

POSTFORM.M

name FANUC 15M #####

% 00  
 / 00  
 O >4  
 N >4  
 \$ 00  
 ^ 00  
 & 00  
 \* 00  
 G 2  
 X ->3.>4  
 Y ->3.>4  
 Z ->3.>4  
 A ->3.>4  
 I ->3.>4  
 J ->3.>4  
 K ->3.>4  
 Q ->3>4  
 R ->3.>4  
 P >40  
 F >3.1  
 H >2  
 D >2  
 T >2  
 M >2  
 S >4

SbackDoor SsupressHeader

ModalLetters X Y Z F R # List of letters that are modal  
 ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal  
 Sequence#s N 0 1 1 # Char, freq, incr & start  
 First#? N # Y or N 'Output 1st sequence no.  
 Last#? N # Y or N 'Output last sequence no.  
 HCode X # X or X U 'Horizontal char.  
 VCode Y # Y or Y V 'Vertical char.  
 Dcode Z # Depth char.  
 FeedCode F # Feed rate char.  
 Comment ( ) # Begin End comment char.  
 Spindle 3 4 5 # Cw, ccw & stop m codes  
 Coolant 8 9 7 61 62 63 64 # Flood, Off, Mist and Thru Spindle  
 M codes  
 DComp 41 42 40 # Left, Right & Cancel m codes  
 LComp 43 49 # On & Off codes  
 Feed G01 # Linear move  
 Rapid G00 # Rapid positioning word  
 ArcPlane G 17 18 19 # G19, G18, G17 Arc Plane selection  
 ReturnPlane 98 99 # G98 G99 Return Plane selection  
 Cw G2 # Circular move clockwise  
 Ccw G3 # Circular move counter clockwise

```

Inc/Abs G 91 90                                POSTFORM.M          #Inc& Abs char. & values

CtrCode I J K                                  # I J or R or I J K L
Helical? Y                                     # Y or N 'Spaces between words
Spaces? Y

Incremental? Y                                 # Y or N 'Inc or abs output
CtrIncremental? Y                             # Y or N 'Inc or abs I & J
ByQuadrants? Y                               # Y or N 'Break arcs at quadrants

UppercaseComments? Y                          # Y or N 'Require uppercase

comments

Drill                                          # Drilling canned/manual cycle
G81 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

CSink
G82 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell]
end cancel

Peck                                          # Pecking canned/manual cycle
G83 G[RetPlane] X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate]
end cancel

Tap                                          # Tapping canned/manual cycle
if [Rigid] > 0
G93      G93 to lock Z to spindle rotation.
G84 G[RetPlane] X[H] Y[V] Z[D] P[Dwell] R[Vclear] F[FRate]
else
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
Endif
end cancel

LTap                                          # Left handed tapping cycle
G74 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] Q[VBite]
end cancel

Ream                                          # Reaming canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Bore                                          # Boring canned/manual cycle
G86 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Back                                          # Back boring canned/manual cycle
G87 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Cancel                                        # Cancel a canned/manual cycle
G80
if [Rigid] > 0
G94      Unlock Z if w/ rigid tap.
endif
End

StartCode                                    # Start of the program
%0
O[0]
$[0]
^[0]

```

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&[0] \*[0]  
G17 G40 G80 G90  
End

1stToolChange # First tool change  
T[Tool] M6  
M[Direct] S[Speed]  
G0 G[54] X[H] Y[V]  
G43 Z[D] H[Lcomp]  
M[Cool]  
End

Infeed # Enable cutter comp  
G[Side] X[H] Y[V] D[DComp] F[FRate]  
end

Outfeed # Disable cutter comp  
G1 G40 X[H] Y[V]  
end

ToolChange # Secondary tool changes  
M9  
G49 Z0 M5  
T[Tool] M6  
M[Direct] S[Speed]  
G0 X[H] Y[V]  
G43 Z[D] H[Lcomp]  
M[Cool]  
End

EndCode # End of the program  
M9  
G90 G0 G49 Z0 M5  
X0 Y0  
M30  
%0  
End

Replace "\$" with "(Surfware, Inc.)"  
Replace "^" with "(5703 Corsa Ave)"  
Replace "&" with "(Westlake, Ca."  
Replace "\*" with "91362)"

name HAAS VF Series #####

% 00  
/ 00  
O >4  
N >4  
G >2  
g >2 G  
X ->3.>4  
Y ->3.>4  
Z ->3.>4  
I ->3.>4  
J ->3.>4  
K ->3.>4  
Q ->3.>4  
R ->3.>4  
P >40  
F >3.1  
H >2  
D >2

