

ENTC 463 Mechanical Design Applications II Spring 2008

Due 12:00 noon 5/2/2008

Design a conveyor drive system based on the following requirements.

- Input motor – 1 horsepower, 1750 rpm
- Output – 400 lbf load moving at 20 ft/min (specify pulley size)
- Use two stage speed reduction. (gear-chain, gear-belt).
- Assuming 50 lbf can be applied to a clutch and the motion should reach full speed in 2 seconds.

Sketch your design, identify all components. Design and analyze gear, belt, chain, bearing, shaft, key, and clutch.

Figures source: Cisco-Eagle

