

Lesson 2

CAD Mechanical – Part 1

Chamfer Practice

Objectives

In this assignment you will **apply the chamfer command** along with skills learned in assignment one.

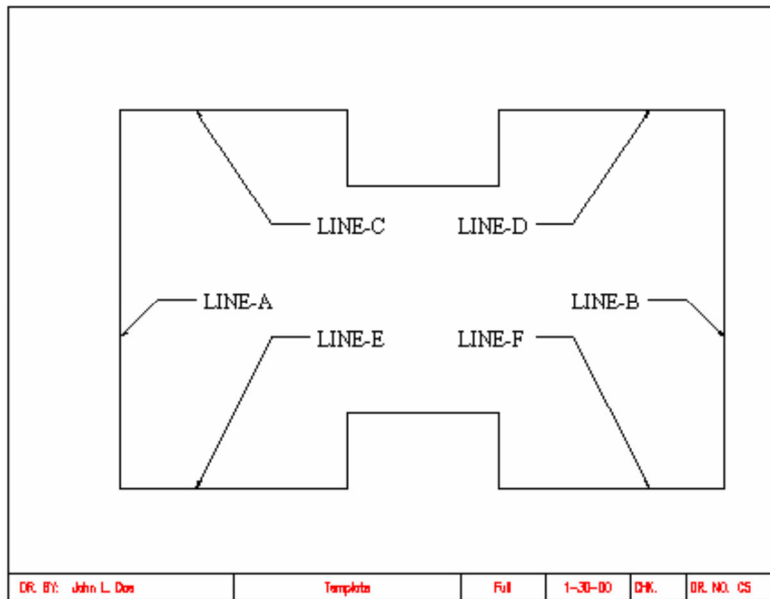
Getting Started

1. When AutoCAD's start up menu appears, select the first icon to the left (Open) and open the first drawing C1.
2. Check C1, C2, C3, and C4 for errors. You should check to see if dimensions are correct, the lines are drawn in the correct layers, and the title block information is typed correctly.
3. You will now follow instructions to complete the next two drawings. Remember to change layers and fill out the title block correctly. Both assignments will use the **chamfer command**.
4. After you **complete** drawing 5, you will then proceed to complete drawing 6.
5. There are **no additional instructions for drawing 6** in the manual; it is **designed to reinforce** your chamfering skills.
6. When you draw assignment C6A **do not dimension it!** The dimensions are on the drawing only to assist you in drawing the assignment.
7. After completing drawing C6A you will need to **study the Chamfer Practice drawing C6B**. The **chamfer distances are calculated from the dimensions on the C6B drawing**.
8. Dimension both assignments 5 & 6 after drawing the chamfers.

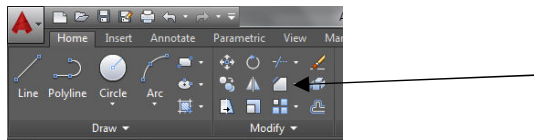
Note: If a pop ask for you to make a selection, choose the one that is recommended.

Drawing C5

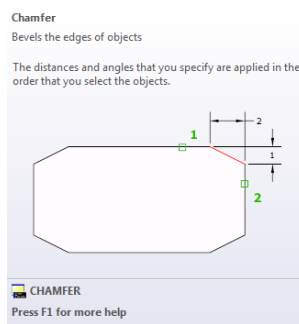
1. This drawing uses **two new AutoCAD** commands, **Chamfer** and **Angular Dimension**. Be sure to **read** about these commands from the **help menu** before proceeding.
2. Choose the Otto 2016 template and **Insert block** (refer to assignment 1 if necessary). You will notice that the drawing on the **goldenrod sheet** is **drawn with the angles**. Thus far, all assignments have been drawn **horizontally** or **vertically**. In this assignment, you will begin by drawing the lines for the **drawing the same as before** (refer to the illustration below):



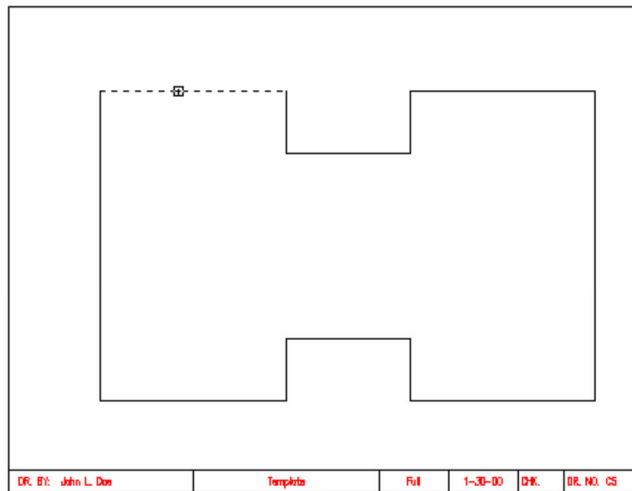
3. Lines **C, D, E, and F** will be drawn **3" long**. Lines **A and B** will be drawn **5" long**. The **angles** for the **chamfer** will be **45 degrees** as shown on the **goldenrod sheet**. It is important that you draw the lines **A-E accurately** to accomplish the assignment properly.
4. Select the **Chamfer tool** from the **Modify** menu tool bar on the left of the draw area. Type **D** at the command prompt and press enter.
- 5.



