N810-II

SERVICE MANUAL

INTRODUCTION

This manual explains only the features of the N810-II (C225 model) that are different compared with the N810 (C217 model). So, please refer to the N810 service manual for the sections which are not described in this manual.

SECTION 1

OVERALL MACHINE INFORMATION

1. SPECIFICATIONS

Configuration:	Desk top
Master Making Process:	Digital
Printing Process:	Full automatic one-drum stencil system
Image Mode:	Line/Photo
Original Type:	Sheet
Original Weight:	64 g/m^2 ~ 104.7 g/m^2 (17.0 lb ~ 27.9 lb)
Original Size:	Max: 216 mm x 356 mm (8 1/2" x 14") (Legal Drum) 216 mm x 297 mm (8 1/2" x 11.7") (A4 Drum) Min: 90 mm x 140 mm (3 1/2" x 5 1/2")
Paper Size:	Max: 216 mm x 356 mm (8 1/2" x 14") (Legal Drum) 216 mm x 297 mm (8 1/2" x 11.7") (A4 Drum) Min: 90 mm x 140 mm (3 1/2" x 5 1/2")
Paper Weight:	52 g/m^2 ~ 150 g/m^2 (13.8 lb ~ 39.9 lb)
Printing Area:	LG drum: 210 mm x 349.6 mm (8.3" x 13.8") or less A4 drum: 210 mm x 291 mm (8.3" x 11.5") or less
Printing Speed:	70/100/130 cpm (3 settings)
First Copy Time:	28 seconds ± 2 seconds (Legal Drum) 26 seconds ± 2 seconds (A4 Drum)
Second Copy Time:	30 seconds ± 2 seconds (Legal Drum) 28 seconds ± 2 seconds (A4 Drum)
Leading Edge Margin:	5 mm ± 3 mm (0.2" ± 0.12")

Trailing Edge Margin: 1 mm ± 1 mm (0.04" ± 0.04")

Paper Feed Table Capacity: 500 sheets (80 g/m^2, 20.0 lb)

Paper Delivery Table Capacity: 500 sheets (80 g/m^2, 20.0 lb)

Master Eject Box Capacity: More than 25 masters

ADF Original Capacity: 6 sheets or a 0.6 mm height

Weight: 55 kg (122 lb)

Power Source: 120 V, 60 Hz, more than 3.6 A (for North America)
220 V ~ 240 V, 50/60 Hz, more than 2.1 A (for Europe, Asia)

Power Consumption:
Master Making: Less than 0.22 kW
Printing: Less than 0.22 kW

Dimensions:
(W x D x H)
[Tables stored]
692 mm x 612 mm x 440 mm
(26.2" x 24.1" x 17.3")
[Tables set up]
1050 mm x 612 mm x 440 mm
(41.3" x 24.1" x 17.3")

Pixel Density: 300 dpi

Print Counter: 7 digits

Master Counter: 6 digits

Noise Emission:

Printing Speed	Operator position	Bystander position
70 rpm	less than 66 dB	less than 64 dB
100 rpm	less than 70 dB	less than 68 dB
130 rpm	less than 72 dB	less than 71 dB

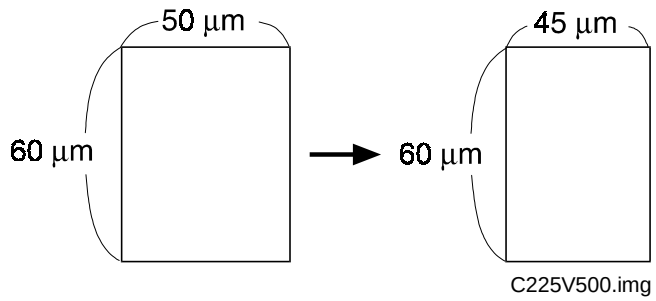
The measurements are to be made in accordance with ISO 7779.

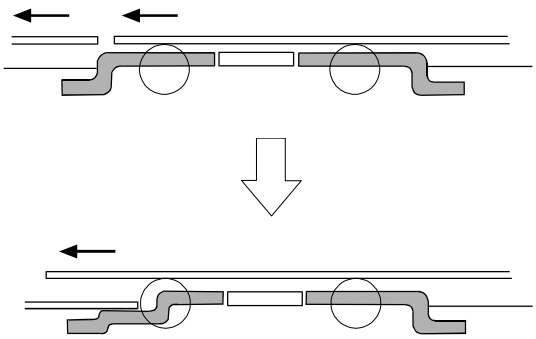
Optional Equipment: Key Counter, Tape Dispenser

Consumables:

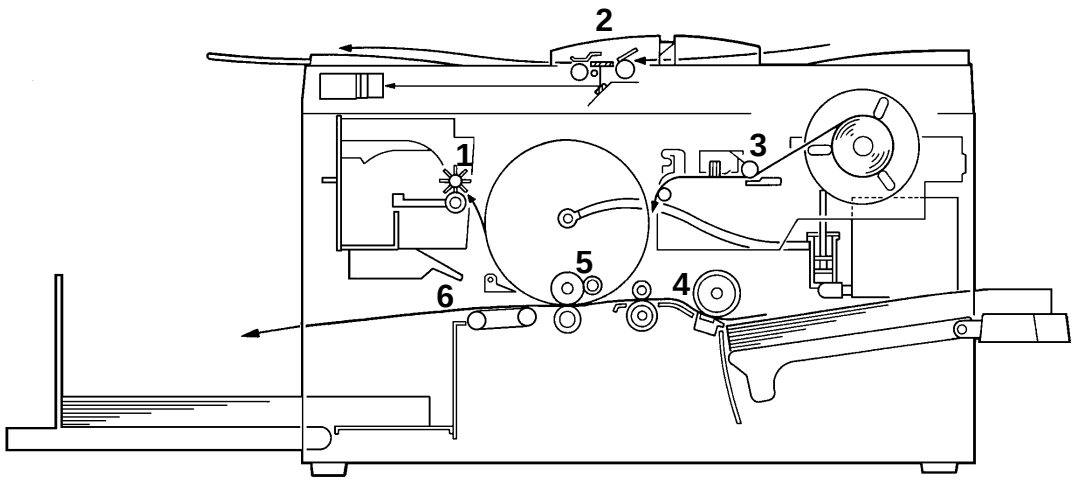
Name	Size	Remarks
Thermal master	Length: 125 m (410 ft)/roll Width: 240 mm (9.5")	260 masters can be made per roll with a Legal Drum. 304 masters can be made per roll with an A4 Drum. Storage Conditions: –10 ~ 40°C, 10 ~ 90% RH
Ink	600 cc/pack	Storage Conditions: –5 ~ 40°C, 10 ~ 90% RH
Tape for tape maker	35 m (114.8 ft)/roll	

2. ESSENTIAL DIFFERENCES BETWEEN THE C217 AND THE C225

No.	Item	Remarks
1	Paper Delivery System	The paper delivery system has been changed from a delivery roller system to a vacuum transport system. Due to this modification, 5 mm side margins are not required for originals.
2	Paper Table Set Switch	A magnetic switch has been added to detect whether or not the paper table is in the paper feed position. Indicator "B" lights when the paper table is in the low position.
3	Thermal Head	To minimize ink set-off, the shape of the thermal head heating elements have been changed as shown below.  C225V500.img
4	Paper Table Side Fences	For easy side fence positioning, a rack and pinion mechanism has been installed. The left and right side fences move together.
5	Master Eject Box	To prevent the used master from drooping when the customer takes out the master eject box, a master holder has been added to the master eject box.
6	Paper Delivery Table	The delivery end fence and the side fences can be folded for storing in the delivery table.
7	Master Eject Box Capacity	The pressure for compacting the master in the master eject box has been increased. The master eject box capacity has been increased from 15 to 25 masters.
8	Economy Mode	If Economy mode is selected, the thermal head energy is reduced by 15% (this is done by changing the pulse width). The image density will be slightly lighter, and ink consumption will be less than normal.

No.	Item	Remarks
9	Exposure Glass Bracket	To prevent the scanned original from being pushed out by the next original, the shape of the exposure glass bracket has been changed as shown below.  H225V501.wmf
10	Original Feed Spring Plate	To ensure proper feeding of thin paper, the angle of the original feed spring plate has been changed.
11	Paper Feed Timing	To reduce noise which occurs when the paper hits the 2nd feed roller, the first paper feed length has been reduced. (The buckle between the 1st and 2nd paper feed rollers has been shortened.)
12	Skip Feed	A user can select from 2 to 9 rotations of the drum while one sheet of paper is fed.
13	A4 Size Drum (Only A4 machines)	To minimize master consumption, the screen mesh length and the master cut length of the Europe/Asia machines has been shortened. (The master consumption of the LT/LG machines is the same as for the C217.)
14	Quality Start	The first print tends to be light. To increase the image density of the first print, Quality Start mode can be selected. In this mode, the first print is made at 30 rpm.
15	Image Processing in the "Darker 2" setting	In the C217 model, only the A/D conversion parameters are changed when the image density setting is changed. This does not change the density of solid black areas. In the C225 model, if "Darker 2" is selected on the operation panel, the thermal head energy is increased to 115% of the normal setting. The solid black areas will become darker.

3. PRINTING PROCESS



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1. Master Ejecting: The machine ejects the used master wrapped around the drum into the master eject box.

