This document captures ideas, experiences, and informal recommendations from the Yaskawa Partner Support team. It is meant to augment – not supersede manuals or documentation from motoman.com. Please contact the Partner Support team at partnersupport@motoman.com for updates or clarification.
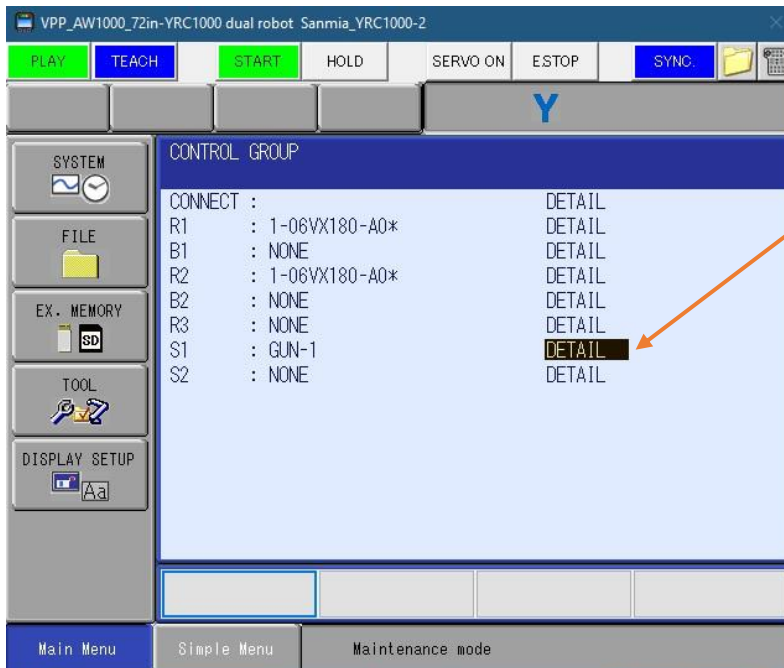
Spot Welding Motor Gun Setup in MotoSim

Introduction

This document will walk you through setting up a motor gun, spot welding C gun.

Setting up S1 to control motor gun:

First, boot into maintenance mode. Then setup the control group for S1. In the detail, pick GUN-1

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Details of Motor Gun

Specs for your gun may be different here.   Enter the data for your C gun in the mechanical setup window.

