

Homework-2 (due 07/27/20)

Refer to the listed “Dimensioning Rules” and identify the dimensioning errors on the attached drawing.

Mark the errors with a large (thick) red “**X**” and put the corresponding **Rule #** next to it; see example marking next to the shaded isometric view (upper right corner).

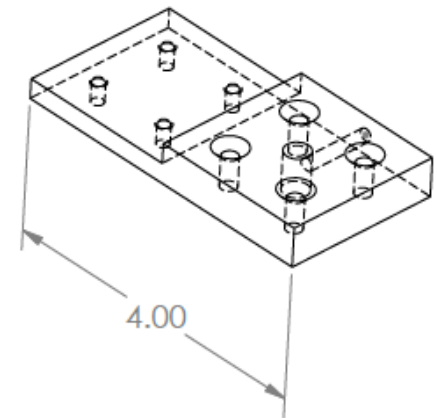
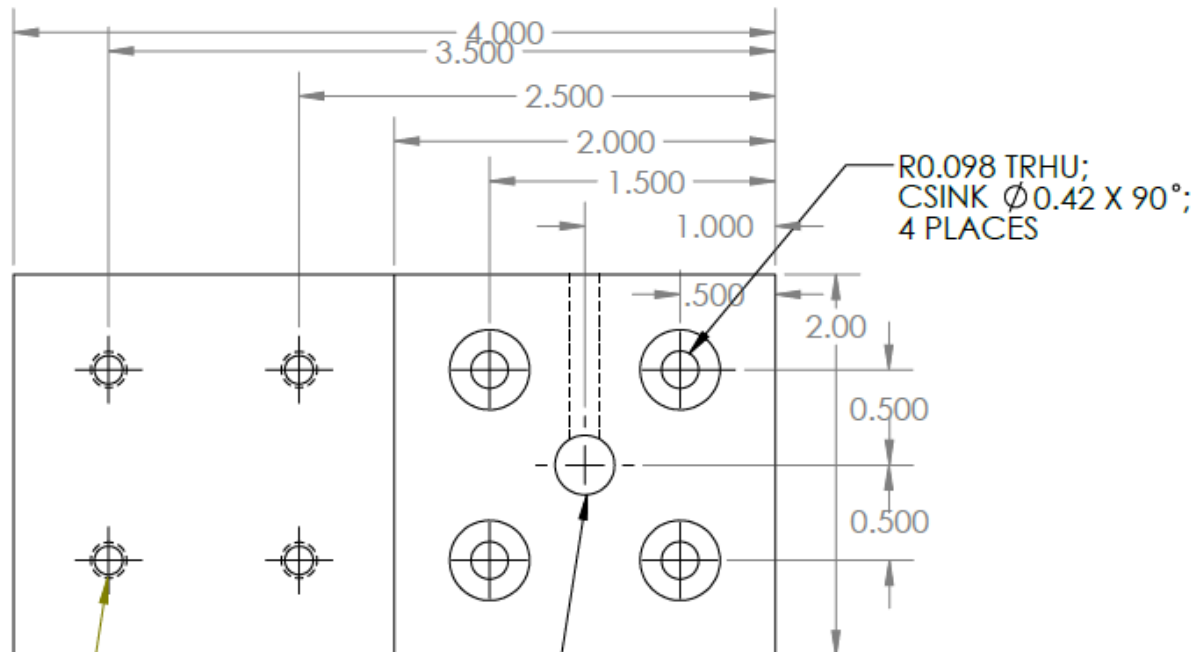
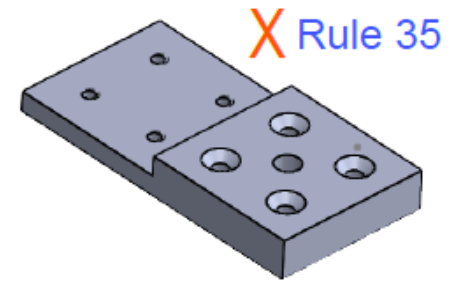
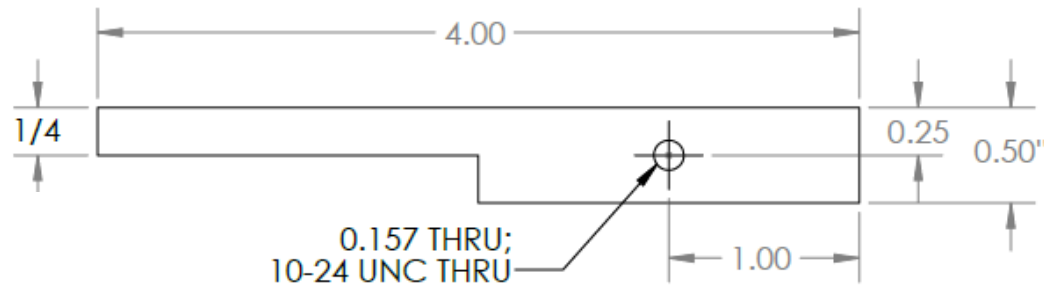
Either print or download the drawing into Adobe Acrobat, MS Word, or PowerPoint or any other editing software to mark the drawing. Write your name and date in the top margin of the drawing. Mark as many errors you can identify and submit the drawing as a PDF file to CCLE (*LastName_DrawingErrors.pdf*).

