# EZ Manual XL4xxe

▶ Electric Checks and Adjustments

▶ Electric Checks and Adjustment chart

▶ Cutter sensor adjustment

▶ Ribbon Clutch Adjustment

▶ Print Head Balance Adjustment

▶ Print Head Position Adjustment

# Electric Checks and Adjustments

This explains how to check DC power supply, I-Mark sensor level, Gap/center hole sensor level, ribbon sensor level, side hole sensor level, R-corner hole sensor level and jump hole sensor level. Ensure printer power is OFF. Then remove the VR cover on the back of the printer and perform the following steps.

Additional equipment required
TP Test Module
Digital Multimeter

STEPS

1   Attach the connector from the TP Test Module to the test port on the MAIN PCB. Note correct positioning of connector. Nibs on the connector are placed down on the PCB in the forward position.

2   Attach the ground probe of the Digital Multimeter to the TP Test Module ground  pin (GND PIN).

3   Attach positive probe of the Multimeter to the +SIG PIN on the TP Test Module terminal.

4   Turn printer power on and rotate the dial to a dial POS on the TP Test Module. Record the values from the Multimeter.

5   Confirm voltages are correct. If not, then replace parts or adjustment sensor level. Refer to Check and Adjustment chart.

6   After performing test, put the VR cover back to the printer.

Cable to TP Test Module

Cable to PCB

Ground PIN     SIG PIN     Dial

TP Test Module
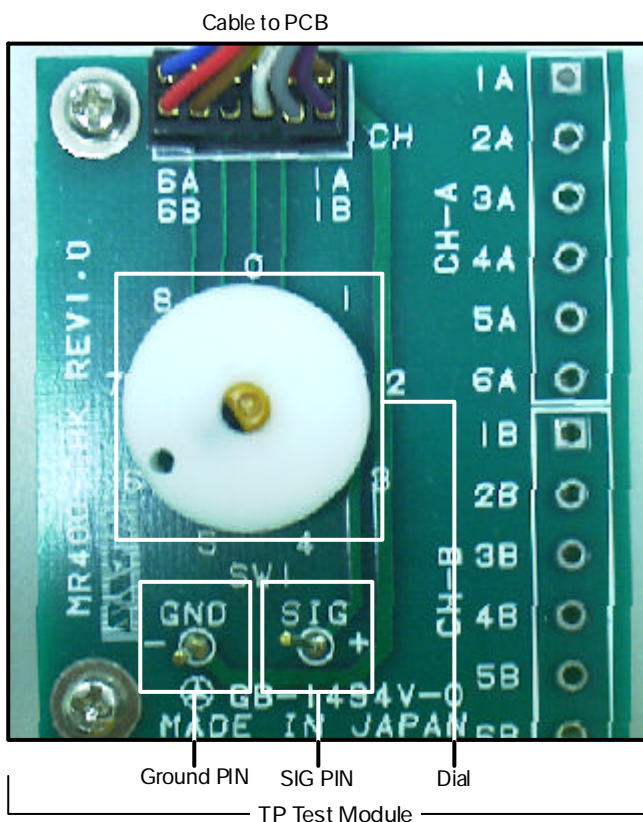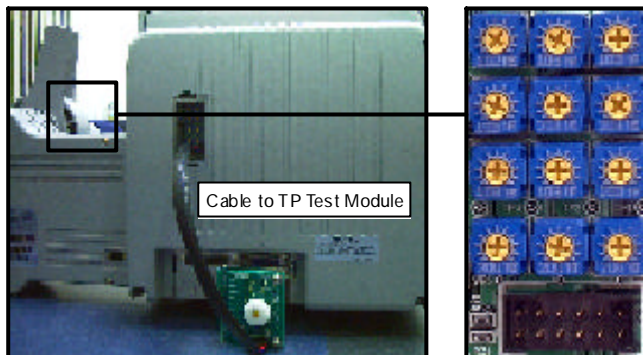
Electric Checks and Adjustments
# Chart 1

