

FORMAX[®]

FD 4170

Cut Sheet Burster

MAINTENANCE MANUAL
FIRST EDITION

TABLE OF CONTENTS

TOPIC	PAGE
SPECIFICATIONS	1
UNPACKING & SET-UP	1
INPUT SIDE DIAGRAM	2
OUTPUT SIDE DIAGRAM	3
OUTPUT CONVEYOR	3
CONTROL PANEL	4
OPERATOR SIDE, INTERIOR	4
PAPER FLOW & OPERATING PRINCIPLES	5
WARNING LABELS	6
OUTLINE OF OPERATION - Paper Feed Section / PPS1	7
Burst Section / Encoder Sensor	8
Cover Switch / Solenoid	9
REMOVING, ADJUSTING, REPLACING PARTS - Front Cover	10
Rear Cover	11
ELECTRICAL - Removing Control Panel PCB Unit / Main PCB Unit	12
ADJUSTING GAP BETWEEN UPPER / LOWER RUBBER ROLLERS	13
ADJUSTING PRESSURE OF PAPER FEED RUBBER ROLLERS	14
ADJUSTING THE PAPER SEPARATOR UNIT	14
REMOVING THE PAPER FEED RUBBER ROLLERS	15
REPLACING PAPER SEPARATOR UNIT AND ADJUSTING THE GAP	15
REPLACING RUBBER ROLLERS	16-19
TROUBLE-SHOOTING / ERROR DISPLAY CODES	20 - 23
HELP MODES	24 - 45
WIRING DIAGRAM	46
MAINTENANCE GUIDELINES	47

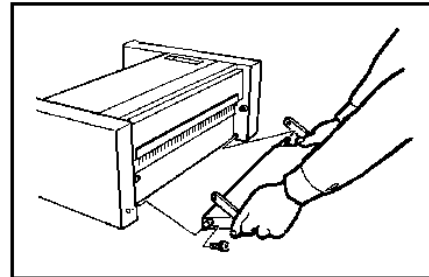
SPECIFICATIONS

Speed:	5-level speed adjustment: 42, 64, 89, 114, 140 sheets/minute
Feed Tray Capacity:	Up to 400 sheets
Paper Size:	5" - 17" H x 4" - 11" W Paper must not have staples, clips, adhesive or holes.
Paper Weight:	13# bond - 110# index (58 - 175 gsm)
Min./Max. Burst Length:	2.5" - 9.9"
Dimensions:	32" L x 9" H x 16" D
Weight:	56 lbs.
Voltage:	120V, 60 Hz

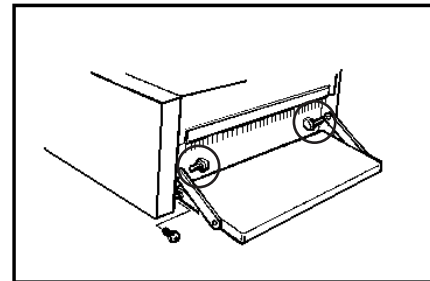
UNPACKING & SET-UP

Check package for shipping damage. If there is shipping damage, do not discard the box.

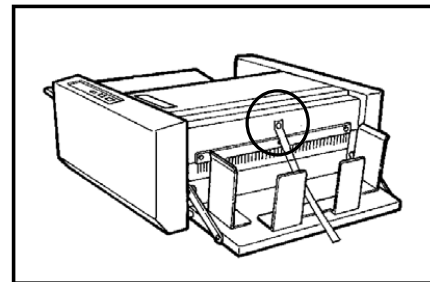
1. Facing the output side, remove the setscrew from the right side of the paper stacker, and insert the axis into the holes of the machine frame on both sides. Then install the paper stacker with the setscrew removed.



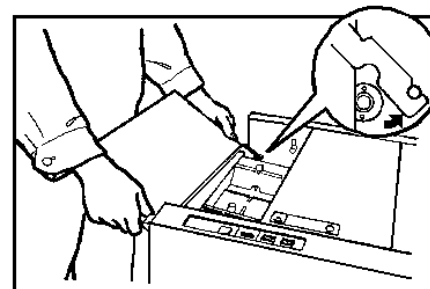
2. Remove the thumb screws (see circled area, right) and attach the columns on the right and left hooks, then fasten the thumb screws.



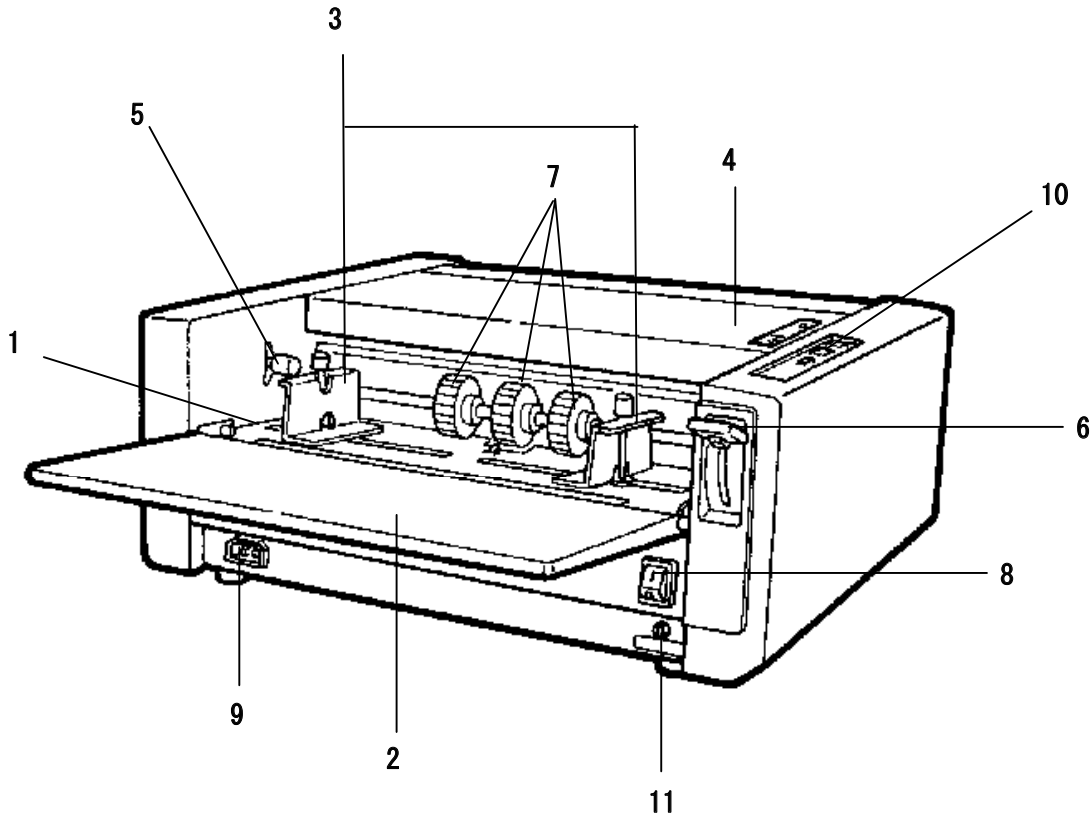
3. Remove the screw (see circled area, right) and install the paper holding plate attachment. Set the paper stopper and paper guides as shown in the picture.



4. Insert the edge of the support tray into the right and left columns of the paper infeed tray. Then set the support tray downward.

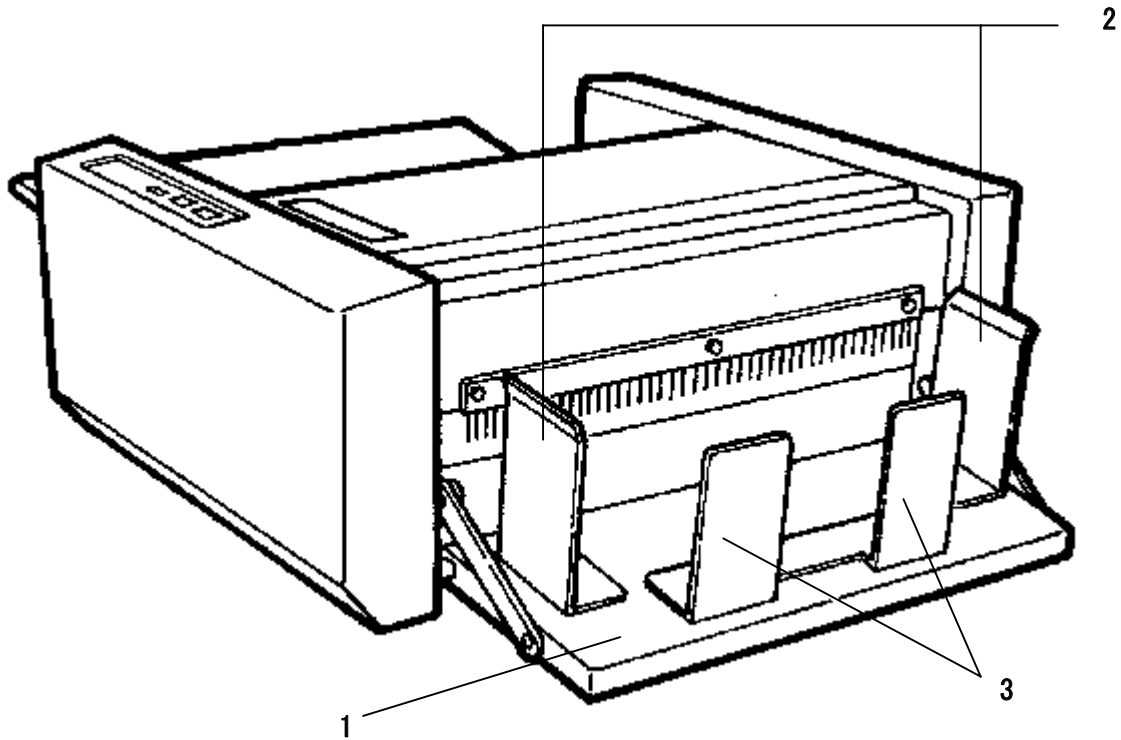


INPUT SIDE



Number	Description	Function
1	Paper Feed Tray	
2	Support Tray	Open this tray prior to operating to support paper.
3	Paper Feed GuideS	Align and center paper according to width.
4	Safety Cover	Must be closed during operation. Burster will not operate with cover open.
5	Paper Feed Pressure Adjustment Lever	Adjusts paper feed pressure according to paper thickness. Standard setting is "Normal."
6	Paper Feed Tray Up/Down Lever	Moves the paper feed tray up and down for loading paper.
7	Paper Feed Rubber Rollers	Feeds paper into the bursting area.
8	Power Switch	Toggles between ON (I) and OFF (O).
9	Power Cord Inlet	Insert power cord here.
10	Control Panel	Refer to Control Panel on page 4
11	Circuit Breaker	Shuts down machine in case of overload.