2. Scanning: The machine scans the original using the CCD, through the mirror and the lens, while feeding the original.

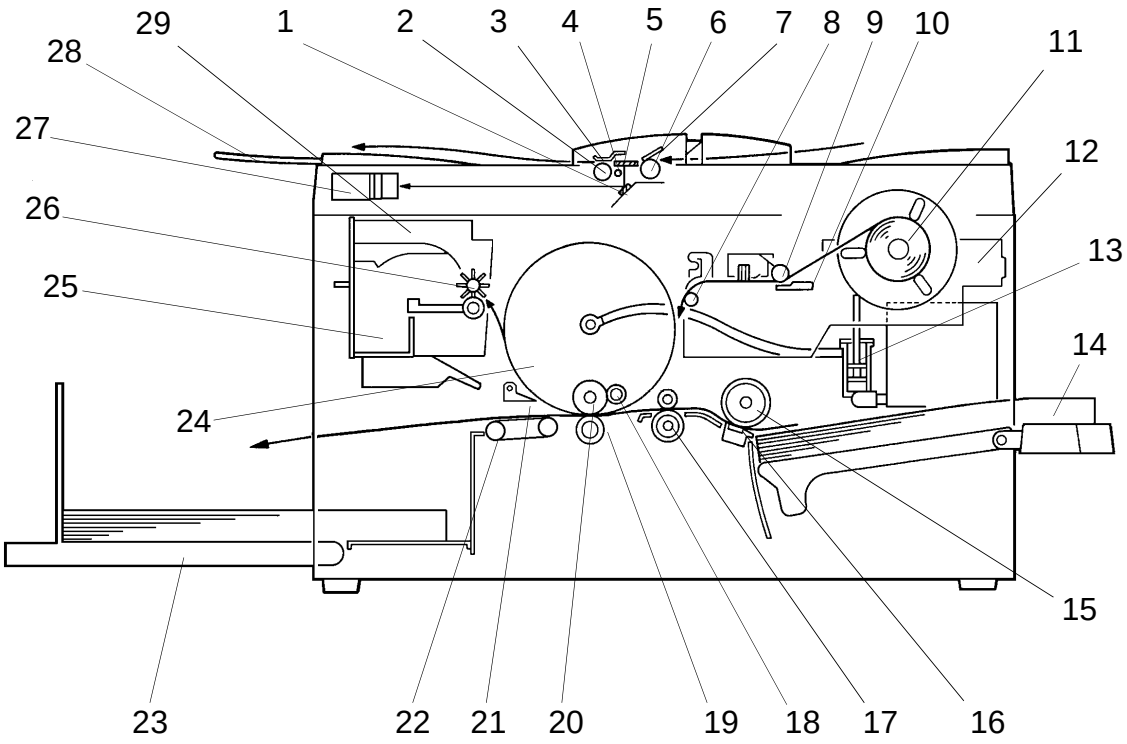
3. Master Feeding: The machine converts the signal from the CCD into digital signals and sends them to the thermal head to make holes in the master. The master then wraps around the drum.

4. Paper Feeding: The machine sends paper separately to the drum.

5. Printing: The machine presses the paper fed from the paper feed section against the drum. This transfers the ink to the paper through the drum screen and the master.

6. Paper Delivering: The machine peels off the printed paper with the exit pawls and air knife, and ejects the paper onto the paper delivery table.

4. MECHANICAL COMPONENT LAYOUT



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1. Mirror
2. Original Feed Roller
3. Original Pressure Plate
4. Exposure Lamp
5. Exposure Glass

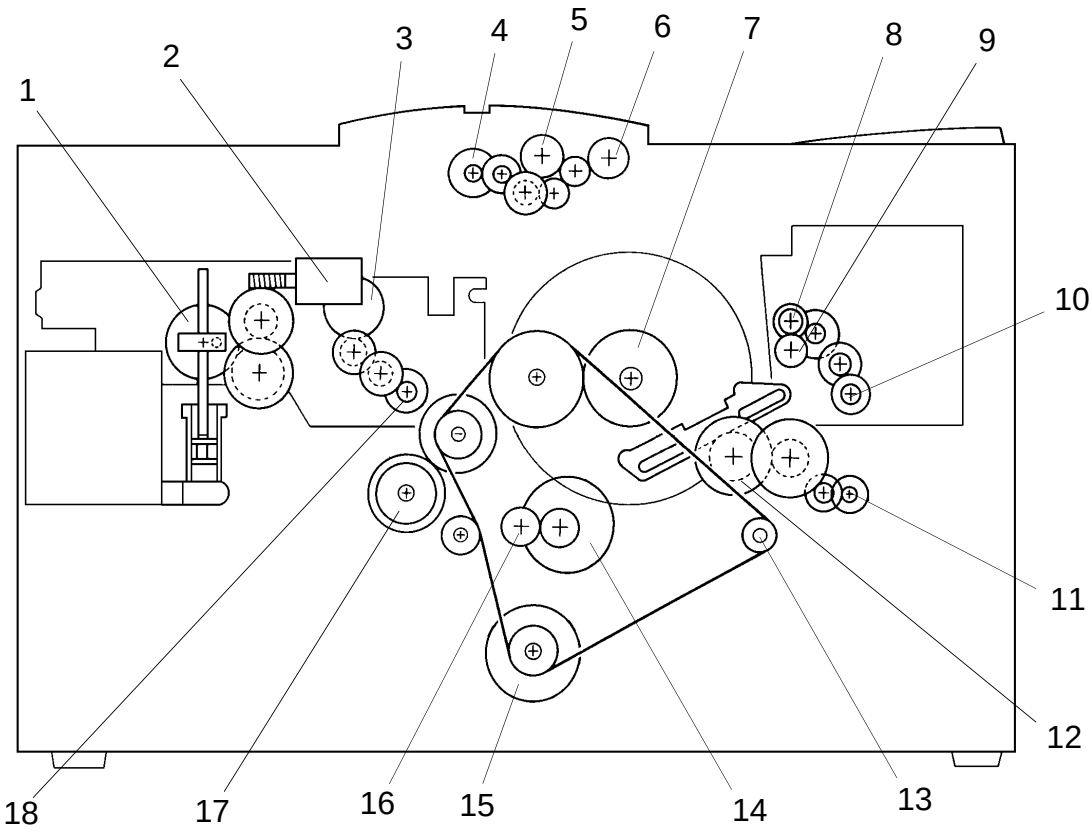
6. Original Pick-up Roller
7. Original Friction Pad
8. Master Tension Roller
9. Platen Roller
10. Thermal Head

11. Master Roll
12. Platter Unit
13. Ink Pump
14. Paper Table
15. Paper Feed Roller
16. Friction Pad
17. 2nd Feed Roller
18. Doctor Roller
19. Press Roller
20. Ink Roller

21. Exit Pawl
22. Transport Unit
23. Paper Delivery Table
24. Drum
25. Master Eject Box

26. Master Eject Roller
27. CCD Unit
28. Original Exit Tray
29. Master Eject Unit

5. DRIVE LAYOUT



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1. Pump Drive Gear
2. Ink Supply Motor
3. Platen Roller Gear
4. Original Feed Motor
5. Original Pick-up Roller
6. Original Feed Roller
7. Drum Drive Gear
8. Upper Master Eject Roller Gear
9. Lower Master Eject Roller Gear
10. Master Eject Motor
11. Master Clamper Motor
12. Master Clamper Drive Gear
13. Transport Unit Drive Pulley
14. 2nd Feed Motor
15. Main Motor
16. 2nd Feed Roller Gear
17. Paper Feed Roller Gear
18. Master Feed Motor

6. ELECTRICAL COMPONENT DESCRIPTION

Index No.	Name	Function
Motors		
11	Master Feed	Feeds the master to the drum.
25	Master Eject	Sends the used master into the master eject box.
28	Main	Drives the paper feed, drum, printing and paper delivery unit components.
29	Vacuum	Provides suction so paper is held firmly on the transport belt.
32	2nd Feed	Drives the 2nd feed roller.
35	Master Clamper	Open and closes the master clamper.
38	Air Knife	Rotates the fan which generates the air knife to separate the paper from the drum.
40	Pressure Plate	Drives the pressure plate.
45	Original Feed	Transports the original for scanning.
46	Master Cutter	Cuts the master.
49	Ink Supply	Drives the ink pump to supply ink.
Solenoid		
31	Pressure Release Solenoid	Releases the press roller to apply printing pressure.
Sensors		
1	Master End	Detects if the plotter unit has run out of master roll.
3	Original Registration (Upper: light receiver, Lower: light emitter)	Informs the CPU of the original position. Also, detects original misfeed.
14	Feed Jam Timing	Determines the paper misfeed check timing.
15	Paper End	Detects if there is any paper on the paper table.
16	Registration	Detects paper misfeeds.
17	Feed Start Timing	Determines the paper feed start timing.
18	Exit Jam Timing	Determines the master misfeed check timing.
19	Master Eject Position	Detects the master eject position of the drum.
26	Drum Master	Detects if there is a master on the drum.
30	Exit	Detects paper misfeeds.
33	Master Eject	Detects used master misfeeds.
37	Full Master	Detects if the master eject box is full.
39	Pressure Plate H.P.	Detects the pressure plate home position.
48	Original Set	Detects if there is an original on the original table.
Switches		
5	ADF Open	Checks if the ADF is open.
6	Left Cutter	Determines the left limit position of the cutter.
9	Master Cut	Starts the cutter motor to cut the master.
13	Paper Table Set	Detects if the paper table is in the paper feed position.

