

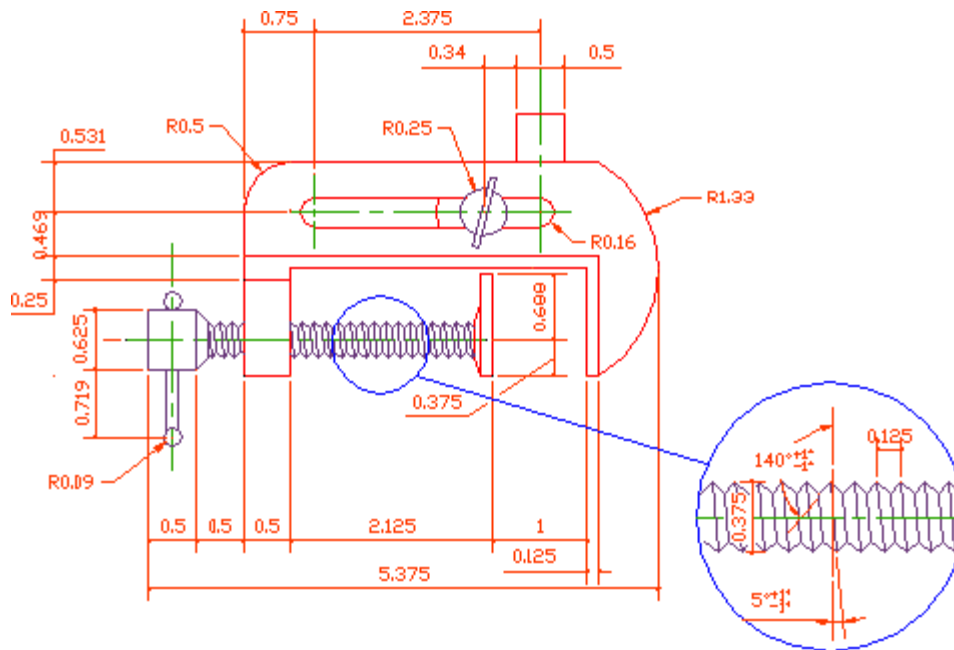
# AutoCAD 2010: One Step at a Time

## *Lesson 17: Customizing Dimensions and Using Dimensional Constraints*

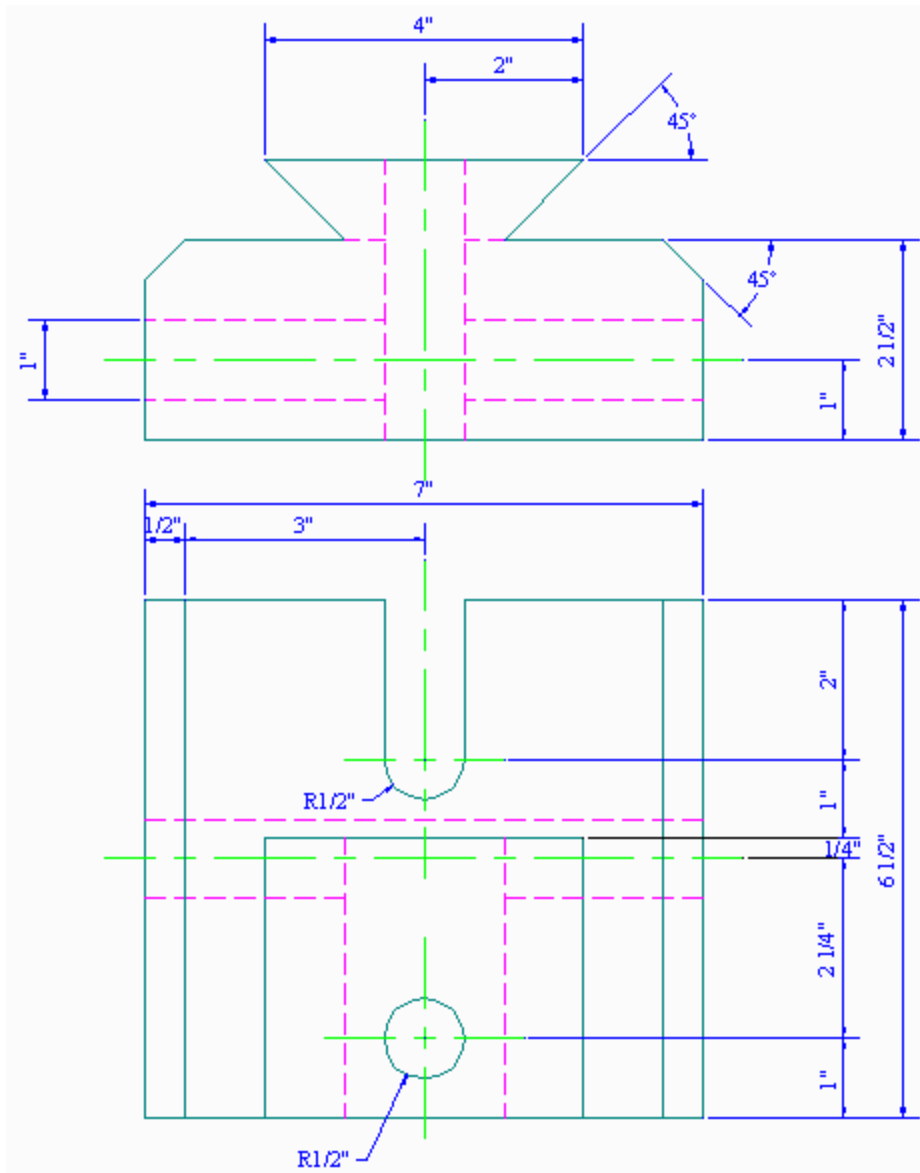
**10R17**

### **Exercises**

1. Open the *drillguide* file in the C:\Steps\Lesson17 folder. Create an appropriate dimension style to dimension the image as indicated below.
  - 1.1. Use **small dot** arrowheads but no center marks.
  - 1.2. Use an overall **scale** of 1.
  - 1.3. Use decimal units accurate to three decimal places (suppress trailing zeros).
  - 1.4. Use standard 1/8" text.
  - 1.5. Allow a tolerance deviation of 1° on all angles, and a precision of zero decimal places.
  - 1.6. All dimensions should be above the dimension line except radii which should be centered on the leader.



