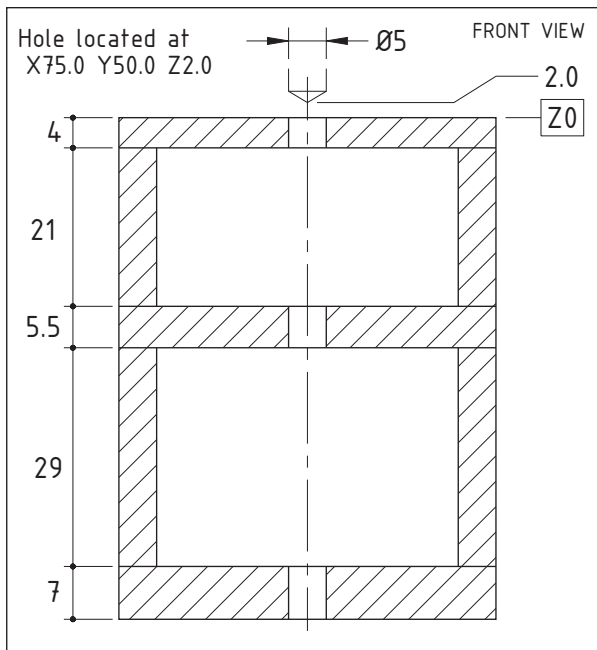


Web drilling - sometimes called the case drilling - is a special drilling application in which the drill breaks through two or more separate layers of material, at the same XY location. These layers, typically plates separated by space, may be part of a fabricated object, such as a welded structure. To drill through the two or more plates (layers) in a single toolpath motion means cutting air in the open space separating the plates. The program listed on this page uses only a single tool path through the plates. The objective of this exercise is to change the program below for a much more efficient cutting.

The following drawing specifies three plates (layers) of material to be drilled at the same location. Use 1 mm breakthrough clearance.



The inefficient version of a single tool path program is similar to other programs for machining a hole:

```
O2606
(WEB DRILLING PROJECT)
(T01 - 5 MM DIA DRILL)

N1 G21
N2 G17 G40 G80
N3 G90 G00 G54 X75.0 Y50.0 S1200 M03
N4 G43 Z20.0 H01 M08
N5 G99 G81 R2.0 Z-69.0 F175.0
N6 G80 G00 Z20.0 M09
N7 G28 Z20.0 M05
N8 G28 X75.0 Y50.0
N9 M30
%
```

(ALL PLATES IN ONE MOTION)

Modify this program to make it as efficient as possible.