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T >2  
S >4  
M >2

SbackDoor SsupressHeader

```

ModalLetters X Y Z F          # List of letters that are modal
ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal
Sequence#s N 0 1 1          # Char, freq, incr & start
First#? N                    # Y or N 'Output 1st sequence no.
Last#? N                      # Y or N 'Output last sequence no.

HCode X                      # X or X U 'Horizontal char.
VCode Y                      # Y or Y V 'Vertical char.
Dcode Z                      # Depth char.
FeedCode F                   # Feed rate char.

Comment ( )                  # Begin End comment char.

Spindle 3 4 5                # Cw, ccw & stop m codes
Coolant 8 9 7 61 62 63 64   # Flood, Off, Mist and Thru Spindle

M codes
DComp 41 42 40              # Left, Right & Cancel m codes
LComp 43 49                 # On & Off codes

Feed G1                      # Linear move
Rapid G0                    # Rapid positioning word
ArcPlane G 17 18 19         # G17, G18, G17 Arc Plane selection
ReturnPlane 98 99          # G98 G99 Return Plane selection

Cw G2                       # Circular move clockwise
Ccw G3                      # Circular move counter clockwise

Inc/Abs G 91 90            # Inc & Abs char. & values

CtrCode I J K              # I J or R or I J K L
Helical? Y

Spaces? Y                   # Y or N 'Spaces between words

Incremental? N              # Y or N 'Inc or abs output
CtrIncremental? Y          # Y or N 'Inc or abs I & J
ByQuadrants? N             # Y or N 'Break arcs at quadrants

UppercaseComments? Y      # Y or N 'Require uppercase

comments

Drill                        # Drilling canned/manual cycle
G81 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

CSink
G82 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell]
end cancel

Peck                        # Pecking canned/manual cycle
G83 G[RetPlane] X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate]

```

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```

end cancel

Tap                                     # Tapping canned/manual cycle
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[Frate] Q[VBite]
end cancel

LTap                                     # Left handed tapping cycle
G74 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Ream                                     # Reaming canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Bore                                     # Boring canned/manual cycle
G86 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Back                                     # Back boring canned/manual cycle
G87 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Cancel                                  # Cancel a canned/manual cycle
G80
end

StartCode                               # Start of the program
%0
O[Program#]
"(HAAS VF SERIES)"
End

1stToolChange                           # First tool change
G0 G17 G20 G40 G80 G94
"G28 G91 Z0 M19"
T[Tool] M6
M1
G0 G90 X[H] Y[V] G[Work] S[Speed] M[Direct]
G43 Z[D] H[Lcomp]
M[Cool]
End

Infeed                                  # Enable cutter comp
G[Side] X[H] Y[V] D[DComp] F[FRate]
end

Outfeed                                  # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

ToolChange                               # Secondary tool changes
M9
"G0 G28 G91 Z0 M19"
M1
T[Tool] M6
M1
G0 G90 G[Work] X[H] Y[V] S[Speed] M[Direct]
G43 Z[D] H[Lcomp]
M[Cool]
End

EndCode                                  # End of the program

```

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```
"M9"
"G0 G28 G91 Z0"
"G28 G91 Y0 M19"
M30
%0
End
```

```
name HAAS VF-5 #####
```

```
% 00
/ 00
O 4
N >4
G >2
g >2 G
X ->3.>4
Y ->3.>4
y >2.1 Y
Z ->3.>4
z >2.1 Z
A >3.>4 No-Opt #forces the decimal point
B ->3.>4 No-Opt #forces the decimal point
I ->3.>4
J ->3.>4
K ->3.>4
Q ->3.>4
R ->3.>4
P >40
F >3.1
H >2
D >2
T >2
S >4
M >2
```

SbackDoor SupressHeader

```
ModalLetters X Y Z F A B R # List of letters that are modal
```

```
ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal
```

```
Sequence#s N 0 1 1 # Char, freq, incr & start
First#? N # Y or N 'Output 1st sequence
```

```
no.
Last#? N # Y or N 'Output last sequence
```

no.

```
HCode X # X or X U 'Horizontal char.
VCode Y # Y or Y V 'Vertical char.
Dcode Z # Depth char.
FeedCode F # Feed rate char.
```

```
Comment ( ) # Begin End comment char.
```

```
Spindle 3 4 5 # Cw, ccw & stop m codes
Coolant 8 9 7 61 62 63 64 # Flood, Off, Mist and Thru Spindle
```

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```

M codes
DComp 41 42 40      # Left, Right & Cancel m codes
LComp 43 49         # On & Off codes

Feed G1             # Linear move
Rapid G0            # Rapid positioning word
ArcPlane G 17 18 19 # G17, G18, G19 Arc Plane selection
ReturnPlane 98 99  # G98 G99 Return Plane selection

Cw G2               # Circular move clockwise
Ccw G3              # Circular move counter clockwise

Inc/Abs G 91 90    # Inc & Abs char. & values

CtrCode I J K      # I J or R or I J K L
Helical? Y

Spaces? Y          # Y or N 'Spaces between words

Incremental? N     # Y or N 'Inc or abs output
CtrIncremental? Y # Y or N 'Inc or abs I & J
ByQuadrants? N    # Y or N 'Break arcs at quadrants