Potentiometers are located on MAIN PCB.
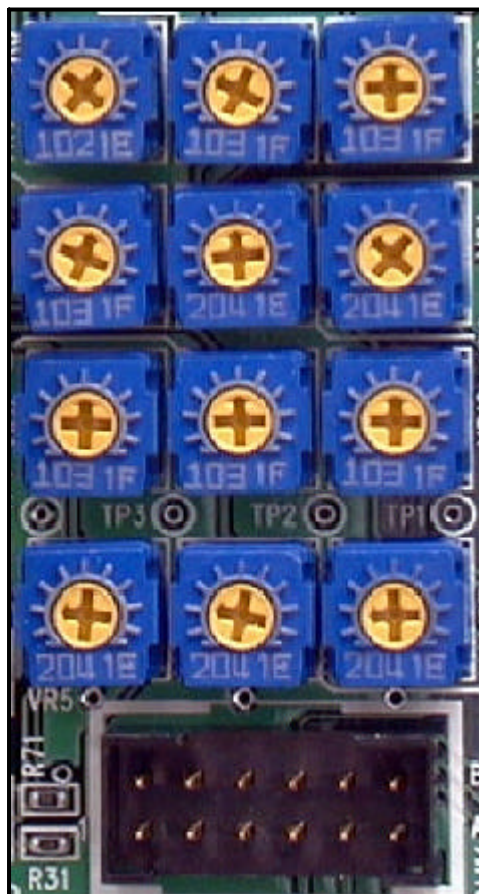


| VR3 | VR8 | VR9 |
|---|---|---|
| VR4 | VR2 | VR1 |
| VR11 | VR10 | VR12 |

| TP4 | TP3 | TP2 | TP1 |
|---|---|---|---|

| VR5 | VR6 | VR7 |
|---|---|---|

| B6 | B5 | B4 | B3 | B2 | B1 |
|---|---|---|---|---|---|
| A6 | A5 | A4 | A3 | A2 | A1 |

Connector PIN No.

| VR (Adjustment Level) on Main PCB | |
|---|---|
| VR1 | Tag Center Hole And Label Gap Sensor Level Adjustment |
| VR2 | I-Mark Sensor Level Fine Adjustment |
| VR3 | Ribbon Sensor Level Adjustment |
| VR4 | Print Position Adjustment (Use Factory) |
| VR5 | Side Hole Sensor Level Adjustment |
| VR6 | R Corner Hole Sensor Level |
| VR7 | Jump Hole Sensor Level Adjustment |
| VR8 | I-Mark Sensor Level Adjustment |
| VR9 | Tag Center Hole And Label Gap Sensor Level Fine Adjustment |
| VR10 | R Corner Threshold Level Adjustment |
| VR11 | Jump Hole Sensor Threshold Level Adjustment |
| VR12 | Side Hole Sensor Threshold Level Adjustment |

| TP (check level) on main PCB | |
|---|---|
| TP1 | Side Hole Sensor Threshold Level Adjustment |
| TP2 | R Corner Threshold Level Adjustment |
| TP3 | Jump Hole Sensor Threshold Level |
| TP4 | GND |

Electric Checks and Adjustments
# Chart 2

TP TEST POINT CHART

| Dial test point | Comment | Voltage | Voltage Range | Check pin on TP Test Module and Main PCB | Adjustment to VR |
|---|---|---|---|---|---|
| 0 | DC power Supply | +5.0 VDC | +4.8V to +5.2V | CH3A(+5.0V) - CH1A(GND) | N/A |
| 1 | | +2.0 VDC | +1.9V to +2.1V | CH4A(+2.0V) - CH1A(GND) | N/A |
| 2 | | +3.3 VDC | +3.1V to +3.5V | CH5A(+3.3V) - CH1A(GND) | N/A |
| 3 | | +24.0 VDC | +23.5V to +24.5V | CH6A(+24.0V) - CH1A(GND) | N/A |
| 4 | I-Mark Sensor Level | Low level (Set the no eye-mark point in the sensor's) = Less than +0.5V | | CH1B(+8.4V) - CH1A(GND) | VR8 and VR2 |
| | | High level (Set the eye-mark in the sensor's) = Low level plus more than +0.9V | | | (VR2 is used for adjusting the light reception flow. If there is difference between the high and low level, adjust VR2 to allow some level difference.) |
| | | High level (with eye-mark point) - Low level (without eye-mark point) = +0.9V | | | |
| 5 | Gap/Tag Center Hole Sensor Level | Low level (Set the label backing liner or centre hole tag in the sensor's) = Less than +0.5V | | CH2B - CH1A(GND) | VR1 and VR9 (Fine adjustment) |
| | | High level (Set the label and tag in the sensor's) = Low level plus more than +0.1V | | | |
| | | High level (printing point) - Low level (gap point) = +1.0V | | | |

