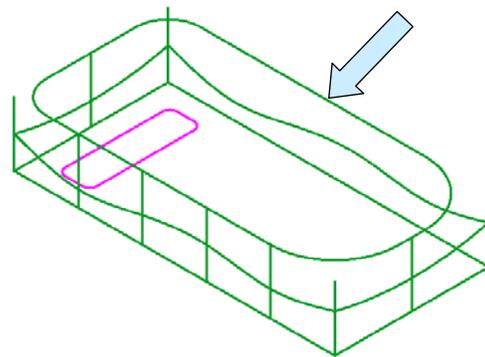Now, click on the FILLET WITH TRIM Icon.

Type 0.5 for the Radius.

Create fillets at the top, left front and rear corners of the grid, using the grid edges that lie on the top, horizontal grid plane.
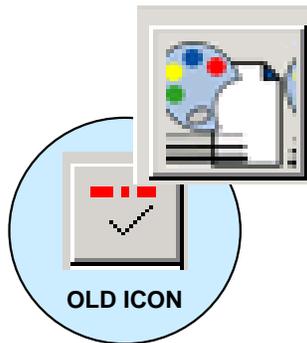
Click on the BACKUP Button.
Type 1 for the Radius.
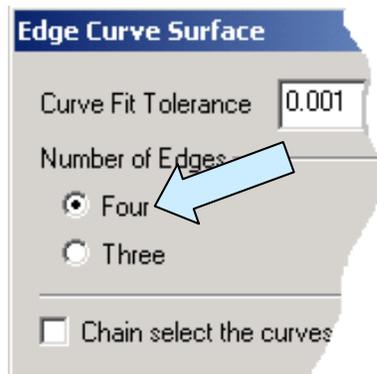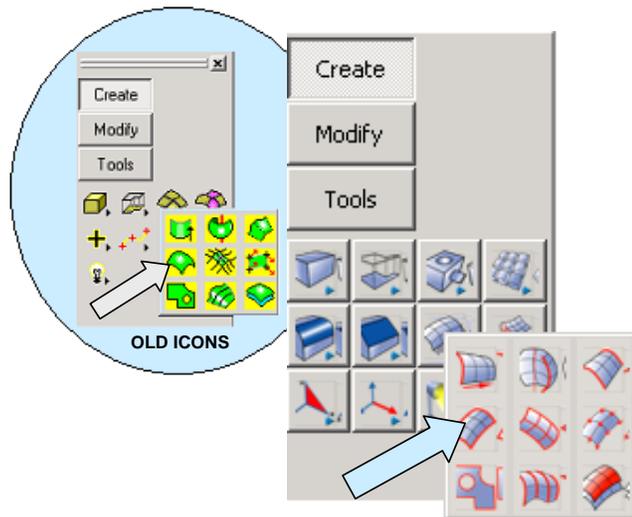Now create fillets at the top, right front and rear corners of the grid.

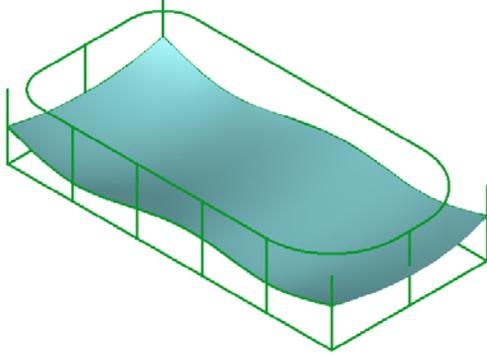**OLD ICONS**

You now have a profile for the top, parting line edge.

Click on the SET ATTRIBUTE Icon. Select CYAN for the construction color.

OLD ICON

Click on the CREATE SURFACE FROM EDGES Icon.