UppercaseComments? Y # Y or N 'Require uppercase

comments

Drill               # Drilling canned/manual cycle
G81 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

CSink
G82 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell]
end cancel

Peck                # Pecking canned/manual cycle
G83 G[RetPlane] X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate]
end cancel

Tap                 # Tapping canned/manual cycle
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

LTap               # Left handed tapping cycle
G74 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Ream                # Reaming canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Bore                # Boring canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Back                # Back boring canned/manual cycle
G87 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Cancel              # Cancel a canned/manual cycle
G80
end

```

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```

StartCode                                     # Start of the program
%0
O[Program#]
G17 G40 G80 G90
End

1stToolChange                               # First tool change
N[Block] T[Tool] M6
G0 G90 G[WORK] X[H] Y[V] A[ROTANGLE] S[Speed] M[Direct]
G43 Z4.0 H[Lcomp] M[Cool]
T[NextTool]
Z[D]
END

Infeed                                       # Enable cutter comp
G[Side] X[H] Y[V] D[DComp] F[FRate]
end

Outfeed                                       # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

ToolChange                                   # Secondary tool changes
  G28 G91 z0. M19
  G28 y0.
M01
N[Block] T[Tool] M6
G0 G90 G[WORK] X[H] Y[V] A[ROTANGLE] S[Speed] M[Direct]
G43 Z4.0 H[Lcomp] M[Cool]
T[NextTool]
Z[D]
End

Upon [Speed]                                 # Output spindle speed change
S[Speed] M[Direct]
End

Index X                                       # Index the rotary table
G0 Z8.0
G[WORK] X[H] Y[V] A[ROTANGLE]
Z[D]
End

  Unwind                                       # Unwind the rotary table
  G0 G49 G90 Z0
  A0
  G43 Z[D] H[Lcomp] M[Cool]
  G0 X[LastH] Y[LastV] A[LastRotAng]
  G1 Z[LastD]
  End

EndCode                                       # End of the program
G0 G28 G90 z0.0 M9
G28 y0.0
M30
%0
End

```

name okuma MC-V4020 #####

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% 00  
 O 4  
 N >5  
 G >3 Limit 0 399  
 H >4  
 g >2 G  
 X ->4.>4  
 Y ->4.>4  
 Z ->4.>4  
 x ->4.>4 X  
 y ->4.>4 Y  
 z ->4.>4 Z  
 I ->4.>4  
 J ->4.>4  
 K ->4.>4  
 L ->4.>4  
 R ->4.>4  
 F >4.>1 Limit 0.1 1181  
 D >4  
 T >4  
 P >5.>3  
 Q >5.>3  
 S >5 Limit 0 15000  
 M >3 Limit 0 511  
 a >2  
 b >3.3  
 c >3.3  
 d 00

ModalLetters X Y Z F R # List of letters that are modal  
 ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal  
 Sequence#s N 0 1 1 # Char, freq, incr & start  
 First#? N # Y or N 'Output 1st sequence no.  
 Last#? Y # Y or N 'Output last sequence no.  
 HCode X # X or X U 'Horizontal char.  
 VCode Y # Y or Y V 'Vertical char.  
 Dcode Z # Depth char.  
 FeedCode F # Feed rate char.  
 Spaces? Y # Y or N 'Spaces between words  
 Comment ( ) # Begin End comment char.  
 Spindle 3 4 5 # Cw, ccw & stop m codes  
 Coolant 8 9 7 8 8 50 51 # Flood, Off, Mist, Flood Low, Flood  
 High, Thru Low, Thru High M codes  
 LComp 56 53 # On & Off codes  
 DComp 41 42 40 # Left, Right & Cancel m codes  
 # CDC P Q # Cincinnati style DComp vectors  
 Feed G1 # Linear move  
 Rapid G0 # Rapid positioning word  
 Cw G2 # Circular move clockwise  
 Ccw G3 # Circular move counter clockwise  
 ReturnPlane 53 54 # M53 M54 Return Plane selection  
 CtrCode I J # I J or R or I J K L  
 Helical? N  
 CtrIncremental? Y # Y or N 'Inc or abs I & J  
 ByQuadrants? N # Y or N 'Break arcs at quadrants

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```

Inc/Abs G 91 90                # Inc & Abs char. & values
Incremental? N                 # Y or N 'Inc or abs output
UppercaseComments? Y          # Y or N 'Require uppercase comments
WorkDefault 1                  # Work offset register default

Drill                           # Drilling canned/manual cycle
G71 Z[Val1]
G81 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

Peck                             # Pecking canned/manual cycle
G71 Z[Val1]
G83 X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate] M[RetPlane]
end cancel

Tap                             # Tapping canned/manual cycle
G71 Z[Val1]
G84 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

