

JV3 Series - S-Head Replacement Procedure

This document details the correct procedure for replacing Print Heads in the JV3 series of solvent printer. Before attempting this procedure ensure that you have read and understood this and all related documents. Ensure also that you have all the required parts and tools on hand.

Tools and parts required for this procedure:

Phillips screwdriver, type 2	Hex Wrench 2.5mm (Approx L=170mm)
Needle nose pliers or tweezers	Magnifying scope (approx 50x mag)
Pair of solvent resistant gloves	Protective goggles
Paper towels or rags for cleaning	S-Head Replacement Solution (M005026)
Syringe/Damper Tool (M005027)	

As head cables are easily damaged when removing and re-installing we recommend having at least one of the following parts on hand:

1x Head FPC cable 1 (# E102216)	1x Head FPC cable 2 (# E102217)
1x Head FPC cable 3 (# E102218)	

Related Procedures:

- JV3 Series - Procedure for Print Adjust 2

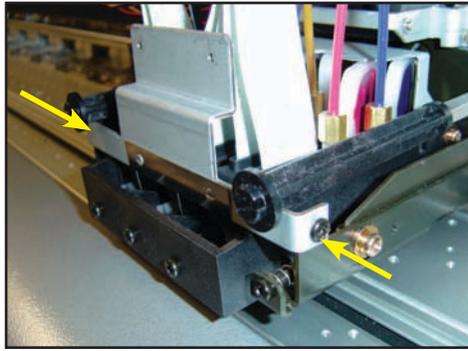
 Ensure that front and rear power switches are turned off before beginning.

 Proper eye protection and gloves must be worn when handling Cleaning or S-Head replacement Solution.

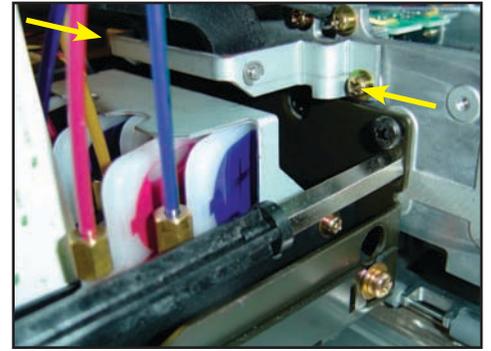
1. Removal of Damaged Print Head:



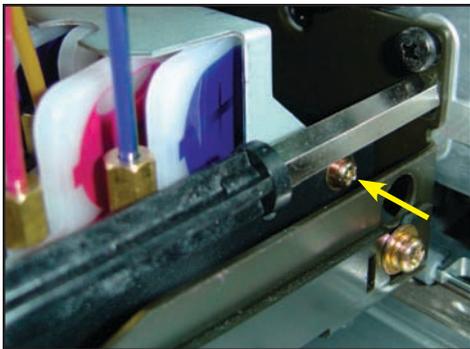
1-1. Ensure both power switches are off. Move Carriage out over Platen by hand. Remove indicated screws and remove Head Cover.



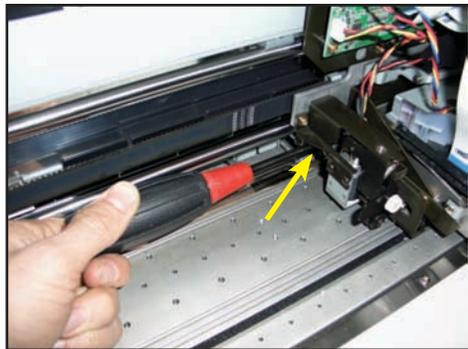
1-2. Remove the two indicated screws and remove the Head Cover Bracket.



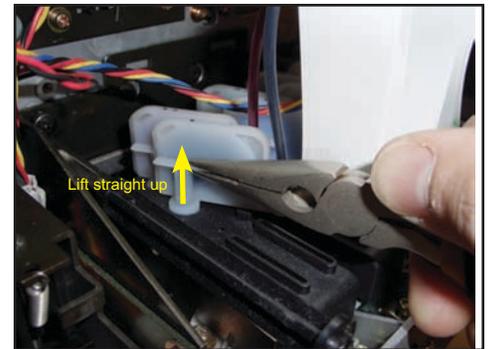
1-3. Use a coin to ensure that Head-Lock Screws are tight then remove screws on left and right ends of Head Lever Bracket. Remove entire Head lever taking care not to damage Head FPC Cables.



