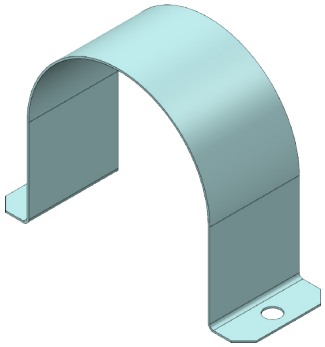
Motor Mount Solid



A. Set Level.

Step 1. If necessary start a new Mastercam file, click **New** (**Ctrl-N**) on the Quick Access Toolbar QAT.

Step 2. Display Level Manager. Use **Alt-Z**.

Step 3. In the Levels Manager:
Key-in **6** in the Number field, **Fig. 1**
Press **Tab** key to move to the Name Field and key-in **MOTOR MOUNT GEOMETRY**.

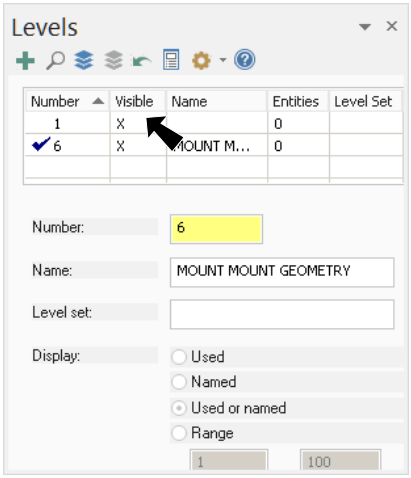


Fig. 1

B. Create Circle.

Step 1. Change to the **Front View**. **Right click** in the graphics window and click Front (**Alt-2**).

Step 2. Change the Z depth to **-7.45**. **Right click** in the graphics window and on the Mini Toolbar set **Z depth -7.45** and press ENTER, **Fig. 2**

Fig. 2

Step 3. On the Wireframe tab WIREFRAME click **Circle Center Point** Circle Center Point.

Step 4. In the Circle Center Point function panel:
under Size, **Fig. 3**
Diameter 1 and press ENTER

Press **spacebar** to activate AutoCursor **Fast Point**

Key-in **1.5**, **1.35** .3,.25 and press ENTER

Click OK .

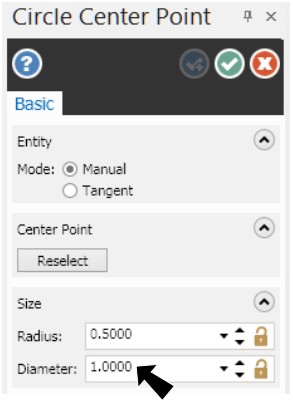


Fig. 3

Step 5. **Right click** the graphics window and click **Fit** (**Alt-F1**).

C. Save As "MOTOR MOUNT SOLID"

Step 1. Click **Save As** (**Ctrl-Shift-S**) on the Quick Access Toolbar QAT.

Step 2. Key-in **MOTOR MOUNT SOLID** for file name and press ENTER.

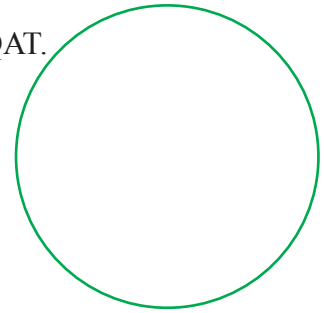
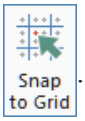


Fig. 4

http://www.cudacountry.net email:cudacountry@hotmail.com

D. Set Grid And Snap .05.

Step 1. On the View tab VIEW click **Show Grid** 

and **Snap to Grid** 

.

Step 2. Click the **Dialog Box Launcher** (Alt-G), **Fig. 5**.

Step 3. In the Grid Settings dialog box:
under Spacing, **Fig. 6**
X and Y Spacing .05
Click OK  .

