

UR5e panel

Name: UR5e Parameters

### Cartesian Jog

Tool Frame Hammer with respect to robot flange

[X,Y,Z]mm | Rot[u,v,w] deg - UR (deg)

0.000 0.000 289.500 0.000 0.000 0.000

Reference Frame UR5e Base with respect to robot base

[X,Y,Z]mm | Rot[u,v,w] deg - UR (deg)

0.000 0.000 0.000 0.000 0.000 0.000

**Tool Frame with respect to Reference Frame**

[X,Y,Z]mm | Rot[u,v,w] deg - UR (deg)

89.524 -526.911 -92.212 0.020 -179.311 -3.421

Tool Frame Workspace Show Frames

Do not show  
 Show for wrist center  
 Show for robot flange  
 Show for current tool

All/None Base (0)  
 Tool Frame  
 Ref. Frame  
 1  2  3  
 4  5  6

### Joint axis jog

Align Home

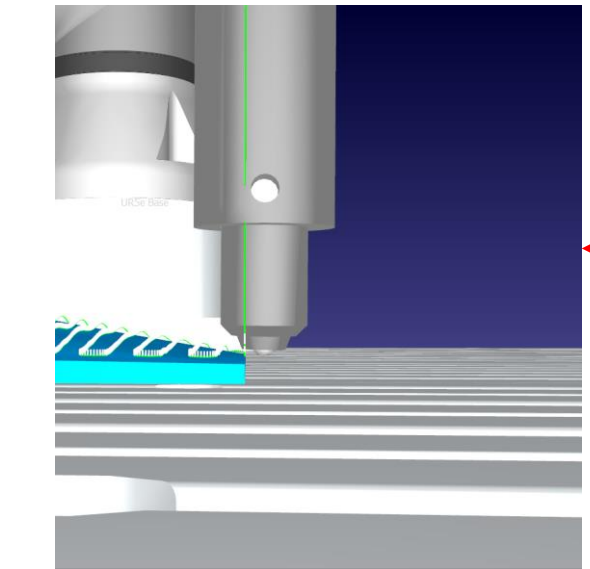
θ<sub>1</sub>: -66.13 ° -180.0 < > 180.0  
 θ<sub>2</sub>: -109.56 ° -180.0 < > 180.0  
 θ<sub>3</sub>: -112.43 ° -180.0 < > 180.0  
 θ<sub>4</sub>: -50.27 ° -180.0 < > 180.0  
 θ<sub>5</sub>: 90.28 ° -180.0 < > 180.0  
 θ<sub>6</sub>: 23.85 ° -180.0 < > 180.0

Other configurations (θ<sub>1</sub>, θ<sub>2</sub>, θ<sub>3</sub>, θ<sub>4</sub>, θ<sub>5</sub>, θ<sub>6</sub>) More options

(\*)-[-66.13°, -109.56°, -112.43°, -50.27°, 90.28°, 23.85°]

Desired HTM:

```
[ -0.999934, -0.000000, -0.011457, 89.524251;
-0.000437, 0.999272, 0.038146, -526.911363;
0.011449, 0.038148, -0.999207, -92.212279;
0.000000, 0.000000, 0.000000, 1.000000];
```



Matlab code:

```
%% Forward Kinematics
ur5_kin = UR5Kinematics(); mdl_ur5e; % Library initialization
Ttransl=transl(0,0,-0.2895); % Tool offset m
Ttransl2=transl(0,0,-289); % Tool offset mm

q = ([-1.154157, -1.912235, -1.962343, -0.877351, 1.575757, 0.416324]); % Joints in rad
q2 = rad2deg(q) % Joints in deg (-66.1283 -109.5630 -112.4340 -50.2685 90.2842 23.8536)

result = ur5_kin.forward_kinematics(q); % Obtains the transform frames of all links
T = double(result.transform_matrices.Tend);
T = Ttransl * T % IKFast

T2 = double(ur5e.fkine(q));
T2 = Ttransl * T2 % Peter Corke

RDK = Robolink;
ItemList=RDK.ItemList();
robot = RDK.Item('UR5e');
T3 = robot.SolveFK(q2);
T3 = Ttransl2 * T3 % RoboDK
```

Output:

```
T =
-0.9999 0.0000 -0.0115 0.0928
-0.0004 0.9993 0.0382 -0.5379
0.0115 0.0382 -0.9992 -0.0924
0 0 0 1.0000

T2 =
-0.9999 0.0000 -0.0115 0.0928
-0.0004 0.9993 0.0382 -0.5380
0.0115 0.0382 -0.9992 -0.0924
0 0 0 1.0000

T3 =
-0.9999 0.0000 -0.0115 92.8405
-0.0004 0.9993 0.0382 -537.9539
0.0115 0.0382 -0.9992 -91.9467
0 0 0 1.0000
```