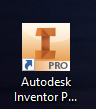
**Autodesk Inventor Nameplate Tutorial.**

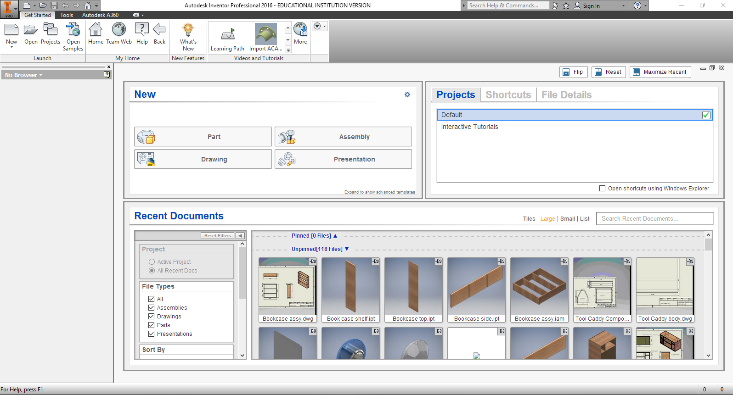
Computer Aided Design Software such as Autodesk Inventor allows us to design and model a product in a virtual drawing space. The following tutorial will guide you through the production of a nameplate which can be produced using a 3D printer.

Follow the steps below to produce your nameplate:

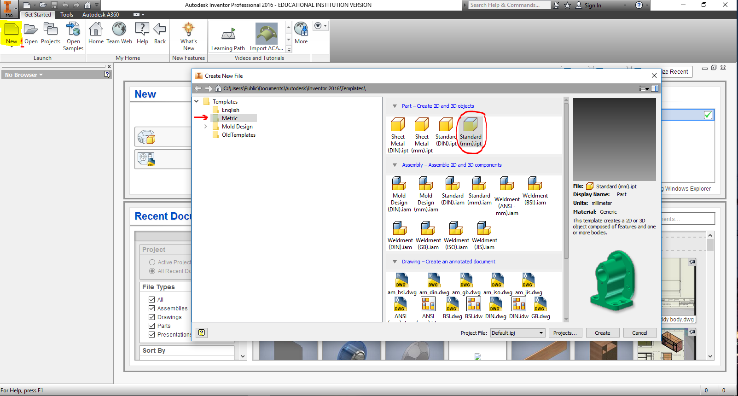
1)

Select the Icon for **Autodesk Inventor** which can be found on your **desktop.**

2)

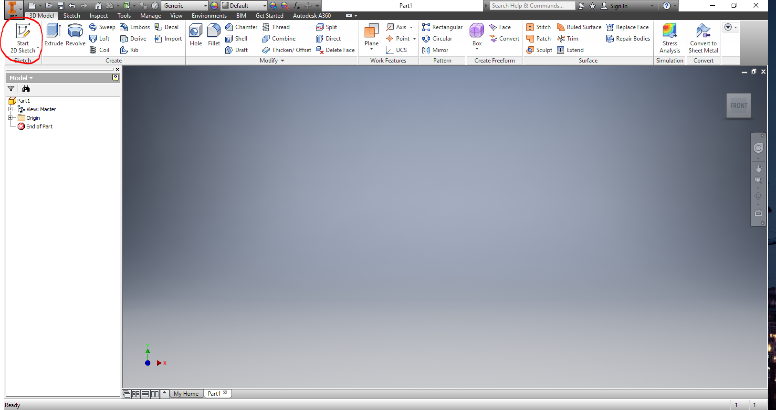
The screen shown should be the opening screen. If this is not the case, you may have to select the box that says “**start working**” before seeing this screen.

3)

Place your cursor over the word **New** in the top left corner of the screen and click. This will open the “**Create New File**” box as shown.

Ensure that **Metric** is selected and then double click on the “**Standard (mm) .ipt**” icon.