- You will then be asked for the **first distance** for the **chamfer**. Type **2** and press **Enter**. Then you will be asked for the **second distance** for the **chamfer**. **Again type 2** and press the **Enter** key.

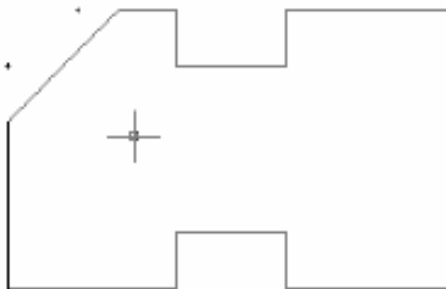


- The **crosshair** will turn into a **square** and the command prompt ask you to select the **first line** for the **chamfer**. Select the first line by **pressing left button**. The line now becomes a dashed line.



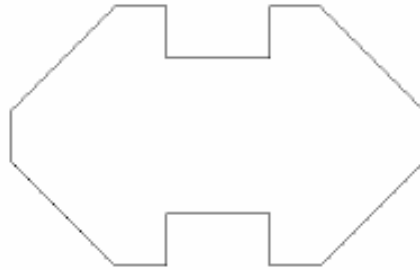
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Select first line or [Polyline/Distance/Angle/Trim/Method]:
Select second line:
```

- Select the **second line following the same procedure** by pressing the left button. You will notice that the **first chamfer** will be drawn on the upper left corner of the drawing as illustrated below:



- After the first chamfer is drawn as illustrated above press the **space bar** or the **Enter** key to repeat the operation.

10. Continue selecting all of the corners until they all have chamfers as illustrated below:

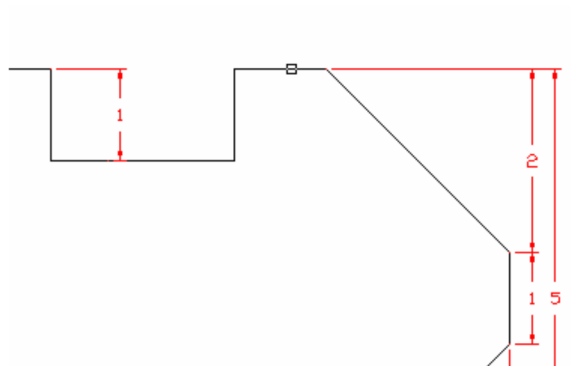


11. Change to the **dimension** layer and place all of the **linear dimensions** first as they are **illustrated** on the **goldenrod sheet C5**.

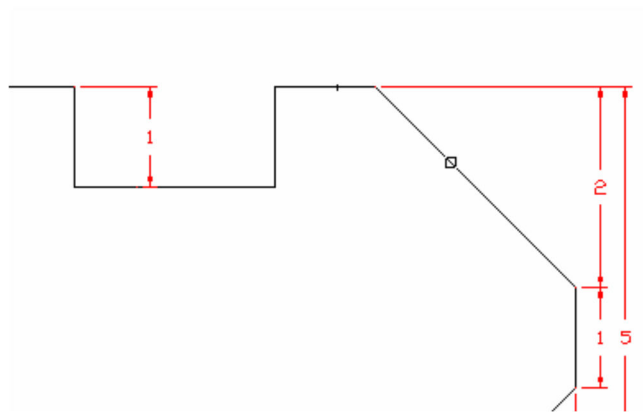
12. After placing the linear dimensions onto the drawing, you will be placing an **angular dimension** of **45-degree dimension** onto the upper right hand corner of the drawing.

13. Select the **angular dimension tool** from the Dimension tool bar.

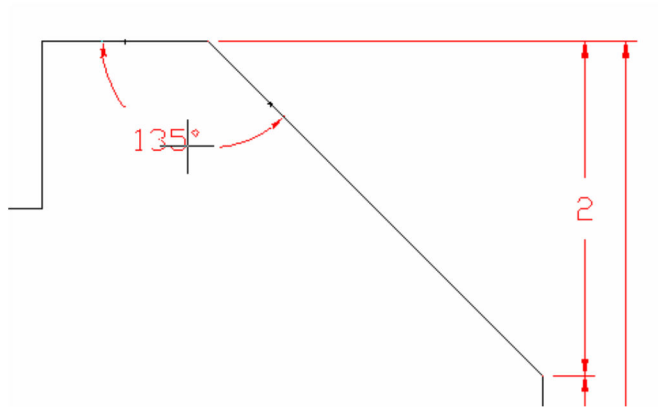
14. Select the **first line** of the **angular dimension** as **illustrated** below:



15. Select the **second line** for the **angular dimension**.

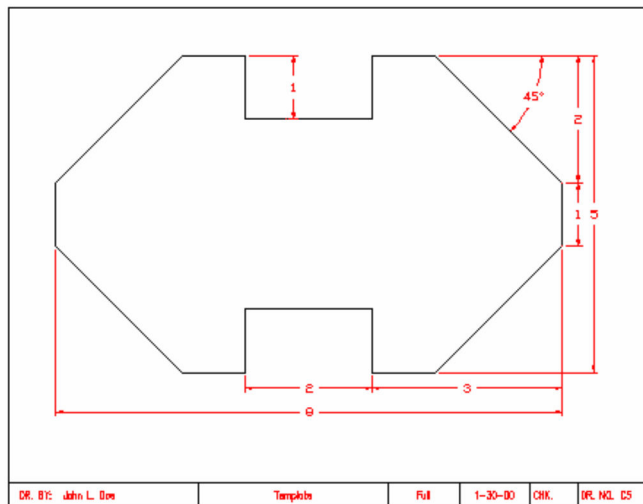


