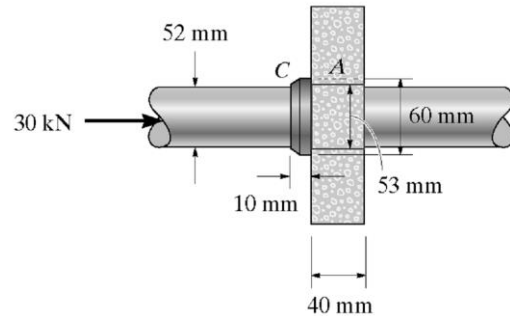
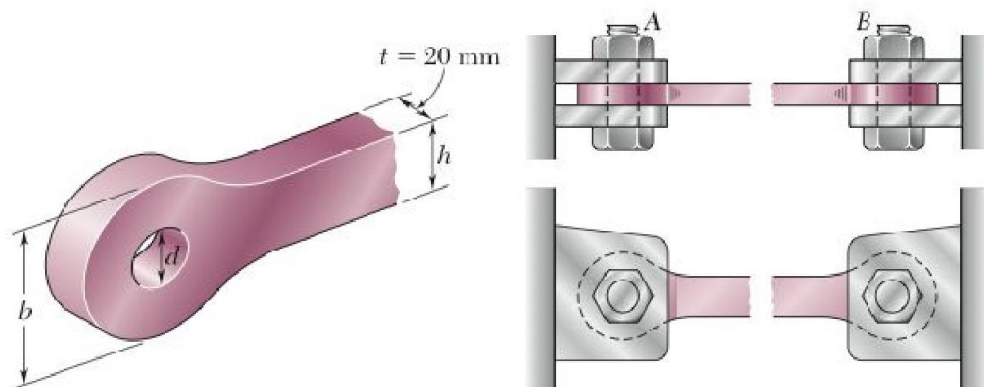


1. The shaft is subjected to the axial force of 30 kN. If the shaft passes through the 53-mm diameter hole in the fixed support *A*, determine the bearing stress acting on the collar *C*. Also, what is the average shear stress acting along the inside surface of the collar where it is fixed connected to the 52-mm diameter shaft? 【如图所示，直径为 52 mm 的圆轴一端承受 30 kN 的轴向压力，并通过与其固定的套环依附于孔径为 53 mm 的固定支撑 *A* 上，已知套环外径为 60 mm，宽 10 mm，试求作用于套环端面上的挤压应力和套环/圆轴结合面上的平均剪切应力。】



2. The steel tie bar shown is to be designed to carry a tension force of magnitude $P = 120$ kN when bolted between double brackets at *A* and *B*. The bar will be fabricated from 20-mm-thick plate stock. For the grade of steel to be used, the maximum allowable stresses are: $[\sigma] = 175$ MPa, $[\tau] = 100$ MPa, $[\sigma_b] = 350$ MPa. Design the tie bar by determining the required values of (a) the diameter d of the bolt, (b) the dimension b at each end of the bar, (c) the dimension h of the bar. 【图示钢杆承受 $P = 120$ kN 的轴向拉力，若用于制造钢杆的板材厚度为 20 mm，许用拉应力 $[\sigma] = 175$ MPa，许用切应力 $[\tau] = 100$ MPa，许用挤压应力 $[\sigma_b] = 350$ MPa，试求 (a) 螺钉直径 d ，设螺钉由与钢杆相同材料制造；(b) 钢杆端部的尺寸 b ；(c) 钢杆截面尺寸 h 。】



3. In the assembly shown, each of the four vertical links has an 8×36 -mm uniform rectangular cross section and each of the four pins has a 16-mm diameter. Determine (a) the average shearing stress in the pin at B , (b) the average bearing stress at B in link BD , (c) the average bearing stress at B in member ABC , knowing that this member has a 10×50 -mm uniform cross-section. 【图示结构中，四根竖直连杆均为 8×36 -mm 的矩形等直杆，四个圆柱销直径均为 16-mm，试求(a)圆柱销 B 中的平均切应力；(b)连杆 BD 在 B 处的平均挤压应力；(c)杆件 ABC 在 B 处的平均挤压应力，已知杆 ABC 为 10×50 -mm 的矩形等直杆。】

