

I-Mark Rotator Setup

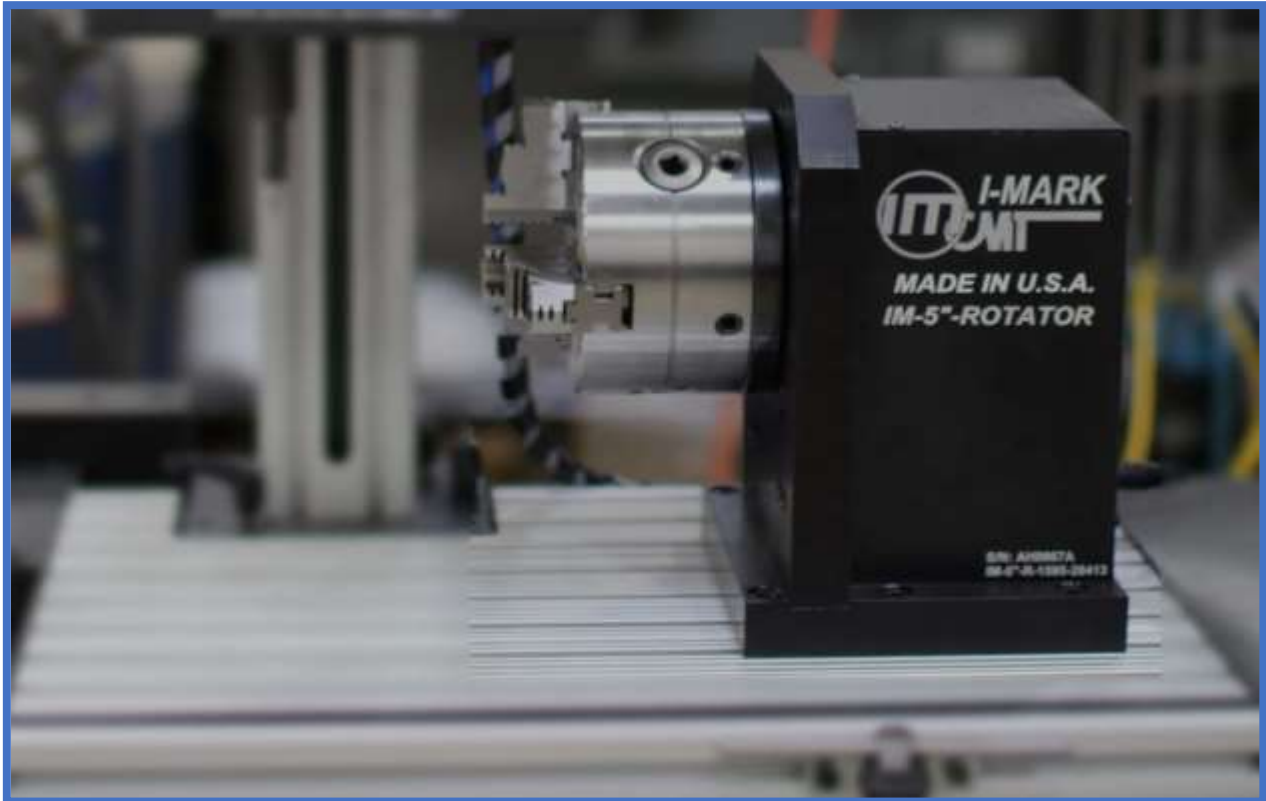
Technical Brochure



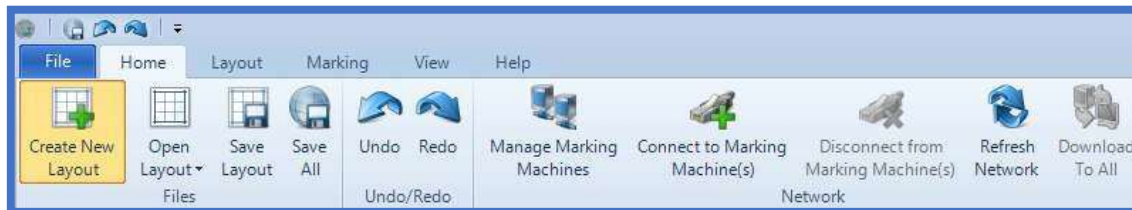


I-Mark

How to use the rotator in I-Mark



Creating a layout with the Rotator enabled.



