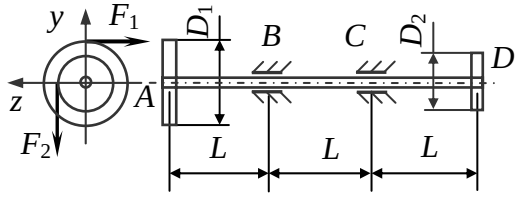
Course work 4

A solid circular shaft transmits torque T = 600 Nm. Knowing that L = 300 mm, D_1 = 350 mm, D_2 = 200 mm and σ_{all} = 120 MPa, design the shaft using the Maximum Shearing Stress Yield Criterion (MSSC). Draw the stress diagrams in the critical cross section.

1



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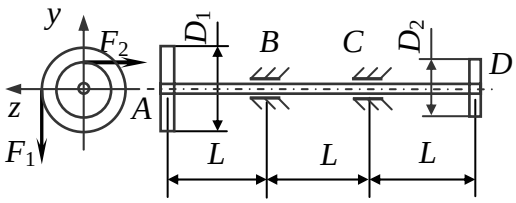
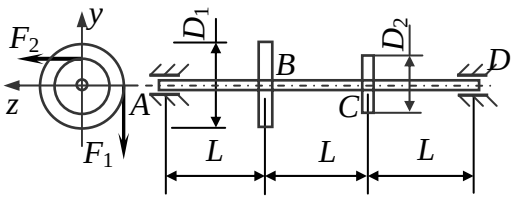


A solid circular shaft transmits torque T = 700 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM). Draw the stress diagrams in the critical cross section.

3



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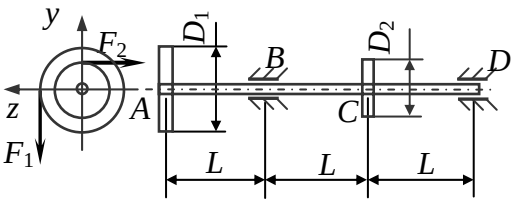

A solid circular shaft transmits torque T = 800 Nm. Knowing that L = 300 mm, D_1 = 400 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Maximum Shearing Stress Yield Criterion (MSSC). Draw the stress diagrams in the critical cross section.

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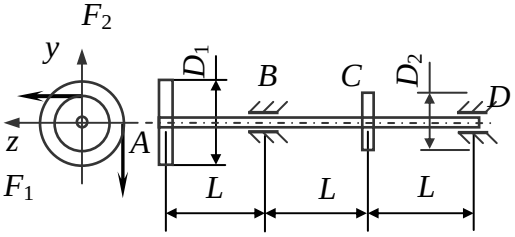

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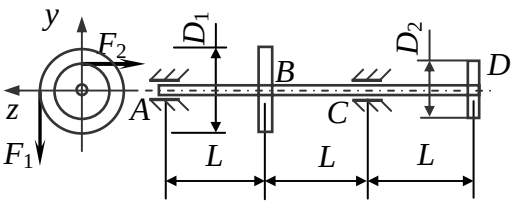
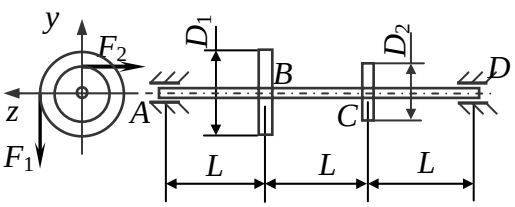


A solid circular shaft transmits torque T = 700 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

7



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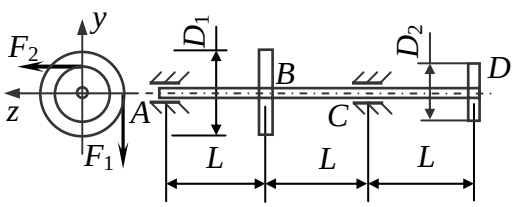
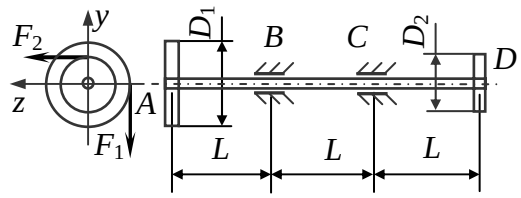


A solid circular shaft transmits torque T = 700 Nm. Knowing that L = 300 mm, D_1 = 400 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

9



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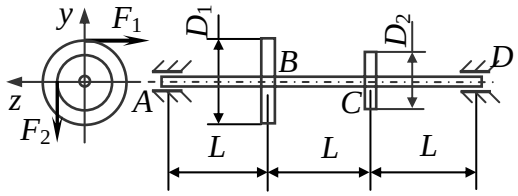

A solid circular shaft transmits torque T = 700 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 200 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

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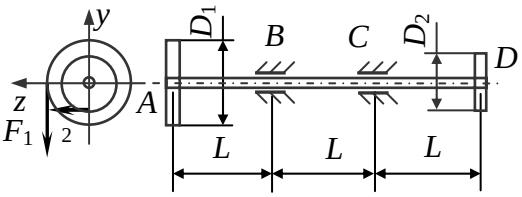

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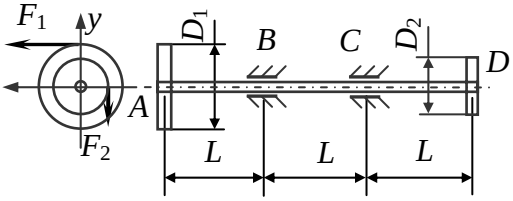
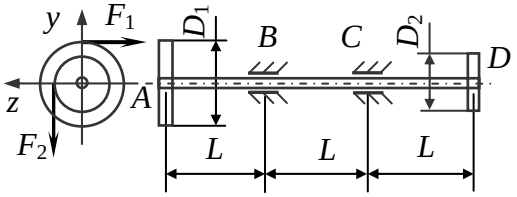


A solid circular shaft transmits torque T = 500 Nm. Knowing that L = 300 mm, D_1 = 350 mm, D_2 = 200 mm and σ_{all} = 120 MPa, design the shaft using the Maximum Shearing Stress Yield Criterion (MSSC). Draw the stress diagrams in the critical cross section.