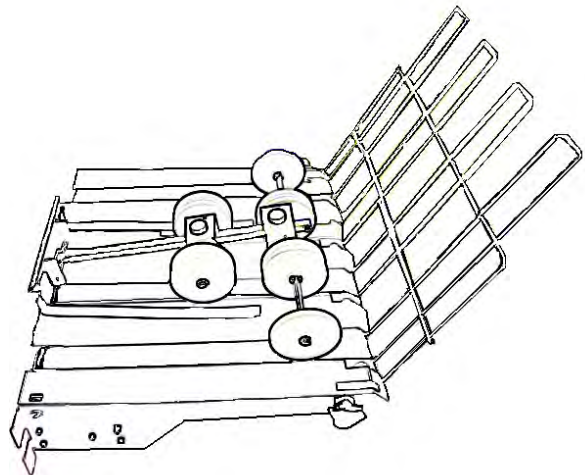
OUTPUT SIDE



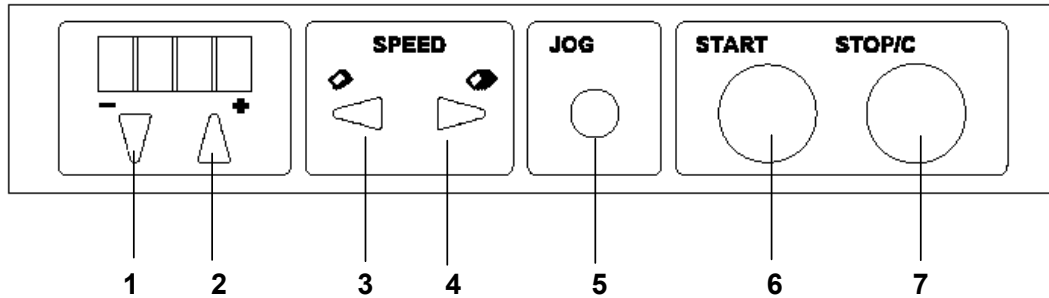
Number	Description	Function
1	Stacker	Burst forms stack here upon exiting.
2	Paper Guides	Should be set according to the width of the burst forms.
3	Paper Stopper	Should be set according to the length of the burst forms.

OUTPUT CONVEYOR (optional)

With the optional Output Conveyor, burst forms can be easily removed while the burster is still operating.

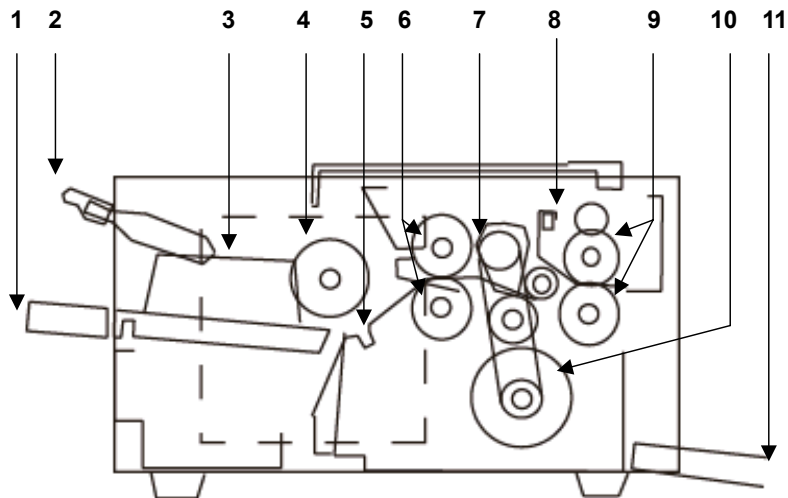


CONTROL PANEL



Number	Description	Function
1	"-" Button	Use to decrease cut size on LCD display
2	"+" Button	Use to increase cut size on LCD display
3	Decrease Speed Button	Decreases processing speed, also used to select Presets
4	Increase Speed Button	Increases processing speed, also used to select Presets
5	JOG Button	Press this to process one sheet of paper
6	START Button	Press to start operation. NOTE: This button is inoperative when an error is displayed, or no paper is in the infeed tray.
7	STOP/C Button	Press to stop operation. NOTE: When this button is pressed after a paper jam is cleared, the indicator will be reset.

OPERATOR SIDE, INTERIOR



Number	Description	6	Front rubber rollers
1	Support tray	7	Burst roller
2	Paper feed tray up/down lever	8	Paper Passage Sensor (PPS)
3	Paper feed tray	9	Rear rubber rollers
4	Paper feed rubber roller	10	Rotary solenoid
5	Paper separator unit	11	Stacker

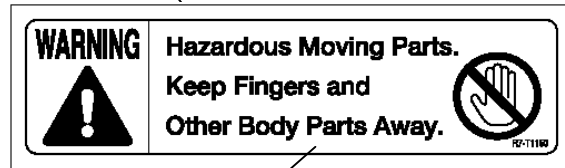
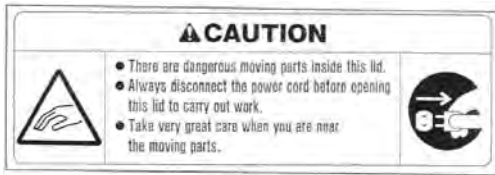
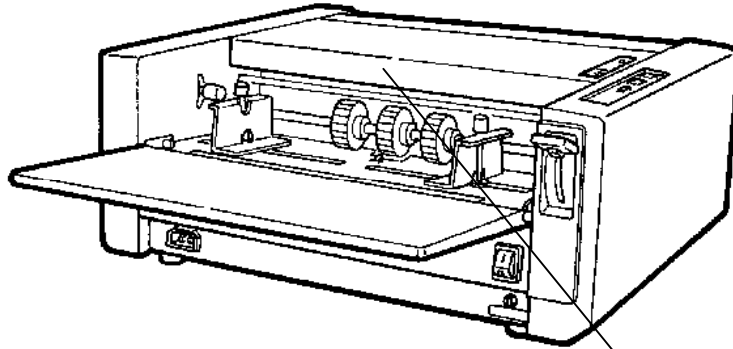
PAPER FLOW & OPERATING PRINCIPLES

1. Paper on the paper feed tray is fed at a time with the rotation of the paper feed rubber rollers.
2. As the paper is fed through the front rubber rollers, the leading edge of the paper is detected by the PPS (Paper Passage Sensor). The encoder on the spindle of the front rubber roller begins measuring the length of paper being fed.
3. The rear rubber rollers rotate at approximately 1.8 times the speed of the front rubber rollers. The upper rear rubber roller is held up by a spring, with a gap of 0.5mm.
4. When the value measured by the encoder matches the preset top and bottom dimension values, i.e. when the horizontal perforation of the paper comes under the burst roller, the upper and lower rear rubber rollers are pressed together.
5. Because the rollers are rotating at different speeds, the paper is stretched. The horizontal perforation of the paper comes under the burst roller and the paper is cut.
6. When the paper is cut and the cut end is detected by the PPS, the upper and lower rear rubber rollers that were being pressed together return to their original location. This operation is repeated.
7. The cut paper is collected in the stacker.
8. When there is no more paper in the paper feed tray and the paper feed sensor is set to OFF, the machine finishes delivering paper to the stacker and automatically stops.

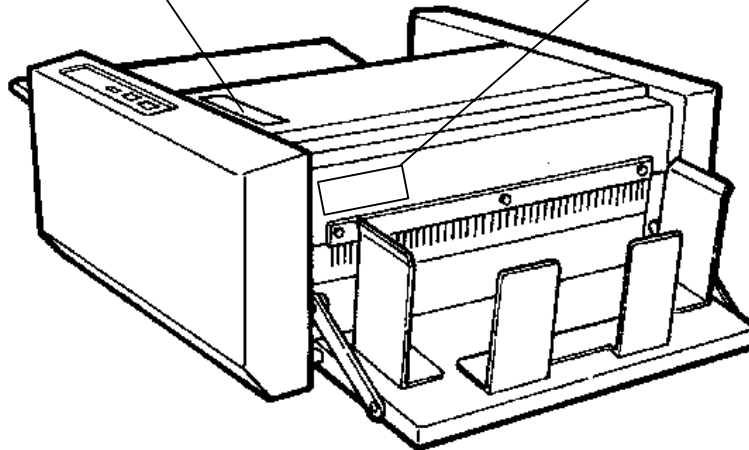
WARNING LABELS

Keep the labels clean at all times. If they become damaged or come off, replace them with new ones.

