

Magnus VLF Autoloaders

Side Ejector Alignment

Document Number

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Revision History

Revision	Date	Author	Comments
Draft	Sep, 2005	A.Blignaut/M.Zgrych	Draft version on the side ejector alignment
1	07 Oct, 2005	A.Blignaut/M.Zgrych	Steps revised and updated

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1. SCOPE

This document describes the side ejector alignment procedure for Magnus VLF MCU and Magnus VLF CL devices. The ejector alignment should be performed close to the MAB area (the highest point of the unload table) as reference position and rechecked at the eject position for each plate size (the lowest point of the unload table) for proper ejector pusher/plate arrangement.

2. SIDE EJECTOR

2.1 Functional Test

1. To get the ejector status, type `>>ejector` . Service Shell displays:

```
<MCE> Ejector status:
<MCE> Ejector stepper position: HOME (Initialized)
<MCE>
<MCE> Ejector at HOME sensor
<MCE> Ejector NOT at AWAY sensor
<MCE>
<MCE> Pusher 1 drive                = Off
<MCE> Pusher 2 drive                = On
<MCE>
<MCE> *** Command Complete
```

2. To check the Home and Away sensors, use a piece of paper to block each sensor respectively and confirm from Service Shell that the corresponding message is true for both sensors. Type:

   `>>ejector init` (to initialize the ejector, the ejector goes to home position)

   `>>ejector pusher1 dn` (check that the pusher has lowered)

   `>>ejector pusher1 up` (check that the pusher has lifted up)

   `>>ejector move 3840` (move ejector to away end). Watch that it stops before the away limit switch.

   `>>ejector idle` (to free the stepper motor). Manually move the ejector to reach the away limit switch and check that Service Shell displays **<MCE> Ejector at AWAY sensor**.

2.2 Mechanical Alignment and Check

1. Check that the unload table panels are installed and adjusted correctly.
2. Check that the ejector is parallel to the MAB panel along the length of the ejector (assuming the unload table is level).

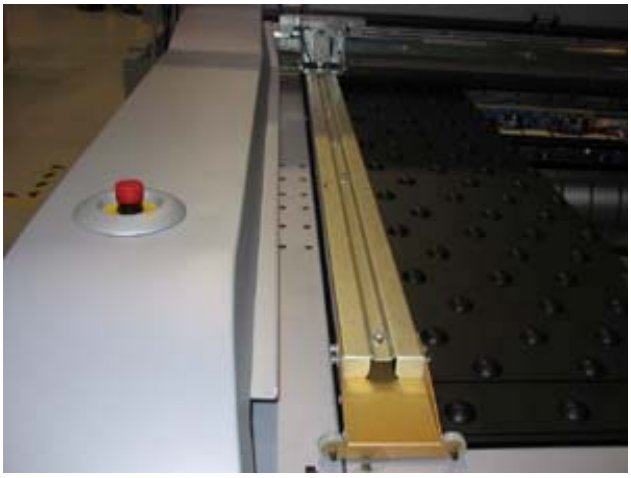


Figure 1: Ejector parallel to MAB

If you need to adjust the ejector, loosen the four M5 screws shown in Figure 2 and adjust the ejector arm to the edge of a MAB. Tighten the M5 screws.

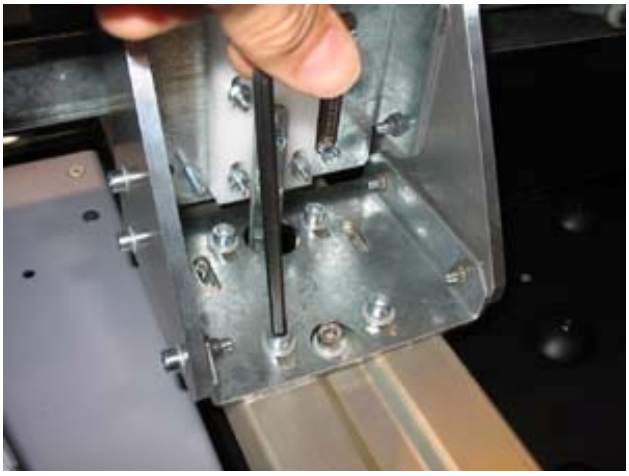


Figure 2: Adjusting the ejector

3. Check that the ejector body is level and that there is a 20 mm (+2 -1 mm) clearance between the bottom of the ejector body to the top of the unload table along the length of the ejector. Position a level on top of the ejector—it should read 0 degrees.



