Kodak

Magnus VLF

Rear Panel Fan Upgrade

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Revision History

Revision	Date	Author	Comments
1	28 April 2006	A.Blignaut / P.Hawes	First draft
A	09 May 2006	A.Blignaut	Red-lines implemented from P.Hawes and C.Rueck.
B	15 Nov 2007	A.Blignaut	Incorrect kit number fixed.

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1. BACKGROUND

The addition of ventilation in the rear panels provides the Magnus VLF device with superior image scaling accuracy due to smaller internal temperature gradients. The fans can be installed on devices with or without the punch option—the difference is in the cable numbering.

To install the rear panel fans on a Magnus VLF should take approximately 6 to 8 hrs.

2. TOOLS REQUIRED

- Hand drill
- 5 mm drill bit
- 6.8 mm drill bit
- M8 tap and tapping fluid

3. PARTS REQUIRED

- Kit # 512-00357A for devices with a 51 in. drum

Or

- Kit # 512-00362A for devices with a 63 in. drum

The kits include new rear panels, fan assemblies, E-Stop brackets, cables, and a drill jig. Although the kits look similar, the mounting brackets are different sizes between the two kits and are not interchangeable.

4. UPGRADE PROCEDURE

4.1 Installing the Fan Assemblies

1. Use Print Console to unlock the device doors and raise the rear hood.
2. Turn the device power to the **OFF** position.
3. Remove the two rear panels.
4. Remove the two E-Stop switch brackets that are mounted on the casting. Disconnect and remove the switches (ES6 and ES7) from the brackets and discard the old brackets.
5. Install the switches on the new E-Stop switch brackets.
6. Mount the drill jig on the left side of the casting. See the drawing in Appendix A for orientation. Use the two M8 screws that were removed from the E-Stop bracket to mount the drill jig. Ensure that the chamfered corner of the jig is on the top-inside corner. Match drill the five pilot holes with a 5 mm drill bit.
7. Remove the drill jig, and mount it on the right side of the casting. In a similar way, match drill the five pilot holes to give a total of 10 new holes. Remove the drill jig.

8. Drill the 10 pilot holes using the 6.8 mm bit.
9. Tap the 10 holes with the M8 tap.
10. Install the new E-Stop brackets using one of the newly tapped holes, and one of the original holes.



Figure 1: New E-Stop switch positions (ES6 and ES7)

11. Install the two fan assemblies using the M8 screws and washers included in the kit. The assemblies are quite heavy, and may need to be supported on blocks to line up the holes in the bracket with the tapped holes in the casting. For each side, two screws hold the hinged bracket to the casting and two screws hold the magnetic latch bracket to the casting. The magnetic latch bracket can be detached from the fan backing while attaching to the casting.
12. Install the air filters in the fan assemblies. Ensure that the direction of flow indicated on the filter frame is into the machine.

4.2 Installing the E-Stop Switch Cables

The original cables going to the E-Stop switches are too short to reach the new switch positions and new cables will have to be installed. Before installing the cables, you must first determine if the punch option is being installed or already installed and whether the device is a series 1 or series 2 device. Go to the rear upper home side E-Stop switch (ES4). If there is a cable coming from ES4 going to the right corner marked 220-00398A then it is a series 1 device. If the cable is 220-00398B, then it is a series 2 device.

See Appendix B for wiring drawings.



Cables 220-01441A and 220-01504A

(cable extension 220-01495A not shown)

Figure 2: Away side fan and cables

4.2.1 Upgrading Series 1 devices

1. Remove and discard cable 220-00398A:

   a. Disconnecting the wires from the terminals of both ES4 (rear upper home side E-stop switch) and ES6 (rear lower home side E-Stop switch).

   b. Disconnect the Molex 2x2 Minifit plug on 220-00398A from cable 220-00330A.

Note: It is not absolutely necessary to remove cable 220-00398A as long as the ends of the cable are neatly tucked and cable tied out of view so that they do not interfere with moving parts.

