

Magnus VLF

Backbone Upgrade for Adjustable LEC Openings

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Revision History

Revision	Date	Author	Comments
A	22 Jul 2004	G.Tang	First Release
B	30 Sept 2004	G.Tang	Revised kit: added tools, added new linkbar and slider pins and bushings.
C	07 Feb 2005	A.Blignaut	Updated procedures.

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TOOLS REQUIRED

- Feeler gauge
- 2, 3 and 4 mm hex keys
- Gap setting tools: 690-00384A, 690-00385A, and 690-00386A (included in kit)
- 1.5 Nm torque wrench with 2mm hex bit
- Vise grip pliers

MATERIALS REQUIRED

- Loctite® 242
- Torque seal
- Tape

PARTS REQUIRED

- 512-00185B, KIT, UPGRADE, CA04701, LEC ADJ. OPENING, MTA
  - 719-00352A, DOC, UPGRADE, CA04701, LEC ADJ. OPENING, MTA (qty 1)
  - 252-01026D, FAB, LEC LINK BAR, MTA (qty 1)
  - 54-4293, BRG, IGLIDE, CLIP, 5MMID, 6.2MMOD, 3MM THICK (qty 10)
  - 252-06618A, FAB, INSULATOR CAP WITH NECK, BACKBONE, MTA (qty 1)
  - 252-06325B, FAB, LEC LINK BAR SLIDER BUSH, 8 MM, MTA (qty 6)
  - 252-07623A, FAB, LINK BAR SLIDER PIN,10 MM DIA, MTA (qty 6)
  - 252-06321B, FAB, BRK, LEC PUSH PIN STOP, ADJUST, MTA (qty 9)
  - 252-06620A, FAB, SCREW, LEC PUSH PIN STOP, MTA (qty 9)
  - 300-00092, SCRW, M4*10, SOCK-SET, NYLON TIPPED (qty 9)
  - 690-00384A, TOOL, 2.2 MM LEC OPENING GAP SET, MTA (qty 1)
  - 690-00385A, TOOL, 2.5 MM LEC OPENING GAP SET, MTA (qty 1)
  - 690-00386A, TOOL, 2.8 MM LEC OPENING GAP SET, MTA (qty 1)

Figure 1 is extracted from assembly drawing 50-2588C (sheet 4). Items 90, 310, 320, 355, 360, 370, 371 and 372 are new parts to be installed on the backbone. Items 115 are the M4 x 25 screws that will be reused from the original brackets.

