Adjusting Stitching/GC Parameters on GMCE NEWS 200 Using the Test Plot Software in Service Shell

Product

Kodak® Trendsetter® NEWS™ 200 (GMCE)

Background

The Trendsetter NEWS 200 output device uses two TH2 thermal imaging heads to increase its maximum plate throughput compared to that of single-head devices. When the two heads are writing one large image on a panorama plate, it is important that the following geometric correction parameters be set correctly, so that stitch line can be seen between the section imaged by the master head and that imaged by the slave head:

- **`mshift`** (mainscan shift)
- **`headspacing`** (distance between master and slave heads)

This procedure describes how to use the Test Plot software in Service Shell to adjust both of these parameters, along with the `sshift` (subscan shift), which ensures that the image written by each thermal head is correctly set up for individual plates.

Procedure

Adjusting Subscan and Mainscan Shift

1. In Service Shell, select the **Device Monitor** and then select **GMCE** from the Device Tree.
2. Enter command
   gc
   to display a table showing all the current gc parameters. Take note of the current `mshift` and `sshift` values for both the Master (pin 1-2) and Slave (pin 3-4) heads.
3. In Service Shell, select **Test Plot** and then under **Dual Head Plate Jobs**, select **DH-GC Plate**.
4. Click **Modify** and select the media type you are using.
5. Select the settings for imaging both the Home and Away plates with both the Master and Slave heads. If you cannot select these settings at this point, leave do so in the next step.
6. Click the green triangle on top of the screen to start the job. Check the media and head settings. The Test Plot software instructs you to load two plates manually.
7. When the plates are ready, use a pen to mark which plate was imaged by the master thermal head and which was imaged by the slave.
8. Process the plates.
9. For each plate, with the leading edge towards you, measure the distance between the crosshair in the lower left corner and the bottom edge (leading edge) of the plate. This mainscan distance should be 25.4 mm (1 inch) from the leading edge of the plate, within 20 microns (0.02 mm).
10. For each plate, with the leading edge towards you, measure the distance between the crosshair in the lower right corner and the right (home side) edge of the plate. This subscan distance should be 25.4 mm (1 inch) from the left edge of the plate, within 20 microns (0.02 mm).

11. If necessary, adjust the mainscan shift (`gc mshift`) and subscan shift (`gc sshift`) parameters for the master head.

    Increasing the gc `mshift` value will move the crosshair upwards on the plate by the number of microns added. Increasing the `gc sshift` value will move the crosshair to the right by the number of microns added.

    The commands to change these values for the master head are as follows:

    `set gc mshift 1 <new value>`

    `set gc sshift 1 <new value>`

12. If necessary, adjust the mainscan shift (`gc mshift`) and subscan shift (`gc sshift`) parameters for the slave head.

    The commands to change these values for the slave head are as follows:

    `set gc mshift 2 <new value>`

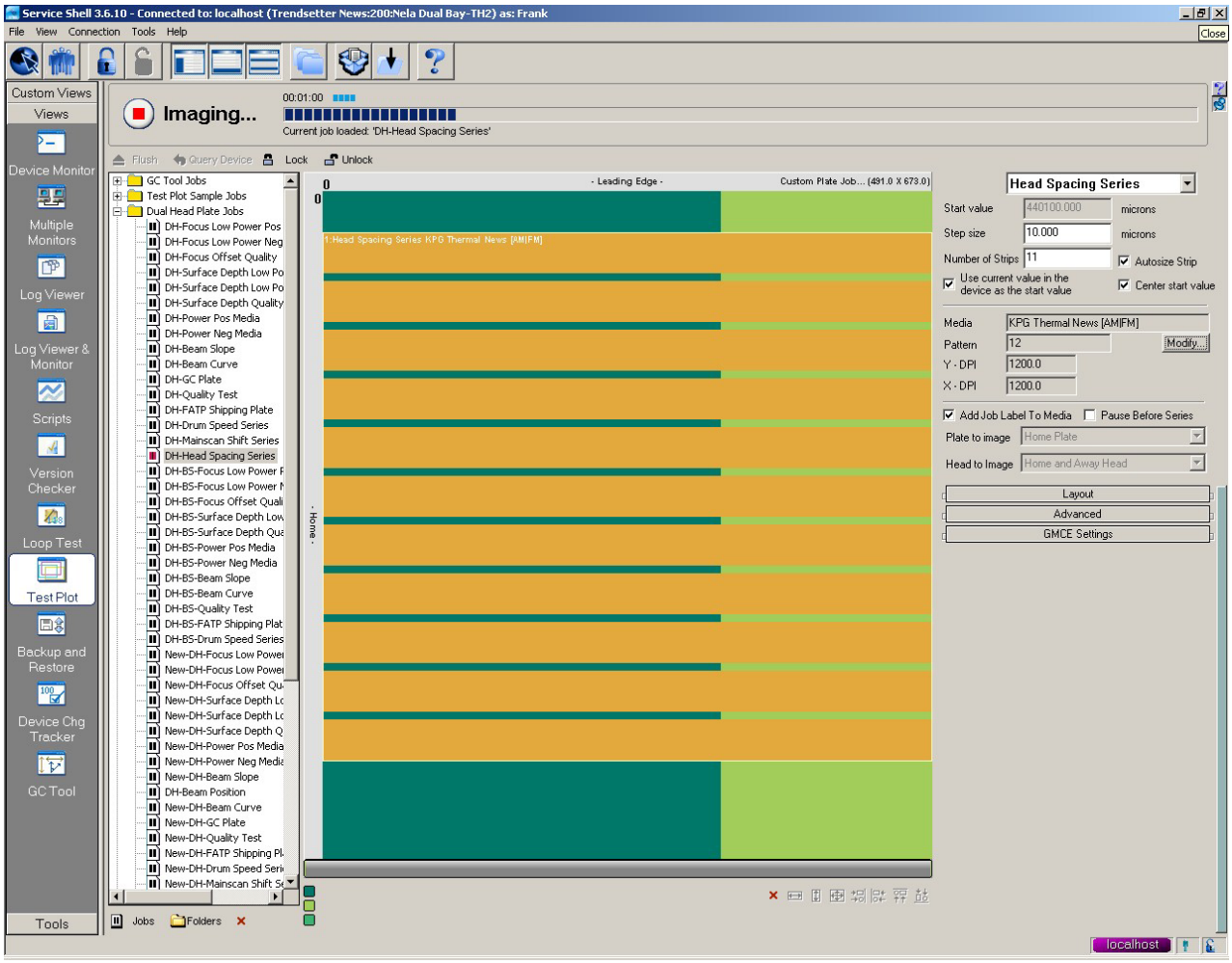
    `set gc sshift 2 <new value>`

13. Load two new plates and repeat steps 4 to 8 to confirm that the crosshairs are now in the correct positions.
14. If they are not, repeat steps 9 to 11.

Adjusting Head Spacing

1. Enter command:
   gc

   Take note of the current values for the `mshiftslave` and `headspacing` parameters.
2. In Service Shell, select **Test Plot** and then under **Dual Head Plate Jobs**, select **DH-Head Spacing Series**.
3. On the right-hand side of the dialog box, select the check the boxes for:
   - **Autosize Strip**
   - **Use current value in the device as the start value**
   - **Center start value**
4. Enter a **Step size** of 10 microns.
5. Enter a **Number of strips** of 11.
6. Click **Modify** and select:
   - The **Media** type you are using
   - The resolution of the device (**Y-DPI** and **X-DPI**)
   - **Pattern 12** (solids) for negative media or **33** (checkerboards) for positive media.
7. Click the green triangle on top of the window to start the job.



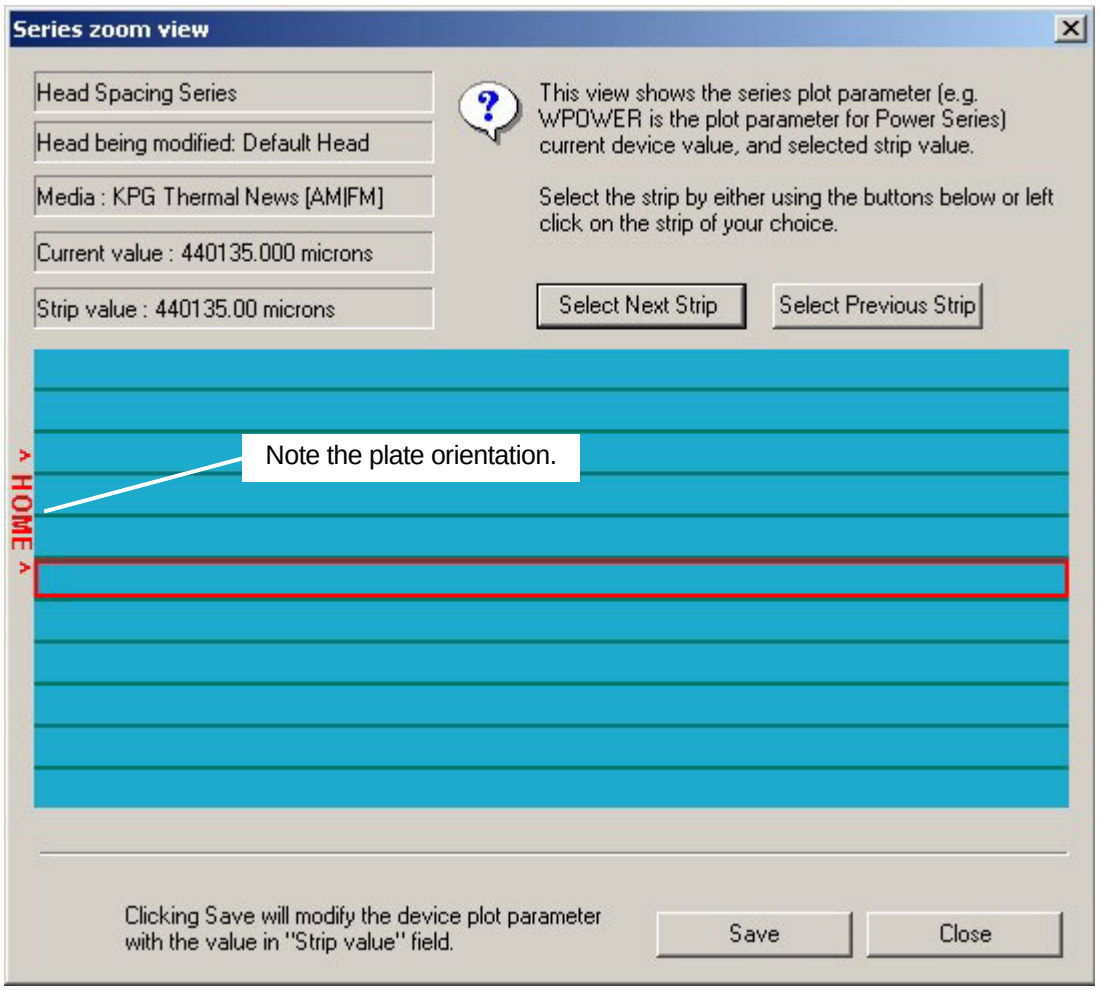
8. Check the **Media** settings and enter the plate size you want to use.
9. From the **Plate to Image** drop-down menu, select **Home Plate**.
10. From the **Head to Image** drop-down menu, select **Home and Away Head**.