From the “Home” Menu select the “Create New Layout” button in the software.

On the “Create Layout” dialog choose your controller type from the list on the left and then on the right side of the screen choose the Axis configuration whose Axes in Parenthesis contain X and A.

NOTE: The axis within the parenthesis will be the two designated axes used for the drawing of the layout. All additional axis listed in the configuration will be available as positional axis only.

Marking Machines

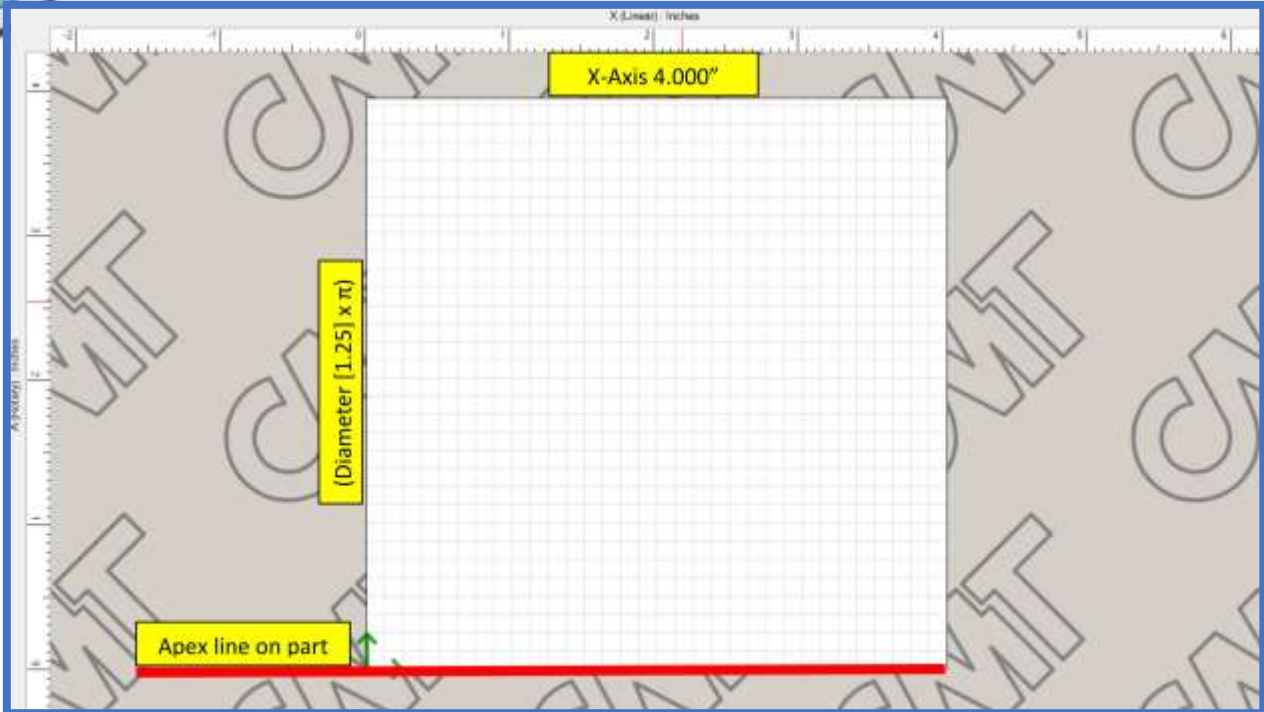


The 'Create Layout' dialog box is shown. On the left, a list of machine types is displayed, with 'IM_M75R' selected. On the right, the 'IM series marking controller' is selected, and the hardware configuration is shown: Marking Width 4.0000 in, Marking Height 4.0000 in, Axis 1 - X Linear, Axis 2 - Y Linear, Axis 3 - A Rotary, and Axis 4 - Axis 4 None. The Axis Configuration dropdown is set to '(X x Y): A'. The Dwell Time is 30 ms. The Presets section has buttons for Draft, Normal, and High Res. The OK and Cancel buttons are at the bottom.

After you've selected a configuration, whose axis is a rotary type (A in this case), the dialog will show a hidden field for the Part Diameter. This data in this field must be entered correctly to ensure that the scaling of the marking around the circumference of the part is accurate.

NOTE: If your part has multiple surfaces with varying diameters, the diameter at or closest to the desired marking location should be entered here.

