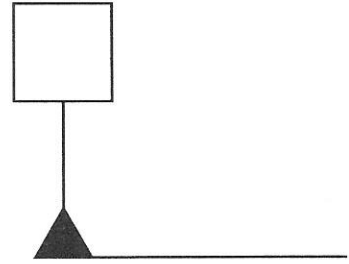


Drafting Problems

Geometric Dimensioning and Tolerancing



GENERAL INFORMATION AND INSTRUCTIONS

A variety of drafting problems are provided on the following pages. Drafting problems vary in complexity and require different GD&T applications. The drafting problems are presented as 3D illustrations, 2D layouts, or rough engineer's sketches. The GD&T applications are displayed on the problem or in written instructions. Use the following instructions unless otherwise specified with the problem.

- Use manual or computer-aided design and drafting as specified by your course requirements.
- Select a drawing scale that clearly displays the features and dimensions.
- Select drafting sheet sizes that avoid crowding and are in accordance with standard practices such as scale, number of views, amount of dimensions and notes, and space for future revisions.
- Prepare formal drawings using properly selected multiviews (orthographic projection). The number of views needed depends on the requirements of each drafting problem. This is to be determined by you.
- Use proper sectioning techniques as needed.
- Place conventional dimensioning and geometric dimensioning and tolerancing as specified in ASME Y14.5M and as instructed in this workbook.
- Use unidirectional dimensioning unless otherwise specified by your instructor or other specific instructions.
- Do metric drawings in millimeters and inch drawings in inches, unless directed by your instructor to convert millimeters to inches or inches to millimeters.
- Place the following general notes in the lower left corner (1/2" each way from the corner) unless otherwise specified by your instructor:
 4. OTHER NOTES AS NEEDED FOR PROBLEM REQUIREMENTS.
 3. REMOVE ALL BURRS AND SHARP EDGES.
 2. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS. (or INCHES.)
 1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M-1994.

NOTES

- Provide specified dimensions as given. Provide general title block tolerances for unspecified dimensions as follows, unless otherwise specified by your instructor.

Inches

$$.X = \pm .1$$

$$.XX = \pm .01$$

$$.XXX = \pm .005$$

$$\text{ANGULAR} = \pm 30'$$

$$\text{FRACTIONAL} = \pm 1/32$$

$$\text{FINISH} = 125\mu\text{IN}$$

Metric

$$.X = \pm 0.5$$

$$.XX = \pm 0.2$$

$$.XXX = \pm 0.1$$

$$\text{ANGULAR} = \pm 30'$$

$$\text{FINISH} = 8\mu\text{M}$$

- Use line standards as recommended in ASME Y14.2M.

DRAFTING PROBLEM 3**Units**

METRIC

Application

Entry level, circularity and cylindricity. A section is shown here only for clarity.

Name

VALVE PIN

Material

PHOSPHOR BRONZE

FinishALL OVER $0.2\mu\text{M}$ 