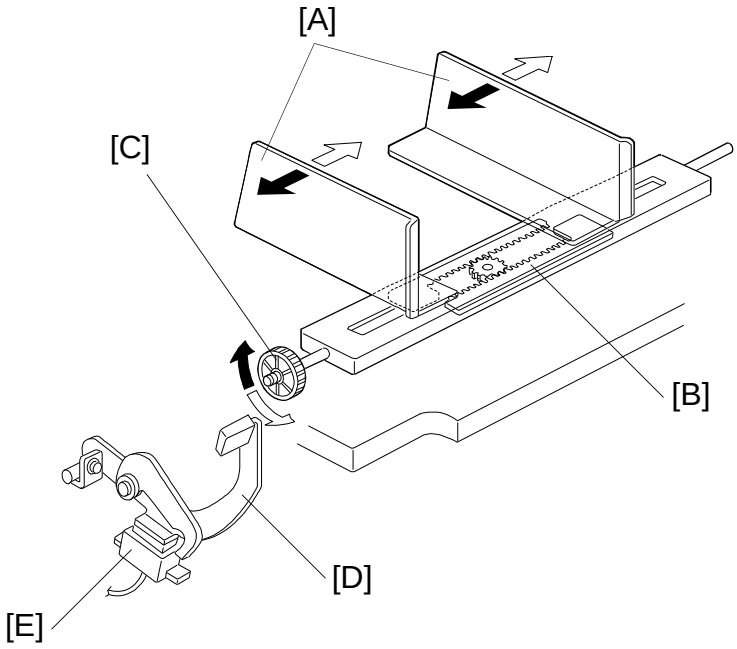
Index No.	Name	Function
21	Scanner Unit Open	Checks if the scanner unit is open.
22	Delivery Cover Open	Checks if the delivery cover is open.
23	Main	Turns the power on or off.
27	Master Eject Box	Checks if the master eject box is set correctly.
36	Master Clamper	Detects the master clamper open/close position.
47	Right Cutter	Determines the right limit position of the cutter.
Printed Circuit Board		
4	Lamp Control	Controls the power to the exposure lamp.
8	Operation Panel	Interfaces the CPU with the operator.
12	Main	Controls all machine functions.
20	Power Supply	Provides power for all dc components.
24	Main Motor Control	Controls the main motor speed.
34	Noise Filter	Filters out electrical noise on the ac power input lines.
41	CCD	Converts light intensity into an electrical signal.
42	A/D Conversion	Converts the analog signals into digital signals.
Counters		
7	Print	Keeps track of the total number of prints made.
10	Master	Keeps track of the total number of masters made.
Others		
2	Thermal Head	Makes the master using heat.
43	Paper Feed Clutch	Transmits main motor drive to the paper feed roller at the appropriate time.
44	Exposure Lamp	Illuminates the original for exposure.

SECTION 2

DETAILED SECTION DESCRIPTIONS

1. PAPER FEED

1.1 PAPER TABLE



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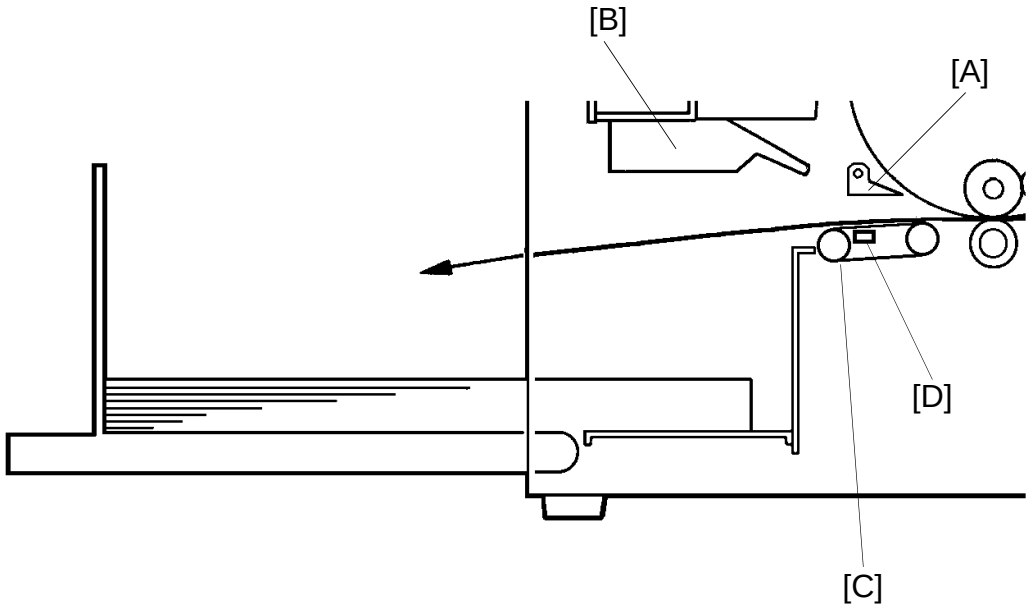
The paper table side fences [A] should be adjusted depending on the paper size. The left and right side fences move together because of the rack and pinion [B], to ensure correct paper positioning on the tray. If the dial [C] is turned, the side fences move together, changing the paper position on the table.

When the lever [D] is lowered and the paper table is in the no-paper feed position, the magnetic switch [E] is de-activated. In this condition, the Print Start key is disabled.

2. PAPER DELIVERY SECTION

2.1 OVERALL



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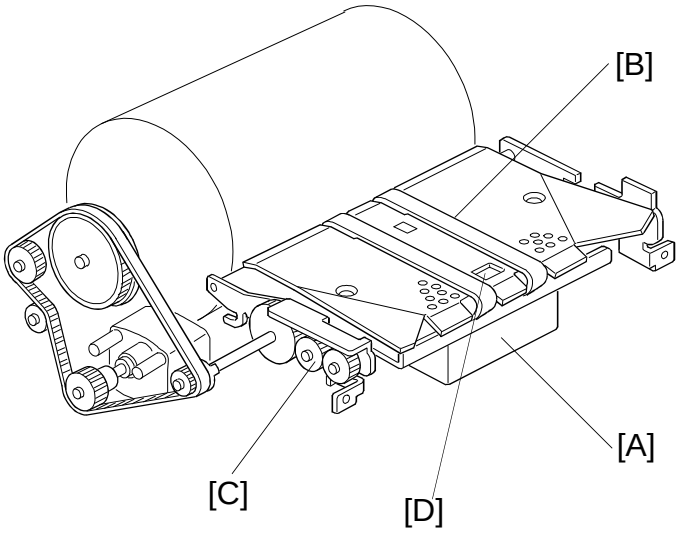
The exit pawl [A] and the air knife [B] separate the paper from the drum. The paper is transported to the delivery table by the transport unit [C].

There is a reflective photosensor [D] to detect paper jams.

2.2 VACUUM UNIT DRIVE MECHANISM



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The vacuum fan [A] holds the paper against the transport belts [B] to deliver the paper to the delivery table. The transport belts are driven by the main motor through gears [C].

The exit sensor (reflective photosensor) [D] located on the vacuum unit detects paper jams.

3. IMAGE PROCESSING

3.1 IMAGE DENSITY SETTING

The A/D conversion parameters (refer to page 2-43 of the C217 model service manual) and thermal head energy change depending on the image density selected on the operation panel.

The table below shows the relationships between the image modes, parameters, and the thermal head energy.