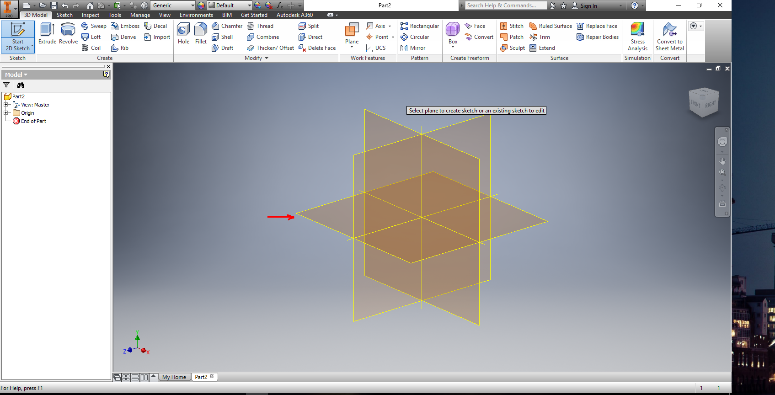
4)

Click on the “Start 2D Sketch” icon and you will see a drop down appear with 2 options.

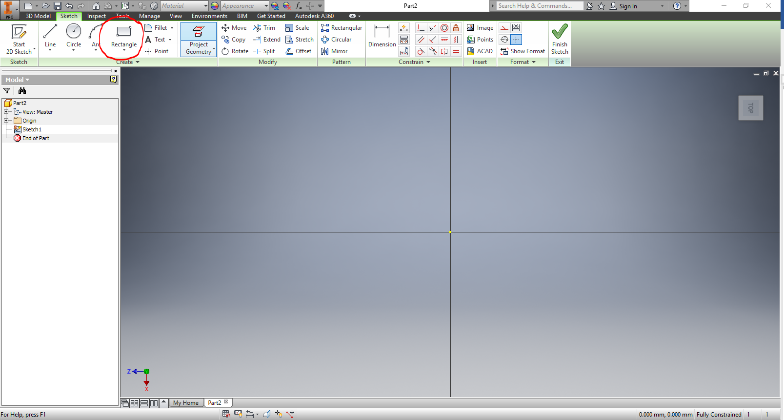
* Start 2D Sketch
* Start 3D Sketch

Select **Start 2D Sketch**.

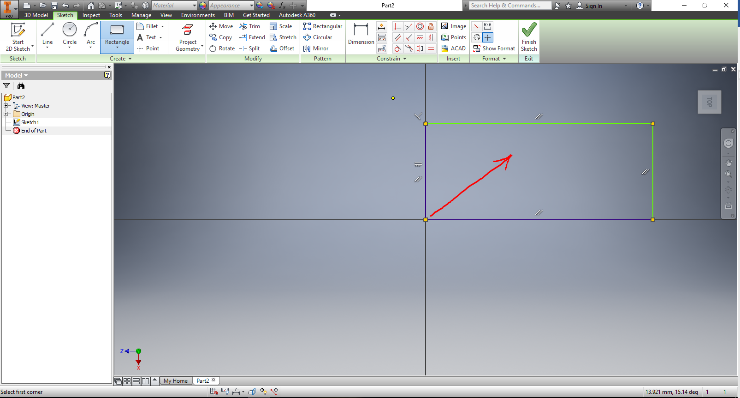
5)

This screen should now appear. In the centre of the drawing space there is a set of **planes**. We will select the **XZ Plane**; the plane will highlight when the cursor is placed over the plane. **Click**.

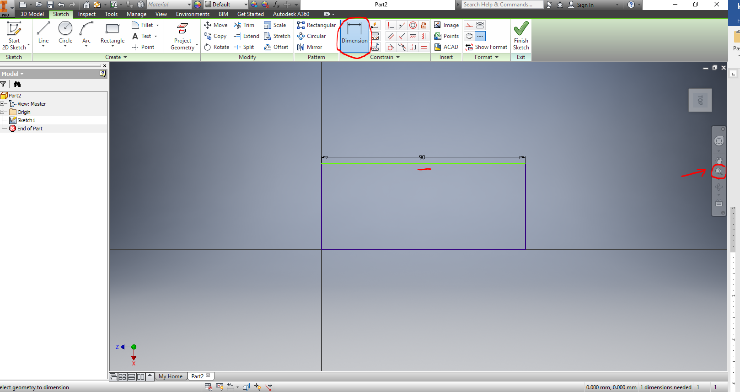
6)

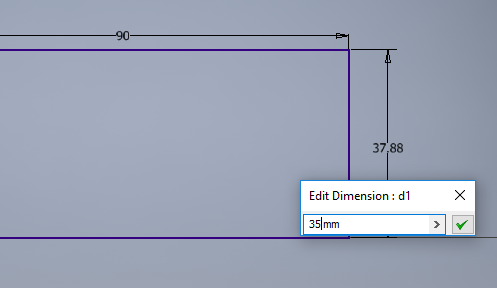
The screen will now show a set of lines which will guide our drawing. Select “**Rectangle**” from the top ribbon bar by clicking and then and move the cursor to the **Centre** of the screen. When your cursor is at the **Centre** you will notice the yellow dot turn **green**.Click and **hold the mouse left button and drag** from the centre to the top right of the screen as shown in the next step.

