



# Stagehand Pro RS485 Upgrade

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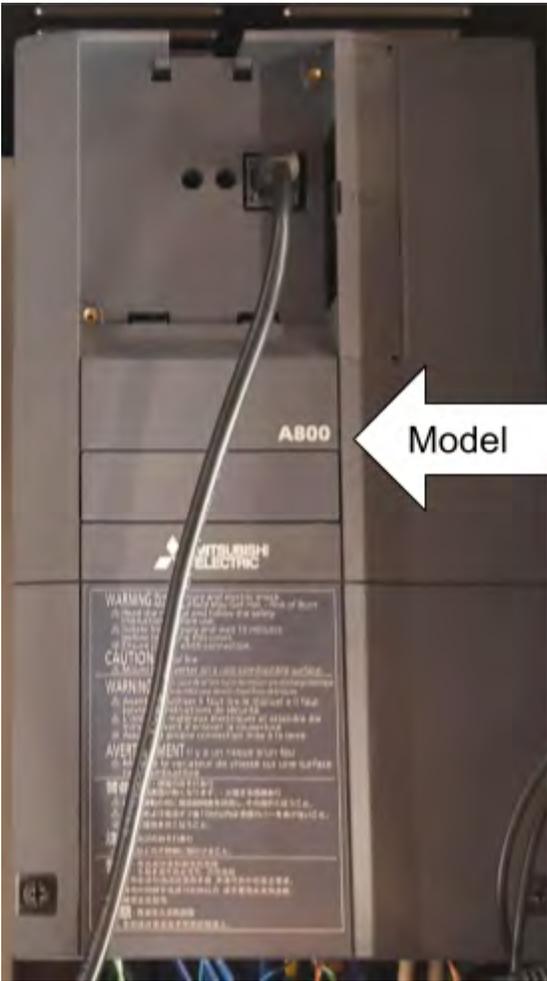
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### Getting Started

- 1. You will need the following to complete this upgrade
  - a. Stagehand Pro running v27 (or later) firmware
  - b. #2 Phillips head screwdriver
  - c. Small flathead screwdriver
  - d. Resistor kit (2 @ 680Ω)
  - e. A known working motor or machine
  - f. A computer running Spikemark 4.0
- 2. Unplug the Stagehand and lay it down on the big side that doesn't slide out.
- 3. Loosen the brass thumb screw on the top of the Stagehand, and slide out the side panel.
- 4. Look for the model number on the VFD (big grey box) It will either say **A800** or **A700**.