Once that is done, boot controller into normal mode.
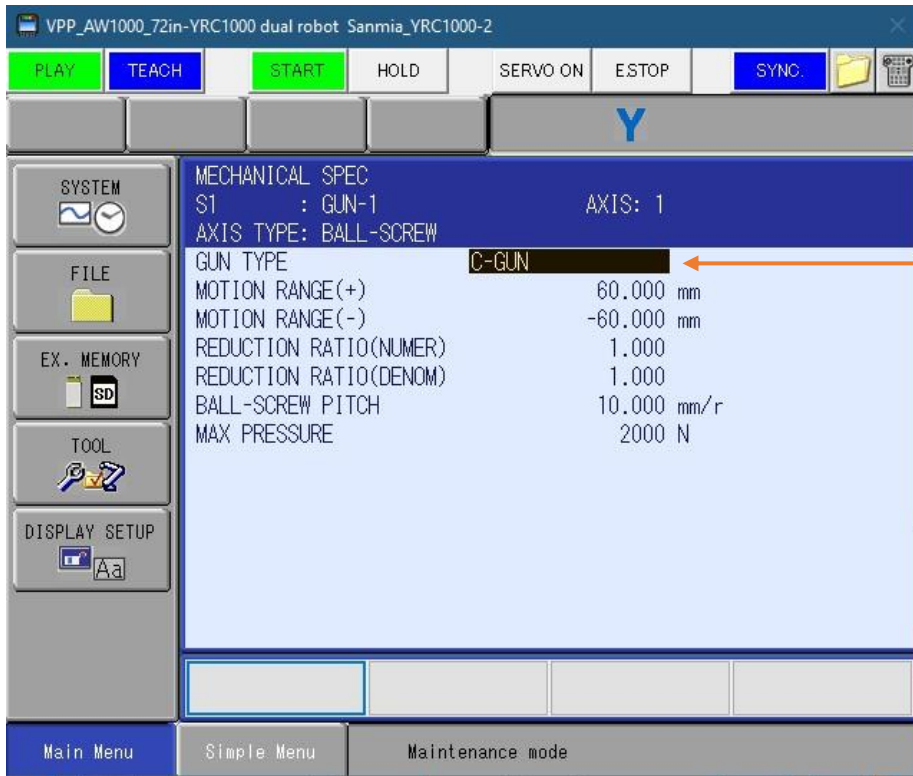
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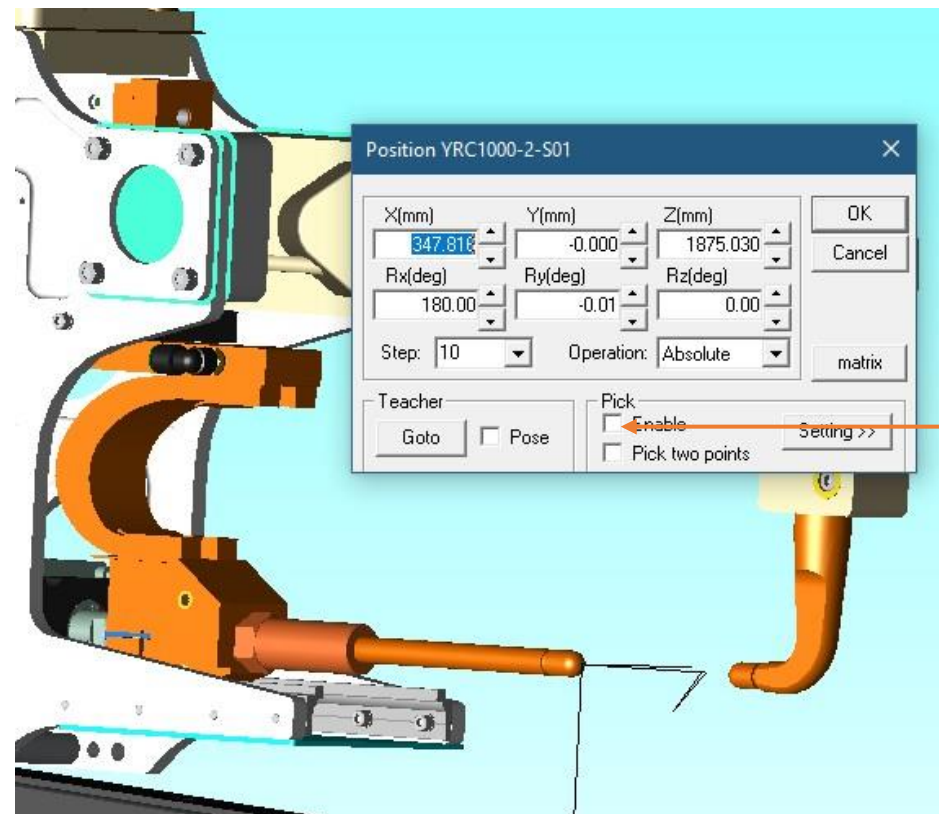
Importing 3D Model and Setting it Up

