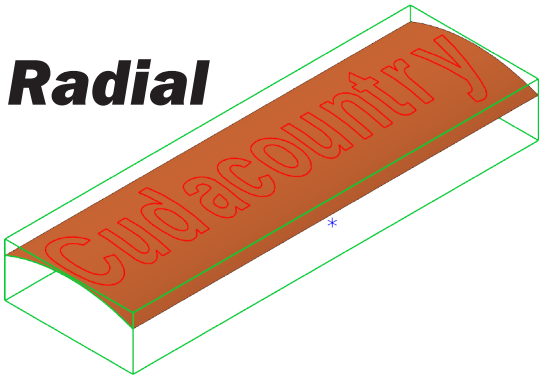
Cudacountry Radial



A. Create Rectangle.

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

Step 2. On the Wireframe tab WIREFRAME click **Rectangle** Rectangle.

Step 3. In the Rectangle function panel:
under Dimensions, **Fig. 1**
Width 5.7
Height 1.8
and press ENTER
Press **O key** to select AutoCursor **Origin** override, **Fig 2**
Click OK.

Fig. 2

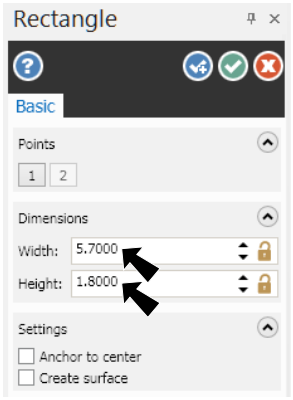


Fig. 1

Step 4. **Right click** the graphics window and click **Fit** (**Alt-F1**).

B. Create Bounding Box Point.

Step 1. On the Wireframe tab WIREFRAME click **Bounding Box** Bounding Box.

Step 2. Use **Ctrl-A** to select all and click **End Selection** End Selection (**ENTER**).

Step 3. In Bounding Box function panel:
under Entities, **Fig. 3**
All shown
under Shape
Rectangle
Click **bottom center Anchor point**
under Create Geometry
Check **Center point** uncheck **others**
Click OK.

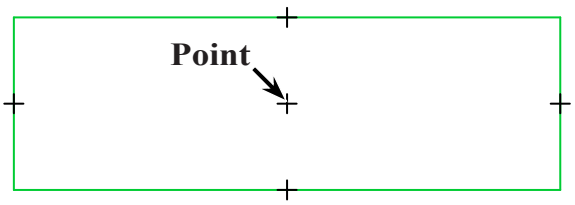


Fig. 4

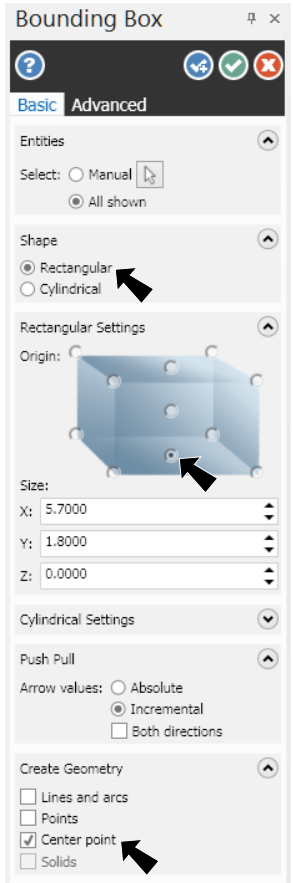


Fig. 3

C. Save As "CUDACOUNTRY RADIAL"

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

Step 2. Key-in **CUDACOUNTRY RADIAL** for the filename and press ENTER.

D. Create Cudacountry Letters.

Step 1. Create Cudacountry letters **red**. **Right click** in the graphics window and on the Mini Toolbar click **Wireframe Color** drop down arrow, then click **red**, **Fig. 5**.

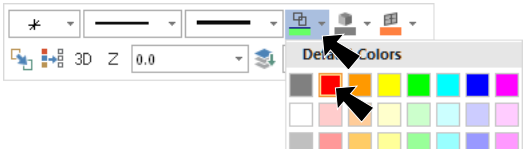


Fig. 5

Step 2. On the Wireframe tab WIREFRAME click **Create Letters**.

Step 3. In the Create Letters dialog box, **Fig. 6**
key-in **Cudacountry**
Select **Horizontal**
Height 1
Spacing .1
Click **TrueType(R)** button.

Step 4. In the Font dialog box, **Fig. 7**
Font **Arial**
Font Style **Bold Italic**
Click OK.