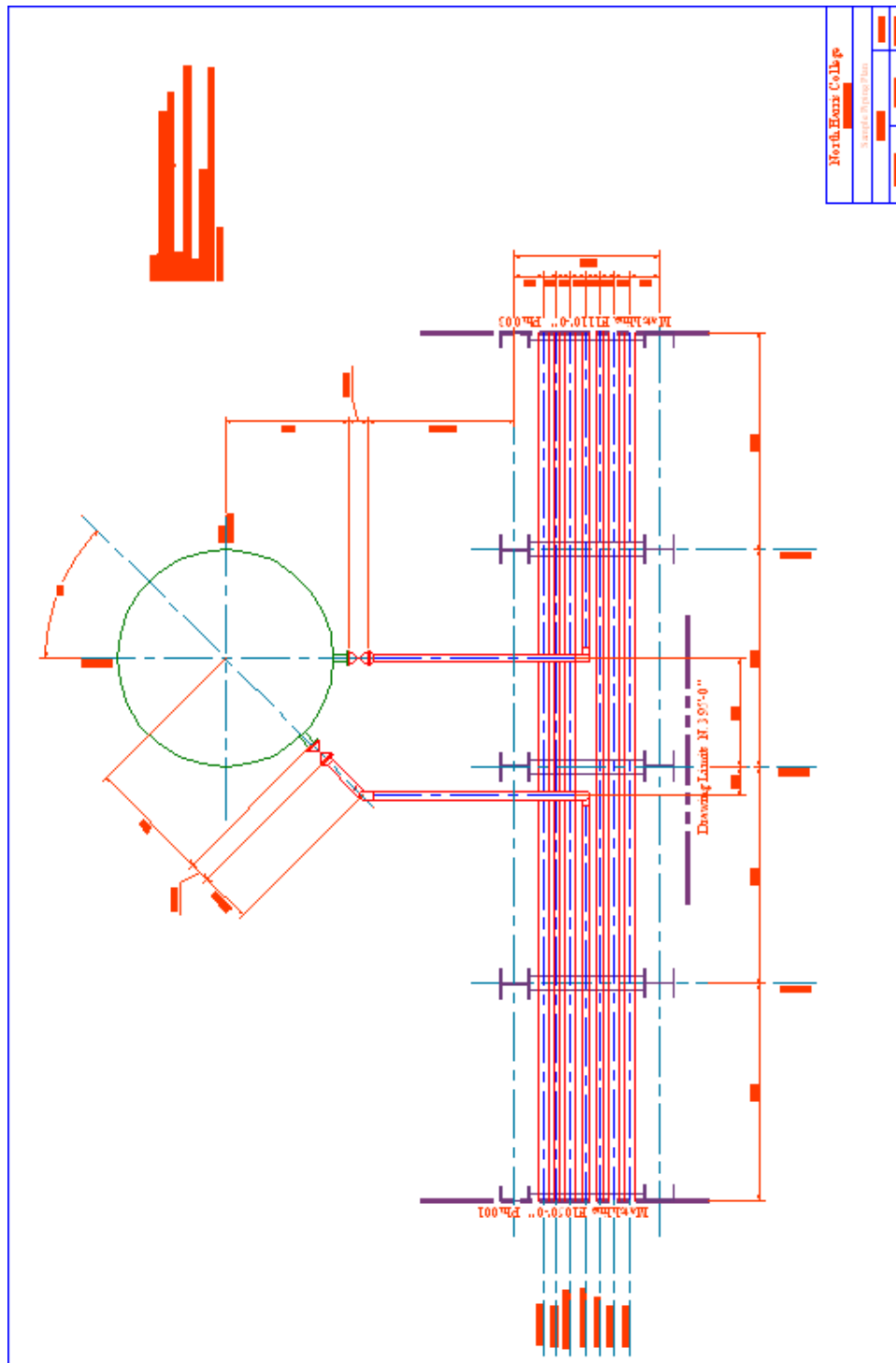
2. Now let's dimension some of the other drawings we've created.
  - 2.1. Open the *block guide 17* file in the C:\Steps\Lesson17 folder.
    - 2.1.1. Dimension the drawing as shown. (Hint: The dimension text size is 3/16" and the arrow size is 1/8".)
    - 2.1.2. Save the drawing as *MyBlockGuide17* in the C:\Steps\Lesson17 folder.