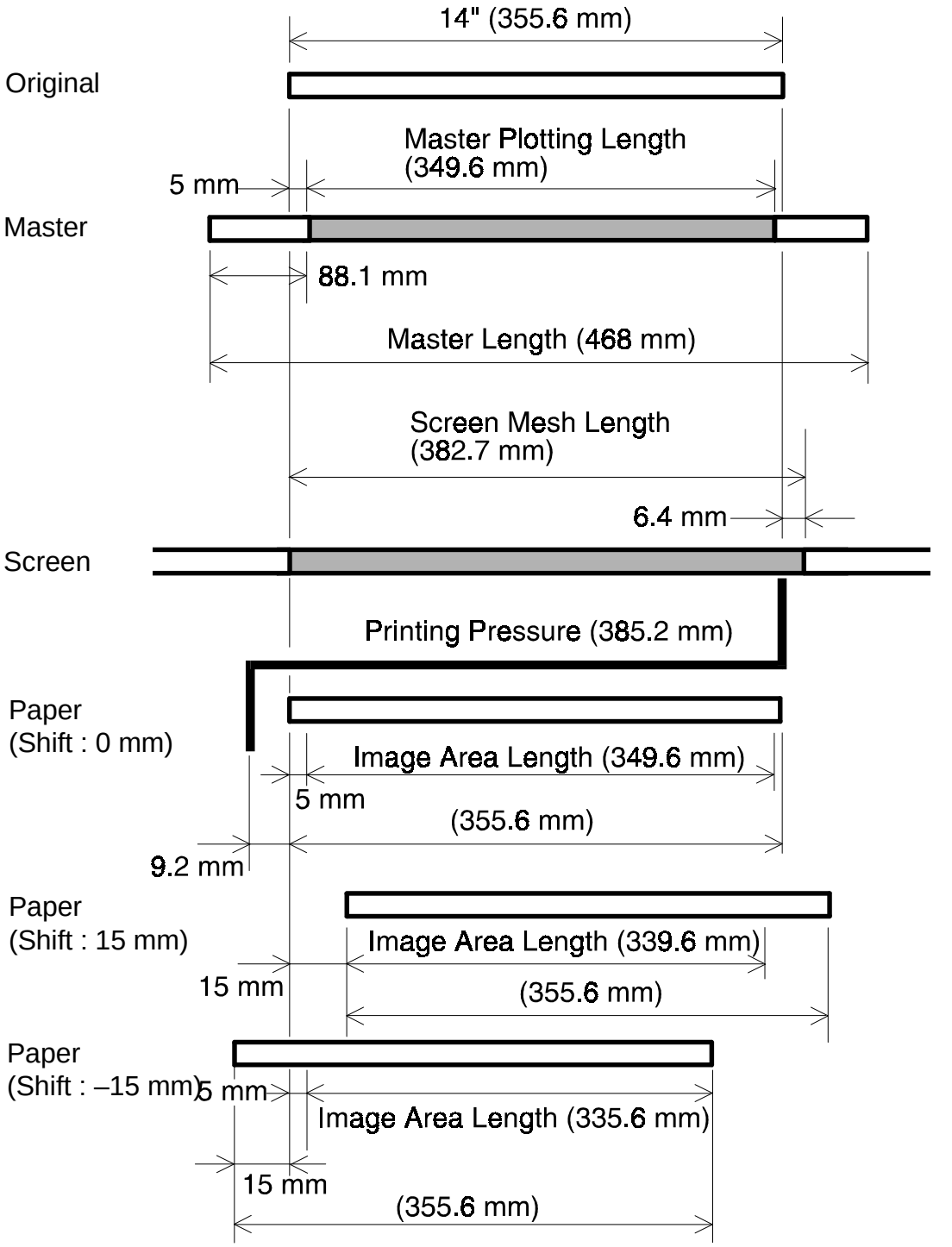
			VH (%)	M1 (%)	M2 (%)	M3 (%)	VL (%)	T/H Energy (%)
Shading Distortion Memory			100	86.5	73.0	59.5	46.0	
Image Setting	**Line Mode**	**Lighter**	74.0	57.0	40.0	23.0	6.0	100
		Normal	100	76.5	53.0	29.5	6.0	100
		Darker 1	100	79.8	59.5	39.3	19.0	100
		Darker 2	100	79.8	59.5	39.3	19.0	115
	Photo Mode	**Lighter**	70.0	36.6	19.6	11.4	7.0	100
		Normal	80.0	43.4	24.8	15.8	11.0	100
		Darker 1	85.0	47.9	29.0	19.9	15.0	100
		Darker 2	85.0	47.9	29.0	19.9	15.0	115

In the C217 model, the thermal head energy is always the same regardless of the image density setting. Only the A/D conversion parameters change depending on the selected image density. Using this method, the image density of solid black areas does not change even if a darker setting is selected. This is because all the pixel data will be the same (evenly black) after the binary processing, if the area is purely black.

In the C225 model, when Darker 2 is selected, the A/D conversion parameters are the same as those of Darker 1, but the thermal head energy increases to 115% of the normal thermal head energy. (This is done by changing the pulse width.) As a result, the density of solid black areas will become darker.

4. MASTER PLOTTING AND PRINTING AREA

1. Length (Legal Drum)



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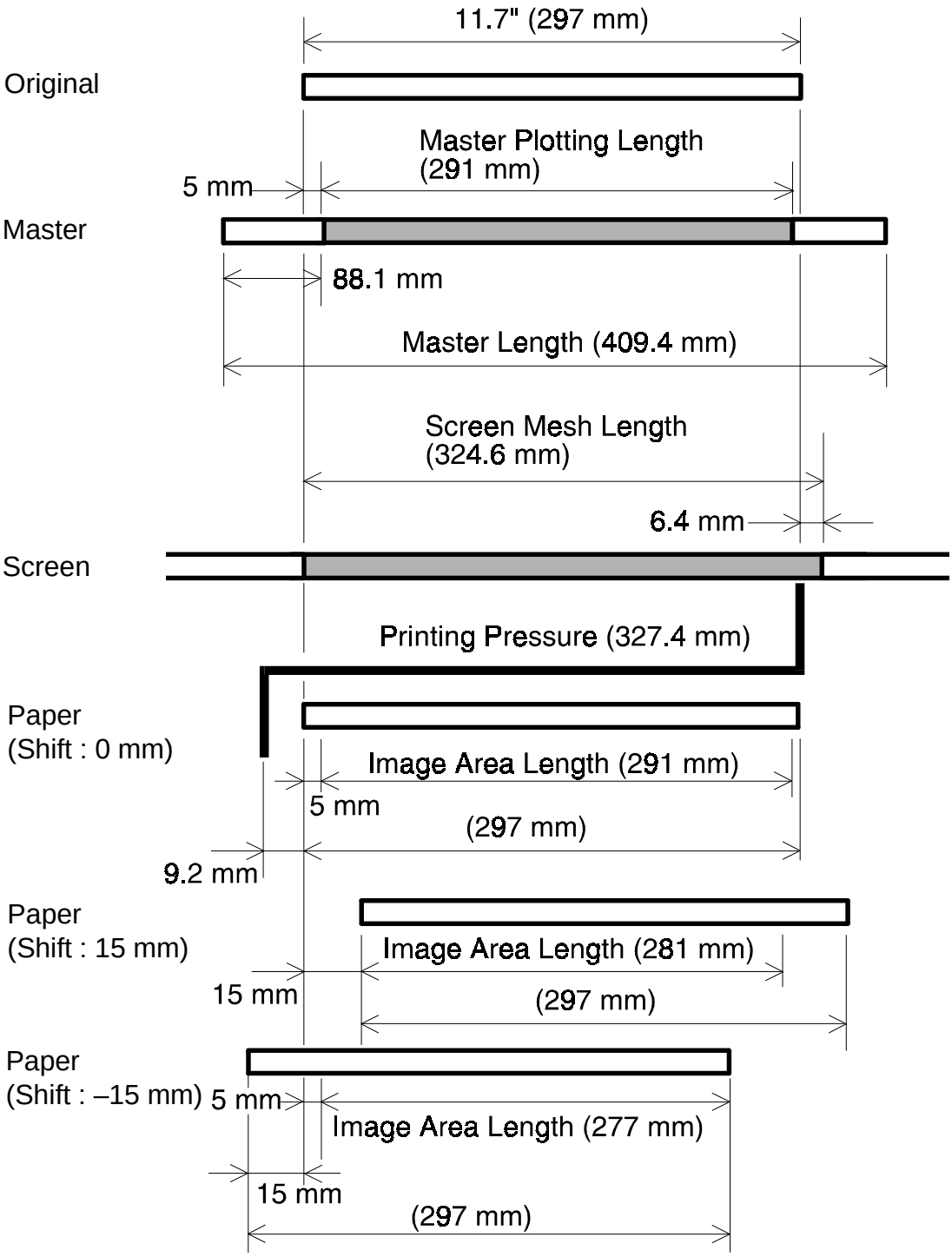
(A4 Drum)



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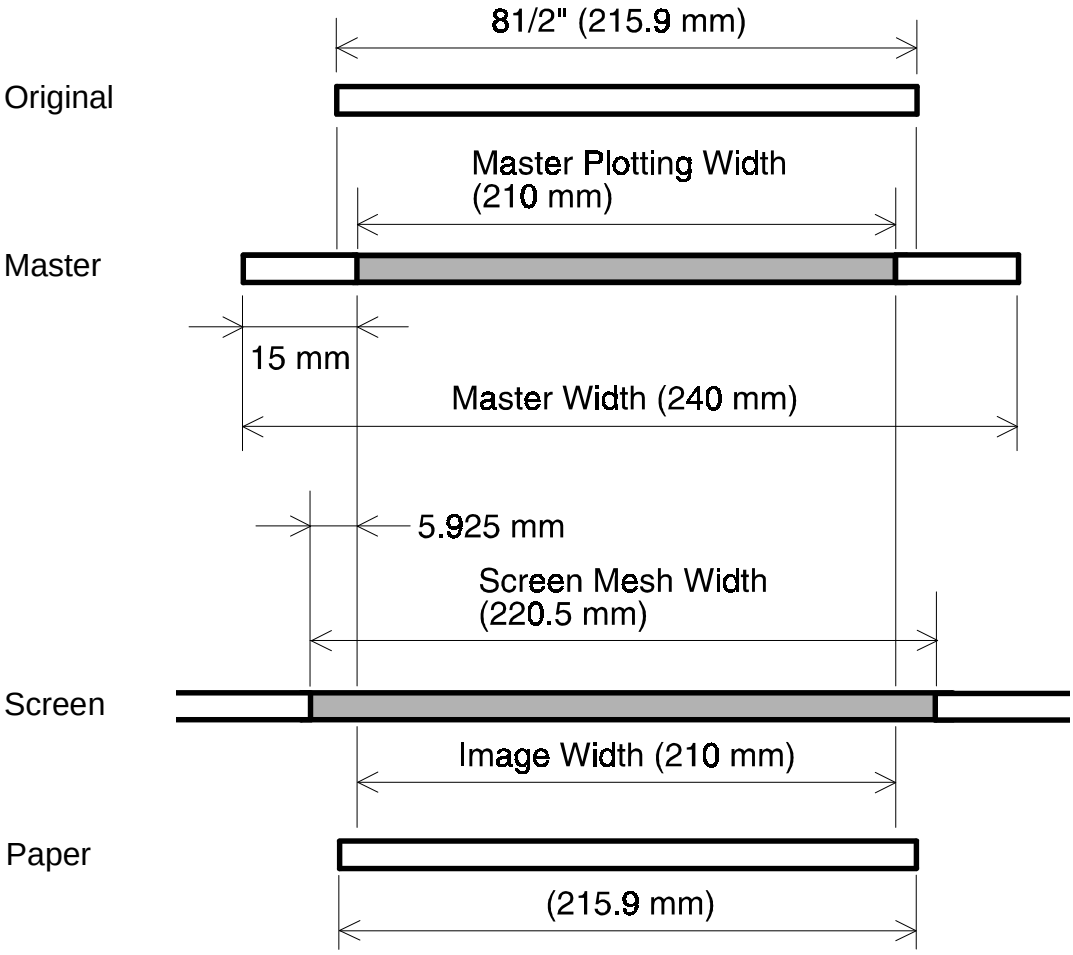
2. Width (Legal and A4 Drum)