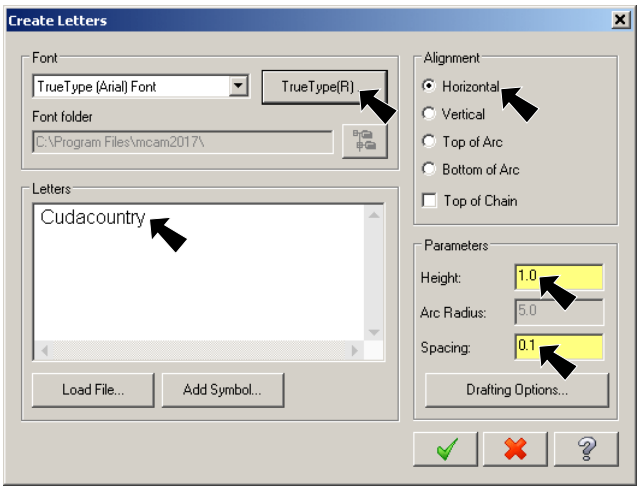


Fig. 6

Step 5. Click OK in the Create Letters dialog box.

Step 6. Click just inside bottom left corner of rectangle to place letters, **Fig. 8**. Press Escape key to exit placing letters.

Step 7. **Right click** the graphics window and click **Fit** (**Alt-F1**).

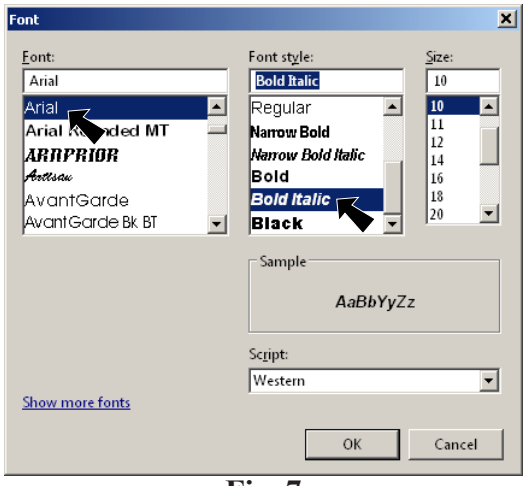


Fig. 7

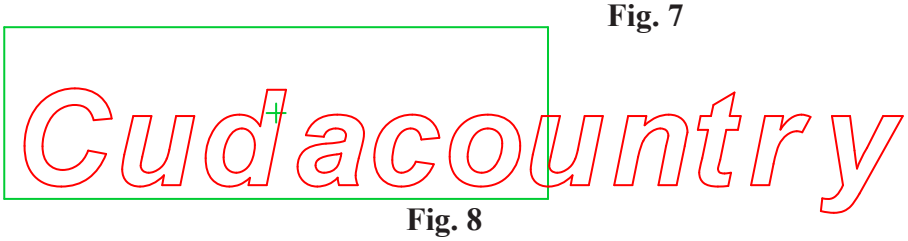


Fig. 8

E. Scale Letters.

Step 1. On the Transform tab TRANSFORM click **Scale** Scale.

Step 2. Click **Select all entities by color** the **left half** of Quick Mask button on the right edge of graphics window.

Step 3. In the Select All dialog box
Check **red** check box, **Fig. 9**
click OK.

Step 4. Click **End Selection** End Selection **(ENTER)**.

Step 5. In Scale dialog box:
Select **Move** , **Fig. 10**
Uncheck **Auto center**
Select **XYZ**
X .6
Click OK.

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

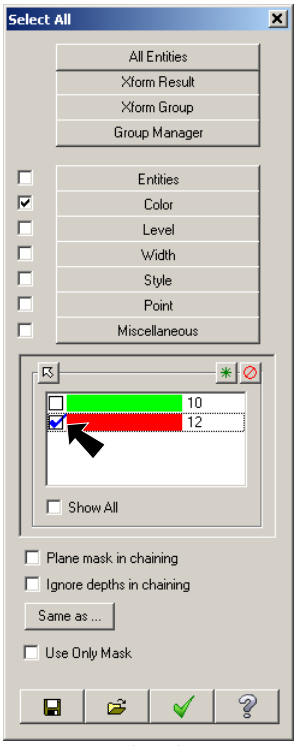


Fig. 9

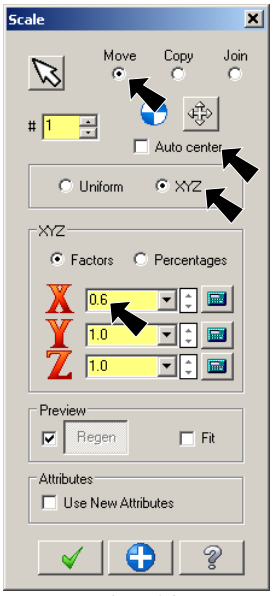


Fig. 10

Fig. 11

F. Create Bounding Box Point for Letters.

Step 1. On the Wireframe tab WIREFRAME click **Bounding Box** Bounding Box.

