CL608e/612e
Mechanical Adjustments

SATO CL608/CL612 printers contain adjustable sub-assemblies. This means that during your regular maintenance, your service technicians are able to make adjustments to reset the printer to factory specifications thereby ensuring optimum performance of your printer.

The main mechanical sub-assemblies are:

- *Ribbon Unwind/Rewind Assembly's*
- *Ribbon Guide Roller Assembly*
- *Print Head Assembly*
- *Drive Belt Assembly's*

In this section you will find procedures for:

- *Ribbon Unwind/Rewind Clutch Adjustment*
- *Print Head Position Adjustment*
- *Print Head Balance Adjustment*
- *Ribbon Roller Adjustment*
- *Ribbon Tension Balance Adjustment*
- *Feed Roller Adjustment*
- *Timing Belt Tension Adjustment*
- *Head Latch Adjustment*
- *Notch/Gap Sensor Adjustment*

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Ribbon Clutch Adjustments

Excessive ribbon unwind and rewind tension will result in variable ribbon motion and could be the cause of print quality problems.

Follow the procedures 1 and 2 to verify that the ribbon unwind and rewind tensions are within specifications or if adjustment of either clutch is necessary.

Required Equipment:	• 1 Kg Tension Gauge • Ribbon Core, empty • String • 12mm Wrench • #2 Pozidrv Screwdriver

Proc 1 Ribbon Unwind Clutch Adjustment

STEP	PROCEDURE
1.	Connect the power cable to the printer and AC outlet. Turn the printer **ON**.
2.	Raise the access door and remove the ribbon and label stock if installed. ***Fig. 1***
3.	Attach string to an empty ribbon core and place on the Ribbon Unwind Spindle. Wind the string tightly around the ribbon core in a single layer and in a clockwise direction. Attach the free end of the string to the tension gauge. ***Fig. 2 & 3***
4.	Gradually lift the tension gauge, pulling the string to unwind it from the core. Once the spindle begins to move, the gauge should indicate 450 to 550 grams of tension. Excessive or insufficient tension must be corrected by adjusting the Ribbon Unwind Clutch. ***Fig. 2 & 3***
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.