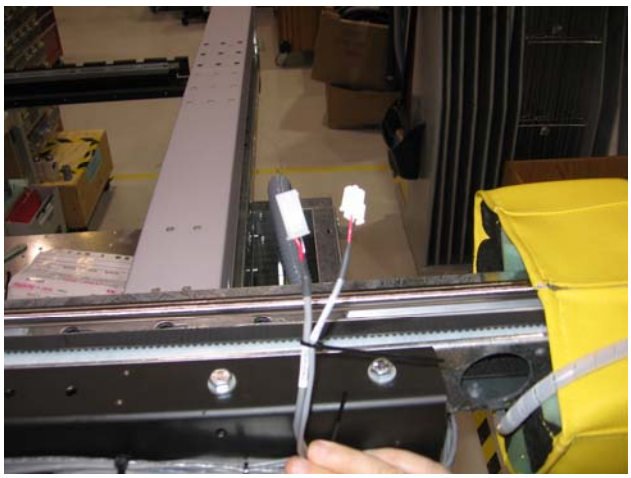


Figure 3: Cables 220-00398B (or 220-01401B) and 220-01337B

2. Disconnect cable 220-00330A from ES5 (front home side E-Stop switch) and discard this cable. Install cable 220-00330B in its place.

Devices without the punch option:

Complete steps 1 and 2 before proceeding to step 3.

3. Connect cable 220-00398B to cable 220-00330B. Connect the wires on the other end of 220-00398B on terminals 12 and 22 of ES4. Switch ES4 is mounted on the on the rear upper bulkhead.
4. Connect cable 220-01337B to cable 220-00330B. Route cable 220-01337B down along the home side bulkhead as shown in Figure 4 to the new location of ES6 (rear lower home side E-Stop switch). Attach to terminals 11 and 21 of ES6 (Rear Lower home E-Stop switch).

Devices with the punch option:

Complete steps 1 and 2 before proceeding to step 3.

3. Connect cable 220-01401A to cable 220-00330B.
4. Route cable 220-00401A along the back bulkhead behind the punch and onto the punch electronics tray to ES4 (ES4 is mounted on the home side of the electronics tray on the punch assembly). Connect the wires on the other end of cable 220-01401A on terminals 12 and 22 of ES4.
5. Connect cable 220-01337B to cable 220-00330B. Route cable 220-01337B down along the home side bulkhead as shown in Figure 4 to the new location of ES6 (rear lower home side E-Stop switch). Attach to terminals 11 and 21 of ES6.



Figure 4: Routing cable 220-00398B

4.2.2 Upgrading Series 2 devices

Devices without the punch option:

1. Unplug cable 220-01337A from cable 220-00330B and remove the wires of 220-01337A from ES6 (rear lower home side E-Stop switch).
2. Connect cable 220-01337B to cable 220-00330B. Ensure that cable 220-00398B is plugged into 220-00330B.
3. Route cable 220-01337B down along the home side bulkhead, as shown in Figure 4, to the new location of ES6 (rear lower home side E-Stop switch). Attach to terminals 11 and 21 of ES6.
4. Replace cable 220-00331A with cable 220-00331B. Cable 220-00331B allows for the extra length needed to go between ES6 and ES7 (rear lower away side E-Stop switch). Neatly cable tie the cables entering the engine casting to ensure that the cables are strain relieved at the terminals.

Devices with the punch option:

1. Connect cable 220-01337B to cable 220-00330B. Ensure that cable 220-01401A is plugged into 220-00330B. Remove 220-00398B and discard it.
2. Route the other end of cable 220-01401A to the punch assembly.

Note: Cable 220-00325A going to ES7 does not need to be replaced. It is long enough for all configurations of Magnus VLF, including rear fan and punch upgrades.