Step 2. Click **Select all result entities** Quick Mask button on the right edge of graphics window to reselect the all red entities and click **End Selection** End Selection **(ENTER)**.

Step 3. In Bounding Box function panel:
under Shape, **Fig. 12**
Rectangle
Click **bottom center Anchor point**
under Create Geometry
Check **Center point** uncheck **others**
Click OK .

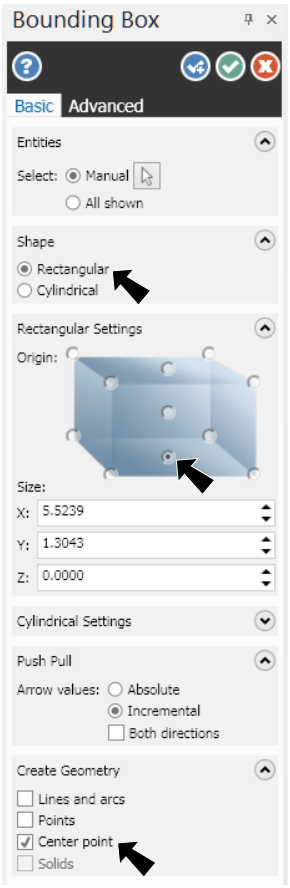


Fig. 12

G. Dynamic Move Text.

Step 1. Click **Select all result entities** Quick Mask button on the right edge of graphics window to reselect the red entities.

Step 2. On the Transform tab TRANSFORM click **Dynamic** Dynamic.

Step 3. In Dynamic function panel:

Check the **center point** of the **text** to place the gnomon , **Fig. 13**
Click a **second time** to accept gnomon orientation
Click center point of rectangle
Click OK .

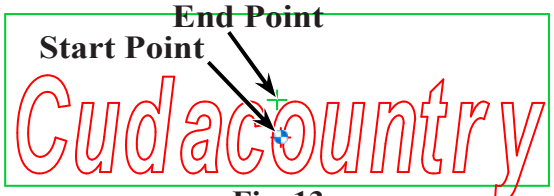


Fig. 13

Step 4. **Right click** the graphics window and click **Clear Colors** .

H. Delete Points.

Step 1. Delete the **Points**, **Fig. 15**. To delete, click **Select all point entities** the **left half** of Quick Mask Points button on the right edge of graphics window and press **Delete** key on keyboard.

Fig. 14

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

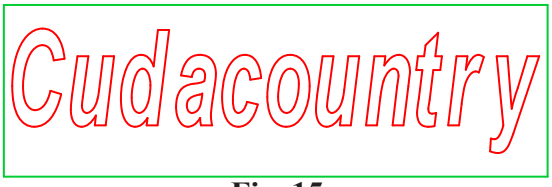


Fig. 15

I. Rotate.

Step 1. On the Transform tab TRANSFORM click **Rotate** Rotate.

Step 2. Use **Ctrl-A** to select all and click **End Selection** End Selection **(ENTER)**.

Step 3. In the Rotate dialog box:
Select **Move** **Fig. 16**
Number of Steps **1**
Rotation Angle **90**
Click OK.

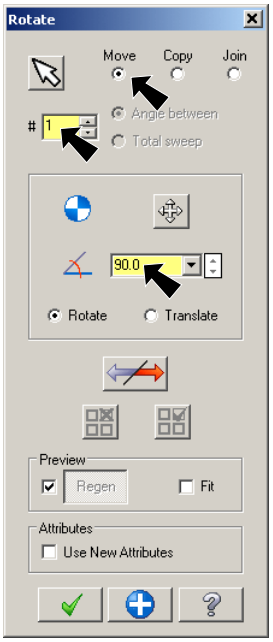


Fig. 16

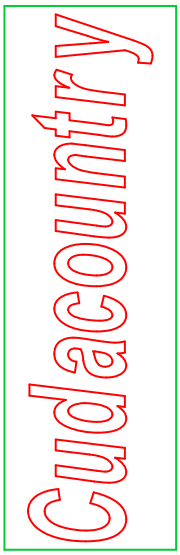


Fig. 17

Step 4. **Right click** the graphics window and click **Fit** (**Alt-F1**).

