


Let's Get Going with Lines!

While I've said before that everything in PM is made up of points (also called Vertices), if you combine two or three points, you get a line. So starting with the basics, we are going to start drawing lines.

And we are going to do a bunch of them. We will start each lesson by turning on two tools that make learning PM a lot easier. The first is to hit the F4 key. This will turn on our grid. The grid is a set of dots that are over the entire pattern area at whatever spacing we set up in our configuration, it can be 1", 1 cm or 5 cm. The default is set to 1. The second key we want to make sure that is on is F5. This is the key that turns on the View Vertices. You will then be able to see little blue and green X's all across your pattern.  You will need to have at least something drawn on your desktop to see them. If you draw your first line and it doesn't have blue X's on either end, hit it again.

Over on the left, you have a bunch of icons; we want the one that is a diagonal line-click on that.

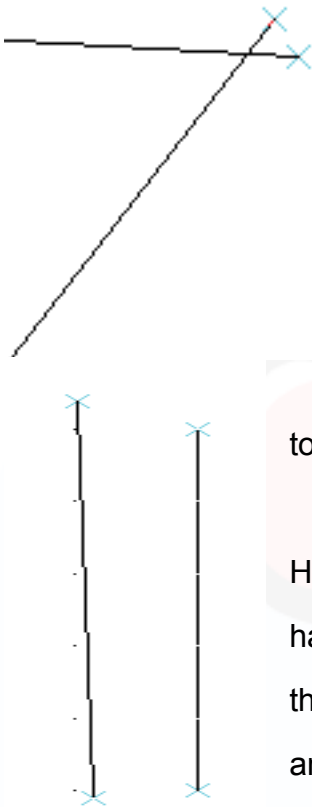


OK, immediately your icons change and the status box on the top right says **Line** in green!

This says you are drawing a line. Now click someplace in the drawing area. Then move your mouse without holding down the mouse button, the line starts. Pick a second point and click-the line finishes, and you have done it! You may have noticed as you drew that the coordinate box showed initially your starting point at the first click and the ending point at the second click. Also while you were doing this you might have noticed that the writing changed at the blue box at the bottom. This tells you what stage of the task you are in and what to do next. Each time you finish, the Line in the Status box turns purple. If at any time you make a mistake, simply right click twice or hit escape to cancel. Draw some more lines! With one of these lines, draw a line at an angle to one of the other lines, so that they share a common point.



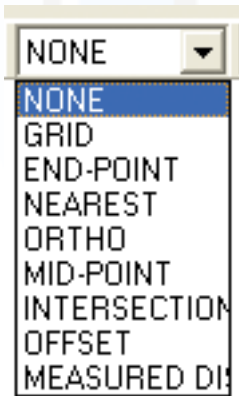
But do they? Remember that the coordinate box shows what's under your mouse-not necessarily the vertex. So we want to ZOOM IN far enough to check. Hit F2, until you can see both vertices



completely. (Or put your mouse cursor on the Command box-that blue box on the bottom and scroll your mouse wheel). If the intersection goes off the screen, you need to pan. The way to remember this is that you are moving the “VIEW” not the screen. If you want to **look** up, hit up-right, hit right, etc. Most likely your lines are not quite touching or have crossed over instead of just touching. This program goes down to 100th's, which is an incredibly tiny increment. In many instances you need to make sure they are touching or crossing, so remember this when you can't get something to cut! Now hit F1 to Zoom out or hit End and your entire drawing will be in the screen.

How do your lines look? Are they completely straight, or do they have little computer bends in them? If they are completely straight, they are either directly vertical or directly horizontal, diagonal lines of any degree will always have little bends in them. Try it, draw a few horizontal and a few vertical lines-then a few diagonal lines. The

vertical and horizontal lines aren't that easy are they? But this program has a way to fix both that and getting your lines to exactly touch! It is called the Snap-To Menu.

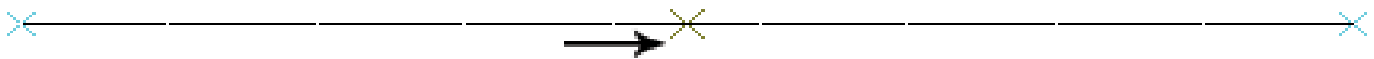


Snap-To Menu

To explore this new feature, we will draw another line. Start out and click on your first point. Now remember that box up in the status bar that says NONE? Go click on the drop down arrow. WHOA, what are all those thing? This is your SNAP-TO menu and it will make your vertex snap to a command. **YOU ONLY WANT TO USE IT IN THE MIDDLE OF A COMMAND,**

THEN TURN IT OFF AT THIS POINT! Because it restricts where you can input points, it can really give you problems. So go up there now and select ORTHO. Move your mouse over the screen, you will notice that in a lot of places the vertex disappears and nothing you can do will put it there. In the SNAP-TO ORTHO, you can only draw straight horizontal or vertical lines. Finish your line and then go back up and set the snap mode to none.