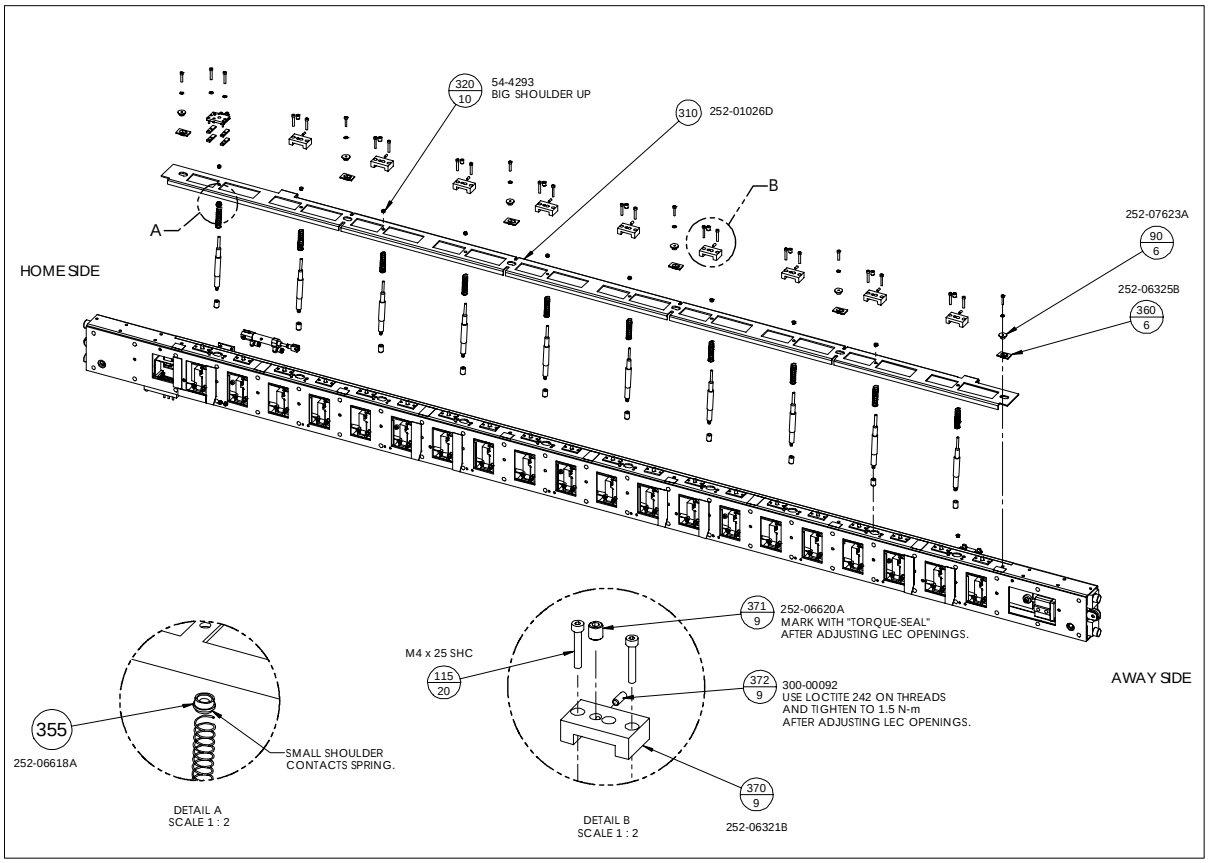




Figure 1: Backbone assembly

REMOVING THE OLD LINK BAR

The clamps are sequentially numbered one through ten. Clamp #1 is on the home side of the device by the cylinder and clamp #10 is on the away side of the device. The stop bracket for clamp #1 is not replaced and will be reinstalled with its original spacers and washers.

1. Turn off the power and shut off the air supply to the device.
2. Open the rear hood to get access to the backbone assembly.
3. For clamps #2 to #10, remove the two M4 screws, plate, and spacers and remove the stop brackets. The screws will be reused for reassembly, but the washers, spacers and brackets will not.

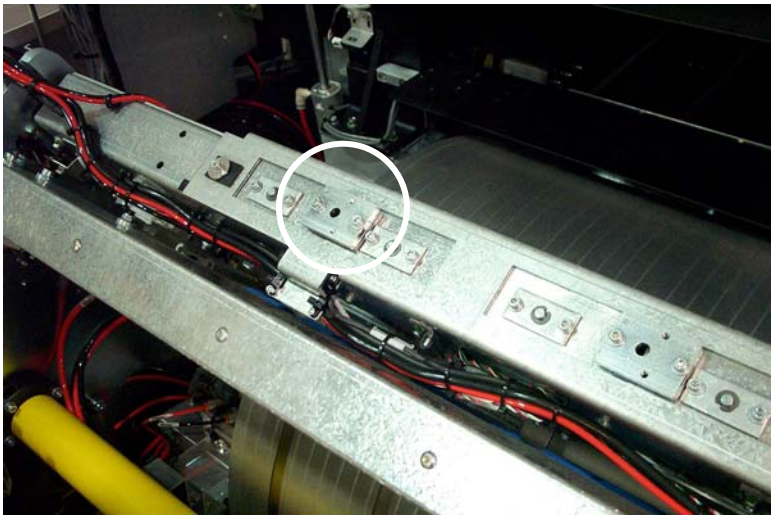


Figure 2: Backbone away side with bracket #10 shown

4. For clamp #1, remove the two M4 screws, plate and spacers, but leave the two wires attached to the plate. Use tape to keep the 4 thick spacers and 6 thin spacers together so that they do not get lost.

