

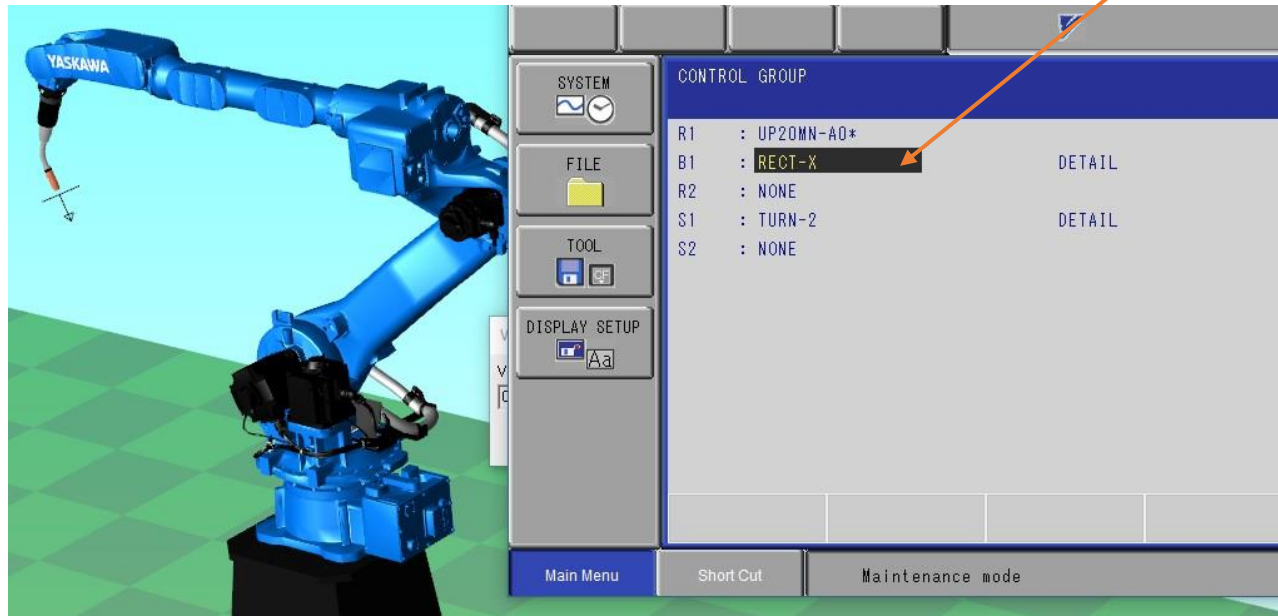
Setting up a Base Track in MotoSim

Introduction

This document will show you how to import and setup a base track.

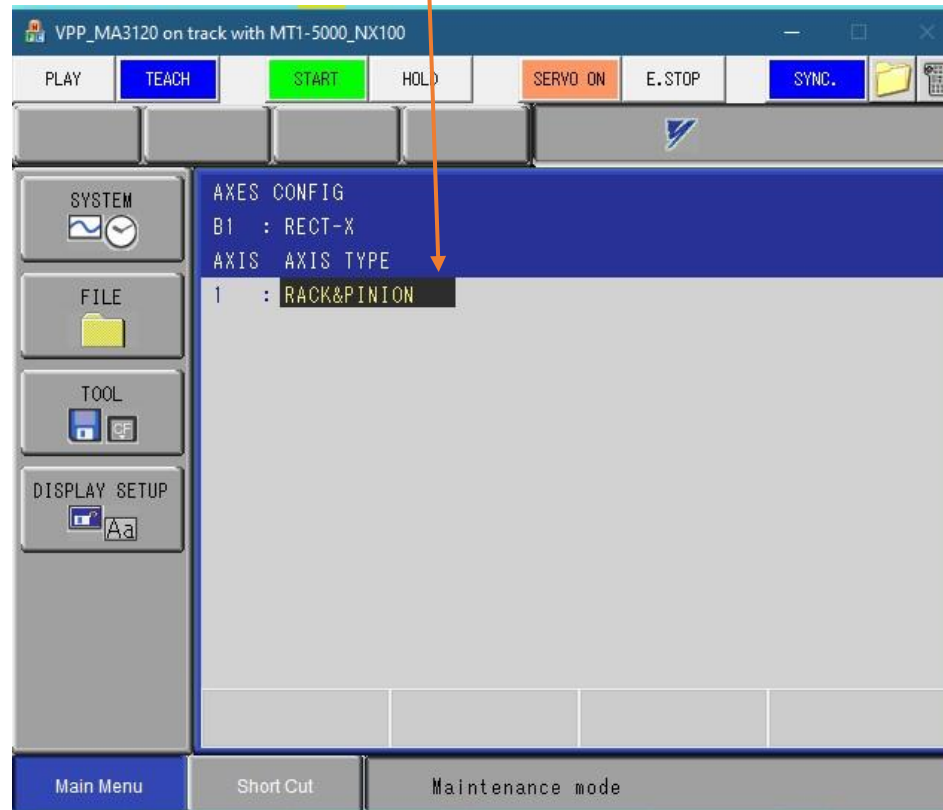
Configuring the track in maintenance mode

