XM LINEAR AXIS/Z-AXIS, OSC MOTION MODULE CALIBRATION CHECK

1. INTRODUCTION

This procedure is used to check the calibration the XM System Linear Axis Motion Module to assure accurate and reliable positioning of the motion control devices. This procedure applies to all XM Modules loaded with Linear Axis, AVC, OSC firmware.

2. RESPONSIBILITIES

Performer	Responsibility
Technician	After assuring prerequisites are met, performs a calibration check of the Linear Axis Module functions using steps 4.1 through 4.10 of this procedure. If calibration check fails, initiates troubleshooting using step 4.11 and the NOTE at the end of this procedure as guidance.

3. PREREQUISITS

Record the XM Module serial number in Section 5, *RECORDS*. Tools and equipment required to perform this calibration include:

3.1 Non-permanent pen or pencil.

3.2 Measuring device (accurate rule or dial indicator).

4. INSTRUCTIONS

4.1 Press the SETUP Mode Button on the controller.

4.2 Use the SELECT MODULE Programming Knob to highlight the Linear Axis/AVC/OSC Module to be calibrated.

> **NOTE**: Not all linear axis devices have HOME capability. Step 4.3 only applies to those linear axis devices that have a HOME switch.

4.3 HOME the selected axis (negative direction) by using the associated HOME Function Button located in the MOTION Function Button section on the right hand side of the controller.

4.4 Press the CALIBRATE Programming Knob to enter the CALIBRATION Mode.

4.5 Use the SELECT PARAMETER Programming Knob to scroll down to "KAccell."

4.6 Set a desired velocity using the ADJUST VELOCITY Programming Knob.

4.7 Set a length of travel for the axis to move by using the ADJUST LENGTH Programming Knob. A length between 3 and 5 inches will be sufficient for an accurate calibration.

4.8 Mark the position of the slide using a non-permanent pen or pencil. This mark will be used to determine the actual distance the axis has traveled. Another option for this step is to use a dial indicator to measure the travel distance.

4.9 Press the **Start** Sequence Button on the controller.

4.10 When the linear axis travel has stopped, measure the travel distance by using an accurate measuring device and compare it to the value set in Step 4.7. If the measurement is correct, there is no need for adjustment; stop here. If the measurement is incorrect continue with step 4.11. If you have already completed step 4.11 and the measurement is still incorrect, refer to the NOTE below.

4.11 Exit the CALIBRATION Mode by pressing the CLOSE Soft Button. Verify the Linear Axis/AVC/OSC Module being checked is still highlighted. Press the CONFIGURE Programming Knob to enter the CONFIGURATION Mode. Press the CUSTOMIZE Soft Button. Press the LOAD Soft Button. Use the SELECT Programming Knob to highlight the configuration file for the Linear Axis/AVC/OSC Module being checked. Press the LOAD Soft Button. Press the CLOSE Soft Button twice to exit the CONFIGURATION Mode. Repeat Steps 4.1 through 4.10.

NOTE: Once you enter into the Configuration Mode, as was described in step 4.11 of the calibration procedure, you will notice a "Counts/Unit" parameter on the right hand side of the display. This will only appear when "Slide," "Z-Axis," or OSC Axis" is selected on the left hand side of the display. The existing value in the "Counts/Unit" parameter is based on the encoder counts and the drive ratio of the motor and gear box assembly. If the axis does not move accurately to a commanded distance then either the "Counts/Unit" parameter has changed from its original value or there is a mechanical discrepancy with the motor and encoder assembly. In order to determine the source of the problem, continue with the steps below:

1. Verify that all mechanical connections are sound and there is no slippage of the motor shaft to the encoder or gear box.
2. If there are no mechanical discrepancies, contact AMET Inc., Technical Support for the correct "Counts/Unit" value.

5. RECORDS

Technician: _____ Date: _____

XM Module Serial Number: _____

6. DEFINITIONS

None

7. REFERENCES

7.1 XM System Manual, SM-001

7.2 XM Maintenance Manual, MM-001 (DRAFT)

8. APPENDIXES

None