● Front Side



● Exit side



No.	Part No.	Name	Q'ty
1	F2-60380	Caution label	1
2	R7-T1150	Warning label	2

OUTLINE OF OPERATION

Paper Feed Section

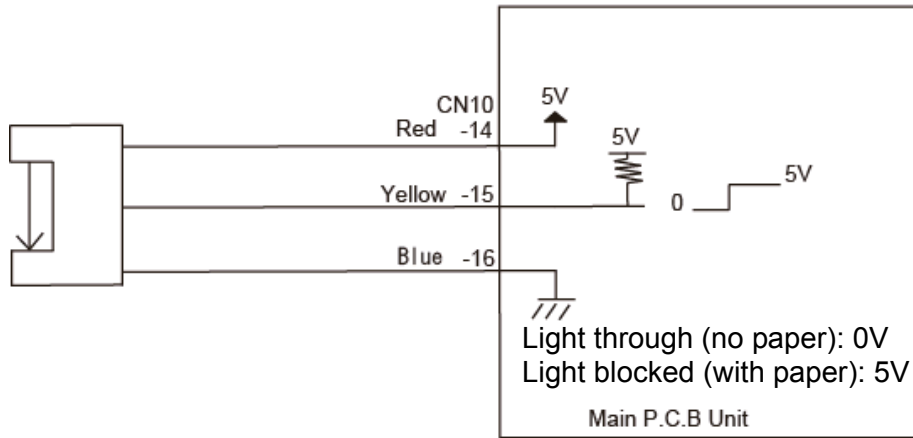
Outline

Papers are separated by center separation method with the paper separation and paper feed rubber rollers.

The paper feed tray presses the paper against the paper feed rubber rollers by a spring.

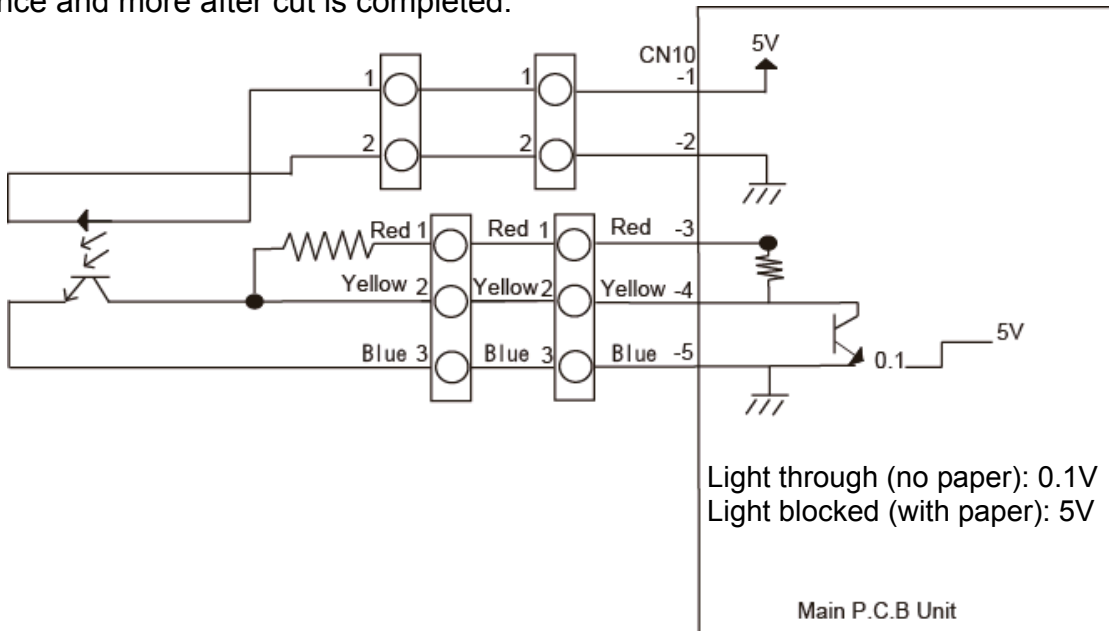
Paper Feed Sensor

When no paper is installed, the sensor is OPEN by the passage of light through. When paper is installed, the sensor is CLOSED by the paper which blocks light. If the sensor detects no paper after pressing the START key, 'SET PAPE' appears on the LCD panel.



PPS1 (Paper Passage Sensor 1)

The PPS1 detects an error and 'FEEd Err' (paper jam in the paper feed part) appears on the LCD panel if the paper does not reach the PPS1 even the paper is fed for a predetermined distance and more after cut is started. 'FEEd Err' also appears if the next paper does not reach the PPS1 even the paper is fed for a predetermined distance and more after cut is completed.



Burst Section

Outline

The upper/lower rubber rollers (front) are held with a spring.

The upper/lower rubber rollers (rear) are supported by arm through bearing and rotates on the supporting point of the arm.

A shaft is passed into the rubber roller (upper) and cams are installed at both ends of the shaft.

Bearing covered with urethane is on the upper side of the cam. When the center shaft rotates, the cam rotates in conjunction with its rotation and presses against the bearing which lowers the rubber roller (upper) and the rubber roller (lower) is pressed.

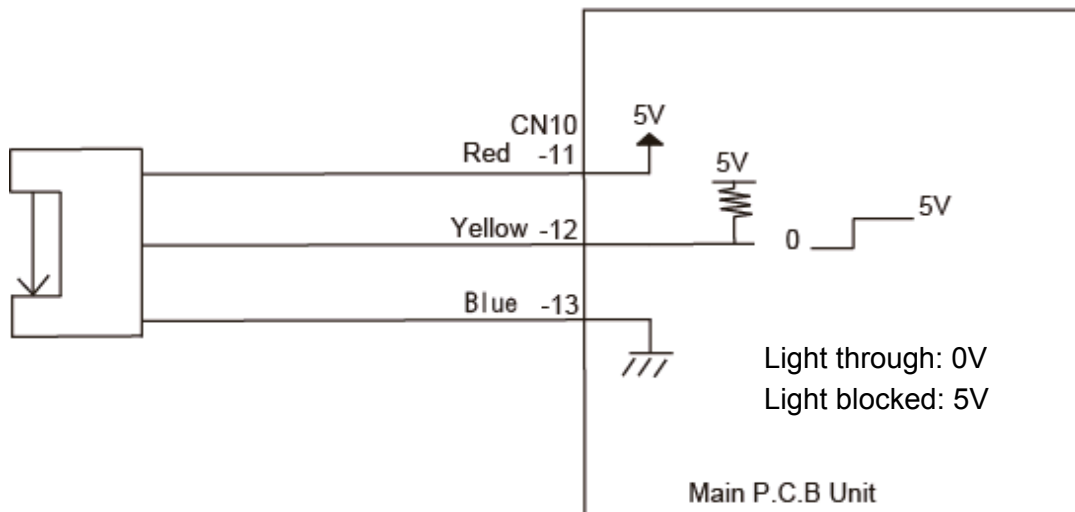
The center shafts are installed with timing pulley and the timing belt is installed with the rotary solenoid.

When the rotary solenoid rotates, the rubber roller (upper) interlocks downward, and the rubber rollers (upper/lower) are pressed.

Encoder Sensor

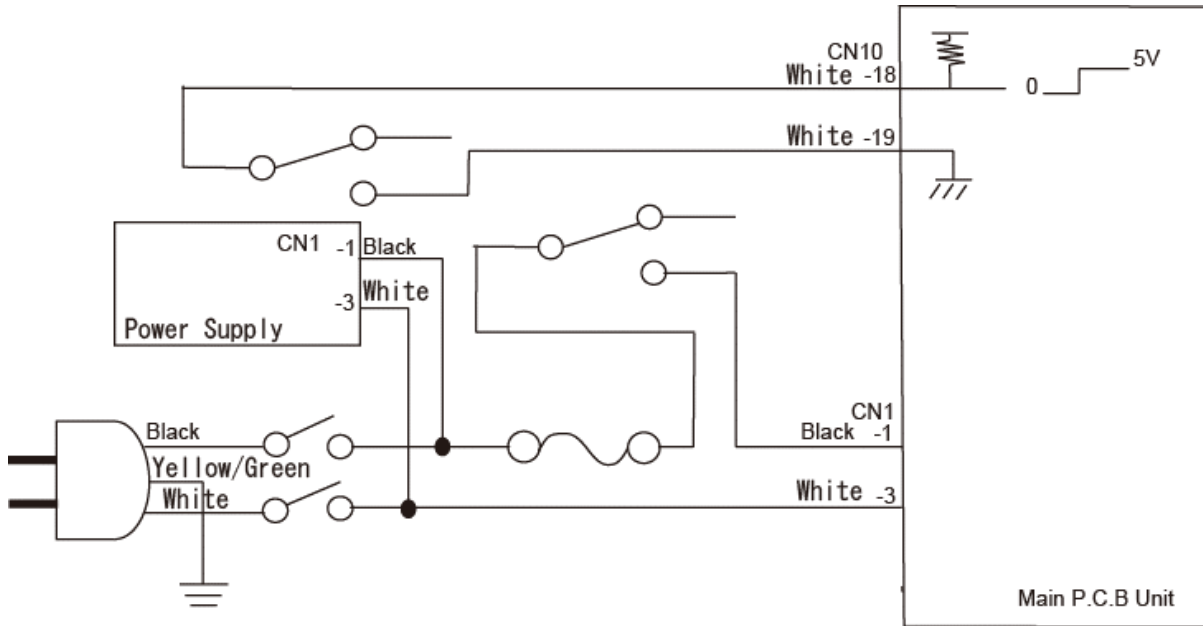
The encoder controls processing speed.

If the encoder sensor does not turn ON within 1 second after the main motor drives, 'Err1' appears (main motor lock).