1. Boot the controller into maintenance mode. This is if you already have a robot in the simulation. If you do not have a robot, then you will also add a robot at this time.
2. In the control group, add a B1. Pick the direction following the coordinate system of the robot. In this case, it is RECT-X.



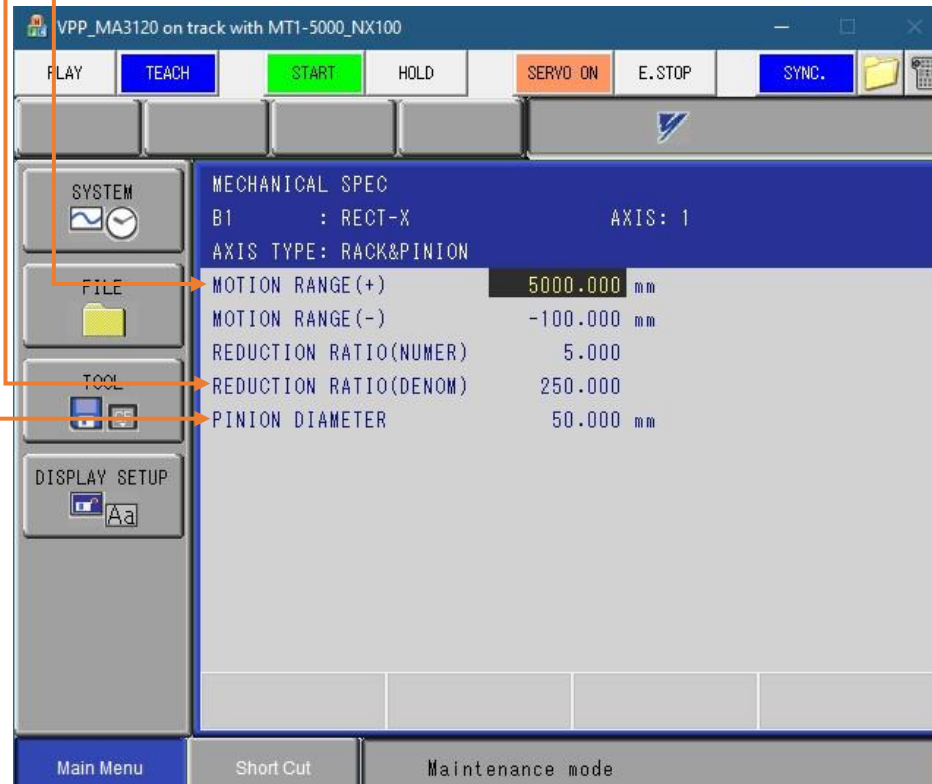
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3. Next, setup the AXES configuration. It will be Ball-screw or Rack & Pinion