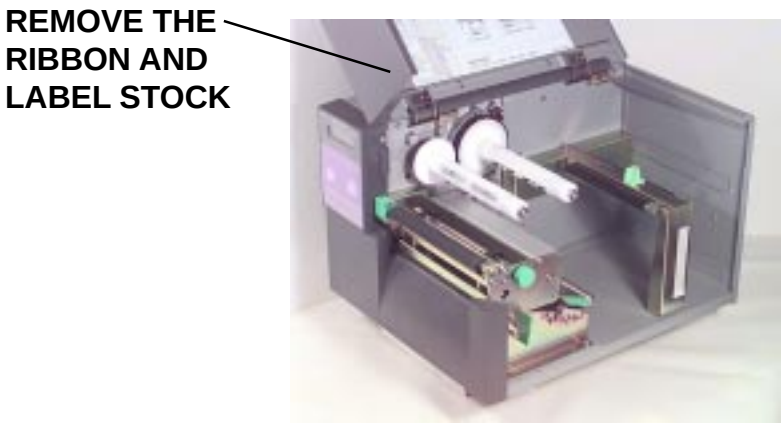


Fig. 1

Ribbon Clutch Adjustments

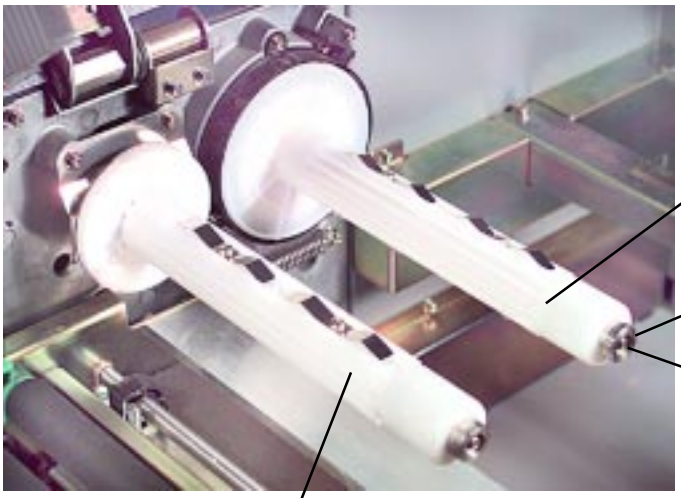


Fig. 2

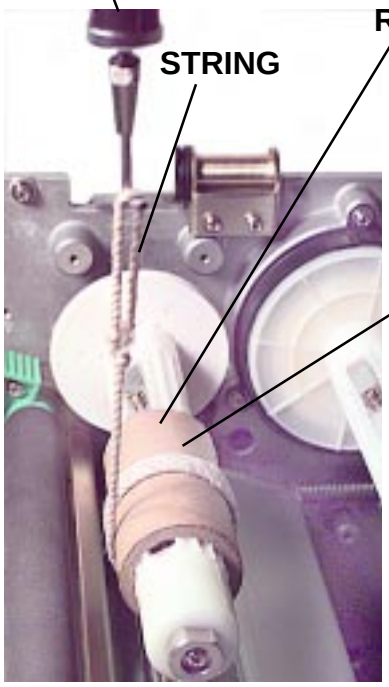


Fig. 4

REWIND CLUTCH

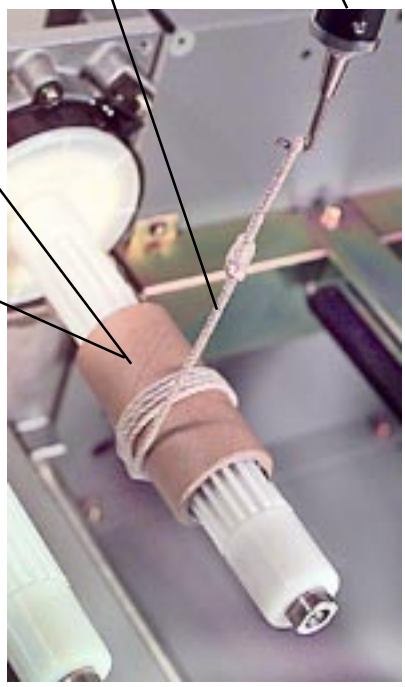


Fig. 3

UNWIND CLUTCH

Ribbon Clutch Adjustments

Proc 2 Ribbon Rewind Clutch Adjustment

STEP	PROCEDURE
1.	Connect the power cable to the printer and AC outlet. Turn the printer **ON**.
2.	Raise the access door and remove the ribbon and label stock if installed. ***Fig. 1***
3.	Attach string to an empty ribbon core and place on the Ribbon Rewind Spindle. Wind the string tightly around the ribbon core in a single layer and in a clockwise direction. Attach the free end of the string to the tension gauge. ***Fig. 2 & 4***
4.	Gradually lift the tension gauge, pulling the string to unwind it from the core. Once the spindle begins to move the gauge should indicate 950 to 1050 grams of tension. Excessive or insufficient tension must be corrected by adjusting the ribbon unwind clutch. ***Fig. 2 & 4***
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.

5.3 Print Head Position Adjustment

Required Equipment:	• Allen Wrench 2.5mm • Ruler

STEP	PROCEDURE
1.	Run a test print. ***Fig. 5***
2.	By adjusting the Allen head screws on the rear of the Stay, you can move the print head forward or backward. This allows you to position the burnline of the print head directly and evenly over the apex of the platen surface. ***Fig. 6 & 7***
3.	While printing the test pattern, adjust the Allen adjustment screws for the best print quality. **NOTE:** It is vital that a known good platen be in the unit.
4.	Verify the image is even on the label by measuring the distance from the bottom of the barcode to the bottom of the label on both sides. Refer to ***Fig. 5***. If uneven, adjust the Allen adjustment screws to correct the alignment. This may affect the print quality and may need to be readjusted.
5.	If you are unable to get the unit to produce good print quality, proceed to Print Head Balance Adjustment and perform the adjustment; then return to this section and redo the Print Head Position Adjustment. **NOTE:** You may have to do both of these adjustments concurrently several times to achieve proper print quality and alignment.