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

J. Move to Origin.

Step 1. Display the origin. Use **F9** to toggle axes display, **Fig. 18**.

Step 2. On the Transform tab TRANSFORM click **Move to Origin** Move to Origin.

Step 3. Click **bottom left corner** of rectangle to move Origin to new position, **Fig. 18**.

Step 4. **Right click** the graphics window and click **Clear Colors**.

Step 5. Confirm new position of origin, **Fig. 19**.

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

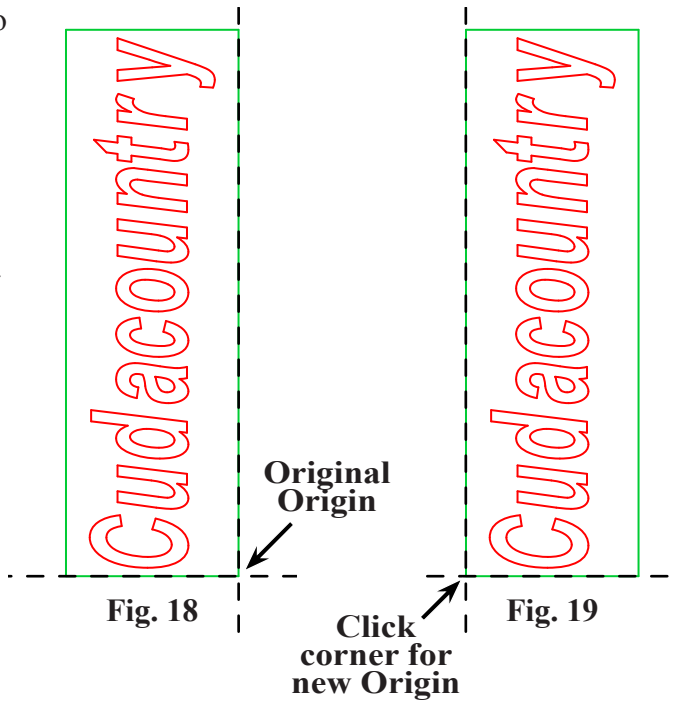


Fig. 18 Fig. 19

K. Transform 3D Block.

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

Step 2. **Right click** the graphics window and click **Fit** **(Alt-F1)**.

Step 3. On the Transform tab TRANSFORM click **Translate** Translate.

Step 4. **Shift click** a line of rectangle to chain select rectangle and click **End Selection** End Selection **(ENTER) Fig. 20**.

Fig. 20

Step 5. In Translate dialog box set:
Select **Join** **Fig. 21**
-.75
Click OK.

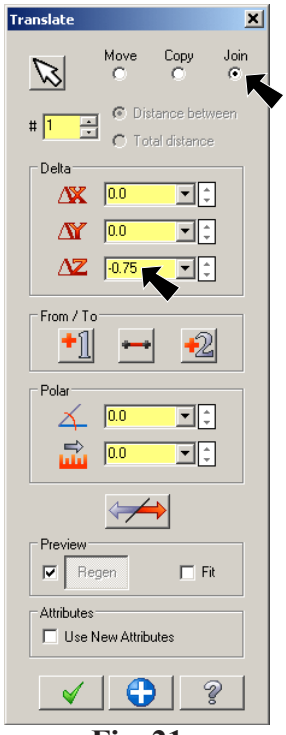


Fig. 21

Step 6. **Right click** the graphics window and click **Fit** **(Alt-F1)**.

Step 7. **Right click** the graphics window and click **Clear Colors**.

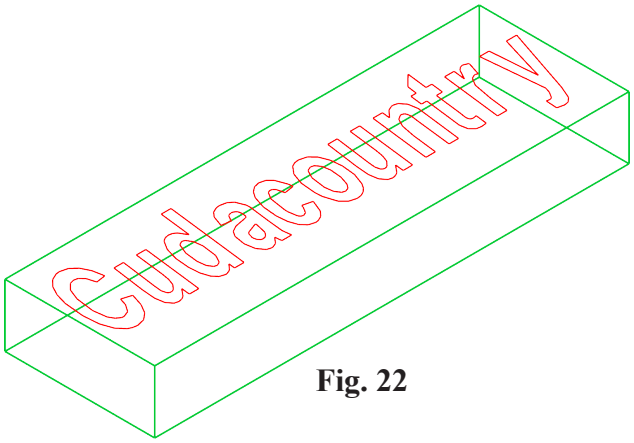


Fig. 22

L. Create Arc.

Step 1. Click **CPLANE** in Status bar at bottom of the graphics window and click **Front** from the menu, **Fig 23**.