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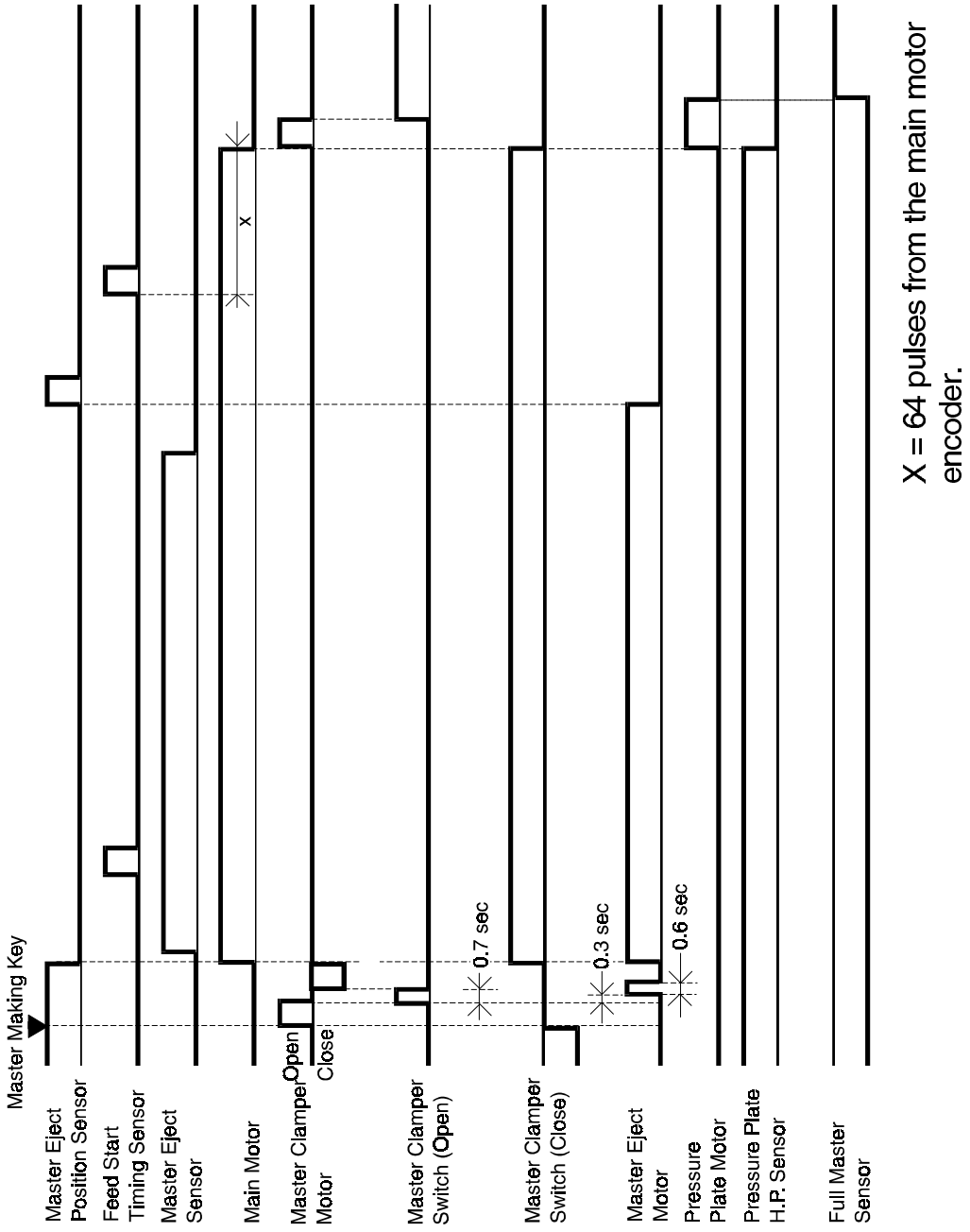
5. TIMING CHART

TIMING CHART 3 (Master Cut/Trial Print) is identical to that of C217 model.

5.1 MASTER EJECT (TIMING CHART 1)



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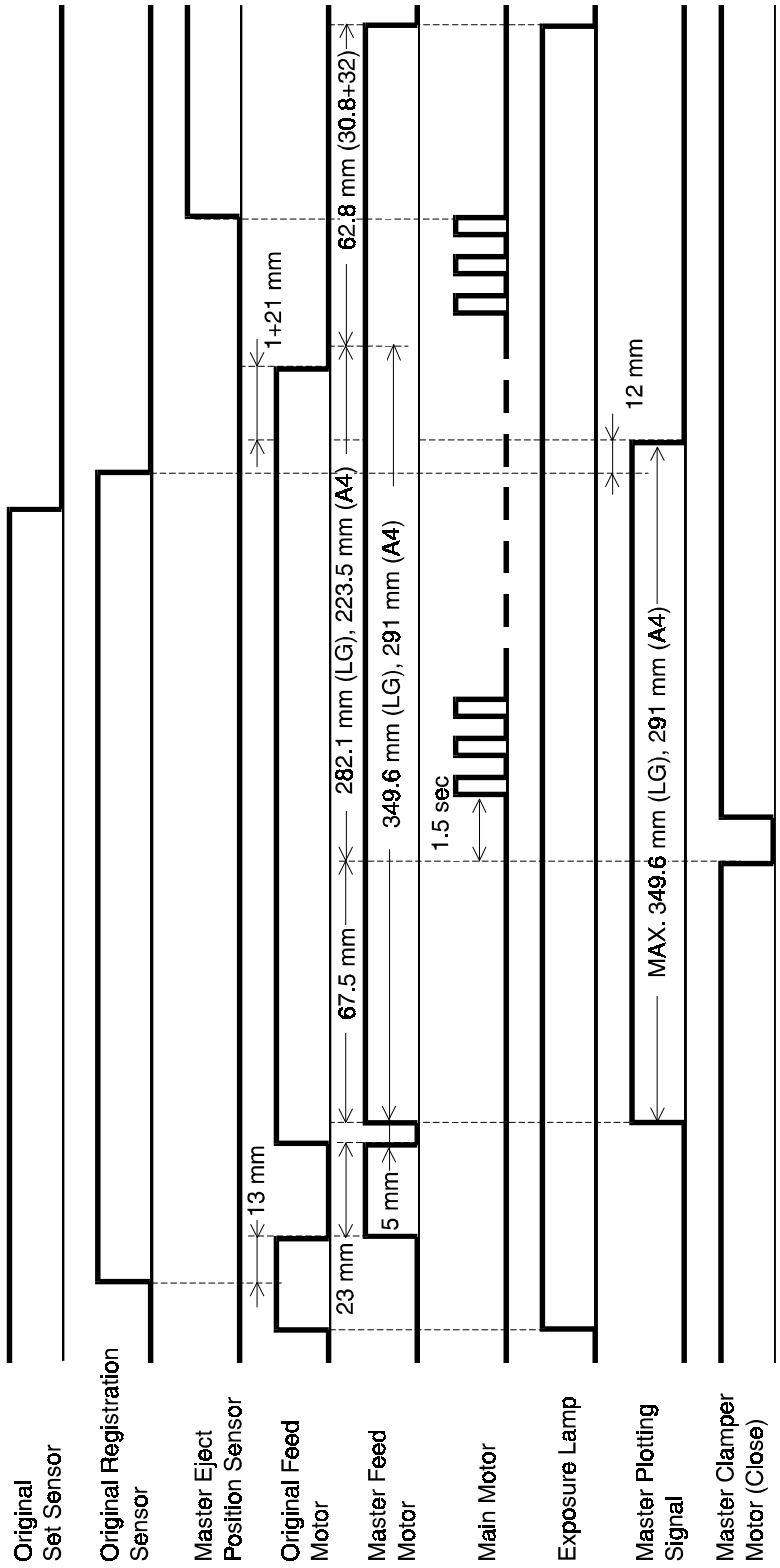
5.2 ORIGINAL FEED/PLOTTING (TIMING CHART 2)



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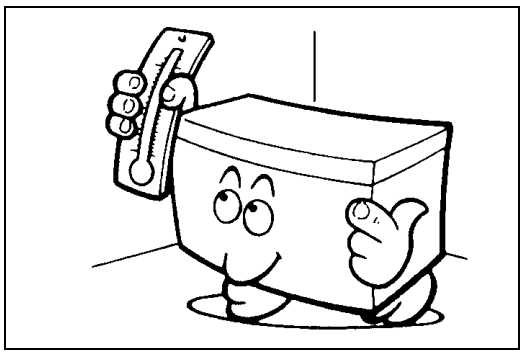
SECTION 3

INSTALLATION

1. INSTALLATION REQUIREMENTS

The installation location should be carefully chosen because the environmental conditions greatly affect the performance of the machine.