1. First, you will need to use a CAD program to break apart the model for the gun you want to control. Bring in the main body of the C gun and attach it to the robot flange. You may have to rotate it, depending on the 3D model origin. This will be the stationary part, or main body of the gun.
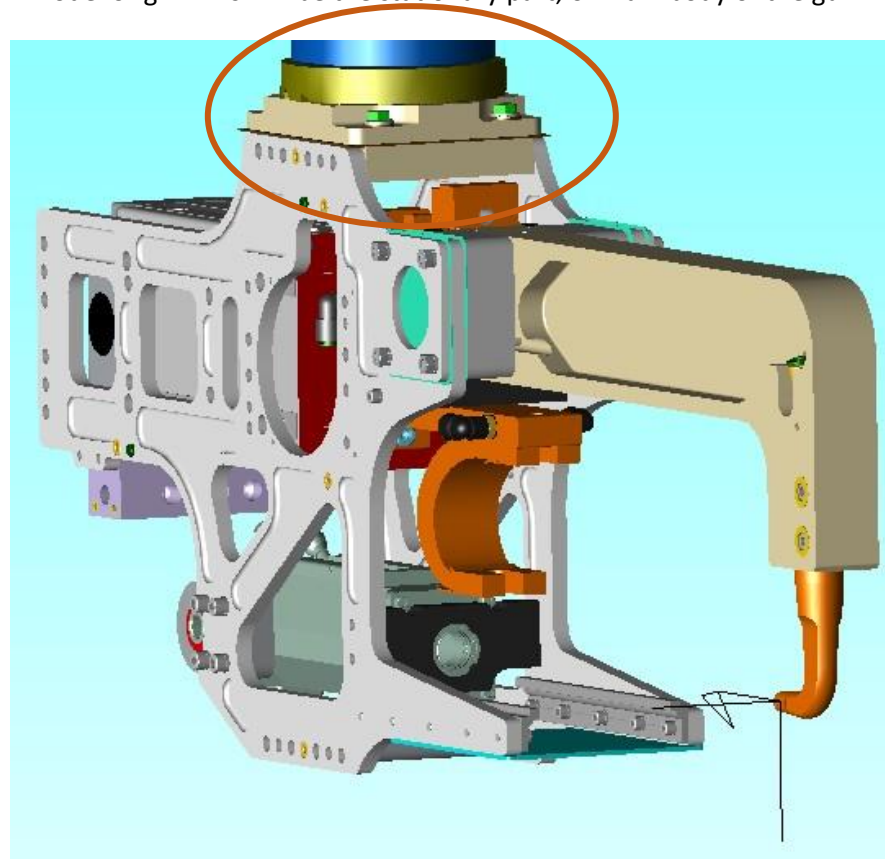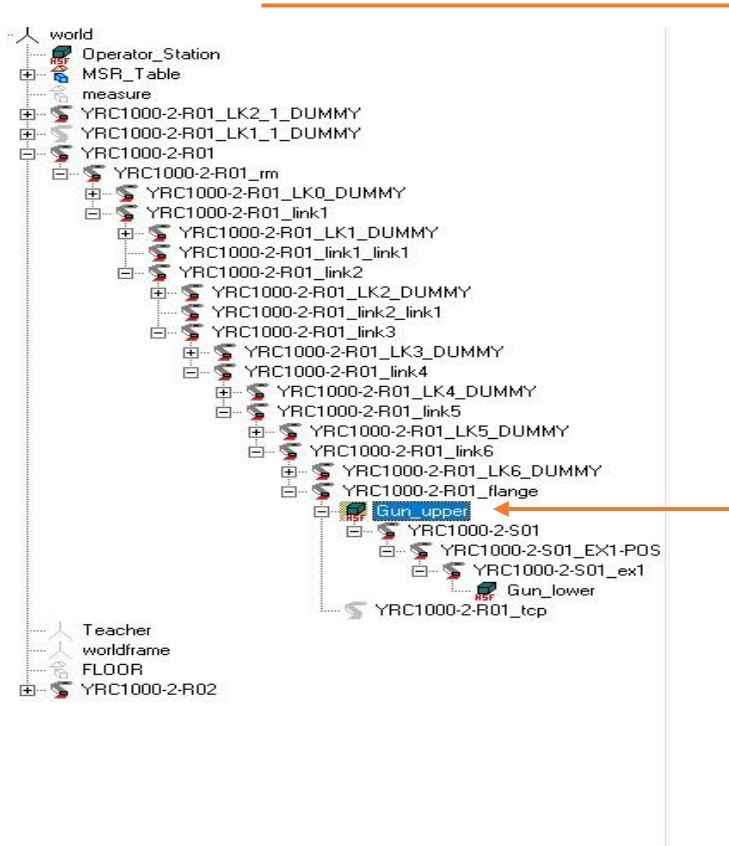
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2. Next, import the lower part of the C gun, or the movable portion and attach it to the main for now. That way, it will come in at the correct location to the main body.

3. Find the YRC1000-2-S01. It will also contain YRC1000-2-S01_EX1-POS and YRC1000-2-S01_ex1.   Make sure the CAD tree section for those models are colapsed, so you only see YRC1000-2-S01 and a + sign to the left of it. Left click and hold on that file and drag it to the main body of the spot gun. Let go and say "set parent" - NOT move parent.

4. Once that is in place, right click on YRC1000-2-S01 and then click on SET POSITION. With that window open, click on the Enable in the PICK window.