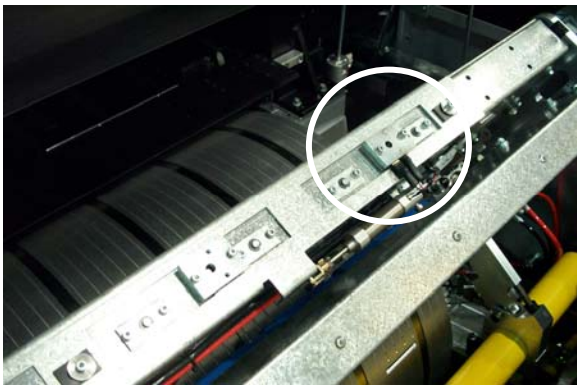




Figure 3: Backbone home side with bracket #1 shown

5. Relieve the air pressure in the cylinder by disconnecting and reconnecting the air tubes.

Note: The air supply to the device should be turned off.

6. Disconnect the cylinder clevis (rod) from the leading edge clamp link bar. It is not necessary to disconnect the other end of the cylinder from the backbone.

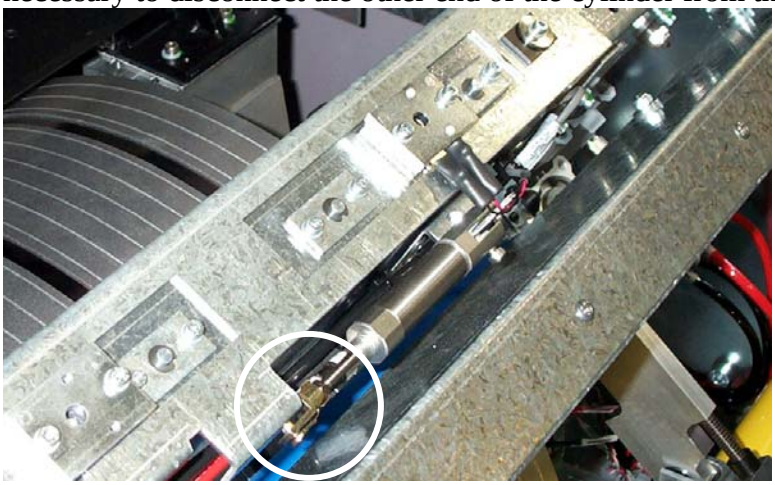


Figure 4: Disconnecting the cylinder clevis

7. Remove the six M5 screws, washers, link bar slider pins, and bushings from the link bar and remove the link bar from the backbone.