Electric Checks and Adjustments
# Chart 3 continued

TP TEST POINT CHART

| Dial test point | Comment | Voltage | Voltage Range | Check pin on TP Test Module and Main PCB | Adjustment to VR |
|---|---|---|---|---|---|
| 6 | Ribbon sensor level adjustment | Low level (Set the ribbon without slit point) : Less than +0.5V | | CH3B - CH1A(GND) | VR3 |
| | | High level (with slit point) - Low level (without slit point) +2.0V | | | |
| 7 | Side hole sensor level | Low level (Set the side hole in the sensor's) : Less than +0.5V | | CH4B - CH1A(GND) | VR5 |
| | | High level (Set the tag in the sensor's) : Low level plus more than +0.2V | | | |
| | | High level (printing point) - Low level (side hole point) : +2.0V | | | |
| N/A | Side hole slice level | Middle of level between high and low levels | | TP1 - TP4(GND) | VR12 |

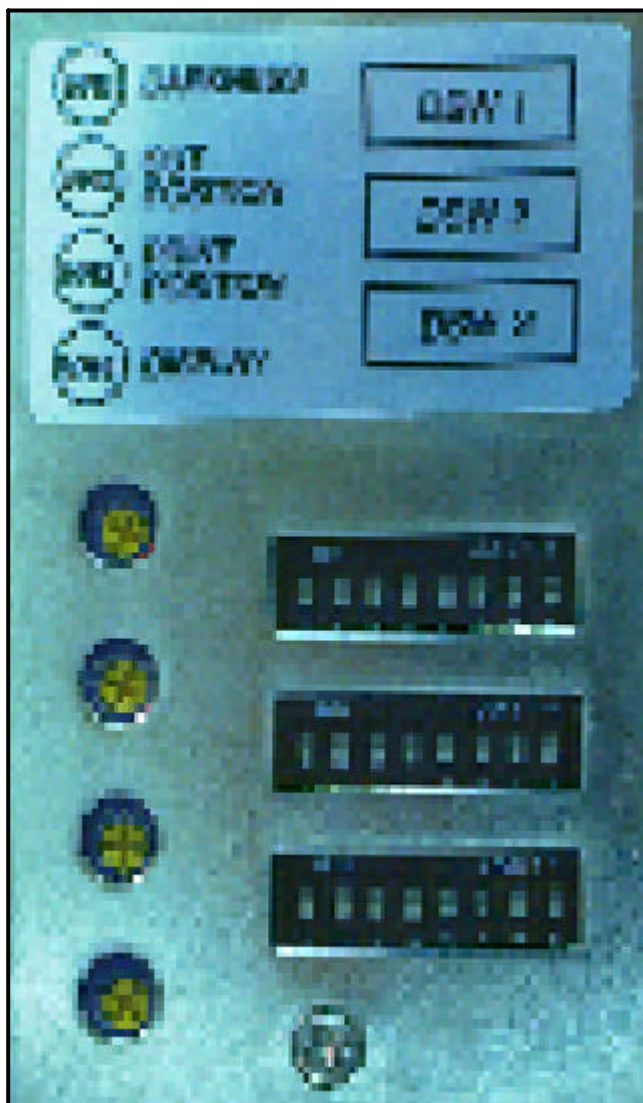Electric Checks and Adjustments
# Chart 4 continued

