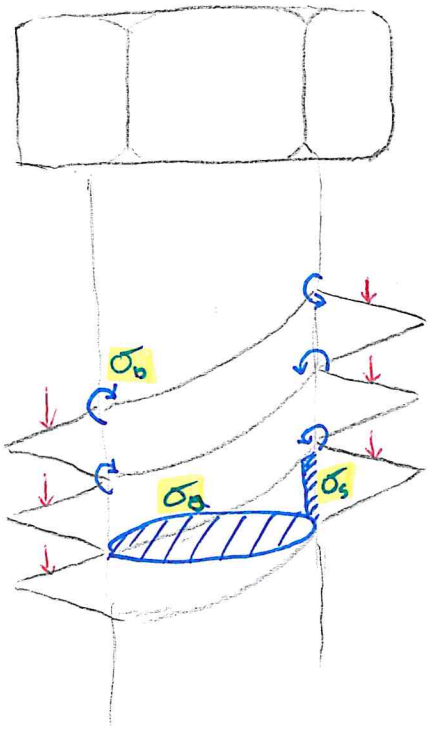

$\downarrow$ = force total (load + pretension)

σ_b = bending stress at the root due to the total force (load + pretension) acting at the mean diameter.

σ_s = shear stress at the root due to the total force (load + pretension) acting at the mean diameter

σ_a = axial stress at the cross section of the root diameter due to the total force (load + pretension)

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standard fastener method:

$$\sigma_a = 0,75\,(\sigma_{proof})$$

$$F_{total} = 0,75(\sigma_{proof})(A_{root})$$

power screw method:

$$\sigma_{bolt} = \sqrt{\frac{(\sigma_b)^2 + (\sigma_a)^2 + (\sigma_b - \sigma_a)^2}{2}}$$

note no torque ∴ the 3rd term in Von mises is excluded

~~$\sigma_{bolt} \leq \sigma_{proof}$~~

$\sigma_{bolt} \leq \sigma_{allowable-yield}$