4.3 Installing the Fan Power Cables

1. Route the home side fan power cable 220-01504A along the bottom of the home side fan and into the casting toward the away side and again along the bottom of the away side fan.
2. Connect the power cables 220-01504A and 220-01441A as shown in Appendix B – Rear fan connection diagram and Figure 5. To install the wires into the terminal strip requires the use of a small miniature flat screw driver. The screw driver is inserted into each square hole to open the hole for the wire to enter the round opening. Once the wire has been inserted, remove the screwdriver and the wire will be solidly connected into the terminal. There are four points of entry for each terminal.
3. Ensure that the capacitors (13-4847) are correctly connected inside the junction box. They are non-polarized AC caps. Tuck the caps into the box so that the wires are strain relieved as shown.

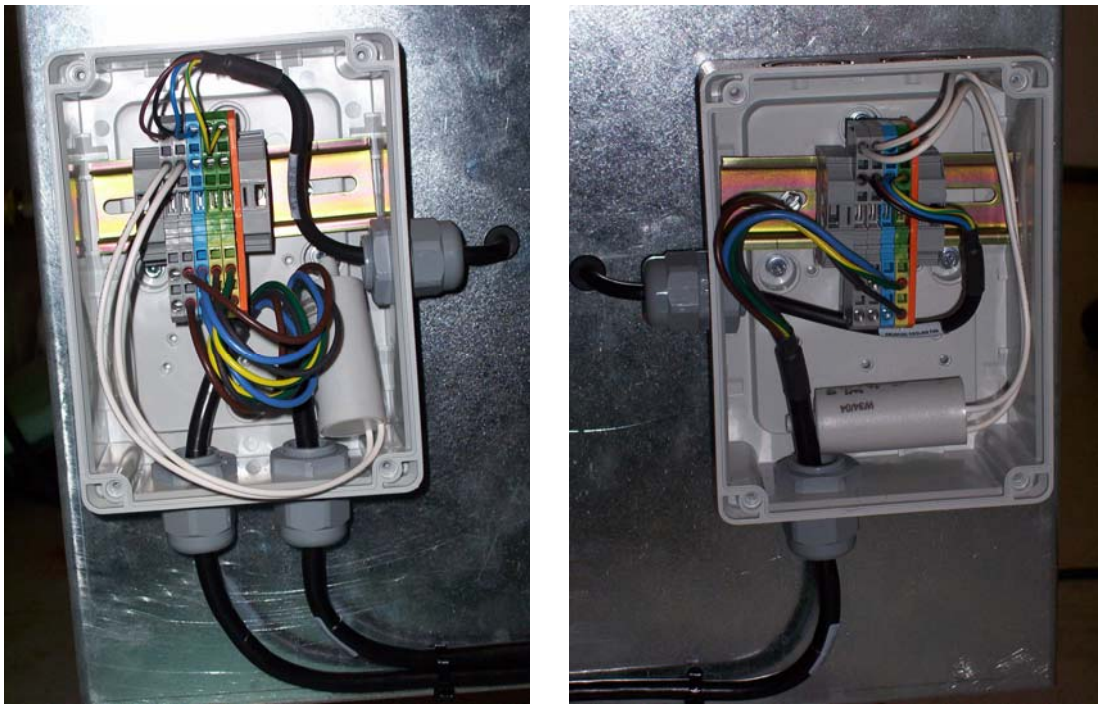


Figure 5: Junction box wiring (away side left and home side right)

4. Replace the covers on each junction box.
5. Route the power cable 220-01441A through the casting exiting beneath the main manifold and following the other cable bundles towards the power box.

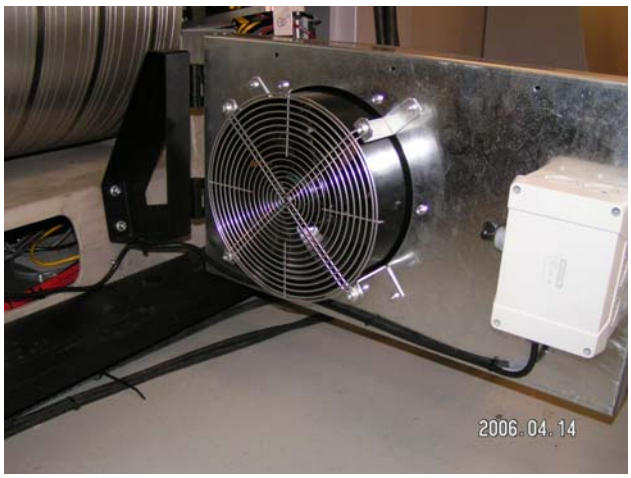


Figure 6: Home side fan cable routing

Note: Leave approximately 1.7 meters of slack behind the power box so that the power box can be moved into its shipping position.