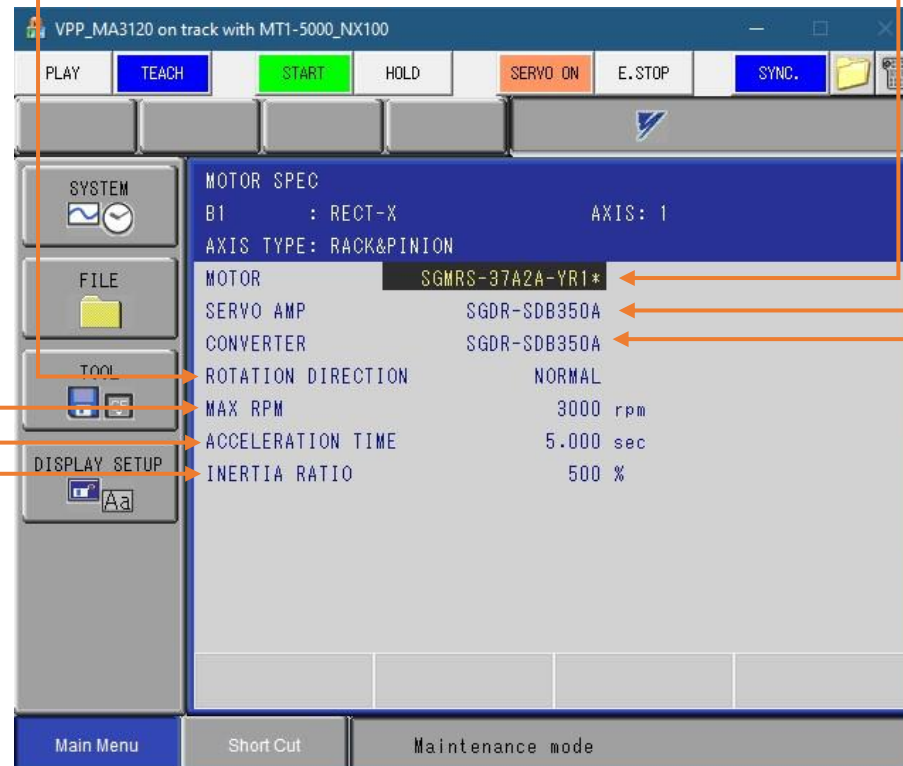
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4. Next page will be Mechanical Spec. You will need to know the following:
 - a. Range of motion
 - b. Reduction Ratio
 - c. Pinion Diameter



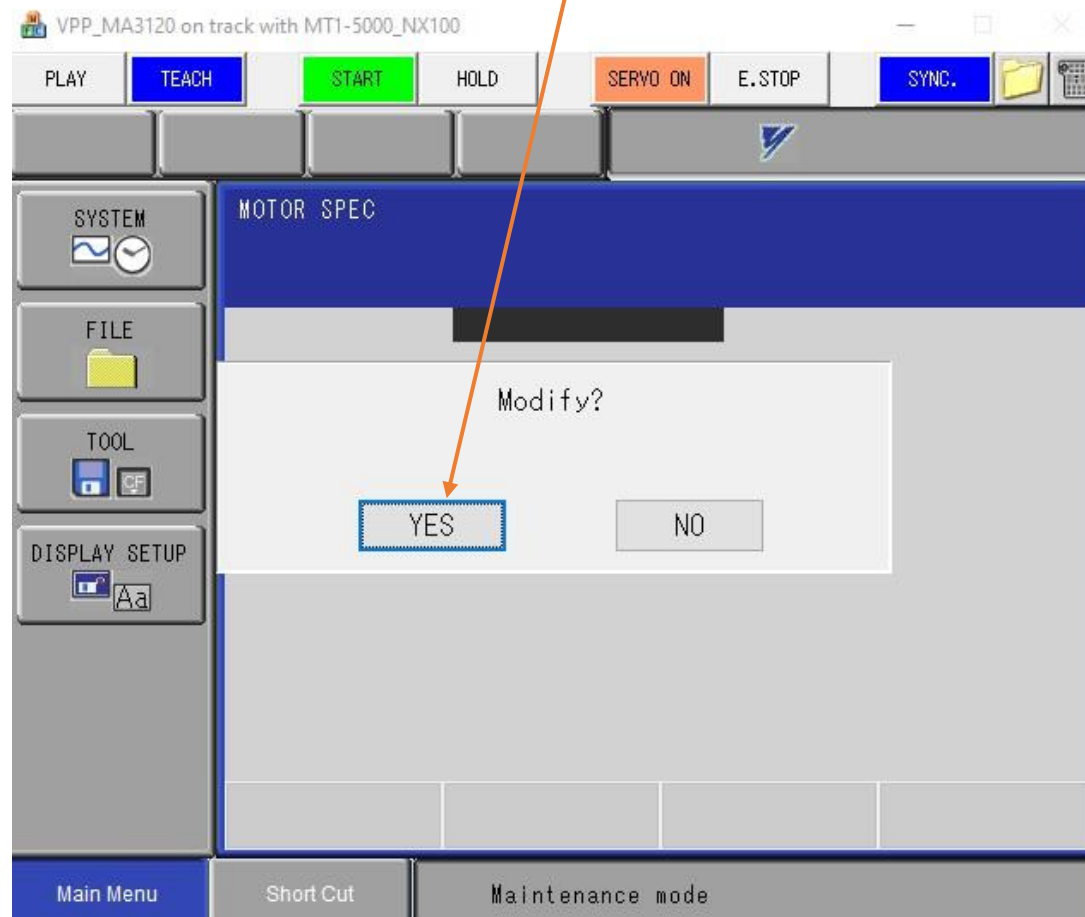
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5. Next page will be the motor specs. The following are not important for running Motosim and programming.
 - a. Motor model
 - b. Servo Amp
 - c. Converter
6. The next section is important to run in Motosim and have the travel and speed correct
 - a. Rotation Direction
 - b. Max RPM
 - c. Acceleration Time
 - d. Inertia Ratio



