Universiti Malaysia PAHANG
Engineering • Technology • Creativity

Mechanics of Materials

Topic 4 – Torsion

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This chapter is devoted to the study of torsion and of the stresses and the deformation it causes. In the jet engine shown here, the central shaft links the components of the enginer to develop ther thrust that propels the plane.

Source: https://commons.wikimedia.org/wiki/File:Piping_pic1.JPG

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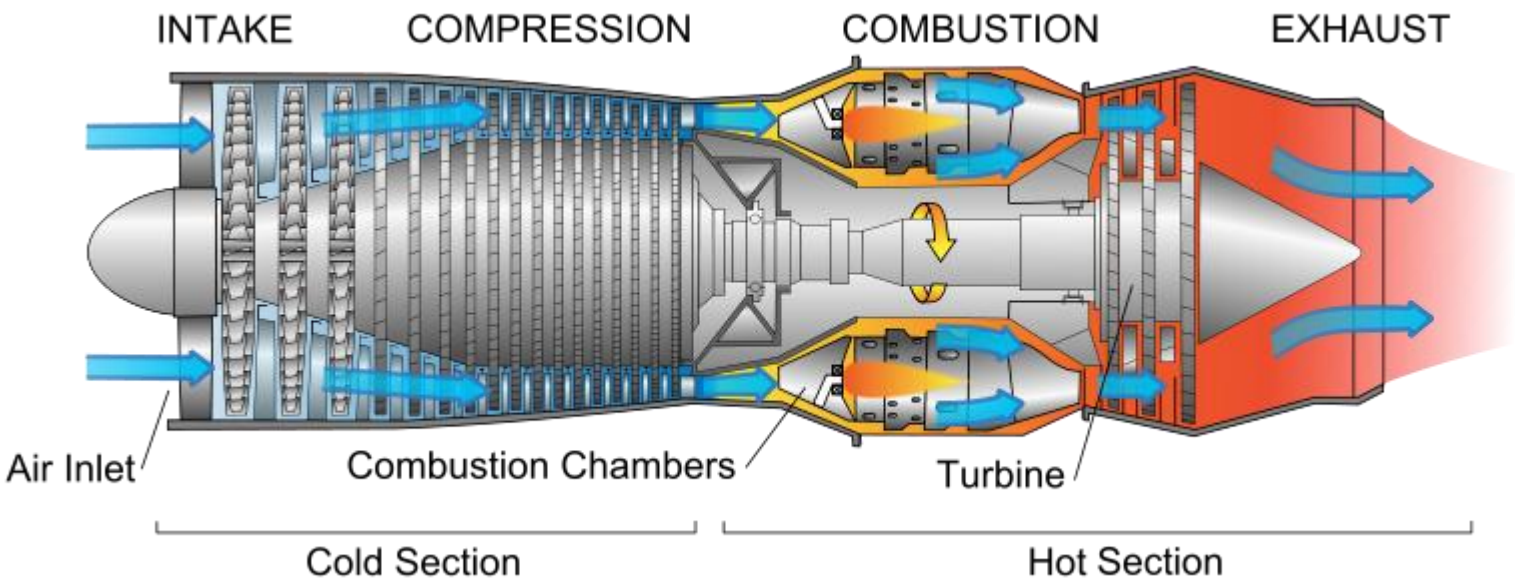
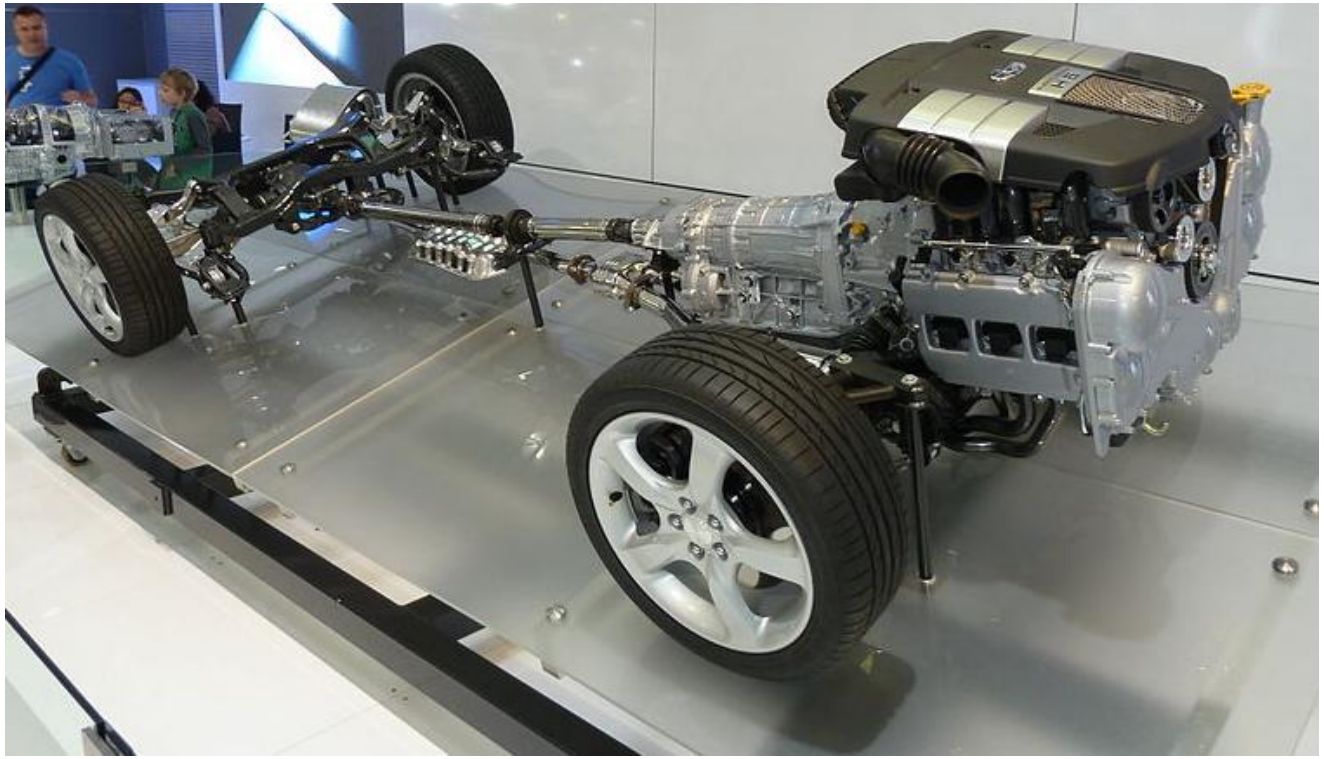


Source: https://en.wikipedia.org/wiki/File:Jet_engine.svg

In the automotive power train shown, the shaft transmits power from the engine to the rear wheels.



Source: https://commons.wikimedia.org/wiki/File:Subaru_Liberty_powertrain_(2010-10-16).jpg

Shear failure of shaft subject to torque

Source: https://commons.wikimedia.org/wiki/File:QSMM_Line_shaft_brackets_3213.JPG

Bending produced with a torsion instrument using a typical bender.

Source: https://commons.wikimedia.org/wiki/File:Torsion_bending_Ehrt.jpg