

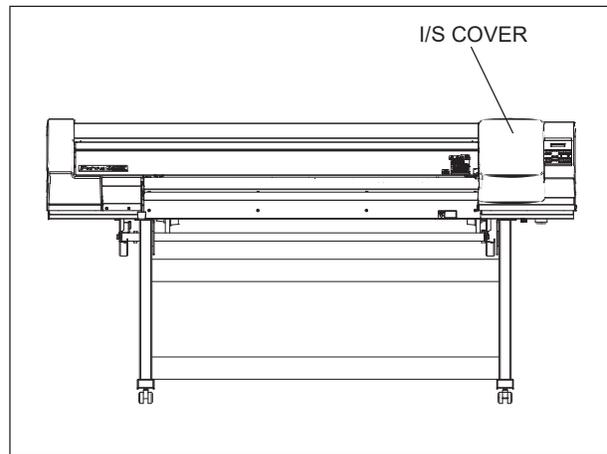
## 4-4 HEAD ALIGNMENT (Referential Time : 25 min.\_1 Head Alignment)

### [About HEAD ALIGNMENT]

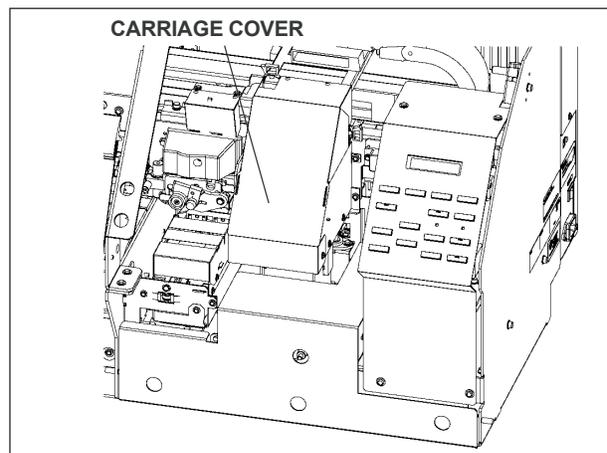
HEAD ALIGNMENT is necessary to obtain the good printing quality.

If the heads are not aligned, printing problems, such as banding, fine lines, gap between bands, could occur.

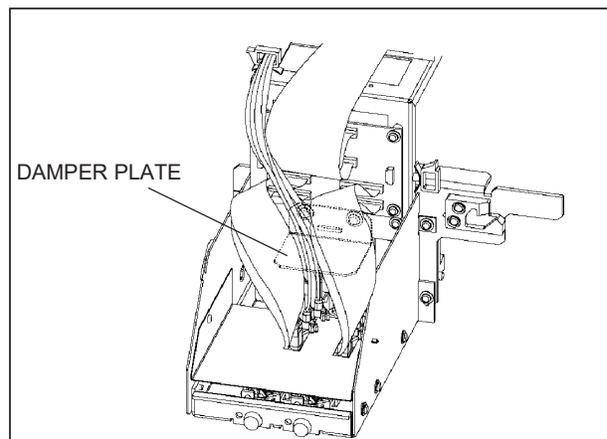
- 1 Remove the I/S COVER.



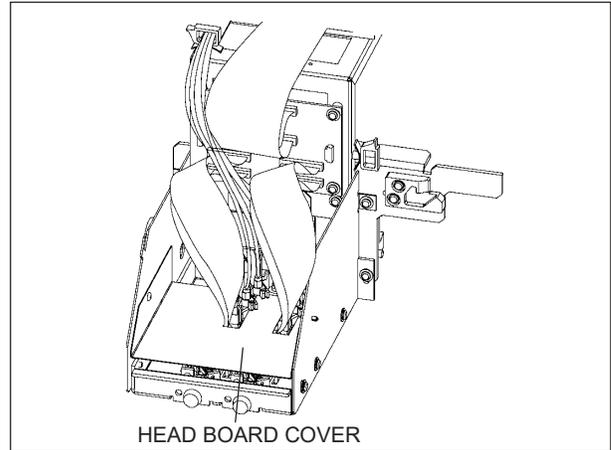
- 2 Remove the CARRIAGE COVER.