If you wanted to handle that overlap or gap problem in the last paragraph, you could SNAP TO ENDPOINT, either before you started your line, or before you input the second point. Draw one line normally, and then turn on SNAP TO ENDPOINT. You will find that you can only start the second line at the endpoint of the first or another previously existing vertex. This poses a problem if you want to finish the line in a spot that doesn't have a vertex already. So to finish the line, just turn it off and click where you want.



If you want to divide a line in two, you could SNAP-TO MIDPOINT. Again try it and turn it off! SNAP-TO GRID will allow you to snap to a grid point. This could be really useful if you wanted to say draw a straight horizontal or vertical line of a specific length. Simply SNAP TO and then click on a Grid point, and count over-say 5 points. You now have a line of 5 (assuming you've left your grid distance at the default of 1). Look at your coordinate box, and you will see it is true. Your first point will be expressed as the X, Y and then for a horizontal line the second point will be X+5, Y if you drew your line to the right and X-5, Y if you drew the line to the left.

(Snap to Measured Distance only works on a curve and I can only get it to work about half the time, so ignore it for now. The others are either self-explanatory or will be covered later.)

But it can get really irritating counting those dots, especially above 5 or 10 dots, so Gary has

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Enter a point <ESC> to cancel: 0,0  
Second point <ESC> to cancel: 10,0
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given us another way to get things done!

Remember that

writing in the blue? We're going to go back there now!

Click on the LINE icon again. Note what it says, ENTER a point-You can also enter points by typing-so type in a point, expressed as X and Y coordinates (I like 0,0) and Enter Now

it wants a second point. TYPE 10 ,0. You should see a line going over 20 spaces and up 0 spaces. If you can't see it hit END. Play around with this until you are comfortable with the idea of using the X and Y coordinates. Make both straight and diagonal lines.

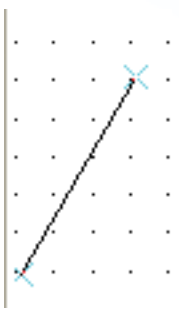
Ok, so everyone is set with the fact that if you want a 10 ¼" (26 cm) horizontal line your first

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Enter a point <ESC> to cancel: 0,0
Second point <ESC> to cancel: @0,10
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point is entered at 0,0 and your second point is either 10.25, 0 or -10.25, 0 (26,0 or -26,0)? If not play some more! <G>

Now sometimes even this can be a pain, with the math, so we have an even better way to do it! There are now *2* ways to do this in Ver. 7. Both the "@" (SHIFT+2) and the "r" keys give us the ability to enter a second point relative to the first point. So you can have any point, any place and even click on it. Then for your second point enter a relative placement. In this tutorial, I will be using the "@" symbol because it is easier to read and differentiate than r. I will say that I now use the "r" in my patterning though.

We are going to add a couple of lines onto one of your existing lines, so choose one and Snap to Endpoint>click on one of the endpoints> Now when it asks for the second point, type in "@0,10" (NOTICE no space between the r and the first number) <enter> You now have a line that goes vertically 10 spaces above your previous line, and your Line command is purple. Unless you turned it off, you are still in SNAP TO ENDPOINT so click on the second point of the previous line and enter @5, 0. If it isn't doing what you think it should be play some more. And if you run into trouble make sure you turn off SNAP-TO to trouble shoot, and after you're done!



Last thing is that some times we don't want a horizontal or vertical line, but an angled line of a specific length. We can do this too! And it is called POLAR COORDINATES in the manual. To accomplish this simply enter @LENGTH<ANGLE

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Command:
Enter a point <ESC> to cancel:
Second point <ESC> to cancel: @8<60
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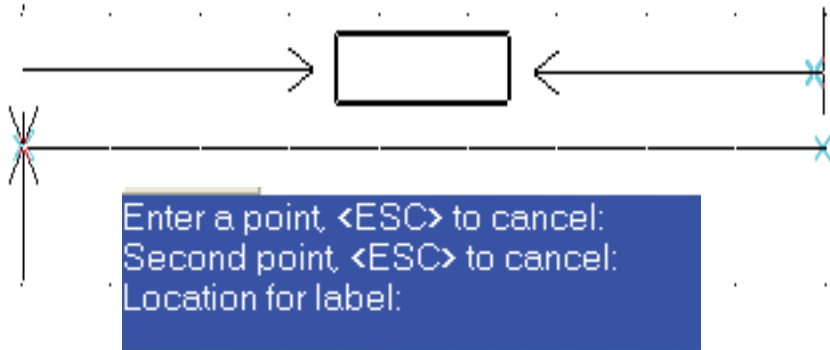
(on a 180 degree plane, so 90 is vertical up and -90 is vertical down). So if I want a 6" (15 cm) line at a 60 degree angle from

my starting point, my command would be @6<60 <enter> (or 15<60 <Enter>). I love playing with starbursts (like those you see on quilts) with this command.

