

Assignment:

- Determine if provided part matches the drawing for that part.

Items provided:

- a drawing for the part (one per student)
- the first piece of production of 3170002P001 (located in the machine shop)
- the tools and instruments required to perform the inspection (located in the machine shop)

Background:

When a new part design is being introduced into production, it's common to inspect a batch of the initial (first piece) parts to ensure that they meet the requirements of the drawing. If there are discrepancies, the possible responses include (but are not limited to):

- rejection of the parts,
- acceptance of the parts with changes made to the drawing so that the drawing matches the parts as manufactured,
- provisional acceptance of the parts,
- reworking the parts.

The difficulty of inspecting the first piece parts can be influenced by how the part is designed and the placement of dimensions. Often the placement of the dimensions on a CAD generated drawing is determined by the order and manner in which the features were created during the creation of the drawing. These dimension placements are not always the best for the users of the drawing. Accordingly, the engineer/draftsperson should review the dimensions suggested by a CAD system and revise them if necessary for the benefit of the user. Some useful guidelines for placement of dimensions are found on page 1.20 of your textbook listed under "General Design Rules."

Motivation/Objective:

- introduce basic machine shop measurement techniques
- illustrate the impact of the placement of dimensions on users of the drawings
- introduction to creating "marked up drawings" as a form of communication in the engineering community

Deliverables:

- The deliverable for this assignment is a copy of the drawing marked-up in red ink that clearly indicates all of the instances where the part deviates from the drawing. You can do this individually or in pairs. Please be sure to write your name(s) on the print.

Grading is based on your ability to:

- find all the ways that the part deviates from the print
- clearly communicate your findings in a marked-up print