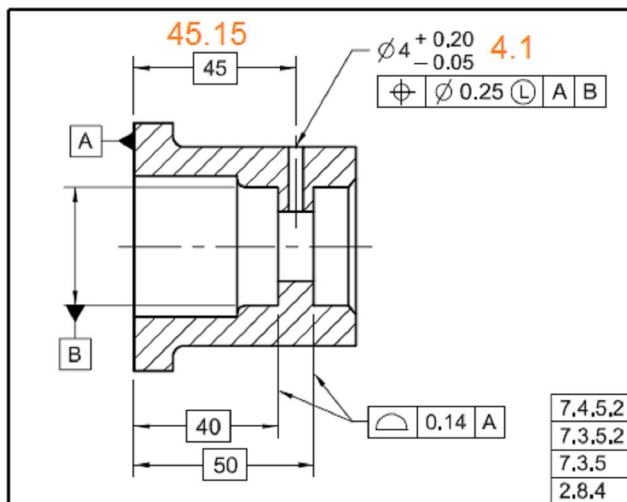


ACCURATE CENTRE OF EXCELLENCE

How to Calculate GD&T Position with LMC:

LMC, \textcircled{L} , is benefit while using GD&T Position which is not applied in +/- tolerance. Three things to note for LMC is given in the drawing.

1. LMC is applied or used when part is out of tolerance. More than 0.25 in the following case.
2. Given tolerance is applied at LMC condition of the hole/shaft size. 0.025 is given for hole size 4.20 (LMC Size).
3. Application of LMC is to protect minimum stock, clearances, wall thickness, ID-OD, wall thickness, etc.



Steps to measure & calculate Position Tolerance with LMC:

1. Dimensions in red colour 4.15, 4.1 are actual measured values.
2. Calculate the deviation from the basic dimension. I.e. Deviation in X is 0.15, and increase in diameter is 0.15.
3. Use the following formula to calculate radial hypotenuse value Multiply by 2 for the diametrical position tolerance.

$$\text{Diametrical Actual Tolerance} = 2 \times \sqrt{(0.15)^2 + (0.00)^2}$$

4. Therefore actual GD&T Position Tolerance measured against 0.25 is 0.30. The part is rejected
5. Now calculate bonus tolerance = (LMC Diameter - Actual Diameter) = (4.20 - 4.10) = 0.10
6. Total acceptable Position Tolerance = Given TOL + Bonus TOL = 0.25+0.10 = 0.35.
7. Actual Position 0.30 is less than acceptance total tolerance 0.35 therefore part is now accepted.

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