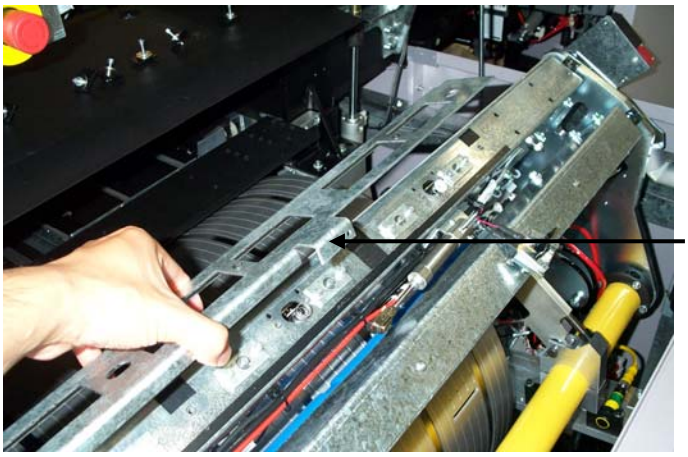


Figure 5: Removing the old link bar

INSTALLING THE NEW LINK BAR

1. Remove the old insulator cap and replace it with the new one. The small shoulder of the cap contacts the spring.

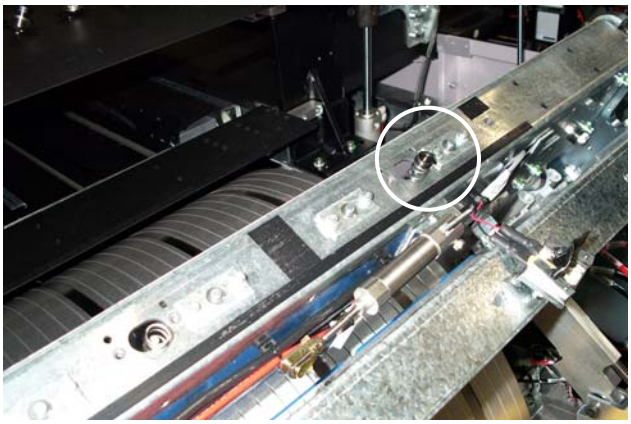


Figure 6: Insulator cap

2. Install the ten iglide clip bushings into the holes in the new link bar.



Figure 7: Installing the iglide clip bushings

3. Taking note of which side is the cylinder mount side, place the new link bar on the backbone. Align the backbone pushpins with the iglide clip bushings on the link bar. Take care not to push the iglide clip bushings out of the link bar.

4. Install the six new slider bushings and six slider pins on the link bar with the M4 screws and washers previously removed. The screws must be tight.

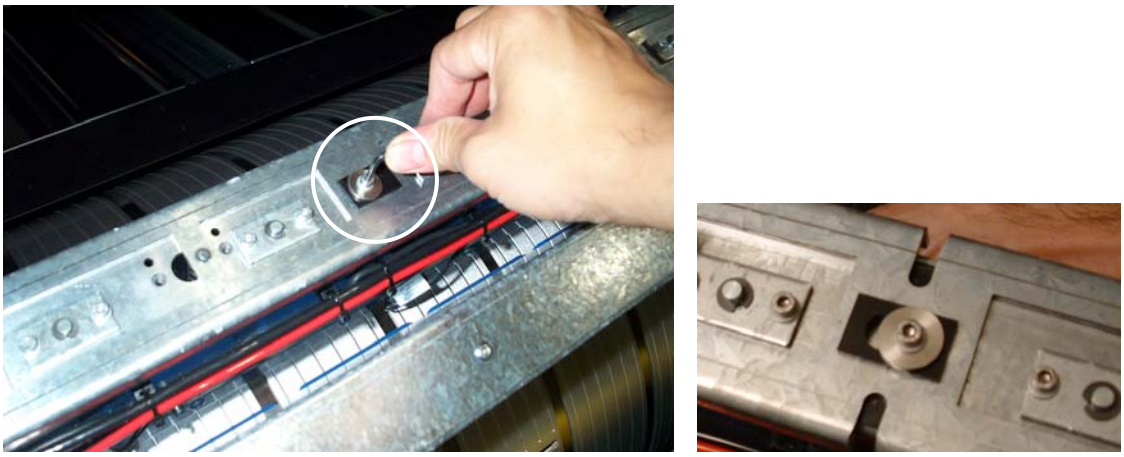


Figure 8: Installing the slider bushings

5. If the new adjustable stop brackets are not pre-assembled, install the M8 stop screws and M4 set screws into the brackets for clamps #2 to #10.

   - For clamp #10, adjust the bottom of the M8 stop screw to be flush with the bottom surface of the bracket.
   - For clamps #2 to #9, adjust the bottom of the M8 stop screw to be approximately 2.5 mm in from the bottom of the bracket.

Note: Do not tighten the M4 set screws yet.

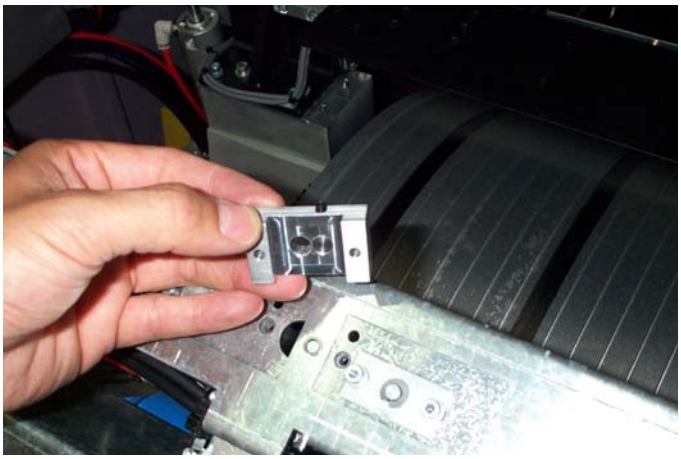


Figure 9: Clamp with stop screw and set screw installed

6. Use the old M4 screws to fasten the stop brackets to the backbone for clamps #2 to #10—no washers are required.
7. For clamp #1, install the plate, spacers, and washers as removed in step 3.
8. Fasten the cylinder clevis to the new link bar with the clevis pin. Ensure that the air tubes are still securely connected to the cylinder.

