

20. If necessary, change the colors of some features to make the text stand out better.

And there you have it: engraved text the way it should be. Next, we will look at how to add embossed text to a nonplanar face. Embossing requires a new approach, which we will tackle in the next section.

Embossed Text on a Curved Surface

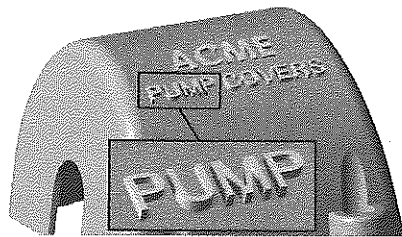


Fig. 21-29. The cover with improper embossed text.

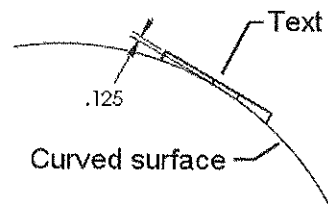


Fig. 21-30. Adding raised text to a curved surface.

The cover part from previous exercises will be used in the example that follows to show you how to add raised text to a curved surface. The cover is shown in figure 21-29. Some embossed text has already been added, but the resultant feature does not conform to the cover's surface. This is a typical situation when extruding. Where the extrusion begins, the feature is flat.

There are some special problems that arise when creating embossed text. The first problem is that of creating a plane to sketch on, the tools for which you have learned in Chapter 4. In particular, it may be necessary to create a plane tangent to a surface. The second problem is creating the extruded text at the required height. It is sometimes necessary to create the text feature larger than necessary with regard to the extrusion distance. The text then has to be cut down to size. An offset surface is usually used to perform the task of cutting the text.

A simple diagram can be used to illustrate the problem of creating the proper raised height for the text feature. Figure 21-30 shows some text that has been added to a curved surface, as seen from the side. The problem

lies in the fact that the text height does not conform to the curvature of the model.

In figure 21-30, the .125-inch dimension is the desired height of the text. The problem should be obvious from the image. Due to the curvature of the surface, it is impossible to achieve the proper height for the text using nothing more than a simple extrusion. To achieve a uniform height, a different tactic is necessary.

Sometimes it is possible to create a plane on which to place the sketched text, and then extrude the text feature from underneath the sur-

face of the model. The plane has to be essentially embedded within the material, so that when the text is extruded any excess is absorbed into the rest of the part. The extrusion would use an end condition of Offset From Surface, where the surface would be the outer curved surface of the part. This would be a direct way of controlling the height of the text feature. The only problem is that often the model is not thick enough to absorb the unwanted portion of the text feature.

Trying to extrude the sketch text from a plane above the curved surface while using the Offset From Surface end condition will not work either. This is because the offset is either going to be below the surface of the part (which does absolutely no good) or above the surface of the part, which creates a separate body (or in the case of extruded text, many separate bodies).

There is more than one way to create raised text on a curved surface, but there is one particular easily accomplished method that in this case will work well. This method utilizes an offset surface, and can usually be employed in what might otherwise be a difficult situation. How-To 21-4 takes you through the process of creating embossed text on a curved surface.

How-To 21-4: Creating Embossed Text on a Curved Surface

To create embossed text on a curved surface, perform the following steps.

1. Create an offset surface using Insert > Surface > Offset.
2. Offset the surface to the same height the embossed text is to be.
3. Create a sketch plane if necessary. Tangent planes work well, and the point of tangency should be near the area where the text feature will be placed. (Review How-To 4-14 if you need help with this.)
4. Start a new sketch and create the sketch text as desired. Add construction geometry and dimensions as necessary. Use the Modify Sketch command to rotate text.
5. Extrude the sketch. It is recommended that the extrusion be in two directions. Use Up To Next for the extrusion toward the part, and Blind to add some height to the text in the direction going away from the part. The precise height really is not important, as long as it is greater than the required final height.
6. Once the extrusion is complete, select Insert > Cut > With Surface.