Print Head Position Adjustment

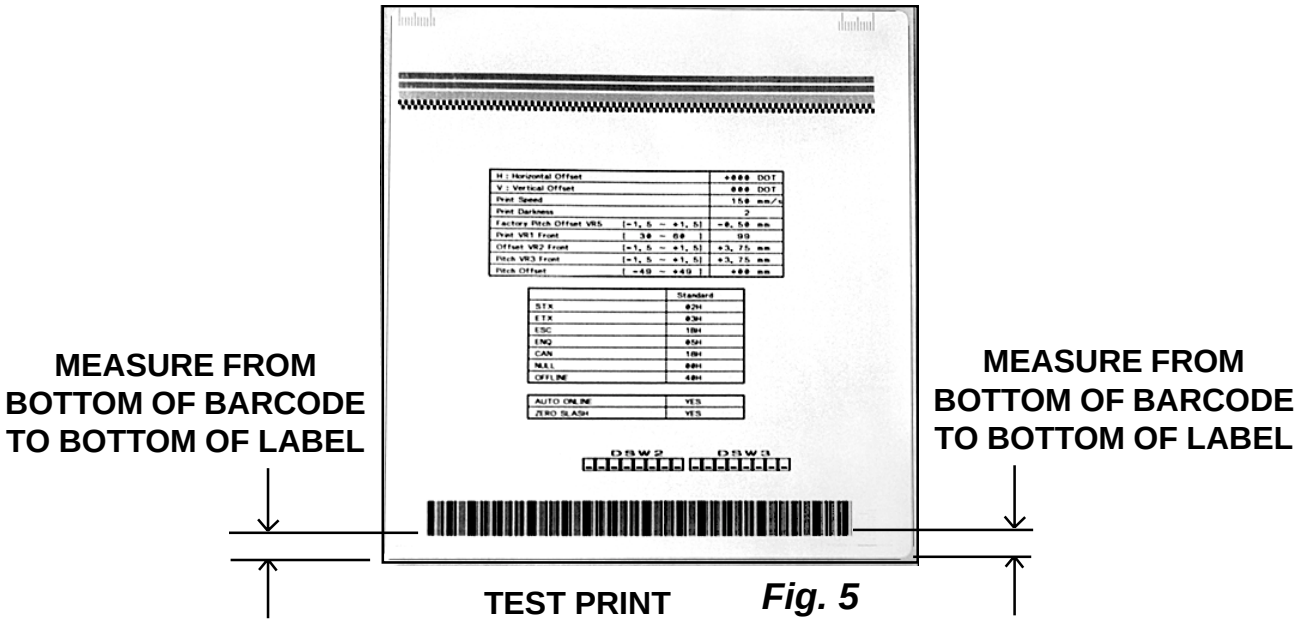


Fig. 5

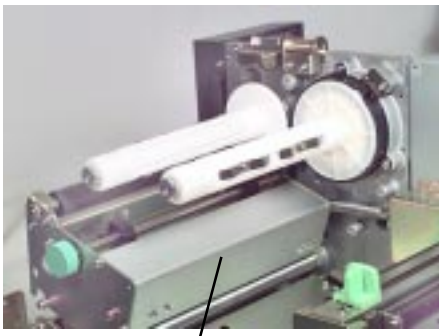


Fig. 6

ROTATION OF ALLEN WRENCH	MOVEMENT OF PRINT HEAD
CLOCKWISE	TO THE FRONT
COUNTER-CLOCKWISE	BACKWARD

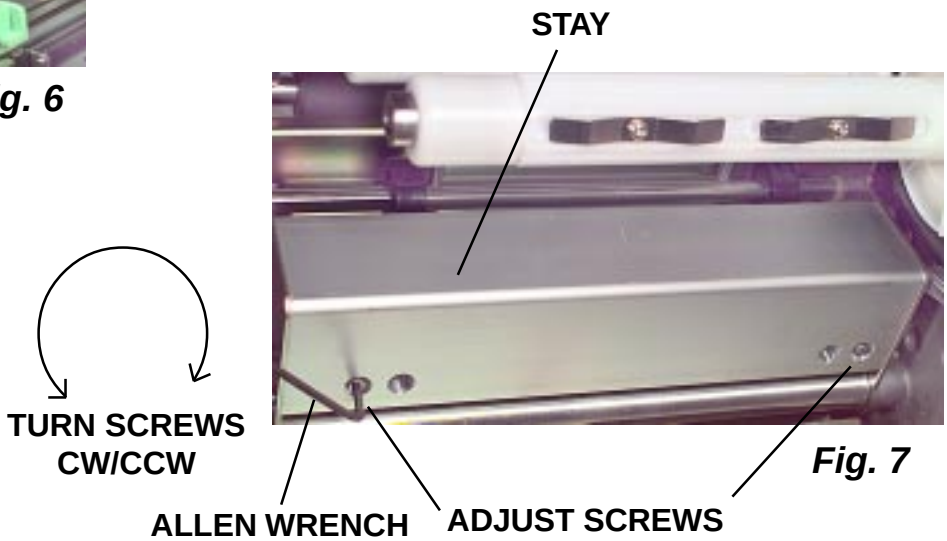


Fig. 7

Print Head Balance Adjustment

Required Equipment:	• #2 Pozidrv Screwdriver • 10mm wrench

NOTE: On this printer, the platen roller under the print head is adjustable with an eccentric to make print quality and pressure consistent across the label.

STEP	PROCEDURE
1.	Connect the power cable to the printer and AC outlet. Turn the printer **ON**.
2.	Raise the access door and load the ribbon and label stock. **NOTE:** It is vital that a known good platen be in the unit.
3.	Loosen the locking screws. ***Fig. 8***
4.	While printing, adjust the eccentric with a 10mm wrench. Turn the eccentric clockwise to increase the density (darker impression) of the inner side of the image or counter-clockwise to increase the density (darker impression) of the outer side of the image.
5.	Hold the eccentric in place with the 10mm wrench and tighten the locking screws loosened in Step 3 above.
6.	After adjustment, verify that label and ribbon are still tracking correctly.
7.	If you are unable to get the unit to produce good print quality, return to Print Head Position Adjustment and perform the adjustment; then return to this section and redo the Print Head Balance Adjustment. **NOTE:** You may have to do both of these adjustments concurrently several times to achieve proper print quality and alignment.

