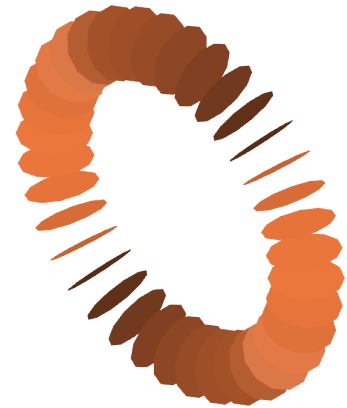
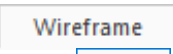
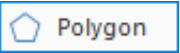
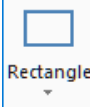



# Torus

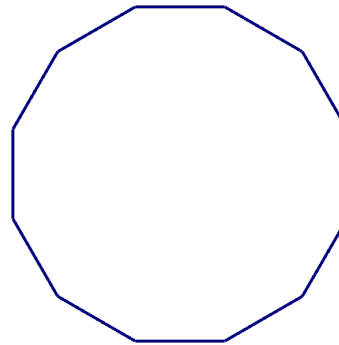


## A. Create 12 Sided Polygon.


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

Step 2. On the Wireframe tab  click **Polygon**  on **Rectangle**  drop down.

Step 3. In the Polygon function panel:  
under Entity, **Fig. 1**  
**Sides 12**  
**Radius 1** and press **ENTER**  
Press **O** key on keyboard to select  
Auto Cursor **Origin** override  
and **press ENTER**, **Fig 2**  
Click OK .



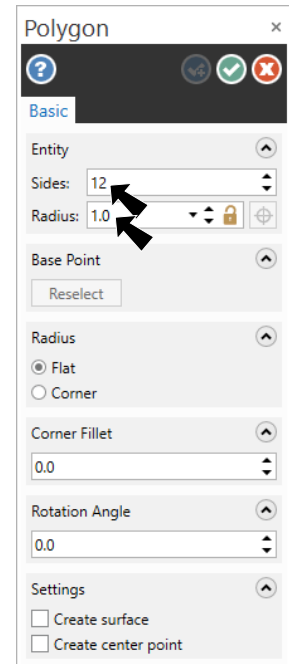
**Fig. 2**

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

## B. Save As "TORUS"

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

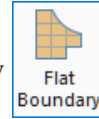
Step 2. Key-in **TORUS** for the filename and press **ENTER**.



**Fig. 1**

### C. Create Flat Boundary Surface.

Step 1. On the Surfaces tab **Surfaces** click **Flat boundary**



Step 2. Click the **Chain** (C) in the Chaining dialog box, **Fig. 3**.

Step 3. Click a line of polygon to define flat boundary, **Fig. 4**.

Step 5. Click OK in the Chain dialog.

Step 6. In Flat Boundary Surface function panel click OK , **Fig. 5**.