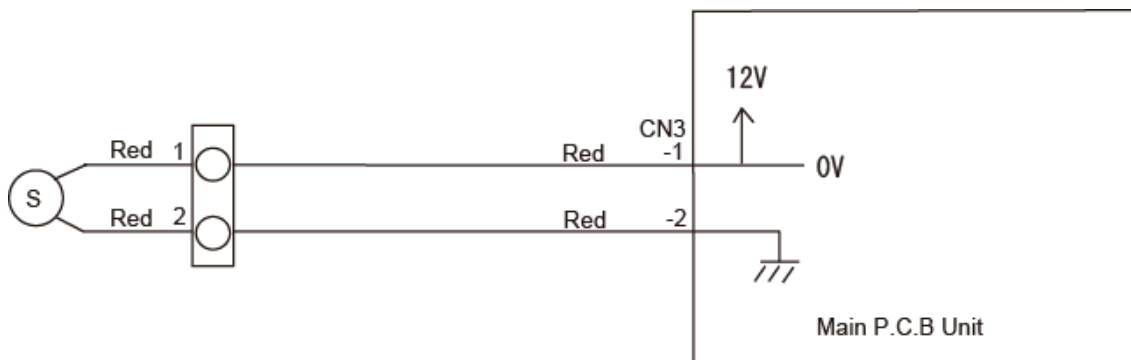
Cover Switch

Two parts of a microswitch detect the opening and closing of the safety cover. The burster will not operate safely if the cover is open, and will stop immediately if the cover is opened during operation. "OPEn" (cover open) appears on the LCD panel if the cover is opened after pressing START with the power on.

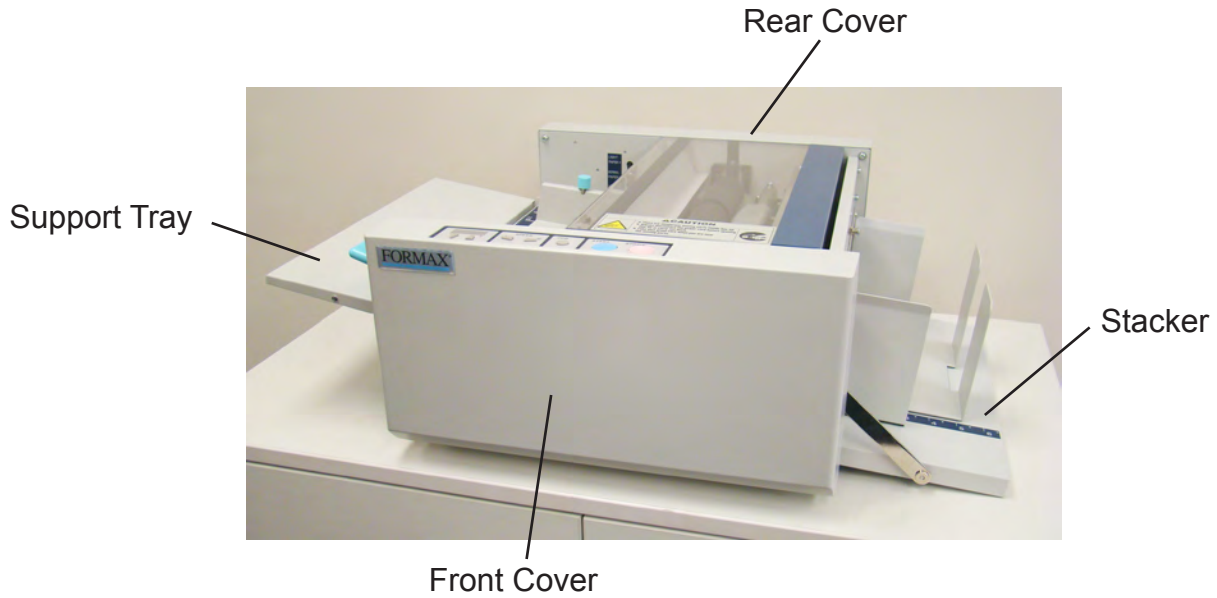


Solenoid

Burst rollers (upper/lower) are driven by rotating the solenoid.



REMOVING, ADJUSTING, REPLACING PARTS



Removing the Front Cover

1. Remove the support tray.

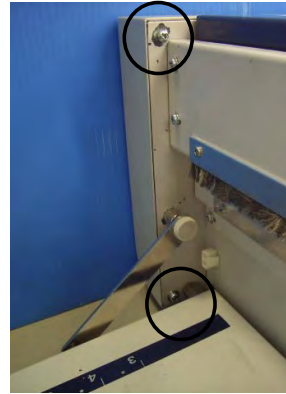
2. Remove the 2 screws.



3. Remove the 2 setscrews to remove the stays from the stacker.

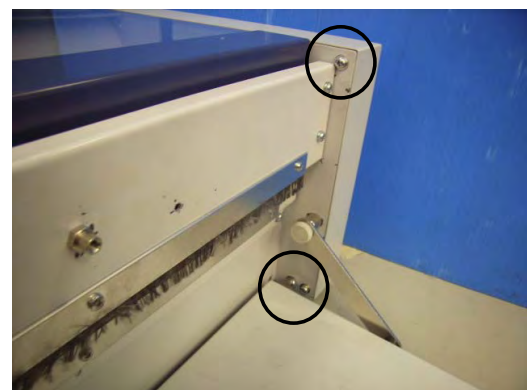


4. Remove the 2 screws to remove the front cover.



Removing the Rear Cover

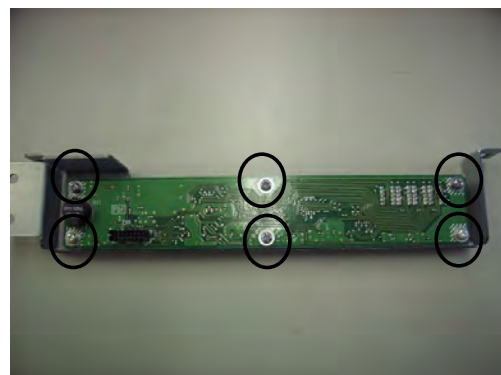
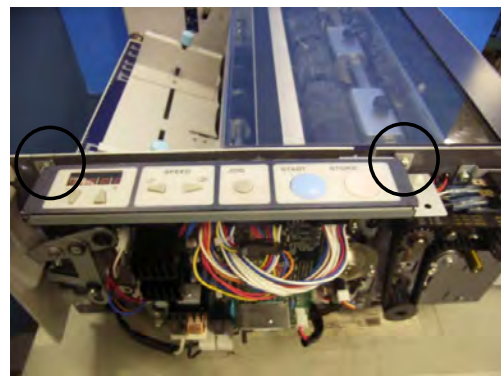
1. Remove the support tray.
2. Remove the 2 screws.
3. Remove the 2 setscrews to remove the stays from the stacker.
4. Remove the 2 screws to remove the rear cover.



ELECTRICAL

Removing the Control Panel PCB Unit

1. Remove the front cover.
2. Remove the connector to remove the banding band.
3. Remove the 2 screws attaching the Control Panel unit.
4. Remove the 6 screws to remove the Control Panel PCB unit.



Removing the Main PCB Unit

1. Remove the front cover.
2. Remove the 8 connectors from the main PCB unit.
3. Remove the 4 screws to remove the main PCB unit.



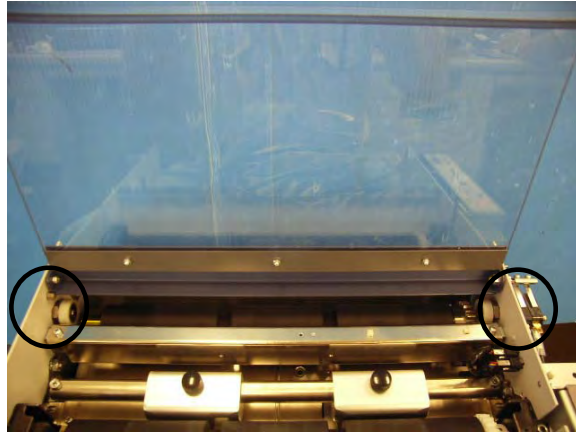
Driving Part

Adjusting the gap between the upper/lower rubber rollers

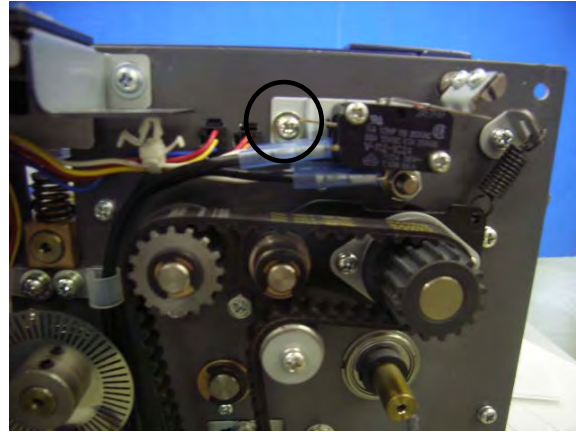
1. Remove the front and rear covers.
2. Remove the screw fixing the upper cover, and the 2 screws fixing the Z collar and the bracket to remove the upper cover.

[NOTE]

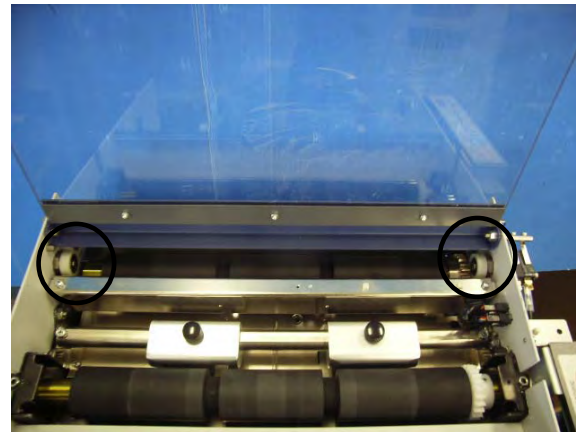
DO NOT DROP the Z collar inside the machine.



