Makers Local 256: Makers Learn: Basic Blueprint Reading
At the end of this course you should be able to:

- Understand the basics of blueprints
- Know the basic views on the print
- Know the two types of view projection
- The types of lines used on prints
- Basic print structure
- Basic dimensions and tolerances
Standard Print Views

- Dimension Line
- Extension Line
- No Gap
- Gap Required
- Leader Line

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Single View Print
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Three View Print

![Three View Print Diagram]
Types of View Projections

Orthographic drawing

- First angle projection
- Third angle projection
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View Creation
Blueprint Line Types and Hatch Styles

- Part Outlines: Heavy
- Section Lines: Light
- Hidden Lines: Medium
- Center Lines: Light
- Dimension and Extension Lines: Light, 3.000
- Cutting Plane: Heavy
- Break Lines: Heavy, Light

Hatch Styles:
- Horizontal
- Vertical
- FDiagonal
- BDiagonal
- Cross
- Diagcross
Basic Print Structure and Notation.
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Title Block Elements

Figure 6.2 – Title Block Tolerancing
Title Block Information

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Hole Callouts

6X Ø 397
√ ř 833 X 82°
.397 DIA
.833 DIA CSK X 82°
6 PLACES

CURRENT
PREVIOUS

2X ř .500

CURRENT
PREVIOUS

Thin Cashed Line
The outer circle is broken
Hidden Detail
Sectional View

Note the hatching

Thin Cashed Line
The outer circle is broken
Hidden Detail
Sectional View

Note the hatching

Thin Cashed Line
The outer circle is broken
Hidden Detail
Sectional View

Note the hatching
Screw Thread Callouts
### Bill Of Materials

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>UNIT</th>
<th>ASSEMBLY OR FSN NO.</th>
<th>QUANTITIES</th>
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<td>LIGHTING DECEPT - Catalog # 669-3141</td>
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<td>15-AMP RECEPTACLE</td>
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<td>500 AMP, 505 Y</td>
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# Title Block With Standard Tolerances

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<th>ITEM</th>
<th>DRAWING NUMBER W/O REV LEVEL</th>
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<td>MATERIAL</td>
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<tr>
<td>UNLESS OTHERWISE SPECIFIED:</td>
<td>ALL DIMENSIONS ARE IN INCHES</td>
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<td>TOLERANCES:</td>
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<td>DECIMALS</td>
<td>ANGULAR</td>
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<tr>
<td>.X</td>
<td>± .1</td>
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<tr>
<td>.XX</td>
<td>± .01</td>
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<tr>
<td>.XXX</td>
<td>± .005</td>
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<tr>
<td>SURFACE ROUGHNESS</td>
<td>125/</td>
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<tr>
<td>REMOVE ALL BURRS AND BREAK SHARP EDGES .03 MAX.</td>
<td>SURFACE TEXTURE TO BE IN ACCORDANCE WITH LATEST ANSI B46.1</td>
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<td>DIMENSIONING &amp; TOLERANCING IN ACCORDANCE WITH LATEST ANSI Y14.5</td>
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<td>ELECTRONIC FILE NAME</td>
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<tr>
<td>DESIGN BY</td>
<td>DATE</td>
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<td>CHECKED BY</td>
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<td>RESPONSIBLE ENGINEER</td>
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<td>GROUP LEADER</td>
<td>DATE</td>
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Dimensioning
Dimension Line Styles
Ordinate Dimensioning

- 2x Ø .3125
  (.375) 3/8-16 UNC TAPPED HOLE

- 2x Ø .0938

- 2x Ø .2188

- 2x Ø .2660
  Ø .5832 X 82°

- 2x Ø .3320
  Ø .5313
  ➝ .3425

- ORIGIN 0,0
Ordinate Dimensioning With Stacked Dimensions.
Dimensional Tolerances

Limit Dimensioning

Plus & Minus Tolerancing
Example Prints
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Questions, Comments, Rants???
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For more info about Makers Local 256, please visit: https://256.makerslocal.org/