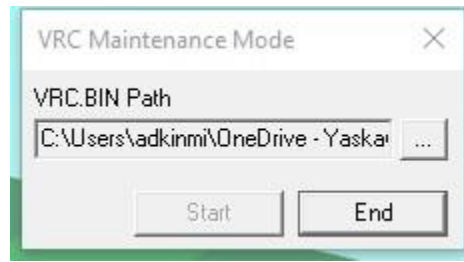
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7. Once the base is configured, the next screen will ask to modify. Enter 'YES'

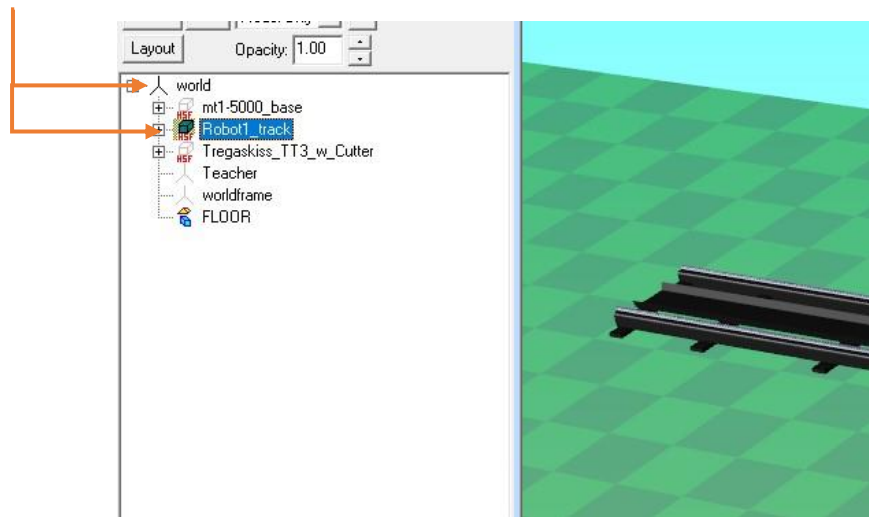


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8. Then re-boot controller by hitting “END” on the small window.