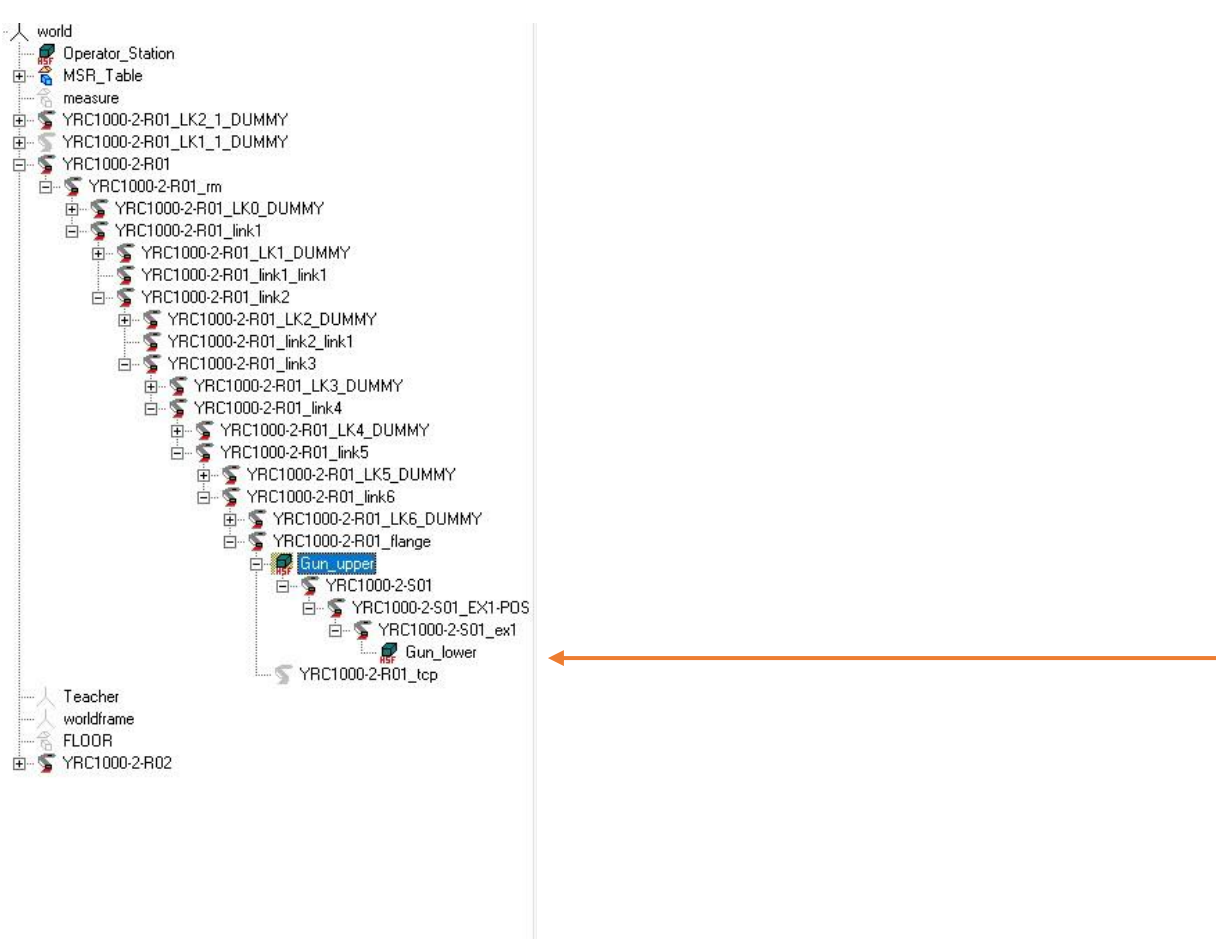5. Pick the end of the electrode of the lower gun

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6. Make sure the Z axis (Flag) is pointing away from electrode.
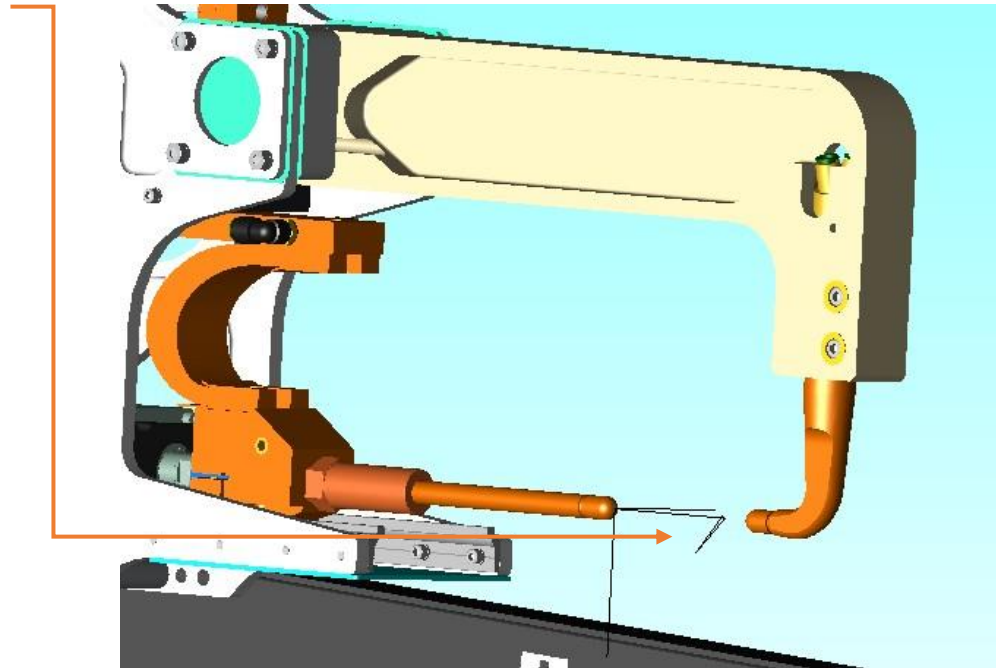
7. Now right click and hold on the lower gun (movable part) and drag it to the YRC1000-2-S01_ex1 and let go, and say set parent - NOT move parent.