Figure 3: Checking the ejector body

If you need to adjust the ejector body, start your adjustment from ejector wheel side. Loosen the M6 screws and adjust the ejector body as needed.

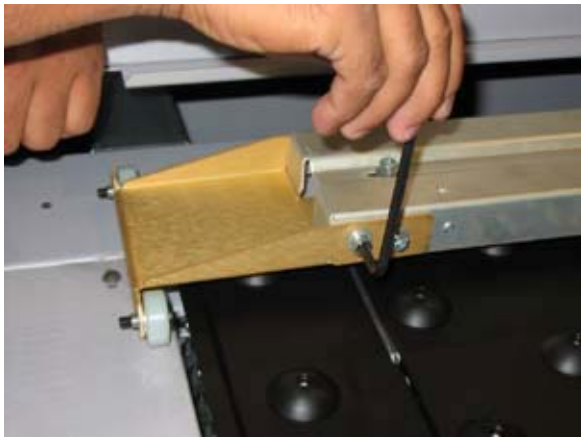


Figure 4: Adjusting the ejector body at the ejector wheel side

Recheck the ejector body level and height. Check the level and height at the ejector carriage side. If you need to correct ejector level or height, loosen the M5 screws and adjust the ejector body.

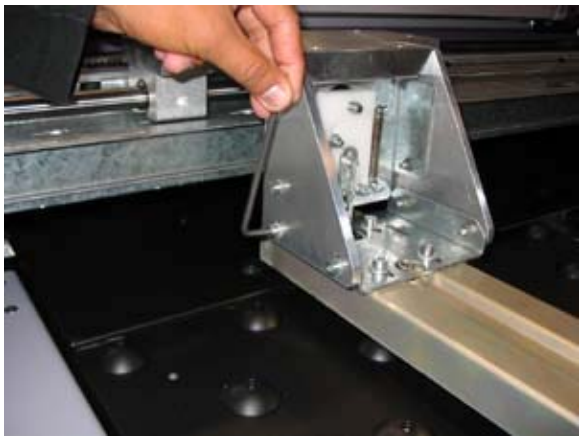


Figure 5: Adjusting the ejector body at the carriage side

4. Check that when the pusher fingers are down, they are 2-3 mm from the top of the unload panels. Scoop the plate using the pusher fingers down and check that there is a good margin when picking it up—the ejector must successfully catch the plate without scratching the panels or darts.



Figure 6: Checker pusher finger operation

The pusher finger height adjustment is accomplished by a combination of adjusting the finger bracket and using the stopper screws.

5. If the pusher fingers need adjustment, follow the next five steps:

   Loosen the two M5 screws that hold the finger bracket (the finger bracket pushes the pusher fingers down).



Figure 7: Loosening the finger bracket

   Loosen the three M3 stopper screws used to adjust the bottom final 2-3 mm distance.



Figure 8: Stopper screws

Actuate the pusher finger down. Type `>>ejector pusher1 dn .`

Using your finger, push the bracket that pushes the pusher fingers down until resistance is met. Tighten the two M5 screws holding the bracket.

