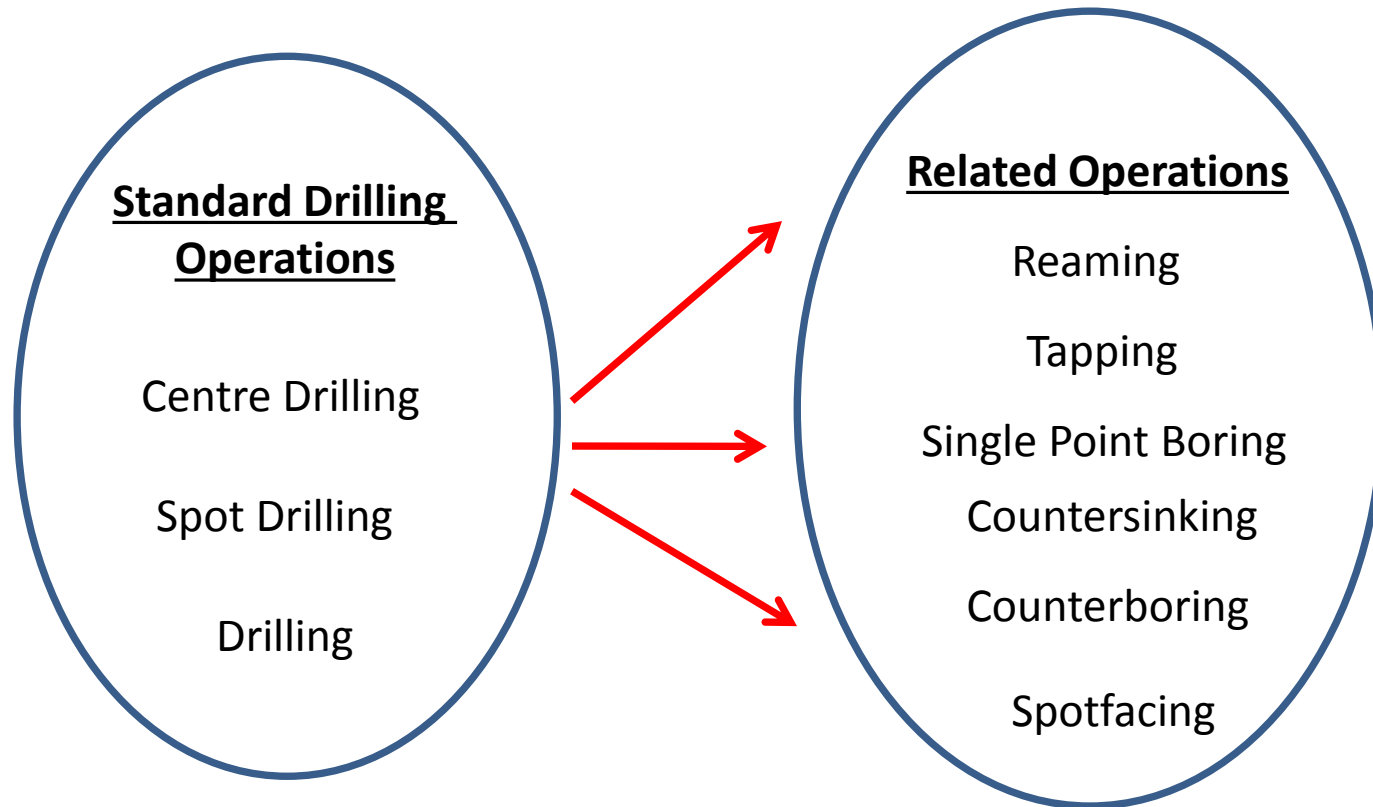


CNC Programming

Canned / Fixed Cycles

Machining Hole Geometry



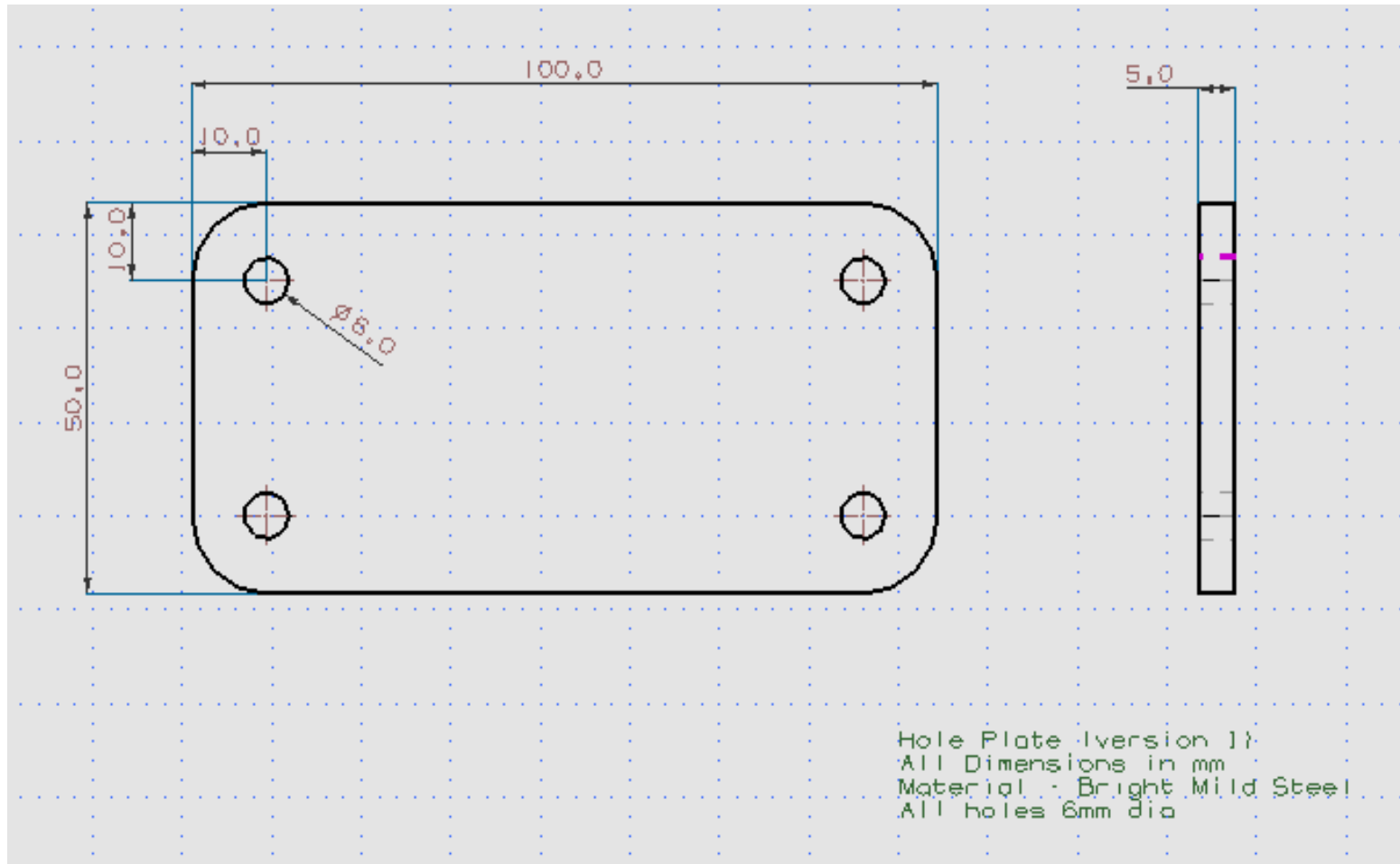
Basic Canned Cycles

Command	Cycle Description
G80	Canned Cycle Cancellation
G81	Drilling Cycle
G83	Peck Drilling Cycle
G84	Tapping Cycle
G98	Returns the tool to the initial Z position after cycle is completed
G99	Returns the tool to the position specified by the R address after cycle is completed

Basic Canned Cycles

Cycle Inputs	Applicability	Input Description
Q	Only applicable to G73 or G83 peck drilling cycles	Milling depth of each peck or turning – amount of shift for boring.
I	Only used when boring	Shift amount in X axis
J	Only used when boring	Shift amount in Y axis
F	Applies to cutting movements during any canned or fixed cycle	Feed rate in mm/min
L	Applies to any canned or fixed cycle	Number of cycles or repetitions at single location. Range between L0 (no repetitions) & L9999 (9999 repetitions)

Canned/Fixed Cycle Example (4 Hole Plate)



Canned/Fixed Cycle Example (4 Hole Plate)

