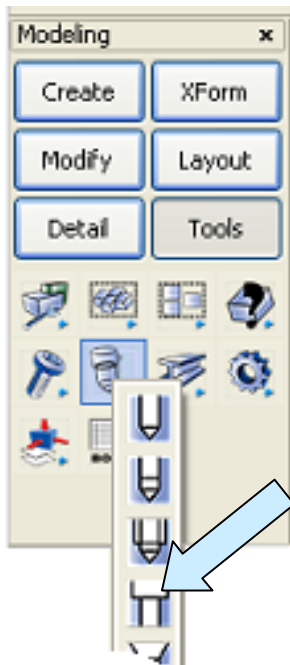
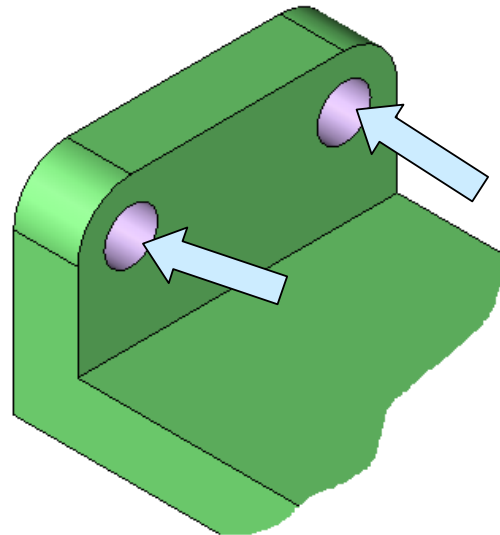
Type 0.25 for the Diameter, use the Point Normal to Face Option and hit the ENTER Key.



Click on the broad, right face of the part, indicated by the arrow in the illustration to the left.

Then, using the CtrMid Option, click on the left, front corner fillet and the left, rear corner fillet on the part.

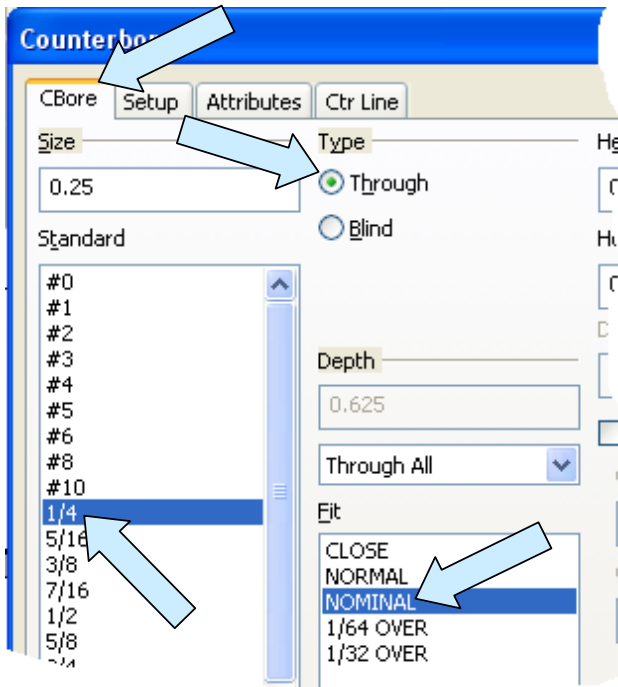
This will locate holes concentric to the corner radii of the part.



Our last task is to create the counterbored hole in the horizontal leg of the part. We could make this by first drilling a through hole and then redrilling a large blind hole at the same location.

Instead, we're going to use the Counterbore Tool in the Features Tool Palette.

Click on the COUNTERBORED HOLE Icon.



A large Dialog Box appears.

Click on the 1/4 hole size.

Select the Through Option and select the Nominal Fit Option.