LTap                            # Left handed tapping cycle
G71 Z[Val1]
G74 X[H] Y[V] Z[D] R[Vclear] F[FRate] Q[VBite] M[RetPlane]
end cancel

Ream                             # Reaming canned/manual cycle
G71 Z[Val1]
G85 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

Bore                             # Boring canned/manual cycle
G71 Z[Val1]
G86 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

Back                             # Back boring canned/manual cycle
G71 Z[Val1]
G87 X[H] Y[V] Z[D] R[Vclear] Q.01 F[FRate] M[RetPlane]
end cancel

Cancel                           # Cancel a canned/manual cycle
G80 M54
end

StartCode                       # Start of the program
O[Program#]
"(OKUMA MC-V4020)"
End

1stToolChange                   # First tool change
G0 G17 G20 G40 G80 G90 G94
N[BLOCK] T[Tool] G116
M1
G0 G90 X[H] Y[V] G15 H[work] S[Speed] M[Direct]
G56 " HA " Z[D] T[NextTool] M[Cool]
Set [Val1] to [D]
G56 Z[D] H[Lcomp] T[NextTool] M[Cool]
End

```

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```

Infeed                                     # Enable cutter comp
G1 Z[D] F[Plunge]
G[Side] " DA " X[H] Y[V] F[FRate]
  G[Side] X[H] Y[V] D[DComp] F[FRate]
end

Outfeed                                    # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

ToolChange                                 # Secondary tool changes
G0 G17 G20 G40 G80 G90 G94
N[BLOCK] T[Tool] G116
M1
G0 G90 G15 H[work] X[H] Y[V] S[Speed] M[Direct]
G56 " HA " Z[D] M[Cool]
  G56 Z[D] H[Lcomp] T[NextTool] M[Cool]
if [NextTool] <> [Tool]
  T[NextTool]
endif
End

EndCode                                    # End of the program
"G30 P1"
M2
End

Replace "a" with "(USING TOOL# "
Replace "b" with " DIAM: "
Replace "c" with " C.RAD: "
Replace "d" with ")"
Replace "N00" with "0"

name Makino A55      #####

% 00
/ 00
O 4
N >4
G >2
g >2 G
X ->3.>4
Y ->3.>4
y >2.1 Y
Z ->3.>4
Z >2.1 Z
B ->3.>4 Limit 0 359.999
I ->3.>4
J ->3.>4
K ->3.>4
Q ->3.>4
R ->3.>4
P >43
F >3.2
H >2
D >3
T >2
S >4
M >2
t >2 T
  00 used for replace

```

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@ 00 used for replace  
 \$ 00 used for replace  
 ^ 00 used for replace  
 & 00 used for replace

SbackDoor SsupressHeader

ModalLetters X Y Z F B R

# List of letters that are modal

ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal

Sequence#s N 0 1 1 # Char, freq, incr & start  
 First#? N # Y or N 'Output 1st sequence no.  
 Last#? N # Y or N 'Output last sequence no.

HCode X # X or X U 'Horizontal char.  
 VCode Y # Y or Y V 'Vertical char.  
 Dcode Z # Depth char.  
 FeedCode F # Feed rate char.

Comment ( ) # Begin End comment char.  
 Spaces? Y # Y or N 'Spaces between words

Spindle 3 4 5 # CW, ccw & stop m codes  
 Coolant 8 9 7 26 # Flood, Off, Mist and Thru Spindle M

codes  
 DComp 41 42 40 # Left, Right & Cancel m codes  
 LComp 43 49 # On & Off codes

Feed G1 # Linear move  
 Rapid G0 # Rapid positioning word  
 ArcPlane G 17 18 19 # G17, G18, G19 Arc Plane selection  
 ReturnPlane 98 99 # G98 G99 Return Plane selection

CW G2 # Circular move clockwise  
 Ccw G3 # Circular move counter clockwise

Inc/Abs G 91 90 # Inc & Abs char. & values

CtrCode I J K # I J or R or I J K L  
 Helical? Y

Spaces? Y # Y or N 'Spaces between words

Incremental? N # Y or N 'Inc or abs output  
 CtrIncremental? Y # Y or N 'Inc or abs I & J  
 ByQuadrants? N # Y or N 'Break arcs at quadrants

UppercaseComments? Y # Y or N 'Require uppercase

comments

Drill # Drilling canned/manual cycle  
 G81 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]  
 end cancel

CSink  
 G82 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell]

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```

end cancel

Peck                                # Pecking canned/manual cycle
G83 G[RetPlane] X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate]
end cancel

Tap                                  # Tapping canned/manual cycle
if [Rigid] > 0
M5
S[Speed]
M135
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
else
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
Endif
end cancel

LTap                                  # Left handed tapping cycle
G74 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Ream                                  # Reaming canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Bore                                  # Boring canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Back                                  # Back boring canned/manual cycle
G87 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Cancel                                # Cancel a canned/manual cycle
G0 G80 Z[D]
end

StartCode                            # Start of the program
Set [Val2] to 0
%0
O[Program#]
"(MAKINO A55)"
    0                                Replace #525=84. (PLT CNFM 84. 1, 95.