To convert PowerPoint or MS-Word to PDF, please follow these instructions:

https://docs.ccle.ucla.edu/index.php?title=How_do_I_convert_my_PowerPoint_Presentation_to_PDF

Name: _____

Date: _____



#22 THRU;
10-24 THRU;
4 PLACES

0.3125 THRU

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ±
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ±
THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC
TOLERANCING PER:

MATERIAL

Steel

FINISH

Polished

NEXT ASSY

USED ON

APPLICATION

DO NOT SCALE DRAWING

NAME

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

DATE

RSS

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4/30/2020

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MAE94-UCLA

TITLE:

Shaft Clamp
Bracket

SIZE

A

DWG. NO.

1

REV

0

SCALE: 1:1

SHEET 1 OF 1

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Dimensioning Rules

1. Each dimension should be given clearly so it can be interpreted in only one way.
2. Dimensions should not be duplicated or the same information given in two different ways (dual dimensioning excluded).
3. Dimensions should be given between points or surfaces that have a functional relation to each other or that control the location of mating parts.
4. Dimensions should be given so given it will not be necessary for the machinist to calculate, scale, or assume any dimension.
5. The machinist should not be expected to assume a feature is centered (as a hole on a plate), so always provide a location dimension from the appropriate datums.
6. Dimensions should be attached to the view where the shape is best shown and the features dimensioned are shown true shape.
7. Dimensioning to hidden lines should be avoided wherever possible. Use auxiliary cross sectional views instead.
8. Dimensions should not be placed on a view unless clarity is promoted and long extension lines are avoided.
9. Longer dimensions should be placed outside all intermediate dimensions so that dimension lines will not cross extension lines.
10. In machine drawing, all unit marks should be omitted, except when necessary for clarity; for example, 1" REAMER or 1mm DRILL.
11. Detail dimensions should "line up" in chain fashion.
12. Dimension lines should be spaced uniformly throughout the drawing. They should be at least 3/8" from the object outline (a gap between visible line and dimension line) and 1/4" apart.
13. No line of the drawing should be used as a dimension line or coincide with one.
14. Dimension lines should not cross, if avoidable. Dimension lines and extension lines should not cross, if avoidable. Extension lines may cross each other. When extension lines cross extension lines or visible lines, no break in either should be made.

15. A center line may be extended and used as an extension line, in which case it is still drawn like a center line.
16. Leaders for notes should be straight, not curved, and point to the center of circular views of holes wherever possible. Leaders should slope at 45°, 30° or 60° with horizontal but may be made at any convenient angle except vertical or horizontal.
17. Leaders should extend from the beginning or from the end of a note, the horizontal "shoulder" extending from mid height of the lettering.
18. Dimension figures should be approximately centered between the arrowheads, except that in a "stack" of dimensions, the figures should be "staggered."
19. Dimension figures should be about 1/8" high for whole numbers and 1/4" high for fractions.
20. Dimension figures should never be crowded or in any way made difficult to read.
21. Dimension figures for angles should generally be lettered horizontally.
22. Notes should always be lettered horizontally on the sheet.
23. Notes should be brief and clear, and the wording should be standard in form.
24. Finish marks should be placed on the edge views of all finished surfaces.
25. Finish marks should be omitted on holes or other features where a note specifies a machining operation.
26. A cylinder is dimensioned by giving both its diameter and length in the rectangular view, except when notes are used for holes. A diagonal diameter in the circular view may be used in cases where clarity is gained thereby.
27. Holes to be bored, drilled, reamed, and so on are size-dimensioned by notes in which the leaders preferably point toward the center of the circular views of the holes. Indications of manufacturing processes may be omitted from notes.
28. Drill sizes are preferably expressed in decimals.
29. Circles (holes) are dimensioned by the DIAMETER, arcs (fillets) by the RADIUS.
30. A diameter dimension value should always be preceded by the symbol Ø.
31. A radius dimension should always be preceded by the letter R. The radial dimension line should have only one arrowhead, and it should pass through or point through the arc center and touch the arc.

32. When there are several rough, non-critical features obviously the same size (fillets, rounds, ribs, etc.), it is necessary to give only typical (abbreviation TYP) dimensions or to use a note.
33. Decimal dimensions should be used for all machining dimensions. Decimal dimensions less than 1.0 should be preceded with a leading zero (i.e. 0.375).
34. Never show hidden lines in isometric drawing views, but always show tangent lines.
35. Never shade orthographic or isometric drawing views.
36. Always show hidden lines in orthographic views.
37. Place dimensions pertinent to part geometry in the detail drawing and dimensions pertinent to positioning the part with respect to others in the assembly drawing.

Copyright Notice: many of these rules were taken from an excellent document produced by Dr. Tommy G. Barker (Tarleton State University)