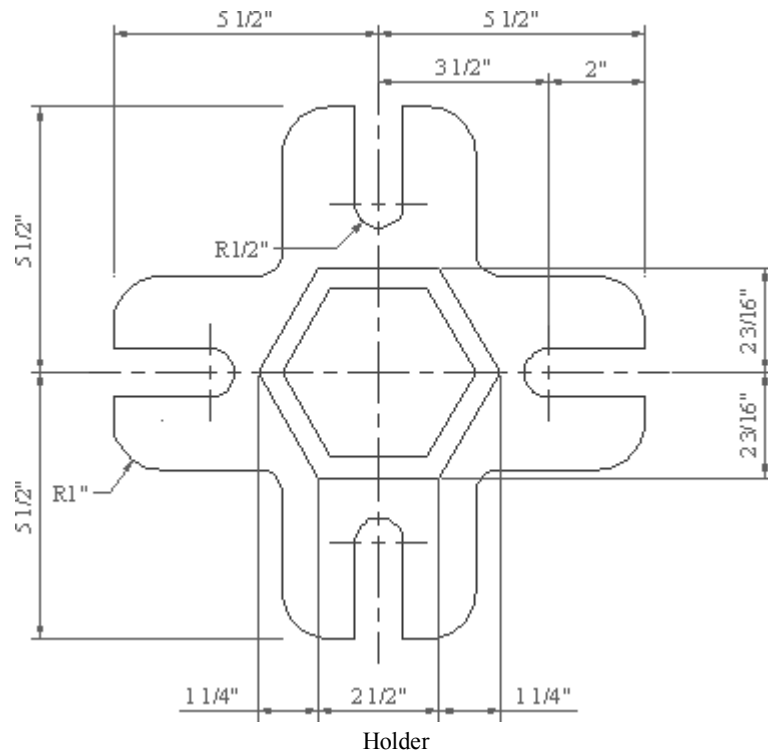
Block Guide

3. Open the *Piping Plan 17* file in the C:\Steps\Lesson17 folder. Create an appropriate dimension style to dimension the image as indicated.
  - 3.1. To determine the overall scale, refer to the scale factor in the Drawing Scales Chart (Appendix A). You'll plot this drawing at 3/8"=1'-0" on a D-Size sheet of paper.
  - 3.2. Use architectural units with a 1/16" precision.
  - 3.3. Suppress zero feet.

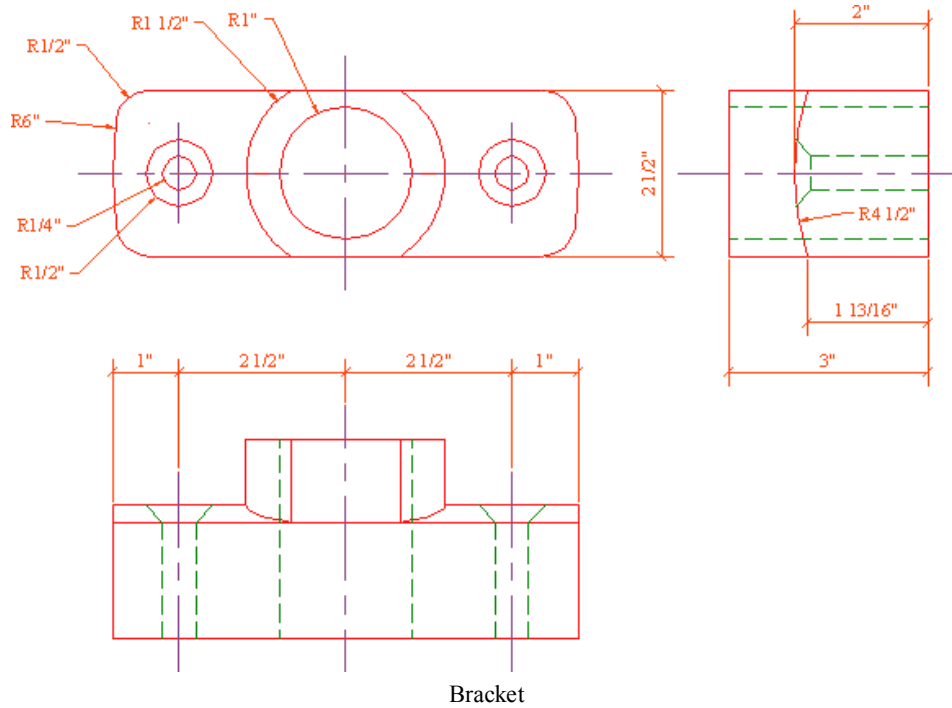
- 3.4. Use the **Times** text style and a 1/8" text height.
- 3.5. Center the dimension text above the dimension line.
- 3.6. Use **Closed Filled** arrowheads.



4. Open the *holder 17* file in the C:\Steps\Lesson17 folder.
  - 4.1. Dimension the drawing as shown. (Hint: The dimension text size is 3/16" and the arrow size is 1/8".)
  - 4.2. Use dimensional constraints to change the overall dimensions of the holder proportionally when you change the size of the polygon.
  - 4.3. Save the drawing as *MyHolder17* in the C:\Steps\Lesson17 folder.