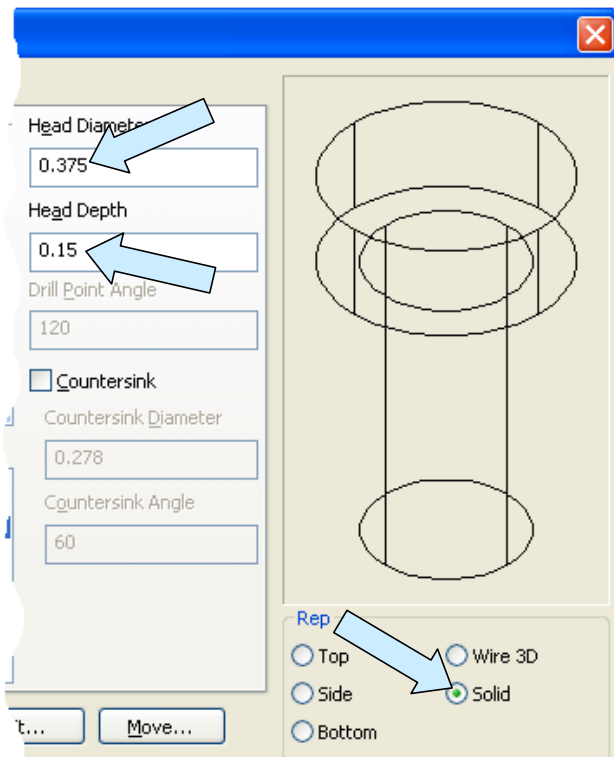
Type 0.375 for the Head Diameter and 0.15 for the Head Depth.

Click on the Solid Option and then hit the ENTER Key.

Now, select the solid part on your screen.

Notice that as you move your cursor over the part, a ghost counterbored hole appears, oriented flat on the screen.

This is because the current construction plane is the plane of the screen.





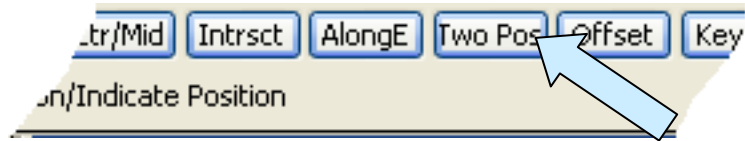
To orient the counterbore properly, click on the CONSTRUCTION PLANE Icon.

Move the cursor over the broad, top face of the part and click on it when it highlights.

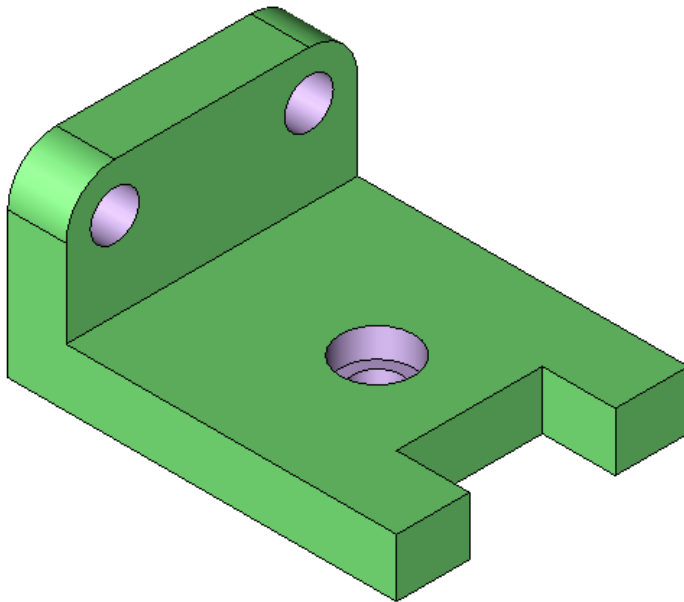
Notice that the ghost counterbore following the cursor is now oriented properly.

We're going to use a really useful function to locate the counterbored hole in the center of the broad face on the part.

Click on the TwoPos Option on the Conversation Bar.



Then, using the CtrMid Option, click on the top, front long edge of the part and then on the top, rear long edge of the part.



Your completed part should look like this:

Take a moment to save your part. Let's call it "KC1021."