Edge Curve Surface

Curve Fit Tolerance   0.001

Number of Edges
○ Four
○ Three

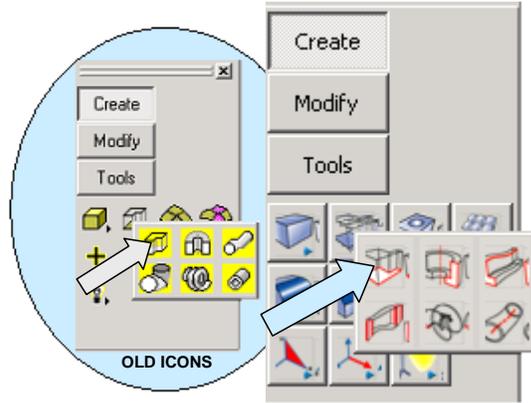☐ Chain select the curves

OLD ICONS

A Dialog Box appears. We'll use the default Four Curve Option. Click on the OK Button.
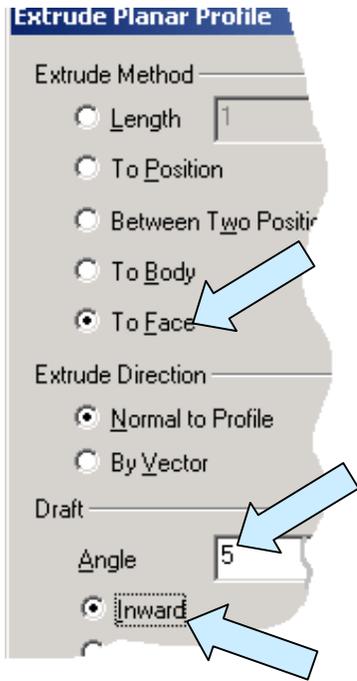
Now, click on the rear spline, the right arc, the front spline, and the left arc.

You will now have a construction surface that looks like this:

Click on the EXTRUDE Icon.

A Dialog Box appears.

Click on the To Face Option.

Type 5 for the Draft Angle and click on the Inward Option. Then, click on the OK Button.
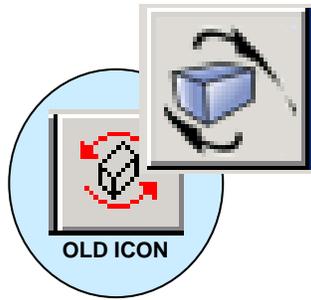
Now, click on the four fillets and four lines that comprise the parting line profile. Then, click on the ACCEPT Button.

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

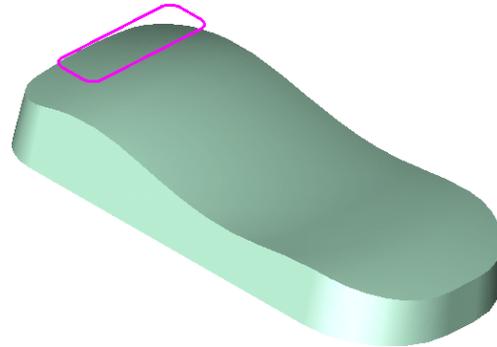Then, click on the construction surface that you just created.

Your screen should now look like this:

Doctor Walt's KEYCREATOR 5 Sizzling Solids
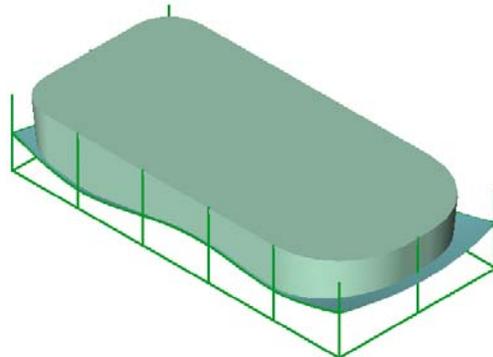
Click on the DYNAMIC ROTATION Icon.

Drag the part around so that you can see the underside and the boss profile.
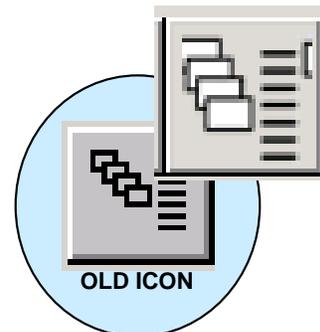
OLD ICON

I've illustrated the part to the right.