5. Open the *bracket 17* file in the C:\Steps\Lesson17 folder.
  - 5.1. Dimension the drawing as shown below (Hint: The dimension text size is 3/16" and the arrow heads are 1/8" obliques.)
  - 5.2. Use dimensional constraints to control the overall size of the bracket with the 1" radial dimension.
  - 5.3. Use dimensional constraints to change the overall size of the object with a user-defined constraint. (For example, create Size1, Size2, and Size3 user-defined constraints that change the overall length and width of the bracket by factors of 1, 2, and 3.)
  - 5.4. Save drawing as *MyBracket17* in the C:\Steps\Lesson17 folder.



Write your answers on a separate sheet of paper.

1. Another name for a dimension variable is \_\_\_\_\_.
2. Access the Dimension Styles Manager with the \_\_\_\_\_ command.
3. (T or F) The Dimension Style Manager is not the only way to create dimension styles, but it is the easiest.
4. Overall dimension settings are called \_\_\_\_\_ settings.

List the six children available to an overall dimension style.

5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. The user can set the size of arrowheads and extension line origin offset on the \_\_\_\_\_ tab of the Dimension Style Manager.
12. The overall scale of dimensions should be set using the \_\_\_\_\_ for the drawing.
13. Dimension text, which is not horizontal, will be placed \_\_\_\_\_ to the dimension line.
14. \_\_\_\_\_ determines where along the dimension line AutoCAD will place the dimension text.
15. (T or F) Once units have been set for the drawing (using the Units command), it isn't necessary to set up units for dimensions.
16. (T or F) Careful consideration should be given to the size of a working copy of a drawing before setting dimensioning to use stacked fractions.

To dimension various details on a drawing drawn at various scales, set the scale of the detail in relation to the rest of the drawing (for example, 2x or .5x) in the (17) frame of the (18) tab of the Dimension Style Manager.

17. \_\_\_\_\_
18. \_\_\_\_\_
19. (T or F) The only text style available in dimensioning is AutoCAD's standard style.
20. Use DDim or the \_\_\_\_\_ command to rid a drawing of unwanted dimension styles.

To read the dimension variables used to create a particular dimension, use the (21) option of the (22) command.

21. \_\_\_\_\_
22. \_\_\_\_\_

23. (T or F) You can put text and/or dimensions in one location for one annotative scale and in another location for another scale.

Customize leaders with the (24) manager accessed with the (25) command.

24.

25.

26. Select to create a splined leader on the \_\_\_\_\_ tab of the Multileader Style dialog box.

Select to create bubbled leaders from the (27) control box on the (28) tab of the Multileader Style dialog box.

27.

28.

29. You shouldn't use \_\_\_\_\_ dimensional constraints as actual dimensional tools.

30. Use \_\_\_\_\_ dimensional constraints if you wish to avoid duplicating dimensions for plotting.

Control the display of dynamic dimensional constraints with the (31) system variable or the (32) button on the Dimensional panel.

33. Create a new user parameter in the \_\_\_\_\_ Manager.

34. (T or F) It's possible to set up dimensional constraints so that changing a single dimensional value can change all the dimensional values of a drawing.

## Answers

1. Dimvar
2. DDim
3. T
4. Parent
5. Linear
6. Radial
7. Diameter
8. Ordinal
9. Angular
10. Leaders and Tolerances
11. Symbols & Arrows
12. Annotative Scale
13. Parallel
14. Horizontal Justification (Text Placement)
15. F
16. T
17. Measurement Scale
18. Primary Units
19. F
20. Purge
21. Variables
22. -Dimstyle
23. T
24. Multileader Style
25. MLeaderStyle
26. Leader Format
27. Multileader type
28. Content
29. Dynamic
30. Annotational
31. DynConstraintMode
32. Show Dynamic Constraints
33. Parameters
34. T