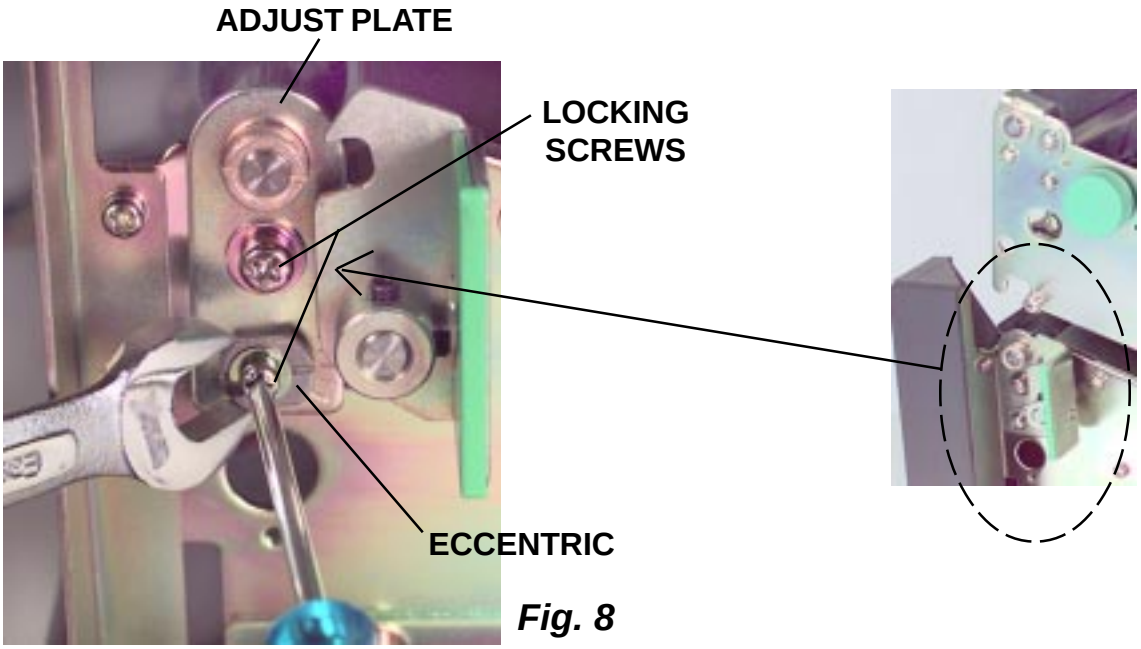


Fig. 8

Ribbon Roller Adjustment

Required Equipment:	• #2 Pozidrv Screwdriver • 10mm wrench

NOTE: Only do this adjustment after adjusting ribbon wind and unwind tension.

STEP	PROCEDURE
1.	Connect the power cable to the printer and AC outlet. Turn the printer **ON**.
2.	Raise the access door and load the ribbon and label stock. ***Fig. 1***
3.	Loosen the locking screws. ***Fig. 9***
4.	Turn eccentric with wrench.
5.	When the carbon ribbon moves evenly without wrinkling, tighten the locking screws.