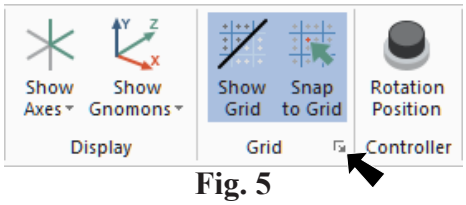


Fig. 5

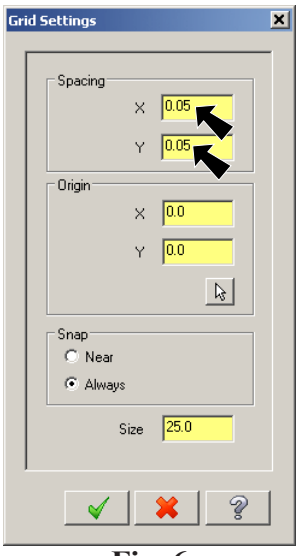
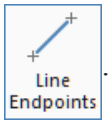


Fig. 6

E. Create Lines.

Step 1. On the Wireframe tab WIREFRAME click **Line Endpoints** 

.

Step 2. Sketch the lines in **Fig. 7**
Use grid to determine location of lines.
Click OK  .

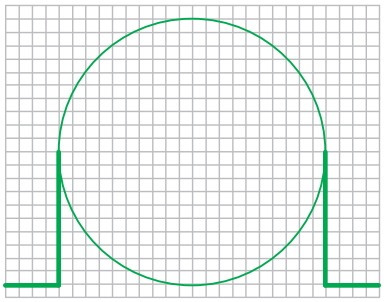
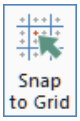


Fig. 7

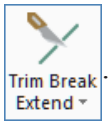
F. Turn Off Grid and Snap.

Step 1. On the View tab VIEW click **Show Grid** 

and **Snap to Grid** 

to unselect.

G. Trim Circle.

Step 1. On the Wireframe tab WIREFRAME click **Trim Break Extend** 

.

Step 2. In the Trim Break Extend function panel:
under Type, **Fig. 8**
select **Divide/delete**
Trim circle to remove bottom.
Click **circle at bottom**, **Fig. 9**
Click OK  .

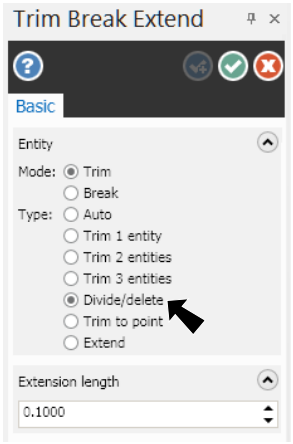


Fig. 8

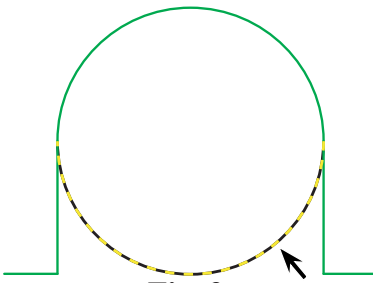


Fig. 9

H. Fillet.

Step 1. On the Wireframe tab WIREFRAME click **Fillet Entities** 

.

Step 2. In the Fillet Entities function panel:
under Radius, **Fig. 10**
Radius .03
Click Position 1 and Position 2
at **both corners**
Click OK .

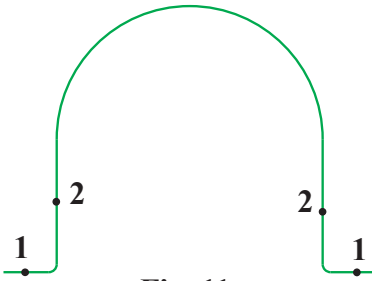


Fig. 11

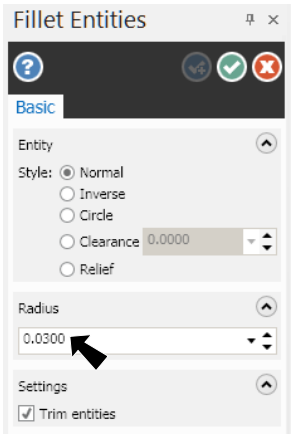


Fig. 10

I. Offset Contour.

Step 1. On the Wireframe tab WIREFRAME click **Chains** Chains on **Offset** 

drop down.

