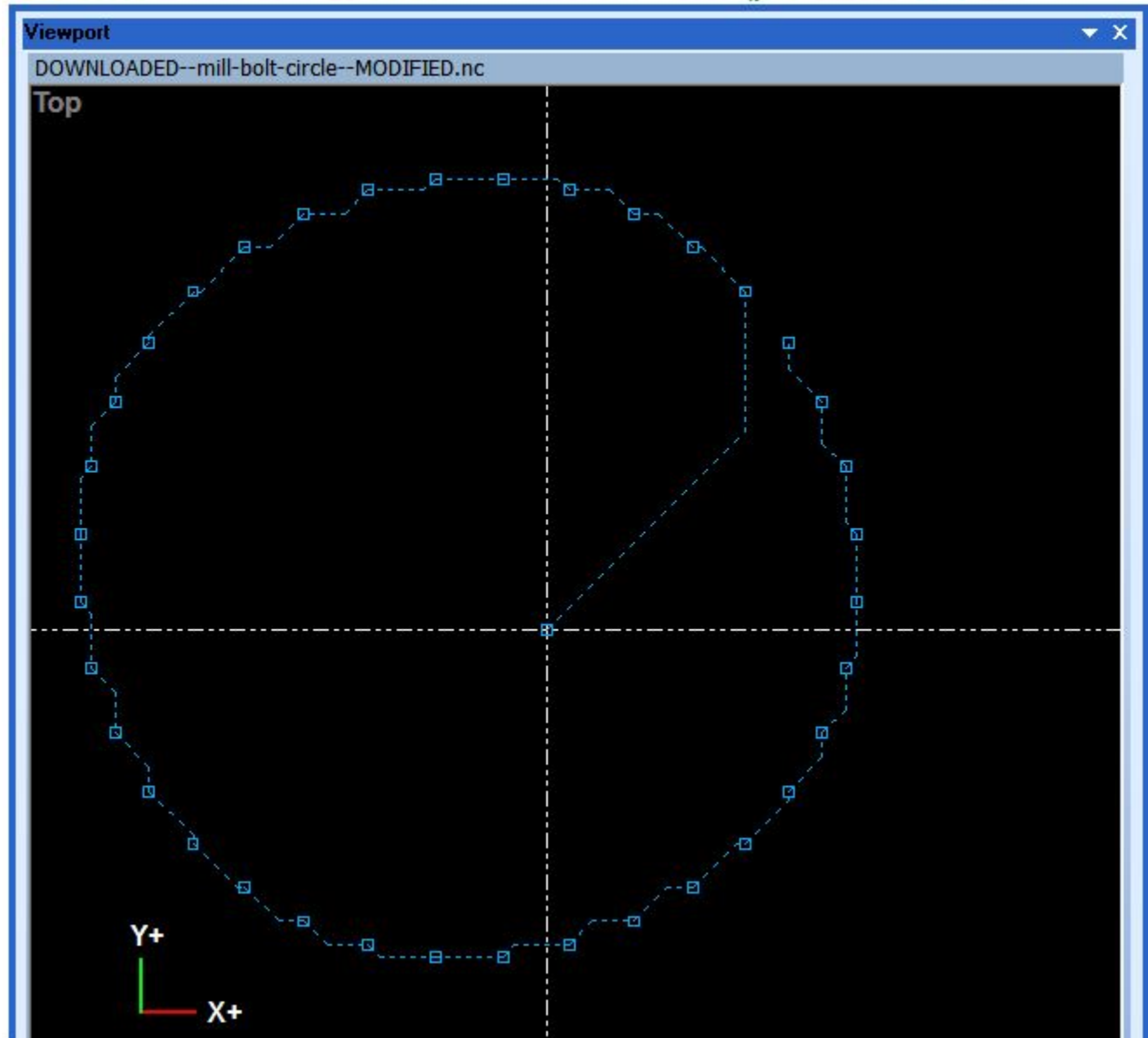


This bolt circle is like most others that can be found on the internet, but has two very unique features. It can start or end at any hole location you choose. I modified the one from CNC Concepts, Inc.

It is not uncommon for a tool to break while doing multiple bolt holes. For example, tool breakage at hole 20 of a 36 hole pattern. Normally the operator would have to re-run from the start with either the tool rubbing through already machined holes or the operator will have to load the new tool after the macro reaches hole 19. This macro allows you to start at any hole, which is far easier and a quicker way to resume machining.

