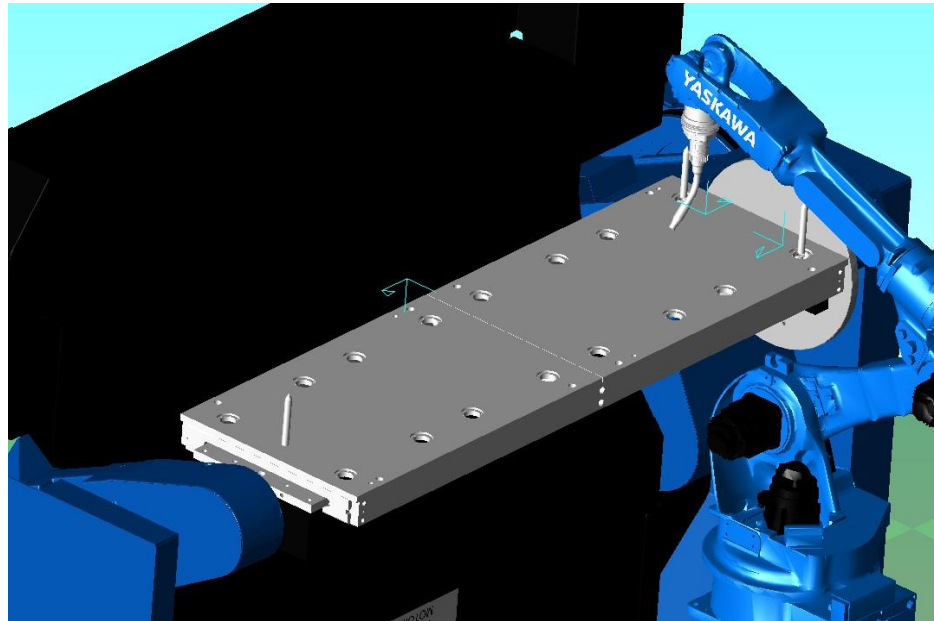


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MotoSim to Real-World Layout

Introduction

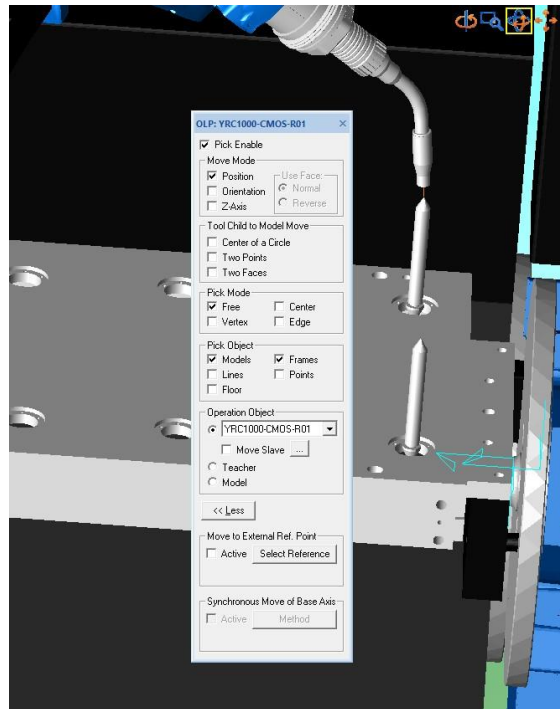
This document will help walk you through making sure your MotoSim cell is as close as possible to the real-world setup. Make sure the CAD data that you import is a very good representation to the real fixture you are using. Also, you need to make sure the robot placement is where it should be and good tool data on the robot as well as proper wire stick-out are defined, if using a weld torch. You can make pointers, like pictured below, or use key features on the fixture if the 3D model is the same as the real world. You need to make sure the correct weld torch or tool is being used before going any further.



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Procedure

- Write a job on the real robot to the pointers installed, or whatever you have picked to use - just a couple of moves to get to each location. Your job could be as simple as punch marks in the corners of the fixture. The 3D model needs to show these as well.
- It is best to use 3 locations. So, you will check for Yaw, Pitch, and roll of the fixture.
- Save that job out.
- Once you have confirmed the robot has good tool data that matches the real one, load that location job in to MotoSim.
- Step to the first point, and confirm it is on point. Double check the wire stick-out if welding. The wire can move in the liner while moving the robot into location. If your torch has a wire brake, you should activate it during this.



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- Check all points, and if they are off, determine in which direction the problem occurs. Is the problem on the X, Y or Z plane, or does it have to be tilted on the RX, RY or Rz direction? You will go to the CAD tree and set position of the model in question if it is found to be off. Do not adjust the TCP or move only the model of the part in the fixture, or fixture on positioner if it is found to be off.
- Once you determine the direction of the problem, you will move the entire positioner to match up all points.
- After all points are lined up as close as possible, you can write a new job. This time it will be in MotoSim and saved out and checked on the real system.
- When confident the systems match, write an actual job for the part in MotoSim, and then test on real system. Do one job to test. If it is a positioner with a Side A and a Side B, then write a job for each side to test. Do not assume it is correct and start writing dozens of jobs, just to find out they are all off in some way. More work up front will save a lot in the end and make you more successful on the project.