Step 2. Click Chain in the Chaining dialog box, **Fig. 12**.

Step 3. Click any geometry and click OK in Chaining dialog box, **Fig. 13**.

Step 4. In the Offset Contour dialog box:
under Mode, **Fig. 14**
select **Join**
under Distance
Distance .01
Click OK .

Step 5. **Right click** the graphics window and click **Clear Colors** .

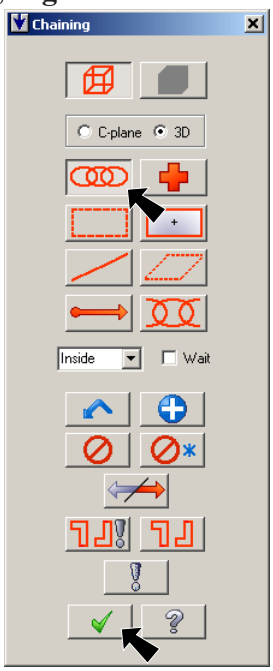


Fig. 12

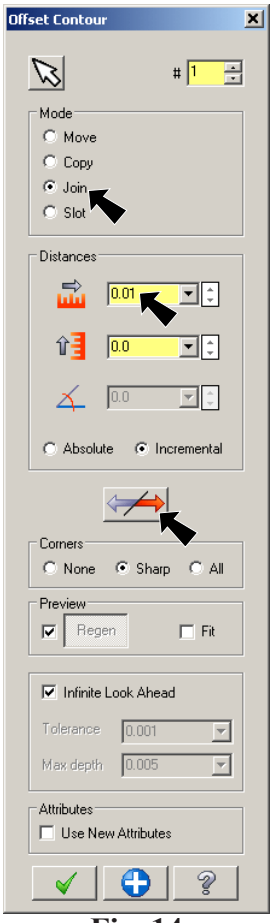


Fig. 14

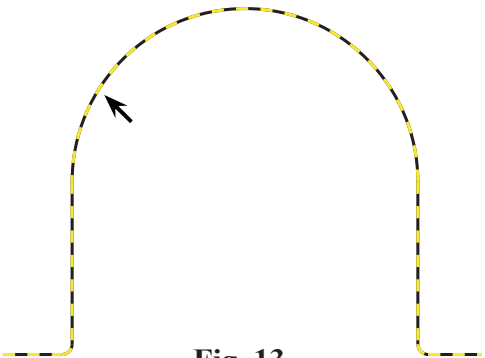


Fig. 13

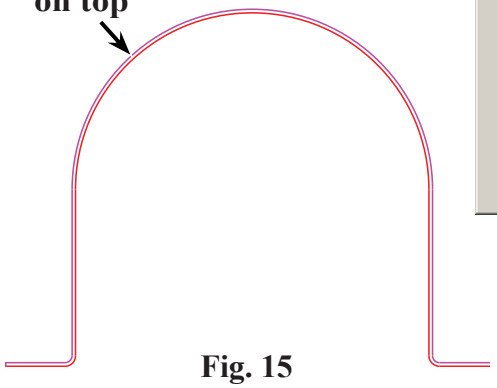


Fig. 15

J. Create Two Circles.

Step 1. Change to Top View. **Right click** in the graphics window and click Top (WCS) (**Alt-1**).

Step 2. **Fit** (**Alt-F1**).