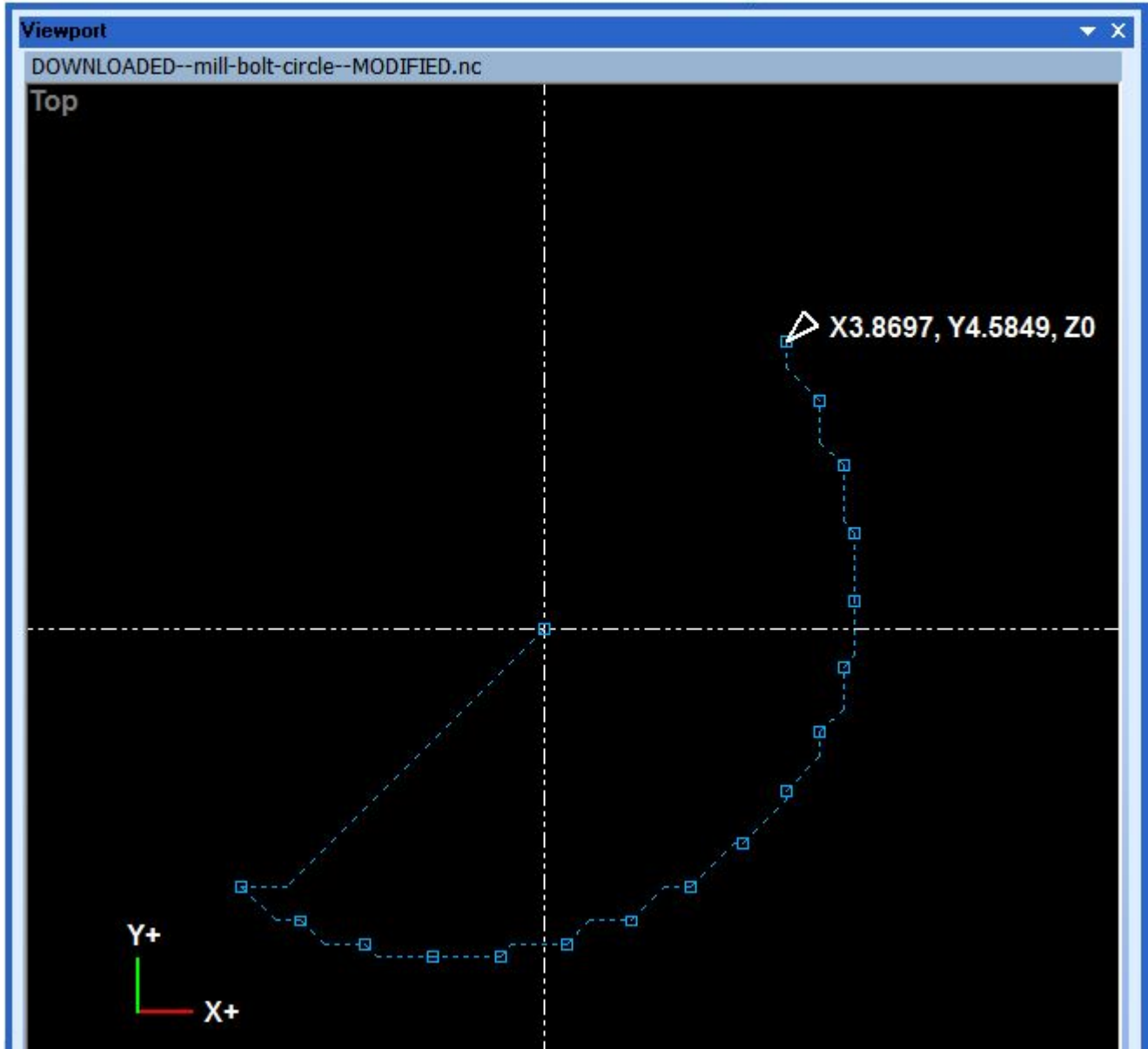
Complete pattern, starting at any angle or center location:

```
G65 P1001 X-1.25 Y1.0 Z0 R6.25 D0.75 A45. H36. C83. Q0.1 T02500 F5.0 S1 E0
```



Resume example:

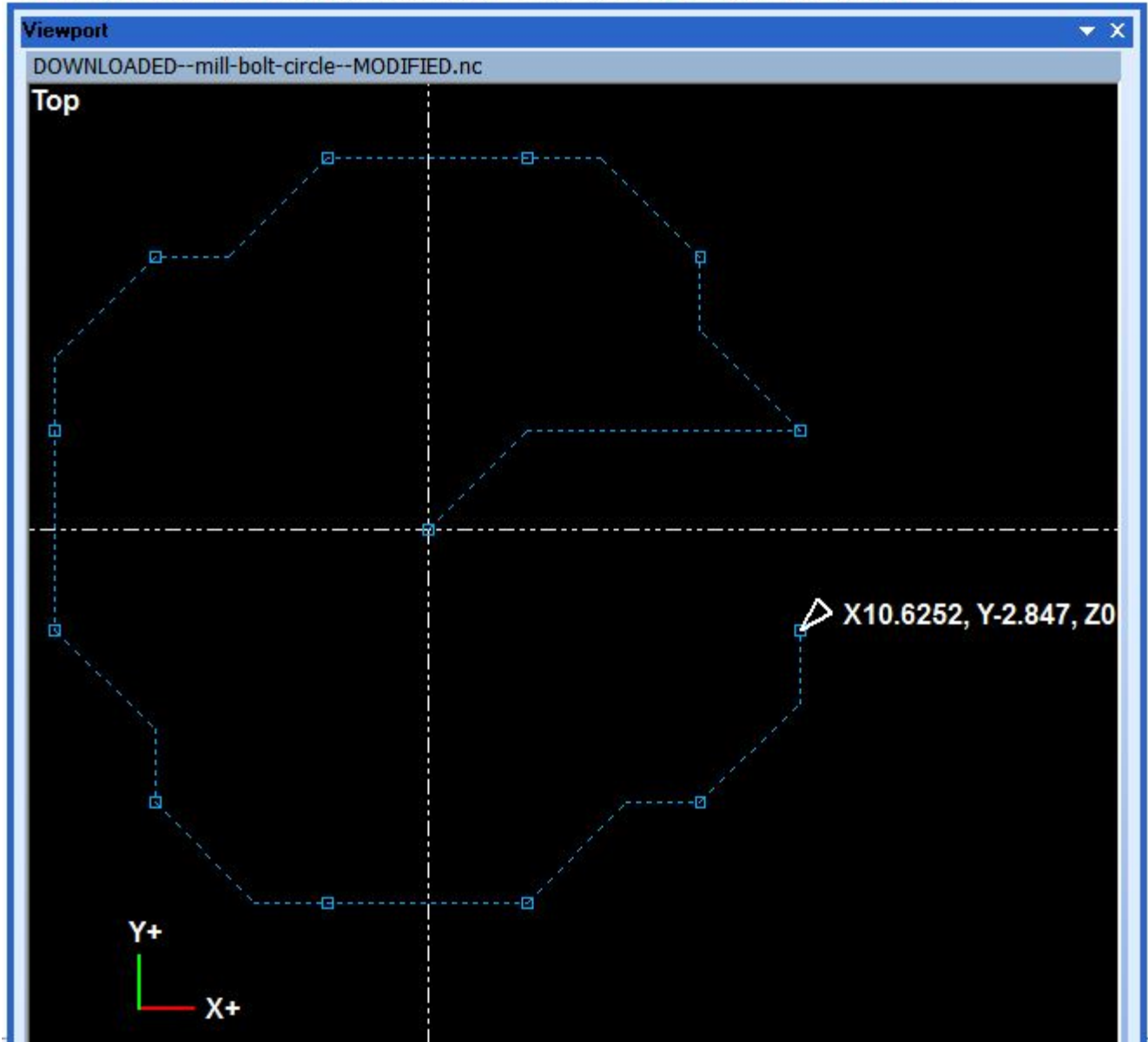
G65 P1001 X-1.25 Y1.0 Z0 R6.25 D0.75 A45. H36. C83. Q0.1 T02500 F5.0 S20 E0



The second unique feature of this macro is that you can use it to do partial hole patterns by changing the start and end hole numbers. For example, a split casting with the split along the x axis, has 12 equally spaced holes. You could machine the pattern with parts assembled together, or do each half independently.

