

# The Hurco Advantage

## NC Merge with Patterns

**HURCO**<sup>®</sup>

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# Fanuc G-Code Program

Supplied NC Program

%  
O2012(HURCO ENGRAVE)  
(MATERIAL - ALUMINUM INCH - 2024)  
( T1000 | 1/8 BALL ENDMILL )  
N100 G20  
N102 G0 G17 G40 G49 G80 G90  
N104 T1000 M6  
N106 G0 G90 X-1.9763 Y.5024 S12000 M3  
N108 Z.25  
N110 Z.2  
N112 G1 Z-.01 F200.  
N114 Y.0024 F20.  
N116 F200.  
N118 Y-.4976 F20.  
N120 G0 Z.24|  
N122 Z.25  
N124 Y.0024  
N126 Z.2  
N128 G1 Z-.01 F200.  
N130 X-1.3691 F20.  
N132 F200.  
N134 Y-.4976 F20.  
N136 G0 Z.24  
N138 Z.25  
N140 Y.0024  
N142 Z.2



# NC Merge Block

Calling Supplied NC Program

%

**02012(HURCO ENGRAVE)**

**(MATERIAL - ALUMINUM INCH - 2024)**

**(T1000 | 1/8 BALL ENDMILL )**

N100 G20

N102 G0 G17 G40 G49 G80 G90

N104 T1000 M6

N106 G0 G90 X-1.9763 Y.5024 S12000 M3

N108 Z.25

N110 Z.2

N112 G1 Z-.01 F200.

N114 Y.0024 F20.

N116 F200

BLOCK	<input type="text" value="3"/>	NC PROGRAM CALL
PROGRAM NUMBER	<input type="text" value="2012"/>	
ARGUMENT TYPE	<input type="text" value="STRING"/>	
ARGUMENT STRING	<div style="border: 1px solid gray; height: 150px;"></div>	