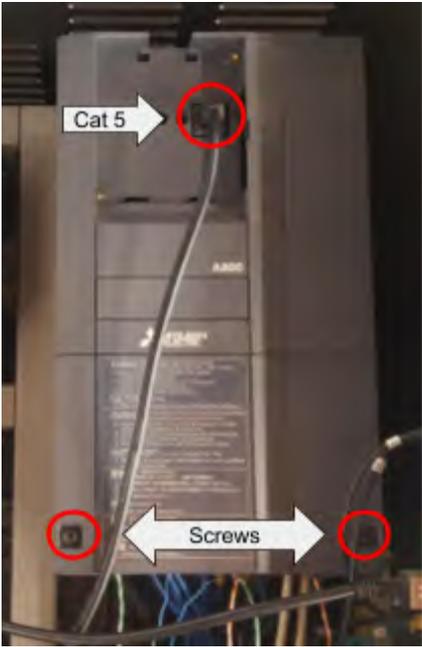
Turn to page 3 for the A800

Turn to page 7 for the A700

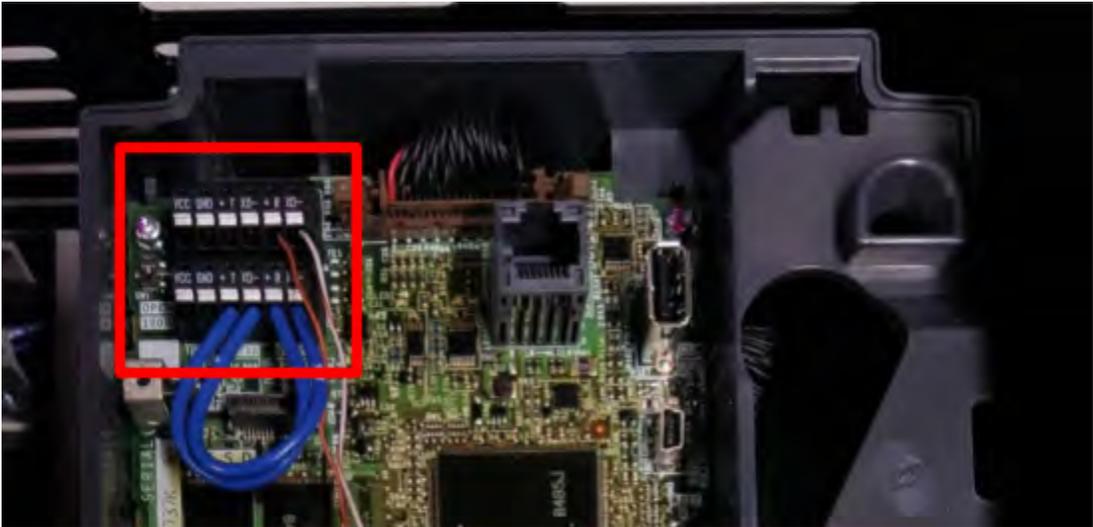


### Upgrading An A800

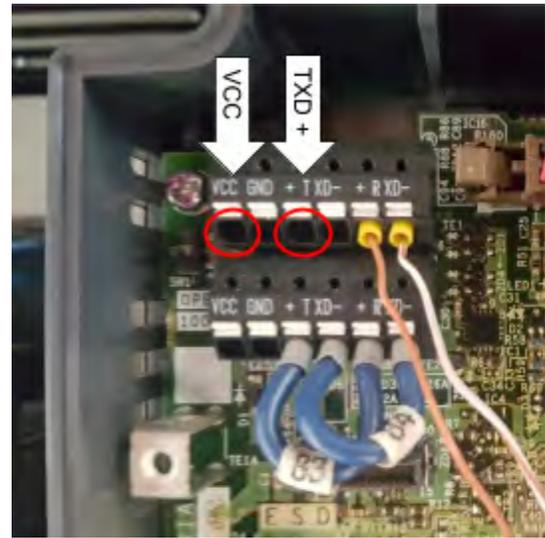
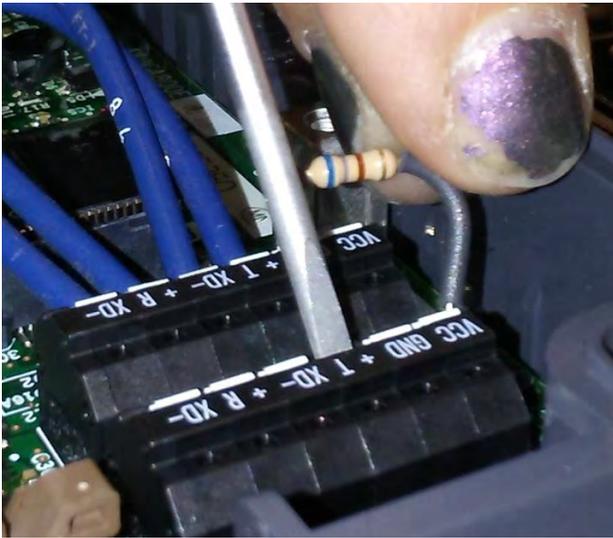
- 1. Unplug the Cat5 cable going into the VFD and remove the 2 screws holding on the lower cover.
- 2. Once the screws are loosened (they will not come out all the way out) gently pull up from the bottom of the cover to remove it.
- 3. Loosen the 1 screw holding in the upper cover.
- 4. Once the screw is loosened (it will not come out all the way out) gently pull up from the bottom of the cover to remove it.



