

Estimate S-N curve & C.L.F curves for axial loading, of precision steel parts with  $S_u = 150$  kpsi  $S_y = 120$  kpsi commercially polished surfaces.  
Cross sectional dims < 2 in

S-N curve  $S(10^3)$   $S_n = S(10^6)$

$S_{10^3} = (0.75)(150) = \underline{112}$  kpsi

$S_n = S_n' C_L C_D C_S$

~~$S_n'$~~   $S_n' = (0.5)(S_u) = (0.5)(150) = \underline{75}$  kpsi

$C_S$  polished = 0.9

$C_L$  axial = 1.0

$C_D$  precision axial, = 0.9

$S_n = (1.0)(0.9)(0.9)(75) = 61$  kpsi

Estimate S-N curve on log-log paper.