13



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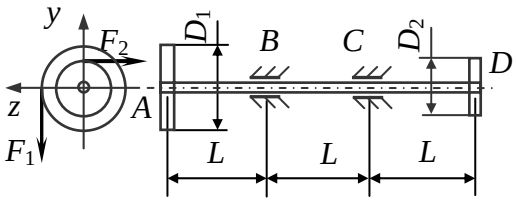

A solid circular shaft transmits torque T = 400 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM). Draw the stress diagrams in the critical cross section.

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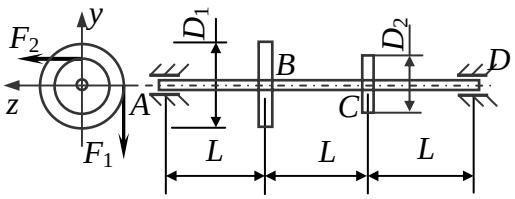

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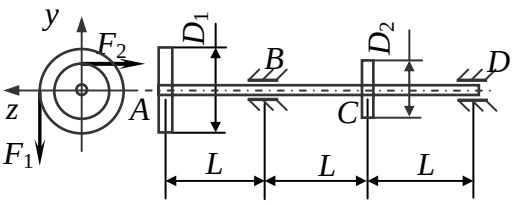

A solid circular shaft transmits torque T = 300 Nm. Knowing that L = 300 mm, D_1 = 400 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Maximum Shearing Stress Yield Criterion (MSSC). Draw the stress diagrams in the critical cross section.

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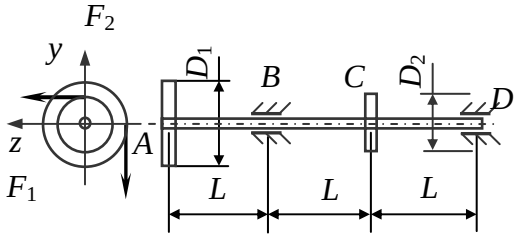

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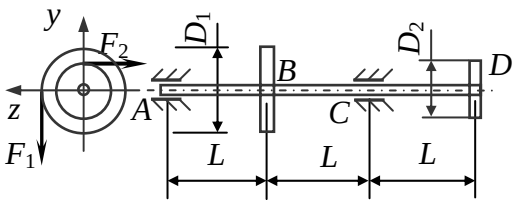
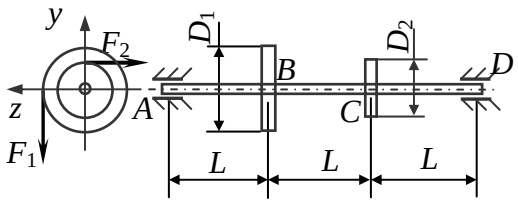


A solid circular shaft transmits torque T = 500 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

19



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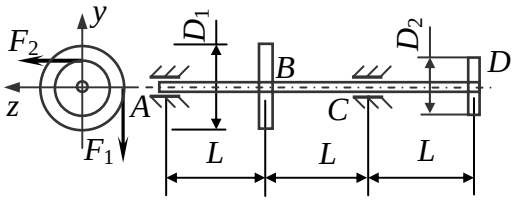

A solid circular shaft transmits torque T = 400 Nm. Knowing that L = 300 mm, D_1 = 400 mm, D_2 = 250 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

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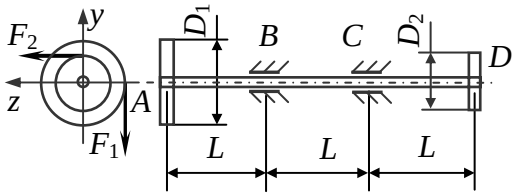

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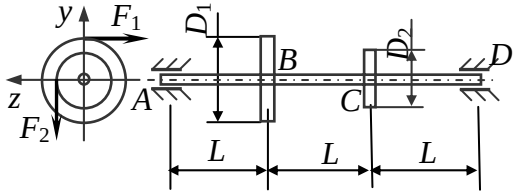
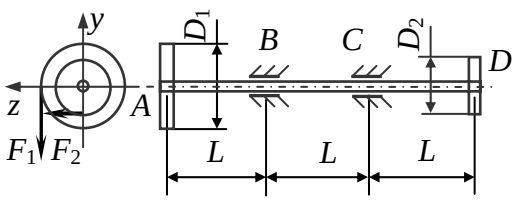


A solid circular shaft transmits torque T = 300 Nm. Knowing that L = 300 mm, D_1 = 300 mm, D_2 = 200 mm and σ_{all} = 120 MPa, design the shaft using the Von Mises Yield Criterion (VM) Yield Criterion. Draw the stress diagrams in the critical cross section.

23



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