6. Plug power cable 220-01441A into J26 on the power distribution board (PDB), and plug jumper 10-4841A into J43 on the PDB.

4.4 Moving the Thermistor Location

1. Disconnect cable 10-5148A from the thermistor (10-0967A) mounted on the away side bearing pillow block, and add the extension cable (220-01495A) to lengthen its reach.

2. Move the thermistor to its new location: an M8 hole under the new away side E-Stop bracket location.



Figure 7: Thermistor location

3. Route the thermistor cable 220-01495A down along the side of the engine frame casting and under the drum motor, through the engine casing wherever possible. Ensure that it is secured away from any moving parts with cable ties. Connect the cable to the thermistor.

4.5 Adjusting the Panels and Fans

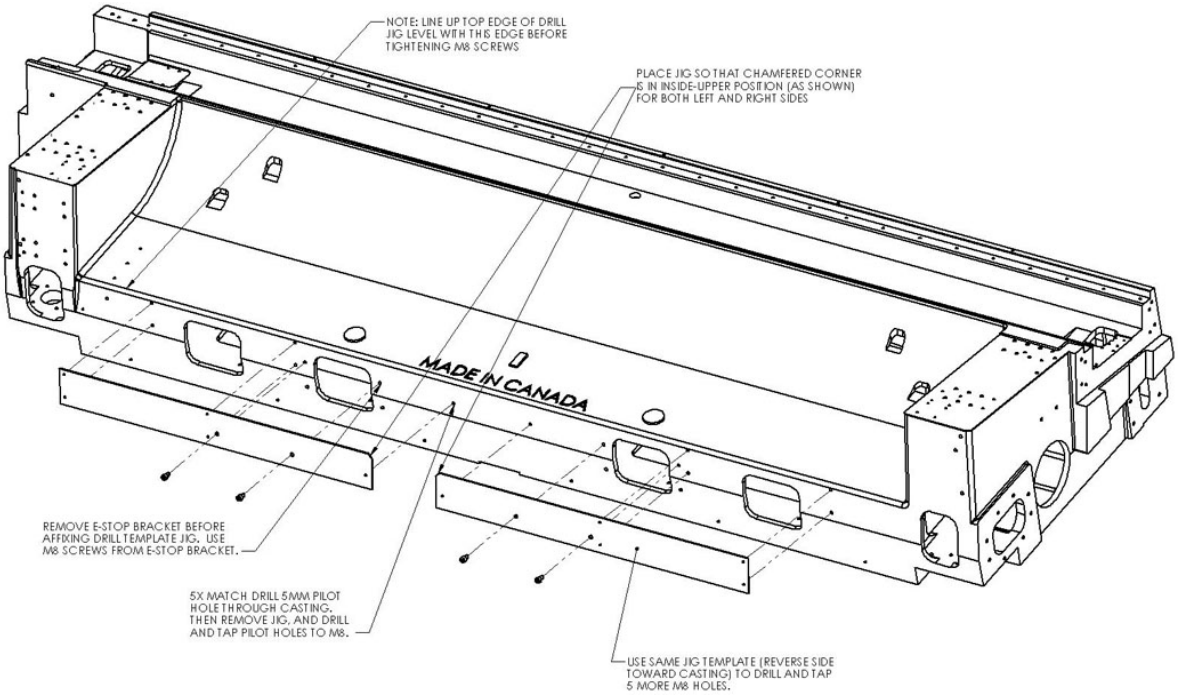
1. Install the new rear panels onto the rear of the machine. Adjust the panels so that they are tight, flush with the other panels in the rear of the machine, and so the latch mechanisms work smoothly. The panels can be adjusted by adjusting the panel latches, the panels' rubber bumpers, and the pins that the panels sit in.