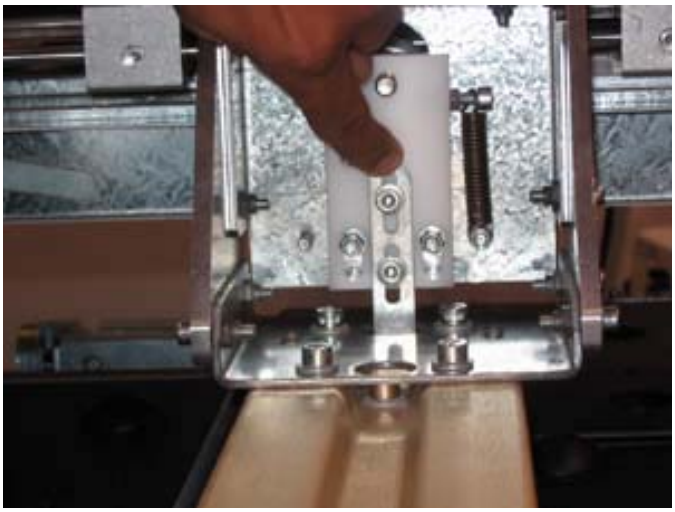


Figure 9: Adjusting the pusher finger bracket

Adjust the pusher fingers so they are 2-3 mm from the top of the unload panel by adjusting the three M3 screws.



Figure 10: Adjusting the pusher fingers

Note: Do not leave the stopper screws loose. If they are loose a heavy plate can push the fingers back more than usual and cause scraping of the unload table panels. The best method is to turn the stopper screws in just until the fingers start to move and leave them there.

6. Check the fingers spacing between the darts—they must be centered between the darts. To adjust the spacing, loosen the five M6 cap screws on top of the ejector body and/or the four attachment screws from the ejector mount plates to ejector body.