Ok, everyone ready for homework?


See how many of the letters of the alphabet you can make and report in!

Dimension Lines

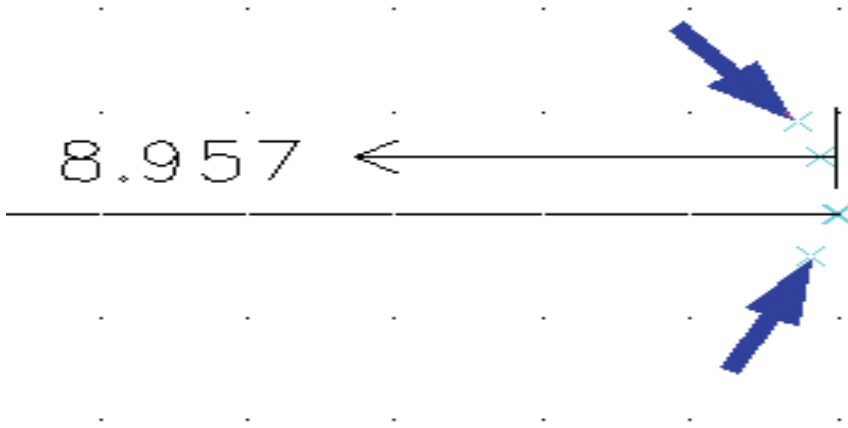


Closely tied into regular lines are “Dimension Lines”. These lines are regular straight lines that act as little rulers and will measure the straight line distance between two points. So pick

out one of the lines that you’ve drawn.

- Select DIM LINE  from the Draw menu or select the DIM LINE icon ,
- And to make sure we are getting the exact measurements, turn on your SNAP-TO ENDPPOINT. This step isn’t absolutely necessary if you are ok with close measurements, but if you are worried about exact, then you won’t get them without using the Snap-To Menu.
- Now, the Blue bar asks us to ENTER A POINT.
- LEFT CLICK to enter one of the endpoints.
- The Blue Bar asks to ENTER THE SECOND POINT. If you look, you will see a tiny dimension line, with an arrow at one end from your first point. Select the other end of the waistband and LEFT CLICK to enter the second point.
- Now the computer would like the LOCATION FOR THE LABEL. The label is the dimension, and if you put it in the middle of the line, it is difficult to read, so move the mouse off to the side, or above or below the line. When you are clear of everything, LEFT CLICK to select and you are done. How did you do?

A last note is that the DIMENSION LINE is represented to the computer as only 2 points; one at



the LABEL, and one on one of the ends. If you are trying to select the DIMENSION LINE and can't get it to highlight, turn on your points and go for either the LABEL or try one of the ends.

If you are getting like me and that is just not readable and

you need it larger, it is easy to alter. Select SETTINGS from the menu bar and then CONFIGURE DEFAULTS>ADVANCED> and look for the box that says DIM SETTINGS. Here you can set the TEXT SIZE (.5 is the default), ARROW SIZE, and OFFSET SIZE. I have my text size at .75 and it is a lot easier for me to read. Now for those with the Home Version or higher, a preference of mine is that rather than leave a whole lot of dimension lines on my drawings to clutter things visually, I prefer to put the number in a circle, and that way I know it is a finished measurement.

Review and Troubleshooting

In this lesson, we actually covered a lot. While the tutorial was about drawing lines and the Snap-To Menu, we covered what Vertices are and what the CORNER VERTICES look like (blue x's). We discussed moving in and out (Zoom) with the F2 and F1 keys, as well as Zoom ALL with the END key to see everything we have. We also played with moving around the desktop with the arrow keys. Lastly we covered Relative Coordinates and Angles. This is where we know where we want a horizontal or vertical line to start, and end and a quick way to draw them. Unfortunately relative coordinates don't work with curves or vertical lines unless you want to go into more math than I am willing to do and people tell me I rely too much on it already! ☺ So we'll have to cover that in a different lesson.

As far as troubleshooting goes, the BIGGEST problem people have when getting used to this is leaving the Snap-To Menu on! If you just can't get something to work, check your Snap-To Menu and make sure it is set to NONE. A lot of people are also used to