ES120 Spring 2018 – Section 4 Notes

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Problem 1:

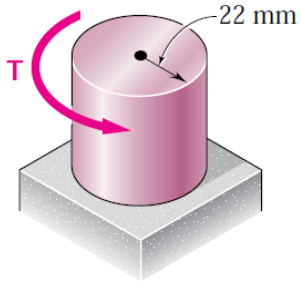

Figure 1: 3.3

For the cylindrical shaft shown, determine the maximum shearing stress caused by a torque of magnitude T=1.5 kN·m.

Solution 1

Problem 2:

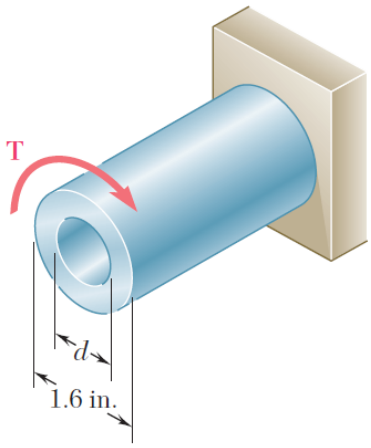

Figure 2: 3.3

Knowing that the internal diameter of the hollow shaft shown is d=0.9 in., determine the maximum shearing stress caused by a torque of magnitude T=9 kip·in.

Solution 2

Problem 3:

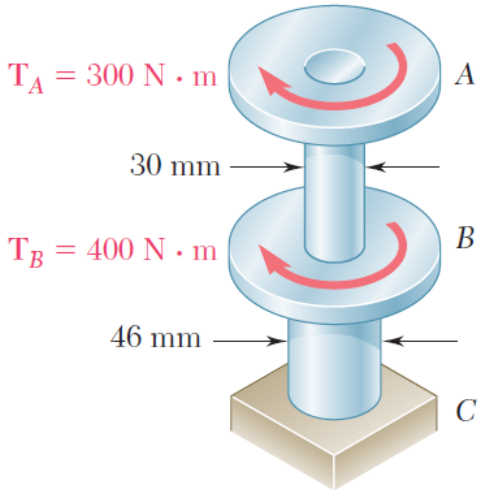

Figure 3: 3.9

The torques shown are exerted on pulleys A and B. Knowing that each shaft is solid, determine the maximum shearing stress (a) in shaft AB, (b) in shaft BC.

Solution 3

Part A

Part B