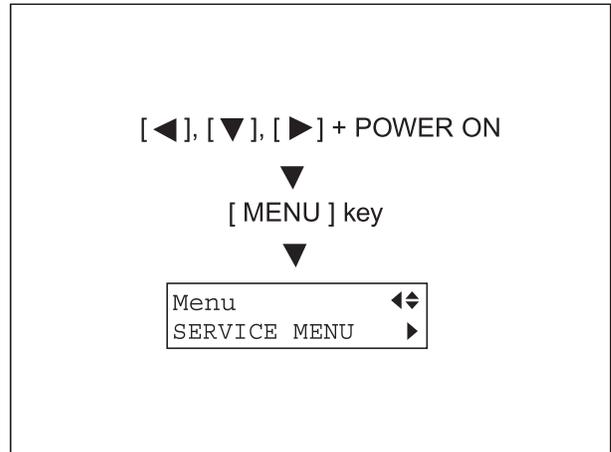
- 3 Remove the DAMPER PLATE.



**4** Remove the HEAD BOARD COVER (Clear Cover).

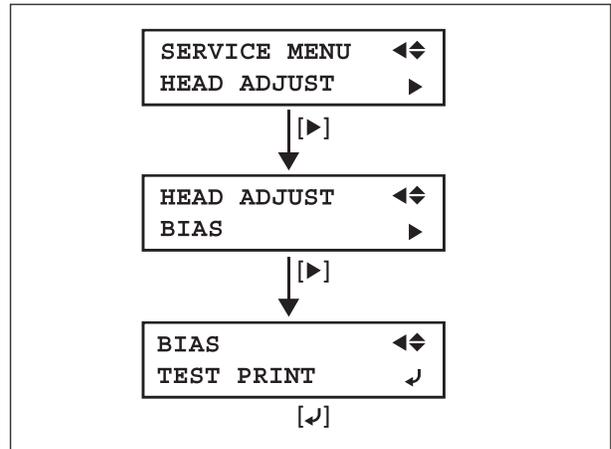


**5** Turn on the SUB POWER SW while pressing [◀], [▼] and [▶] keys to enter the SERVICE MODE.  
Setup the PET film on the machine.

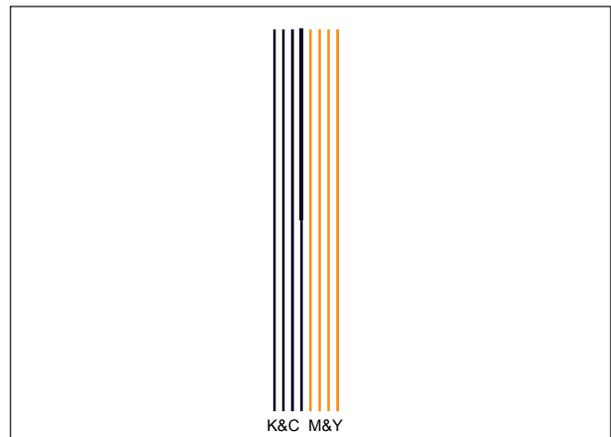


**[BIAS ADJUSTMENT]**

**6** Select the [BIAS] > [TEST PRINT] menu under the [HEAD ADJUST] menu and press the [ENTER] key.



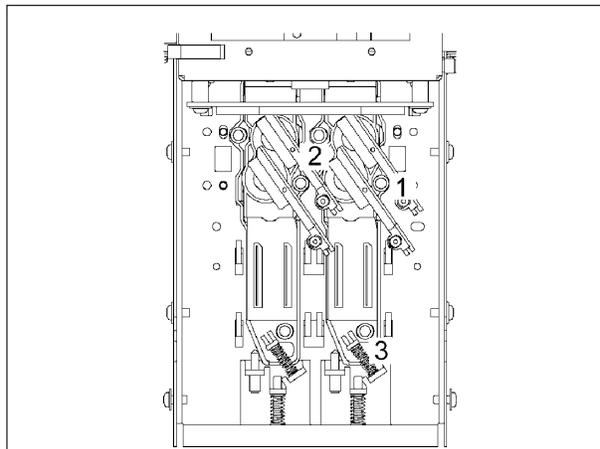
**7** TEST PATTERN shown in the right figure will be printed.