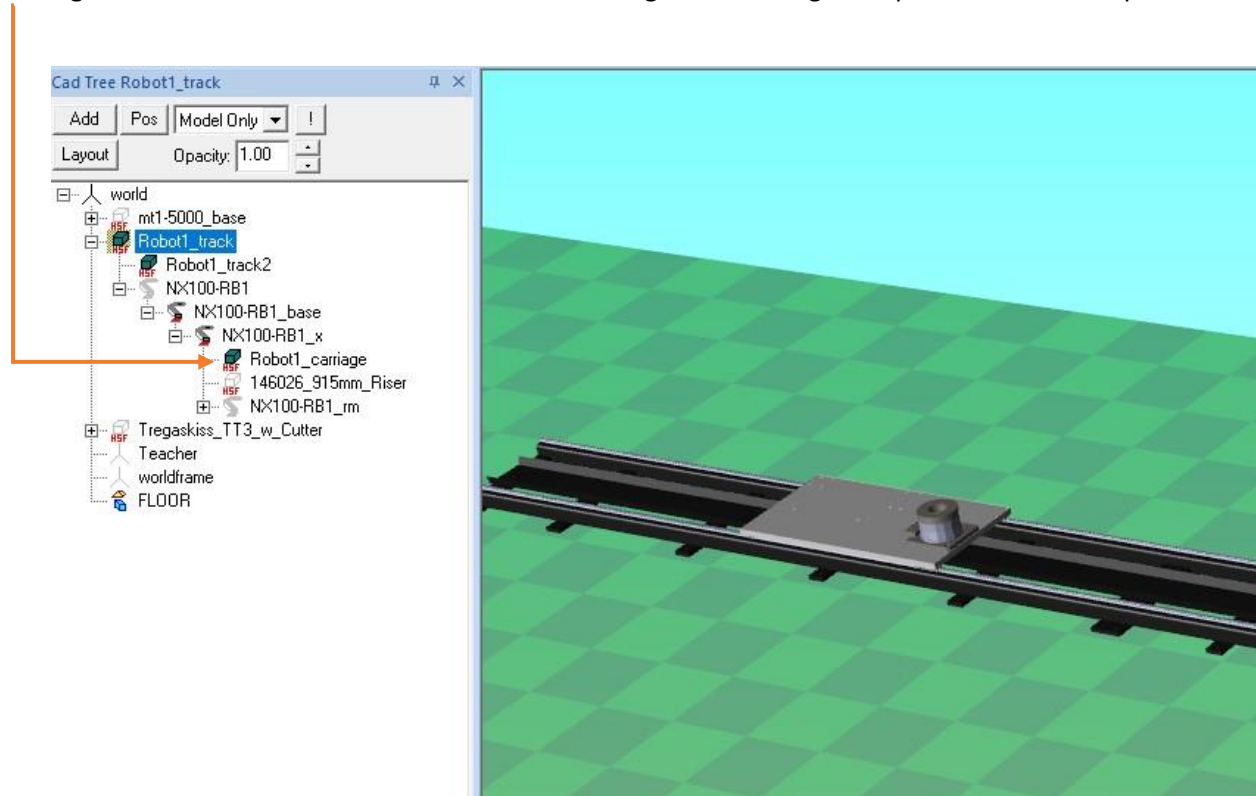


9. The models of the track base and carriage can be imported before being setup in maintenance mode or after.
 - a. You need to use a 3D package like Solid Edge or Solid Works to separate the models.
 - b. Always export the models from the top-level assembly. Hide what is not needed and export displayed items only.
10. Import the track first under WORLD.



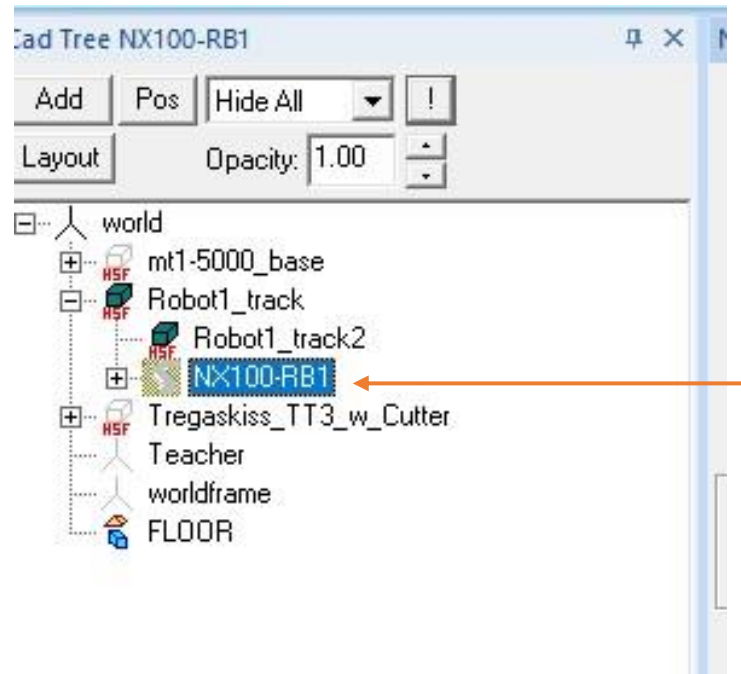
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11. Next, import the carriage and make it a child to the track. This will bring in the carriage and place it as it was exported and will not have to be manually moved.