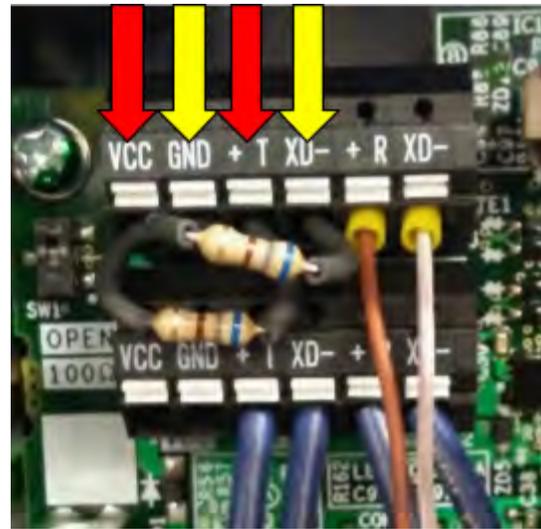
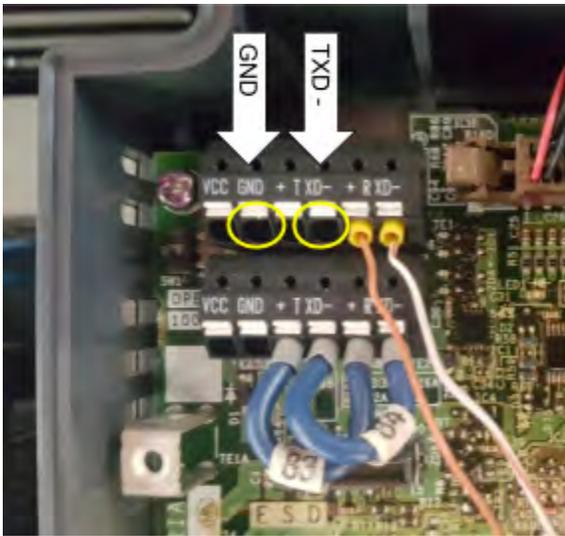
- 5. Look for the communication terminal blocks located at the top of the VFD



- Using a small screwdriver, press the white tabs above each terminal and insert a 680 $\Omega$  resistor between VCC and TXD +

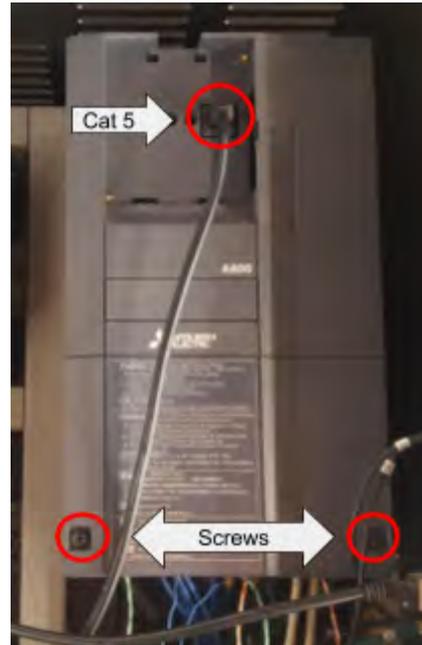


- Repeat to insert a 680 $\Omega$  resistor between GND and TXD-.



- IMPORTANT:** make sure the bare legs of the resistors are not touching each other. You should be able to gently tug on the resistors and they should not come out of the VFD.
- Confirm RDX discrete wiring connections:
  - RDX+ = BROWN
  - RDX- = WHITE with BROWN STRIPE

10. Replace upper VFD cover by snapping it into place and tightening the screw at the bottom.
11. Replace lower VFD cover by snapping it into place and tightening the 2 screws.



12. Plug the Cat5 cable back into the VFD.
13. Remove all foreign material from the Stagehand and replace its side cover. Tighten your thumbscrew.
14. Plug in a motor
15. Plug in and power up the Stagehand.

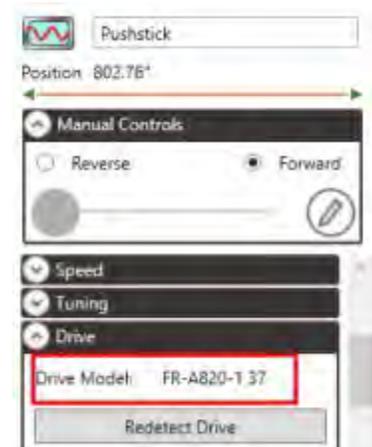
16. Using the VFD keypad on the front of the Stagehand, change the parameters to match the settings in the table below:

Parameter		A800 / A700 Value
79	Operation mode selection	0
117	PU communication station number	1
118	PU communication speed	48
119	PU communication stop bit length	0
120	PU communication parity check	0
331	RS-485 communication station number	1
332	RS-485 communication speed	48
334	RS-485 communication parity check selection	0
338	Communication operation command source	0
339	Communication speed command source	0
340	Communication startup mode selection	0
549	Protocol selection	1
550	NET mode operation command source selection	1
551	PU mode operation command source selection	9999

17. After making all the changes, cycle power to the VFD.
18. Open Spikemark 4.0, connect to the Stagehand.
19. Confirm that your Stagehand is running firmware version 27 or later.
20. In Spikemark, scroll down to the Drive section.
21. Next to Drive Model you should see **A800 Series**, or **FR-A8** followed by other letters and numbers. Your drive is now speaking to Spikemark!

