Robot movements with joystick.

The joystick solution can be used on UR3 – UR5 and UR10 for control of the Universal-Robots movement.

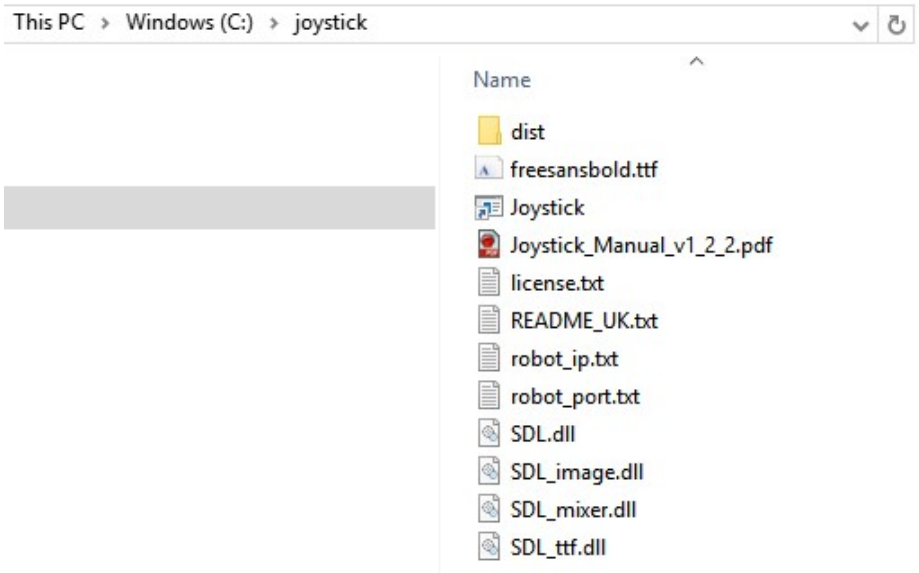
As the movement is hand controlled and communication is via Ethernet the repeatability might vary compared to using waypoints programmed directly on the robot.

1 Risk assessment.

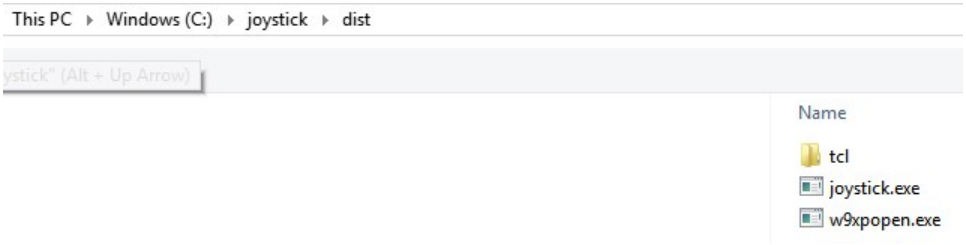
Remember to perform risk assessment before use:

2 Program installation:

Create a folder with the name joystick in C:\joystick and Unzip the zip file in joystick directory.

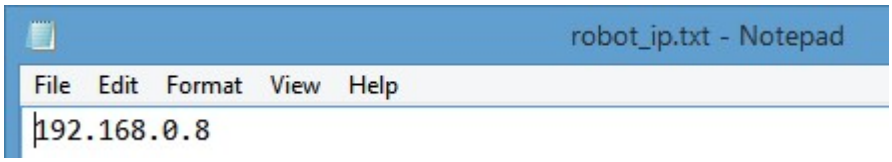


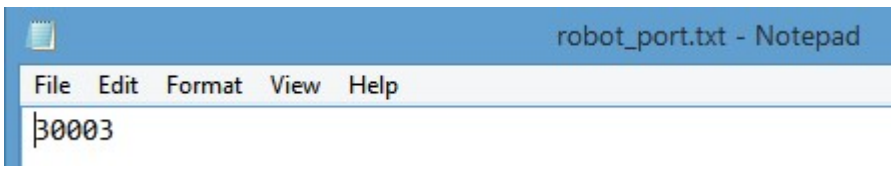
(EXE will be located in C:\joystick\dist)



Configure the robot target IP address in the file robot_ip.tx

Configure the robot target Port address in the file robot_port.txt (Use 30003 as default).