1.1 OPTIMUM ENVIRONMENTAL CONDITIONS



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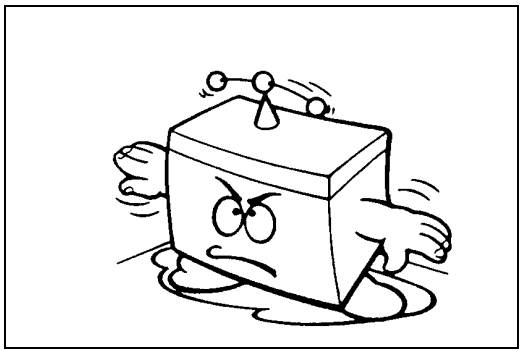

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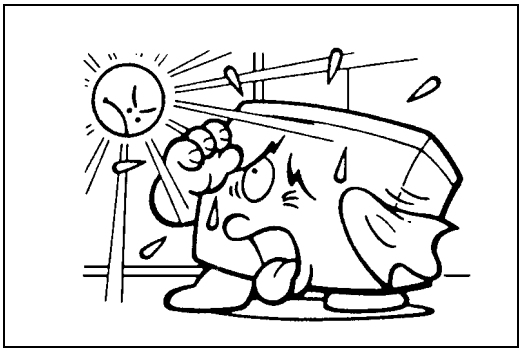
Temperature —	10 to 30°C (50 to 86°F)	On a strong and level base.
Humidity —	20 to 90 % RH	The machine must be level within 5 mm (13/64") both front to rear and left to right.

1.2 ENVIRONMENTS TO AVOID



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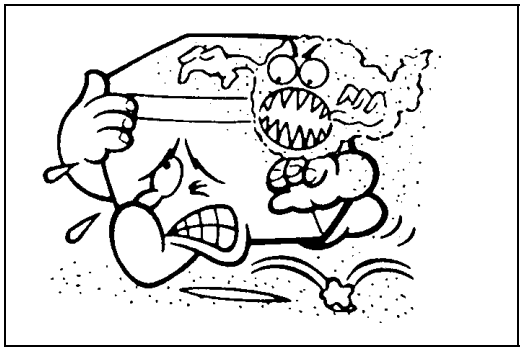
Locations exposed to direct sunlight or strong light (more than 1,500 lux).



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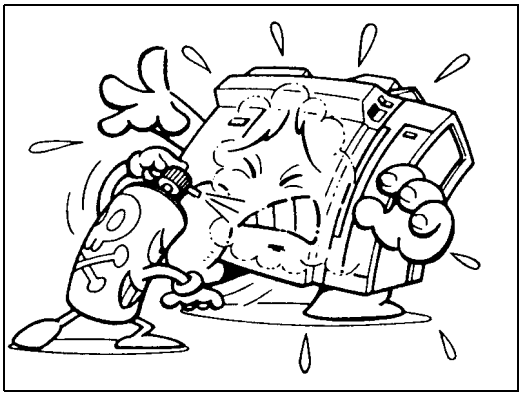
Dusty areas.



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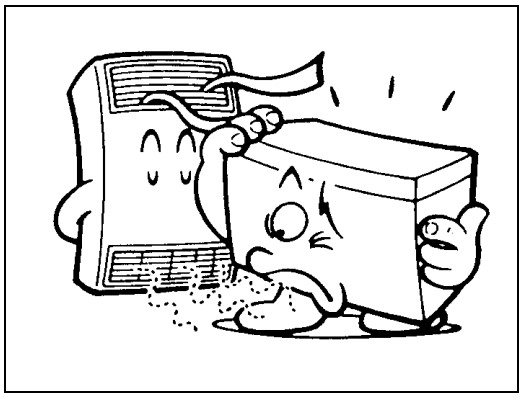
Areas with corrosive gases.



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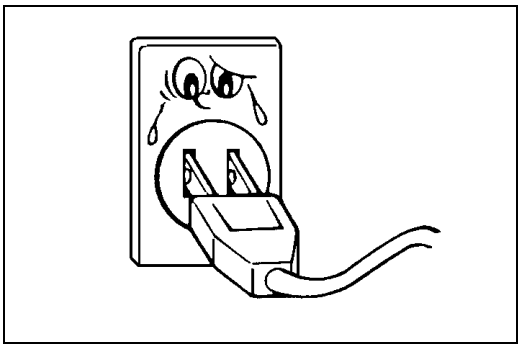
Locations directly exposed to cool air from an air conditioner or reflected heat from a space heater. (Sudden temperature changes from low to high or vice versa may cause condensation within the machine.)

1.3 POWER CONNECTION



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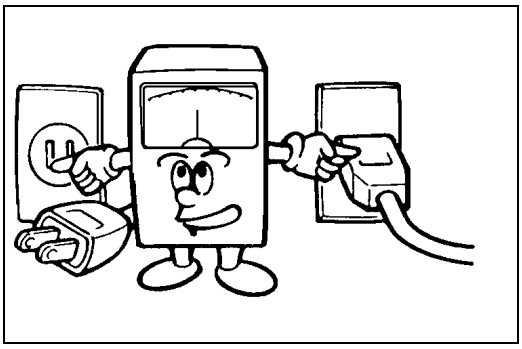
Securely connect the power cord to a power source.

Make sure that the wall outlet is near the machine and easily accessible.

Make sure the plug is firmly inserted in the outlet.



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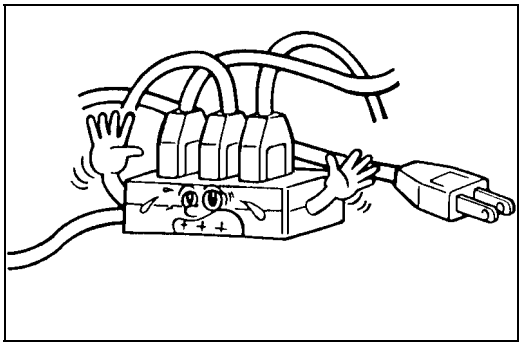
Voltage must not fluctuate more than 10%.



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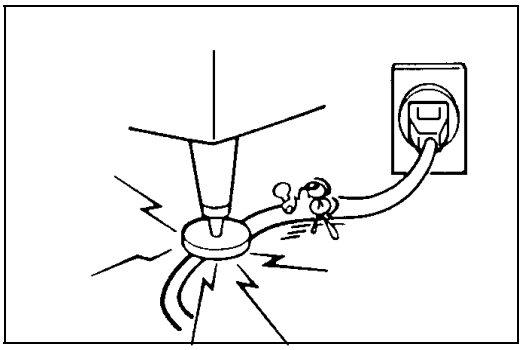
Avoid multiwiring.



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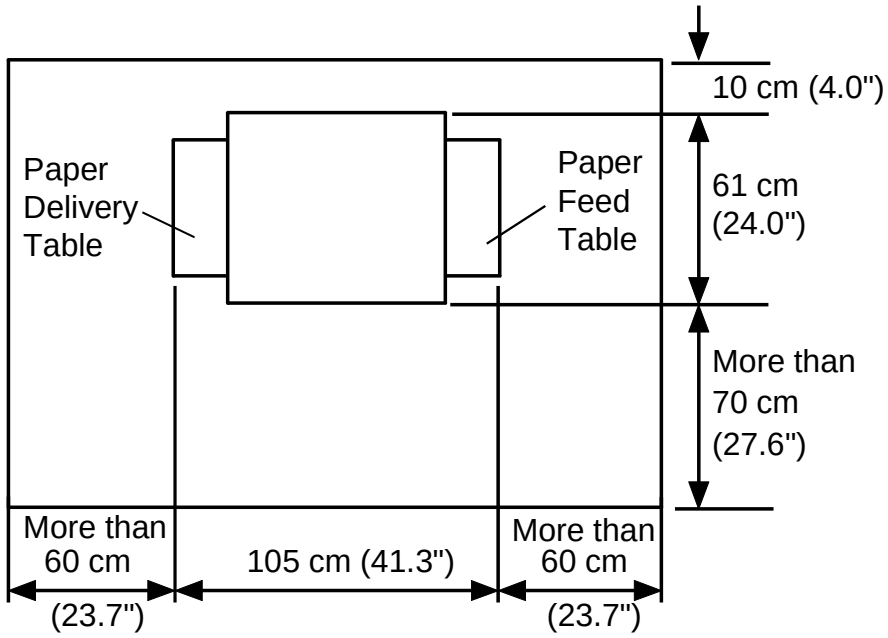
Do not pinch the power cord.