TP TEST POINT CHART

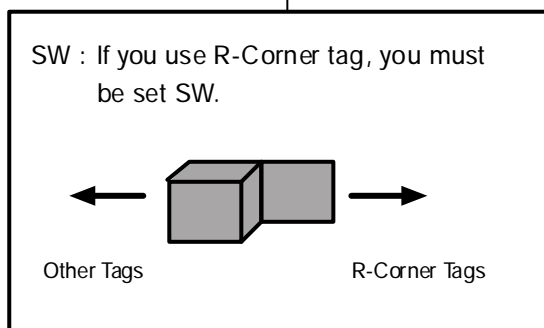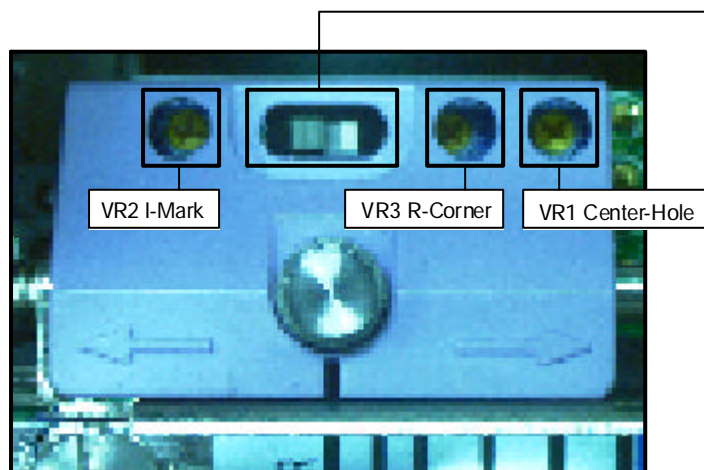| Dial test point | Comment | Voltage | Voltage Range | Check pin on TP Test Module and Main PCB | Adjustment to VR |
|---|---|---|---|---|---|
| 8 | R corner hole sensor level | Low level (Set the R corner in the sensor's) : Less than +0.5V | | CH5B - CH1A(GND) | VR6 |
| | | High level (Set the tag in the sensor's) : Low level plusmore than +2.0V | | | |
| | | (High level on printing point) - (Low level on R corner point) $\geqq$ +2.0V | | | |
| N/A | R corner slice level | Middle of level between high and low levels | | TP2 - TP4(GND) | VR10 |
| N/A | Jump hole sensor level | Low level (Set the jumphole in the sensor's) : Less than +0.5V and more than +0.2V | | CH6B - CH1A(GND) | VR7 |
| | | High level (Set the tag in the sensor's) : Low level plus more than +2.0V | | | |
| | | High level (printing point) - Low level (R corner point) +2.0V | | | |
| N/A | Jump hole slice level | Middle of level between high and low levels | | TP3 - TP4(GND) | VR11 |

Potentiometers are located on FRONT PANEL

| Adjustment VR | Function |
|---|---|
| VR1 | Print (Print darkness) |
| VR2 | Cut Position |
| VR3 | Print Position |
| VR4 | Display (LCD Darkness) |



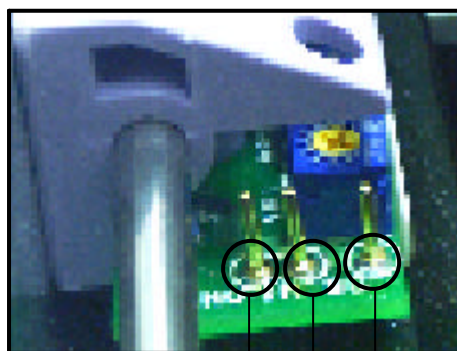Electric Checks and Adjustments
# Chart 5

# Cutter Sensor Adjustment

| Cut sensor type | VR & Check PIN & Sensor Selector Switch | |
|---|---|---|
| Center-Hole | VR 1 | |
| | (+) HO | (–) SG |
| | Other Tag Position (Right side) | |
| I-Mark | VR 2 | |
| | (+) IM | (–) SG |
| | Other Tag position (Right side) | |
| R-Corner | VR 3 | |
| | (+) HO | (–) SG |
| | R-Corner Tag position (left side) | |



VR2 I-Mark    VR3 R-Corner    VR1 Center-Hole

SW : If you use R-Corner tag, you must
be set SW.