3. Remove the screw to remove the upper cover switch.

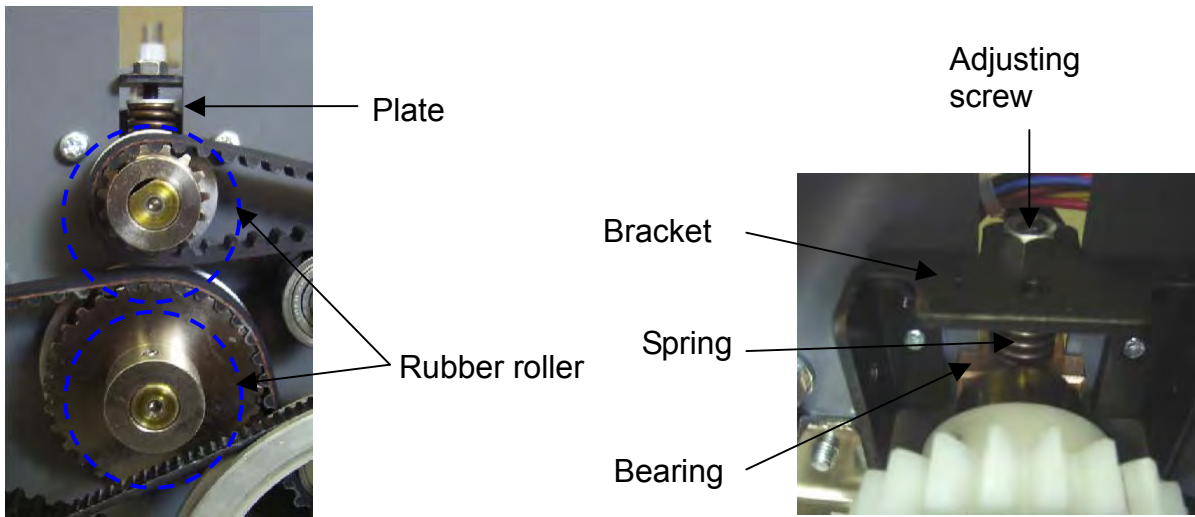


4. Rotate the eccentric shaft of the rubber bearings to adjust the gap between the upper and lower rubber rollers to 0.5mm.
* Insert a thickness gauge between the left and right ends of the rollers to make sure that the gap is the same all along surface.



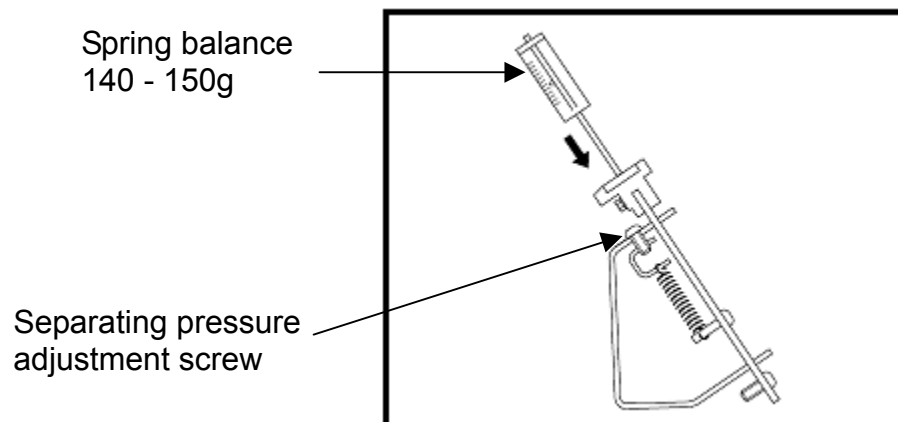
Adjusting the pressure of the paper feed rubber rollers

1. Remove the front and rear covers.
2. Adjust the adjusting screw so the lengths of the springs on both sides of the rubber roller are 13mm. Feed some paper through and check the drift. If there is a drift, increase the pressure by turning the adjusting screw clockwise.
3. Adjust the pressure with the adjusting screw so the paper does not skew.



Adjusting the paper separator unit

1. Loosen the setscrew to move the paper feed rubber rollers.
 2. Remove the paper separator unit.
 3. Adjust the separating pressure adjustment screw so that the spring balance reads "140 - 150g".
- Clockwise → Stronger
 - Counterclockwise → Weaker

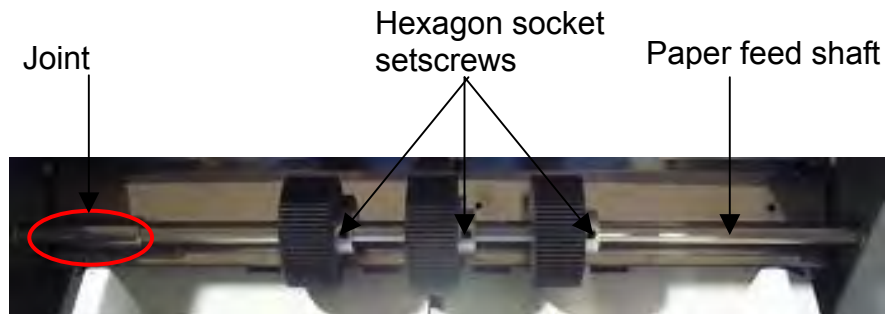


Removing the paper feed rubber rollers

1. Remove the 2 screws on the joint at the left side of the paper feed shaft.
2. Move the joint to the right side to pull out the paper feed shaft.
3. Remove the 3 hexagon socket setscrews on the paper feed rubber rollers to remove the rollers.
4. Install new paper feed rubber rollers on the paper feed shaft and fix them with the hexagon socket setscrews.

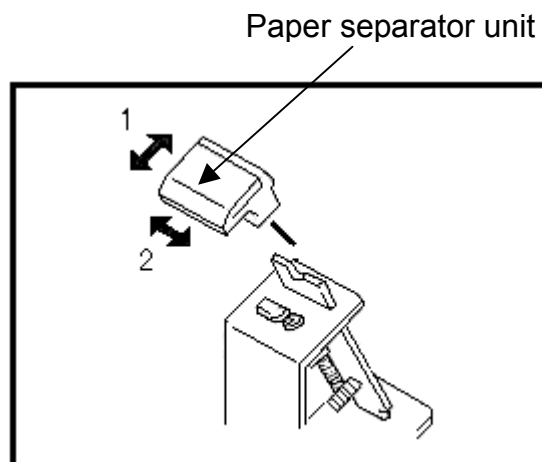
IMPORTANT:

When replacing paper feed rubber rollers, replace all the 3 pcs. as a set.



Replacing the paper separator unit and adjusting the gap

1. Remove the paper separator unit.
2. Install a new paper separator unit.
3. When installing the paper separator unit, adjust the gap with the adjusting screw so that there is no backlash for the direction 1 and the paper separator unit moves slightly for the direction 2, and then fix it with a nut.



Replacing the rubber rollers

1. Remove the front and rear covers.

2. Remove the screw fixing the upper cover and the Z collar, and the 2 screws fixing the bracket to remove the upper cover.

[NOTE]

DO NOT DROP the Z collar inside the machine.



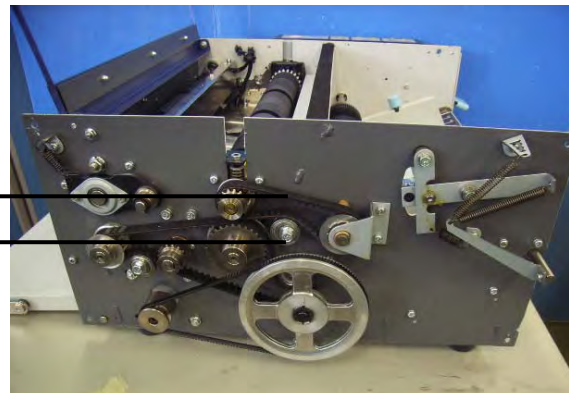
3. Remove the operation panel and main PCB unit.

4. Pull out the 2 cables and remove 2 screws fixing burst roller to remove the burst roller.

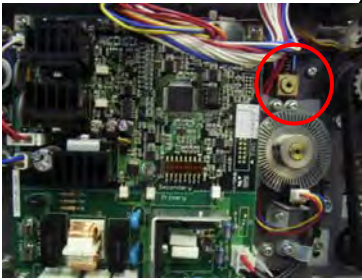
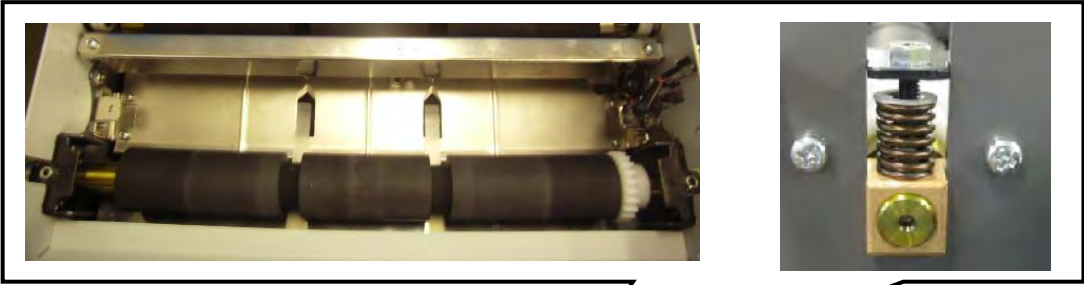


