Falcon Outdoor Printhead Replacement Procedures

Note: There are a variety of screw sizes. It's a good idea to keep them separated to eliminate confusion when re-assembling.

CAUTION: The Eco Solvent ink and Transition Fluid will damage plastic parts that are not part of the ink supply system. The head carriage will be damaged if the solvent gets on it. Rinse the solvent off immediately should it be spilled on other plastic parts.

To remove the printheads (right and left):

1. Perform a head wash on all colors. Always use full or half full cartridges.
2. Power down and unplug the printer.
3. Remove the safety cover (screws: 2 left, 2 right).
4. Remove keypad cover.
5. Remove top (screws: 1 left front, 2 right front, 5 rear) & cassette bay cover (screws: 3 top, 2 bottom).
6. Place the media hold lever in the down position.
7. Move printhead carriage to the center of the platen.
8. Remove the printhead carriage cover (2 screws – put them back in the printhead).
9. Remove the screw (left side) that secures the keeper.
10. Pop the keeper up and out of the way.
11. Cut and remove the tie wrap on the stainless tubing.
12. If replacing the dampers, remove the brass-coupling nuts from the dampers (don't lose the O-rings). Then swing the stainless steel tubing up and keep them elevated.

CAUTION: The ink level in the damper should never be higher than ½ way. If the ink level is too high the filter in the damper may be clogged and the damper should be replaced. If too low the seal at the capping area may be compromised. Do not touch the fragile Mylar side of the damper.

13. Use a small pliers to lift up the dampers. They are press fit and pop loose. If they are too loose they may cause a poor vacuum situation and should be replaced. If you are

not replacing the dampers, swing the dampers and stainless tubing up and keep them elevated.

14 Remove the keeper.

15 Remove the spring inside the printheads (compress the center coils to make removal easier).

16 Remove the adjustment screws down inside the carrier securing the printheads (don't lose the brass washers).

17 Lift the printheads straight out (remove the left printhead first if both are to be replaced).

18 Remove the printhead power cables from the head board – J207 for the left printhead and J208 for the right printhead (Caution: Don't force them – they have pressure fittings) Gently pull out on the cable.

To install the printheads (right and left):

1 Write the head rank number for the new printheads on the left printhead power cable (this numbers are located somewhere on the printhead bodies – they are written using black ink and may be hard to see). Head rank is a code that is used to bring all the heads into specification so that each head will print 21 pl and 17 pl drop sizes and thereby ensure accurate image quality. The 5 digit code will be entered later.

2 Reinsert the flat printhead cables (Caution: Don't force the pressure fittings. Gently press the cable into the CENTER of the connector. Misalignment will damage the heads.

3 Insert the new printheads & set them into place (make sure the printheads are up against the pins in the rear of the printhead carriage).

4 Insert the brass washers & screws.

5 Insert the springs (use needle nose pliers to compress the center coils of the spring).

6 If replacing the dampers, attach the new dampers to the head nipples. Insert the stainless steel tubing, slide the 'o' ring down first and lower the brass coupling nuts.

7 After reinserting the stainless steel tubing into the dampers tighten the nut finger tight.

8 Install the keeper and snap into place on the stainless tubing. Secure the keeper with the screw on the left side.

9 Place a new tie wrap securing the stainless tubing

10 Visually inspect the heads and ensure that they are sitting in the carriage at equal distance and square to each other. This is the MOST important adjustment.

To change the head rank in the printer, initialize the printer in Diagnostics mode:

1 Plug in and power up the printer in Diagnostic mode by simultaneously pressing the Cleaning, Menu, and Shift keys. the upper right three buttons

2 Scroll to Adjustment using the Menu key and press Enter.

3 Scroll to Head Rank using the Menu key and press Enter.

4 Use the center buttons to enter the head rank number for the left printhead and press Enter.

5 Enter the head rank number for the right printhead and press Enter.

6 The display is Ink Fill, press Enter (you will be prompted to insert the ink cassettes – the fill should take approximately 4 minutes). USE nearly FULL cartrtidge.

Note: The first 2 digits of the head rank number represent the normal dot voltage, the middle digit represents the frequency, and the last 2 digits represent the micro dot voltage.

To perform the mechanical alignment of the left printhead to the right printhead. Perform the LEFT TILT first):

Note: If possible, use lower quality vinyl when making adjustments to the printhead to prevent the customers quantity of higher quality vinyl from being affected.

1 Scroll to Check Nozzles and press Enter.

2 Inspect the Check Nozzles print and perform cleanings as needed. See the Diagnostic Menu Map for the necessary path. After the cleaning(s) is / are complete and the Check Nozzles print looks good, return to the Adjustment portion of the Menu.