You'll notice that I've also removed the construction surface, curves used for the surface, and grid lines from the display by moving them to a separate level that is now turned off.
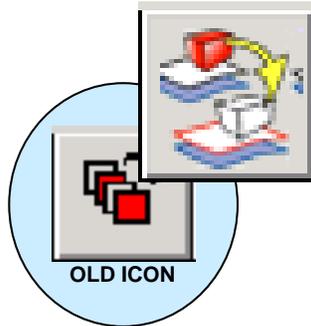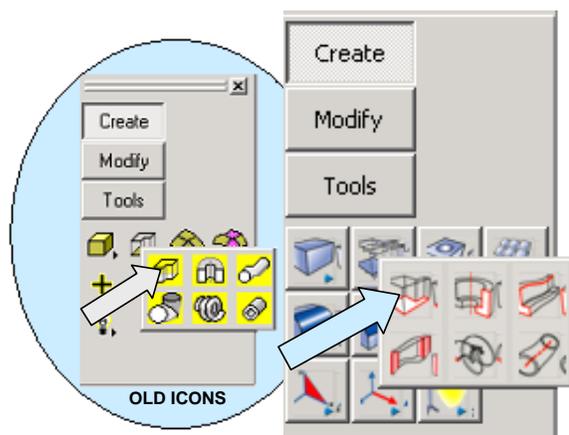
You can do the same by using the MOVE ENTITIES Function.

Then use the TOGGLE SPLITTER to access the Level List.

OLD ICON

OLD ICON

Don't delete these entities; just remove them from the display. We'll be using the grid later to help position the cutouts for the keypad.
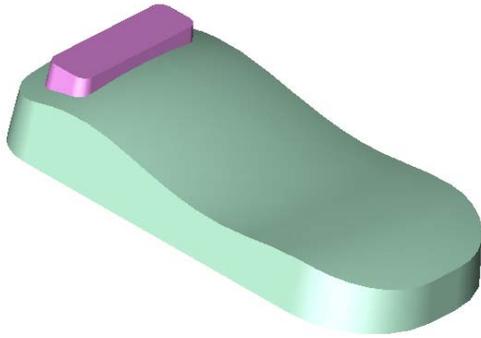
Click again on the EXTRUDE Icon.

We'll use the same settings again except that this time we want an Outward Draft.

Click on the OK Button.

Select the MAGENTA Profile that you created earlier and then click on the ACCEPT Button.

Click on the vector that points toward the main part. Then, click on the undulating surface of the part.

Create
Modify
Tools

Create
Modify
Tools

OLD ICONS

Your screen should now look like this:

Click on the BOOLEAN UNION Icon.
Click on the main body and then on the boss.

Click on the ACCEPT Button.
You now have one solid body.

MENU SHIFT
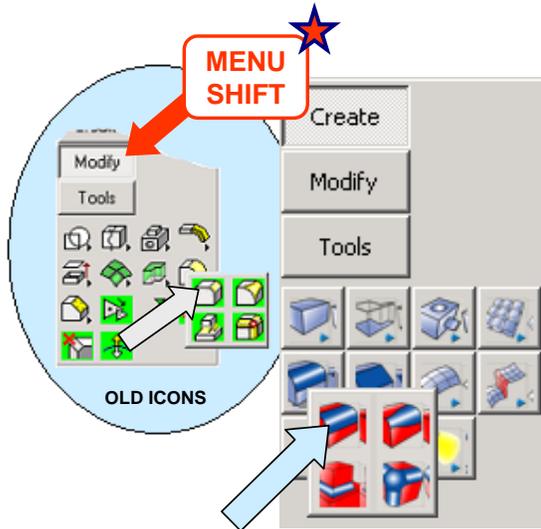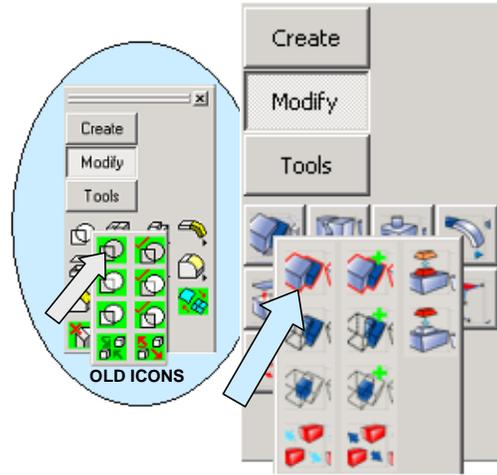
Click on the CONSTANT RADIUS BLEND Icon.