**8** Loosen the 3 screws fixing the Head in order as shown in the figure.



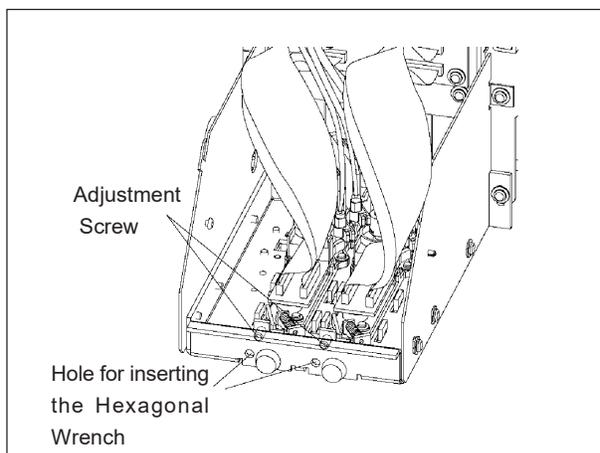
Loosen the screws fixing the Head for 1/2 turn. If the screws are loosened too much, adjustments could not be performed correctly.



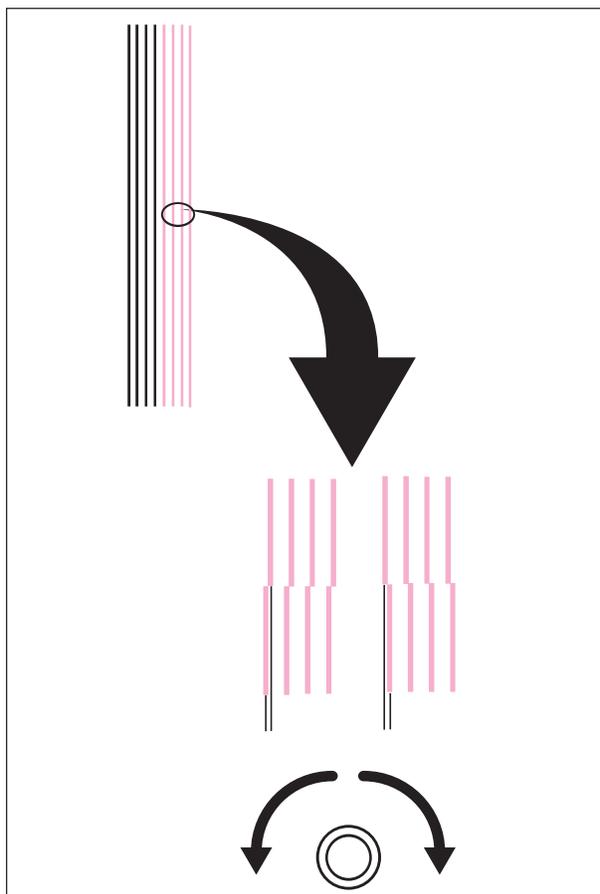
**9** Insert the 1.5 mm Hexagonal Wrench to the hole of the HEAD CARRIAGE, then, turn the screw so that the lines of each color in the test pattern will be straight.

*\*Reference\**

Position of the printing moves 1 line by turning the screw 3/4 turn.