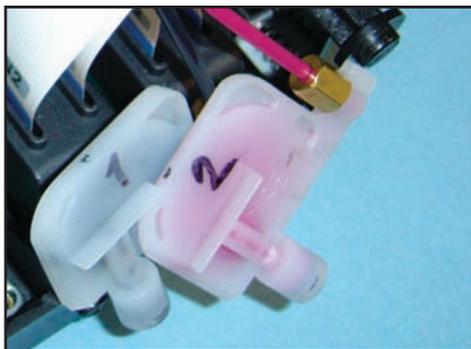
1-4a. Loosen the two screws that secure the Damper Holder Bracket, tilt up and remove.



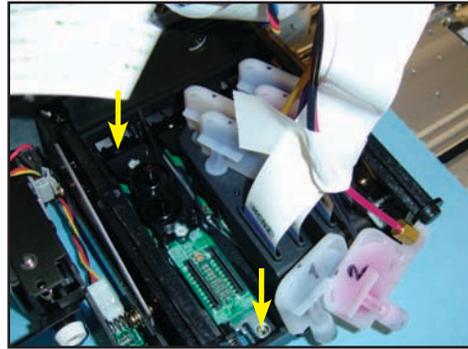
1-4b. Left screw is accessed through this opening in Head Bracket and Cutter Bracket.



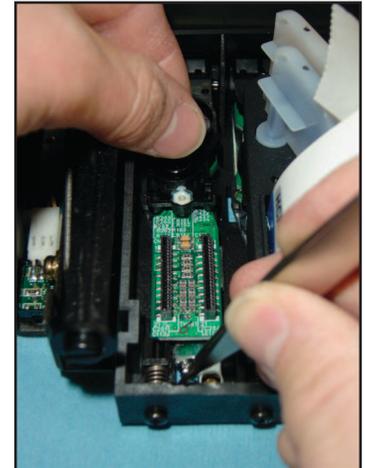
1-5. Unplug the pair of FPC Cables from the head you wish to replace and tuck cables up out of the way. Using long-nose pliers as shown, remove each of the two Dampers. **Be especially careful not to drip ink onto FPC Cables or contacts on Head!**



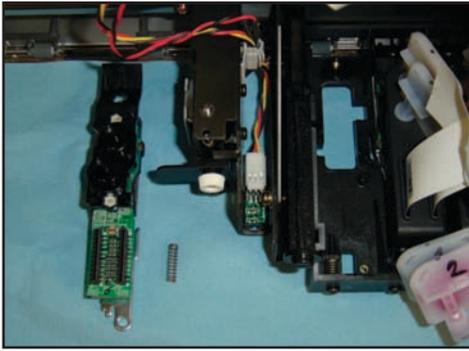
1-6. If replacing multiple Heads it is a good idea to label the position of each Damper. Newer models may already have a small ID tag on each ink line. **Take care not to touch or damage the clear membrane on back of Damper!**



1-7. Tape ink lines and Dampers out of the way. Lift off the plastic Damper Holder that covers the head. Remove the hex screw from front and rear of Head Adjusting Plate.



1-8. Wipe any ink from the damper projections. Grasp damper projection nearest to you. Using tweezers or needle-nose pliers to compress the spring, tip head forward and lift to remove.



1-9. Head and Adjusting Spring removed. If head is covered by warranty, flush, drain, place rubber cap over nozzles and package ready for return to Mimaki USA.

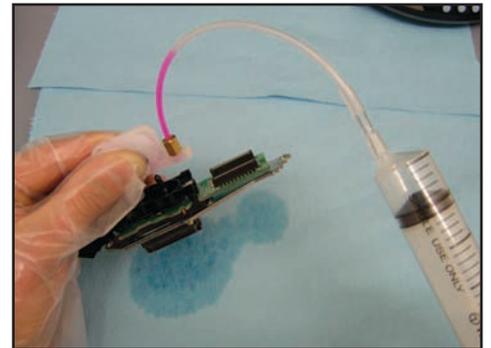
2. Installation of New Head:



2-1. Unpackage new head. Copy down the new Head ID exactly as it appears on head.