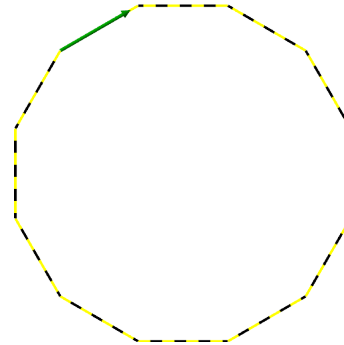


Fig. 4

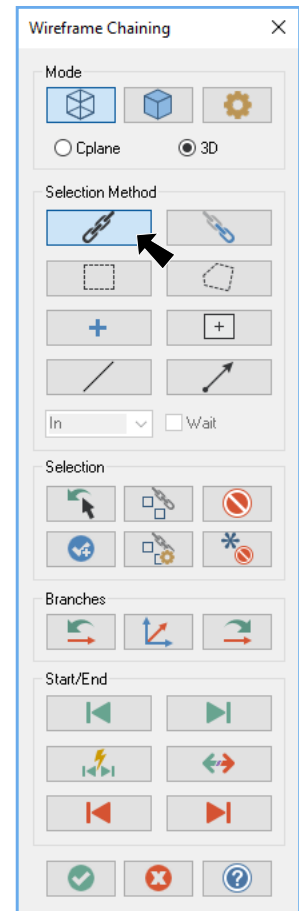


Fig. 3

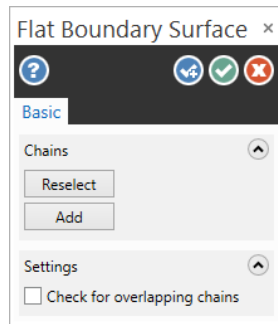


Fig. 5

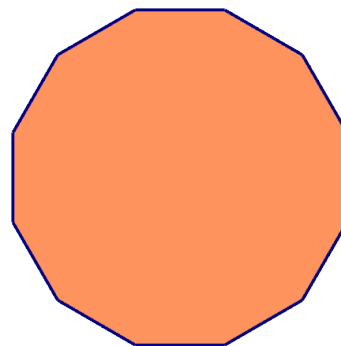


Fig. 6

### D. Turn On Grid and Snap.

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

**Snap to Grid** .

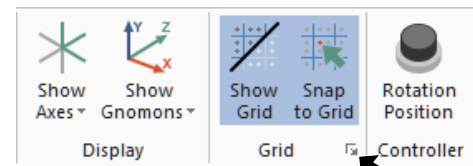
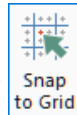


Fig. 7

**Tip:** You can adjust the shading options and lighting modes by using **Appearance Dialog Box Launcher** on the View tab **View**, **Fig. 8**.

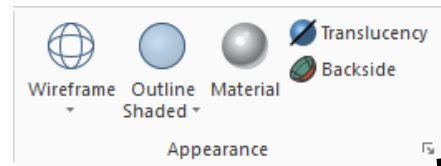

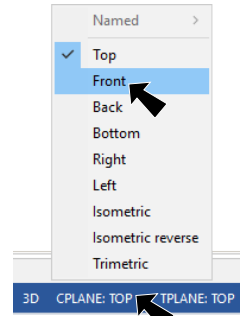


Fig. 8

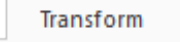
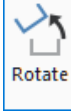
## E. Rotate Surface.

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


Step 2. Click **CPLANE** in Status bar at bottom of the graphics window and click **Front** from the menu, **Fig 9**.

