

The Hurco Advantage

Using NC Merge with Patterns

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NC Merge Block

Calling Supplied NC Program

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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>	

- Enter the four digit program number into the PROGRAM NUMBER field
- You must change the M02 or M30 at the end of the program to an M99
- Make sure the conversational AND the NC program are open in the program manager screen
- All types of conversational Pattern blocks, or Transform Plane blocks can be used with a merged NC program

IMPORTANT NOTE: if a G54 thru G59 work offset is called in the NC program, that work offset WILL BE USED FOR CUTTING. If you delete the G54 thru G59 callout in the program, the conversational part setup will be used by default.

NC Merge with Patterns

Loop Linear

BLOCK 1 PATTERN LOOP LINEAR

NUMBER 3 ANGLE CAL 90.000

X DISTANCE 0.0000 DISTANCE CAL 2.0000

Y DISTANCE 2.0000

The diagram illustrates the 'Loop Linear' pattern. It shows a coordinate system with X and Y axes. An 'Original Pattern' (green rectangle) is positioned at the origin. Three copies of this pattern are shown as yellow rectangles, arranged in a line. The 'X Distance' is the horizontal distance between the centers of the rectangles. The 'Y Distance' is the vertical distance between the centers. The 'Angle' is the angle between the X-axis and the line connecting the centers of the rectangles. The 'Number = 3' indicates the total number of copies.

