3300M CNC Control
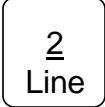# Lines and Arcs

ANILAM
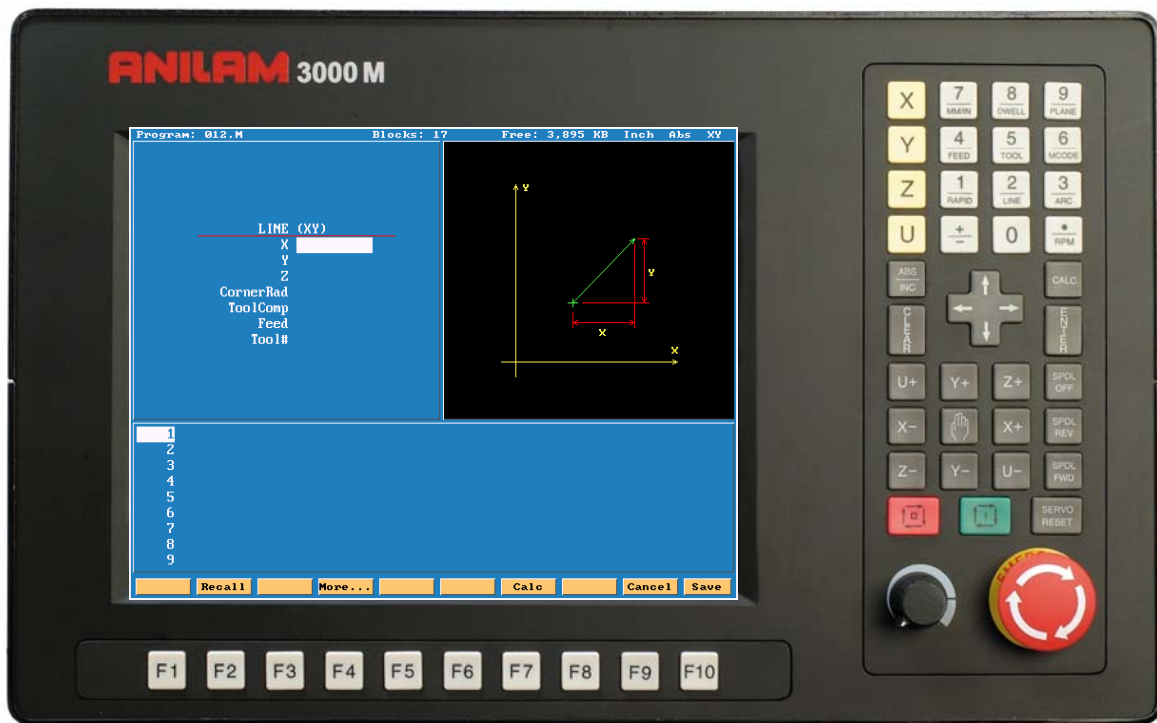
Lines and Arcs

Lines and arcs can be access in two ways .
1. Using hot keys.

1 Rapid	Accesses Rapid menus.
2 Line	Accesses Line menus.
3 Arc	Accesses Arc menus.

2.Using soft keys

| Teach | Draw | Drill | Pocket | Mill | Tool | Calc | Sub | Misc | Exit |

Press **F5**   **Mill**

| | Rapid | Line | Arc | | | More | | Prev | |

Press **F2**   **Rapid**

| | Recall | | More... | | | Calc | | Cancel | Save |

Press **F4**   **More...**

1.