7)

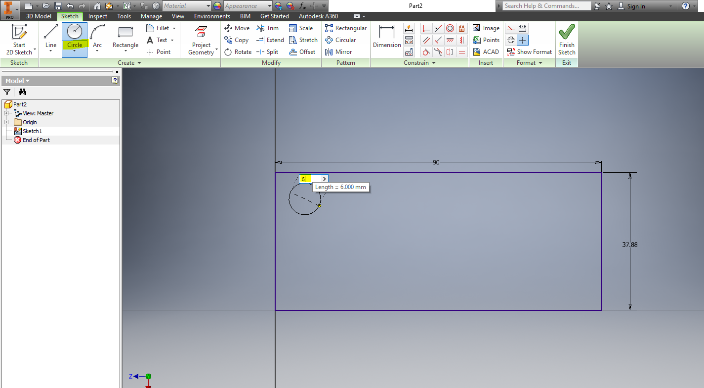
**Drag** the mouse while holding the left button and release once you have a rectangle. At this point the size does not matter the next step is where we will add the sizes or **dimensions** to the rectangle.

8)

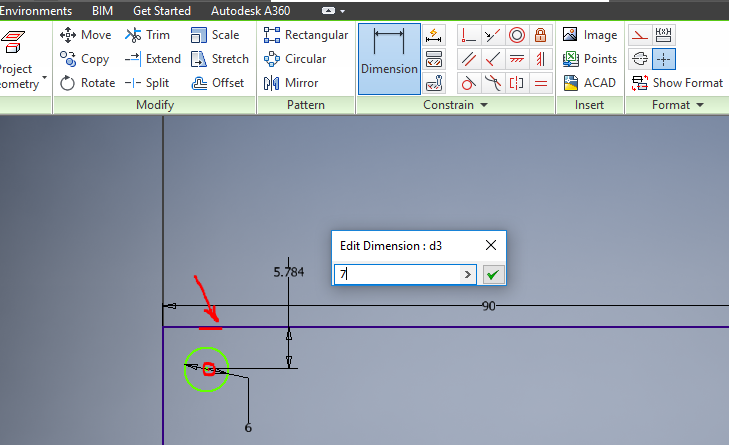
Now select the **dimension icon** and move your mouse over the top **horizontal line**, the line will change colour **click and drag up** from the line and a dimension box will appear. Click on this box and a **dimension** will appear highlight the measurement shown and **type 90**. The top line will now change to reflect the value entered. If your drawing moves out of view, click on the small magnifying glass or **“zoom all**” icon on the right. Now change the **vertical line** to **35mm** using the same method.



9)

Now select the **circle** from the top ribbon and place it in the top left hand corner of your rectangle**, click and drag** a circle out from the **centre** and watch the dimension change you can now enter the value **of 6 mm** into the dimension box giving the circle a **6mm diameter**.

10)

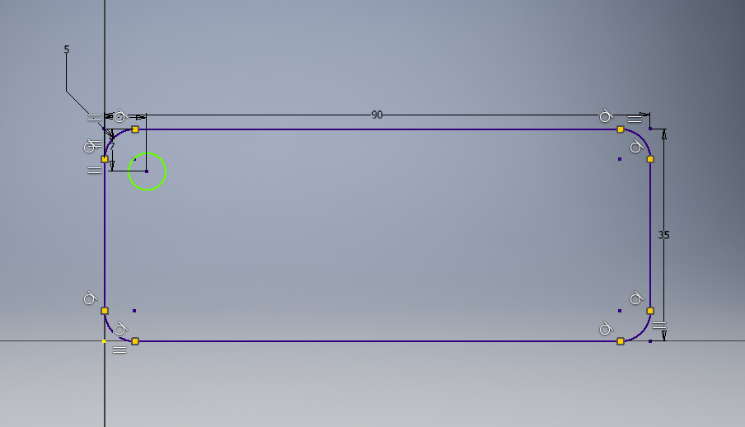
The next step is to place the circle where it should be this is achieved by **dimensioning** it **7mm from the horizontal** line at top and **7mm from the vertical** line on the left.