A Dialog Box appears. Type 0.150 for the Radius and click on the OK Button.

Click on the edge of the undulating main surface. Then, click on the ACCEPT Button.

A blend propagates around the entire edge of the surface. Click on the BACKUP Button.

Type 0.05 for the Radius and click on the OK Button.

Click on one of the edges at the intersection of the root of the boss and the undulating surface. Then, click on the ACCEPT Button. A blend propagates around this intersection.

Your part should now look like this:

MENU SHIFT

**OLD ICONS**
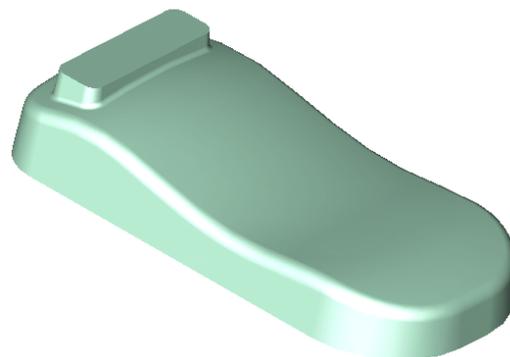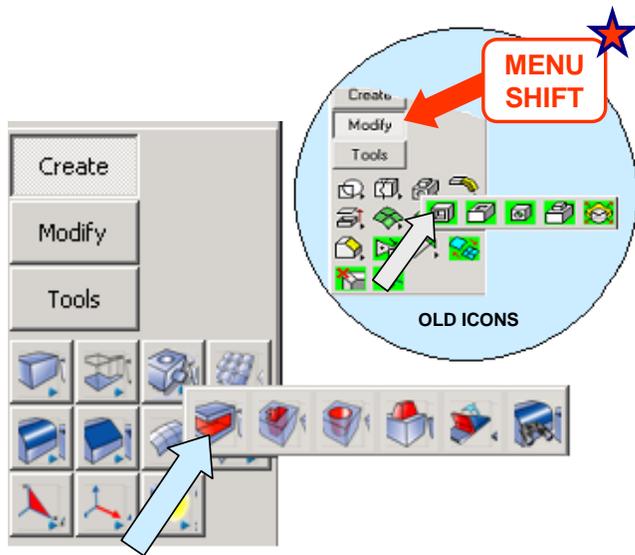
Next, click on the SHELL Icon.

A Dialog Box appears.
Type 0.05 for the Shell Thickness.
Then, click on the OK Button.
Click on the end face of the boss.

Next, click on the broad, parting line surface. Since the part is still rotated upside-down, this surface is hidden.

Use the TAB Key to index the Face Selector and click when the surface highlights. Then, click on the ACCEPT Button.

You now have a shelled part. Switch to the Isometric View (View 7.) and Autoscale the display.

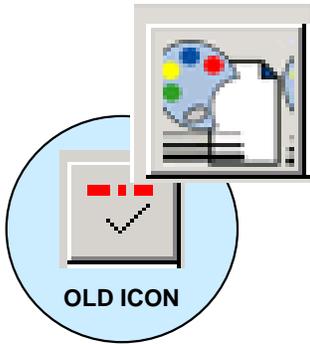Your part should look like this:

OLD ICON
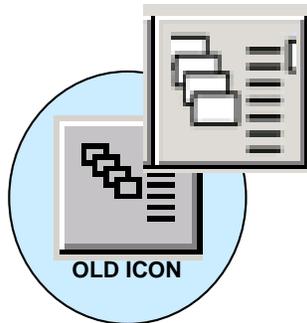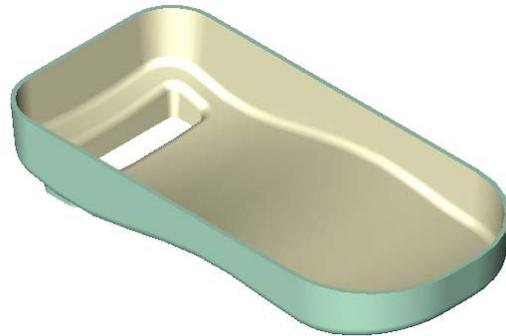
Our last task is to construct the twelve cutouts in the part. We'll start by redisplaying the grid.