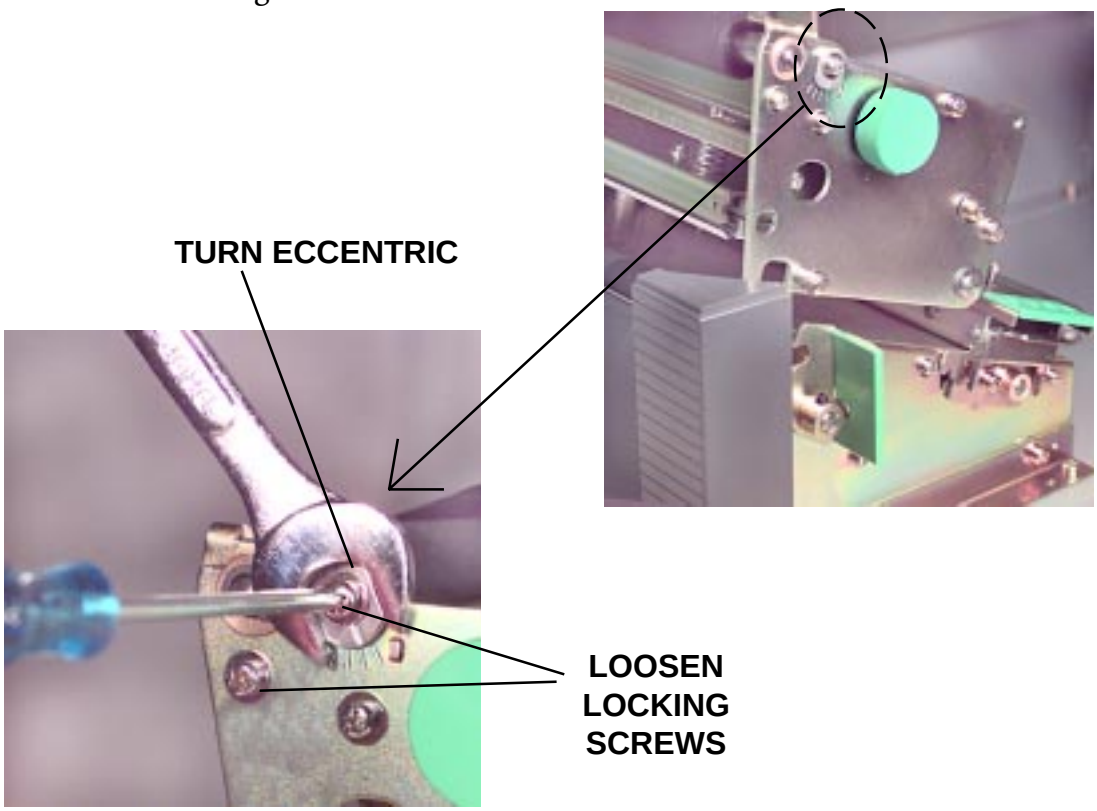


Fig. 9

Ribbon Tension Balance Adjustment

NOTE: This procedure should only be attempted by a qualified technician.

The ribbon should flow evenly along the length of the STAY to avoid ribbon wrinkles and maintain optimum print quality. If ribbon wrinkles appear as in ***Fig. 10***, perform the following steps:

Required Equipment:	• #2 Pozidrv Screwdriver • Flat Blade Screwdriver

NOTE: Only do this adjustment after adjusting ribbon wind and unwind tension.

STEP	PROCEDURE
1.	Connect the power cable to the printer and AC outlet. Turn the printer **ON.**
2.	Remove (3) screws holding the left side cover to the printer. Raise the access door and loosen the (2) screws on the inside top of the printer. Lift off the left side cover. ***Fig. 11***
3.	Unload the ribbon and label stock.
4.	Refer to ***Figs. 12.*** Ribbon Rewind Spindle **A** must be parallel with Ribbon Roller **B**. Ribbon Rewind Spindle **C** must be parallel with Ribbon Roller **D**. Loosen (2) locking screws astride shafts **A** & **B**. Insert a flat blade screw driver into each slot and adjust until shafts are parallel with ribbon rollers **B** & **D**. Tighten the locking screws astride shafts.
5.	Recheck the ribbon alignment and printouts. If necessary, redo step 4.

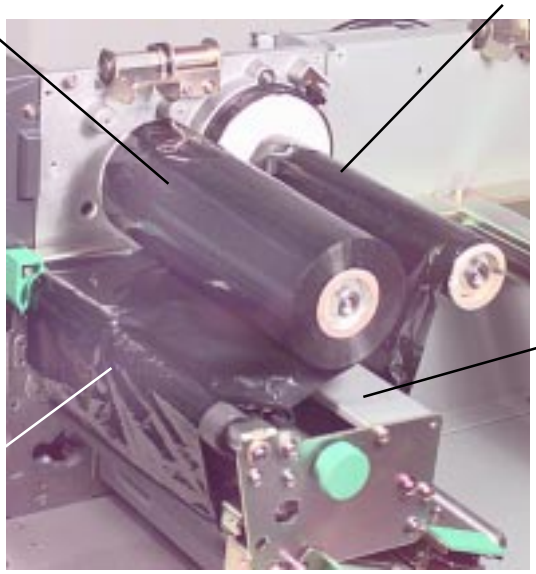
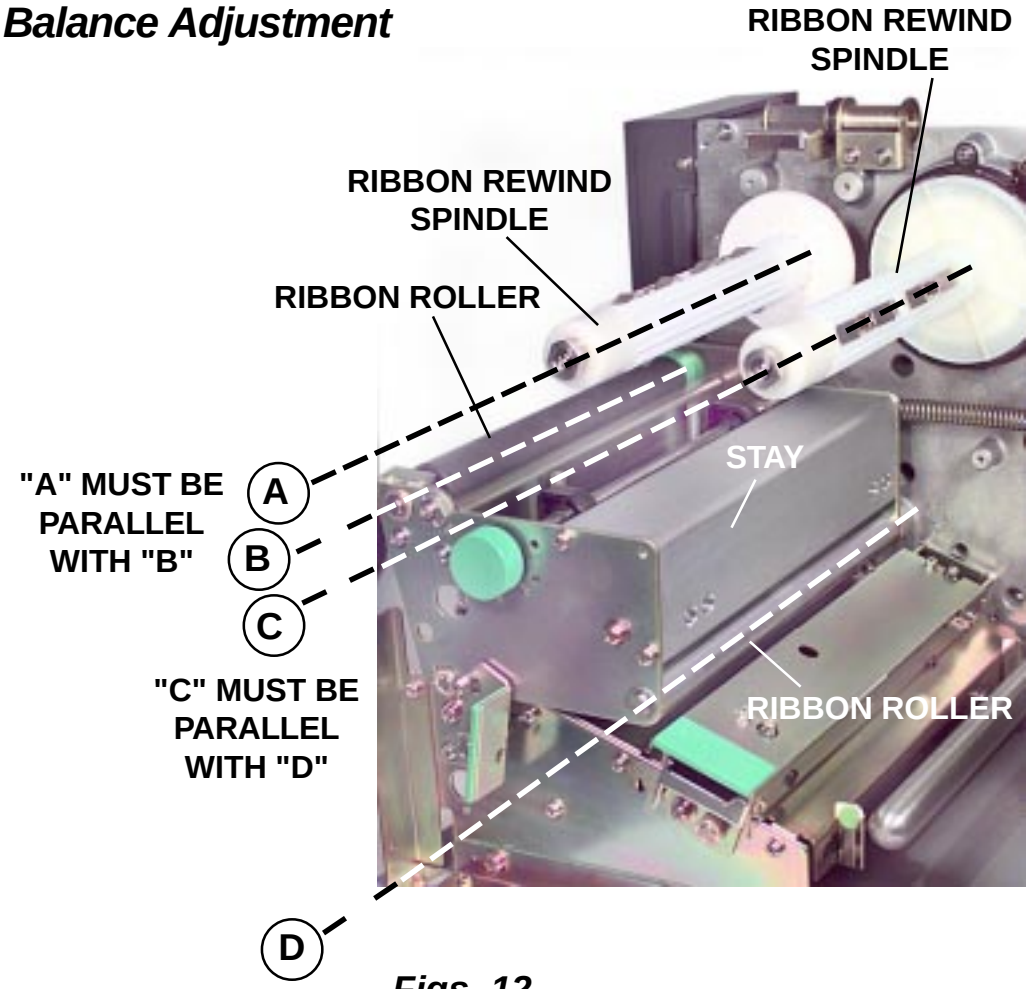