5. Remove the screw fixing the eccentric shaft to remove the timing belt.

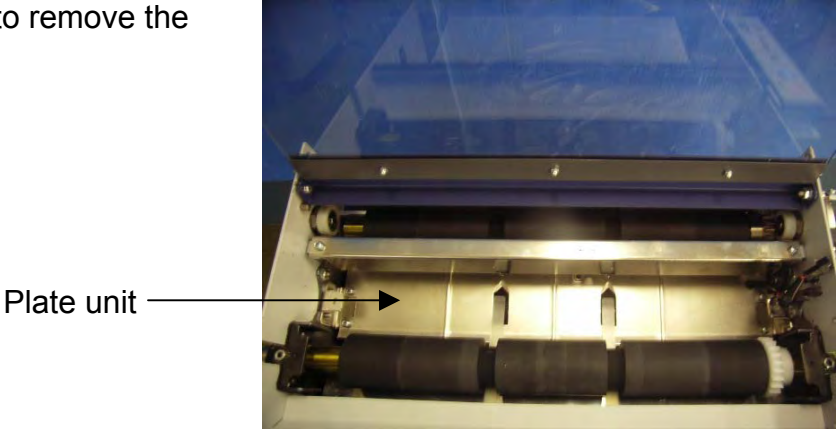
Timing belt
Eccentric shaft



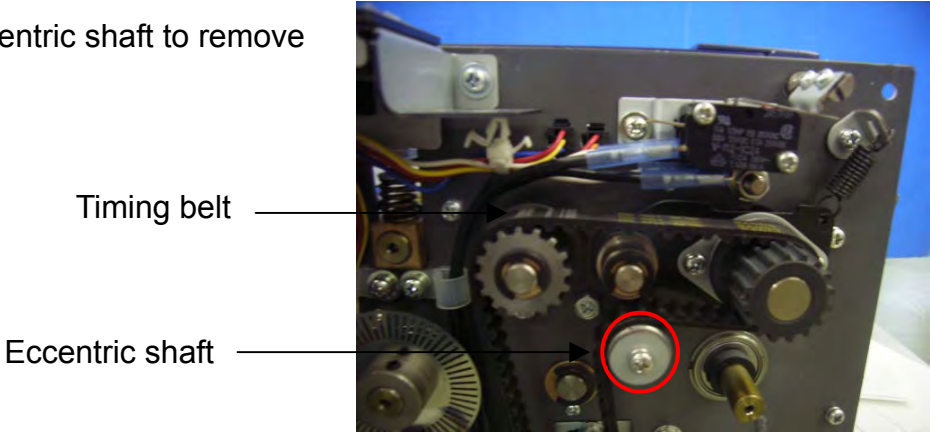
6. Remove the 2 screws, tension bracket, washer and spring C to remove the upper roller at paper feed side.



7. Remove the 4 screws to remove the plate unit.

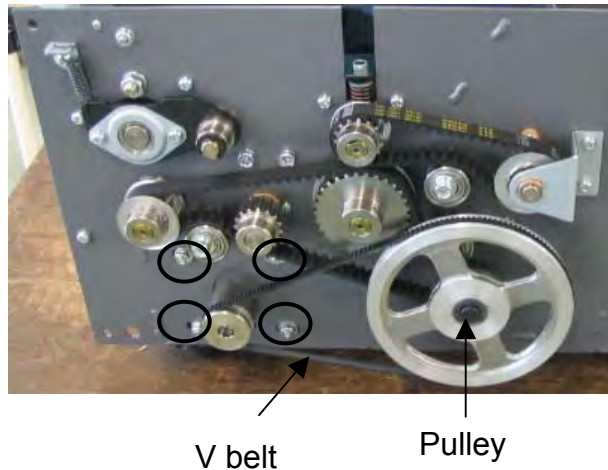


8. Remove the eccentric shaft to remove the timing belt.



9. Loosen the 4 screws fixing the main motor to remove the V belt.

10. Remove the E ring to remove the pulley.



11. Remove the support tray.
Remove the 2 screws to remove the paper feed tray.



12. Remove the paper feed shaft.

13. Remove the 4 screws to remove the paper feed inlet.

14. Remove the encoder and collar.

15. Pull out the roll pin to remove the roller at the paper feed side.

16. Remove the timing belt installed on the rotary solenoid and roller.

17. Pull out the roll pin to remove the timing pulley on the roller at the exit side.

18. Remove the spring T installed on the arm.

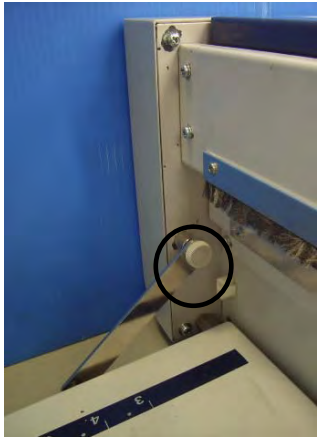
19. Remove the E ring to remove the left and right arm units.



20. Move the roller unit at the exit side in the direction of the arrow to move the roller.



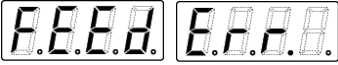





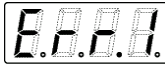

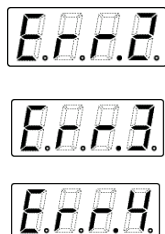
21. Remove the stays at both sides.



22. Pull out the roll pin to remove the roller under the exit side.

TROUBLE-SHOOTING

Use the guide below to correct error messages which may appear in the LCD control panel display.

<p>[FEEd]→[Err.]</p> 	<p>Error is detected if the paper does not reach the PPS even it is fed for a certain distance and more after starting to cut.</p>
<p>[OPEn]</p> 	<p>Error is detected if the cover switch is turned off while cutting, jog cutting, jog operation at error or machine operation.</p>
<p>[SEt]→[PAPE.]</p> 	<p>Error is detected if there is no paper in the paper feed tray.</p>
<p>[PAPE.]→[LEft]</p> 	<p>Error is detected if the PPS detects the paper while cutting or jog cutting with the following conditions.</p> <ul style="list-style-type: none"> * The first cut after power turned on * Cutting after error/JAM/warning are cancelled
<p>[Cut]→[Err.]</p> 	<p>Error is detected if the paper cannot be removed from the PPS even the paper is fed for a certain distance and more after the solenoid is on while cutting or jog cutting.</p>
<p>[PASS]→[Err.]</p> 	<p>Error is detected if the paper cannot be removed from the PPS even the paper is fed for a certain distance and more while non-cut process, cutting or jog cutting.</p>
<p>[Err.1]</p> 	<p>Error is detected if the encoder sensor does not turn on within 1 second after the main motor drives while cutting, jog cutting, or jog operation at error.</p>
<p>[Err.5]</p> 	<p>Error is detected if fuse on the solenoid power supply line is blown while cutting or jog cutting.</p>
<p>Memory read data error</p> 	<p>Error is detected if data is not written normally in the EEPROM on the main PCB unit.</p>

* When Result is “NO”, go to “Measures to be taken”, when it is “YES”, go to the following procedure.

Error display	Err.1	Main motor lock
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Driving gear breakage, belt breakage, invasion by foreign matters	1	Dose the main motor rotate by removing the driving timing belt?	YES	Remove causes.
Cover switch (interlock switch)	2	1. Does the switch actuator operate by opening/closing operation of the cover? 2. Do COM (lower) terminal and NO (middle) terminal conduct while pressing the switch actuator?	NO	1. Adjust switch installing position. 2. Replace the switch.
AC power supply	3	Measure the voltage between CN1-1 and CN1-3 of the AC power supply with a tester. Is the voltage AC120V?	NO	Measure the voltage between L and N of the inlet with a tester. If it is AC120V, replace the wiring. If not, check the power supply.
Fuse	4	Is F1 on the main PCB conducted?	NO	Replace the fuse.
Main motor encoder sensor	5	Does the main motor encoder sensor respond by rotating the encoder plate in HELP-07?	NO	Replace the sensor. Replace the main PCB if the sensor does not respond after replacing the sensor.
Main PCB	6	Does the motor rotate by replacing the main PCB?	NO	Replace the main motor.

Error display	Err.2	Memory access error
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Main PCB	1	Is error cleared by replacing the main PCB?	YES	Replace the main PCB.

Error display	Err.3	Memory read data error
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Main PCB	1	Is error cleared by replacing the main PCB?	YES	Replace the main PCB.

Error display	Err.4	Memory write data error
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Main PCB	1	Is error cleared by replacing the main PCB?	YES	Replace the main PCB.

Error display	FEEd Err	Paper feed part: Paper jam
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Paper jam in the paper feed part	1	Is paper jammed in the paper feed part?	YES	Remove jammed paper and, set paper and setting again.

Error display	Cut Err	Cut error
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Cut error	1	Is paper correctly cut?	NO	Remove the paper with cut error and check that paper and setting are correctly set.

Error display	Err.5	Solenoid overload
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Solenoid	1	Is solenoid overheated?	YES	Turn off the power and leave it for a while. If error remains even after turning on the power again, replace main PCB unit.


Error display	OPEn	Safety cover open
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Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
Cut error	1	Is paper correctly cut?	NO	Close the cover and press the STOP/C key to clear [OPEn].
			YES	Go to the procedure 2.
	2	1. Dose the switch actuator operate by opening/closing operation of the cover? 2. Does the switch respond in H-05?	NO	1. Adjust switch installing position. 2. Replace switch.

Error display	SEt PAPE.	No paper
----------------------	------------------	-----------------

Cause/Location	Proce- dure	Item to be checked	Result	Measures to be taken
No paper	1	Is there any paper in the paper feed tray?	NO	Place paper in the paper feed tray and press the STOP/C key to clear [SEt PAPE].
			YES	Clean the PPS sensor. If error remains, replace PPS sensor.

NOTE:
Use caution when servicing the Driving Part as it contains moving parts which may cause injury.