Step 2. Draw arc **green**. **Right click** in the graphics window and on the Mini Toolbar click **Wireframe Color** drop down arrow and select **green**, **Fig. 24**.

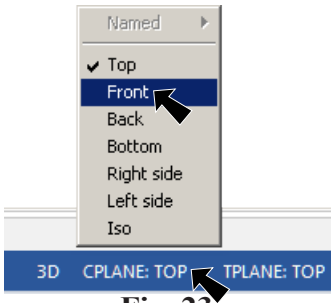


Fig. 23

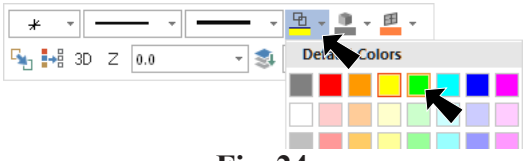


Fig. 24

Step 3. On the Wireframe tab WIREFRAME click **Arc Endpoints** Arc Endpoints on **Circle Edge Point** Circle Edge Point drop down.

Step 4. In the Arc Endpoints function panel:
under Size, **Fig. 25**
Lock Diameter
Diameter 4.8 and press **ENTER**
Press **G key** on keyboard to select AutoCursor **Along** override

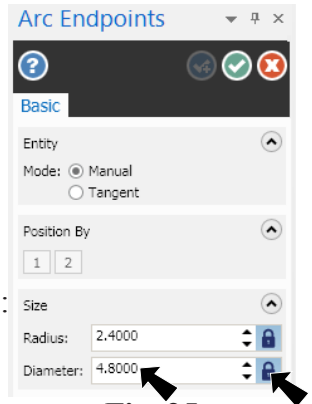


Fig. 25

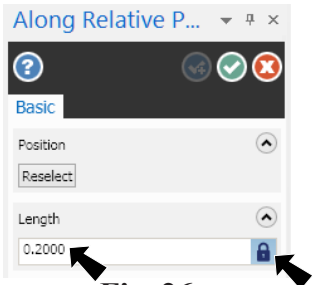


Fig. 26

Step 5. In the Along Relative Position function panel:
under Length, **Fig. 26**
Lock Length
Length .2 and press **ENTER**
Click **left front vertical line towards top of line** for first point, **Fig. 27**
Press **G key** on keyboard to select AutoCursor **Along** override
Click **right front vertical line toward top of line** for second point, **Fig. 28**

Step 6. Back in the Arc Endpoints function panel:
Click **top segment of bottom arc** as arc to keep, **Fig. 29**
Click OK .