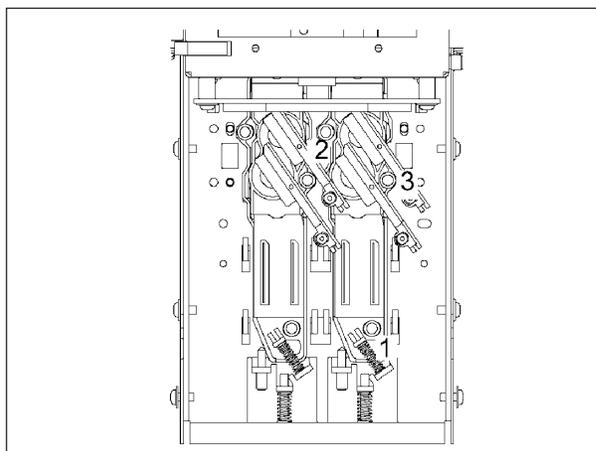
- When the upper lines are the left side of the lower lines, turn the screw CW.
- When the upper lines are the right side of the lower lines, turn the screw CCW.



- 10** Tighten the screws fixing the Head in the reverse order when fixing with using the TORQUE DRIVER (ST-056).



Torque for tightening is **2kgf · cm (20cNm)**.  
Make sure not to tighten the screws too tightly.



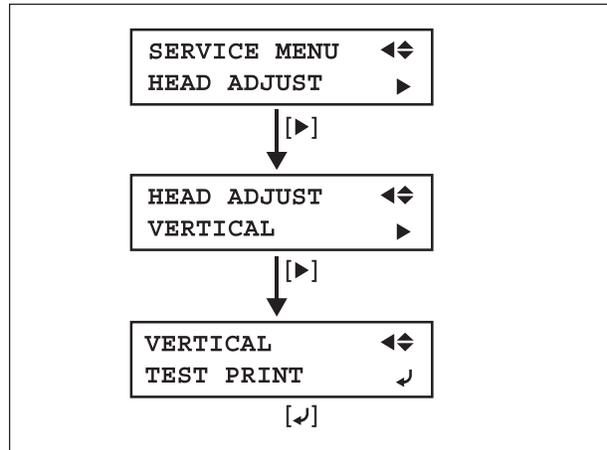
- 11** Print the test pattern again.  
If the result is NG, repeat **6** ~ **10**.



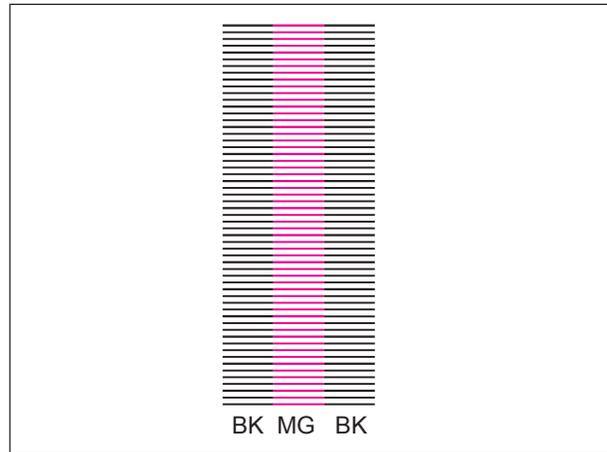
The shifting of lines should be within 1/2 dot.

### [VERTICAL ADJUSTMENT]

**12** Select the [VERTICAL] > [TEST PRINT] under the [HEAD ADJUST] menu and press the [ENTER] key.



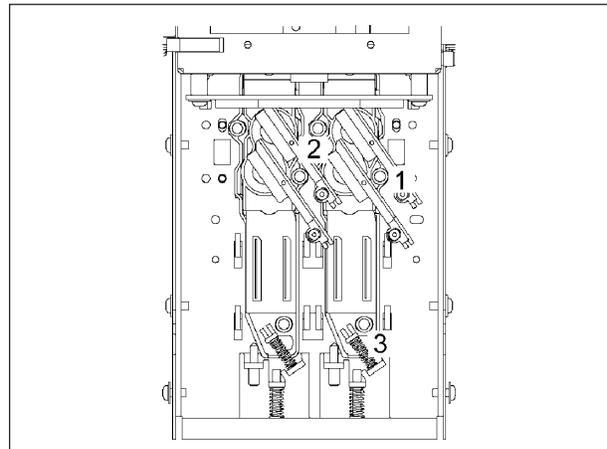
**13** TEST PATTERN shown in the right figure will be printed.



