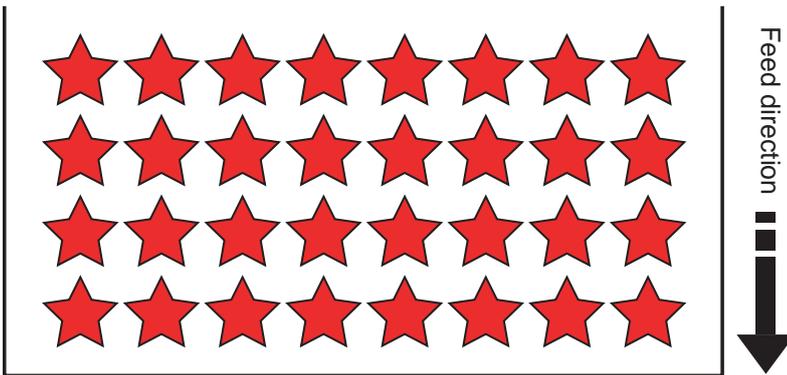


Confidential

Print & Cut Misalignment problem

- **SP-540V/300V/300**
- **SC-540/545**
- **SC-500**
- **CJ-500/400**

● **Ideal Condition**



The red stars are the printing images and the black lines are the cutting lines. The condition of the figure is the ideal condition. Cutting lines are all aligned to the printing images.

Necessary actions are different depending on the symptom. It is very important to understand how the cutting is actually shifting before taking actions.

** The actions described with **Blue** can be done by a user.

Symptom 1 : Cut is shifted in the same direction for the same amount



Possible Causes

Print & Cut adjustment is not correctly done.

Actions

1. Perform "ENV. MATCH" in the User menu.
2. Perform "PRINT-CUT ADJ." in the User menu.

Symptom 2 : Cut is OK at Left and Right side but Shifted at Center



Possible Causes

Mechanical characteristic

Actions

1. Perform "ENV. MATCH" in the User menu.
2. Perform "TEST PRINT" of "PRINT-CUT ADJ." in the User menu at the Left, Center and Right of the media, and find the value that minimizes the shifting amount at 3 positions. Then, input the values in "SCAN SETTING" and "FEED SETTING".

Symptom 3 : Cut is OK at Right side but getting Shifted as it goes to the Left side



Possible Causes

1. Printer is not optimized for the ambient temperature and humidity.
2. There is some value other than 0 set in "CALIBRATION" > "CUTTING ADJ." > "SCAN SETTING".
3. Linear Encoder Scale cannot be read correctly.

Actions

1. Perform "ENV. MATCH" in the User menu.
2. Make sure "CALIBRATION" > "CUTTING ADJ." > "SCAN SETTING" is set to 0.
3. Perform "PRINT-CUT ADJ." in the User menu.
4. Clean or replace the Linear Encoder Scale.

Symptom 4 : Cut is OK at Front side but getting Shifted as it goes to the Rear

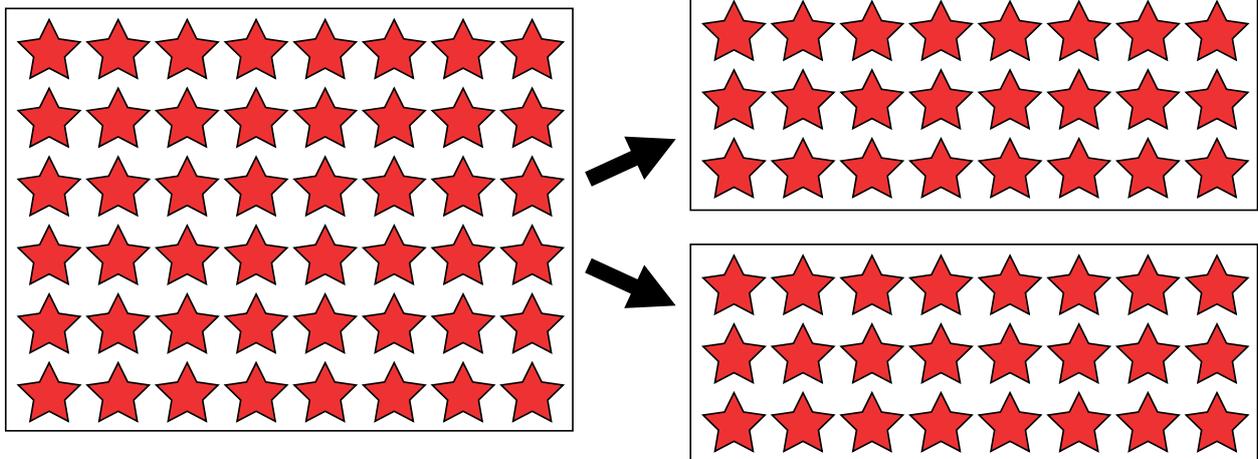


Possible Causes

1. Strong back tension of the heavy roll media causes the media to be fed less than it should be when printing, while cutting is performed free from the back tension of the roll media.
2. There is some value other than 0 set in "CALIBRATION" > "CUTTING ADJ." > "FEED SETTING".