2. Once the panels are in place and adjusted, adjust the fan assemblies so that their foam rims mate nicely with the inside surface of the new panels. The foam should compress evenly around the entire rim by about 2 mm when the panels are fully installed. The fan assemblies can be adjusted by slightly loosening the four bolts that hold the hinges to the black brackets, adjusting the position, and then re-tightening. You will need two wrenches–one to hold the nut and one for the bolt socket head.

3. If no other upgrades are to be done, close the rear hood, and power up the device. Ensure that the fans are running, and the filters are installed.

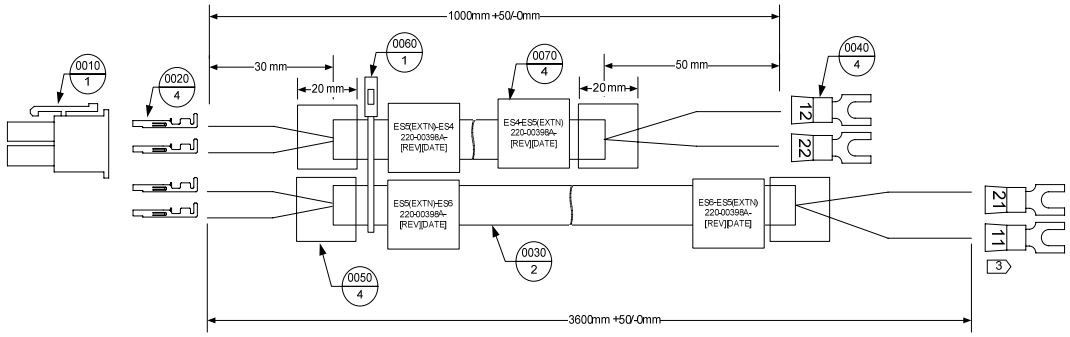
5. APPENDIX A

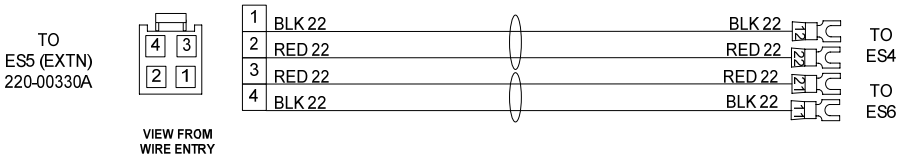
Drill jig orientation



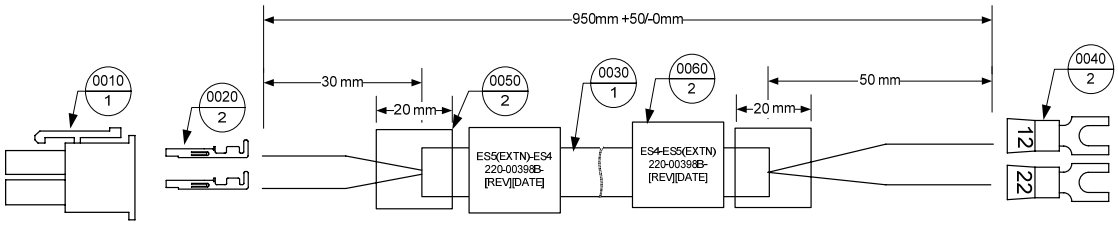
6. APPENDIX B

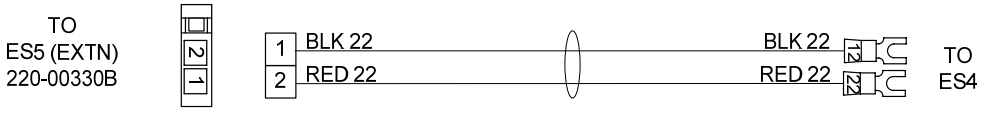
Series 1 wiring





Series 2 wiring





Rear fan connection diagram

