



XM WIRE FEED MODULE CALIBRATION

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 Section 5, *RECORDS*. 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 Table 1.
- 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.
- 4.9 Measure the length of the wire and compare it to the value set in Step 4.5 above and record the value in Table 1. If the wire is the correct length, no adjustment is needed; 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



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- 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. Record this value in Table 1 for use in the equation below.
- 4.12 Calculate the correct drive ratio (X) using the following equation:

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

Where:

X = desired counts per unit (drive ratio)

IC = inches commanded

CC = current counts per unit

IO = inches output by the wire feeder

Table 1 - Drive Ratio Calculation Worksheet

Parameter	As Set	As Measured	As Left
Step 4.5 – INCHES COMMANDED			
Step 4.9 – INCHES OUTPUT			
Step 4.10 – COUNTS/UNIT			
Step 4.11 – DRIVE RATIO (X)			

- 4.13 After determining the new drive ratio (X), replace the existing value in the COUNTS/UNIT parameter with the new (X) value 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.
- 4.15 Repeat Steps 4.1 though 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.



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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