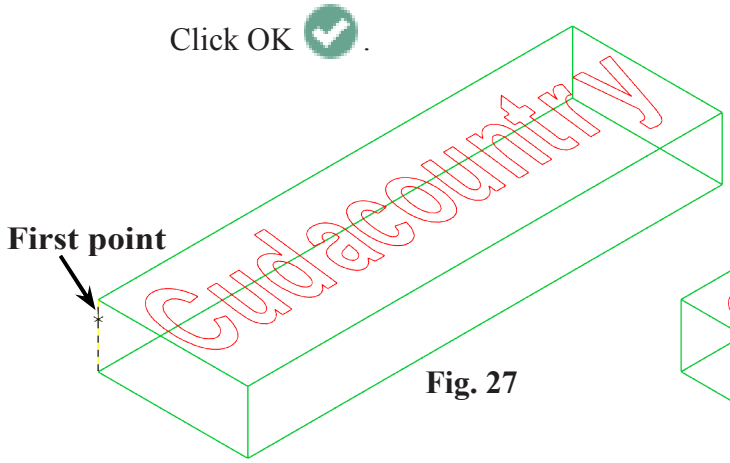


Fig. 27

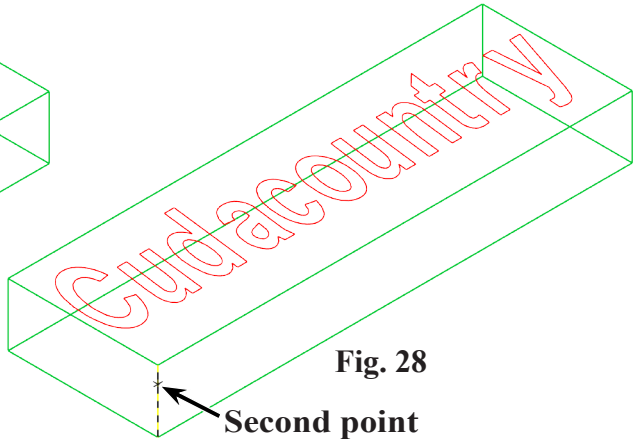


Fig. 28

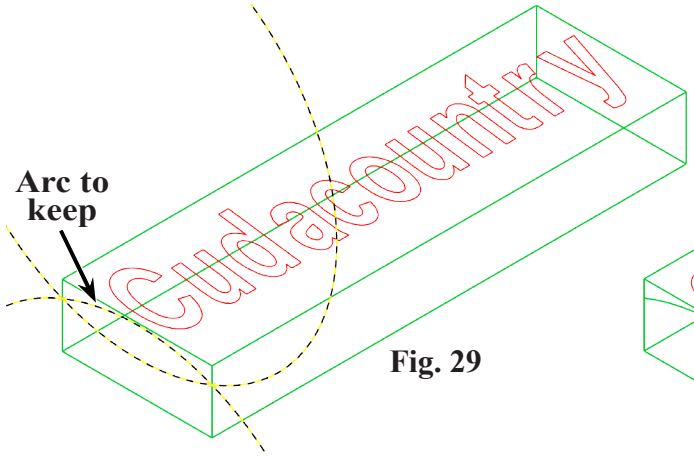


Fig. 29

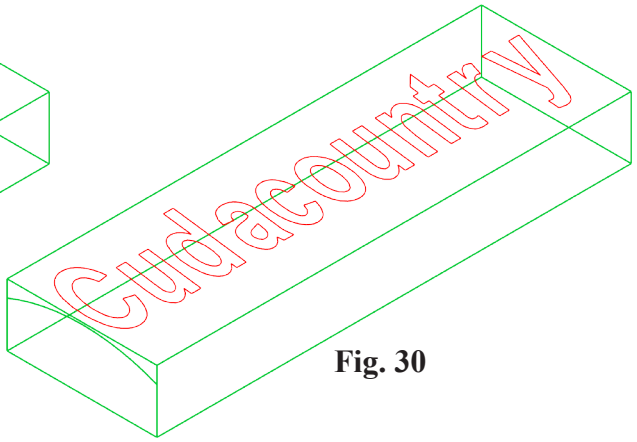


Fig. 30

M. Create Loft Swept.

Step 1. On the Surfaces tab SURFACES click **Sweep** Sweep.

Step 2. In the Surface Sweep function panel:

Click Chain (**C**) in the Chaining dialog box, **Fig. 32**
Click **arc for contour 1**, **Fig. 33**
Click OK in Chain dialog box
Click **length line on side for contour 2**, **Fig. 34**
click OK in Chaining dialog box
Click OK .

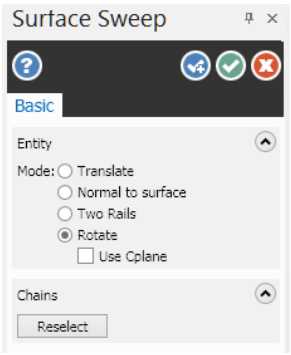


Fig. 31

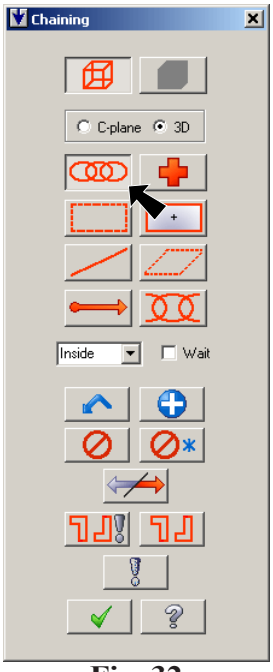


Fig. 32

Step 3. If necessary, turn on shading **Alt-S**.

Step 4. Save (**Ctrl-S**).