Actions

1. Perform "ENV. MATCH" in the User menu.
2. Make sure "CALIBRATION" > "CUTTING ADJ." > "FEED SETTING" is set to 0.
3. Perform "PRINT-CUT ADJ." in the User menu.
4. Divide the file into 2 or more and output them as the separate jobs in order to make the feeding distance of each job shorter.



5. Prefeed the media to make it unrolled before starting a printing.

Symptom 5 : Symptom 2, 3 and 4 are mixed or Detailed situation is not clear



Actions

1. Perform "ENV. MATCH" in the User menu.
2. Make sure "CALIBRATION" > "CUTTING ADJ." > "SCAN SETTING" and "FEED SETTING" are set to 0.
3. Perform "TEST PRINT" of "PRINT-CUT ADJ." in the User menu at the Left, Center and Right of the media, and find the value that minimizes the shifting amount at 3 positions. Then, input the values for "SCAN SETTING" and "FEED SETTING".
4. Prefeed the media to make it unrolled before starting a printing.
5. Decrease the CUT SPEED and the UP SPEED.
6. Divide the file into 2 or more and output them as the separate jobs in order to make the feeding distance of each job shorter.

* In case a technician is on site

1. Perform "ENV. MATCH" in the User menu.
2. Make sure "CALIBRATION" > "CUTTING ADJ." > "SCAN SETTING" and "FEED SETTING" are set to 0.
3. Perform "PRINT&CUT ADJ." in the Service menu with the following method.
 - SP-300V/540V, SP-300(Ver.4.0 and above)** : Go into "SETTING2" and press "TEST CUT" key to output the test pattern. Then adjust the cutting position with the 4 cursor keys, and press "ENTER" key to save the setting.
 - Other Print & Cut machines, SP-300(Ver.3.9 and below)** : Output "TEST PRINT 2" at the Left, Center and Right of the media, and find the value that minimizes the shifting amount at 3 positions. Then, input the values for "SCAN SETTING" and "FEED SETTING".
4. Prefeed the media to make it unrolled before starting a printing.
5. Decrease the CUT SPEED and UP SPEED.
6. Divide the file into 2 or more and output them as the separate jobs in order to make the feeding distance of each job shorter.
7. Clean the Bed, Grit Rollers and bottom side of the Media Clamps. (Not sticky?)
8. Clean or replace the Linear Encoder Scale.
9. Make the Left or Right or Both pinch roller(s) tight on the shaft.
10. Replace the Left or Right or Both pinch roller(s) if there is a crack on the plastic frame of the pinch roller.

If the problem still exists after doing all the instructed things for Symptom 3, 4 and 5, it should be caused by expansion or contraction of the media. Performing cutting after detecting the crop marks can eliminate the affect of the media expansion/contraction.

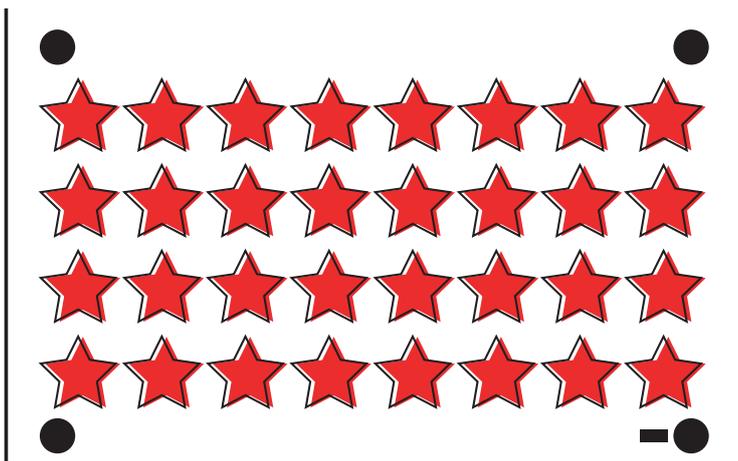
Here are the steps

1. Perform printing with crop marks.
2. Turn off the Print Heater and the Dryer and wait until they are cooled down.
3. Add the number of the pinch rollers.
4. Reload the media and have the machine detect the crop marks.
5. Start cutting.

