



$DJ =$ DISTANCE FROM PIVOT POINT TO CHUCK Z_0

$\theta_B =$ TOOL ANGLE

$\theta_J =$ JOINT ANGLE $= 180 - 90 - \theta_B$

$\theta_{B_1} =$ INCLUDED ANGLE $= 90 - \theta_B$

$b = Z$ OFFSET

$a = X$ OFFSET

$$\theta_J = 180 - 90 - (90 - \theta_B)$$

$$\theta_J = \theta_B$$

$$a = \sin \theta_B \cdot (DJ - z)$$

$$c = \cos \theta_B \cdot (DJ - z)$$

$$b = DJ - z - c$$

$$c = \cos(\theta_B) \cdot (DJ - z) \text{ ————— ① } Z \text{ OFFSET}$$

$$b = (DJ - z) - \cos(\theta_B) \cdot (DJ - z) \text{ ————— ② } Y \text{ OFFSET}$$