SETTING THE LEADING EDGE CLAMP OPENING GAPS

1. Turn on the device power and air supply to the device.

   With the new LEC link bar installed on the backbone, open the leading edge clamps. To position the drum for easy access to the LECs, open service shell and type the following commands:

   a. `<<drum init` to initialize the drum.

   b. `<<drum move 97` to position the drum for opening the LECs.

   c. `<<backbone horizontalload` to position the backbone for opening the LECs.

   d. `<<lec on` to lower the backbone to open the LECs.

   e. `<<drum idle` to remove the motor holding torque.

   f. `<<backbone tiltedload` to tilt the drum and backbone back for better access to the LEC openings.

2. Clamps #1 and #10 should be fully open. The remaining clamps, #2 to #9 should be almost closed. Use a feeler gauge to measure the openings for clamps #1 and #10—they should be 3.1 ± 0.1 mm. Clamp #1 is not adjustable and clamp #10 must not be adjusted from its current setting (the bottom of the M8 stop screw is flush with the bottom surface of the bracket).

Note: If the gap on clamp #1 or clamp #10 is more than the tolerance given above, check for objects trapped under the clamps.

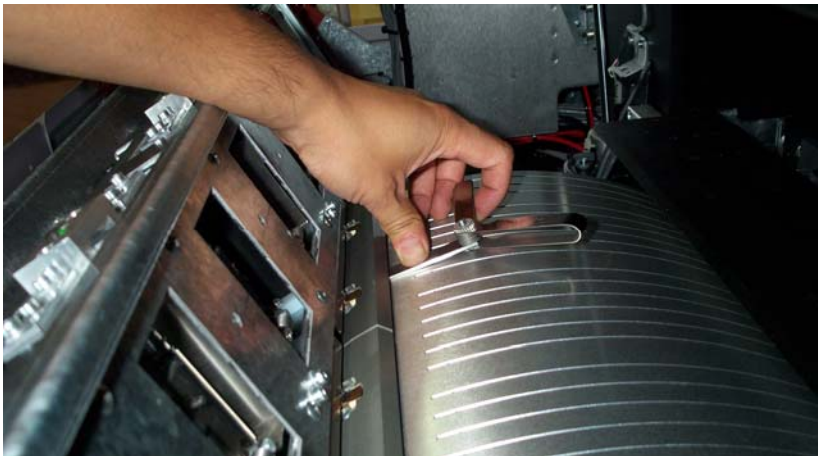


Figure 10: Measuring the opening on clamp #10

3. Adjust clamps #2 to #9.

Note: The clamp openings must be adjusted in pairs and the size of the opening for each pair must be the same or plate skewing will occur.

The clamps are adjusted by turning the M8 stop screw anti-clockwise to close the clamps and clockwise to open the clamps.

a. Using the 2.8 mm gap setting tool (690-00386A), adjust clamp #2 and clamp #9.

b. Using the 2.5 mm gap setting tool (690-00385A), adjust clamp #3 and clamp #8.

c. Using the 2.2 mm gap setting tool (690-00384A), adjust clamp #4 and clamp #7.

d. Using the 2.2 mm gap setting tool (690-00384A), adjust clamp #5 and clamp #6.



Figure 11: Adjusting clamp openings

Once the clamp openings have been adjusted, the M4 set screws on each clamp bracket must be tightened to lock the M8 stop screws in place. To get access to the set screws, the roller backbone must be lowered and the LEC backbone must be raised. To do this:

4. In service shell, type:

a. `<<roller on` to lower the roller onto the drum.

b. `<<lec off` to raise the LEC backbone.

5. On each clamp bracket, turn the M4 set screw partially out and apply Loctite 242 to the set screw. Tighten to 1.5 Nm.



Figure 12: Tightening the M4 set screws

6. Apply torque seal on the M8 stop screws.



Figure 13: Applying torque seal to the M8 stop screws

7. Close the rear hood.