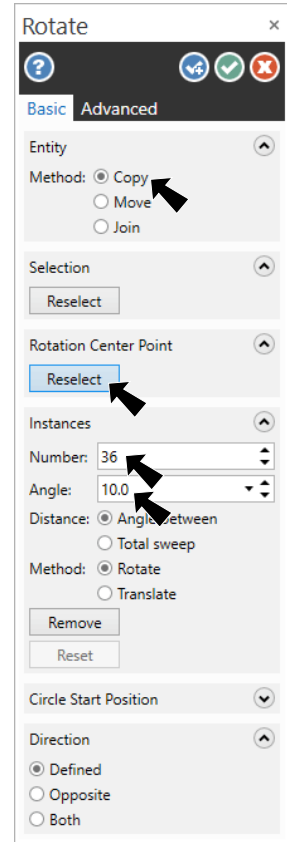


**Fig. 9**

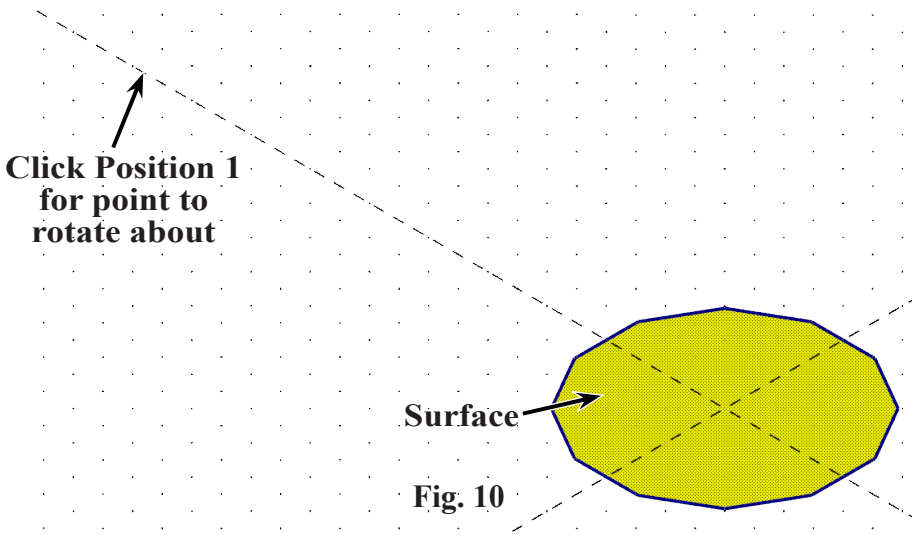
Step 3. On the Transform tab  click **Rotate** .


Step 4. Click the **surface** and click **End Selection**  (ENTER) **Fig. 10**.


Step 5. In the Rotate function panel set:  
 under Method, **Fig. 11**  
 select **Copy**  
 under Instances  
**Number 36**  
**Angle 10**  
 under Rotation Center Point  
 click **Reselect**  
 Click **Position 1** to the left of the surface for point to rotate about.  
 Use **Page Down** key to zoom out, **Fig. 10**.  
 Click OK .

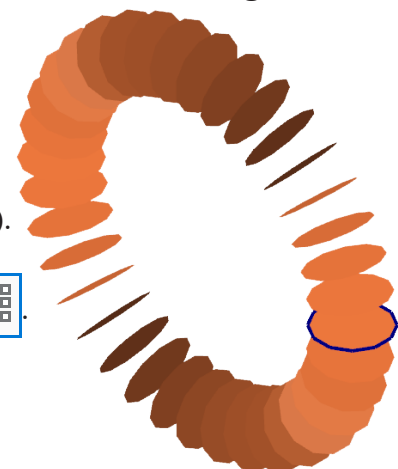


**Fig. 11**




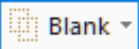
Step 6. **Right click** the graphics window and click **Fit**  (Alt-F1).

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

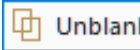
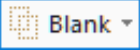


**Fig. 12**

## F. Blank and Unblank.

Step 1. On the Home tab  click **Blank** .

Step 2. **Shift click** a line of polygon to chain select polygon and click **End Selection**  (ENTER), Fig 13.

**Tip:** To show blanked entities, use **Unblank**  on **Blank**  drop down.

Step 3. Save  (Ctrl-S).

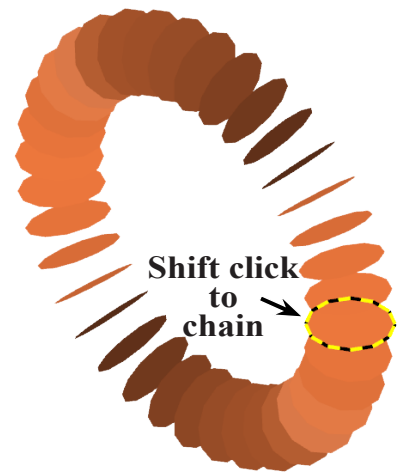


Fig. 13

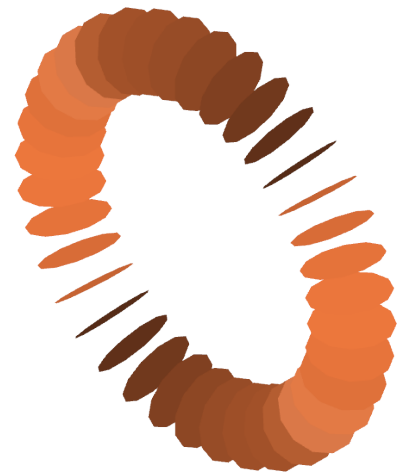


Fig. 14