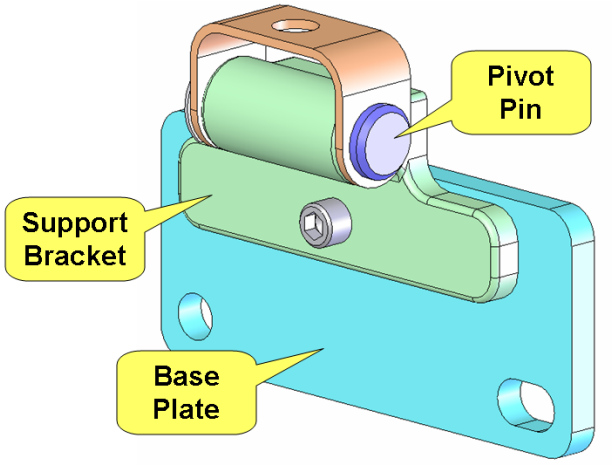
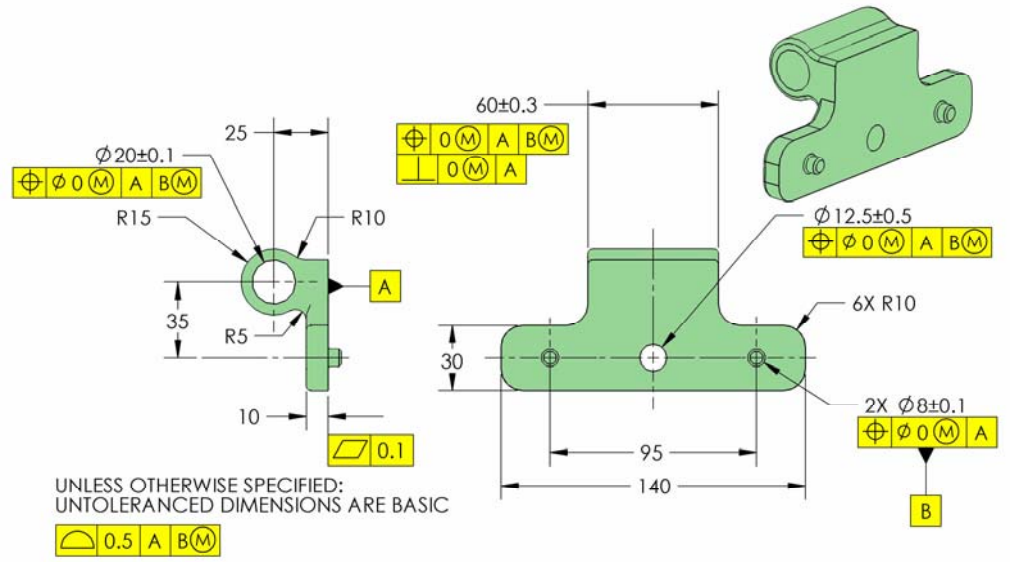
April 2008
Tip-of-the-Month

A Hole's Primary Datum Feature Does Not Have to Be Perpendicular to the Hole.

Where do these myths come from? A lot of folks think that the primary datum for a position tolerance on a hole must be the surface that is perpendicular to that hole. That might be helpful for the shop but may have nothing to do with function. The result might be a part that is easy to machine that does not function. The majority of the time datum features should be selected based on the functional requirements of the part.

In this assembly the Support Bracket mounts against the Base Plate. This mounting surface should be the primary datum feature. The hole receiving the Pivot Pin is positioned relative to the datum plane established by datum feature A. This will assure that the part functions according to the design intent.





A few things to keep in mind when a Designer or Design Engineer selects datum features based on how they **think** the part will be produced:

- Usually they are guessing
- The part may not function
- If the process changes, will you go back and change the datum references?
- The function remains the same even if the process changes

Select datum features based on function and the parts are more likely to meet the design intent.

Go to http://www.tec-ease.com/tips/Apr-08.htm to view a video clip of Don Day explaining this Tip.

Please email us any suggestions or topics that you would like to see covered in our Tip-of-the-Month series.

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