5-Axis Training Cube Tutorial

The training cube discussed in this tutorial is a soft 2″ x 2″ x 2″ cube, available from Hurco, and all five sides include both a description of the particular face of the part, as well as the data that will be used in the Transform Plane programming block.

It was designed to aid in the visualization of rotating the tool into position for machining on multiple sides of the block.

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When using this training aid it is best to place the cube on a hard surface, and imagine that the tool is rotating around the part…don't rotate the cube.

The " R (?) +/- 90° " printed on each side refers to the machine axis that the tool will rotate AROUND when moving into position. Picture the tool swinging around a stick that has been stuck through the center of the block.

For example: if we are rotating the tool to the front side of the block, the rotation is around the X-axis; if rotating to the left side of the part, the rotation is around the Y-axis of the part.
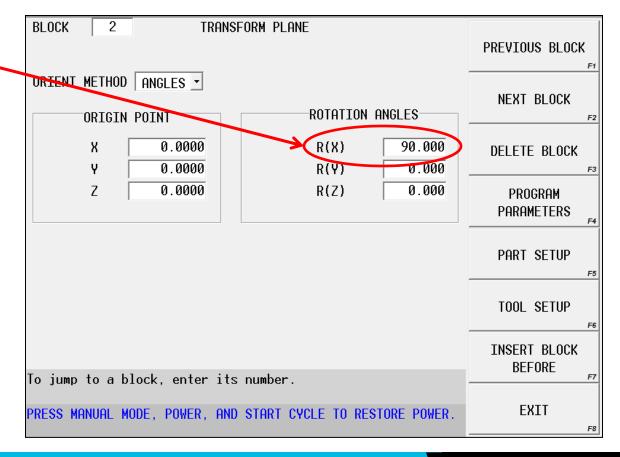

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Let's examine an example of programming on the FRONT side of the block.

You can see that the data entered into the Transform Plane block, for the rotation angle, is the same information that is printed on the front side of the training block.

BLOCK	2	TRANSFORM PLANE

ORIENT METHOD ANGLES ▼

ORIGIN POINT		ROTATION ANGLES	
X	0.0000	R(X)	90.000
Y	0.0000	R(Y)	0.000
Z	0.0000	R(Z)	0.000

To jump to a block, enter its number.

PRESS MANUAL MODE, POWER, AND START CYCLE TO RESTORE POWER.

PREVIOUS BLOCK   F1
NEXT BLOCK   F2
DELETE BLOCK   F3
PROGRAM PARAMETERS   F4
PART SETUP   F5
TOOL SETUP   F6
INSERT BLOCK BEFORE   F7
EXIT   F8

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Now, let's examine an example of programming on the LEFT side of the block.

You can see that the data entered into the Transform Plane block, for the rotation angle, is the same information that is printed on the left side of the training block.

BLOCK	2	TRANSFORM PLANE		

ORIENT METHOD [ANGLES ▾]

ORIGIN POINT

X	0.0000
Y	0.0000
Z	0.0000

ROTATION ANGLES

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

PREVIOUS BLOCK — F1
NEXT BLOCK — F2
DELETE BLOCK — F3
PROGRAM PARAMETERS — F4
PART SETUP — F5
TOOL SETUP — F6
INSERT BLOCK BEFORE — F7
EXIT — F8

To jump to a block, enter its number.

PRESS MANUAL MODE, POWER, AND START CYCLE TO RESTORE POWER.