The 'Layout Defaults' dialog box is shown. It contains three fields: Printing Speed 35 %, Dwell Time 30 ms, and Part Diameter 1.2500 in. The Part Diameter field is highlighted with a blue selection box.



This is how the layout form will look if you've entered the same values I have in this example.

Horizontally is the X-axis and the vertical axis of this 2D layout is the A-axis. Its dimensions were calculated off the know X-axis travel distance of 4" and the calculated value of the part circumference (diameter [1.25] x π) = 3.9267 or roughly a 4x4 grid.

The bottom horizontal line of the grid represents the Apex of your part or the 12 o'clock position. This position must be taught for the Y-axis to ensure that the program will begin marking directly over top of the part.

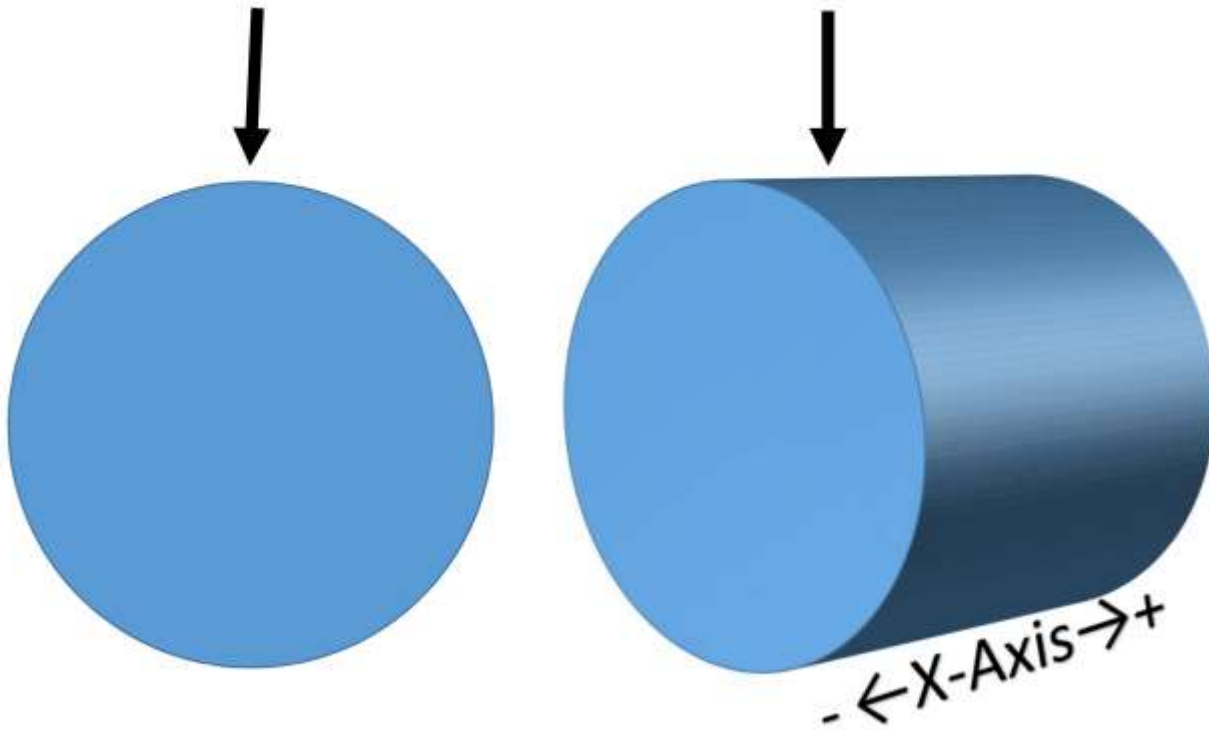
Start by adding a text entity to your part. The program will drop the text automatically into the center of the layout grid.

Now located along the bottom of your software window is a tab named "Manual". Move your cursor overtop of this tab to enable it to slide-out. This tab will allow us to jog the physical axis on the machine to teach the current position of the marking axis to the text or any other desired entities in the program.

Marking Machines



Jog the X-axis → until the marking pin is over top of the marking area you are desiring to mark. Then jog the Y-axis ↓ to bring the pin directly overtop at the Apex or 12 o'clock position of the part.



