

December 2009

Tip-of-the-Month

Center Planes as Datum Features Constrain 3 Degrees of Freedom

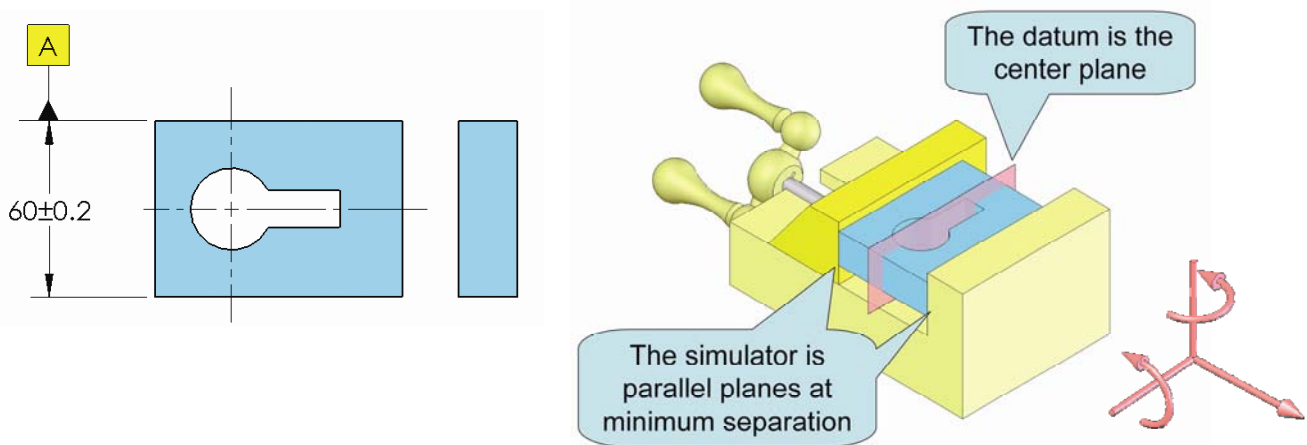
(In accordance with the ASME Y14.5-2009)

There is a new chart in the ASME Y14.5-2009 standard that shows the degrees of freedom that are constrained when **the feature is a primary datum feature and, where appropriate, applies RMB**. The chart also shows the relationship between the feature type, simulator and theoretical datum(s) that are established. The next several monthly Tips illustrate the features shown in the chart. Although some of the simulators are illustrated as physical inspection equipment, these simulators may also be simulated by "soft gaging" optical or probing methods.

Center Plane as a Datum Feature

A width is a feature that is made up of two parallel planes. The datum feature identification symbol must be associated with the size dimension. The datum established by a width is the center plane of two parallel planes at minimum separation. For an external width the practical datum simulator might be a milling vise where the jaws of the vise remain parallel as they close in on the width feature. The datum is the center plane between the jaws of the vise. Since the datum is a plane, it will constrain 3 degrees of freedom.

The practical simulator for an internal width might be a stack of gage blocks which once again will establish a datum center plane.



The video for this Tip is from Don's new computer based training course on GD&T Fundamentals available on DVD and the internet in March 2010.

<http://www.tec-ease.com/tips/Dec-09.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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