**Select** dimension and **click on the centre** of the circle and **then the top line**, then enter **7mm into the dimension box,** do the same for the **centre** to the **left hand** **vertical** line ensuring you **click on the green arrow** to enter the 7mm dimension.

11)

We will now **fillet or round** the corners of our rectangle. Select the fillet icon and **type 5mm** into the **dimension box**. Click on the **top line** and the **left hand line** of the rectangle and you will see the fillet appear. **Repeat** for each corner this action will create a **5mm radius** on each corner..

12)

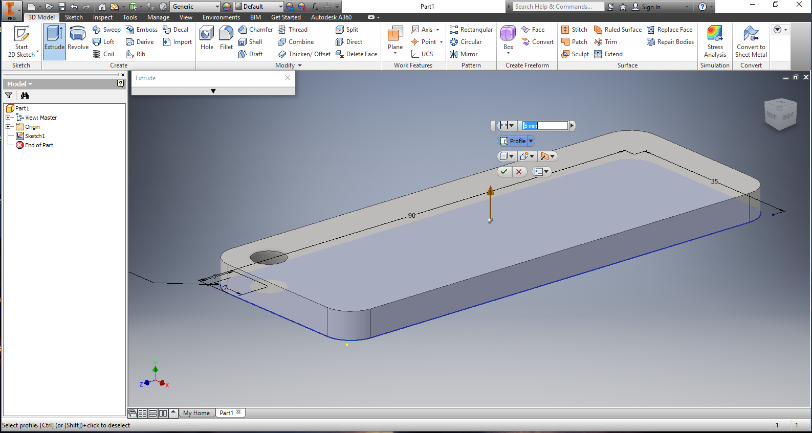
Once you have entered both the dimension **90mm horizontal and 35mm vertical and filleted your corners** your 2D drawing is finished.

We will now create a **3D shape** with this drawing.

Right click and select “finish **2D sketch**”.

13)