2)
    @0                                Replace #527=0. (B0)
    $0                                Replace G10 L20 G90 X0.0 Y0.0 Z0.0

B#527
M1
^0                                    # Replace M60 (Pallet Change)
End

1stToolChange                        # First tool change
Set [Val2] To 1
G17 G40 G80 G90
M60
M1
N[Block] T[Tool] M6
M1
    &0                                Replace M#525 (Pallet Confirmation)
G91 G28 z0.0
M11

```

```

                                POSTFORM.M
G0 G90 G[WORK]+400 X[H] Y[V] S[Speed] M[Direct] t[NextTool]
B[ROTANGLE]
M10
G43 Z[D] H[Lcomp] M[Cool]
Set [Val3] To [NextTool]
END

Infeed                                # Enable cutter comp
G1 Z[D] F[Plunge]
G1 G[Side] X[H] Y[V] D[DComp]+100 F[FRate]
end

Outfeed                                # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

Upon [Speed]                            # Output sipindle speed change
M[direct] S[Speed]
End

Index Y                                # Index the rotary table
IF [Val2] = 0 OR [Tool] = [Val3]
""
Else
"G0 G91 G28 Z0"
M11
G90 G[work]+400 X[H] Y[V]
B[ROTANGLE]
M10
G43 Z[D] H[Lcomp] M[Cool]
Endif
End

    Upon [work]                            #output work offset change
    IF [Val2] = 0 OR [Tool] = [Val3]
    ""
    Else
    "G0 G91 G28 Z0"
    M11
    G0 G90 G[WORK]+400 X[H] Y[V]
    B[ROTANGLE]
    M10
    G43 Z[D] H[Lcomp] M[Cool]
    Endif
    End

ToolChange                                # Secondary tool changes
G0 G91 G28 z0.0
M1
N[Block] T[Tool] M6
M1
    &0      Replace M#525 (Pallet Confirmation)
G91 G28 z0.0
M11
G0 G90 G[WORK]+400 X[H] Y[V] S[Speed] M[Direct] t[NextTool]
B[ROTANGLE]
M10
G43 Z[D] H[Lcomp] M[Cool]
Set [Val3] To [NextTool]
END

EndCode                                # End of the program

```

POSTFORM.M

M9  
"G91 G28 Z0.0 M19"  
M1  
M60  
M30  
"%"  
End

Ask [val1] "Enter Safe Z Distance for indexing" "12.0"

Replace "`" with "#525=84. (PLT CNFM 84. 1, 95. 2)"  
Replace "@" with "#527=0. (B0)"  
Replace "\$" with ""  
Replace "&" with "M#525 (Pallet Confirmation)"  
Replace "G401" with "G54.1 P1"  
Replace "G402" with "G54.1 P2"  
Replace "G403" with "G54.1 P3"  
Replace "G404" with "G54.1 P4"  
Replace "G405" with "G54.1 P5"  
Replace "G406" with "G54.1 P6"  
Replace "G407" with "G54.1 P7"  
Replace "G408" with "G54.1 P8"  
Replace "G409" with "G54.1 P9"  
Replace "G410" with "G54.1 P10"  
Replace "G411" with "G54.1 P11"  
Replace "G412" with "G54.1 P12"  
Replace "G413" with "G54.1 P13"  
Replace "G414" with "G54.1 P14"  
Replace "G415" with "G54.1 P15"  
Replace "G416" with "G54.1 P16"  
Replace "G417" with "G54.1 P17"  
Replace "G418" with "G54.1 P18"  
Replace "G419" with "G54.1 P19"  
Replace "G420" with "G54.1 P20"  
Replace "G421" with "G54.1 P21"  
Replace "G422" with "G54.1 P22"  
Replace "G423" with "G54.1 P23"  
Replace "G424" with "G54.1 P24"  
Replace "G425" with "G54.1 P25"  
Replace "G426" with "G54.1 P26"  
Replace "G427" with "G54.1 P27"  
Replace "G428" with "G54.1 P28"  
Replace "G429" with "G54.1 P29"  
Replace "G430" with "G54.1 P30"  
Replace "G431" with "G54.1 P31"  
Replace "G432" with "G54.1 P32"  
Replace "G433" with "G54.1 P33"  
Replace "G434" with "G54.1 P34"  
Replace "G435" with "G54.1 P35"  
Replace "G436" with "G54.1 P36"  
Replace "G437" with "G54.1 P37"  
Replace "G438" with "G54.1 P38"  
Replace "G439" with "G54.1 P39"  
Replace "G440" with "G54.1 P40"  
Replace "G441" with "G54.1 P41"  
Replace "G442" with "G54.1 P42"  
Replace "G443" with "G54.1 P43"  
Replace "G444" with "G54.1 P44"  
Replace "G445" with "G54.1 P45"  
Replace "G446" with "G54.1 P46"  
Replace "G447" with "G54.1 P47"  
Replace "G448" with "G54.1 P48"

POSTFORM.M

name Makino A55 SUBS #####

