



Re-calibrating an Allen Bradley Drive

PROBLEM: When the 23922 card is changed in this stacker the Allen Bradley Variable Frequency Drive may need re-calibration. This is the procedure for this re-calibration. Also, when updating Software (changing U-18 in a 35X stacker or changing U-2 in a 40X stacker) the drive may need re-calibration. This is usually true if the new EPROM is dated after 11/24/99, (when feedback correction was added to the infeed motor control operation).

On the Parameter Page set the Minimum Infeed Speed to 290 FPM. Start the Stacker. Go to the Status page and read the actual infeed speed. If this is within ± 10 FPM, then no re-calibration is necessary. If the Infeed Speed is off by more than 10FPM then re-calibrate the Allen Bradley drive as follows:

First some general instructions:

1. When powering on the Drive the Display Parameters 1 to 19 may be viewed by using the up \uparrow and down \downarrow arrows.
2. Pressing **ESC** once enters the program mode and program parameters 30 to 84 may be viewed by pressing the up down arrows. Pressing **ESC** again returns the Drive to the Display Mode.
3. Changing Program Mode Parameter 57 to 0 enables the change of any of the parameters. Changing Parameter 57 to 1 locks out any accidental change of any of the program parameters.
4. When in program Mode pressing **Sel** allows you to change the parameter value by pressing the up down keys. When in program mode the **parameter number** is displayed in the left two digits followed by a decimal place. The right hand digit(s) display the **parameter value**.
5. Notice that when pressing **Sel**, the left decimal point begins to flash. This means that change of **parameter values** is now possible.
6. Viewing Display Parameter 11 displays the Firmware version of the drive that you are using. (4.01, 4.02, 4.03, 4.07, 5.01, 5.02, 7.01, 7.03etc.)
7. The parameters for each version are shown on the schematic diagram for the stacker.
8. The top line of the status page shows:

for software versions before 11/24/99

The Press Speed	The Infeed Speed
0 FPM	180 FPM

for software versions after 11/24/99

The Press Speed	The Infeed Speed	Difference
0 FPM	180 FPM	+ 5 FPM

9. The value for the Press Speed will be 0 if the upstream conveyor is not running. The value for The Infeed Speed should be equal to the number set for Minimum Infeed Speed ± 10 FPM. The Difference (later software only) can range from + 50 to -50. If the value is 50 with the infeed running the Allen Bradley Drive definitely needs re-cali-

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bration. After calibration the difference should read ± 10 except when running at maximum speed (300 FPM, 330 FPM, or 350 FPM) (varies with stacker model)

10. Before proceeding examine the front panel of an Allen Bradley drive and familiarize yourself with the various key-strokes and parameters described above. Read the firmware version as described in paragraph # 6. Practice changing parameters by turning on and off the software lock in paragraph # 3. Find out if your drive needs re-calibration by looking at the Status Page as described in paragraphs #8 and #9.
11. All readings of the infeed speed and re-calibrations are done when the Press Speed is 0 FPM. Parameter changes can only be made when the infeed has been stopped.

Re-calibration Firmware Version 4.xx

12. First power up the stacker. Do not push start. Set the Minimum Infeed Speed to the maximum value (usually 300 FPM). Enter the program mode (press **ESC**). Scroll $\downarrow \uparrow$ to parameter 57 (Program Lock). Enable change (press **SEL**) (**the** decimal place flashes). Change \downarrow the value to 0. Press Enter \leftarrow . Scroll to parameter 60 (Analog Scale Teach). Enable change (press **SEL**). Change \uparrow the value to 1. Press Enter \leftarrow . The Drive now remembers the exact value of the DC input signal at terminals 2 & 3 of the drive and uses this as a value for full-scale frequency.
13. In a similar manner to the above, Set Parameter 57 to 1 (to lock the software). Press Esc to leave the program mode and return to display Mode. Scroll to Parameter 01 and press Esc Esc (twice). Now start the stacker and check that the infeed is running at the correct speed as you did in paragraph #8 & #9 above. You can check the calibration at several different minimum infeed speed settings.

Re-calibration Firmware Version 5.00 and higher

14. On the Parameter Page, set the Minimum Infeed Speed to the Maximum Speed. This is usually 300 FPM on a 350 stacker and 330 FPM on a 400 Stacker. Power off the stacker for 20 seconds and power it back on. Do not push start. Scroll \downarrow to parameter 16 and write down the value. This value should range from 49.6% to 57.4%. Enter the program Mode (Press ESC). Un-lock the software Lock (parameter 57) (par # 3 above). Scroll \downarrow to parameter 76. Enable change (press SEL) to parameter 76. Set the value $\downarrow \uparrow$ to the number read from parameter 16. Press Enter \leftarrow .
15. Lock the software lock and return to display mode as in paragraph 13 above. Check that the infeed speed is now running at the correct speed as you did in paragraphs 8 & 9.