Congratulations! You are all done and ready to take advantage of the awesome new features in Spikemark 4.0.

If your drive cannot be detected, jump to troubleshooting on Page 11.



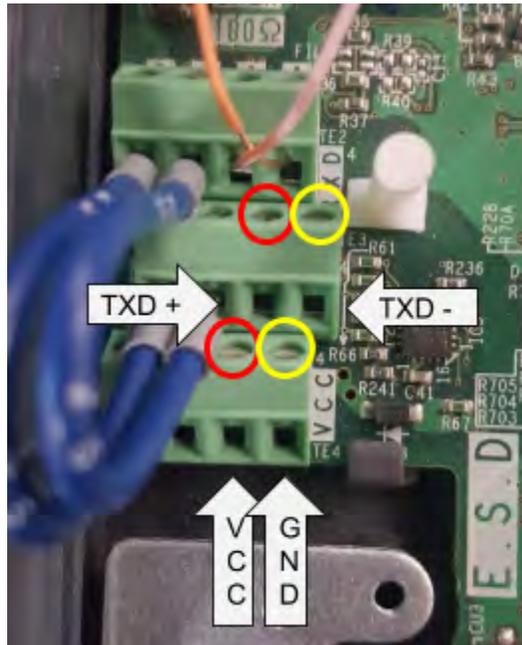
### Upgrading An A700

- 1. Unplug the Cat5 cable going into the VFD and remove the 2 screws holding on the cover.
- 2. Once the screws are loosened (they will not come all the way out) gently pull up from the side of the cover to remove it.

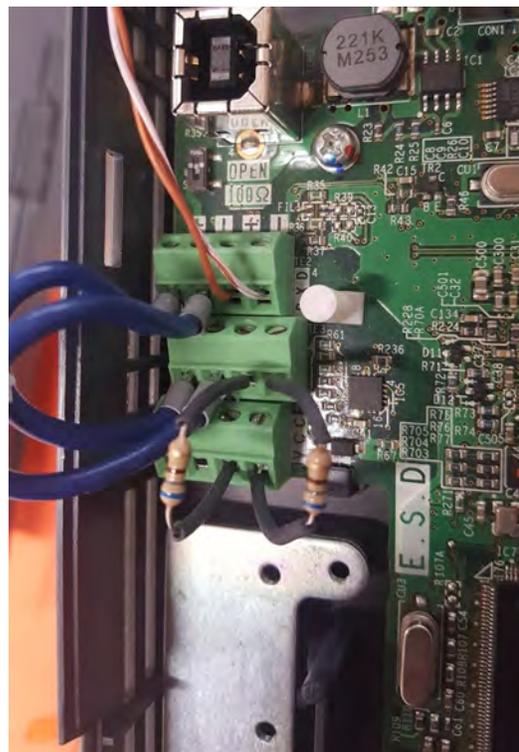


- 3. Look for the communication terminal blocks located at the top of the VFD

4. Using a small screwdriver, loosen the 4 screws circled below
  - a. The lower terminal block are the VCC and GND connections
  - b. The middle terminal block are the TXD+ and TXD- connections



5. Insert one leg of the first 680Ω resistor into VCC and one leg of the second 680Ω resistor into GND and tighten the screws.
6. Connect the other side of the resistors:  
Insert the remaining leg from the resistor plugged into VCC into TXD +.  
Insert the remaining leg from the resistor plugged into GND into TXD -. Tighten down both screws



7. **IMPORTANT**

- a. make sure the resistors are not touching each other or any other components
  - b. the resistors should not cross
  - c. You should be able to gently tug on the resistors and they should not come out of the VFD.
8. Replace VFD cover by snapping it into place and screwing in the two screws



9. Plug the cat5 cable back into the VFD.
10. Remove all foreign material from the Stagehand and replace its side cover. Tighten your thumbscrew.
11. Plug in a motor, and power on the Stagehand.

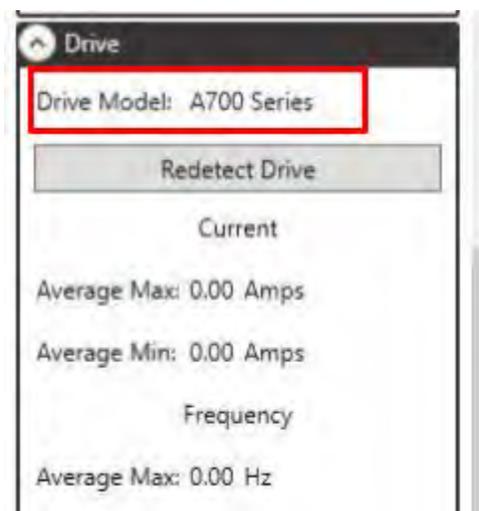
12. Using the keypad on the front of the Stagehand change the parameters to match the settings in the table.

