Magnus VLF

Backbone Safety Release Switch Upgrade (electrical)

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Revision History

Revision	Date	Author	Comments
A	28 Jul, 2005	Kam Cheng	First release
B	01 Feb, 2006	Andre Blignaut	Release switch label application added and procedure updated and formatted into new Kodak template.

Magnus VLF Autoloaders
Safety Release Switch Upgrade

CONTENTS

Revision History i

1. Background 1

2. Prerequisites 1

3. Parts/tools 1
   - 3.1 Tools required 1
   - 3.2 Parts required 1
   - 3.3 Parts removed 1

4. Upgrade Procedure 1
   - 4.1 Disconnecting the old cables 2
   - 4.2 Installing the new cables 4

5. System Test 5

1. BACKGROUND

On Magnus VLF devices MT024 to MT137 the backbone release switches are installed and the pneumatic tubes connected, but the electrical cables installed do not support this function. This procedure describes how to replace the existing cables with new ones.

2. PREREQUISITES

Controlled release 2.0 or later must be installed on the Magnus VLF device for the backbone release switches to be functional.

3. PARTS/TOOLS

3.1 Tools required

- 3 and 4 mm hex keys
- Wire cutter
- Anti-static wrist strap

3.2 Parts required

512-00261A, KIT,UPG,CA06631,SAFTY RELEASE BKBONE,MTA which includes:

- 10-9091B, CAB,ASSY,PEB(J2)-PDB(J34)(J35)(J41),MTA (qty 1)
- 220-00142B, CAB,ASSY LIONEL(J11)-REG&STATUS LEDS,MTA (qty 1)
- 220-00773A, CAB,ASSY,EXN,LIONL0(J11),PEB(J2),SOL,MTA (qty 1)
- 18-3049, CAB,TIE,7.5",BLACK (qty 15)

3.3 Parts removed

- 10-9091A, CAB,ASSY,PEB(J2)-PDB(J34)(J35)(J41),MTA (qty 1)
- 220-00142A, CAB,ASSY LIONEL(J11)-REG&STATUS LEDS,MTA (qty 1)

4. UPGRADE PROCEDURE

1. In Service Shell, type `>>door unlock` and open the rear hood.
2. Turn the Magnus VLF's main power switch to the **OFF** position.
3. Remove the away-side rear panel to access the power entry box (PEB) and the engine manifold.
4. Remove the front left panel to access the power box.
5. Turn the rotary switch in the power box to the **OFF** position.
6. Remove the power box cover.

4.1 Disconnecting the old cables

1. At the back of the PEB, disconnect cable 10-9091A from J2.

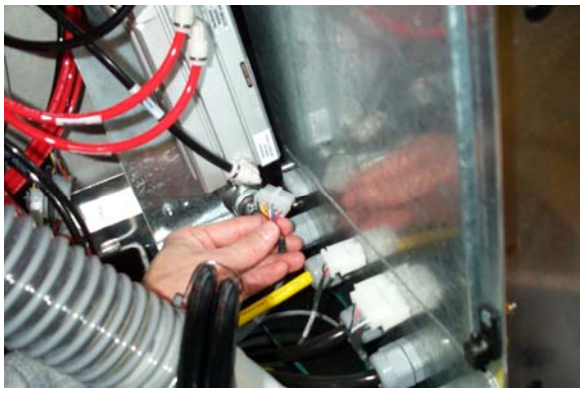


Figure 1: Back of power entry box

2. For Semi-Automatic devices, disconnect cable 220-00142A from cable 220-00144A on the underside of the hood. See Figure 2.
   For automatic devices, open the rear hood and disconnect cable 220-00142A from cable 220-00363A at the MAB electronics bracket. See Figure 3.