**14** Loosen the 3 screws fixing the Head in order as shown in the figure.



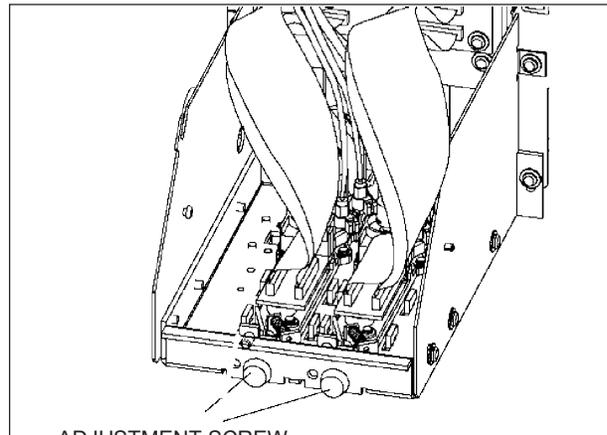
Loosen the screws fixing the Head for 1/2 turn. If the screws are loosened too much, adjustments could not be performed correctly.



**15** Turn the ADJUSTMENT SCREW so that the lines of each color in the test pattern will be straight.

\*Reference\*

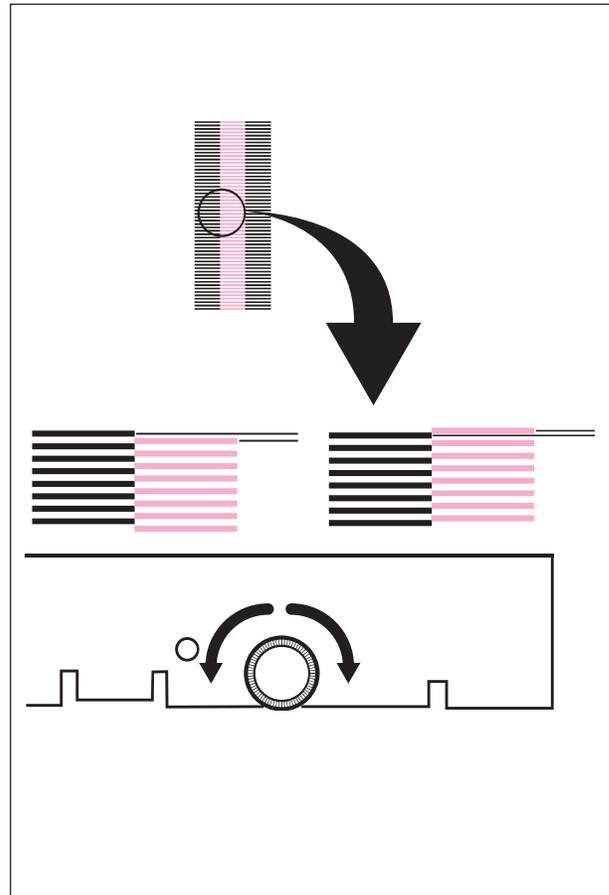
Position of the printing moves 1 line by turning the screw 30 degrees.



- When the M lines are above the K lines, turn the Adjustment Screw CW.
- When the M lines are below the K lines, turn the Adjustment Screw CCW.