1.4 ACCESS TO THE MACHINE

Place the machine near a power source, providing clearance as shown below.



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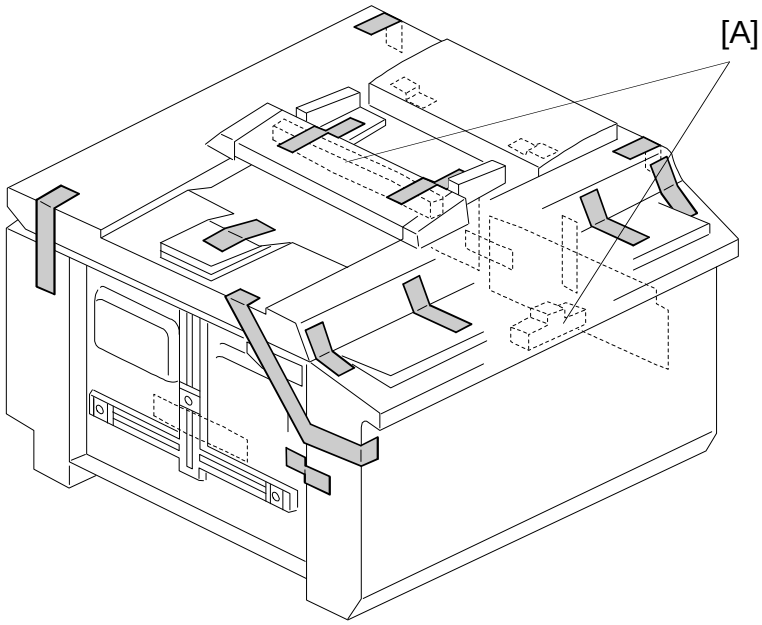
2. INSTALLATION PROCEDURE

1. Make sure that you have all the accessories listed below.

(1) Master Spool 2
(2) Paper Feed Side Pad 2
(3) Operating Instructions - English 1
(4) NECR (Ricoh version only) 1
(5) Brand Stickers
(OEM version only) ..... 1 set
(6) Model Name Plates
(OEM version only) ..... 1 set



C225I511.wmf

2. Mount the machine on a strong and level base.

   NOTE: Use a sturdy desk, or something similar. The machine must be level within 5 mm (0.2") both front to rear and left to right.

3. Remove the tape and string securing the covers and units as shown above.

4. Open the paper feed tray. Then remove the cushions [A] supporting the paper feed table and scanner cover.

5. Firmly insert the plug in the wall outlet.

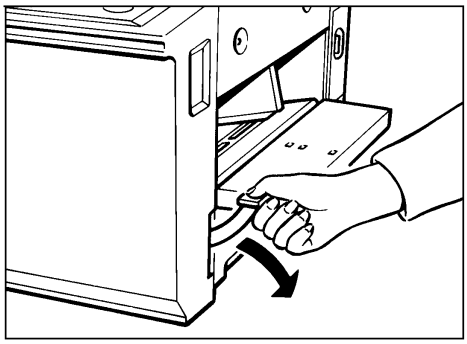
   NOTE: Make sure that the wall outlet is near the machine and easily accessible.

6. Turn on the main switch.

7. Load paper as follows:

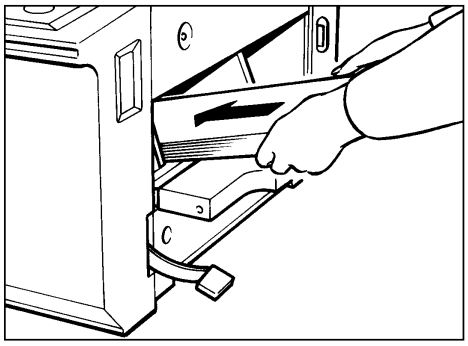
a. Open the paper feed table.

b. Press down the feed roller pressure lever.



C225I512.img

c. Place the paper on the paper feed table.

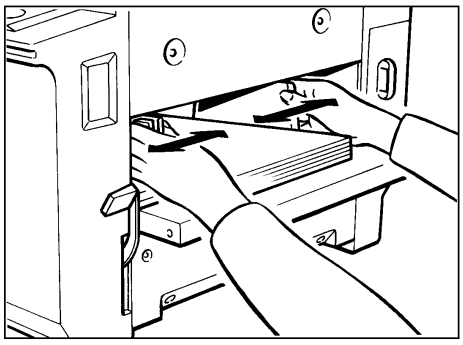


C225I513.img

d. Adjust the paper feed side plates to match the paper size.

e. Lift the feed roller pressure lever.

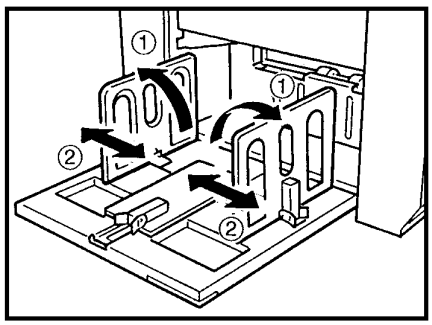
f. Make sure that the paper feed side plates contact the paper lightly.



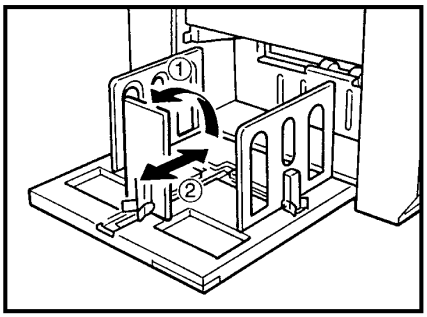
C225I514.img

8. Open the paper delivery table.

9. Move the paper delivery end and side plates to match the print paper size.



C225I516.img



C225I517.img

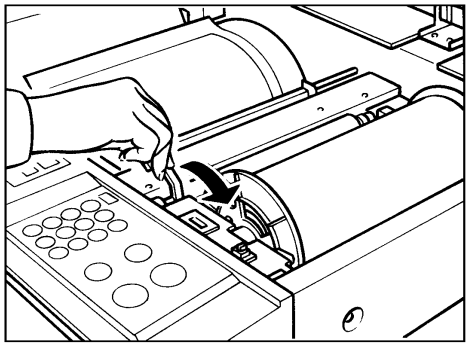
10. Install the master roll as follows:

    a. Insert both spools into the new master roll.

    b. Open the top cover.

    c. Position the master roll.

    d. Lift the pressure release lever to release the platen roller pressure.



C225I518.img

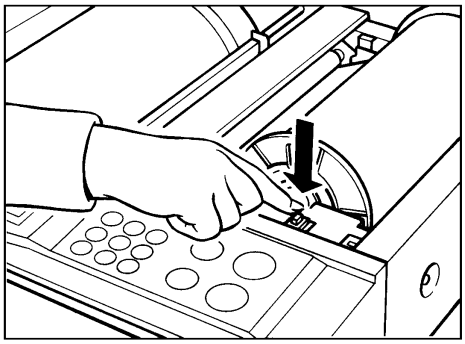
e. Insert the leading edge of the master roll under the platen roller. Then rotate the master roll clockwise a little.

f. Return the pressure release lever to its original position.

g. Turn on the main switch.

C225I519.img

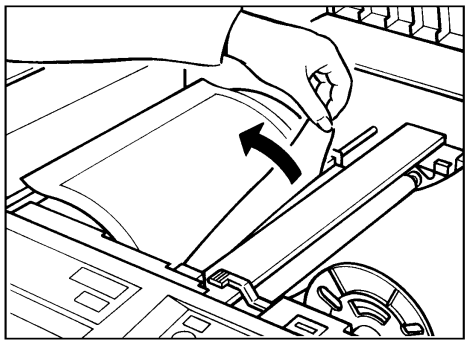
h. Press the master cut button to cut the leading edge of the master roll.



C225I520.img

i. Remove the cut-off portion of the master roll.

j. Close the top cover.



C225I521.img

11. Install the ink cartridge as follows:

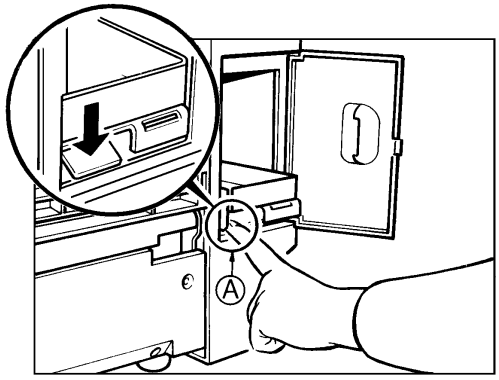
    a. Open the ink cover.

    b. Press down the release lever (green tab [A]). Then pull out the ink cartridge holder.

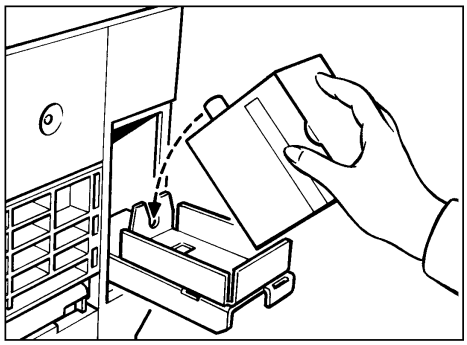
    c. Open the ink cap and install the ink cartridge as shown in the illustration.

    d. Slide in the ink cartridge holder. Then press the setting lever (green tab) until it clicks in position.

    e. Close the ink cover.