Step 3. Change the Z depth to **.85**. **Right click** in the graphics window and on the Mini Toolbar set **Z depth .85** and press ENTER, **Fig. 16**.

Fig. 16

Step 4. On the Wireframe tab WIREFRAME click **Circle Center Point** Circle Center Point.

Step 5. In the Circle Center Point function panel:

under Size, **Fig. 17**

Click **Locked**

Diameter .08 and press ENTER

Press **spacebar** to activate AutoCursor **Fast Point**

Key-in **.89**, **7.7** .89,7.7 and press ENTER

Press **spacebar** to activate **Fast Point**

Key-in **2.11**, **7.7** 2.11,7.7 and press ENTER **twice**

Click OK.

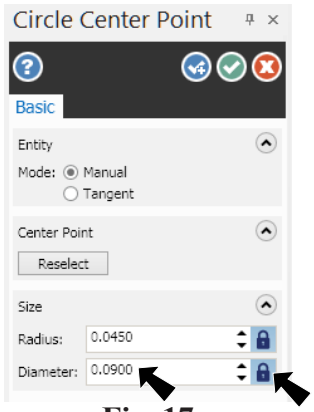


Fig. 17

(.89, 7.7, .85) **(2.11, 7.7, .85)**

Step 6. Save (**Ctrl-S**).

Fig. 18

K. Add Level.

Step 1. In the Levels Manager (**Alt-Z**):

Key-in **7** in the Number field, **Fig. 19**

Press **Tab** key to move to the Name Field and key-in **MOTOR MOUNT SOLID**.

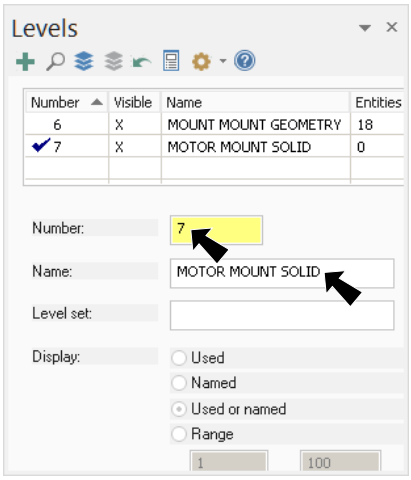


Fig. 19

L. Extrude Solid.

Step 1. Change to the Isometric View. **Right click** in the graphics window and click Isometric (WCS) (**Alt-7**).

Step 2. Confirm **CPLANE:TOP** in Status bar at bottom of the graphics window, **Fig 20**.

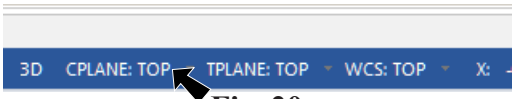


Fig. 20

Step 3. **Right click** in the graphics window and on the Mini Toolbar click **Solid Color** drop down arrow, then click **light cyan**, **Fig. 21**.

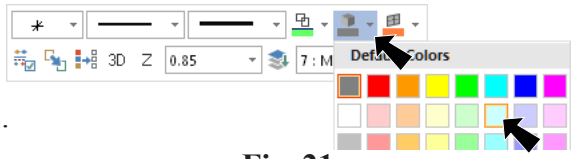


Fig. 21

Step 4. On the Solids tab SOLIDS click **Extrude** Extrude.

Step 5. Click Chain in Chaining dialog box, **Fig. 22**.

Step 6. Click **any motor mount geometry**, not the circles, **Fig. 23**.

Step 7. Click OK in Chaining dialog box.

Step 8. In the Solid Extrude function panel:
under Operation, **Fig. 24**
select **Create body**
under Distance
Distance .5
The direction arrow should **point to rear**, **Fig. 25**. If arrow points in wrong direction, click Reverse All, **Fig. 24**.
Click **OK and Create New Operation**.