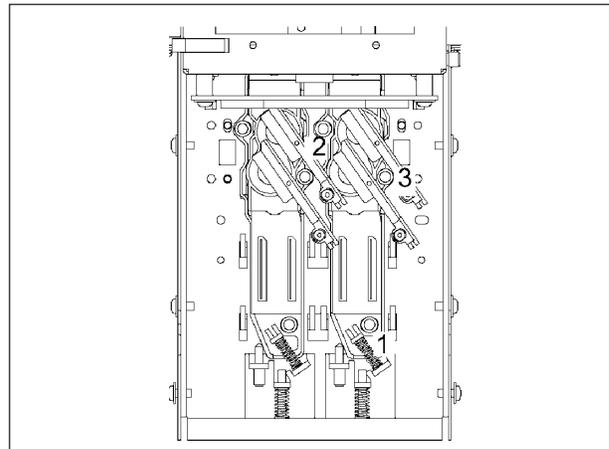
Adjust the M/Y Head on the basis of the K/C Head.  
It is not necessary to adjust the K/C Head.



- 16** Tighten the screws fixing the Head in the reverse order when fixing with using the TORQUE DRIVER (ST-056).



Torque for tightening is **2kgf • cm (20cNm)**.  
Make sure not to tighten the screws firmly.



- 17** Print the test pattern again.  
If the result is NG, repeat **12** ~ **16**.



The shifting of lines should be within 1/2 dot.

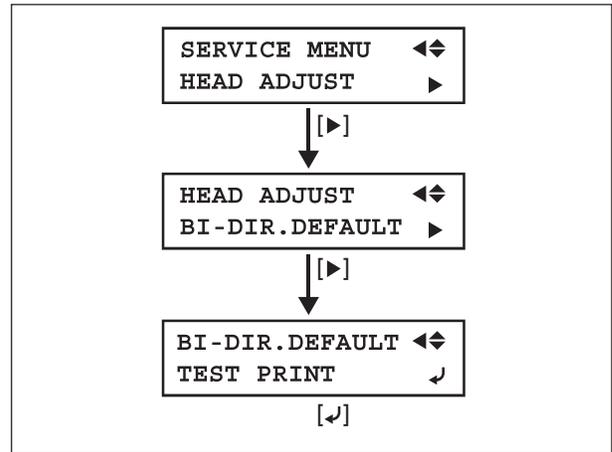
**Revised 13** If the Vertical test print result is OK, select the [BIAS TEST PRINT] menu under the [HEAD ADJUST] menu and print the Bias test pattern again.

If the Bias test print result is not satisfactory, repeat the Bias Adjustment.

