

## Playback Trajectory Check Function (High Accuracy Test Run)

### Introduction

Programming a robot at a conservative or slower speed is often practiced during the setup and testing phase. Once the programming objectives have been met, it is time to start speeding the system up to achieve the desired cycle time. It is common to increase the playback speed gradually and observe the results. This is because the robot path is more rounded off at higher speeds and can be quite different if large speed changes are made. This can result in crashes in areas where there is hardware close to the robot path. The YRC1000 has a Playback Trajectory Check Function that restores the path that the robot will take in PLAY mode and applies it to the INTERLOCK + TESTSTART path confirmation procedure. This can reduce the amount of time it takes to get the programs running at the desired speed.

### Setup

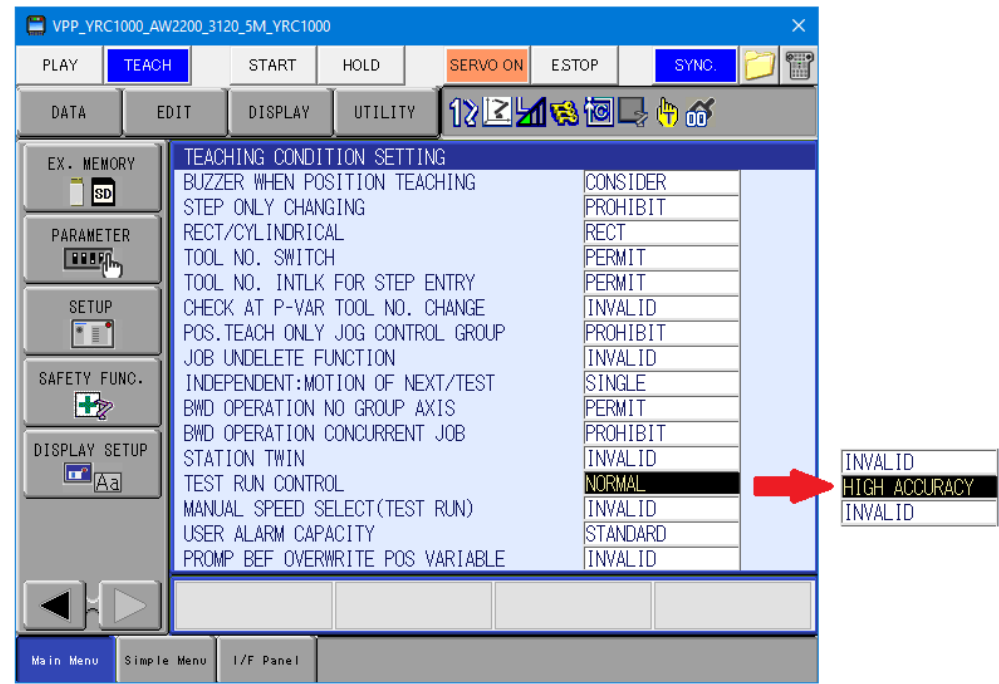
Make sure the security level is EDITING or higher.

- 1) Press the [SETUP] button on the Main Menu.
- 2) Press the [TEACHING COND.] button.
- 3) Cursor down to TEST RUN CONTROL.
- 4) Choose NORMAL or HIGH ACCURACY.

**NORMAL** is the legacy setting and has slightly more deviation between test run operation and playback operation. Speed increases to the program should be done gradually.

**HIGH ACCURACY** restores the trajectory of the robot control points during INTERLOCK + TESTSTART operation to be like the path it takes in PLAY mode.

**SEE NEXT PAGE FOR PROPER USED AND CAUTIONS!**



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](mailto:partnersupport@motoman.com) for updates or clarification.

## Proper Usage

Make sure the TOOL file has been setup properly. This includes TCP data, tool weight, center of gravity, and moment of inertia.

To use this function properly, you must be in TEACH mode and use INTERLOCK+TEST START to run through the points to be tested continuously.

The speed for INTERLOCK+TEST START runs the same as programmed speed until it exceeds a speed limit that is 25% of max. It stays at the 25% max speed for any speeds that are over that limit.

To test with INTERLOCK + TEST START (High Accuracy), you must have the cursor position and robot aligned at the same position preceding the area of the job you want to test. This is because the path planner must look ahead at the entire sequence of movement to calculate the path it will take in PLAY mode. If you interrupt the motion and move the cursor, it can cause some deviation upon resuming. The robot processes a group of MOVC instructions in a similar fashion, if you skip a MOVC with the cursor or start in the middle of the path, the robot will do LINEAR movement to the MOVC of the line the cursor is on and then proceed to run normally after it has achieved that line.

This function does not work with the FWD/BWD keys. When you do FWD/BWD movement, the robot is just moving between command positions without processing instructions like speed, acc/dec, accuracy, etc. It processes the movement at the manual speed selection of L/M/H. This may look close to Interlock+Test Start (normal) but may not be the same based on programmed speeds.

This function does not work with HIGH SPEED override key.

Following functions cannot be simulated using the high accuracy setting:

- Weaving function
- COMARC function
- Sensor function
- Twin/triple coordinated control function
- Conveyor synchronized function
- Weld line coordinate shift function

When the functions above are executed in test operation (high accuracy), the alarm “4909 TEST RUN (HIGH ACCURACY) ERROR” occurs. Ensure that the above functions are set to operate in the normal setting.

More information can be found in the [YRC1000 General Operator’s Manual 178645-1CD](#).