Both halves together, machined at one set up:

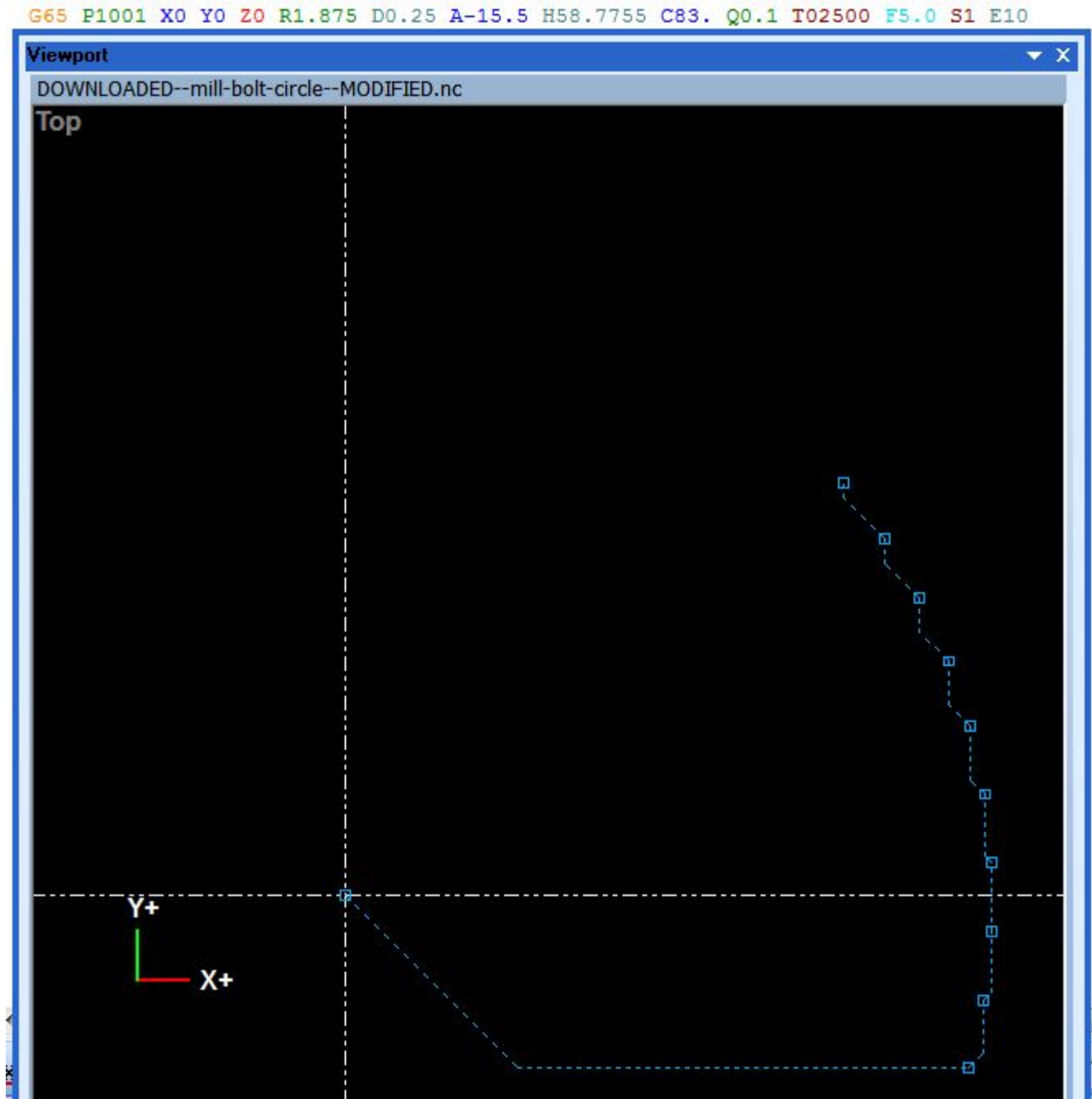
```
G65 P1001 X0 Y0 Z0 R11.0 D1.25 A15. H12. C83. Q0.1 T02500 F5.0 S1 E0
```





Another unique option would be to do a range pattern. Whenever the stop value is not 0, the macro will not force the count to be rounded to a whole number. You can then do any value of spacing. This would require some math beforehand. Take 360 divided by the spacing to get the hole count value.

For example, a 10 hole pattern with a 6.125° spacing starting at -15.5°.



The macro can also do rigid tapping, either left or right hand direction.