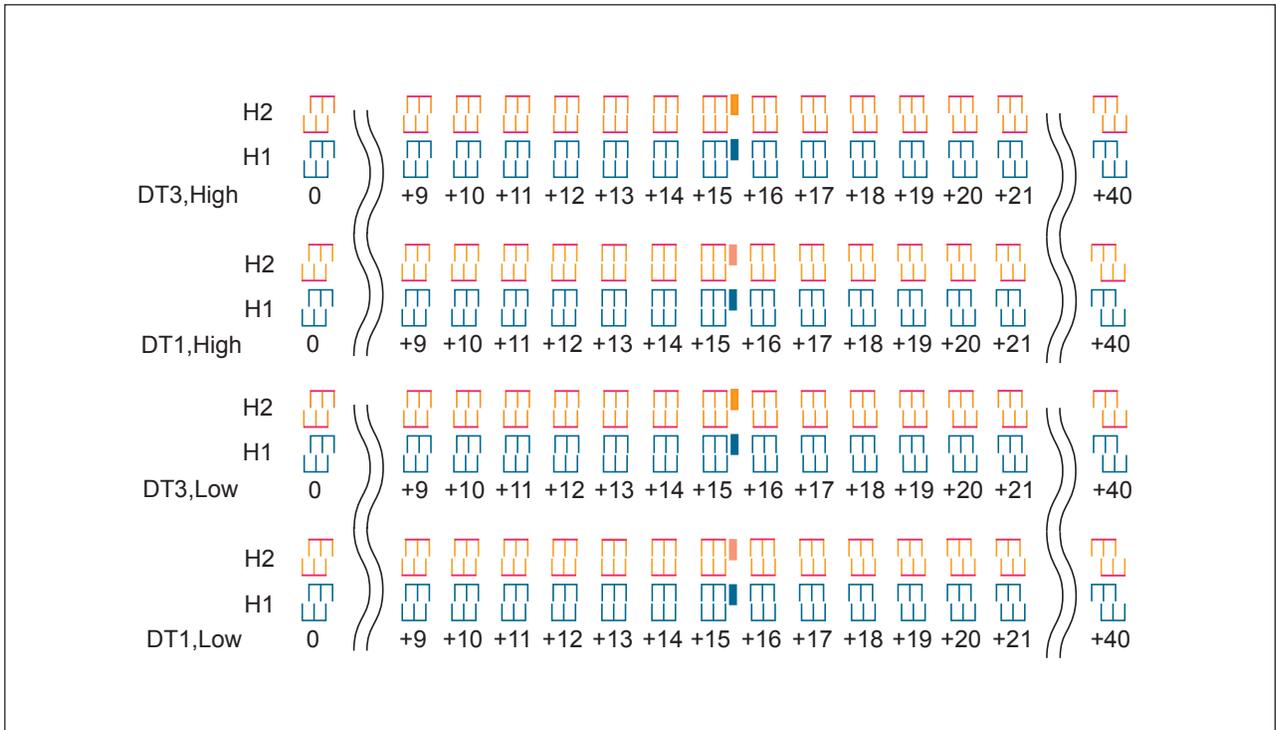


**[BIDIRECTION ADJUSTMENT]**

**21** Select [BI-DIR.DEFAULT] > [TEST PRINT] in the [HEAD ADJUST] menu and press the [ENTER] key.



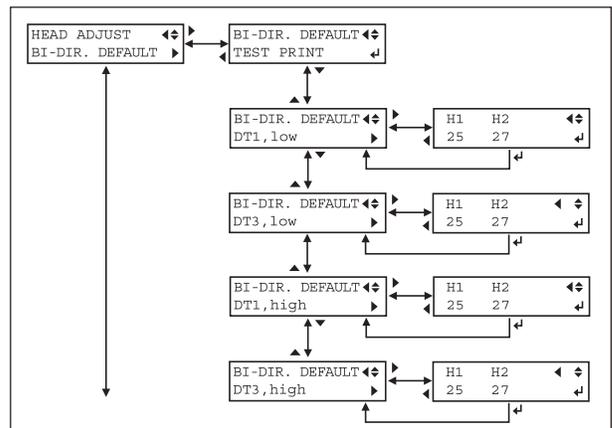
**22** Following TEST PATTERN will be printed.  
 Find the position where the upper block matches the lower block and check the number.  
 In case of having problem deciding the number, the number between the 2 numbers can be selected.  
 The number with ■ is the current setting.



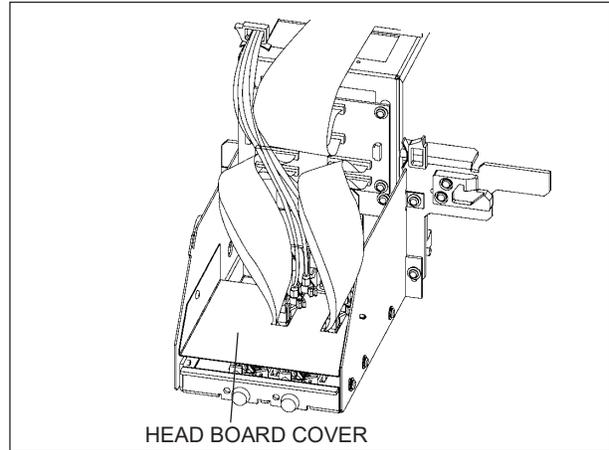
**23** Select [DT1] and [DT3] and in the [BI-DIR. DEFAULT] menu and enter the parameters checked at **22** with [▲] and [▼] keys.  
 Press the [ENTER] key to save the settings.



Parameters can be entered with an increment of 0.5.



**24** Fix the HEAD BOARD COVER (Clear Cover).



**25** Fix the DAMPER PLATE.