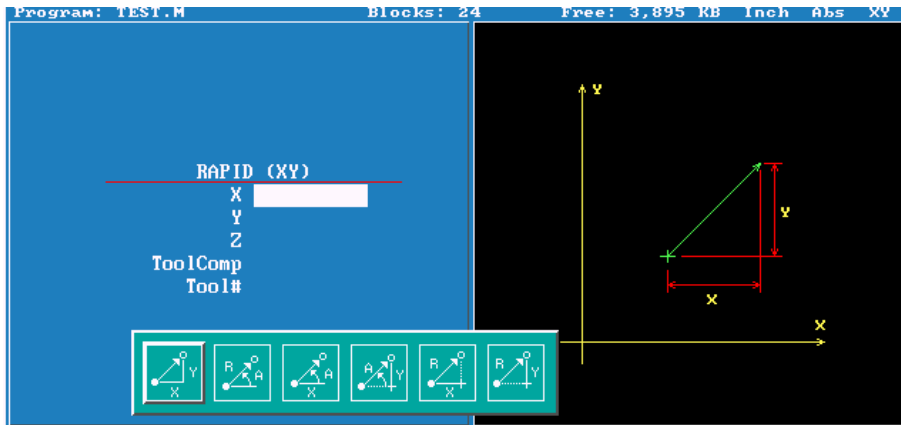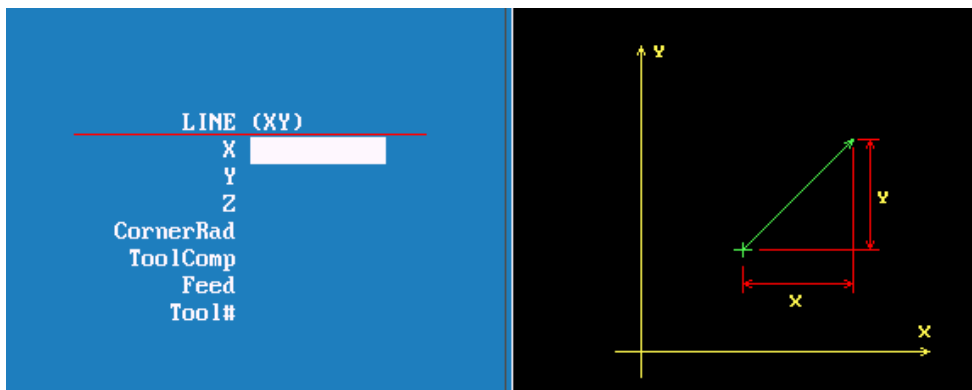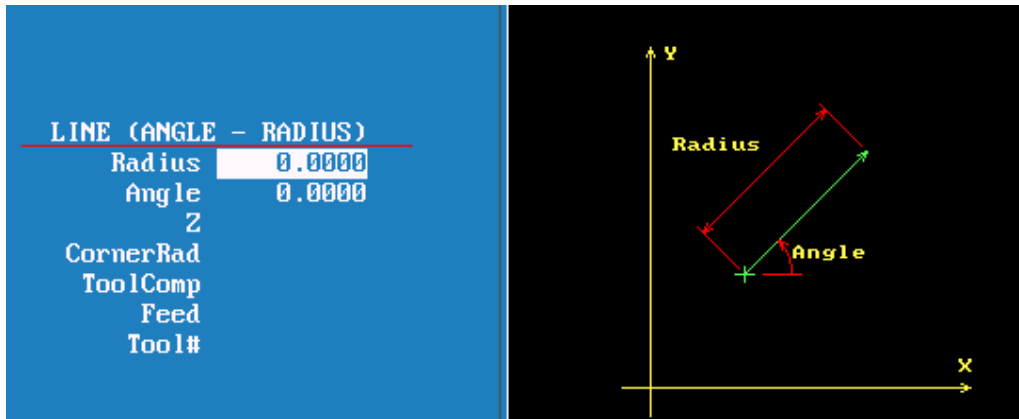Screen will now show 6 icons , these apply to both rapid and line moves.