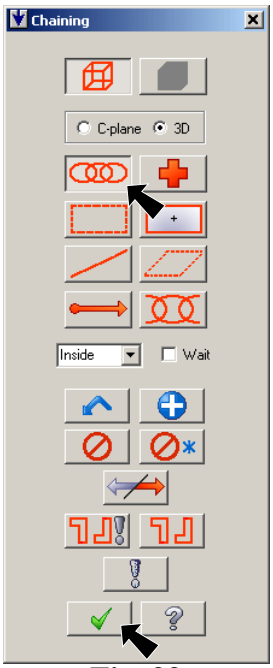


Fig. 22

Step 9. **Right click** the graphics window and click **Fit** (**Alt-F1**).

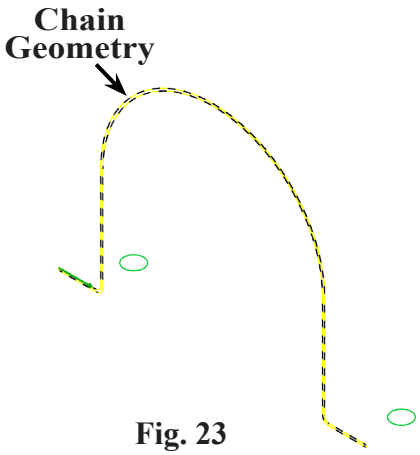


Fig. 23

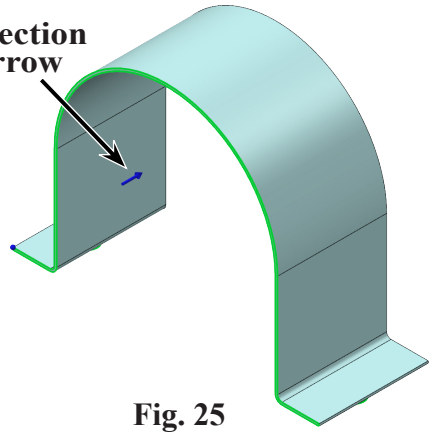


Fig. 25

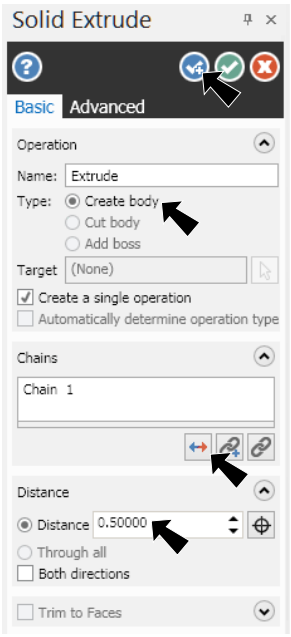


Fig. 24

M. Cut Holes.

Step 1. Click Chain  in Chaining dialog box.

Step 2. Click **both circles** to chain, **Fig. 26**.

Step 3. Click OK  in Chaining dialog box.

Step 4. In the Solid Extrude function panel:
under Operation, **Fig. 27**
select **Cut Body**
under Distance
select **Through all**
The direction arrow should **point up**, **Fig. 28**. If arrow points in wrong direction, click Reverse All  , **Fig. 27**.
Click OK  .