! Important:

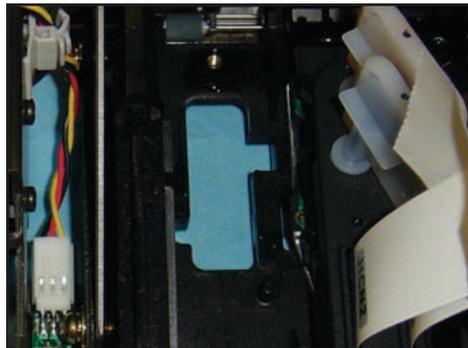
Water-based transportation liquid (S-46), supplied in the head at the time of shipment, reacts to solvent ink and may cause clogging. Therefore, it is necessary to wash the new head before proceeding with installation.



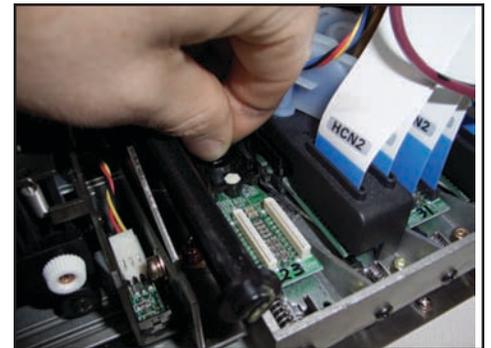
2-2. Fill syringe with 6-8 cc of S-Head Replacement Solution. Inject approx 3-4 cc into each Damper Insertion Projection over a period of about 30 seconds. **Head can be damaged if fluid is injected too fast.**



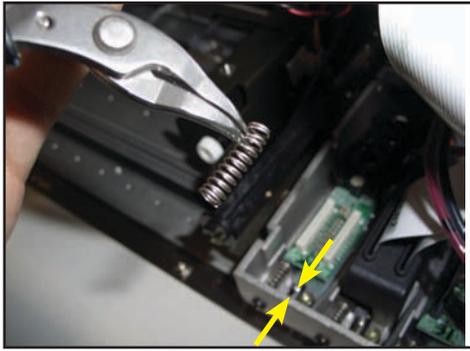
2-3. Insert hex screws in holes at front and rear of Head Adjusting Plate.



2-4. Before installing new Head inspect the area where Head will sit for any debris such as dried ink. Clean with Solvent (SPC-0336) if necessary.



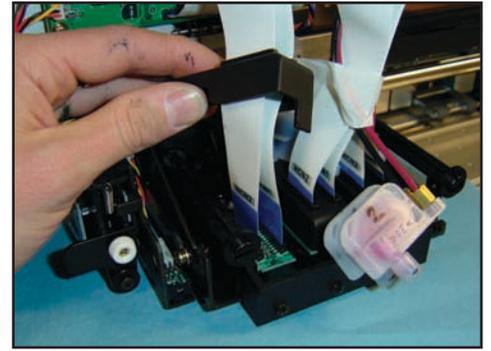
2-5. Grasping damper projection, place Head in position. Install, but do not tighten the front and rear hex screws.



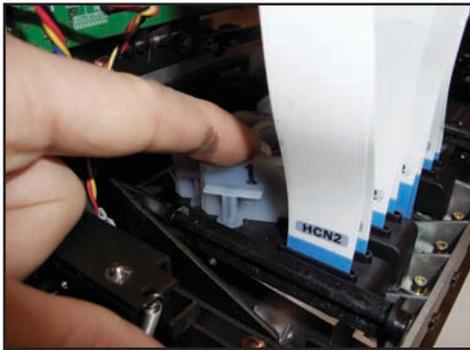
2-6. Grasp spring near onje end with needle-nose pliers. Insert spring one end first then compress to complete installation. Lightly tighten the front and rear hex screws.



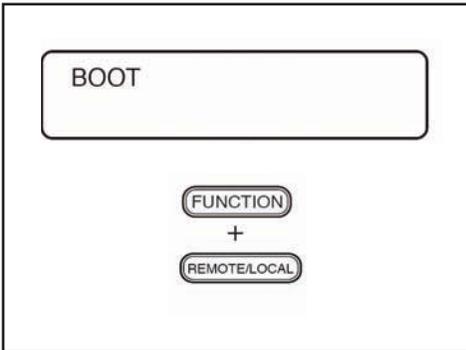
2-7a. Thread Head FPC Cables back through the Damper Holder. Cable HCN2 goes through the left slot and HCN1 through the right. Blue side of cables face to the left.



