2.008 Review

Topics

Process Planning

DFM

Injection Molding

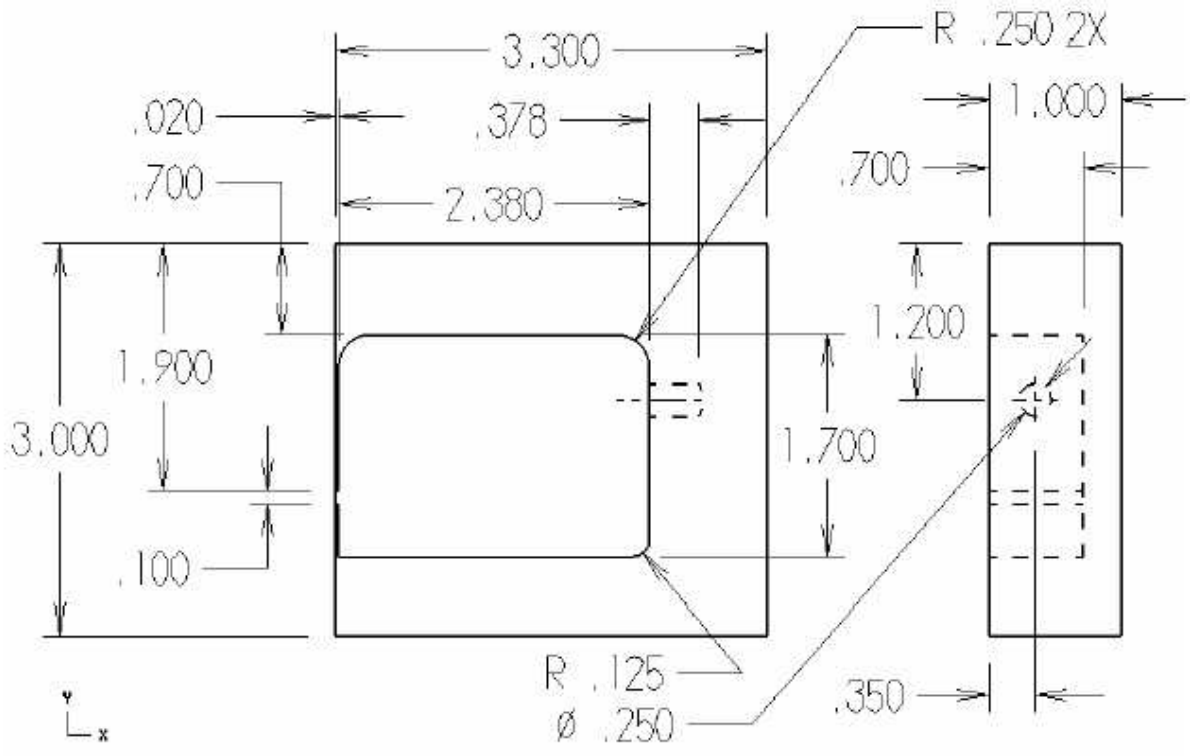
Thermoforming

Cutting

Assembly

Joining

Problem 1


3.300
.020
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2.380
1.900
3.000
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1.700
R .125
ø .250
R .250 2X
1.000
.700
1.200
.350
Y
X

What are some of the problems with making this part using the kind of mill we have in our lab?

Problem 2

In an injection molding operation, what are the consequences of the following:

- Temp too high
- Temp too low
- Pressure too high
- Pressure too low
- Cooling time too low
- Shot size too big

Problem 3:Injection Molding

Draw a profile of cavity pressure as a function of time.

Problem 4:Injection Molding

This Yogurt cup cap has a diameter of 2.75'' and a thickness of 0.040''. How many of these can I make simulaneosly with an IM machine that is rate at 90ton clamping force and a 3.0 in^3 shot size. One making just one such lid, a test run required 9000 psi to get a full shot.

Problem 5

Why and where do sink marks form on injection molded parts?

Problem 6

How does our injection molding machine melt the plastic?

Problem 7

Where does Copper fit on this graph. [interaction time versus heat intensity].

Problem 8

$$vt^n = C$$

Explain the qualitative significance of this formula.

Problem 9

What does the Jacobs number mean qualitatively?

$$J = \frac{c_p(T_o - T_{\text{melt}})}{h_{fs}}$$

Melting

How much energy does it require to melt that projector up there?

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Power is the specific cutting energy times the material removal rate. Lets use this to solve problem 2 on problem set 4.