Parameter		A800 / A700 Value
79	Operation mode selection	0
117	PU communication station number	1
118	PU communication speed	48
119	PU communication stop bit length	0
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338	Communication operation command source	0
339	Communication speed command source	0
340	Communication startup mode selection	0
549	Protocol selection	1
550	NET mode operation command source selection	1
551	PU mode operation command source selection	9999

13. After making all the changes cycle power to the VFD
14. Open Spikemark 4.0, connect to the stagehand.
15. Confirm that your Stagehand is running firmware version 27 or later.
16. In Spikemark, scroll down to the drive section.
17. Next to Drive Model you should see either **A700 Series** or **FR-A7** followed by other letters and numbers. This means your Stagehand is talking to Spikemark!

Congratulations! You are all done and ready to take advantage of the awesome new features in Spikemark 4.0.

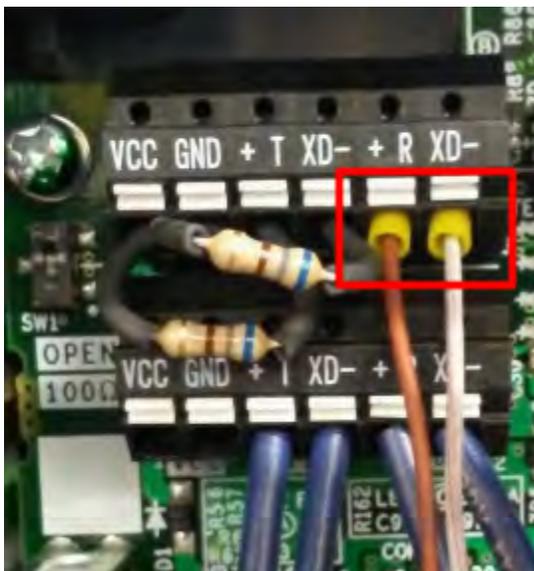
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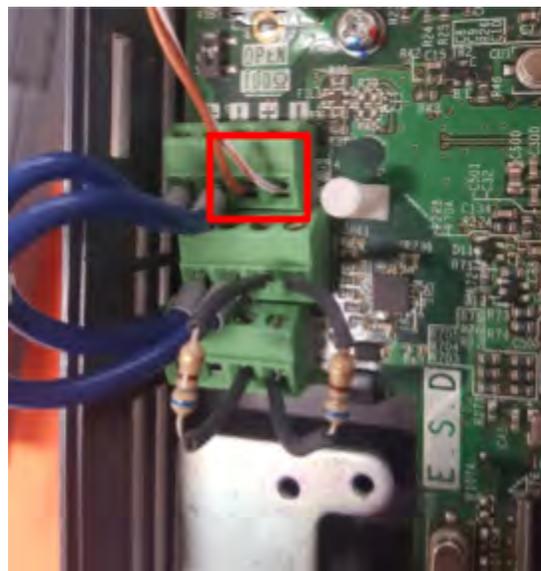
## Troubleshooting

- A. VFD wont turn on
  - a. Double check that your resistors are not touching
- B. If drive model says undetectable
  - a. Double check you are running firmware 27 or above on the Stagehand
    - i. Update firmware through Spikemark 4.0 or later or with the Stagehand Updater Utility
  - b. Double check that you have one 680 $\Omega$  resistor going between TXD+ and VCC
  - c. Double check that you have one resistor going between TXD- and GND
  - d. Double check that you have inserted the resistors securely
  - e. Try swapping the wires going into RXD+ and RXD-

### A800 VFD



### A700 VFD



If you continue to experience difficulties with this upgrade, you can always contact our Technical Support department.

On the web: <http://creativeconners.com/contact/support>

Via email: [support@creativeconners.com](mailto:support@creativeconners.com)

Via phone: 401-289-2942 - follow the prompts for Technical Support

We're available by phone from 8am – 5pm (EST) Monday through Friday. We also check our voicemail regularly after hours and on weekends. If you have problems outside of normal shop hours, please leave a message and someone will get back to you ASAP.