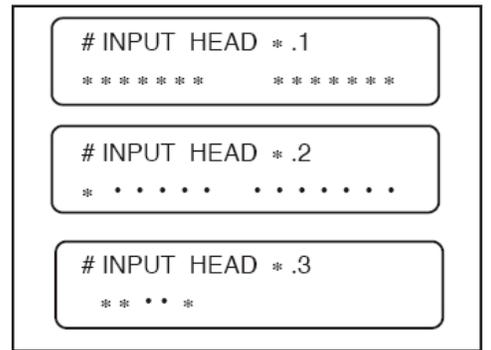
2-7b. Connect the FPC cables, taking care that they are seated correctly. **A cable seated at an angle may short out, damaging cable and head!** Lower Damper Holder into position.



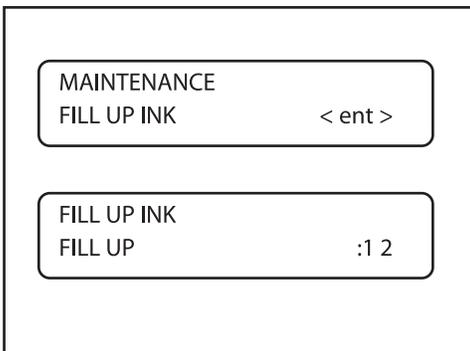
2-8. Re-install the Dampers in their original positions and ensure that they are properly seated. Re-install the Damper Holder Bracket, the Head Cover Bracket and the Height Adjustment Lever.



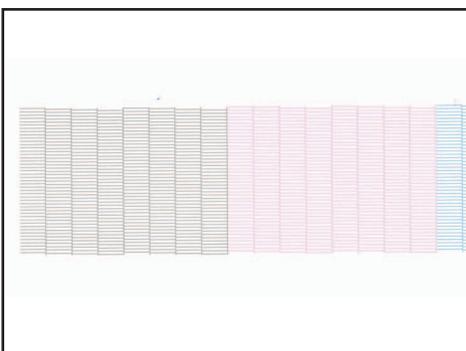
2-10. Restore power to the printer and put into Service Mode. (FUNCTION and REMOTE keys are held as printer boots).