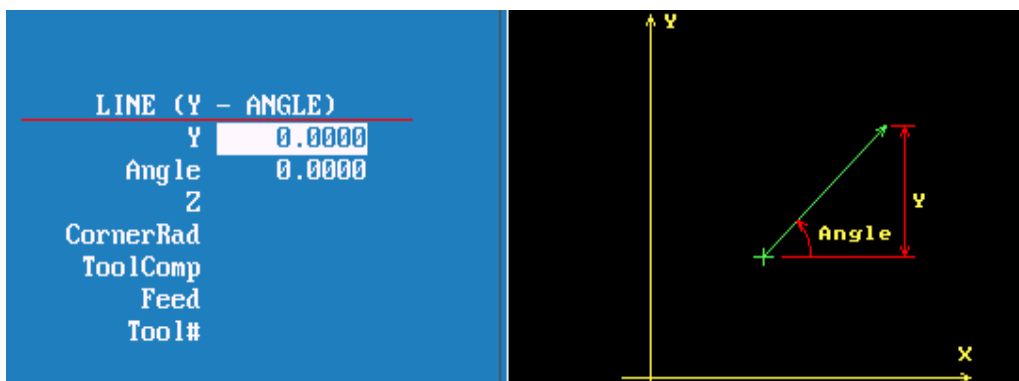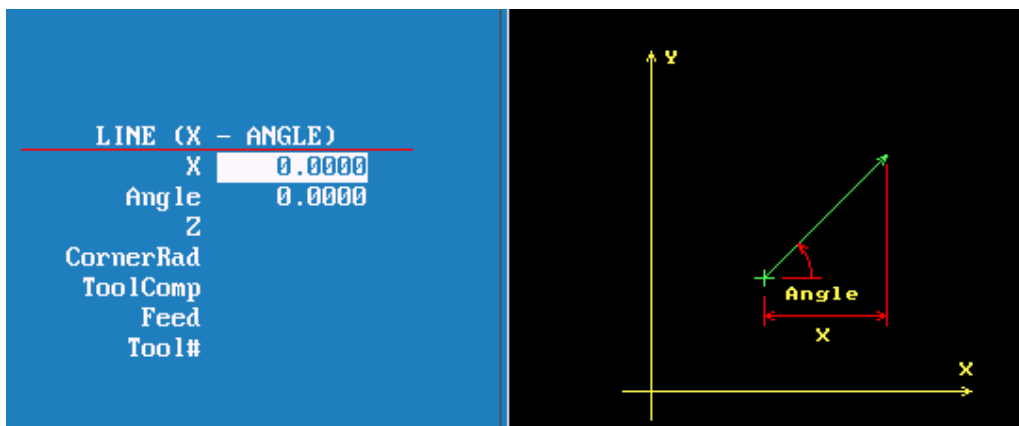**Line** and **Rapid** are the same with one exception CornerRad and feed are not in rapid.

1. Enter coordinates in any or all axis.

2. Using Radius and Angle from current position.

```
LINE (ANGLE - RADIUS)
    Radius      0.0000
    Angle       0.0000
        Z
 CornerRad
  ToolComp
      Feed
     Tool#
```

3. X axis move is an Absolute dimension, the Angle relative to Zero (three O'clock).
   Below it is Y axis and Angle.

```
LINE (X - ANGLE)
        X       0.0000
    Angle       0.0000
        Z
 CornerRad
  ToolComp
      Feed
     Tool#
```

```
LINE (Y - ANGLE)
        Y       0.0000
    Angle       0.0000
        Z
 CornerRad
  ToolComp
      Feed
     Tool#
```
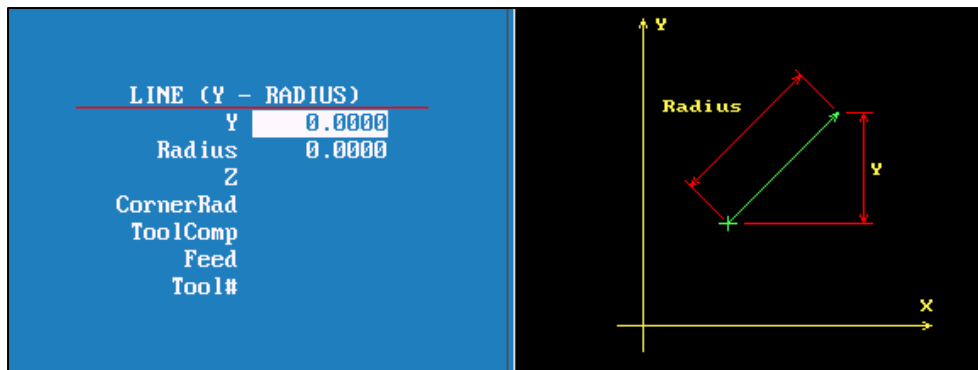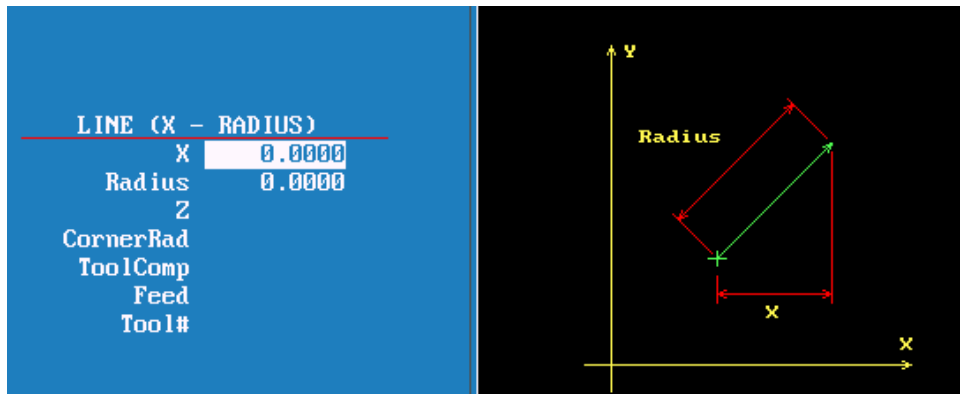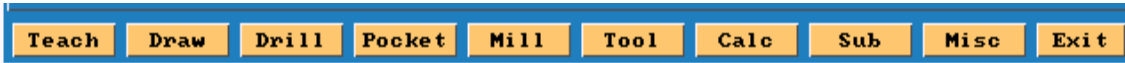
4.Axis and Angle