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8. You can now test that the gun moves correctly, and that the model moves with the frame. Click on this window, and choose S01
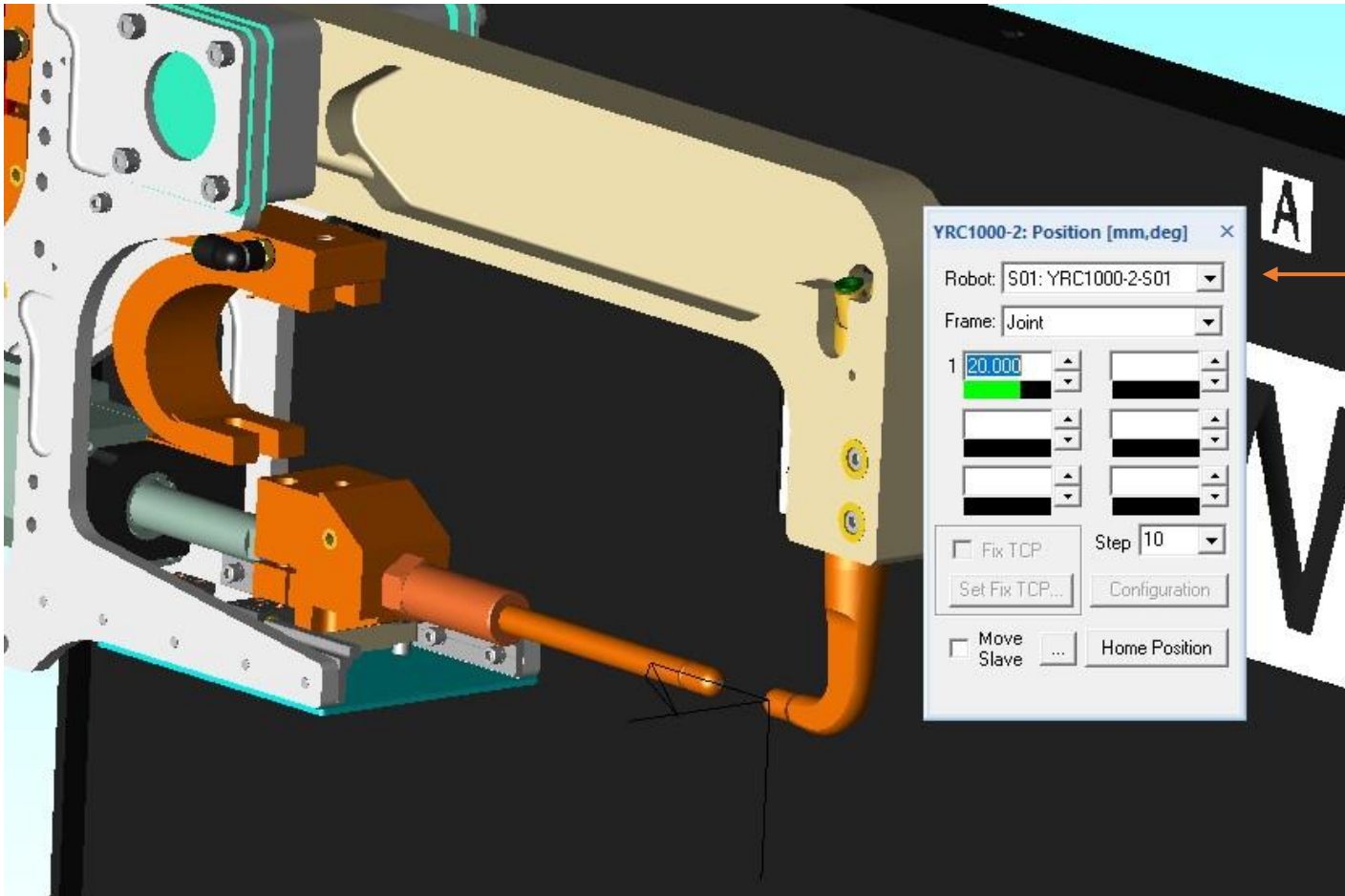
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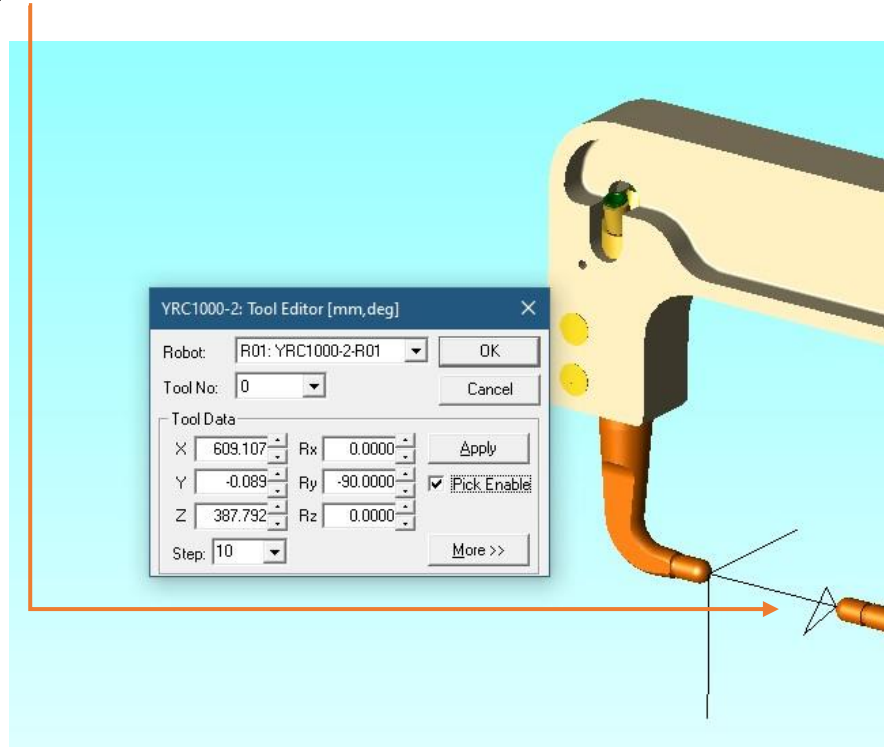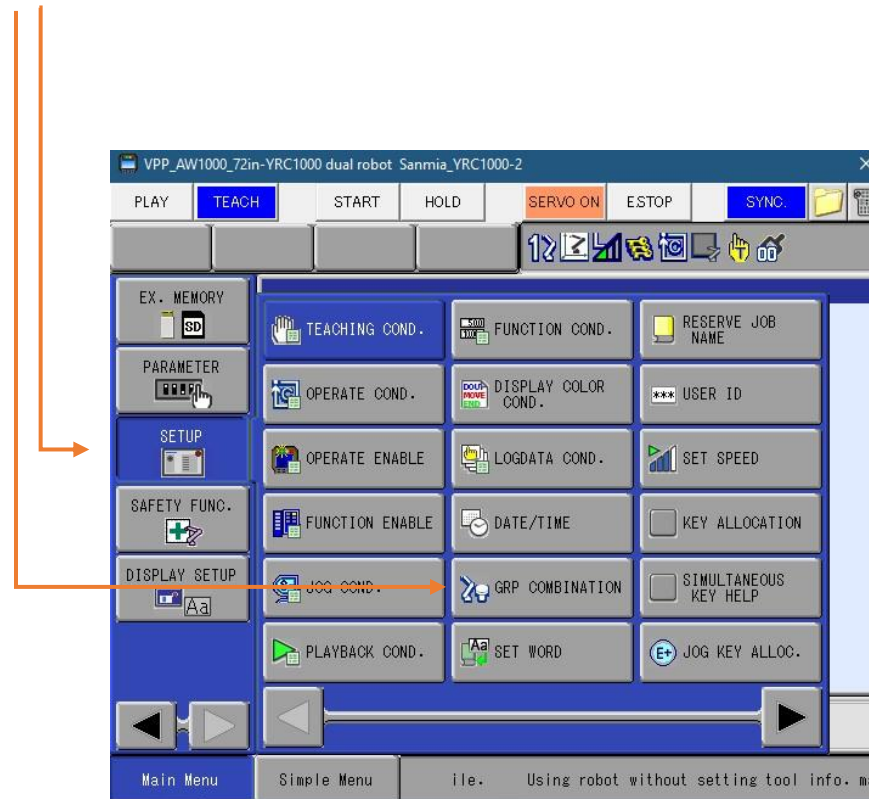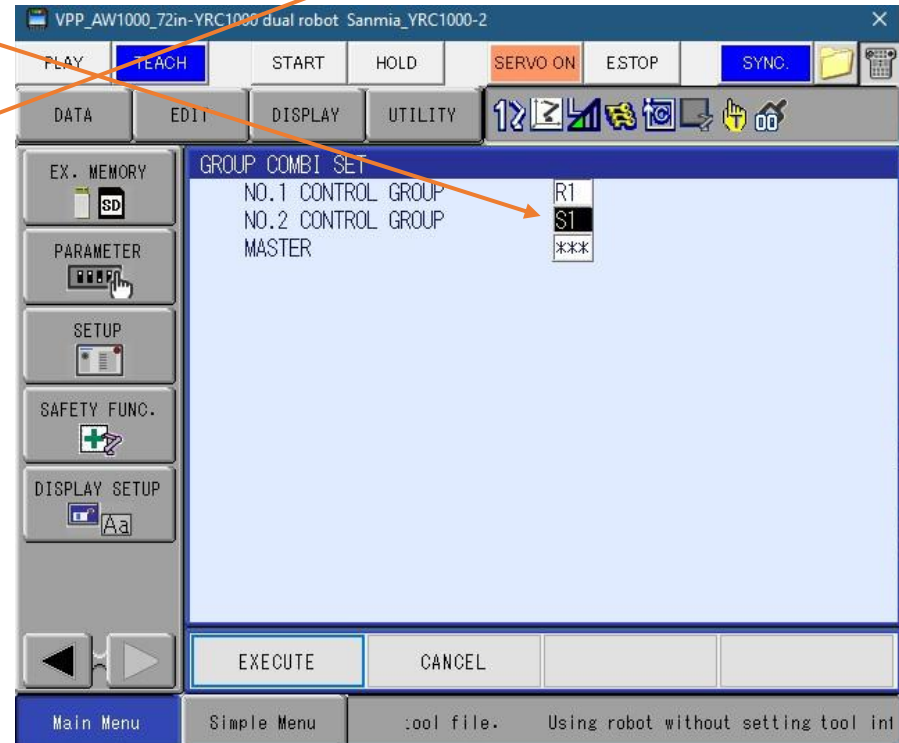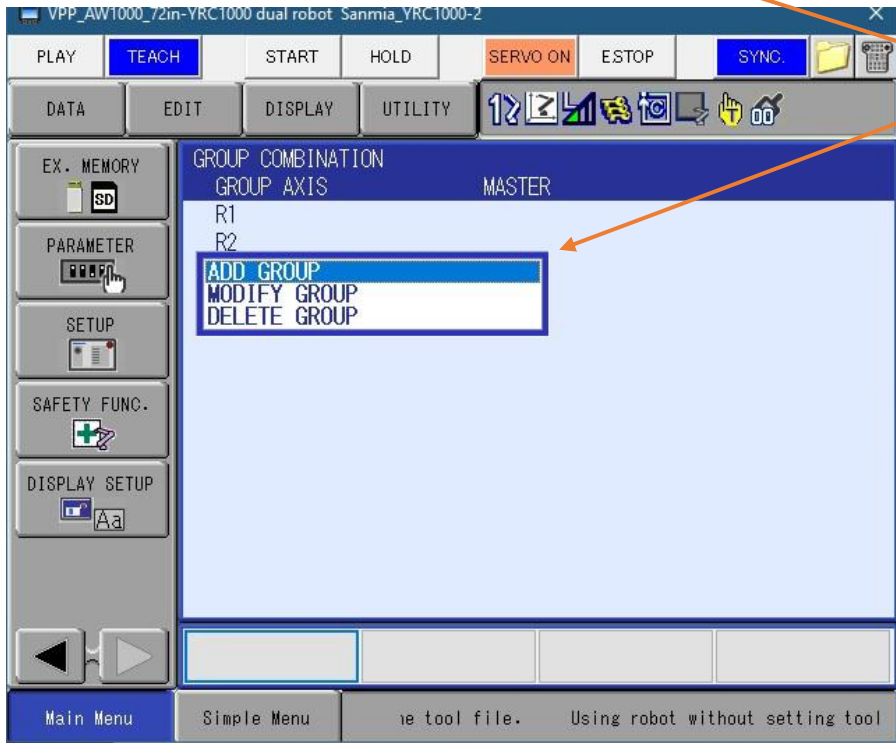**PARTNER SUPPORT**
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9. Once you have picked S1, you can change the FRAME from pulse to joint, then jog it with the arrow keys. The top arrow, or plus direction, should move the electrode out and move the contact tips close together. If the stroke is not correct, then you can go back into maintenance mode through the control group details and modify the distance of travel.