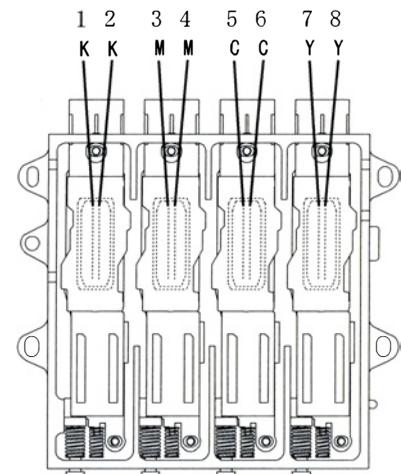
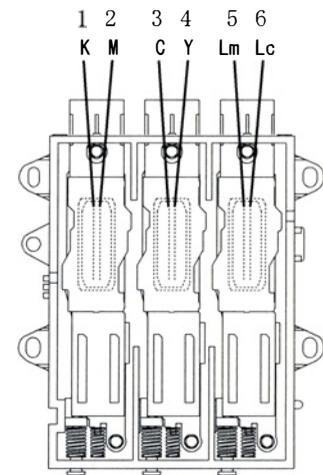
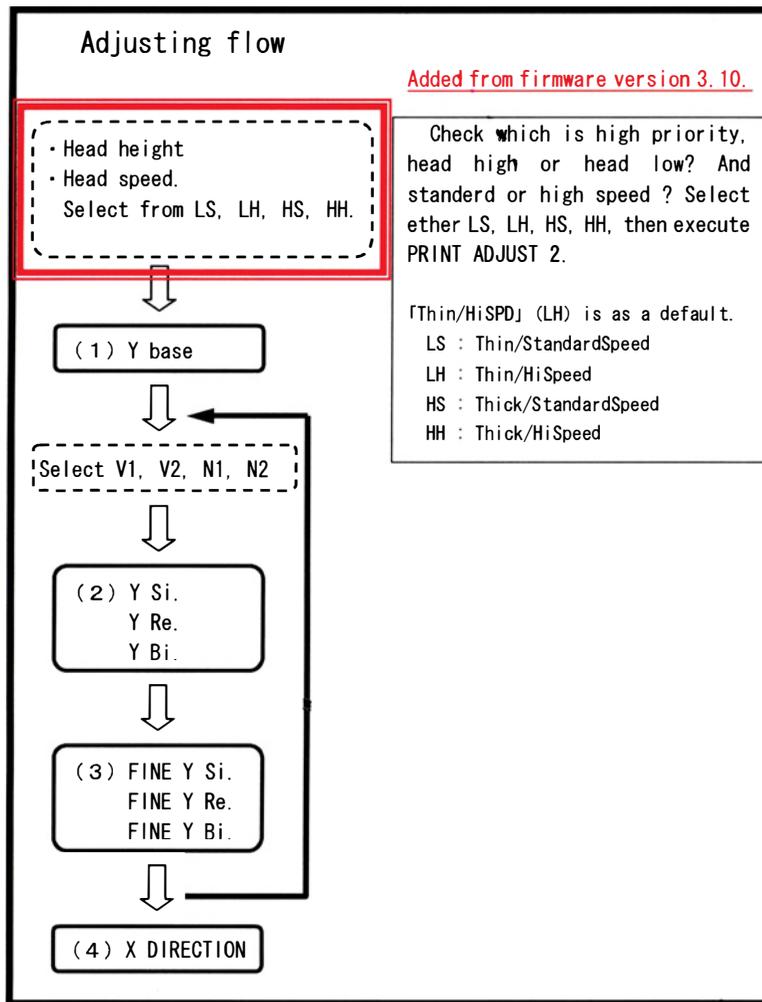
2-11. Use the arrow keys to enter the new Head ID. (#ADJUST ⇌ HEAD ID). Ensure that the correct Head is selected and all ID values are entered correctly. Incorrect entry will result in a error code.



2-12. Perform an Ink Fill Up to fill the new Heads with ink (MAINTENANCE ⇌ FILL UP INK). As the printer is in Service Mode you can choose just Pump 1 or Pump 2 if desired.



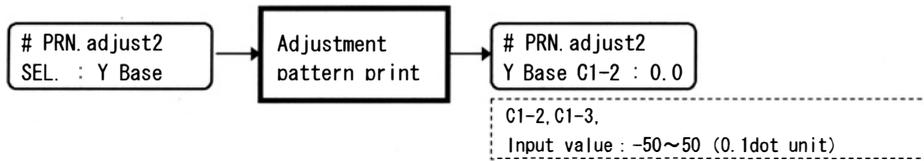
2-13. Perform a TEST DRAW to confirm that all nozzles are firing correctly. Perform additional Ink Fill Ups or Cleanings if necessary.



Cautions

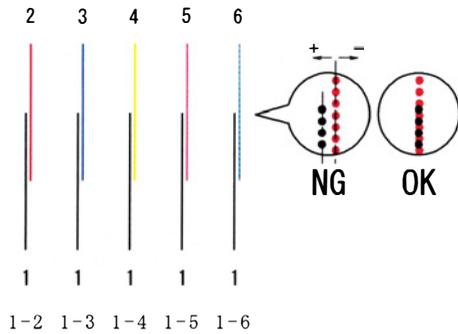
- ※ 1. Select either LS, LH, HS, HH (They are combination between head height and head speed.) as a priority of each operator. The result is a standard set to execute PRINT ADJUST 2. (Since firmware V3.10.) LH (Thin & High speed) is normally recommended as a default. That makes best quality of PRINT ADJUST 2. (Print accuracy is higher.)
- ※ 2. In case LH changes to others and execute PRINT ADJUST 2, adjustment values (Parameter) will be saved into Main board instead of previous values.
- ※ 3. Be sure to start "Y base" after above LS, LH, HS, HH set.
In case FINE adjustment (Y SINGLE, Y REPEAT, Y BI) is done before Y base adjustment, result of Y base is not applied and calculation will be missed inside of program. Therefore as a result of the case, PRINT ADJUST 2 will be missed and result of print position must be wrong. That means Y base should be done before FINE adjustment such as Y SINGLE, Y REPEAT, Y BI.
- ※ 4. Execute FINE adjustment each Y SINGLE, Y REPEAT, Y BI manually for VARIABLE 1, VARIABLE 2, NORMAL 1, NORMAL 2, that means BASIS SET is not available for above adjustment. In case BASIS SET is used, PRINT ADJUST 2 will not be completed perfectly.