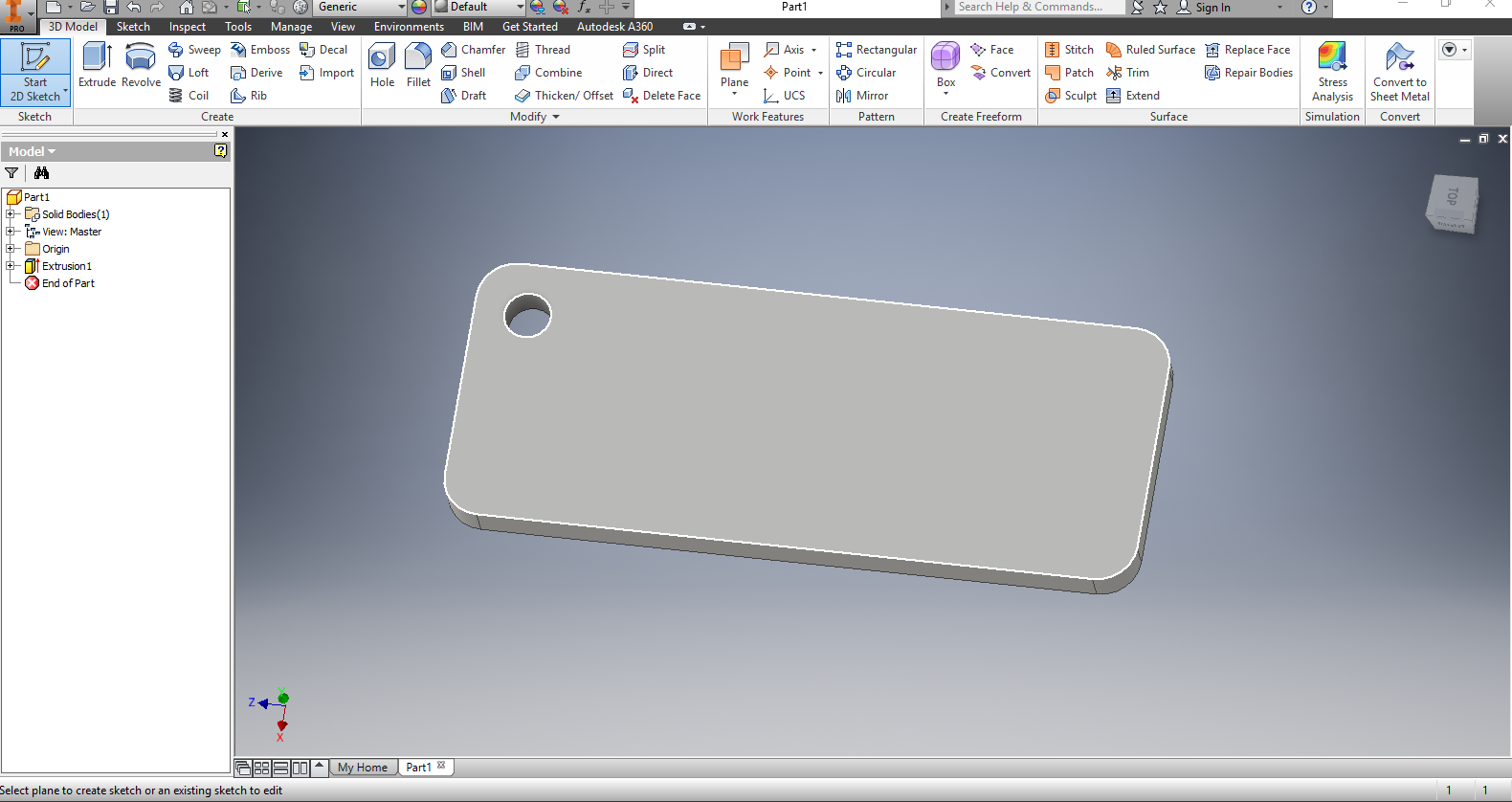
The screen has now changed and we are in **3D** mode. A **new ribbon** has appeared with a set of tools for 3D drawing. Click on **extrude**.

14)

The screen will provide some options. In the **dimension** box type in **5mm**. Move your **mouse onto the middle of your shape** and **click**. The shape is now extruded to a **thickness of 5mm**. The other options will be used in later tasks.

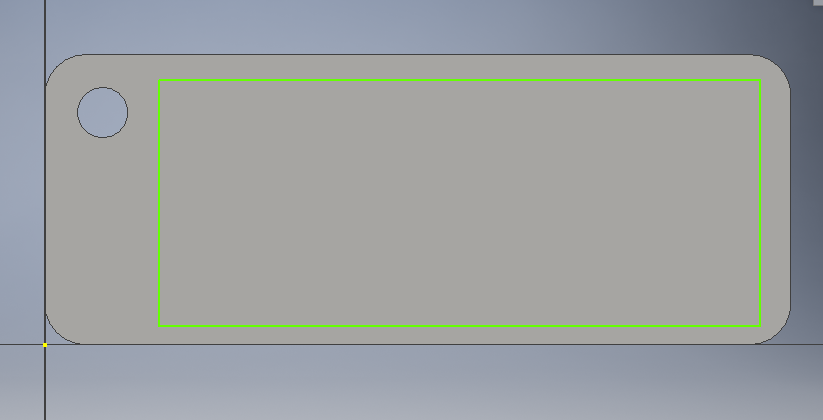
15)

The next step is to create another drawing on the face of our nameplate. Select **create a 2d sketch** and click on the **face** of our plate, the edges will turn **white and click.**



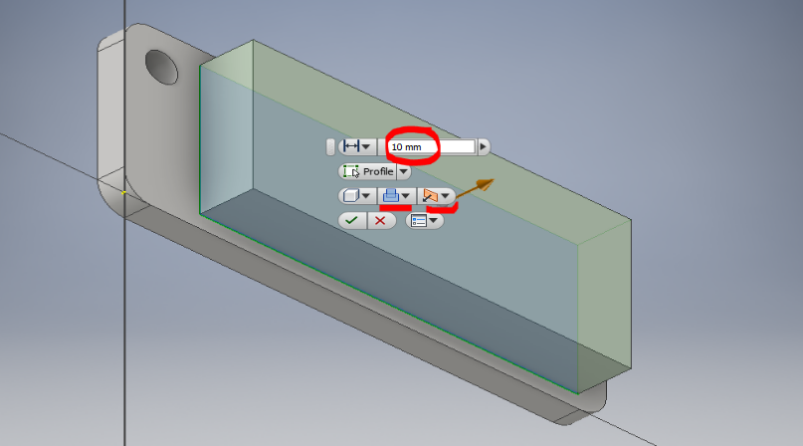
The plate will turn face onto the screen and we are ready to **draw a rectangle.**