# NC Merge with Patterns

Loop Linear

BLOCK  PATTERN LOOP LINEAR

NUMBER  ANGLE CAL

X DISTANCE  DISTANCE CAL

Y DISTANCE

DATA BLOCKS

1. PATTERN LINEAR (3)

2. NC PROGRAM (P2012)

3. PATTERN END

END OF PROGRAM



# NC Merge with Patterns

Loop Rotate with Scale & Mirror



BLOCK 1 PATTERN MIRROR IMAGE

KEEP ORIGINAL YES ▾

X 1.5000

Y 0.0000

ANGLE 90.000

Mirror Image

Y Axis

Original Pattern

XY Point on Mirror Line

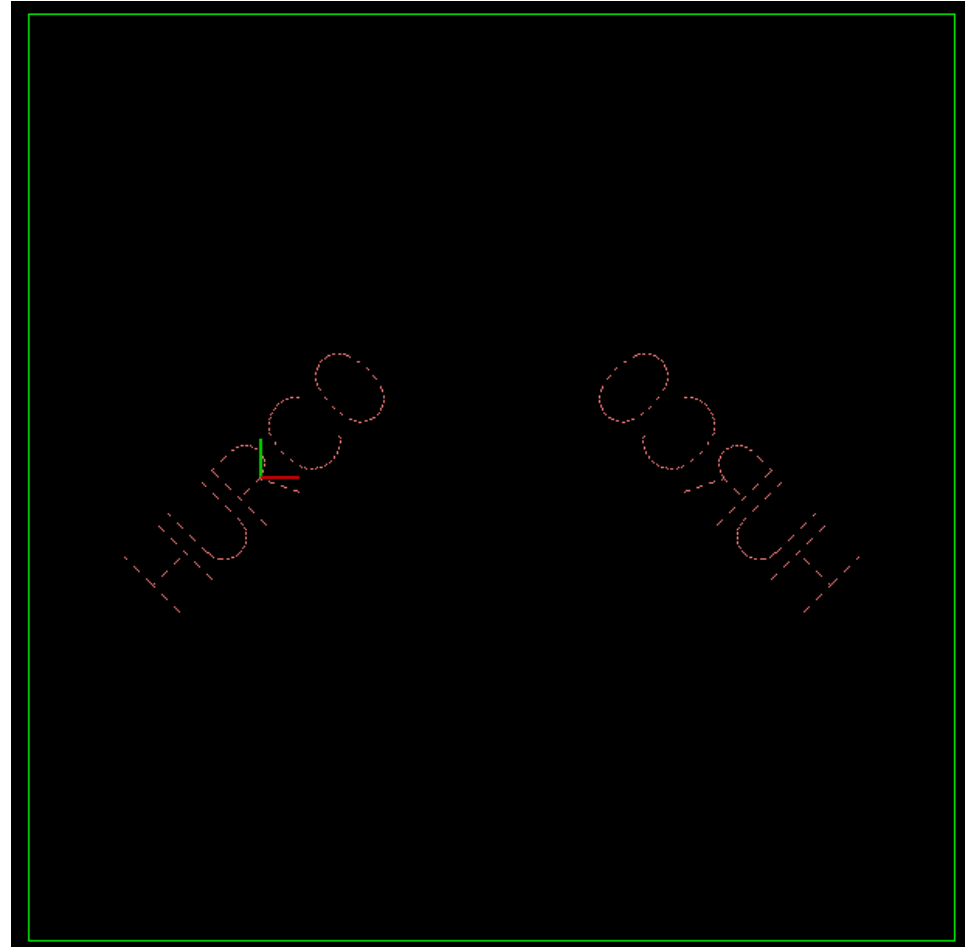
Angle

X Axis

DATA BLOCKS

1. PATTERN MIRROR
2. PATTERN ROTATE (1)
3. PATTERN SCALE
4. NC PROGRAM (P2012)
5. PATTERN END
6. PATTERN END
7. PATTERN END

END OF PROGRAM



BLOCK 2 PATTERN LOOP ROTATE

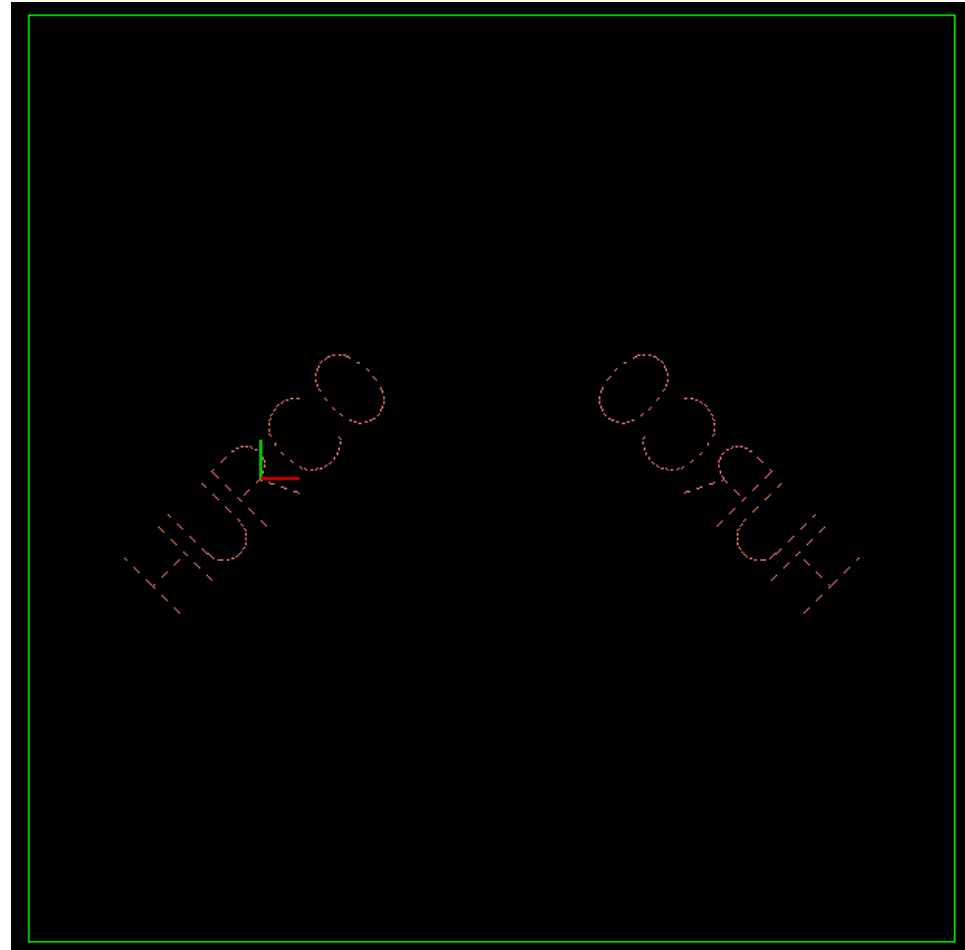
NUMBER 1 START ANGLE 45.000  
 X CENTER 0.0000 ROTATE ANGLE 45.000  
 Y CENTER 0.0000

The diagram illustrates the 'Loop Rotate' function. It shows a coordinate system with X and Y axes. A central point is labeled 'XY Center'. Three yellow rectangles are arranged in a circular pattern around this center. The 'Original Pattern' is shown as a green box. Red arrows indicate the 'Rotate Angle' between the rectangles. A 'Start Angle' is also indicated. The text 'Number = 3' indicates the number of repetitions. The 'XY Reference' is also shown.