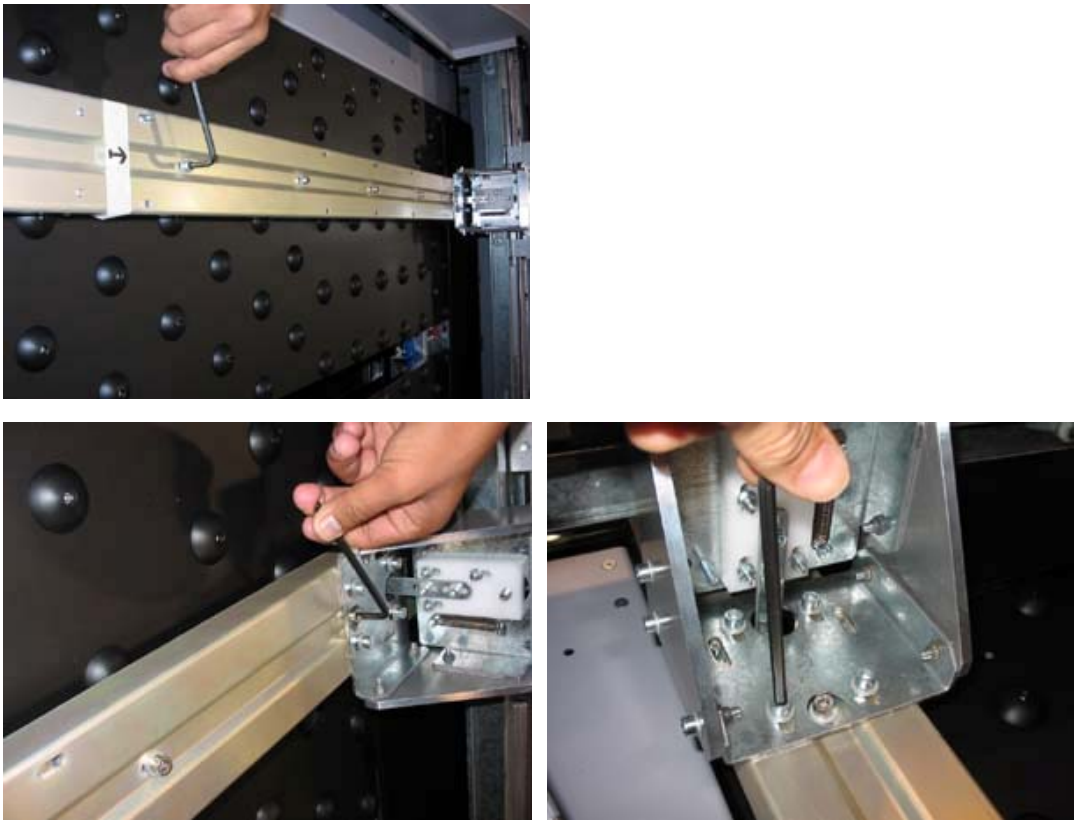


Figure 11: Adjusting the finger spacing between the darts

7. Run the ejector the length of the ejector path to ensure it is well centered to the darts and that the pusher fingers do not touch the unload table panels when **ejector pusher 1**is still down.

8. Type:

```
>>ejector pusher1 up

>>ejector idle
```

9. With the pusher fingers up, put a large plate on the unload table and check that there is enough clearance on top of the plate. There should be approximately 10 mm clearance above the plate (use a hex key for the measurement).

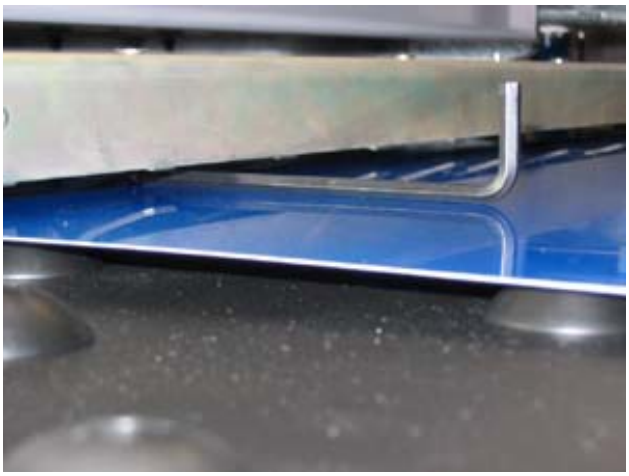


Figure 12: Clearance with the ejector fingers up

If there is not enough clearance, it may be caused by the plunger getting hung up on the sheet metal around it. There are two options to correct the problem:

- Loosen the five M6 cap screws (see top photo of Figure 11) and adjust the finger position slightly so that the plunger clears the sheet metal—the finger spacing between the darts will now have a small offset from center.
- File the hole in the sheet metal bigger so that the plunger does not get hung up on it.

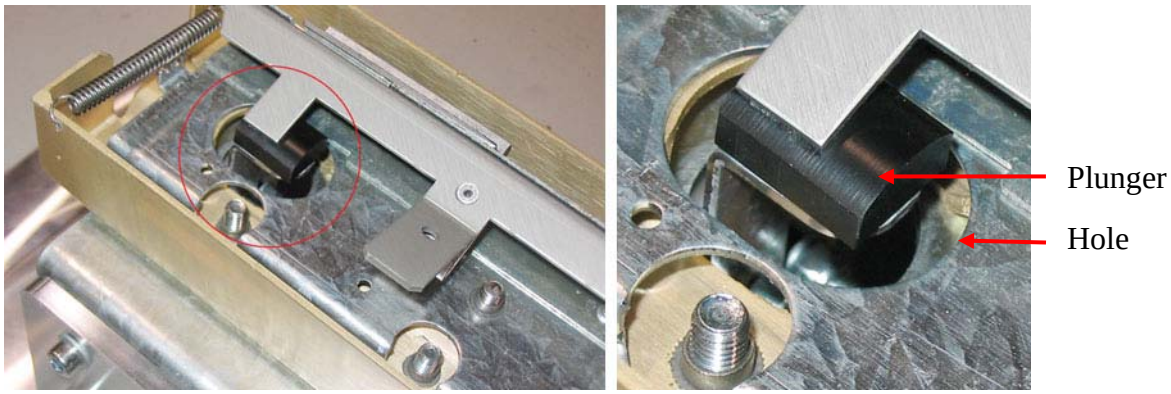


Figure 13: Ejector plunger