

My question is, how does/should the .010 tol. of position (TOP) applied to the Fixture Factor ~~§~~ into determining the gage pin diameter? I am planning on applying practical absolute tolerancing, including a 5% gage tol. + a 5% wear tol. IF I understand the ASME Y14.43 examples for practical absolute tolerancing correctly, sometimes (Fig. A-2b~~§~~ + A-2d) the TOP is added to the pin size, + sometimes it isn't (Fig A-2a, A-2c). Is this just left up to the discretion of the gage designer, or am I missing something?

Here's how I would design the pin:

$$\text{Hole tol.} = +.01 / -.003$$

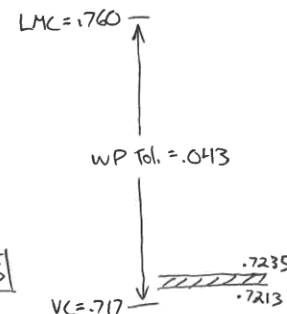
$$\text{Hole LMC} = .750 + .01 = .760$$

$$\text{Hole virtual cond (VC)} = .750 - .003 - .030 = .717$$

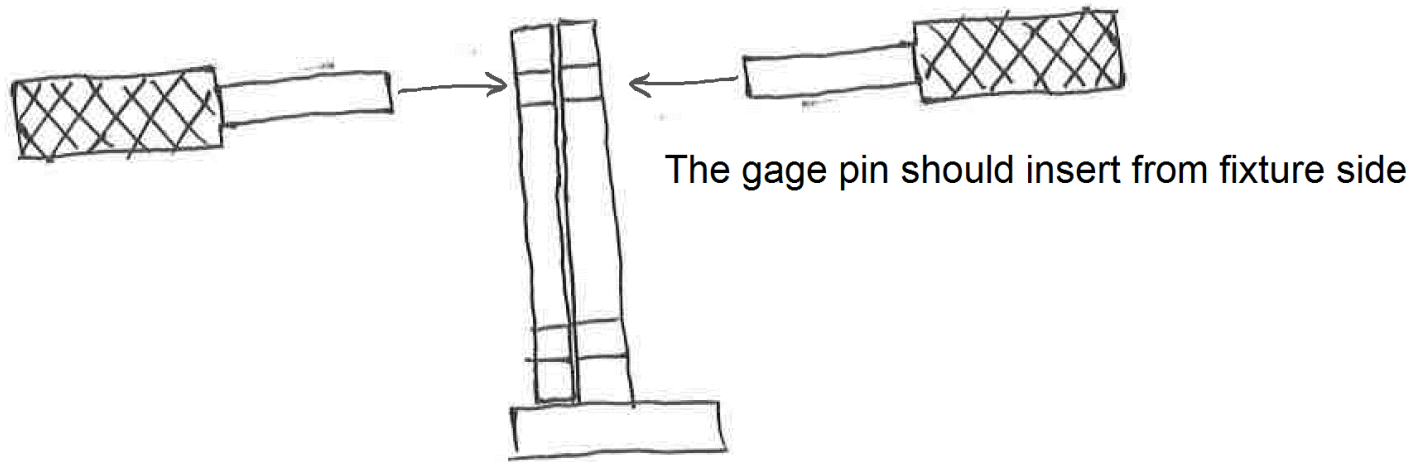
$$\text{Workpiece tol.} = .760 - .717 = 0.043$$

$$\text{Pin LMC} = \text{Hole VC} + 5\% \text{ wear tol.} = .717 + .05(.043) = \boxed{.7213}$$

$$\text{Pin MMC} = \text{Pin LMC} + 5\% \text{ gage tol.} = .7213 + .05(.043) = \boxed{.7235}$$



The graph on the right is used in the standard, + helps me to visualize this.



PART, FIXTURE, PIN ASSEMBLY