

Angular Hole Pattern

The solution to these two projects is in the method of calculating the pitch between holes. Only the program for the spot drill is shown, other tools would use the same programming approach.

➡ PROJECT 27-01a

This version of the project uses the ratio of sides to calculate the X and Y incremental distances between holes:

$$X = 3/7 = 0.4286 \quad Y = 1.5/7 = 0.2143$$

```
(ANGULAR HOLE PATTERN - 27-01A)
(0.5 DIA 90 DEGREE SPOT DRILL - FOR 0.015x45 DEGREES CHAMFER)
N1 G20
N2 G17 G80 G40
N3 G90 G54 G00 X0.5 Y0.375 S1200 M03
N4 G43 Z1.0 H01 M08
N5 G99 G82 R0.1 Z-0.14 P400 F5.0
N6 G91 X0.4286 Y0.2143 L7          (3/7 IS 0.4286 AND 1.5/7 IS 0.2143)
N7 G90 G80 Z1.0 M09
N8 G28 Z1.0 M05
N9 M01
...
%
```

➡ PROJECT 27-01b

This project version uses trigonometry to calculate the X and Y incremental distances between holes:

$$X = 0.482 \times \cos 25 = 0.4368 \quad Y = 0.482 \times \sin 25 = 0.2037$$

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(ANGULAR HOLE PATTERN - 27-01B)
(0.5 DIA 90 DEGREE SPOT DRILL - FOR 0.015x45 DEGREES CHAMFER)
N1 G20
N2 G17 G80 G40
N3 G90 G54 G00 X0.5 Y0.375 S1200 M03
N4 G43 Z1.0 H01 M08
N5 G99 G82 R0.1 Z-0.14 P400 F5.0
N6 G91 X0.4368 Y0.2037 L7          (0.482xCOS25 IS 0.4368 AND 0.482xSIN25 IS 0.2037)
N7 G90 G80 Z1.0 M09
N8 G28 Z1.0 M05
N9 M01
...
%
```