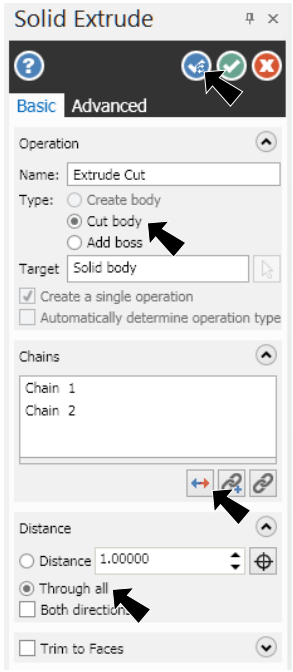


Fig. 27

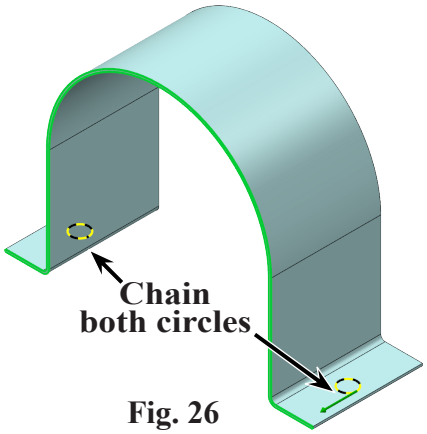


Fig. 26

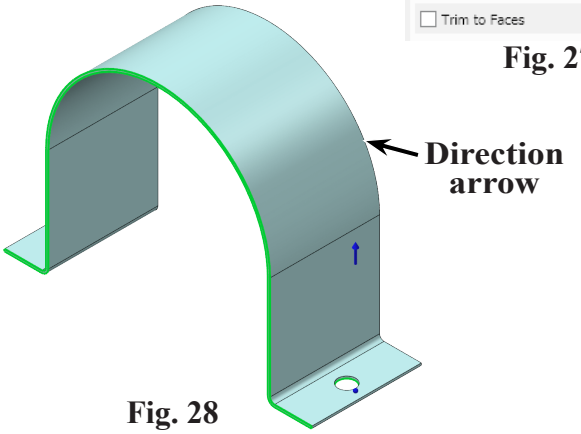


Fig. 28

N. Turn Off Level.

Step 1. In the Levels Manager (**Alt-Z**):
Click to remove X in Visible column of **MOTOR MOUNT GEOMETRY** level to hide the level, **Fig. 29**.

Step 2. Save  (**Ctrl-S**).

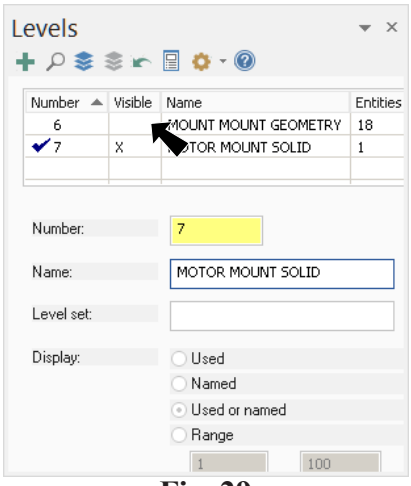


Fig. 29

O. Chamfer Corners.

Step 1. Zoom-in on flange. Use **F1** and make a zoom window around flange, **Fig. 30**.

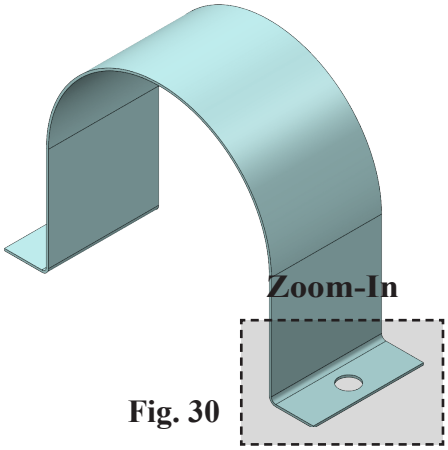
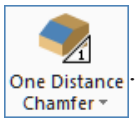


Fig. 30

Step 2. On the Solids tab SOLIDS click **One Distance Chamfer** 

Step 3. In the Solid Selection dialog box, select **Edge**  and unselect others, **Fig. 31**.

Step 4. Click **both vertical corner edges**, **Fig. 32**.

Step 5. Use the arrow keys to pan over to the other flange, **Fig. 34**.

Step 6. Click **vertical corner edge** in front, **Fig. 34**.

Step 7. Click **From back**  in Solids Selection ribbon bar. **Fig. 33**.

Step 8. Click **vertical corner edge** in back, **Fig. 34**.