(1) Y Base

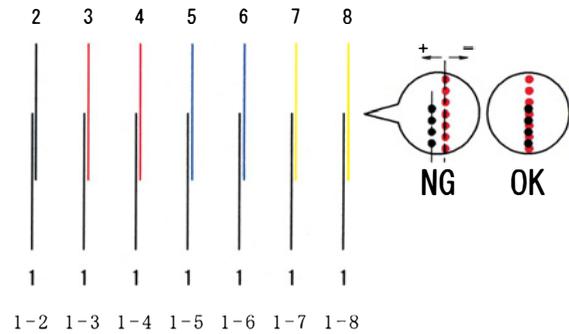


- ① Input the value with key, and set it with .
All colors (not including black) are adjusted to overlap straight on Head No.1 (Black) as standard.
Set all adjustment value from between 1 and 2 to between 1 and 6 (from between 1 and 2 to between 1 and 8 for SP) .
- ② Print adjustment pattern again, and confirm each colors are overlapped straight on black as standard.
In case not overlapped, return to ①, and implement adjust again.

Print sample

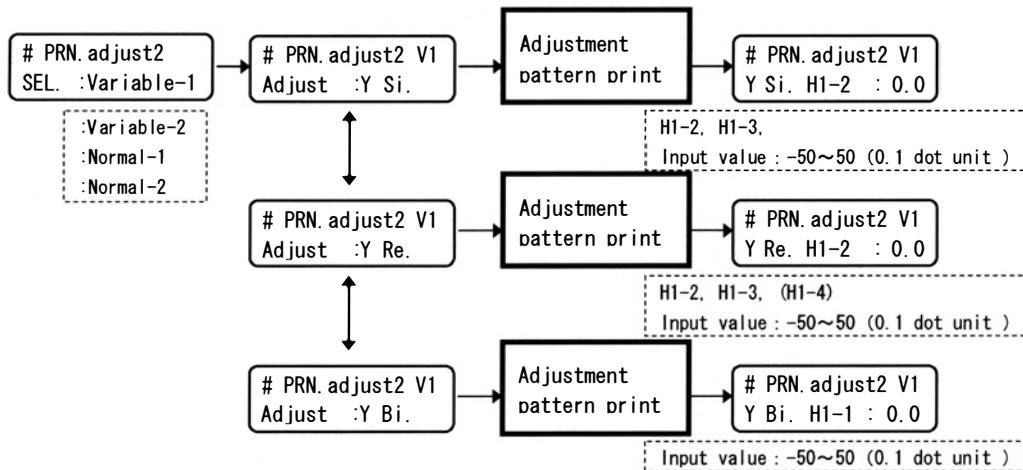


For S model (6 colors)



For SP model (4 colors)

(2) Y Single (Y Repeat, Y Bi-Directional)

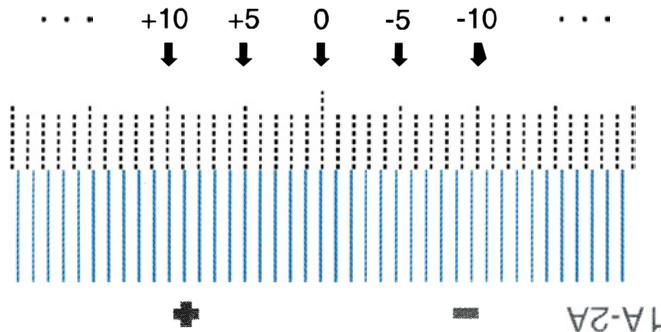


- ① Input the value with key, and set it with .
Input the value matched the end of the upper section and the lower section of plotted drawing.
Set all adjustment value of head from between 1 and 2 to between 1 and 3 (from between 1 and 2 to between 1 and 4 for SP)