16. After the **second line** is selected, an angle of **135 degrees** appears. **Move the mouse** to the **right** to locate where the **angle** is **45 degrees**. When the angle is 45 degrees **press the left mouse button** to **confirm the angle**. Then **press the right button** to **accept the location** and to place the **angular dimension**.



1 (Example after moving the mouse)

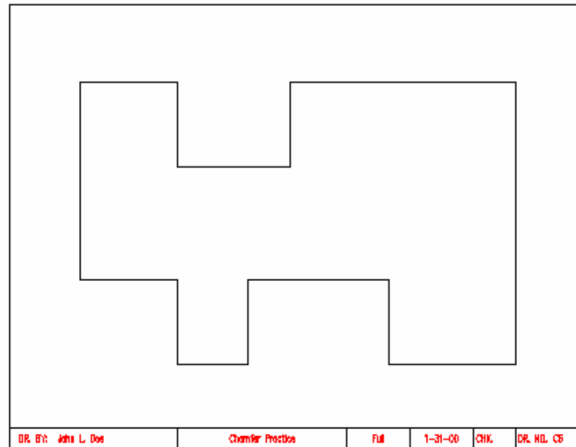
17. The completed assignment is illustrated below:



18. Save the file into the correct folder and study the drawing for C6.

Drawing C6

1. Complete **Drawing C6A** but **do not dimension the drawing!** It should look like the drawing as illustrated below:

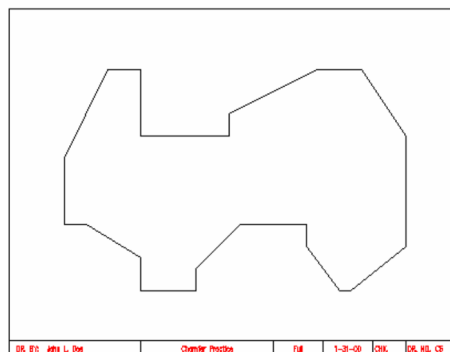


2. You will select the chamfer command from the Modify menu as you did for drawing C5 (review the procedures for chamfer command on pages 13-15 steps 4 - 9).

Unlike the previous chamfers, where you entered a set angle, in this assignment you will be keying in specific measurements and then creating the chamfers. Use **drawing C6A** for determining the chamfer distances. Pay **close attention** to the **lines** and **distances** and the **order** in which you input them.

If you change the order in which you select the lines opposite to the order in which your key in your measurements then the angles will be reversed. Read the command prompt to avoid confusion regarding chamfer distance 1 and chamfer distance 2.

3. If you use fraction distances, they must be separated with a hyphen (**minus** sign) between the whole number and the fraction ($1 - \frac{1}{2}$). If you use decimals then they may be entered in normally.



4. Remember to **dimension** this **assignment** when all of the **chamfers** are **completed**.

Terms to Know

Chamfer

Angular dimension