If programming absolute X or Y dimension is from Part 0 and radius is from current position.

If programming incremental X or Y dimension and radius are from current position.


```
LINE (X - RADIUS)
         X    0.0000
    Radius    0.0000
         Z
 CornerRad
  ToolComp
      Feed
     Tool#
```
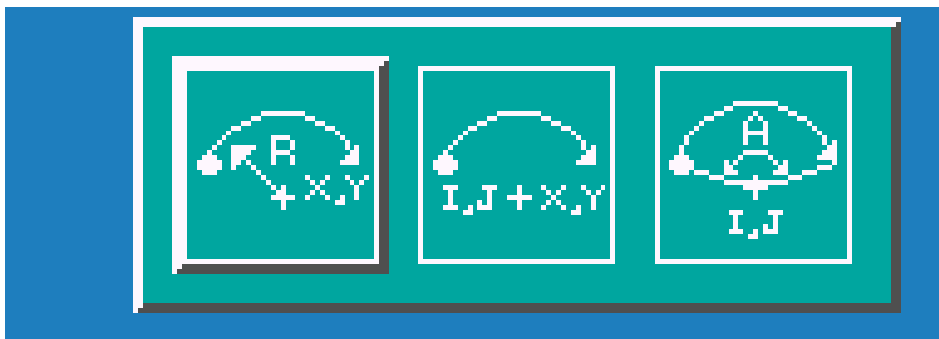


```
LINE (Y - RADIUS)
         Y    0.0000
    Radius    0.0000
         Z
 CornerRad
  ToolComp
      Feed
     Tool#
```