Other Tags                R-Corner Tags

| Cut sensor type | Sensor Level Voltage | |
|---|---|---|
| Center Hole | High level (Position a TAG in the sensor's field of view.) | : More than (+) 6.0Volts to less than (+) 7.0Volts |
| | Low level (Position a Center Hole in the sensor's field of view.) | : Less than (+) 0.5Volts |
| I-Mark | High level (Position a I-Mark in the sensor's field of view.) | : More than (+) 6.0Volts to less than (+) 7.0 volts |
| | Low level (Position a NON I-Mark in the sensor's field of view.) | : Less than (+) 0.5Volts |
| R-Corner | High level (Position a TAG in the sensor's field of view.) | : More than (+) 6.0Volts to less than (+) 7.0Volts |
| | Low level (Position a R-Corner in the sensor's field of view.) | : Less than (+) 0.5Volts |

GND
I-Mark
Center-Hole

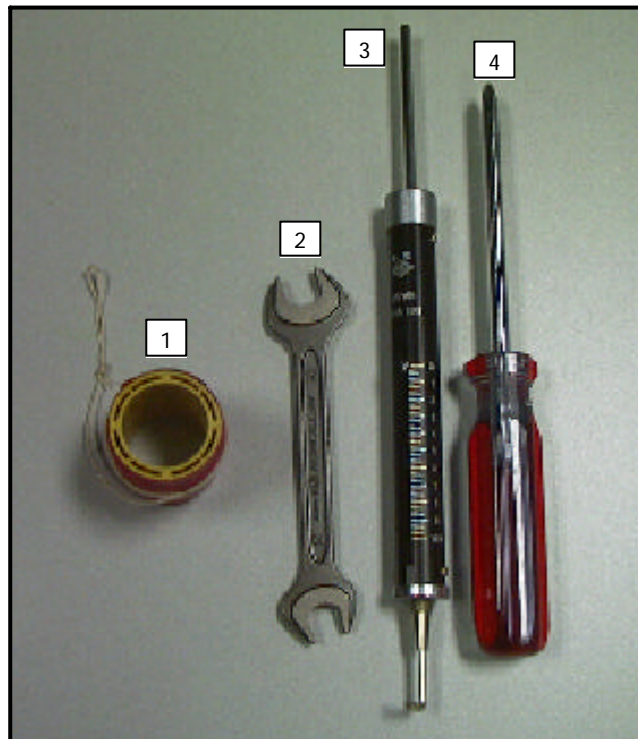# Cutter Sensor Adjustment continued

# Ribbon Clutch Adjustment

Excessive ribbon unwind and rewind tension will result in variable motion and could be the cause of print quality problems. Ensure the ribbon rewind and unwind tensions are within specifications or adjustment of either clutch is necessary.