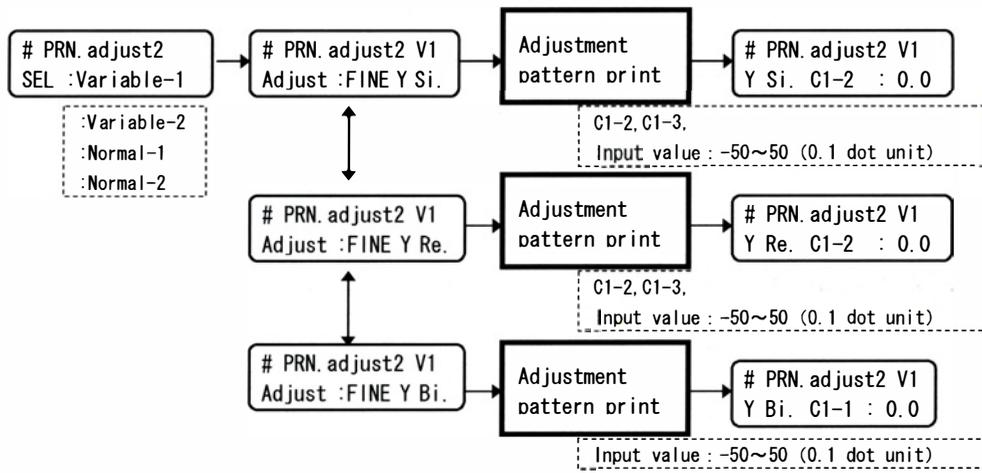
- ※1 Only adjust each head of “a” line (left nozzle line) for “Y single” and “Y bi-directional).
(Same as old adjustment)
- ※2 This adjust is only for “a” line. “b” line (right nozzle line) is also added for new adjust.
- ※3 The fine adjust for all the nozzles is implemented with “FINE Y Si.” , “FINE Y Re.” , and “FINE Y Bi.”

- ② Set the adjust value same as ① for Y Re. and Y Bi.
(Adjust only black for Y Bi.)