Fig. 10

Ribbon Tension Balance Adjustment



Figs. 12

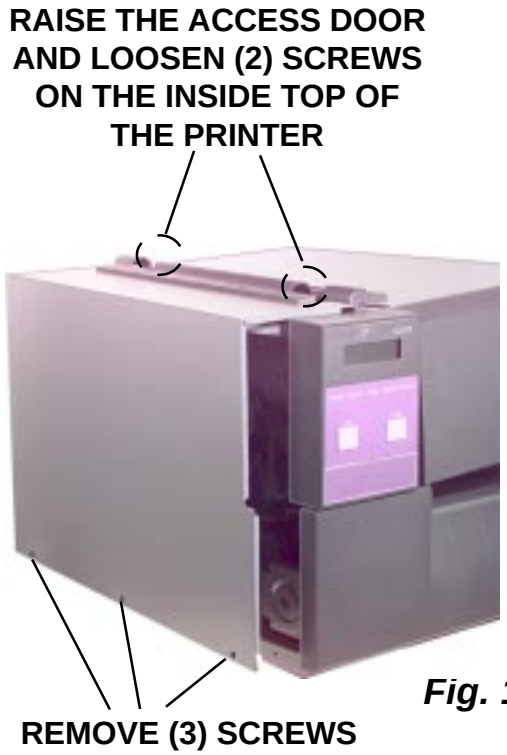
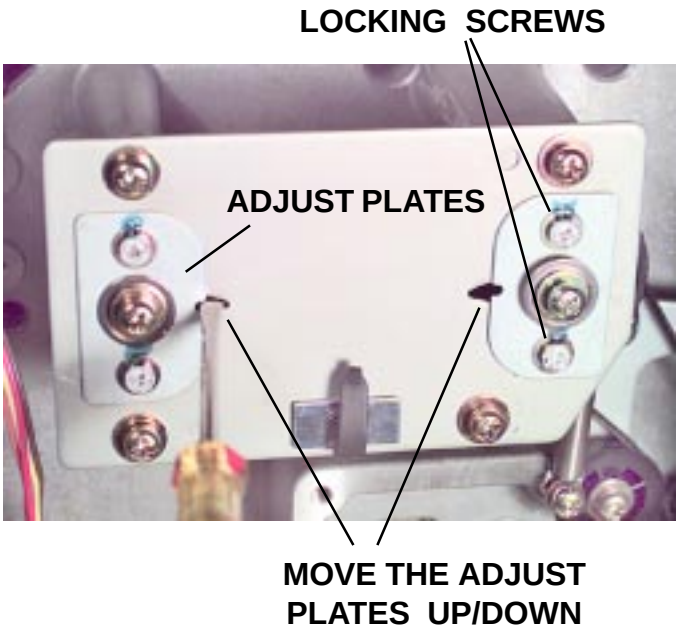


Fig. 11



Feed Roller Adjustment (Label Tracking)

Required Equipment:	• #2 Pozidrv Screwdriver • 5.5mm wrench • 1 Kg Tension Gauge

Used for fine tuning. Adjusts pressure between upper and lower rollers.