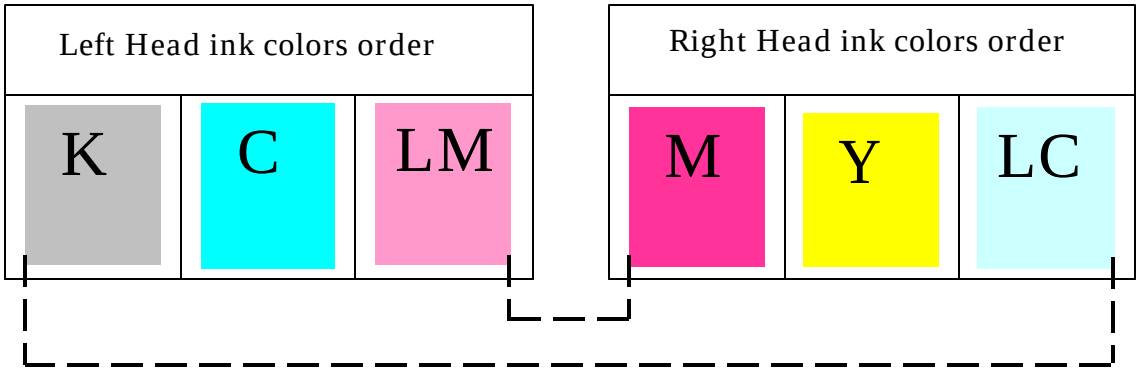
Note: Perform an Ink Fill if all or any one or more colors are missing (Re-enter Head rank or Power down and power up in normal mode to access Function/Ink Fill).

3 Scroll to Left Tilt and press Enter. The printer will print out the pattern shown below. The display says: Adjustment Print.

4 Notice where the Black (K) is next to the Light Magenta (LM) along the test print. If they are not lined up exactly (i.e. one is higher than the other), loosen the adjustment screw for the left printhead and move the front lever to the right if Black is higher or to the left if Black is lower.

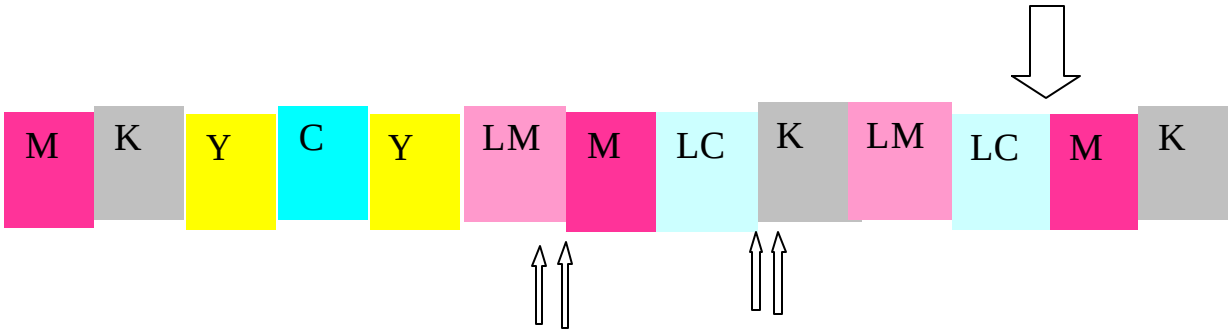
5 Reprint the Left Tilt and adjust as needed.

6 Press the Back (Previous) key



To perform the mechanical alignment of the left head to the right head.
Perform the RIGHT TILT head sweep):

1 Scroll to Right Tilt and press Enter. The Jetster will print out the pattern shown below:



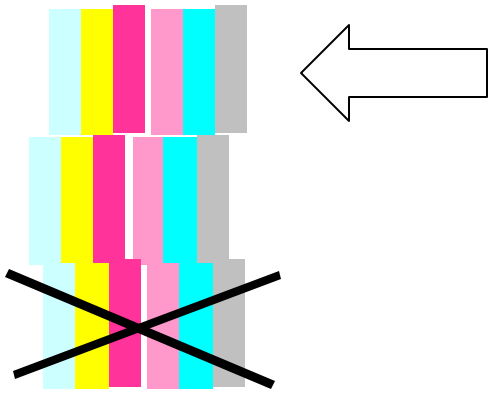
2 Notice where the Magenta (M) is next to the Light Cyan (LC) along the test print (see big arrow on diagram above). If they are not lined up exactly (i.e. one is higher than the other), loosen the adjustment screw for the right printhead and move the front lever to the right if Magenta is higher or to the left if Magenta is lower. This allows you to check the alignment of the right printhead.