Using G81 - Drilling Cycle

G21 G90 G80 G17 G54

M06 T1

G43 H01 M08

M03 S1500

G00 Z20.0

G98 G81 X10.0 Y40.0 R2.0 Z-5.0 F20.0 L1

X90.0

X10.0 Y10.0

X90.0

G80

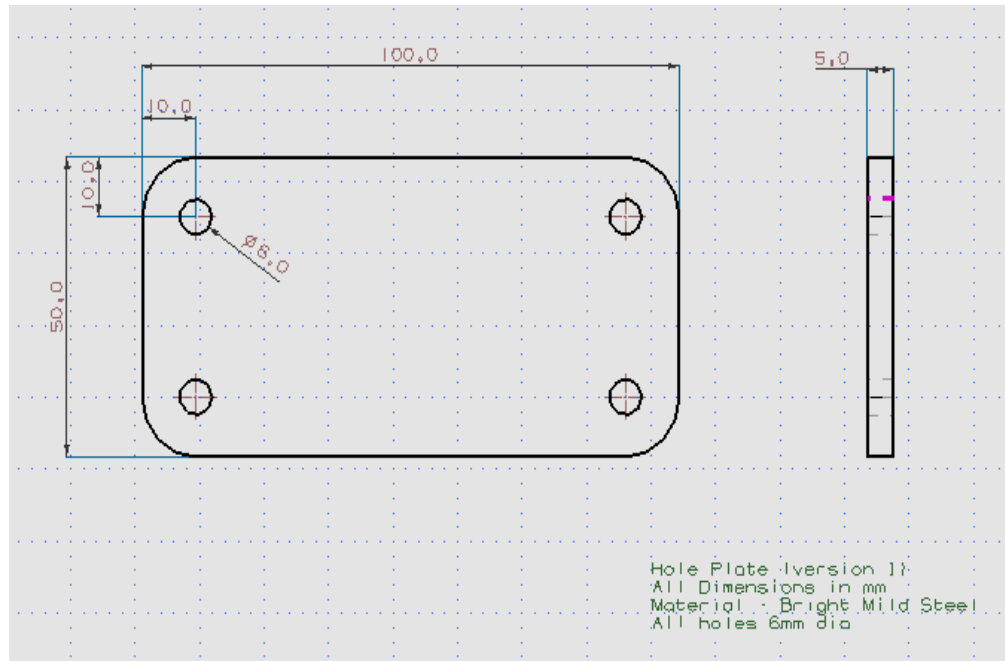
M05

M09

G40

G28

M02



Canned/Fixed Cycle Example (4 Hole Plate)

Using G73 – Deep Hole Drilling Cycle (AKA Peck Drilling)

G21 G90 G80 G17 G54

M06 T1

G43 H01 M08

M03 S1500

G00 Z20.0

G98 G73 X10.0 Y40.0 R2.0 Z-5.0 Q2.0 F20.0 L1

X90.0

X10.0 Y10.0

X90.0

G80

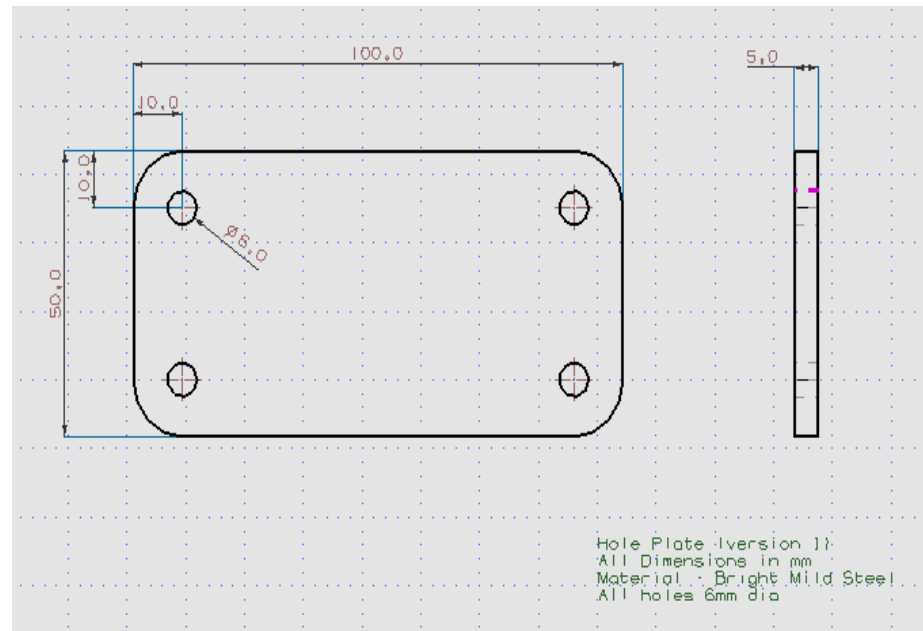
M05

M09

G40

G28

M02



Using Canned / Fixed Cycles on Circular Patterns of Equally Spaced Holes (PCD's)

Command/Word	Description
G70	Pattern of equally spaced holes
I	Distance from current position
J	Angle of 1 st hole on pattern (3 O'clock position = 0°)
L	Number of holes on pattern

- 1) Call the relevant canned/fixed cycle moving the tool to the centre of the hole pattern.
- 2) If you do not require a cycle to be carried out at the centre point, use an L0 command.
- 3) Use the G70 and any relevant I & J coordinates on the subsequent lines along with an L1 to define the position of the holes.
- 4) Use a G80 command to terminate the canned/fixed cycle command.