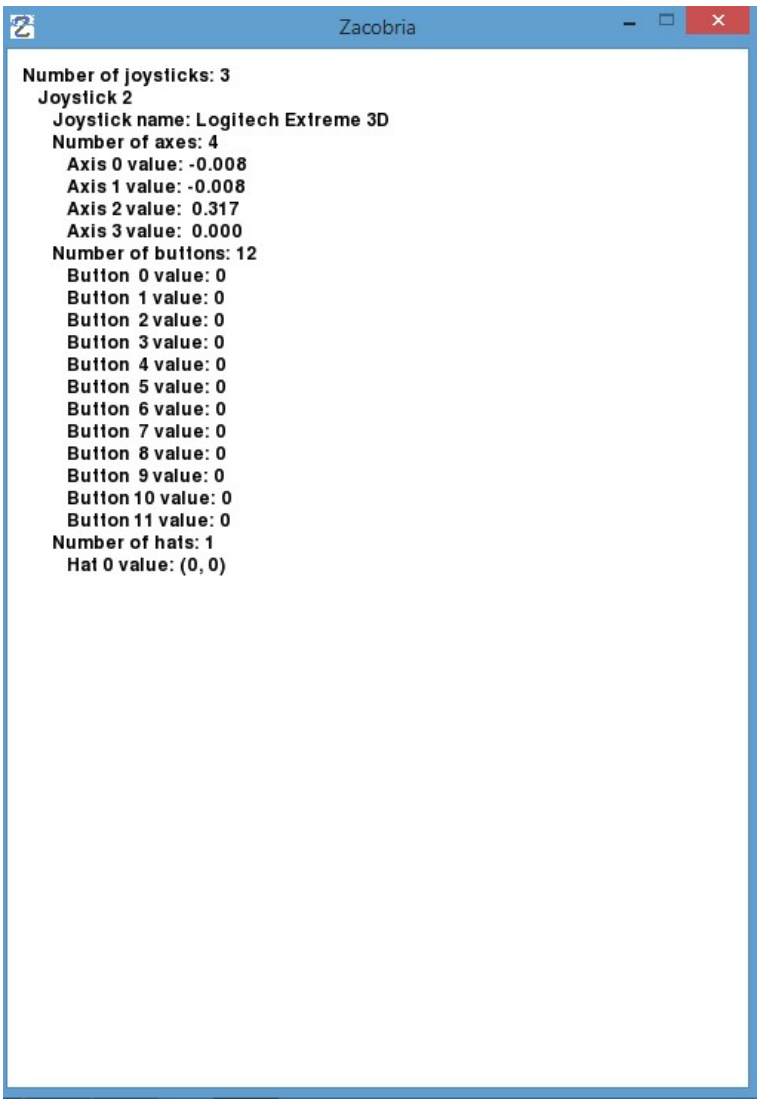
Connect the joystick to the computer USB port and let Windows find it and install driver automatically.

3 Start the program.

Run joystick_v1_2.exe from **C:\joystick\dist** folder – or use the joystick shortcut file.

The first time it can take a few seconds if a virus scanner is analyzing the file.

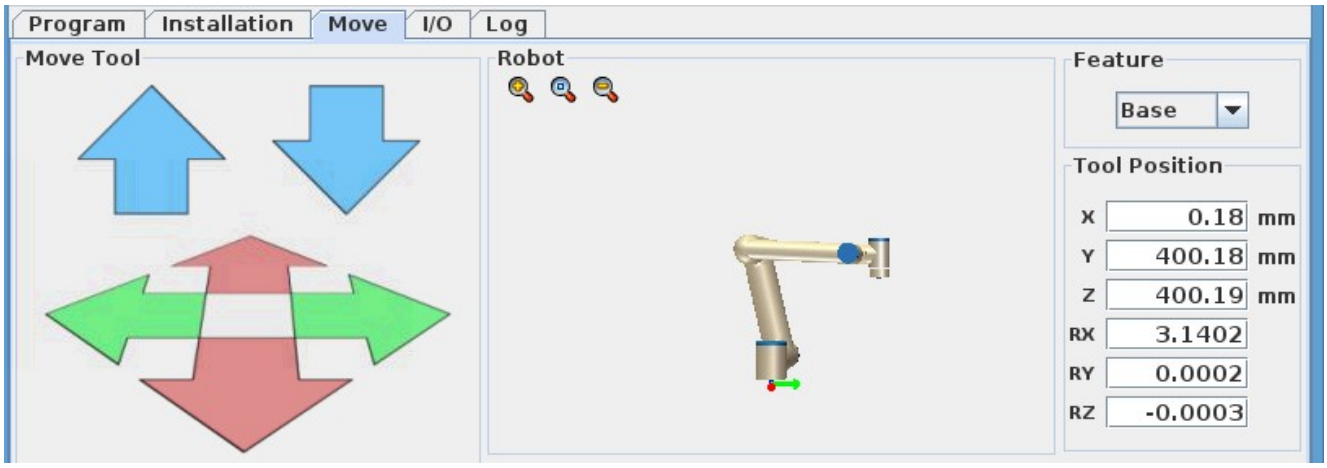
When the program is started this screen will appear if the joystick has been installed correct and the license file is correct.



4 Placement of robot.

Place the robot so the coordinates are viewed as “Feature Base” and with following values.

X = 0
Y = 400
Z = 400
Rx = 3.14
Ry = 0.0
Rz = 0.0



Notice where the cable is coming out from the robot in the Y axis. Joystick movement is from the base in Y direction.

5 Activate communication.

5.1 Activations and deactivations of communication.

In order to get the robot to move the communication has to be opened by pressing the “Start com”

The communication can be disabled by pressing “Stop com”.

6 Control of robot.

6.1 X – Y direction:

X and Y direction is controlled with the “Hat” on the joystick.

6.2 Rotation:

Rotation vector (Rx, Ry, Rz) are controlled with the joystick handle by push-pull-rotate in each direction.

6.3 Up/Down.

Up/Down – is activated by the trigger on the robot and by using the variable up/down (+/-) control.

In plus direction and pressing the trigger will move the robot upwards.

In minus direction and pressing the trigger will move the robot downwards.

The up/down speed can be controlled with the variable button.

7 Speed regulator:

The variable up/down (+/-) control – can also be used for speed regulator for X and Y directions (Hat control).