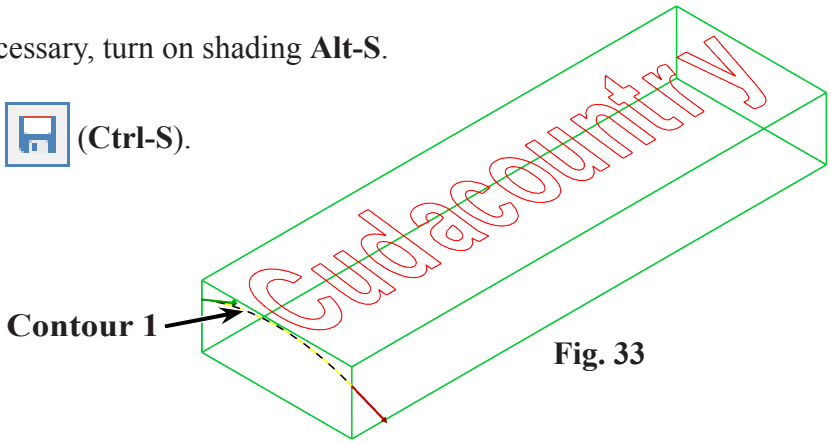


Fig. 33

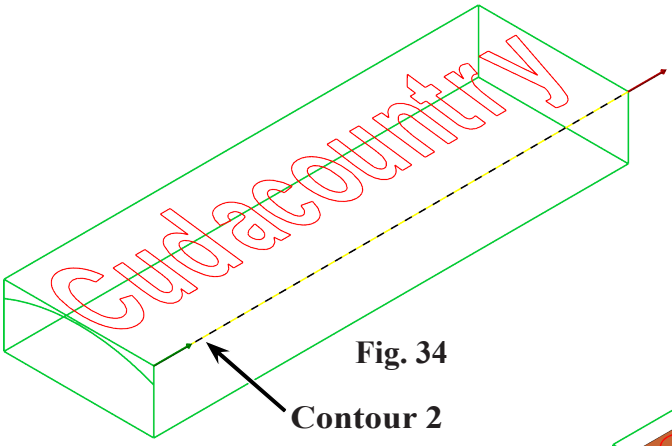


Fig. 34

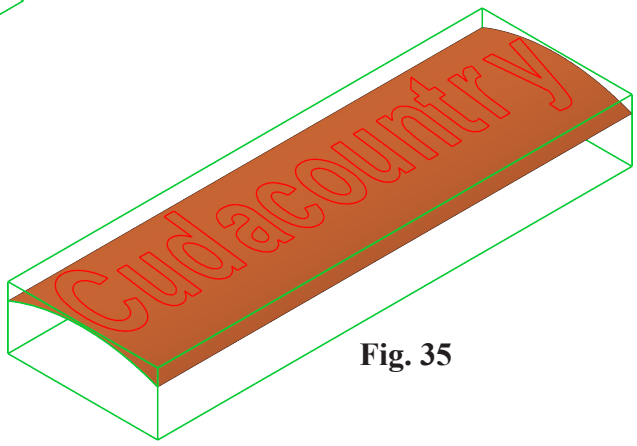


Fig. 35

N. Project Letters.

Step 1. Click **CPLANE** in Status bar at bottom of the graphics window and click **Top** from the menu, **Fig 36**.

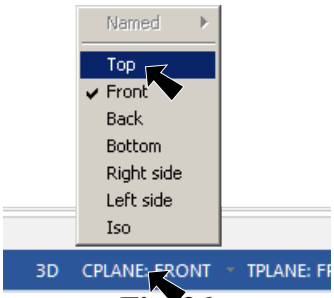
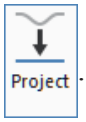


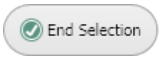
Fig. 36

Step 2. On the Transform tab TRANSFORM click **Project** 

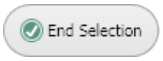
.

Step 3. Click **Select all entities by color**  the **left half** of Quick Mask button on the right edge of graphics window.

Step 4. In the Select All dialog box
Check **red** check box, **Fig. 37**
click OK 
.

Step 5. Click **End Selection** 

(ENTER).

Step 6. In Project dialog box:
Select **Move**  **Fig. 38**
Project onto surfaces 
Click **surface**, **Fig. 39**
Click **End Selection** 

(ENTER)
Check **Join Results**
Click OK 
.

Step 7. **Right click** the graphics window and click **Clear Colors** 
.