Click on the TOGGLE SPLITTER Icon and turn on the level that contains the grid entities.

Then, click on the CONSTRUCTION PLANE Icon.
Click on the right end of the bottom, front grid line and then the front end of the bottom, right grid line.
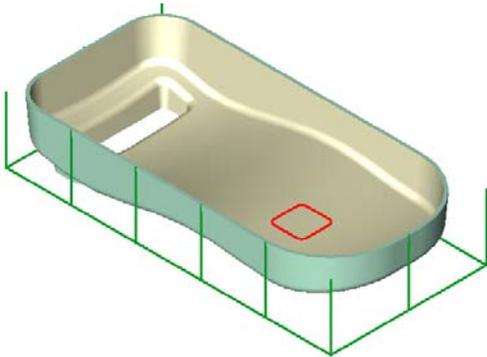

OLD ICON
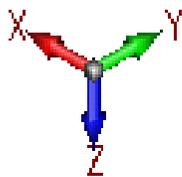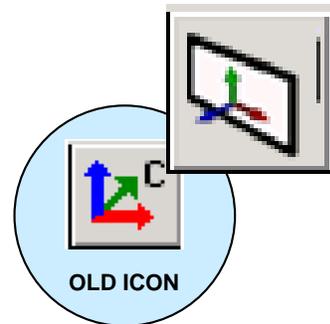
You should have a construction axis that looks like this:

Now, click on the SET ATTRIBUTE Icon. Select a new construction color. I'm going to use RED.

OLD ICON

Click on the CREATE ROUNDED RECTANGLE WIDTH HEIGHT Icon.

Type 0.075 for the Corner Radius.
Click on the BotLft Anchoring Option.
Type 0.5 for both dXC and dYC.

OLD ICONS

Now, click on the OFFSET Option. Using the EndEnt Option, click on the top end of the right, front grid corner.

Type 0.75 for dXC, 0.30 for dYC, and 0 for dZC.

Your screen should look like this:

Note that we established the construction plane so that the X and Y axes could be used to orient this rectangle using the dimensions that we started with on page 155.
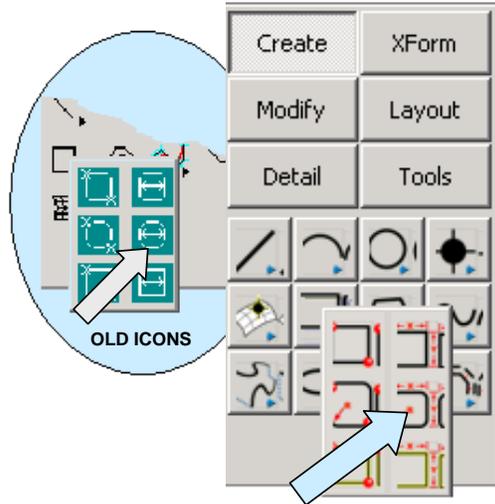
Now, let's duplicate the rectangle to get an array of twelve cutout profiles.

Click on the XFORM DELTA COPY Icon.
Click on the ALL DSP Option and then on the BY TYPE Option.

OLD ICONS

Select the RED Option.
Then, click on the ACCEPT Button.

