Kelsey Bradley and Eric Statzer

ITCD 301

December 10, 2010

 There are two different types of workholding devices that we were to select from for this project. The first option we had was to choose a jig, which is a device that is used for guiding a tool. The other option that we had to choose from was a fixture, which is a device that is used to hold an object while it is being machined. We chose a circular drill jig for our design.

 The circular drill jig that we chose is a template circular drill jig, in that it is used to drill a hole in a part where conventional jigs would be costly and unnecessary. The circular drill jig had a locating pin, which we assumed was for easier placement of the part that was to be machined. This locating pin keeps the workpiece from rotating while the part is being machined. Every axis on our part is secure except for the Y positive one. This means that the only way to fit a workpiece onto the circular drill jig is by placing it on top and securing it through the locating pin. The way that this works is that the part is placed on the circular drill jig and it is made to fit so that the locating pin keeps it from spinning as the machinable part is drilled into. This is often a common fixture of drill jigs.

 According to our textbook, there are some disadvantages to having a template drill jig instead of a conventional one. One of these is that there is a risk that the part will not be machined right because of an operator that is not paying attention. Another is that the orientation of the hole pattern with the workpiece will not be as accurate. They are also not practical when locating datums that are dimensioned no matter what the size of the part is.

 There are certain principles that all jigs must meet in order to be considered jigs. The first one is that the drill jig must be able to correctly locate the workpiece with respect to the tool. A second is that they must be able to securely clamp and rigidly support the workpiece while the part is being machined. They also have to be able to guide the tool, and there has to be a way to fasten the jig to the machine.

 Jigs and fixtures alike are widely used in industry settings. They are what machinists use to create their parts. Without them it would be difficult to design and build anything. Although there are many types of jigs and fixtures, they all have the same purpose. Jigs are there to guide the tool that is machining a part, and fixtures are there to hold the part that is being machined in place.

WORKS CITED

"Jigs and Fixtures."*Scribd.*. 24 Jun 2008. Web. 9 Dec 2010. <<http://www.scribd.com/doc/3587826/Jigs-Fixtures>>.

Spitler, David, Jeff Lantrip, John G. Nee, and David Alkire Smith. *Fundamentals of Tool Design*. 5th ed. Dearborn, Michigan: Society of Manufacturing Engineers, 2003. 149-50. Print.