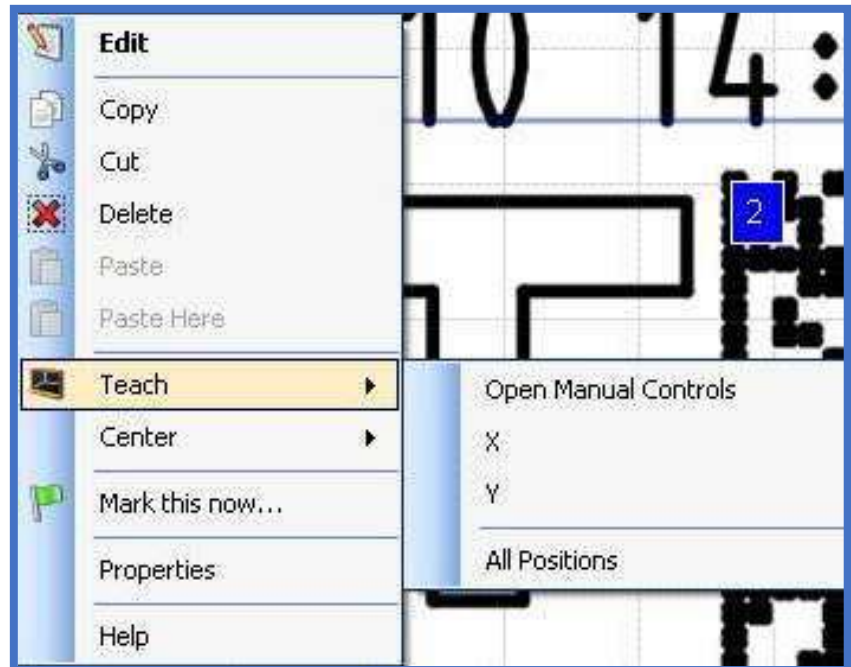


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Then when the pin is directly over top of the desired marking surface, select your text entity back on the marking layout and right-click on it to show the context menu.

Select "Teach → All Positions.

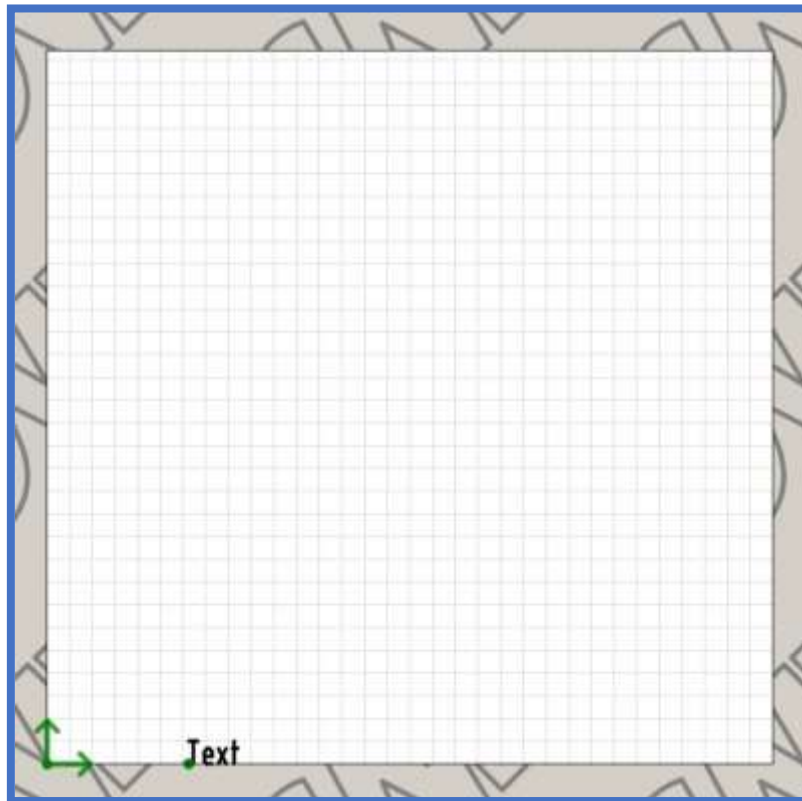
After setting the position of the text to be equal to the current position of the marking axis, you will see that the text on the grid has moved to the relative position of the axis.