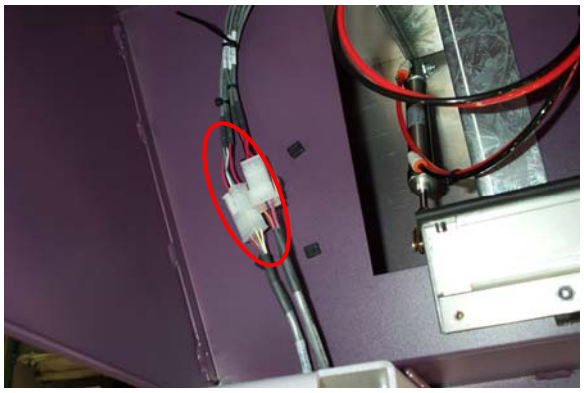


Figure 2: Underside of the hood

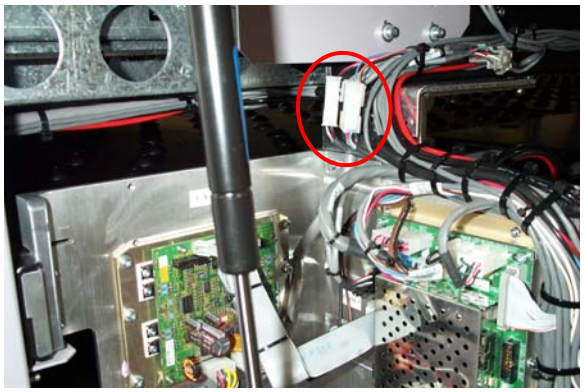


Figure 3: MAB electronics bracket

3. In the power box, disconnect cable 10-9091A from J34, J35, J41 of the power distribution board (PDB).

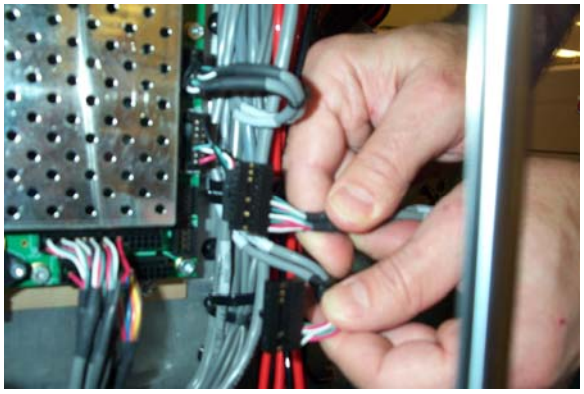


Figure 4: Power distribution board

4. Disconnect cable 220-00142A from J11 of the LIONEL board.



Figure 5: LIONEL board

5. Remove the cable ties along the affected cable bundles and remove the two cables that have been disconnected.

4.2 Installing the new cables

1. Connect cable 10-9091B to J34, J35, and J41 of the PDB. Route the cable through the Exit window and via the AWAY1 cable track on the back of the power box. Follow all the way along the bundle to the HOOD track on the back of the PEB.



Figure 6: Routing cable 10-9091B

2. Connect the other end of cable 10-9091B to J2 on the back of the PEB and to the new cable 220-00773A.

3. At the other end of cable 220-00773A, connect to the **Release Enable** solenoid at the engine manifold.

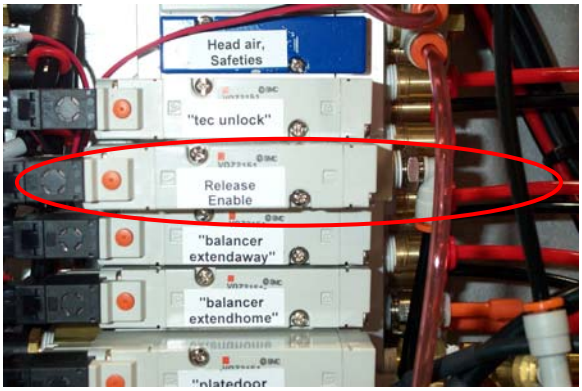


Figure 7: Release enable solenoid

For Semi-Automatic devices:

4. Connect cable 220-00142B to J11 on the LIONEL board. Route the part of the cable labeled **LIONEL(J11)-LEDS BRDS** through the Exit window and via the HOOD cable track on the back of the power box. Follow all the way along the bundle to cable 220-00144A on the underside of the hood and connect it to 220-00144A. See Figure 2.

For Automatic devices:

5. Connect 220-00142B to J11 of the LIONEL board. Route the part of the cable labeled **LIONEL(J11)-LEDS BRDS** through the Exit window and via the HOOD cable track on the back of the power box. Follow all the way along the bundle to cable 220-00363A at the MAB electronics bracket and connect it to 220-00363A. See Figure 3.

For all devices:

6. Route the part of cable 220-00142B labeled **LIONEL(J11)-MANIFD & PEB** through the Exit window and via the AWAY1 cable track on the back of the power box. Follow all the way along the bundle to cable 220-00773A in front of the PEB and connect it to 220-00773A.

7. Use cable ties to secure the new cables to the relative cable bundles.

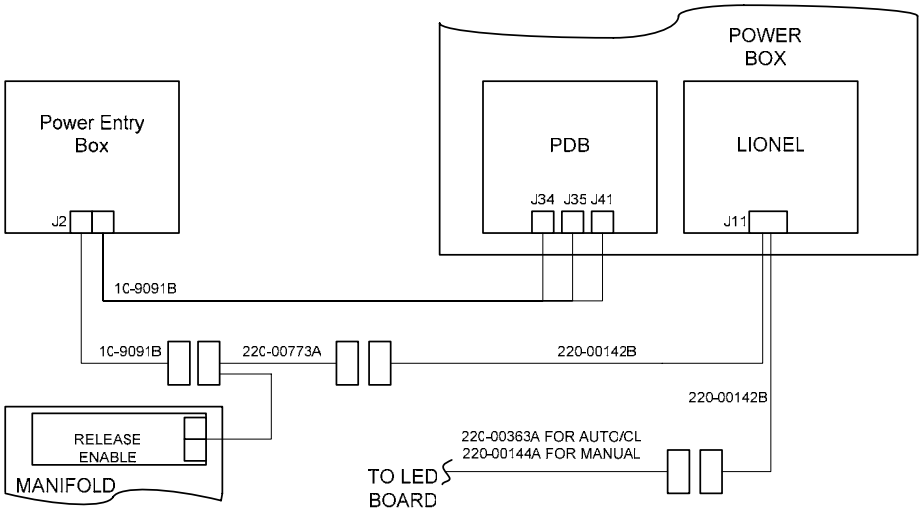


Figure 8: Block diagram of new connections

5. SYSTEM TEST

To test the functionality of the backbone release switches:

1. Check that the red and black pneumatic tubes are connected to the backbone release switches. The two red tubes are connected to a Y-fitting and a single red tube goes to the engine manifold.



Figure 9: Backbone release switch pneumatic tubes

2. Check that the red pneumatic tube is connected to the **Release Enable** solenoid and that the two black tubes are connected to the shuttle valve on the engine manifold.

3. Install the power box cover.

4. Turn the rotary switch on the power box to **ON**.

5. Install the front left panel and the away-side rear panel.
6. Close the rear hood.
7. Turn the device power on and let the device initialize.
8. Open the rear hood.
9. Turn the safety interlock override key switch to the **Interlock Override** position.
10. Press one of the red emergency E-stop switches, and then press one of the black backbone release switches.
11. Check that the backbone has been released and can be moved by hand. If not, check the tube connections and check the connections of the newly installed cables.
12. Apply the Backbone Release Switch labels to the brackets alongside the two black switches.



Figure 10: Backbone release switch label

13. Close the rear hood.
14. Turn the safety interlock override key switch to the **Normal Operation** position.