



XM WIRE FEED MODULE CALIBRATION

Doc. No.: TP-XM-001

Revision: 3

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Effective Date: 08/10/2009

1. INTRODUCTION

This procedure is used to calibrate the XM System Wire Feed Module to assure accurate and reliable wire feed delivery rate and quantity. This procedure applies to all XM Modules loaded with Wire Feed firmware.

2. RESPONSIBILITIES

Performer	Responsibility
Technician	After assuring prerequisites are met, performs a calibration check of the Wire Feed Module functions using steps 4.1 through 4.9 of this procedure. If calibration is required, performs calibration using steps 4.10 through 4.15 of this procedure.

3. PREREQUISITS

Record the XM Module serial number in Appendix A. Tools and equipment required to perform this calibration include:

- 3.1 Wire cutters (for trimming the weld wire).
- 3.2 An accurate rule (inches or millimeters as desired).

4. INSTRUCTIONS

- 4.1 Press the SET UP Mode Button on the controller.
- 4.2 Use the SELECT MODULE Programming Knob to highlight the Wire Feed Module to be calibrated.
- 4.3 Press the CALIBRATE Programming Knob to enter CALIBRATION Mode.
- 4.4 Set a desired wire feed velocity using the ADJUST VELOCITY Programming Knob.
- 4.5 Set a length of wire for the wire feeder to advance by using the ADJUST LENGTH Programming Knob. Record the value in the "Initial Check" column of Appendix A, Table A-1, *XM Wire Feed Calibration Data*.
- 4.6 Trim the weld wire even with the tip of the wire feed nozzle to ensure an accurate length will be measured.
- 4.7 Press the **Start** Sequence Button on the controller.
- 4.8 When the wire stops feeding, cut the wire off at the tip of the wire feed nozzle.



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- 4.9 Measure the length of the wire and record in the *Initial Check* column of Appendix A, Table A-1, *XM Wire Feed Calibration Data*. Compare the INCHES OUTPUT value to the INCHES COMMANDED value set in Step 4.5 above. If the wire is the correct length, no adjustment is needed. Record the final INCHES COMMANDED and INCHES OUTPUT in the *Final Check* column of Table A-1, *XM Wire Feed Calibration Data*. Proceed to step 4.11 to obtain the value for COUNTS/UNIT and record in Appendix A, Table A-2, *Final COUNTS/UNIT*, and stop here.

If the wire length is incorrect continue with step 4.10. If you have already performed step 4.10 and the wire length is still incorrect, perform steps 4.11 through 4.15.

- 4.10 Press the CLOSE Soft Button. Verify the Wire Feed Module selected in step 4.2 is still highlighted. Press the CONFIGURE Programming Knob to enter the CONFIGURATION Mode. Press the CUSTOMIZE Soft Button. Use the SELECT Programming Knob to highlight Wire Feeder configuration file for the module being calibrated. Press the LOAD Soft Button. Press the CLOSE Soft Button twice. Repeat steps 4.2 through 4.9
- 4.11 Press the CLOSE Soft Button. Verify the Wire Feed Module selected in step 4.2 is still highlighted. Press the CONFIGURE Programming Knob to enter the CONFIGURATION Mode. Press the CUSTOMIZE Soft Button. Use the SELECT Programming Knob to highlight Wire Feeder configuration file for the module being calibrated. Locate the COUNT/UNIT on the right side of the screen. Use this value in the equation below (current counts per unit, CC).
- 4.12 Calculate the correct counts per unit using the following equation:

$$X = IC \left(\frac{CC}{IO} \right)$$

Where:

X = desired counts per unit

IC = inches commanded

CC = current counts per unit

IO = inches output by the wire feeder

- 4.13 Replace the existing value in the COUNTS/UNIT parameter with the new value (X) by using the SELECT ATTRIBUTE Programming Knob to highlight the COUNTS/UNIT and the ADJUST VALUE Programming Knob to change the value.
- 4.14 Press the SAVE Soft Button. Press the SELECT Programming Knob to highlight the configuration file for the wire feed module being calibrated. Press the SAVE Soft Button. Press the CLOSE Soft Button twice.



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- 4.15 Repeat Steps 4.1 through 4.9 to confirm proper calibration of the Wire Feed Module. Repeat the entire procedure as many times as needed to achieve an accurate calibration. Record the final INCHES COMMANDED and INCHES OUTPUT in the *Final Check* column of Table A-1, *XM Wire Feed Calibration Data*. Record the final COUNTS/UNIT in Appendix A, Table A-2, *Final Counts per Unit*.



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5. RECORDS

The records for this calibration are in Appendix A, *XM Wire Feed Module Calibration Data*.

6. DEFINITIONS

None

7. REFERENCES

- 7.1 XM System Manual, SM-001

8. APPENDIXES

Appendix A – *XM Wire Feed Module Calibration Data*



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Appendix A

XM Wire Feed Module Calibration Data

Technician:

Date:

XM Module Serial Number:

Table A-1, XM Wire Feed Calibration Data

Parameter	Initial Check	Final Check
Step 4.5 – INCHES COMMANDED		
Step 4.9 – INCHES OUTPUT		

Table A-2, Final COUNTS/UNIT

Parameter	Final Value
Step 4.14 – COUNTS/UNIT	