| Teach | Draw | Drill | Pocket | Mill | Tool | Calc | Sub | Misc | Exit |

F5   **Mill**

| | Rapid | Line | Arc | | | More | | Prev | |

F4   **Arc**

| | Recall | | More... | | | Calc | | Cancel | Save |

F4   **More...**

The icon below are for arcs.
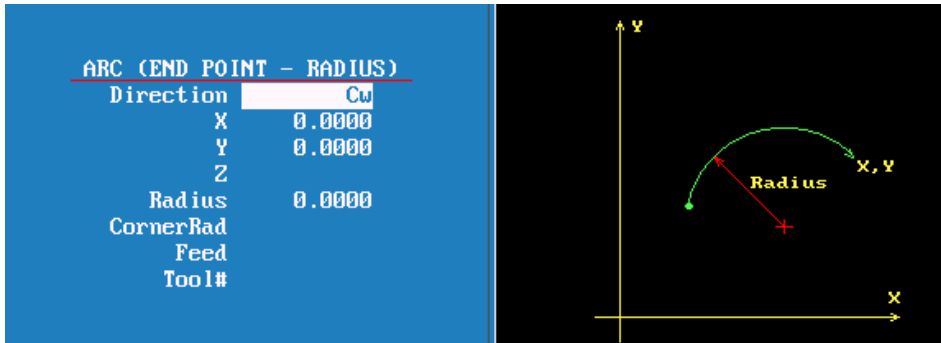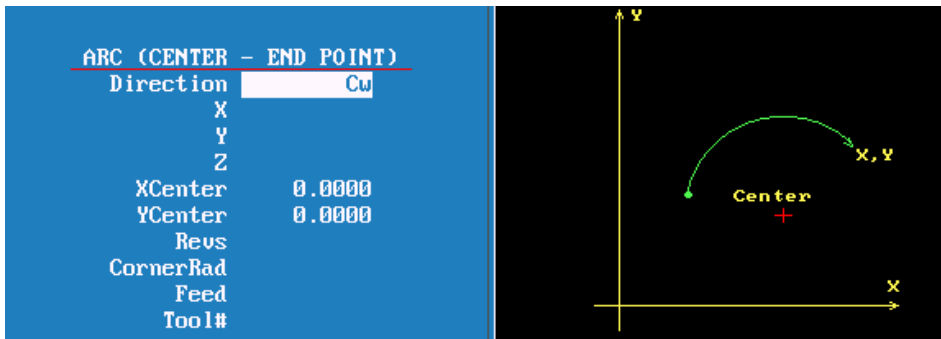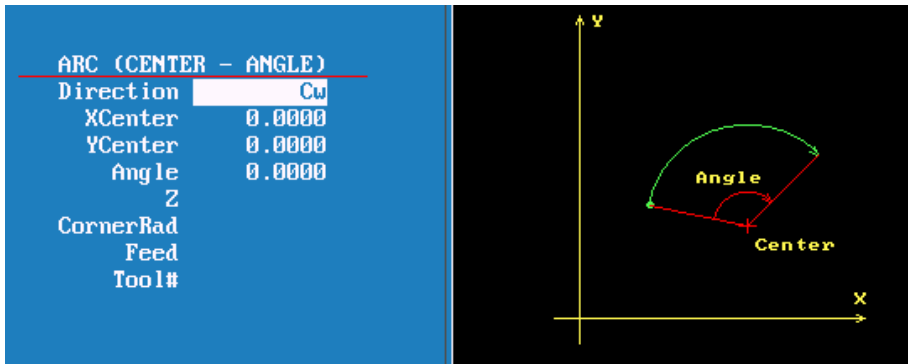

        1   2   3

Tool must be at start point of arc before it is programmed.
Arc may be cut in any plane but must selected, default is XY.

1. This is the default arc , End points for 2 axis and radius.
   Direction is changed by pressing +/- key.
   If programming an arc over 180 deg the radius is entered
   as a minus (-) value.

2. With this arc it is possible to mill a thread .
   Enter X Y and Z end point , X Y center point and Number of Revolutions.
   The pitch of thread is controlled by the Z movement and the number of
   revolutions.

```
ARC (CENTER - ANGLE)
  Direction        Cw
    XCenter     0.0000
    YCenter     0.0000
      Angle     0.0000
          Z
  CornerRad
        Feed
       Tool#
```

3.Center and angle

Programming absolute angle is from 3 o'clock position direction is also critical.

```
1 Rapid       X 0.7071 Y 0.7071
2 Arc Ccw     XCenter 0.0000 YCenter 0.0000 Angle 90.0000
3 <End Of Program>
```

The above lines of program starts at 45 deg's the center is X0, Y0 and go to 90 deg's in a counter clockwise direction, it will go to 12 o'clock, actually only moving 45 deg's. If direction was clockwise it would move 315 deg's.

```
1 Rapid       X 0.7071 Y 0.7071
2 Dim Incr
3 Arc Ccw     XCenter -0.7071 YCenter -0.7071 Angle 90.0000
4 Dim Abs
```

With the above program in incremental Counter clockwise will go from 45 deg's ,were it starting to 125 deg's, so it moves the actual number of degrees programmed. If clockwise is used it will go to -45 deg's , so it still only moves 90 deg's.

| Recall | | More... | | | Calc | | Cancel | Save |

F1   Not used.

F2   **Recall**   Used to recall enters from calculator , will cover later.

F3   Not used.

F4   **More . . .**   Used with Rapid , Line and Arc as shown previously .

F5   Not used.

F6   Not used.

F7   **Calc**   Calculator this will be cover later.

F8   Not used.

F9   **Cancel**   Cancels what is being done .

F10   **Save**   Saves information in to Program.