DATA BLOCKS

1. PATTERN LINEAR (3)

2. NC PROGRAM (P2012)

3. PATTERN END

END OF PROGRAM



NC Merge with Patterns

Loop Rotate, Scale, & Mirror

BLOCK 1 PATTERN MIRROR IMAGE

KEEP ORIGINAL YES ▾

X 1.5000

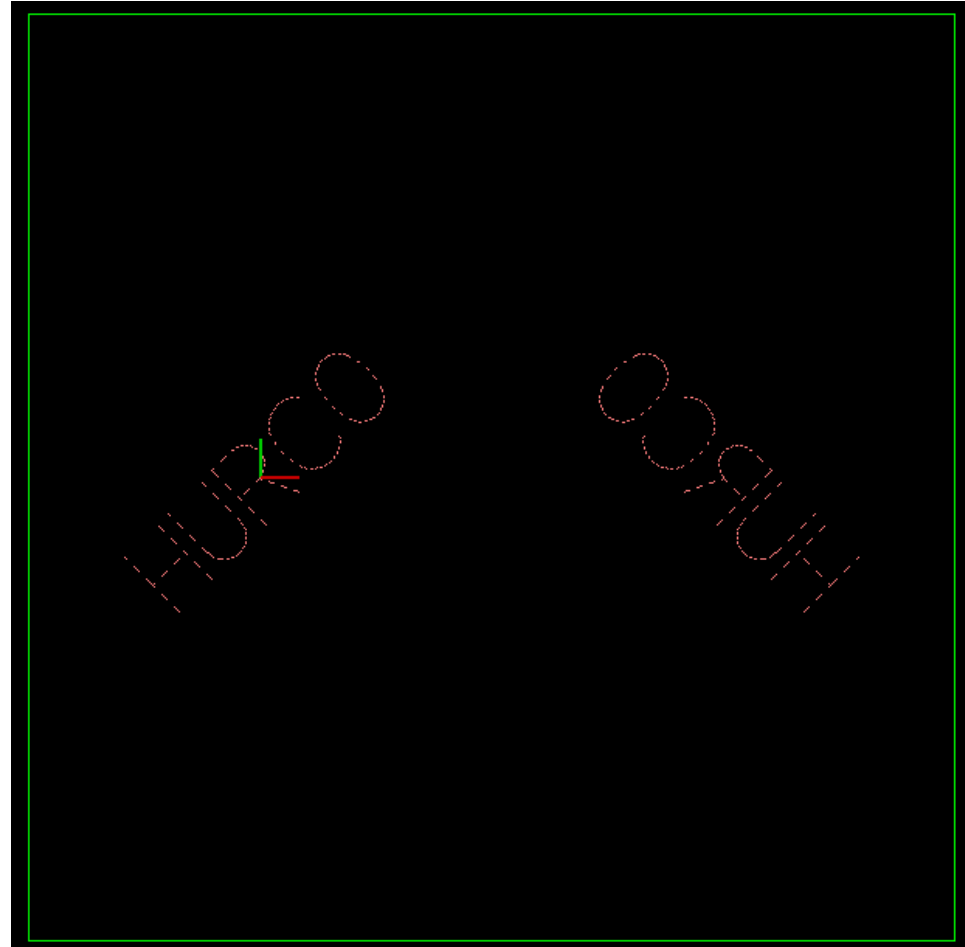
Y 0.0000

ANGLE 90.000

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

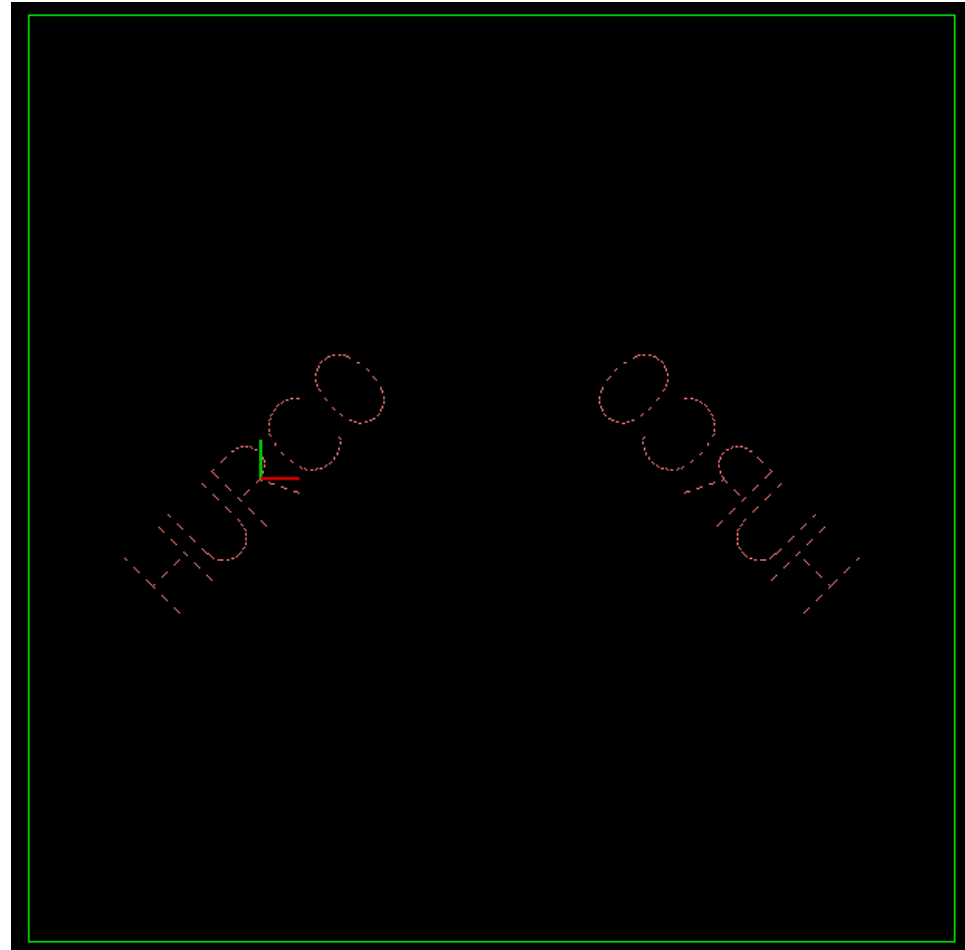
NUMBER 1 START ANGLE 45.000
 X CENTER 0.0000 ROTATE ANGLE 45.000
 Y CENTER 0.0000

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 rectangle. Red arrows indicate the rotation from the original pattern to the three rotated positions. Labels include 'Number = 3', 'Rotate Angle', 'Start Angle', and 'XY Reference'.

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

Y Axis

X Axis

Original Pattern

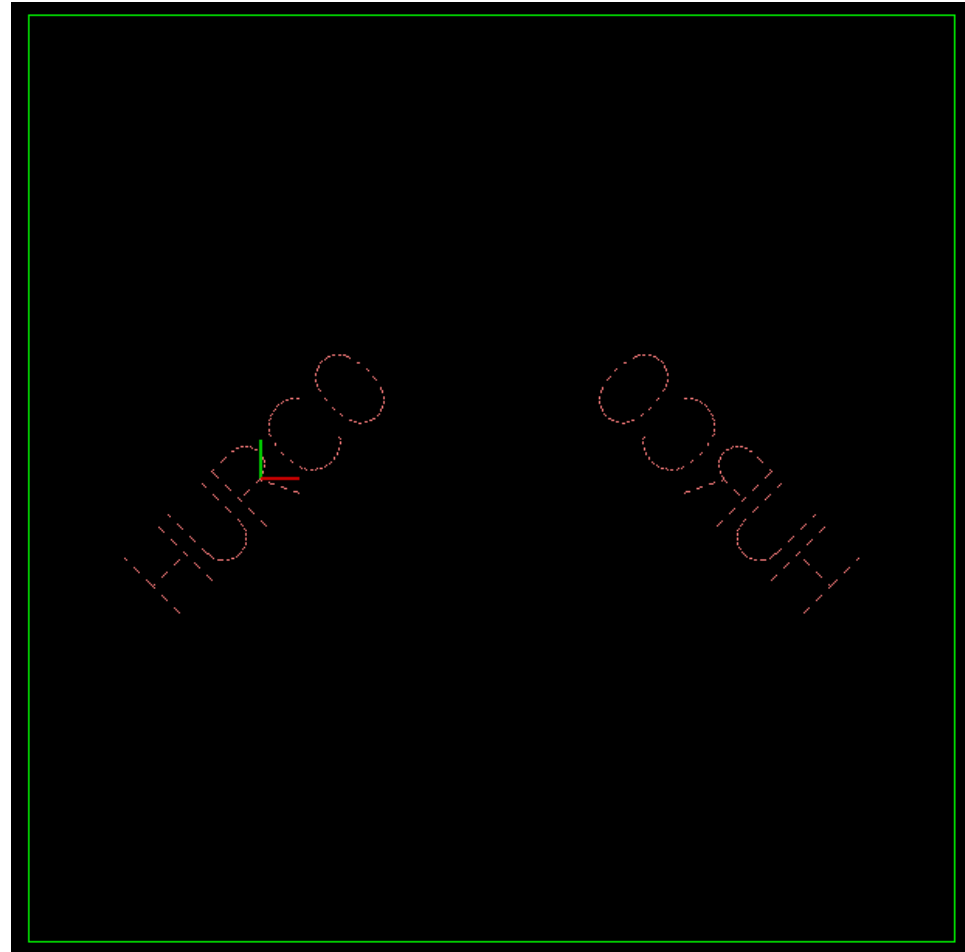
Scaled Pattern

XY Reference

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