Type 2 for the Number of Copies.
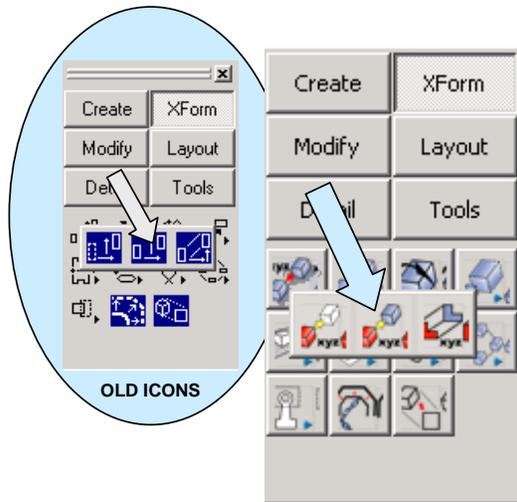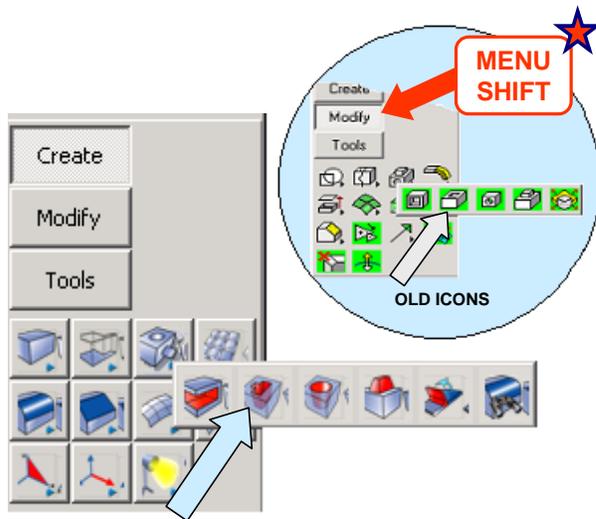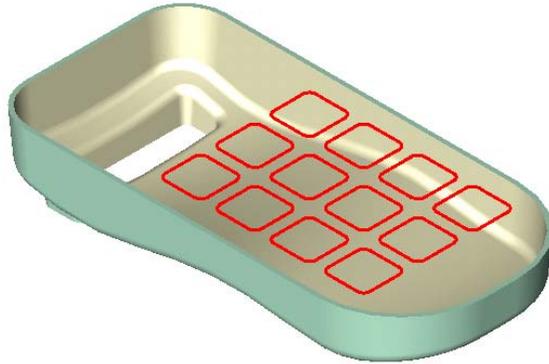Enter 0 for dXC, 0.65 for dYC, and 0 for dZC.

You will now have a row of three red rectangles.

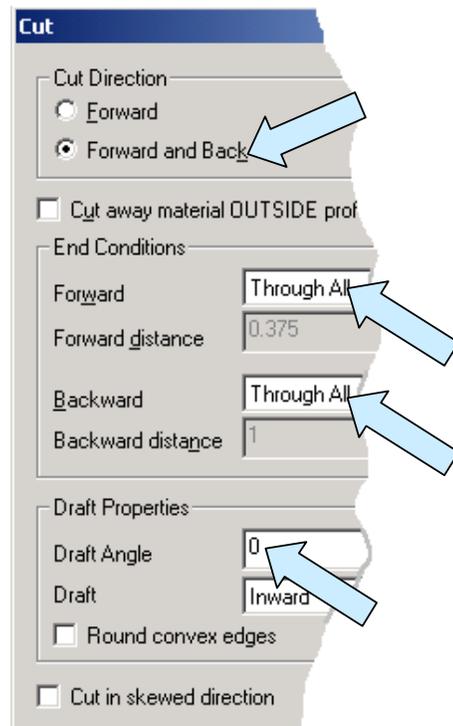Click on the XFORM DELTA COPY Icon again.

Click on the ALL DSP Option and then on the BY TYPE Option. Select the RED Option. Then, click on the ACCEPT Button.

Type 3 for the Number of Copies.
Enter 0.65 for dXC and hit the ENTER
Key three times.

You will now have a grid of twelve rectangles.

Now, click on the CUTAWAY Icon.

A Dialog Box appears.

We'll use the Forward and Back Option.

Use Through All for both directions.

Make sure that the Draft Angle is 0
Then, click on the OK Button.

Click on the solid body.

Next, click on the ALL DSP Option and then on the BY TYPE Option.
The MASKING BY TYPE Dialog Box appears.
Select RED and click on the OK Button.

Then, click on the ACCEPT
Button.

If you have a clunky old
computer, the cutting operation
may take a few seconds.

When it is done, you will have
the completed part illustrated to
the right.