DATA BLOCKS

1. PATTERN MIRROR
2. PATTERN ROTATE (1)
3. PATTERN SCALE
4. NC PROGRAM (P2012)
5. PATTERN END
6. PATTERN END
7. PATTERN END

END OF PROGRAM



BLOCK 3 PATTERN SCALE

X REFERENCE	0.0000	X SCALE	0.500
Y REFERENCE	0.0000	Y SCALE	0.500
Z REFERENCE	0.0000	Z SCALE	1.000

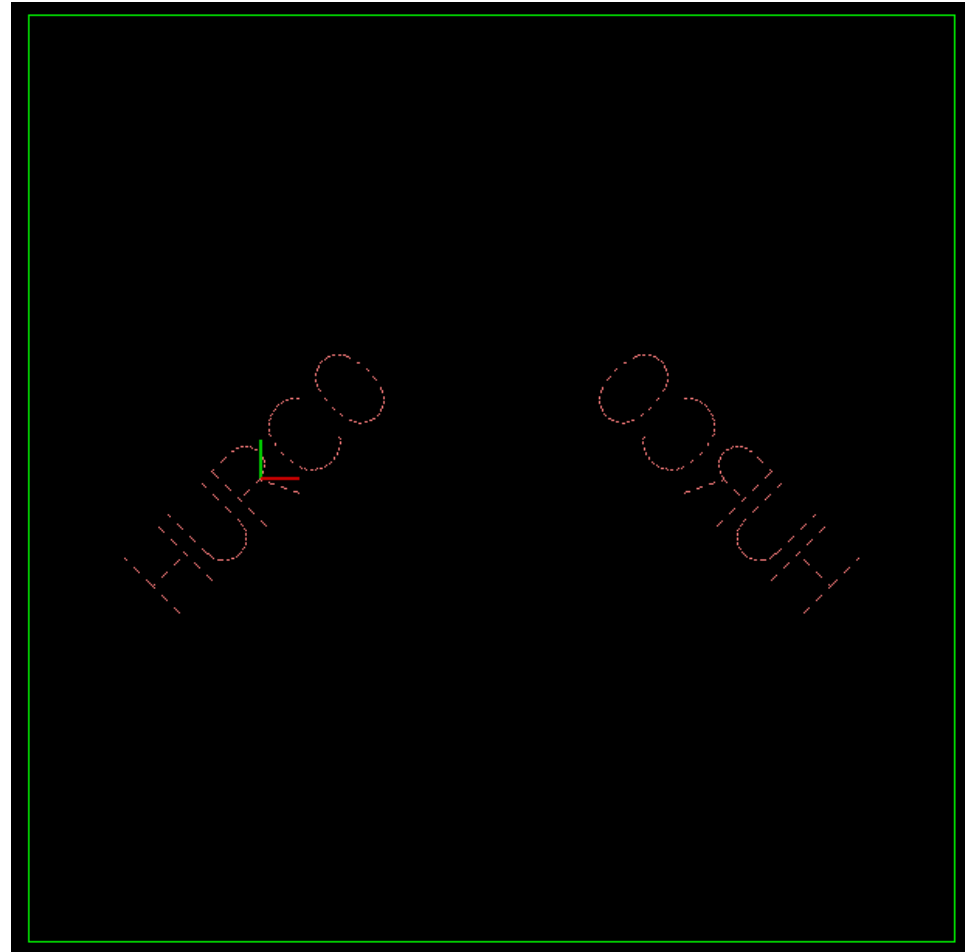
Scale (Z Scale not shown)

X Scale = 3  
Y Scale = 2

DATA BLOCKS

1. PATTERN MIRROR
2. PATTERN ROTATE (1)
3. PATTERN SCALE
4. NC PROGRAM (P2012)
5. PATTERN END
6. PATTERN END
7. PATTERN END

END OF PROGRAM



# NC Merge with Patterns

Scale & Loop Rectangular

BLOCK 1 PATTERN LOOP RECTANGULAR

X NUMBER 4  
 Y NUMBER 5  
 X DISTANCE 1.2500  
 Y DISTANCE 1.0000

*Loop Rectangular*

X Number = 3  
 Y Number = 2

Y Axis  
 X Axis



DATA BLOCKS

1. PATTERN RECTANGULAR (4,5)

2. PATTERN SCALE

3. NC PROGRAM (P2012)

4. PATTERN END

5. PATTERN END

END OF PROGRAM

BLOCK 2 PATTERN SCALE

X REFERENCE	0.0000	X SCALE	0.250
Y REFERENCE	0.0000	Y SCALE	0.250
Z REFERENCE	0.0000	Z SCALE	1.000

Scale (Z Scale not shown)

X Scale = 3  
Y Scale = 2



DATA BLOCKS

1. PATTERN RECTANGULAR (4,5)
2. PATTERN SCALE
3. NC PROGRAM (P2012)
4. PATTERN END
5. PATTERN END

END OF PROGRAM

# NC Merge with Patterns

## 5-Axis Transform Plane

BLOCK 3 TRANSFORM PLANE

ORIENT METHOD ANGLES

ORIGIN POINT

X 0.0000  
Y -3.0000  
Z -3.0000

ROTATION ANGLES

R(X) 90.000  
R(Y) 0.000  
R(Z) 0.000

DATA BLOCKS

- 1. ROTARY POSITION
- 2. NC PROGRAM (P2012)
- 3. TRANSFORM PLANE
- 4. NC PROGRAM (P2012)
- 5. TRANSFORM PLANE END
- 6. TRANSFORM PLANE
- 7. NC PROGRAM (P2012)
- 8. TRANSFORM PLANE END