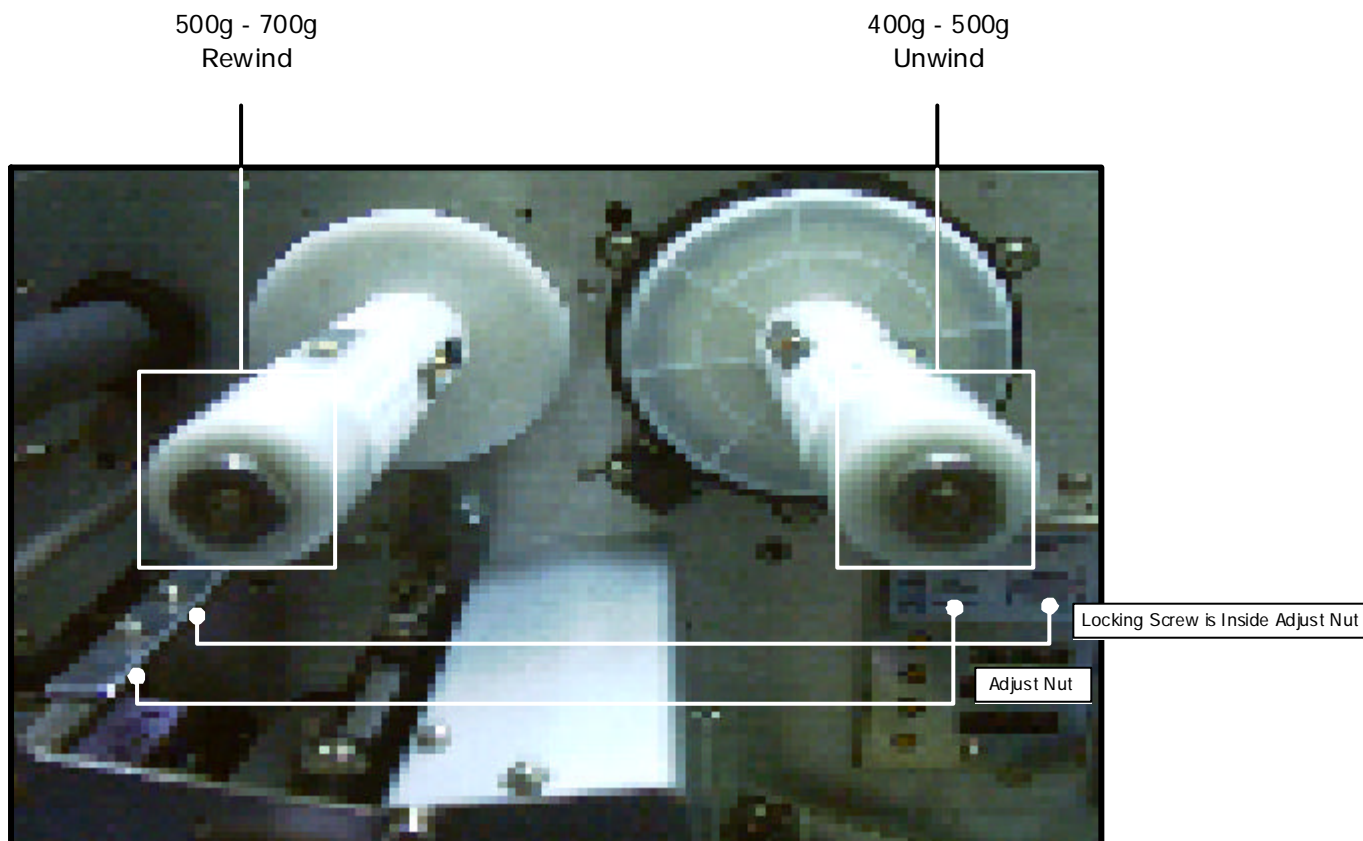
## STEPS

1 Switch the printer OFF and disconnect the power cable.

2 Open the top and front access door. Remove the ribbon and label stock if installed.

3 Attach string to an empty ribbon core and place on the Ribbon Spindle. Wind the string tightly around the ribbon core in single layer and in clockwise direction. Attach the end of the string to the tension guage.

4 Gradually lift the tension gauge, pull the string and unwind it from the core. Once the spindle starts to move, the gauge should indicate 500 to 700 grams of tension for ribbon rewind, and 400 and 500 grams of tension for ribbon unwind. Refer to picture in next page.

5 To adjust the clutch, loosen the locking screw and move the adjust nut CW for more tension and CCW for less tension. Tighten the locking screw and repeat steps 3 and 4 until the correct tension is achieved.

Required equipment
1 Empty Ribbon Core and String
2 12mm Wrench
3 2kg Tension Gauge
4 "+" Screwdriver (JIS No.2 equivalent)