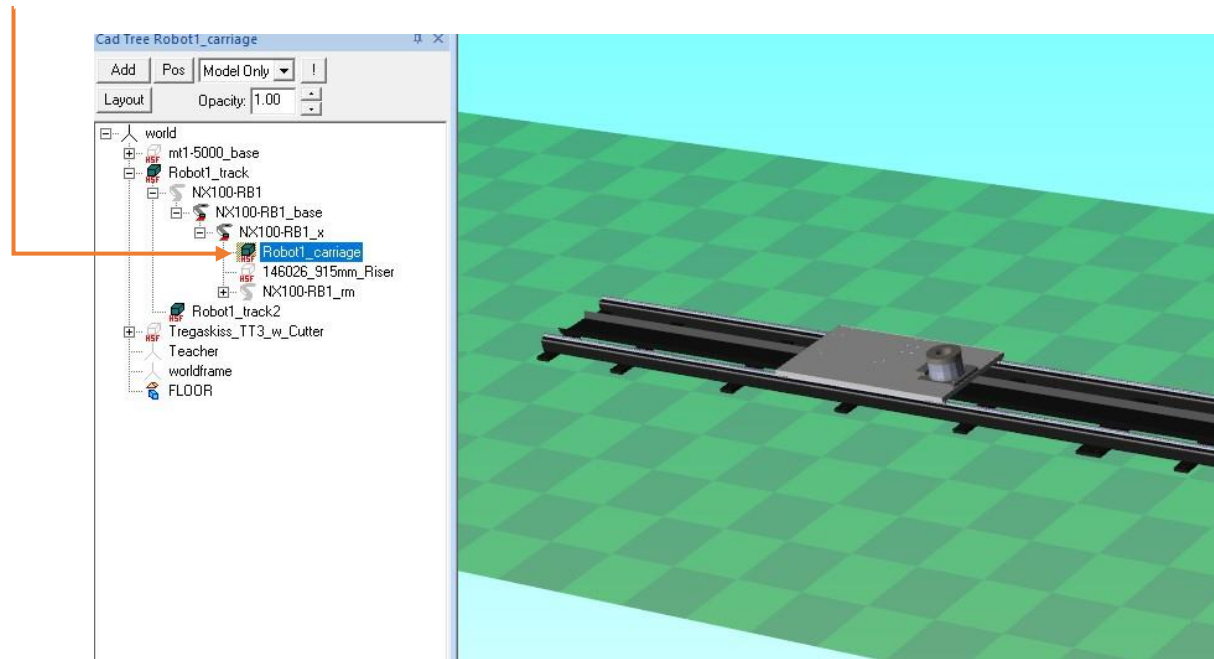
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12. If a robot riser is needed, it can be added from the built-in model library or imported from an external source. Make sure the riser is in place where it should be on the carriage and make sure the robot is mounted where it should be.
13. Left click and drag the robot itself, with structure of robot (IE: NX100-RB1) collapsed in the CAD tree, to the track and release the mouse. It will ask you to set parent or move parent. Click on set parent. This will set R1 and B1 to be a child under the track.