```
% 00
/ 00
O 4
N >4
G >2
g >2 G
X ->3.>4
Y ->3.>4
y >2.1 Y
Z ->3.>4
z >2.1 Z
B >3.>4 No-Opt      #forces the decimal point
I ->3.>4
J ->3.>4
K ->3.>4
Q ->3.>4
R ->3.>4
F >3.2
H >2
D >2
T >2
S >4
M >2
P >43
t >2 T
` 00 used for replace
@ 00 used for replace
$ 00 used for replace
^ 00 used for replace
& 00 used for replace
```

SbackDoor SupressHeader

ModalLetters X Y Z F B R

# List of letters that are modal

ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal

```
Sequence#s N 0 1 1      # Char, freq, incr & start
First#? N                # Y or N 'Output 1st sequence no.
Last#? N                 # Y or N 'Output last sequence no.
```

```
HCode X                  # X or X U 'Horizontal char.
VCode Y                  # Y or Y V 'Vertical char.
Dcode Z                  # Depth char.
FeedCode F              # Feed rate char.
```

```
Comment ( )             # Begin End comment char.
Spaces? Y               # Y or N 'Spaces between words
```

```
Spindle 3 4 5           # Cw, ccw & stop m codes
Coolant 8 9 7 26        # Flood, Off, Mist and Thru Spindle M
```

```
codes
DComp 41 42 40          # Left, Right & Cancel m codes
LComp 43 49             # On & Off codes
```

```
Feed G1                 # Linear move
Rapid G0                # Rapid positioning word
```

```

ArcPlane G 17 18 19
ReturnPlane 98 99

                                POSTFORM.M
                                # G17, G18, G17 Arc Plane selection
                                # G98 G99 Return Plane selection

Cw G2                            # Circular move clockwise
Ccw G3                           # Circular move counter clockwise

Inc/Abs G 91 90                  # Inc & Abs char. & values

CtrCode I J K                    # I J or R or I J K L
Helical? Y

Spaces? Y                         # Y or N 'Spaces between words

Incremental? N                   # Y or N 'Inc or abs output
CtrIncremental? Y               # Y or N 'Inc or abs I & J
ByQuadrants? N                  # Y or N 'Break arcs at quadrants

UppercaseComments? Y           # Y or N 'Require uppercase

comments

Drill                             # Drilling canned/manual cycle
G81 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

CSink
G82 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell]
end cancel

Peck                               # Pecking canned/manual cycle
G83 G[RetPlane] X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate]
end cancel

Tap                               # Tapping canned/manual cycle
if [Rigid] > 0
M135
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
else
G84 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
Endif
end cancel

LTap                             # Left handed tapping cycle
G74 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Ream                              # Reaming canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Bore                              # Boring canned/manual cycle
G85 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Back                              # Back boring canned/manual cycle
G87 G[RetPlane] X[H] Y[V] Z[D] R[Vclear] F[FRate]
end cancel

Cancel                            # Cancel a canned/manual cycle
G80
end

```

```

StartCode                                POSTFORM.M
"%                                         # Start of the program
O[Program#]
G17 G40 G80 G90
End

1stToolChange                            # First tool change
M1
N[Block] T[Tool] M6
M1
G0 G91 G28 z0.0
  M11
G90 G[WORK] X[H] Y[V] S[Speed] M[Direct] t[NextTool]
B[ROTANGLE]
  M10
G43 Z[val1] H[Lcomp] M[Cool]
Z[D]
END

Infeed                                   # Enable cutter comp
G1 Z[D] F[Plunge]
G[Side] X[H] Y[V] D[DComp] F[FRate]
end

Outfeed                                  # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

Upon [Speed]                             # Output sipindle speed change
M[direct] S[speed]
End

Upon [work]                              #output work offset change
G0 Z[val1]
M11
G0 G90 G[WORK] X[H] Y[V]
B[ROTANGLE]
M10
End

Index X                                  # Index the rotary table
G0 Z[val1]
B[ROTANGLE]
End

ToolChange                               # Secondary tool changes
G0 G91 G28 z0.0 M19
M1
N[Block] T[Tool] M6
M1
G91 G28 z0.0
M11
G0 G90 G[WORK] X[H] Y[V] S[Speed] M[Direct]
B[ROTANGLE] t[NextTool]
M10
G43 Z[val1] H[Lcomp] M[Cool]
Z[D]
END