STEP	PROCEDURE
1.	Switch the printer **OFF** and disconnect the power cable.
2.	Raise the access door and remove the label stock if installed. ***Fig. 1***
3.	Attach a strip of 20mm + wide liner backing paper to the end of the tension gauge. Under the media cover, place the strip between the pressure rollers at one end with the print head assembly open. Gradually pull the tension gauge and measure the friction. Repeat at the opposite end of the rollers. ***Fig. 13 & 14***
4.	The difference between the left side and the right side should be 100g or less.
5.	To adjust the pressure between the rollers, loosen the two fixing nuts with a 5.5mm wrench and adjust the screws. ***Fig. 15***
6.	To adjust the alignment of the roller, loosen the locking screw and move the adjust plate with a screwdriver until the required positions are found. ***Fig. 16***
7.	Tighten the locking screw.

Feed Roller Adjustment (Label Tracking)

Fig. 13

TENSION GAUGE

PULL

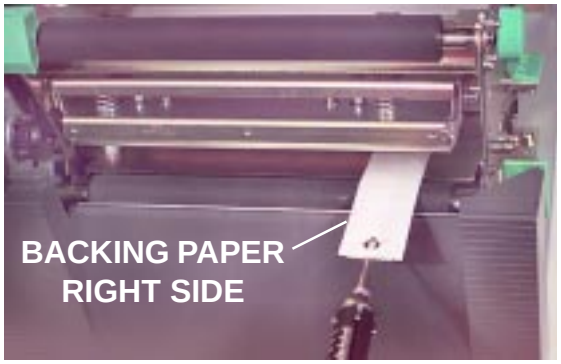


Fig. 14

PULL

MEDIA LID

ADJUST SCREW & FIXING NUT ON BOTH ENDS OF MEDIA COVER

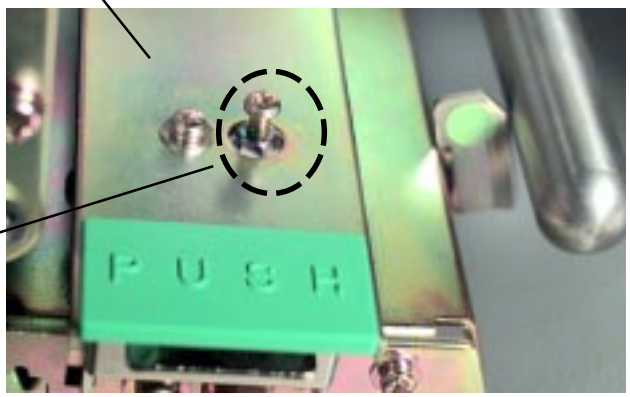
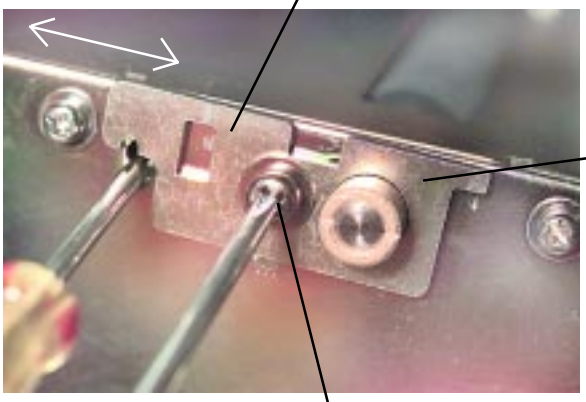
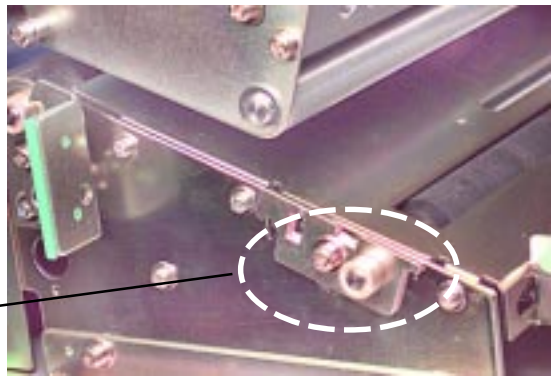


Fig. 15

MOVE WITH FLAT BLADE SCREWDRIVER

ADJUST PLATE





LOCKING SCREW

Fig. 16

Timing Belt Tension Adjustment

STEP	PROCEDURE
1.	Remove (3) screws holding the left side cover to the printer. Raise the access door and loosen the (2) screws on the inside top of the printer. Lift off the left side cover. ***Fig. 11***
2.	Loosen the locking screws and belts will self-adjust. Tighten, but do not overtighten the screws. ***Fig. 17***
3.	Replace the left side cover.

