$d_4 = 1.50$ d_G or $d_7 = 0.303$

z_0, z_1 x_3 z_3

x_4, x_5, x_6
z_5

x_G

Joint 3 O_3 L_3 $a_3 = 0.054$ gripper

O_4, O_5, O_6 z_G

Joint 4 L_4 Joint 5 L_5 Joint 6 L_6 z_6, z_4
$a_2 = 1.25$ L_2 O_4, O_5, O_6 O_G Gripper
W_c

O_1 L_1 z_2
x_2 O_2
Joint 2

Joint 1 $d_1 = 0.75$

L_0
$a_1 = 0.35$ x_0
Joint 0

— shows link
— show joints and distances
— actual joints
— coordinates axes

α_{i-1} (twist angle) = angle between $\hat{z}_{i-1}$ and $\hat{z}_i$ measured about $\hat{x}_{i-1}$

a_{i-1} (link length) = distance between $\hat{z}_{i-1}$ to $\hat{z}_i$ measured along $\hat{x}_{i-1}$

d_i (link offset) = signed distance between $\hat{x}_{i-1}$ and $\hat{x}_i$ measured along $\hat{z}_i$

θ_i (joint angle) = angle between $\hat{x}_{i-1}$ to $\hat{x}_i$ measured about $\hat{z}_i$

Links	α_{i-1}	a_{i-1}	d_i	θ_i	
L_{0-1}	$\alpha_0 = 0$	$a_0 = 0$	$d_1 = 0.75$	q_1	
L_{1-2}	$\alpha_1 = -\pi/2$	$a_1 = 0.35$	$d_2 = 0$	$q_2 = q_2 - \pi/2$	$\leftarrow$ x_2 and x_1 has $\pi/2$
L_{2-3}	$\alpha_2 = 0$	$a_2 = 1.25$	$d_3 = 0$	$q_3 = q_3$	
L_{3-4}	$\alpha_3 = -\pi/2$	$a_3 = -0.054$	$d_4 = 1.50$	$q_4 = q_4$	a_4, a_5, d_4, d_5 are zeros
L_{4-5}	$\alpha_4 = \pi/2$	$a_4 = 0$	$d_5 = 0$	$q_5 = q_5$	since: O_4, O_5, O_6 are coincident
L_{5-6}	$\alpha_5 = -\pi/2$	$a_5 = 0$	$d_6 = 0$	$q_6 = q_6$	x_4, x_5 accounts for
L_{6-EE}	$\alpha_6 = 0$	$a_6 = 0$	$d_7 = 0.303$	$q_7 = 0$	z_4, z_5 and z_5, z_6

$$B = \sqrt{(w_{xy-joint_2})^2 + (w_{z-joint_2})^2}$$

$C = 1.25$ which is given by
$(a_2$, distance between z_2 and z_3 along x_2)

$$A = \sqrt{a_3^2 + d_4^2}$$
$$= \sqrt{(0.05a)^2 + (1.50)^2}$$
$$= 1.50097)$$

$w_{2-joint_2} = w_z - 0.7$

$a_1 = 0.75$

$d_1 = 0.75$

$d_1 = 0.75$

$w_{xy-joint_2} = \sqrt{(w_x^2 + w_y^2)} - d_1$

w_x, w_y