10. You will need to set a TCP as well. The TCP will be attached to the non-movable electrode.
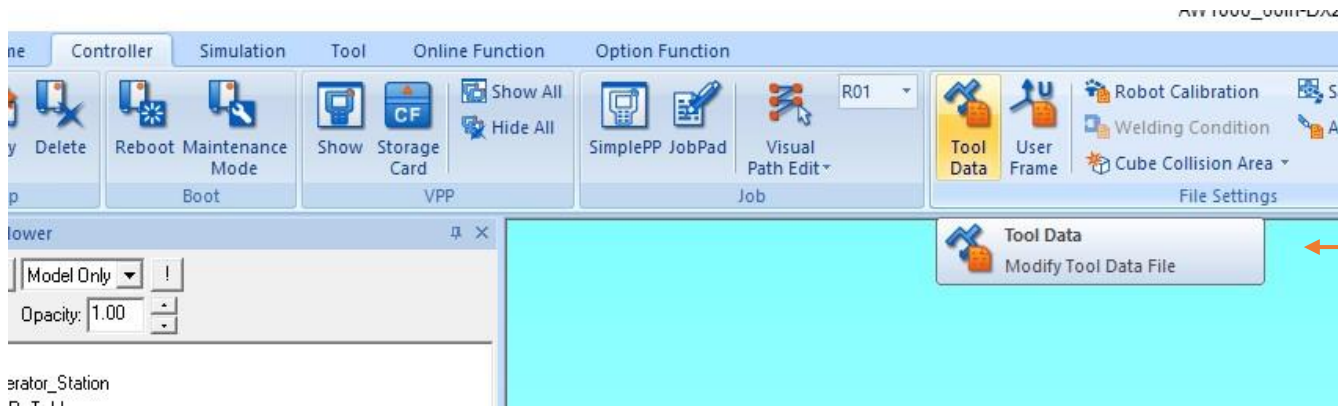
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11. With the tool data window open, click on the Pick Enable. Then pick on the center of the electrode tip. Rotate it until the flag is pointing away from the tip and toward the movable tip.

