



## ADVENT LINEAR AXIS/ Z-AXIS/ ROTATION MOTION CONTROL CALIBRATION

### 1. INTRODUCTION

This procedure is used to calibrate an ADVENT System linear motion axis, z-axis or rotation axis control function to assure accurate and reliable motion control. This procedure applies to all ADVENT Systems.

### 2. RESPONSIBILITIES

Performer	Responsibility
Technician	<p>After assuring prerequisites are met, performs a calibration check of the ADVENT motion control function(s) using steps 4.1 through 4.11.</p> <p>If required, calculates and adjusts the Drive Ratio per step 4.13 and rechecks the calibration using steps 4.1 through 4.11.</p> <p>If the motion control function fails to calibrate properly, initiates troubleshooting with assistance of AMET Technical Support.</p>

### 3. PREREQUISITS

The following tools and equipment are required by this calibration procedure:

- 3.1 Non-permanent pen or pencil.
- 3.2 Measuring device (accurate rule or dial indicator).

### 4. INSTRUCTIONS

- 4.1 Launch CALIBRATION Mode from the ADVENT Control Panel.
- 4.2 Expand the "I/O Channels" section on the left side of the screen by clicking on the arrow next to "I/O Channels".
- 4.3 Expand the "Servo Channels" section on the left side of the screen by clicking on the arrow next to "Servo Channels".
- 4.4 Double click on the axis for which you would like to check calibration.
- 4.5 HOME the selected axis by using the associated **HOME** button located in the middle of the dialog box that you just opened. The button has a pictorial representation of a "House". Once the selected axis has completed travel and is in the home position, it is ready for calibration.
- 4.6 Mark the location of the slide by using a non-permanent pen or pencil. This mark will allow you to measure the actual distance that the axis has traveled. Another option for this step is to use a dial indicator to measure the travel distance.



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Doc. No.: TP-AD-006

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Page: 2 of 2

Effective Date: 09/17/2007

- 4.7. In the “Position” box enter in a distance value that you would like to travel in order to check the calibration.
- 4.8. In the “Velocity” box enter in a velocity value that you would like the slide to travel in order to reach the position you entered in the “Position” box in the last step.
- 4.9. Select “Move Absolute” from the mode box.
- 4.10. Press the **Start** button in the axis dialog box and let the slide finish its move.
- 4.11. Once the axis is done moving, measure the distance of travel by using an accurate measuring device. Verify that the measurement is the same as the commanded length. If the measurement is the correct length, the calibration is complete. If the measurement is incorrect then continue with step 4.12.
- 4.12. Choose the “Controller” pull down menu from the top of the screen and select EDIT Mode. Expand the “Hardware Configuration” section by clicking on the arrow next to “Hardware Configuration”. Expand “Servo Control” by clicking on the arrow next to “Servo Control”. Select the servo axis that you are working on by double clicking on the servo name.
- 4.13. Verify the “Encoder Resolution” and “Drive Ratio” are correct for the selected axis configuration. If the “Encoder Resolution” and “Drive Ratio” are correct go to step 4.14. If the “Encoder Resolution” and the “Drive Ration” are incorrect go to step 4.15.
- 4.14. Verify that all mechanical connections are sound and there is no slippage of the motor shaft to the encoder or gear box.
- 4.15. If there are no mechanical discrepancies then contact AMET for the correct “Encoder Resolution” and “Drive Ratio” values.

### 5. RECORDS

None

### 6. DEFINITIONS

None

### 7. REFERENCES

ADVENT System Manual, SM-[TBD] - DRAFT

ADVENT Maintenance Manual, MM-[TBD] - DRAFT

### 8. APPENDIXES

None