Marking Machines

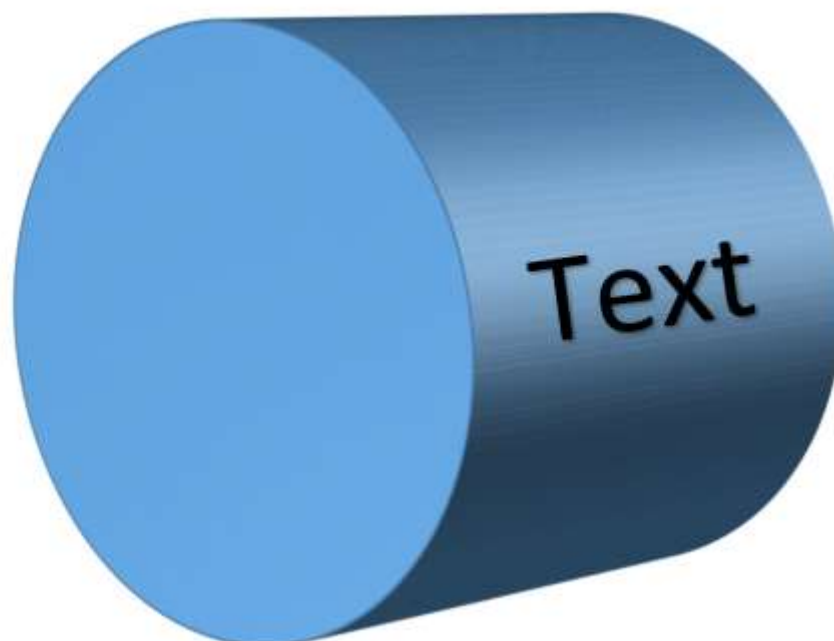


The current position is $X = .7800$, $Y = 1.3248$, $A = 0.000$



With the text in this current orientation moving horizontally, the marking head will rotate the part only slightly to draw the vertical motions of the character Height and the X-axis will move to draw the horizontal motions of the character Width. This will result in the marking along the part as such.

Image shows the part rotated after marking to show location of text.





If you flip the orientation of the text entity to be writing vertically as shown here then the marking will occur around the part using the A-Axis for the majority of the motion drawing the horizontal movement of the character Width and the X-axis will move small motions drawing the vertical height of the character Height.

The resulting mark from this orientation will be as such.

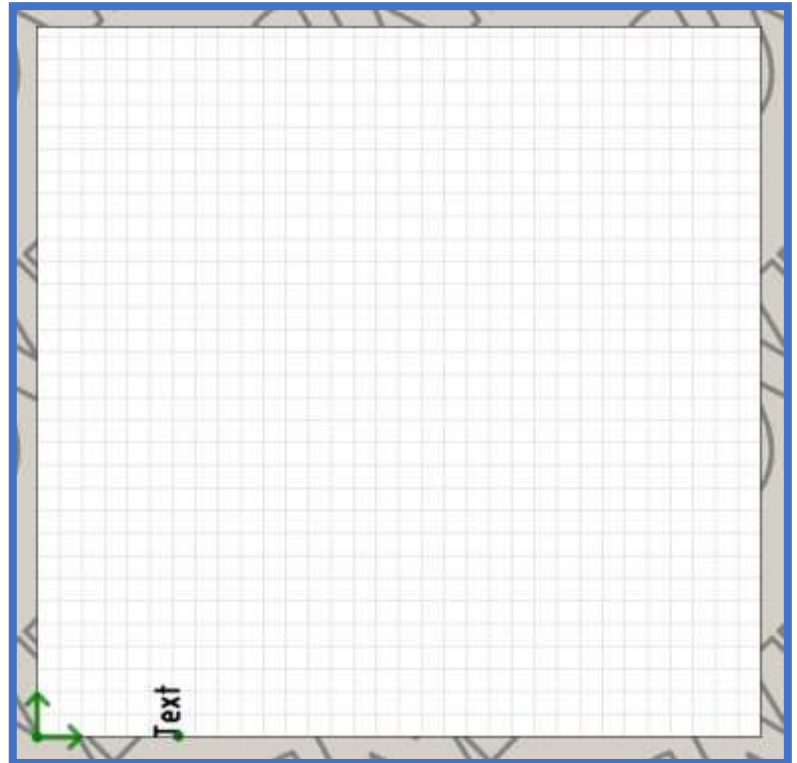


Image shows the part rotated after marking to show location of text.

Finally, to do multiple text entities, just ensure that each one following the initial has the exact same Y-axis coordinate to make sure that the pin stays directly over top of the part and the rotator is all that moves for marking.