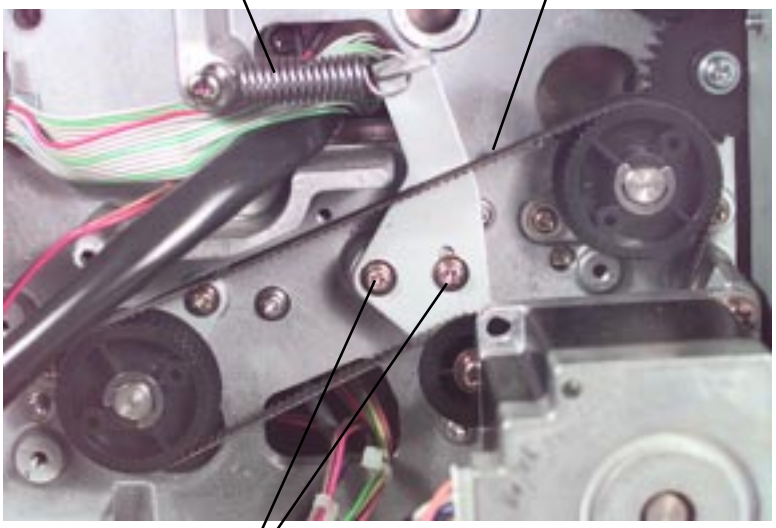


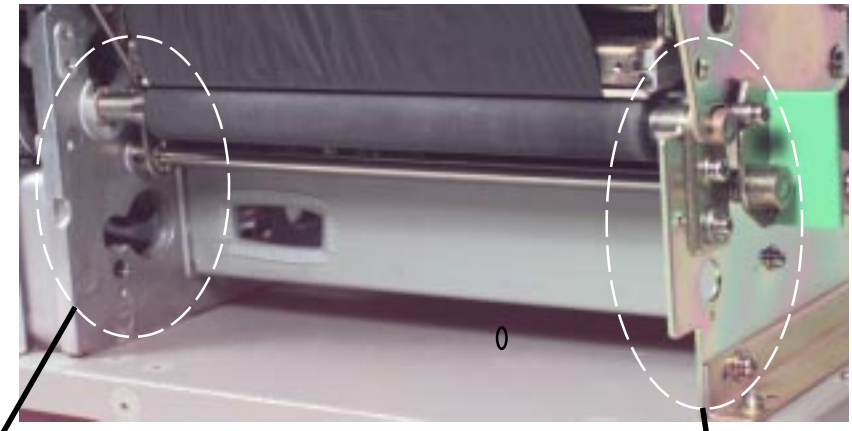
Fig. 17

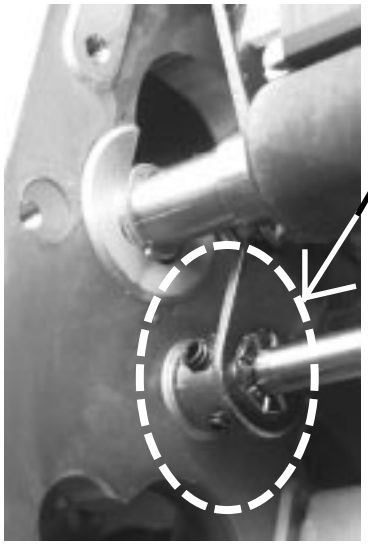
Head Latch Adjustment

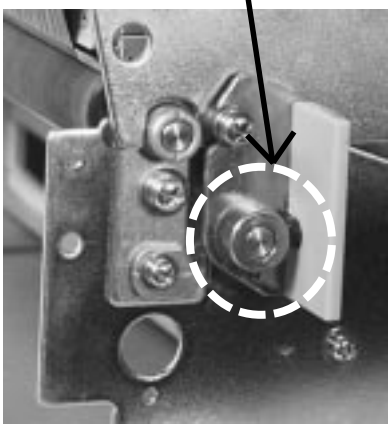
The set-screws which attach the head latches to the latch shaft can become loosened during the operation of your printer. If you notice light printing on the left side of your labels, check the pairs of set-screws to be sure they are securely tightened.

To correct this problem:
Close the printhead and pull both latches so they are fully engaged to the latch posts. Tighten (2) set screws per latch.

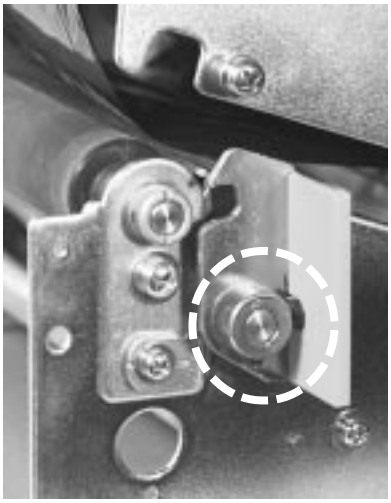
Pairs of set-screws on each end of shaft must be tightened to avoid slippage of media and light printing on the left side of the labels







LATCHED POSITION



UNLATCHED POSITION

Notch/Gap Sensor Adjustment

The CL-608e/612e printers can position labels using either a label gap (transmissive) or a Eye-Mark (reflective) sensor. The sensor used is selected by DSW2-2. (page 2-3) The gap sensor position can be adjusted over a limited range.