# Ribbon Clutch Adjustment continued



500g - 700g
Rewind

400g - 500g
Unwind

Locking Screw is Inside Adjust Nut
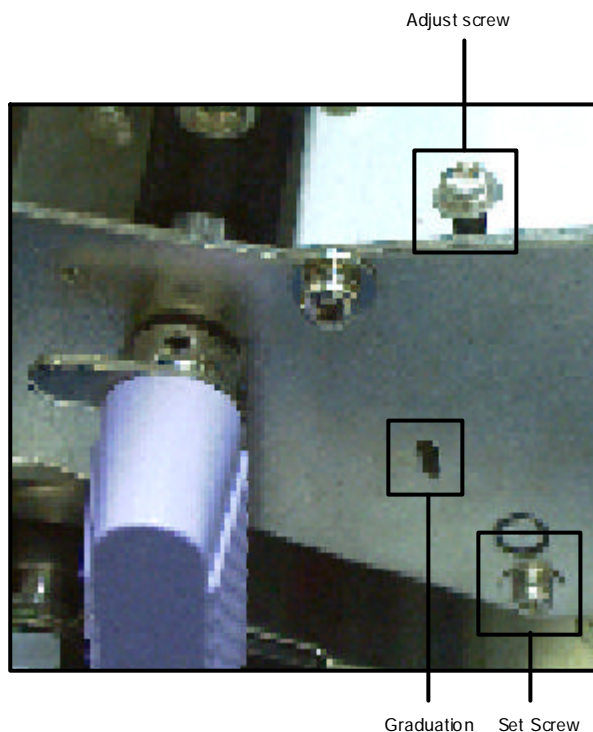
Adjust Nut

# Print Balance Adjustment

Major Adjustment

Required equipment
"+" Screwdriver (JIS No.2 equivalent)

To adjust the print head presser and to ensure consistent print quality across labels, perform the following steps:

STEP

1  Loosen the set screw.

2  Turn the adjust screw to adjust.

3  If the print is dark at front side, turn the adjust screw to clockwise.

4  If the print is dark at basic frame side, turn the adjust screw to anticlockwise.

5  Finish adjust, then fix the set screw.



Adjust screw

Graduation    Set Screw

# Print Head Position Adjustment

## Major Adjustment

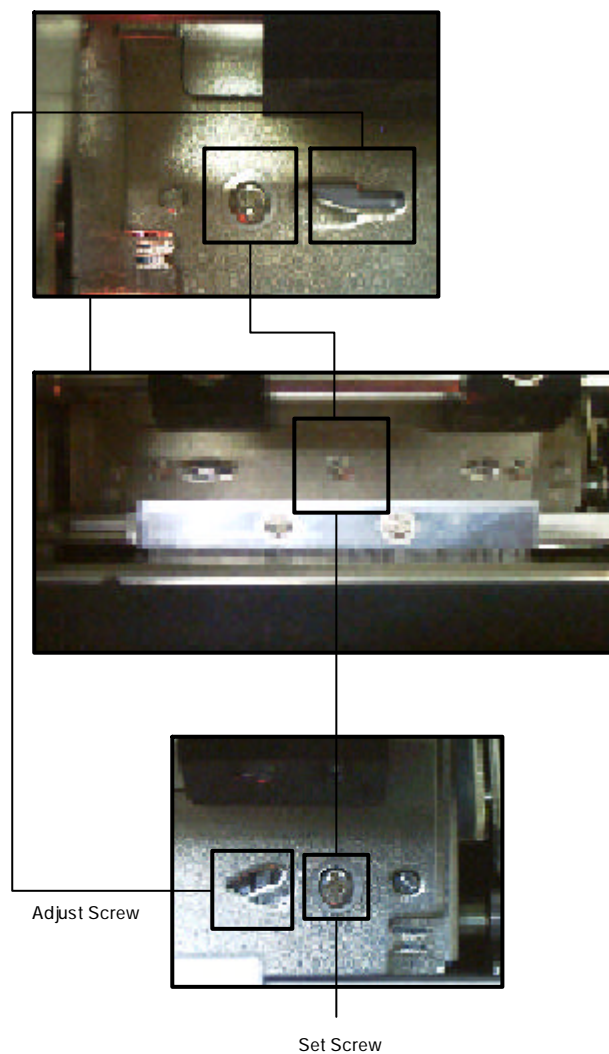### Required equipment

"+" Screwdriver (JIS No.2 equivalent)

"−" Screwdriver

### STEP

1   Loosen the two set screws on the adjustment plate.

2   Turn the head mounting screw.

3   Adjust the head position by moving the head adjustment plate back or forth using the "−" screwdriver.

4   After the adjustment, tighten the set screws and the head mounting screw.



Adjust Screw

Set Screw