16)

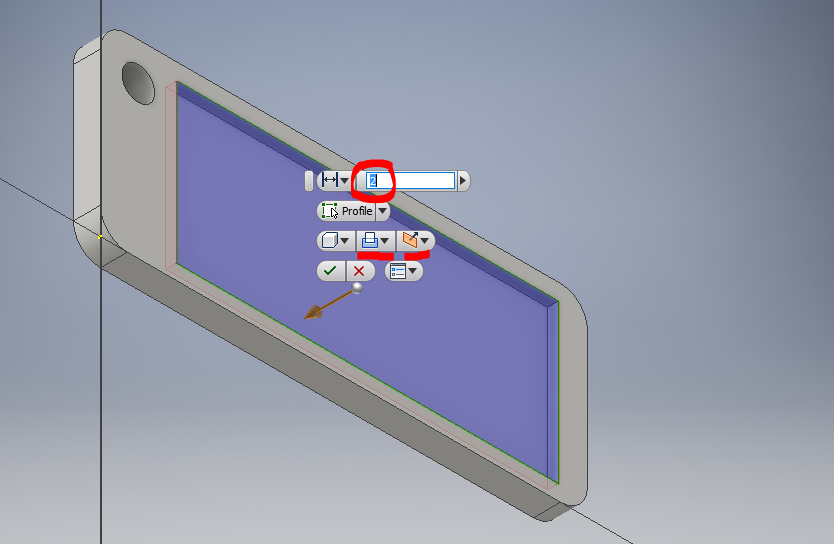


Create a **2D rectangle** on the front face and dimension it so that it is **centred** between the **horizontal** edges of your shape.

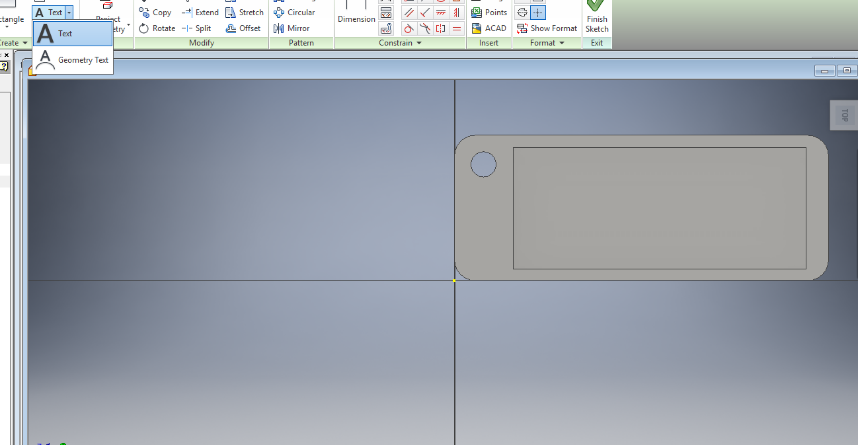
17)

The next step is to Extrude so click on **3D Model** and then **Extrude**. You may see something similar to the picture shown. Now we will alter the measurement and style of extrusion highlighted in red.

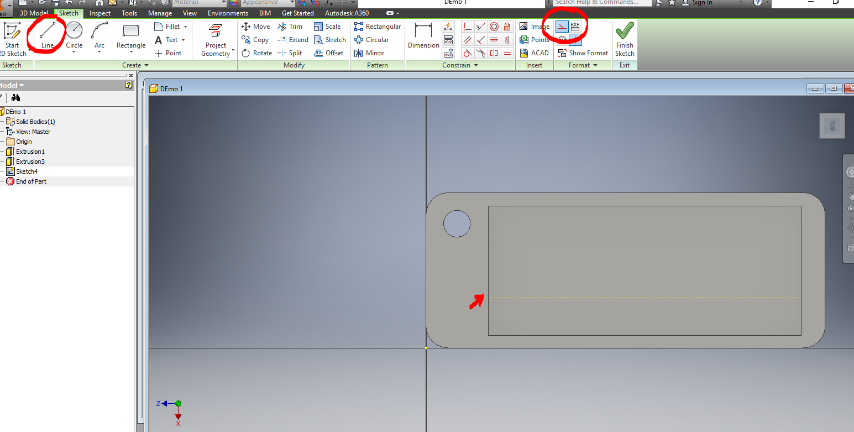
18)