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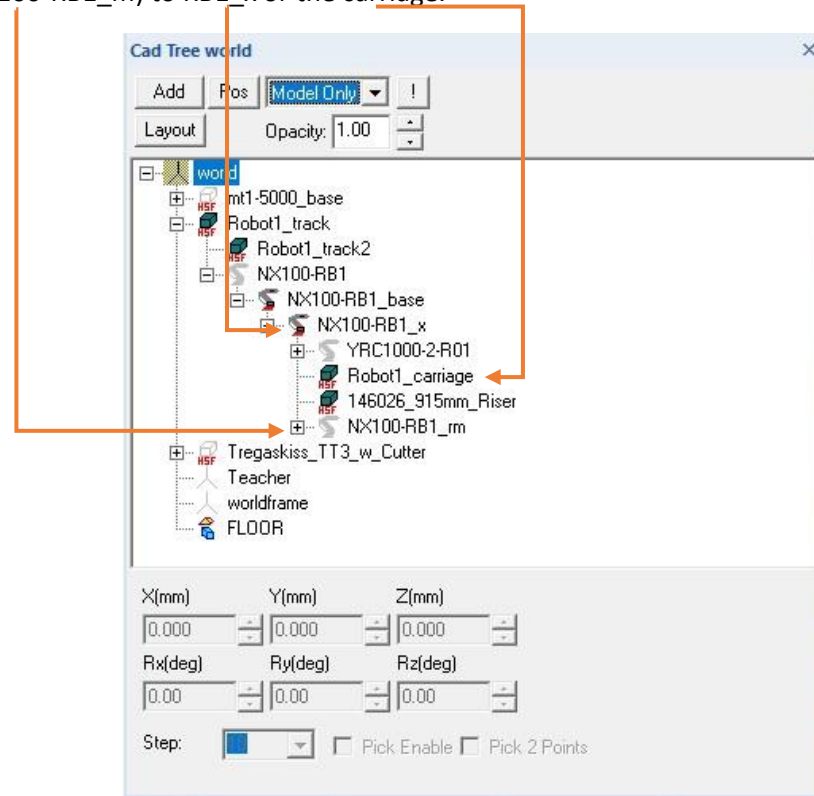
- Next, left click on the carriage and hold to drag it to the controller B1_x and let go. Then, click on SET Parent, and NOT move parent. This will set the carriage to the base ext. axis (RB1_x), but not physically move the model from its location in the cell.



- Left click and drag the riser (if present) to RB1_x or the carriage. Let go and say, set parent.

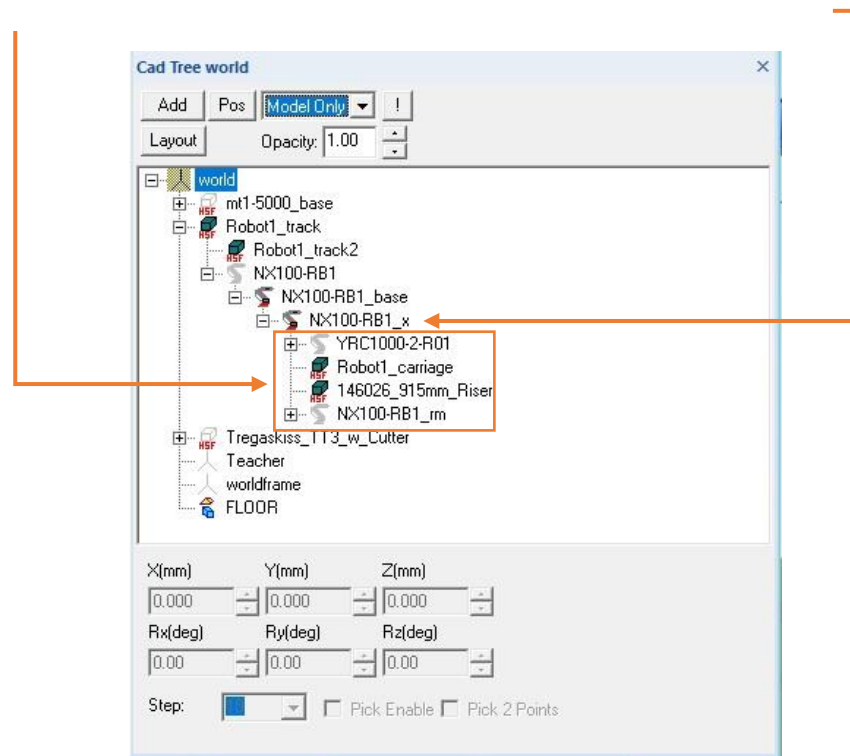
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16. Left click and drag the robot (NX100-RB1_m) to RB1_x or the carriage.



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17. Anything that needs to move with the carriage, (IE: wire spool or other peripheral equipment), will need to be attached to the B1_x or carriage for it to move with it. Everything in this block will move when the base is jogged. Which is controlled by RB1_x.



18. Always place items in location prior to attaching them as parent/child relationships.