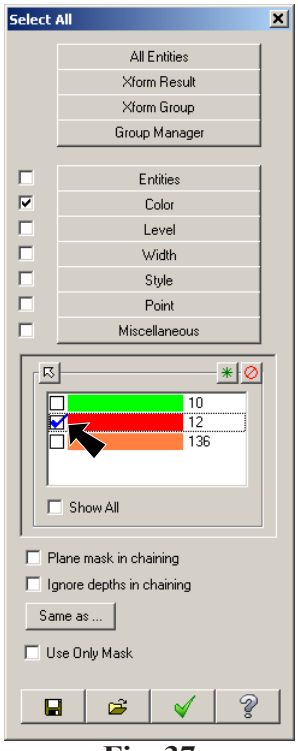


Fig. 37

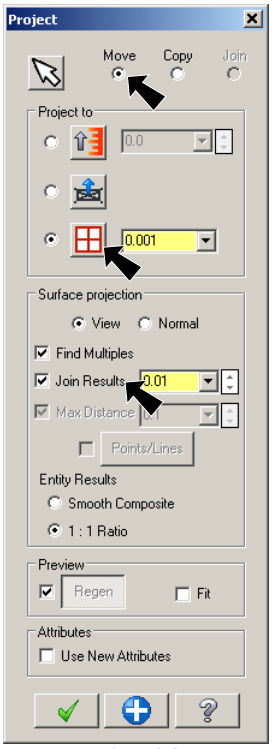


Fig. 38

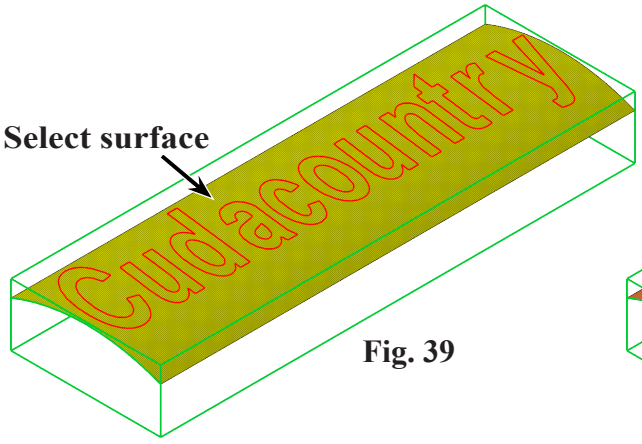


Fig. 39

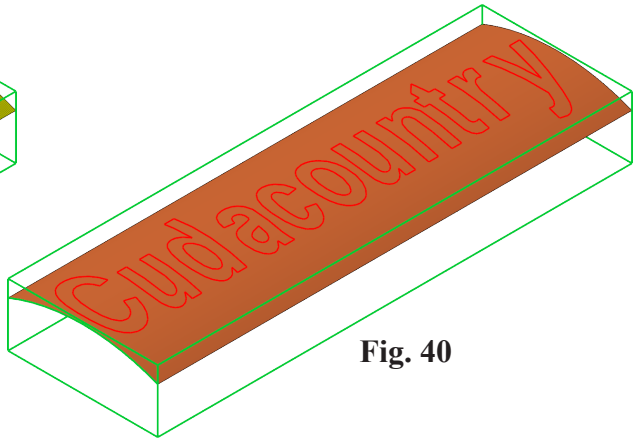


Fig. 40

O. Create Point for Toolpath.

Step 1. Sketch point **blue**. **Right click** in the graphics window and on the Mini Toolbar click **Wire-frame Color**  drop down arrow and select **blue**, **Fig. 41**.

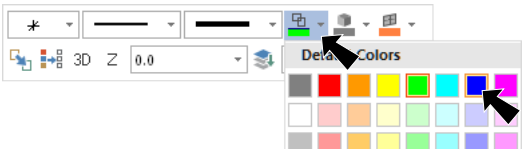
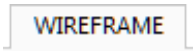


Fig. 41

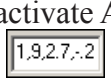
Step 2. On the Wireframe tab 

click **Point Position** 

.

Step 3. In the Point Position function panel:

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

Key-in **1.9**, **2.7**, **-.2** 

and press ENTER

Click OK  .

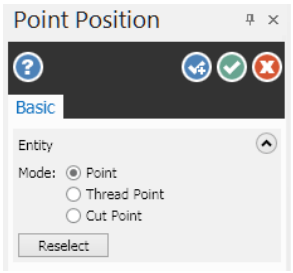


Fig. 42

Step 4. Save  (**Ctrl-S**).

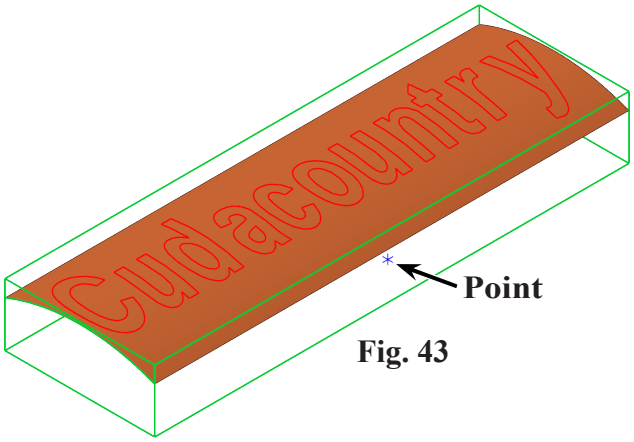


Fig. 43