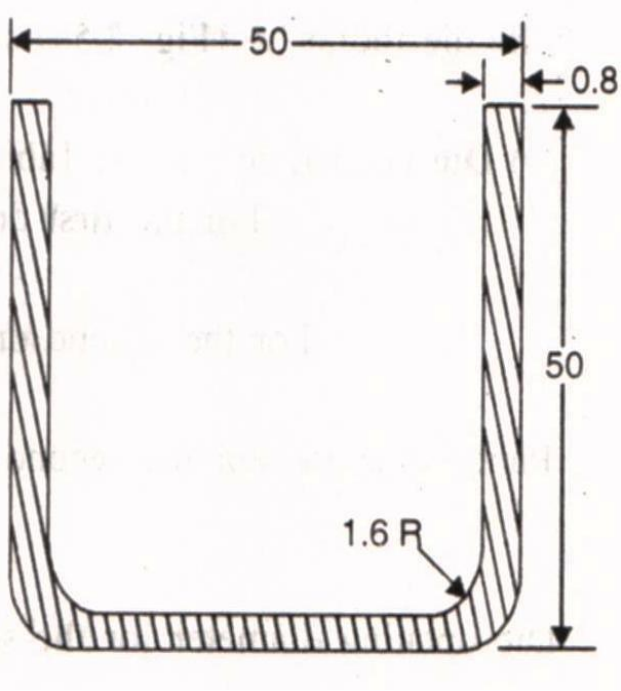
TOOL ENGINEERING

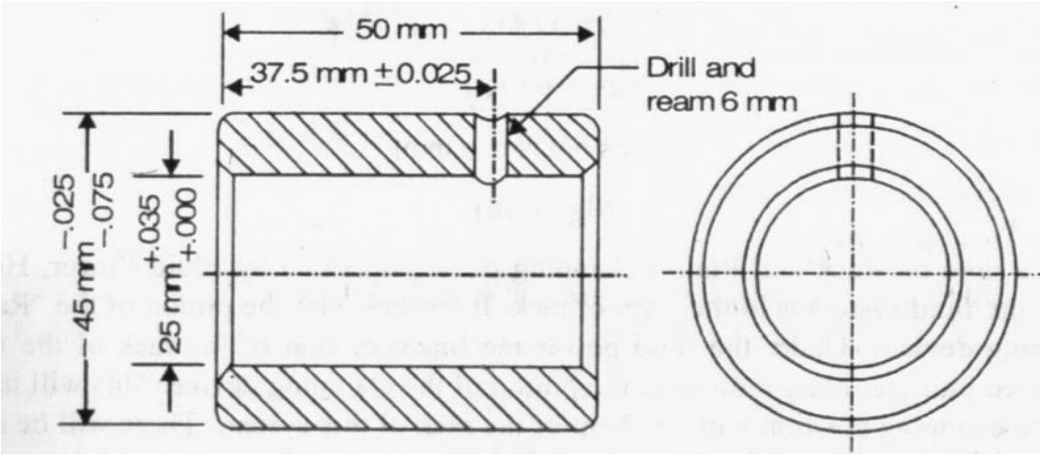
SUBJECT CODE: 2152507

Assignment-1

1. Define with example the concept of "Tool Design"
2. Demonstrate configuration and working principle of some common type chip breakers
3. Derive the equation of shear angle.
4. Give the specific application of following cutting tool material (i) HSS (ii) CBN and (iii) Diamond.
5. Explain in brief hydraulic clamp.
6. Enlist the factors affecting on the selection of press machine.
7. The symmetrical-cup work piece shown in figure (1) is to be made from steel 0.8 mm thick. Make the necessary calculations for designing the drawing die for this part.



8. Design & draw drilling Jig for drilling hole in the component shown in figure (2).



9. Alloy steel having a hardness of 250 BHN is to be machined in milling machine. The depth of cut is to be 6.35 mm, feed is 0.13 mm per tooth and the cutting speed is 1.5m/s. The milling cutter has 12 teeth and is 25 cm in diameter. The width of the cut is 12.5 cm. Find the horsepower. Take machinability factor as 8 cm^3/min/hpc.

10. In an orthogonal cutting operation Cutting force Fv = 1000 N, Feed force Ft =0, Rake angle= 45^0, Shear angle= 45^0

    Determine (a) the coefficient of friction, (b) the shear power if Shear velocity Vs = 20 m/min, and (c) the cutting power.

Note: Assignment should be submitted before Dt. 12/09/2019

Subject Coordinator:

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