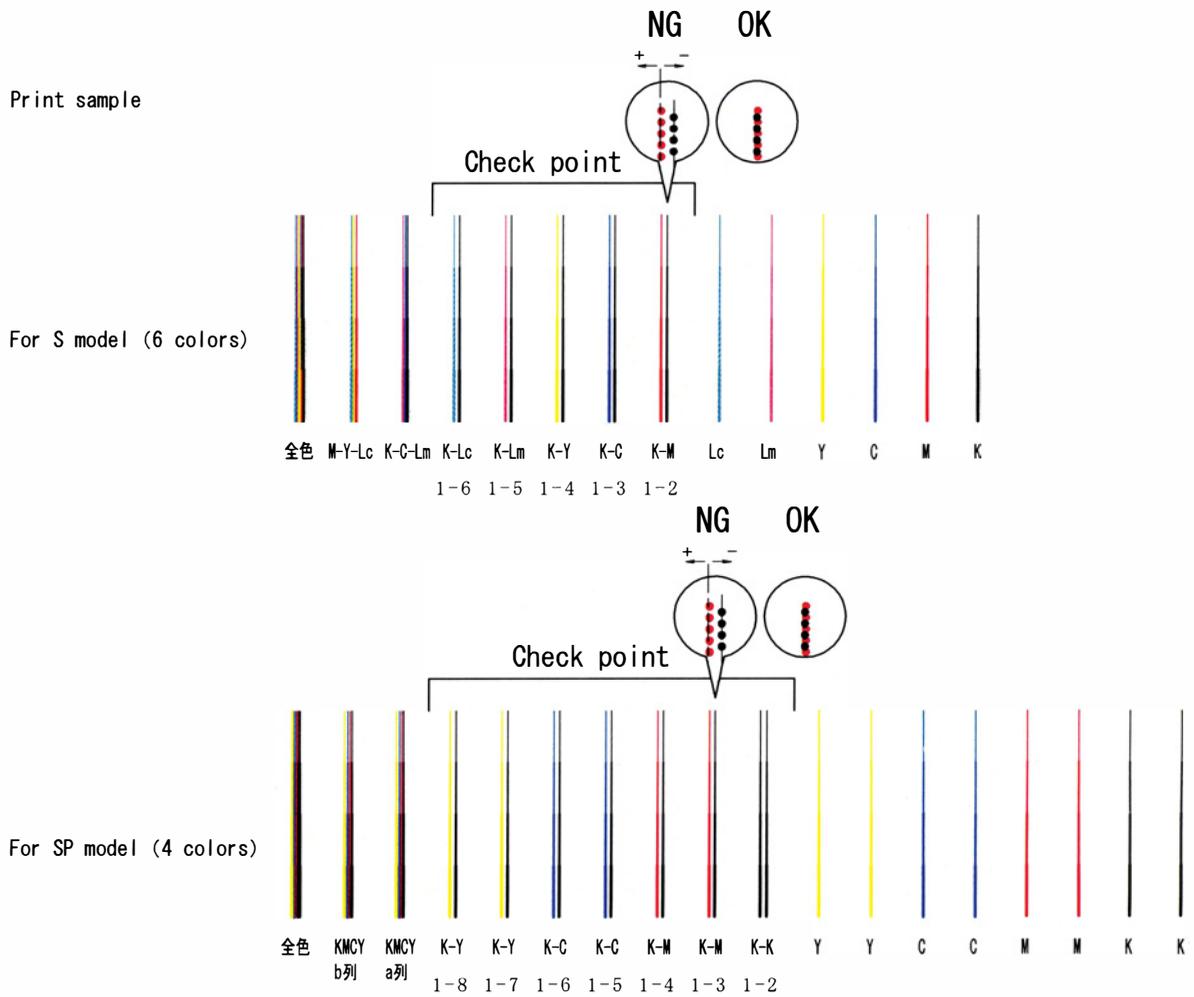
Print sample



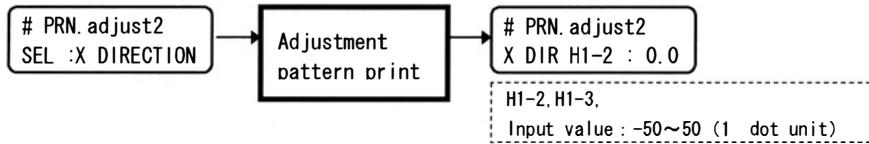
(3) FINE Y Si. (FINE Y Re. and Y Bi.)



- ① Input the value with key, and set it with .
All colors (not including black) are adjusted to overlap straight on Head No.1 (Black) as standard.
Set all adjustment value from between 1 and 2 to between 1 and 6 (from between 1 and 2 to between 1 and 8 for SP) .
- ② Print adjustment pattern again, and confirm each colors are overlapped straight on black as standard.
In case not overlapped, return to ①, and implement adjust again.
- ③ Set adjustment value same as above-mentioned for FINE Y Re. and FINE Y Bi.
(Adjust only black for FINE Y Bi.)
Adjust at all each printing mode V1, V2, N1, N2.



(4) X DIRECTION



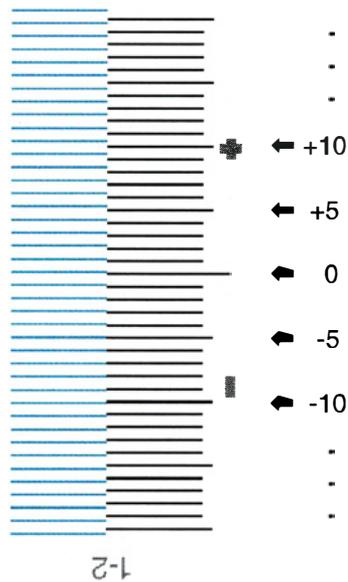
- ① Input the value with key, and set it with .
 Input the value matched the end of the upper section and the lower section of plotted drawing.
 Set all adjustment value of head from between 1 and 2 to between 1 and 3 (from between 1 and 2 to between 1 and 4 for SP)

In case the adjustment value is more than 5 dots, confirm the below and implement this adjustment again.

- Media adjust
- Head unit adjust

※1 Adjust only head of “a” line (left nozzle line) for “X DIRECTION” . (Same as old adjust)

Print sample



(5) “Maintenance” — “PRINT adjust”

Print adjust value of maintenance is zero-cleared.
 In case of printing Bi-directional, implement adjusts again.