Subs1st? N

SubStart

```

POSTFORM.M

O[Sub]  
 G0 G90 X[H] Y[V]  
 End

SubEnd  
 M99  
 End

SubCall  
 G0 G90 G[WORK] X[H] Y[V]  
 M98 P[sub]  
 End

Between  
 "G0 G28 G91 Z0 M9"  
 G90  
 M60  
 M30

EndCode # End of the program  
 M9  
 "G91 G28 Z0.0 M19"  
 M99  
 "%"  
 End

Ask [val1] "Enter Safe Z Distance for indexing" "12.0"

Replace "`" with "#525=84. (PLT CNFM 84. 1, 95. 2)"  
 Replace "@" with "#527=0. (B0)"  
 Replace "\$" with ""  
 Replace "^" with "M60 (Pallet Change)"  
 Replace "&" with "M#525 (Pallet Confirmation)"  
 Replace "G54 " with ""  
 Replace "G401" with "G54.1 P1"  
 Replace "G402" with "G54.1 P2"  
 Replace "G403" with "G54.1 P3"  
 Replace "G404" with "G54.1 P4"  
 Replace "G405" with "G54.1 P5"  
 Replace "G406" with "G54.1 P6"  
 Replace "G407" with "G54.1 P7"  
 Replace "G408" with "G54.1 P8"  
 Replace "G409" with "G54.1 P9"  
 Replace "G410" with "G54.1 P10"  
 Replace "G411" with "G54.1 P11"  
 Replace "G412" with "G54.1 P12"  
 Replace "G413" with "G54.1 P13"  
 Replace "G414" with "G54.1 P14"  
 Replace "G415" with "G54.1 P15"  
 Replace "G416" with "G54.1 P16"  
 Replace "G417" with "G54.1 P17"  
 Replace "G418" with "G54.1 P18"  
 Replace "G419" with "G54.1 P19"  
 Replace "G420" with "G54.1 P20"  
 Replace "G421" with "G54.1 P21"  
 Replace "G422" with "G54.1 P22"  
 Replace "G423" with "G54.1 P23"  
 Replace "G424" with "G54.1 P24"  
 Replace "G425" with "G54.1 P25"  
 Replace "G426" with "G54.1 P26"  
 Replace "G427" with "G54.1 P27"  
 Replace "G428" with "G54.1 P28"  
 Replace "G429" with "G54.1 P29"

POSTFORM.M

Replace "G430" with "G54.1 P30"  
 Replace "G431" with "G54.1 P31"  
 Replace "G432" with "G54.1 P32"  
 Replace "G433" with "G54.1 P33"  
 Replace "G434" with "G54.1 P34"  
 Replace "G435" with "G54.1 P35"  
 Replace "G436" with "G54.1 P36"  
 Replace "G437" with "G54.1 P37"  
 Replace "G438" with "G54.1 P38"  
 Replace "G439" with "G54.1 P39"  
 Replace "G440" with "G54.1 P40"  
 Replace "G441" with "G54.1 P41"  
 Replace "G442" with "G54.1 P42"  
 Replace "G443" with "G54.1 P43"  
 Replace "G444" with "G54.1 P44"  
 Replace "G445" with "G54.1 P45"  
 Replace "G446" with "G54.1 P46"  
 Replace "G447" with "G54.1 P47"  
 Replace "G448" with "G54.1 P48"

name Okuma MA-400HA #####

% 00  
 O 4  
 N >5  
 G >3 Limit 0 399  
 H >4  
 g >2 G  
 X ->4.>4  
 Y ->4.>4  
 Z ->4.>4  
 x ->4.>4 X  
 y ->4.>4 Y  
 z ->4.>4 Z  
 B ->3.>4 No-Opt #forces the decimal point  
 I ->4.>4  
 J ->4.>4  
 K ->4.>4  
 L ->4.>4  
 R ->4.>4  
 F >4.>1 Limit 0.1 2362  
 D >4  
 T >4  
 P >5.>3  
 p 4  
 Q >5.>3  
 S >5 Limit 0 15000  
 M >3 Limit 0 511  
 a >2  
 b >3.3  
 c >3.3  
 d 00

ModalLetters X Y Z F B R # List of letters that are modal  
 ModalGs 0 1 2 3 73 74 76 80 81 82 83 84 85 # List of g codes that are modal  
 Sequence#s N 0 1 1 # Char, freq, incr & start  
 First#? N # Y or N 'Output 1st sequence no.  
 Last#? Y # Y or N 'Output last sequence no.  
 HCode X # X or X U 'Horizontal char.  
 VCode Y # Y or Y V 'Vertical char.

```

Dcode Z          POSTFORM.M
FeedCode F      # Depth char.
Spaces? Y       # Feed rate char.
                # Y or N 'Spaces between words

Comment ( )     # Begin End comment char.