Step 9. Click OK  in Solid Selection dialog box.

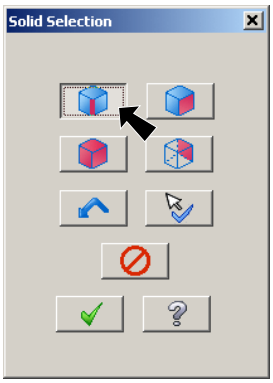


Fig. 31

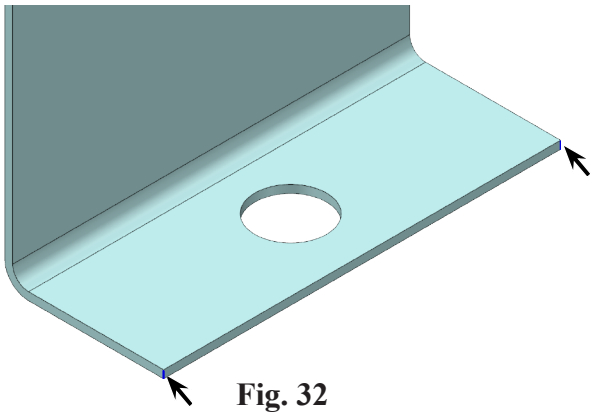


Fig. 32

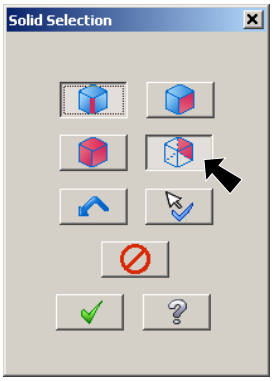


Fig. 33

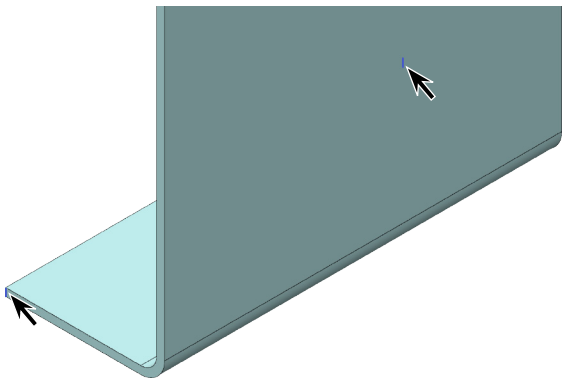


Fig. 34

Step 10. In the One Distance Chamfer function panel:
Confirm **4 edges** selected, **Fig. 35**
under Distance
Distance .07
Click OK  .

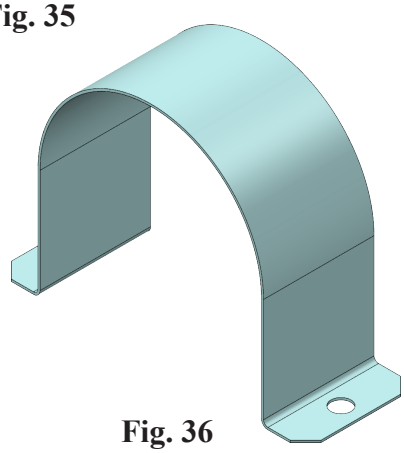


Fig. 36

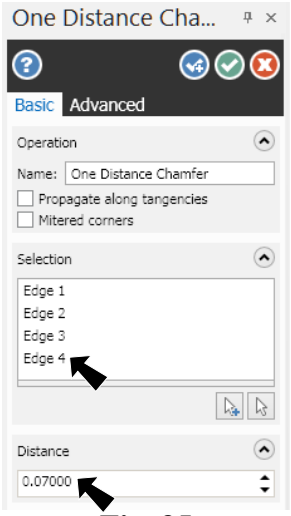


Fig. 35

Step 11. Save  (**Ctrl-S**).