3 Notice where the Magenta (M) is next to the Light Magenta (LM) and where the Black (K) is next to the Light Cyan (LC) along the test print (see smaller sets of arrows on diagram above). They are not lined up exactly with (i.e. one is higher than the other), loosen the adjustment screw and move the side lever of the right printhead to bring the right printhead in line with the left printhead (Up to pull the right printhead out and Down to move right printhead in).

4 Press the Back key

To perform the bi-directional electronic head alignments:

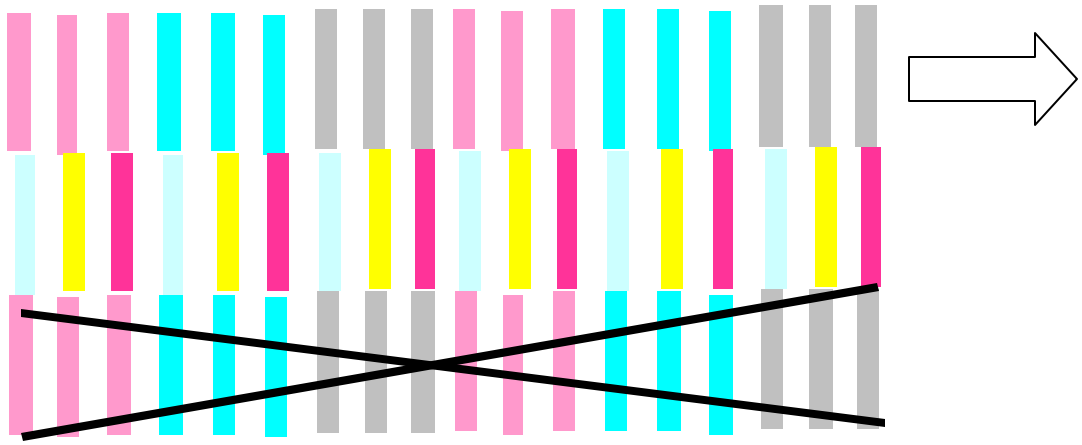
1. Move the head height lever to the up position.
2. Scroll to BiDirPrint and press Enter. The Jetster will print out the pattern shown below. The colors are grouped together by printhead. The colors in the right head are on the left and the colors in the left head are on the right.



3. After the test print is complete, the display says: KCG Err: -345µm.
4. Ignore the bottom set of lines. Notice how well the black lines in the top 2 sets of lines are aligned. Using the Value+ & Value- keys to move the top set of lines. Value+ moves the top set of lines to the left and Value- moves the top set of lines to the right. The width of one line is equal to 12 clicks (1/4 of a line equals 3 clicks) of either key.
5. After you have moved the top set of lines, press Enter. The display says: MYO Err: -345µm. Notice how well the magenta lines in the top 2 sets of lines are aligned. Using the Value+ & Value- keys to move the top set of lines. Value+ moves the top set of lines to the left and Value- moves the top set of lines to the right. The width of one line is equal to 12 clicks (1/4 of a line equals 3 clicks) of either key.
6. Press the Enter key and reprint the test pattern and adjust as needed.
7. Repeat Steps 2 – 6 for BiDir(MD)
8. Move the head height lever to the down position
9. Repeat Steps 2 – 6 for BiDirLow and BiDirLow(MD)
10. Press the Back key

To perform the uni-directional electronic head alignments:

1. Move the head height lever to the up position.
2. Scroll to UniDirPrint and press Enter. The Jetster will print out the pattern shown below. The colors are grouped together by printhead. The colors in the right head are on the left and the colors in the left head are on the right.



3. After the test print is complete, the display says: HeadGap: -46610µm.
4. Ignore the bottom set of lines. Notice how well the top 2 sets of lines are aligned. Using the Value+ & Value- keys to move the top set of lines. Value+ moves the top set of lines to the left and Value- moves the top set of lines to the right. The width of one line is equal to 12 clicks (1/4 of a line equals 3 clicks) of either key.
5. After you have moved the top set of lines, press Enter.
6. Press the Menu ↑ key (to UniDirPrint), reprint the test pattern, and adjust as needed.
7. Repeat Steps 2 – 6 for UniDir(MD)
8. Move the head height lever to the down position
9. Repeat Steps 2 – 6 for UniDirLow and UniLow(MD)
10. Power down the plotter to exit Diagnostic mode