Spindle 3 4 5   # Cw, ccw & stop m codes
Coolant 8 9 7 8 8 50 51 # Flood, Off, Mist, Flood Low, Flood

High, Thru Low, Thru High M codes
LComp 56 53     # On & Off codes
DComp 41 42 40 # Left, Right & Cancel m codes

Feed G1         # Linear move
Rapid G0        # Rapid positioning word
Cw G2           # Circular move clockwise
Ccw G3         # Circular move counter clockwise
ReturnPlane 53 54 # M53 M54 Return Plane selection
CtrCode I J    # I J or R or I J K L
Helical? Y     # Y or N 'Inc or abs I & J
CtrIncremental? Y # Y or N 'Break arcs at quadrants
ByQuadrants? Y

Inc/Abs G 91 90 # Inc & Abs char. & values

Incremental? N  # Y or N 'Inc or abs output

UppercaseComments? Y # Y or N 'Require uppercase comments

workDefault 1   # work offset register default

Drill          # Drilling canned/manual cycle
G71 Z[Val1]
G81 X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell] M[RetPlane]
end cancel

CSink
G71 Z[Val1]
G82 X[H] Y[V] Z[D] R[Vclear] F[FRate] P[Dwell] M[RetPlane]
end cancel

Peck          # Pecking canned/manual cycle
G71 Z[Val1]
G83 X[H] Y[V] Z[D] Q[VBite] R[Vclear] F[FRate] P[Dwell] M[RetPlane]
end cancel

Tap          # Tapping canned/manual cycle
if [Rigid] > 0
G71 Z[Val1]
G284 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
else
G71 Z[Val1]
G84 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
endif
end cancel

LTap          # Left handed tapping cycle
G71 Z[Val1]
G74 X[H] Y[V] Z[D] R[Vclear] F[FRate] Q[VBite] M[RetPlane]
end cancel

Ream          # Reaming canned/manual cycle

```

POSTFORM.M

```

G71 Z[Val1]
G85 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

Custom1 # Double Ream canned/manual cycle
G71 Z[Val1]
G85 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
X[H] Y[V]
end cancel

Bore # Boring canned/manual cycle
G71 Z[Val1]
G86 X[H] Y[V] Z[D] R[Vclear] F[FRate] M[RetPlane]
end cancel

Back # Back boring canned/manual cycle
G71 Z[Val1]
G87 X[H] Y[V] Z[D] R[Vclear] Q.01 F[FRate] M[RetPlane]
end cancel

Cancel # Cancel a canned/manual cycle
G80 M54
G0 Z[D]
end

StartCode # Start of the program
O[Program#] # Normal
  01 # Subroutine
"(OKUMA MA-400HA)"
M60
End

1stToolChange # First tool change
G0 G17 G20 G40 G80 G90 G94
N[BLOCK] T[Tool] G116
  Comment " DIA " [tooldiam] " CORNER R "[corner]
comments
"G30 P5"
M1
G0 G90 X[H] Y[V] G15 H[Work] S[Speed] M[Direct]
B[ROTANGLE]
G56 " HA " Z[D] T[NextTool] M[Cool]
Set [Val1] to [D]
End

Infeed # Enable cutter comp
G1 Z[D] F[Plunge]
G[Side] " DA " X[H] Y[V] F[FRate]
  G[Side] X[H] Y[V] D[DComp] F[FRate]
end

Outfeed # Disable cutter comp
G1 G40 X[H] Y[V]
Z[D]
end

ToolChange # Secondary tool changes
G0 G17 G20 G40 G80 G90 G94
M1
N[BLOCK] T[Tool] G116
comments
"G30 P5"
M1

```

```

                                POSTFORM.M
G0 G90 G15 H[work] X[H] Y[V] S[Speed] M[Direct]
B[ROTANGLE]
G56 " HA " Z[D] M[Cool]
Set [val1] to [D]
    G56 Z[D] H[Lcomp] T[NextTool] M[Cool]
if [NextTool] <> [Tool1]
    T[NextTool]
endif
End

    Upon [work]                                #output work offset change
    G0 Z[val1]
    G0 G90 H[WORK] X[H] Y[V]
    B[ROTANGLE]
    End

    Index Y                                    # Index the rotary table
    G0 Z[val1]
    H[work] X[H] Y[V] B[ROTANGLE]
    Z[D]
    End

    # subroutine section Start
Subs1st? N

SubStart
O[sub]
comments
G0 G90 X[H] Y[V]
End

SubEnd
"RTS"
End

SubCall
"G30 P5"
G0 G90 G15 H[WORK] X[H] Y[V]
B[ROTANGLE]
p[sub]
End

Between
G90
M1
M2
End
    # subroutine section End

    EndCode                                    # PROGRAM END; COMMENT OUT FOR SUBS

"G30 P1"
M5
M9
M1
M60
M2
End

```

Replace "p" with "CALL 0"