    Load a plate manually when the Test Plot software instructs you to do so.
11. When the plate is ready, click **OK** to unload the plate. Use a pen to mark the leading edge of the plate to indicate which side was imaged by the master (home) head and which side was imaged by the slave (away) head.
12. Process the plate.
13. Determine which strip corresponds to the best stitching.

14. Click **OK** when you see this message:



15. Double-click in the middle of the screen to open the Series Zoom View dialog box.
    a. Select the strip with the best stitching by clicking on it or using the **Select Next Strip** or **Select Previous Strip** buttons.
    b. Note the orientation of the plate. In the dialog window Home is on the left hand side. This corresponds with holding the plate with the leading edge up.



16. Click **Save** to write the selected head spacing value to the device.

17. Examine the stitch line on the plate under a microscope.

    To adjust an error in subscan direction:

    - If the images overlap along the stitch line, decrease value of the **`headspacing`** parameter to compensate.
    - If there is a gap between the images along the stitch line, increase value of the **`headspacing`** parameter to compensate.

    Use command:

    `set gc headspacing <new value>`

    Note: When using a microscope, typical power microscopes invert the image, so when viewing the stitch line under a microscope with the leading edge of the plate towards you, keep in mind that the plot to the left of the stitch line was imaged by the slave head, while the plot to the right was imaged by the master head.

    To adjust an error in mainscan direction, look at the bottom of the stitch line.

    - To move the image on the slave head side of the stitch line away from leading edge of plate, increase value of mshiftslave parameter.
    - To move the image on the slave head side of the stitch towards leading edge of plate, decrease value of mshiftslave parameter.

    Use command:

    `set gc mshiftslave <new value>`

18. Using a microscope, inspect the images on either side of the stitch line at the leading and trailing edge of the plate to ensure that they line up perfectly in the mainscan direction. They should line up perfectly, but in the unlikely event that they don't, you may have to adjust the **`mscale`** (mainscan scale) parameter to compensate.

    a. Determine the distance in microns by which the image produced by the slave head needs to be scaled up or down in the mainscan direction in order to line up with that produced by the master head.

    b. Enter command

       `set gc mscale 2 <value>`

       where <value> is the increase or decrease in parts per million.

       To calculate this value in parts per million:

       (D ÷ H) x 1000

       where D = distance in microns by which slave head image needs to be scaled up or down, and H = height (dimension in mainscan direction) of the image in mm

19. Adjust the **`mshift 2`** parameter by the same amount you adjusted **`mshiftslave`** in step 17 on page 5, so that the overall mainscan shift (`mshift 2` + `mshiftslave`) is unchanged.

    Use command:

    `set gc mshift 2 <new value>`

20. Submit a panorama plate job to the NEWS 200 device. Process the plate and verify that subscan shift, mainscan shift, and head spacing are set up correctly. (The stitch line should be very difficult to detect, even under a microscope.)

Technical contact	Frank van Eerdt
Date submitted	25 Feb 2008
Last updated	25 Feb 2008