 WARNING
<p>Be sure to remove the power plug from the outlet when working near movable parts due to paper jam and so on.</p>

HELP MODES

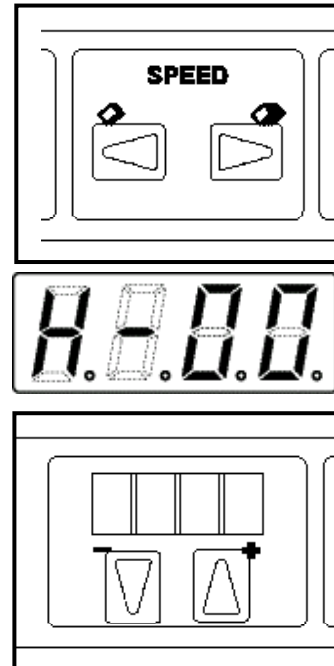
No.	Name	Function	Category
00	Main PCB unit version display	Displays main PCB unit version Upgrades main PCB unit version	Display
01	Main motor operation check	Checks rotation and speed of main motor	Operation check
02	Solenoid operation check	Checks operation of solenoid	Operation check
03	Optional motor operation check	Checks rotation of optional motor	Operation check
04	Operation check of LED display/ operation panel/buzzer	Checks operation of operation panel	Operation check
05	Sensor check 1	Displays status of each sensor	Operation check
06	Sensor check 2	Displays status of each sensor	Operation check
07	Sensor check 3	Displays status of each sensor	Operation check
08	PPS level check	PPS check	Operation check
09	PPS sensitivity adjustment	Adjusts sensitivity of sensor	Adjustment
10	Cut position adjustment	Adjusts cut position	Adjustment
11	Function setting 1	Sets functions	Setting
12	Function setting 2	Not used	Setting
13	Function setting 3	Specification setting	Setting
14	Function setting 4	Not used	Setting
15	Optional setting	Set options	Setting
16	Display of accumulative number of cut sheet (A)	Displays accumulative number of cut sheet (for user)	Display
17	Display of accumulative number of cut sheet (B)	Displays accumulative number of cut sheet (total)	Display
18	Operation time display (A)	Displays machine operation time (for user)	Display
19	Operation time display (B)	Displays machine operation time (total)	Display
20	Display of accumulative occurrence number of solenoid overload	Displays accumulative occurrence number of solenoid overload.	Display
21	Display of accumulative occurrence number of paper jam in paper feed part	Displays accumulative occurrence number of paper jam in paper feed part	Display
22	Display of accumulative occurrence number of paper jam in paper exit part	Displays accumulative occurrence number of paper jam in paper exit part	Display
23	Display of accumulative occurrence number of cut error	Displays accumulative occurrence number of cut error	Display
24	Display of accumulative occurrence number of main motor lock	Displays accumulative occurrence number of main motor lock	Display
25	Display of accumulative occurrence number of memory access error	Displays accumulative occurrence number of memory access error	Display

No.	Name	Function	Category
26	Display of accumulative occurrence number of memory read data error	Displays accumulative occurrence number of memory read data error	Display
27	Display of accumulative occurrence number of memory write data error	Displays accumulative occurrence number of memory write data error	Display
28	Memory initialization		Setting

HELP Mode Function and Operation Procedures

● Accessing the HELP Mode

1. When the machine is in use, put it in the standby mode and turn OFF the power switch before accessing the HELP Mode.
2. Turn ON the power switch while pressing the ◀ and ▶ keys simultaneously. In about 3 seconds, "H-00" appears on the display with the beeping sound.
3. Value of the HELP No. (H-00) is incremented by pressing the + key. (H-00 ⇒ 01 ⇒ 02)
Value of the HELP No. is decremented by pressing the - key. (H-02 ⇒ 01 ⇒ 00)
4. Press the START key to start HELP function specified.



● Exiting the HELP Mode

1. Press the STOP/C key to exit HELP function specified.

[NOTE]

Perform the items 3 and 4 above to access another HELP mode.

2. Turn off the power switch to exit HELP mode.

HELP MODE DESCRIPTIONS

HELP Mode	H-00	Main PCB unit version display
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1. Access the HELP mode "H-00".
2. Press the START key.



(Ex.:Version 1.00)

The version of the main PCB unit is displayed.



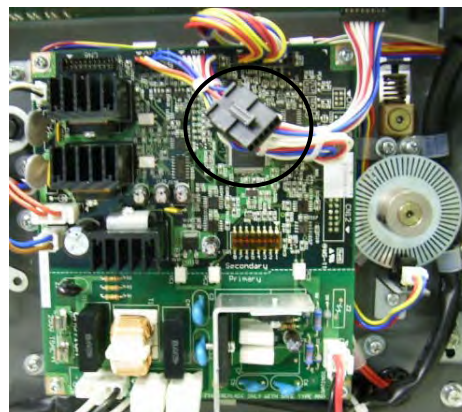
3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

How to upgrade version:

1. Remove the front cover.
2. Connect the cable of DDL to the connector in the right picture.



3. Turn the power switch ON while pressing the ◀ and ▶ keys simultaneously to access HELP mode. Turn the power switch ON in HELP mode.
4. Access the "H-00" and press the START key.
5. Press the JOG key.
The machine will be in standby state for upgrading version.
6. Upgrade the version according to the Service Manual of the Downloader.

1. Access the HELP mode "H-01".
2. Press the START key.



The following screen will appear and the main motor will start to rotate with speed 1. Rotate the main motor with speed selected by the SPEED key. Motor rotation speed (m/min.) will appear in the screen.

- Pressing the SPEED key for the first time: The current speed is displayed to check setting.
- Pressing the SPEED key for the second time: The speed (1-5) is changed. and after that or holding down for a long time

Display will be changed after 2 seconds by releasing the SPEED key.

[NOTE]

HELP mode does not function if the cover (interlock) is open.

Speeds:

Speed 1	12±2 m/min
Speed 2	18±2 m/min
Speed 3	25±2 m/min
Speed 4	32±2 m/min
Speed 5	39±2 m/min

Ex.: Rotation speed 39m/min.



When the SPEED key is pressed.
(Ex.: Setting speed 1)



3. Press the STOP/C key.
The HELP mode selection display will reappear.

IMPORTANT:

Be sure to remove the paper feed rubber rollers when executing this check. The separator unit may be damaged.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-02".
2. Press the START key.



Press the JOG key. The solenoid turns ON and, turns OFF after 0.5 second has passed. Also, it turns OFF after 0.5 second has passed by holding down the JOB key.

3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-03".
2. Press the START key.



The right screen will appear and the motor will start to rotate. (Ex.: Setting speed 1)



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

* When the setting of the conveyer unit is ON in the HELP-15 (optional setting), the conveyer motor will rotate with the setting speed selected with the SPEED key and the motor setting speed will be displayed in the screen.

1. Access the HELP mode "H-04".
2. Press the START key.



The right screen will appear and beep will sound with each press of the key on the operation panel.

All LEDs light up.



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-05".
2. Press the START key.



The right screen will appear to show the state of each sensor.

* The state of each sensor is monitored in the HELP mode and the display of the sensor state is updated.

Ex.
This is not default value.



Contents

- * A: Main motor encoder sensor state (0: light through / 1: light blocked)
- * B: Paper empty sensor (0: paper is set / 1: no paper)
- * C: PPS (0: light through / 1: light blocked)
- * D: Cover switch (0: open / 1: closed)

3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-06".
2. Press the START key.



The right screen will appear to show the state of each sensor.

* The state of each sensor is monitored in the HELP mode and the display of the sensor state is updated.

Ex.

This is not default value.



A B C D

Contents

- * A: Not used
- * B: Not used
- * C: Not used
- * D: Solenoid overload monitor CPU port (0: normal / 1 overload)

3. Press the STOP/C key.

The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-07".
2. Press the START key.



The right screen will appear to show the state of each sensor.

* The state of each sensor is monitored in the HELP mode and the display of the sensor state is updated.

Ex.

This is not default value.



Contents

- * A: DIP SW8
- * B: DIP SW7
- * C: DIP SW6
- * D: DIP SW5 (0: on / 1 off)

3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-08".
2. Press the START key.



D/A value when the PPS state changes from "light blocked" to "light through" will be displayed.



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-09".
2. Press the START key.



3. Adjust amount of luminescence (amount of the current) of PPS LED using the + / - keys.



Value is incremented by pressing the + key.

Value is increased by 10 by holding down the + key for over 1 second.

Value is decremented by pressing the - key.

Value is decreased by 10 by holding down the - key for over 1 second.

Adjusted value is stored by pressing the JOG key and 'SAVE' display will appear.



Contents

- * [ABC]: adjusted value of 3 digits in decimal number
- * Default value: 60 (Approx. 6mA)
- * Unit: 1 (Approx. 0.1mA)
- * Range: 0 - 255 (Approx. 0 - 25mA)

[REFERENCE]

When thin paper is used, lower the output value to 30 from factory setting.

(This is just a rough guide. Please set the output value according to the paper.)

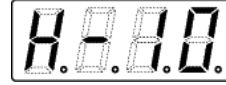
4. Press the STOP/C key.

The HELP mode selection display will reappear.

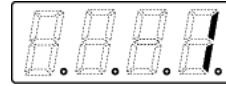
TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-10".
2. Press the START key.



3. Adjust the cut position by pressing the + / - keys.



Value is incremented by pressing the + key and is decremented by pressing the - key.

Adjusted value is stored by pressing the JOG key 'SAVE' display will appear. .



Contents

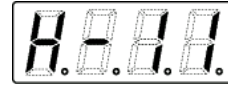
- * Default value: 0
- * Unit: Cut position is changed by approx. 2.1mm by changing the value by 1.
- * Range: -5 - +5 (Approx. -10.5mm - +10.5mm)

4. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode “H-11”.
2. Press the START key.
3. Select bit (A - D below) by pressing the - key.
4. Select ON or OFF for bit by pressing the + key.
 Changed setting is stored by pressing the JOG key and ‘SAVE’ display will appear.