We now change the **Dimension to 2mm** the type of **Extrusion** to **Cut** and the direction to **Direction 2.** Your screen will now show the direction and type of extrusion. **Click** the **Green tick.**

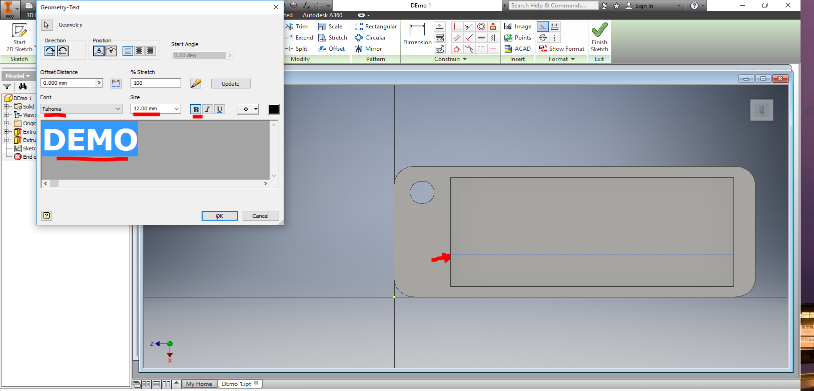
19)

Now we will produce another **sketch** in the area we have **extruded**. Click **2D Sketch** and start a **new 2D Sketch** clicking in the **extruded area.** 

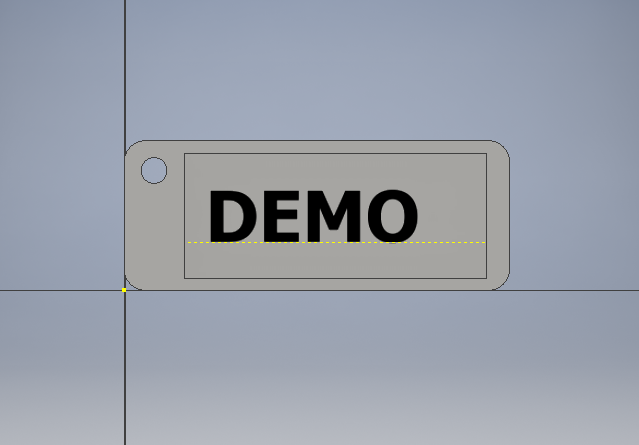
20)

Select the **Construction line** by clicking on the icon in the **top right section of the ribbon toolbar** then select the **line tool** and click around on the line around the **extruded area** about **1/3** up from the bottom line.

21)

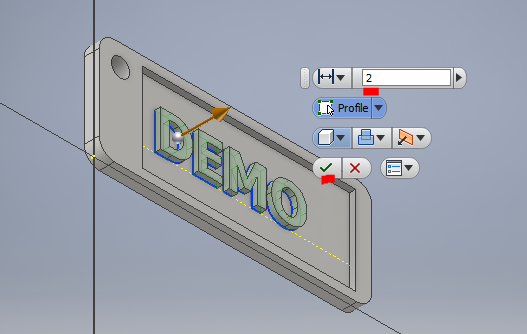
 Now select the **Text drop down** and go to **Geometry text**. Select **Geometry Text** and click on the dotted line. A Box will appear giving a number of options, you can select a font change its size etc.

**Type your text** and click **ok**. If you need to change anything highlight the text and right click, select **edit text** and make your changes as necessary.

22)

Your plate should now look like this.

23)

Click on **3D Model** and select **extrude**, change the dimension to **2mm** and ensure the direction is as shown.

Once you have done this you have finished the tutorial. You can add your own touches including colouring the plate if you explore the options available. Make sure you **save this version of the plate first**.