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12. Before creating a job, make sure to go to setup and add a group

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13. In the group setup window, hit your keyboard space bar or the pendant select button. That will open the window to ADD GROUP. You will add R1, then cursor down and add S1.

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14. When creating a job, make sure to set R1+S1 in the group set.
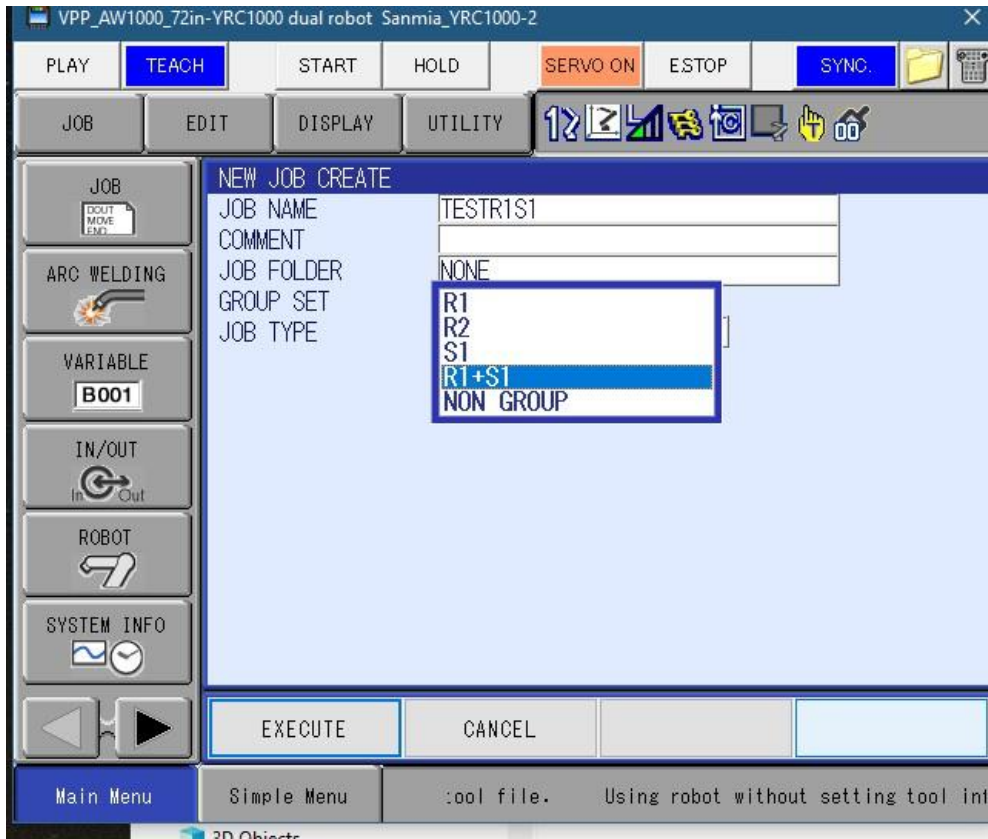
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15. Now you are ready to start programming your spot weld points. Jog the robot normally and the gun with external axis active and using the +/- X button.

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