If still have the error...

6. Decrease the CUT SPPED and the UP SPEED.
7. Divide the file into 2 or more and ouput them as the separate jobs in order to make the feeding distance of each job shorter.

Symptom 6 : “Print&Cut” is Fine but Cut is shifted only when detecting Crop Marks



** "Print&Cut" mentioned here is a Print&Cut operation without using the Crop mark detection.

Possible Causes

Tool/Crop mark sensor position adjustment is not correctly done.

Actions

1. Perform “ENV. MATCH” in the User menu.
2. Perform “CROP-TOOL ADJ.” > “TEST PRINT 2” in the Service menu, and input the values for “SCAN SETTING” and “FEED SETTING”.

Supplemental Information

1. What is the spec. of Print & Cut alignment accuracy ?

+/- 0.5 mm max. at 25 degrees C (excluding possible shift caused by expansion/contraction of the media and/or by reloading the media)

2. “Print & Cut adjustment” and “Crop-Tool adjustment”

• Print&Cut Adjustment (Manual)

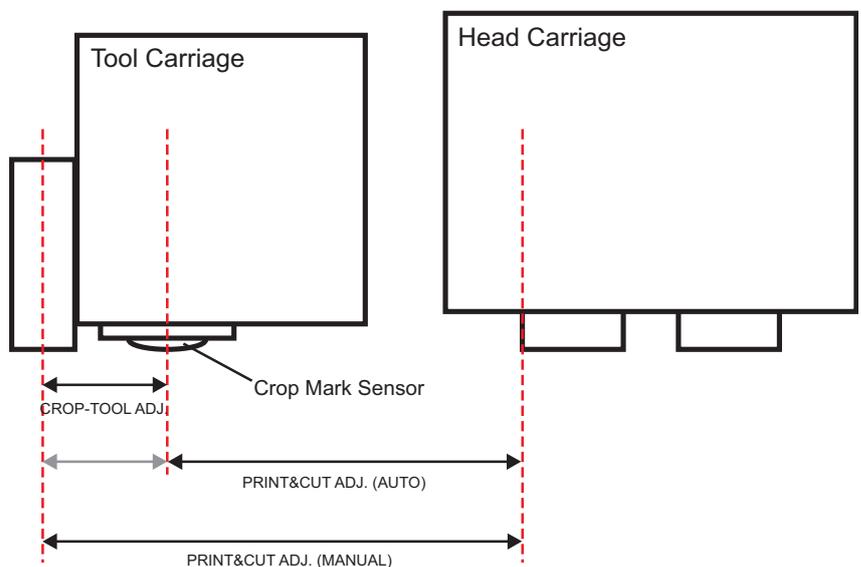
It calibrates the distance between the Head carriage and the blade.

• Print&Cut Adjustment (Auto)

It calibrates the distance between the Head carriage and the Crop mark sensor by printing a crop mark and detecting it by the sensor. Then, the distance between the blade and the Crop mark sensor will be added to figure out the distance between the Head carriage and the blade.

• Crop-Tool Adjustment

It calibrates the distance between the blade and the Crop mark sensor.



3. When I need to perform both “Print & Cut Adjustment” and “Crop-Tool Adjustment”, which should be done first ?

Crop-Tool Adjustment should be done first. This calibrates the distance between the blade and the Crop mark sensor and this distance is used when performing an Auto Print&Cut Adjustment.

4. “ENV. MATCH” function

Printing position is determined by reading the Linear Encoder Scale while cutting position is determined by reading the encoder of the Scan Motor. Since the Linear Encoder Scale can expand or contract due to the ambient temperature or humidity, it causes the Print & Cut mis-alignment. By performing “ENV. MATCH”, the machine performs automatic adjustment to optimize its state to the environment.

By the way, “ENV. MATCH” is the same as “LINEAR CALIB.” in the Service menu.

5. “CALIBRATION” function

In addition to the CALIBRATION for printing, there is CALIBRATION for cutting to calibrate the cutting length. It is prepared for the case you use the machine for cutting only. When using the machine for Print & Cut, the offset values always need to be set to 0.

Please note, the calibration value for printing calibrates the cutting length together with the printing length. But calibration value for cutting only calibrates the cutting length.