Content

- * A: Not used
- * B: Not used
- * C: Not used
- * D: Cut size unit (0: mm / 1 inch)

[NOTES]

- * “mm” and “inch” can not be used simultaneously.
- * When “mm” is changed to “inch”, registered fixed preset data or free size data in “mm” is cleared. (Reverse case is the same.)
- * Default value: 0000

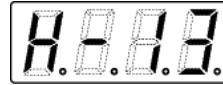


5. Press the STOP/C key.
 The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-13".
2. Press the START key.
3. Select bit (A - D below) by pressing the - key.
4. Select ON or OFF for bit by pressing the + key.



Changed setting is stored by pressing the JOG key and 'SAVE' display will appear.



Content

- * A: Not used
- * B: Not used
- * C: Not used
- * D: Preset counter port (0: available / 1 not available)

- * Default value 0000



5. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-15".
2. Press the START key.
3. Select bit (A - D) by pressing the - key.
4. Select ON or OFF for bit by pressing the + key.



Changed setting is stored by pressing the JOG key and 'SAVE' display will appear.



Content

- * A: Not used
- * B: Not used
- * C: Not used
- * D: Conveyer unit (0: not installed / 1: installed)

- * Default value: 0000



A B C D

5. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-16".
2. Press the START key.



The lower 4 digits out of the 8 digits showing the number of cuts are displayed.

Ex. Counter 12345678



3. Pressing the + key switches the display from the lower 4 digits to the upper 4 digits.



The upper 4 digits are displayed while holding down the + key and are switched to the lower 4 digits by releasing the + key.

The value of the counter is cleared ("0") by holding down the ◀ and ▶ keys for 3 seconds or more. It cannot be cleared less than 3 seconds.

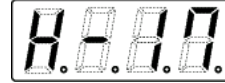
The value of the counter is incremented up to '99999999'.

4. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-17".
2. Press the START key.



The lower 4 digits out of the 8 digits showing the number of cuts are displayed.

Ex. Counter 12345678



3. Pressing the + key switches the display from the lower 4 digits to the upper 4 digits.



The upper 4 digits are displayed while holding down the + key and are switched to the lower 4 digits by releasing the + key.

The value of the counter is incremented up to '99999999'.

IMPORTANT:

The value of the counter cannot be cleared.

4. Press the STOP/C key.
The HELP mode selection display will reappear.

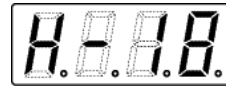
TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-18".
2. Press the START key.

Information of operation time is displayed.

3. The LCD display switches from "hour" to "minute" by pressing the + key.
"minute" display appears while pressing the + key and switches to "hour" display by releasing the + key.



Ex.: Operation time 9999
Time 59 min.



The value of the counter is cleared ("0") by holding down the ◀ and ▶ keys for 3 seconds or more.

The value of the counter is incremented up to '9999.59'.

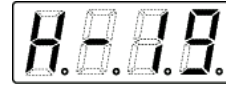
4. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-19".
2. Press the START key.

Operation time is displayed.



Ex.: Operation time 9999 hours and 59 min.

3. The LCD display switches from "hour" to "minute" by pressing the + key.
"minute" display appears while pressing the + key and switches to "hour" display by releasing the + key.



IMPORTANT:

The value of the counter cannot be cleared.

The value of the counter is incremented up to '9999.59'.

4. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-20".
2. Press the START key.



The accumulative occurrence number of 'solenoid overload' is displayed when error is displayed.

Ex.: Counter 1234

The value of the counter is incremented up to '9999'.



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

HELP Mode**H-21****Display of accumulative occurrence number of paper jam in paper feed part**

1. Access the HELP mode "H-21".
2. Press the START key.



The accumulative occurrence number of 'paper jam in the paper feed part' is displayed when error is displayed. The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

HELP Mode**H-22****Display of accumulative occurrence number of paper jam in paper exit part**

1. Access the HELP mode "H-22".
2. Press the START key.



The accumulative occurrence number of 'paper jam in the exit part' is displayed when error is displayed. The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-23".
2. Press the START key.



The accumulative occurrence number of 'cut error' is displayed when error is displayed.

The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-24".
2. Press the START key.



The accumulative occurrence number of 'main motor lock' is displayed when error is displayed.

The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-25".
2. Press the START key.



The accumulative occurrence number of 'memory access error' is displayed when error is displayed.
The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-26".
2. Press the START key.



The accumulative occurrence number of 'memory read data error' is displayed when error is displayed.
The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-27".
2. Press the START key.



The accumulative occurrence number of 'memory write data error' is displayed when error is displayed.

The value of the counter is incremented up to '9999'.

Ex.: Counter 1234



3. Press the STOP/C key.

The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

1. Access the HELP mode "H-28".
2. Press the START key.



3. Select initialization item by pressing the + key.
EX. (Initialization 1) → ALL (Initialization 2) →
EX. (Initialization 1)

Initialization 1

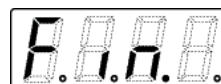


Initialization 2



4. Press the JOG key.
Selected initialization item is executed.

'Fin' appears when initialization is completed.



Initialization items

Item	Initialization item	
	Initialization 1	Initialization 2
H-09 PPS sensitivity adjustment	*	*
H-10 Cut position adjustment	*	*
H-11 Function setting 1	*	*
H-15 Option setting	*	*
Counter	*	*
Cut size	*	*
Speed	*	*
Registered fixed preset data		*
Registered free size data		*

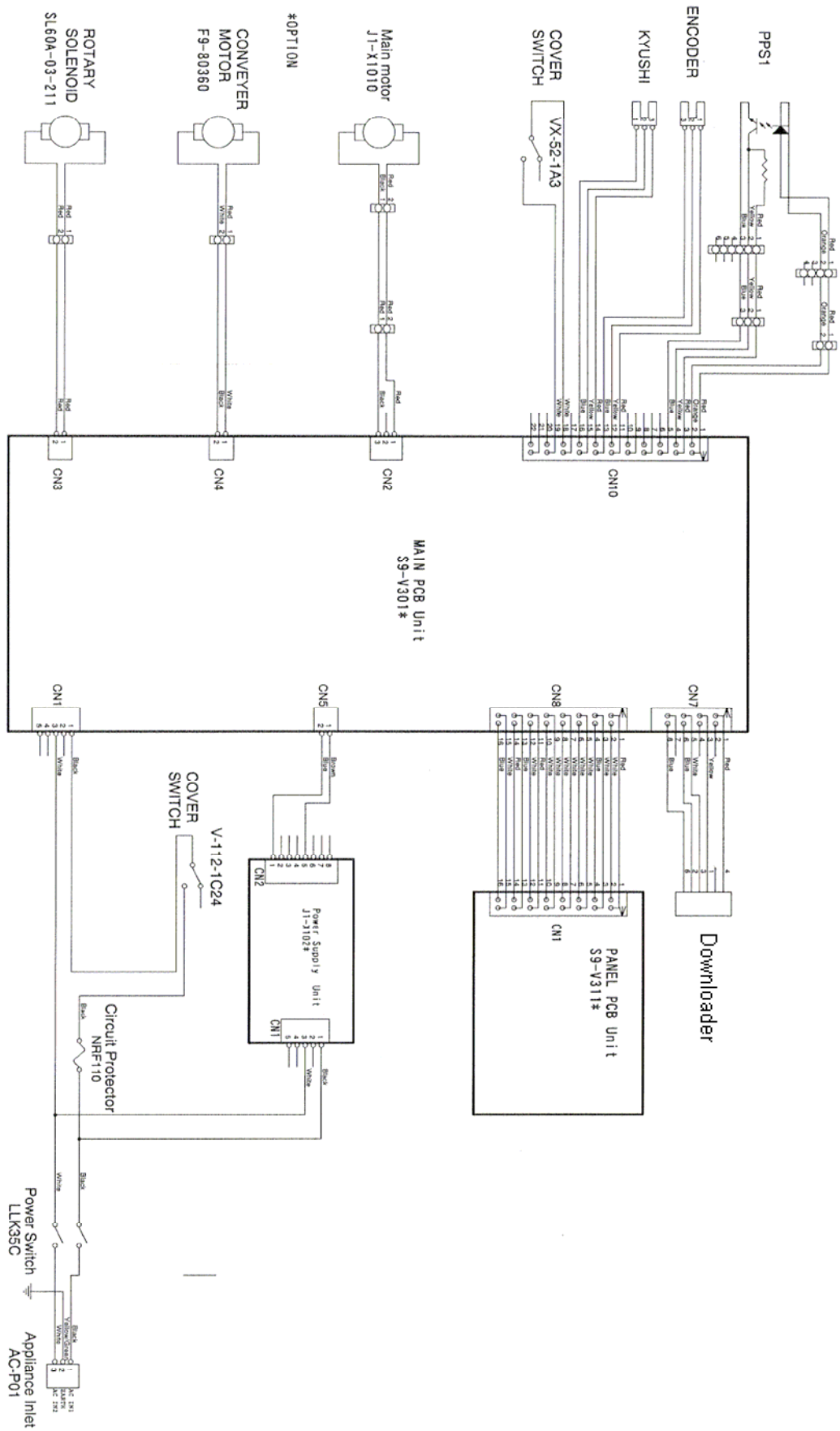
Mark *: Initialization item

5. Press the STOP/C key.
The HELP mode selection display will reappear.

TIP:

Turn the power switch OFF to exit the HELP mode.

WIRING DIAGRAM



MAINTENANCE

No.	Section to be checked	Work description	Check standard
1	PPS sensors (upper/lower)	Cleaning	Remove paper dust
2	Paper feed rubber rollers, exit rubber rollers	Cleaning	Clean toner and paper dust
3	Driving shafts, bearings	Cleaning, lubricating	Smooth rotation
4	Paper feed status	Checking	Smooth paper feed
5	Cut status	Checking	Smooth operation