C225I522.img



C225I523.img

12. Make some test prints as follows:

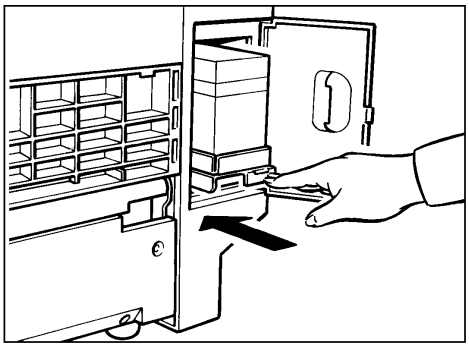
    a. Adjust the original guides to match the original size.

    b. Place an original face down.

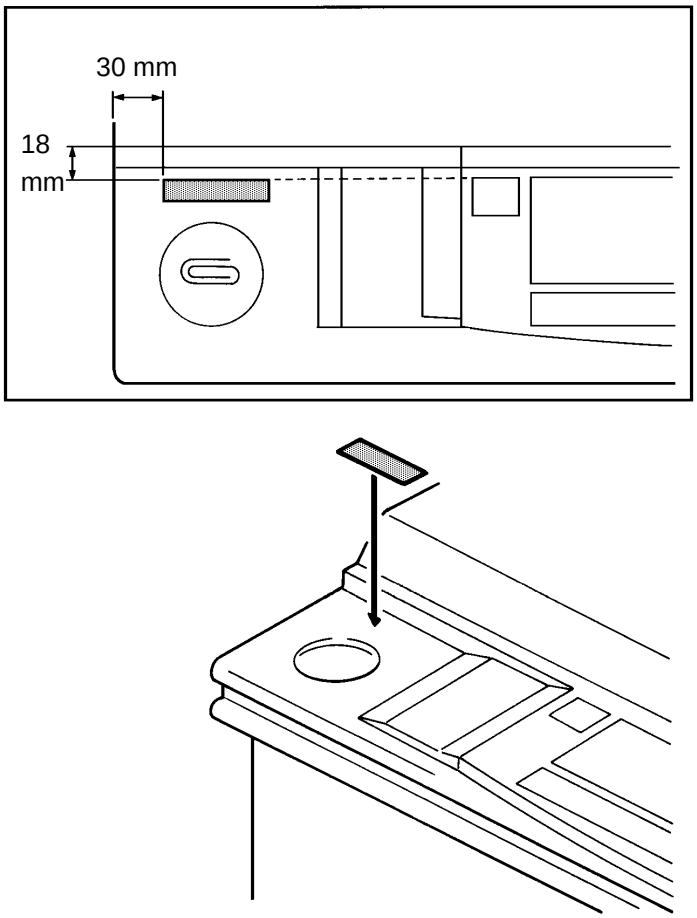
    c. Input the desired number of prints with the number keys and press the Master Making key.

    d. After one sheet of paper is delivered, press the Print Start key to make prints at the lowest print speed until the print image density stabilizes. Use a test chart to check for changes in the image density.

    e. Check the copy image after the image is stabilized.



C225I524.img



C225I525.img

BRAND DECAL AND NAME PLATE INSTRUCTIONS

This procedure is for the OEM version machines only.

1. Peel off the backing film of the brand decal (accessory).
2. Adhere the brand decal to the operation panel as shown.
3. Peel off the backing film of the model name plate (accessory).
4. Adhere the model name plate in the recess on the front cover.

SECTION 4

SERVICE TABLES

1. MAINTENANCE TABLE

The following items should be maintained periodically. There are two sets of intervals - one based on time and the other based on print count. For maintenance items with entries in both of them, use whichever comes first.

C: Clean R: Replace L: Lubricate A: Adjust

Item \ Interval	Time				Print Counter					EM	NOTE
	6M	1Y	2Y	3Y	300K	600K	1M	1.2M	2M		
Scanner/Optics											
Exposure Lamp		C	C	C							Dry Cloth
Original Pick-up Roller				R							
Mirror/Reflector		C	C	C							Soft Cloth
Exposure Glass		C	C	C							Dry Cloth
Original Registration Sensor		C	C	C							Dry Cloth
Original Friction Pad		R	R	R							
Master Feed											
Platen Roller		R	R	R							Expected life is 6K masters.
Master Eject Rollers		C	C	C							Alcohol
Drum Master Sensor										C	Dry Cloth
Paper Feed											
Paper Feed Roller	R	R	R	R	R	R	R	R	R		
Friction Pad	C	C	C	C		R		R			Damp Cloth
Press Roller			R					R			
Paper Feed Roller One-way Clutch							R		R		
Paper Feed Clutch									R		
Feed Roller Bushing		L	L	L							Motor Oil (SAE #20)
Feed Roller Drive Gears		L	L	L							Grease (Albania #2)
Registration/Exit Sensors	C	C	C	C							Dry Cloth
2nd Feed Roller	C	C	C	C							Dry Cloth
Transport Unit Drive Gear Bearing		L	L	L							Motor Oil (SAE #20)
Transport Unit Gears		L	L	L							Grease (Albania #2)
Drum and Ink Supply											
Cloth Screen			R					R			
Drum Drive Gears and Cam		L	L	L							Grease (Albania #2)
Drum Flange Bushing		L	L	L							Motor Oil (SAE #20)
Inside/Outside of the Drum		C	C	C							Alcohol
Ink Pump Nozzle		C	C	C							Alcohol

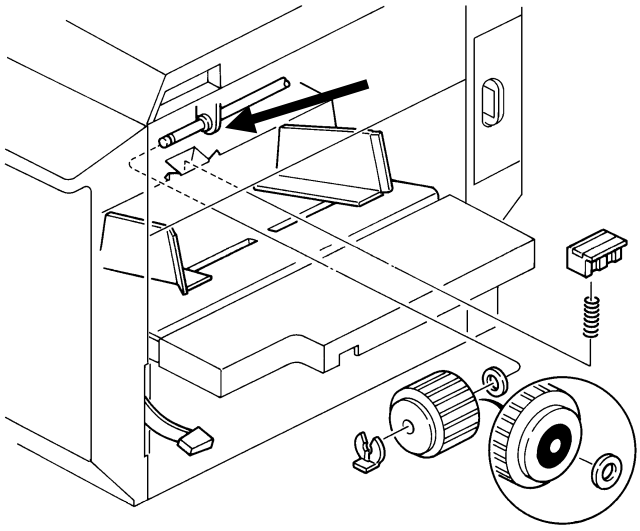
Service Tables

Item \ Interval	Time				Print Counter					EM	NOTE
	6M	1Y	2Y	3Y	300K	600K	1M	1.2M	2M		
Others											
Timing Belt Tension			A								
Press Roller Lock Lever Position			A								

2. LUBRICATION POINTS

2.1 FEED ROLLER BUSHING

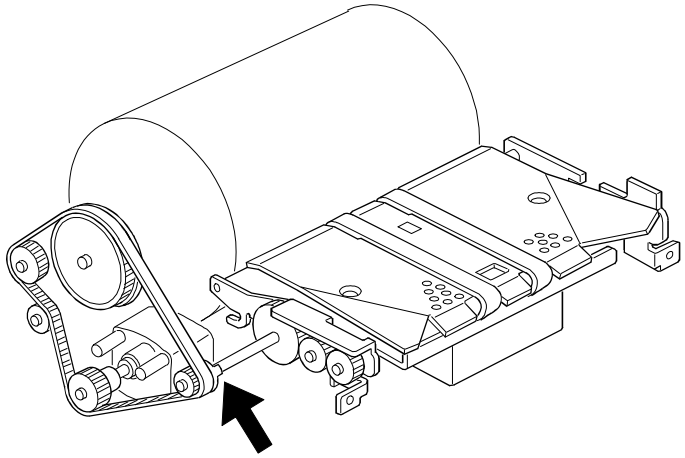
Lubricant: Motor Oil



C225M500.img

2.2 TRANSPORT UNIT DRIVE GEAR BEARING

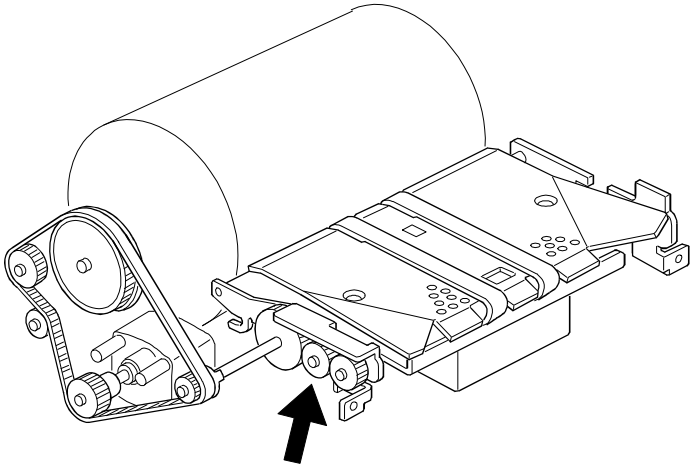
Lubricant: Motor Oil



C225M504.wmf

2.3 TRANSPORT UNIT GEARS

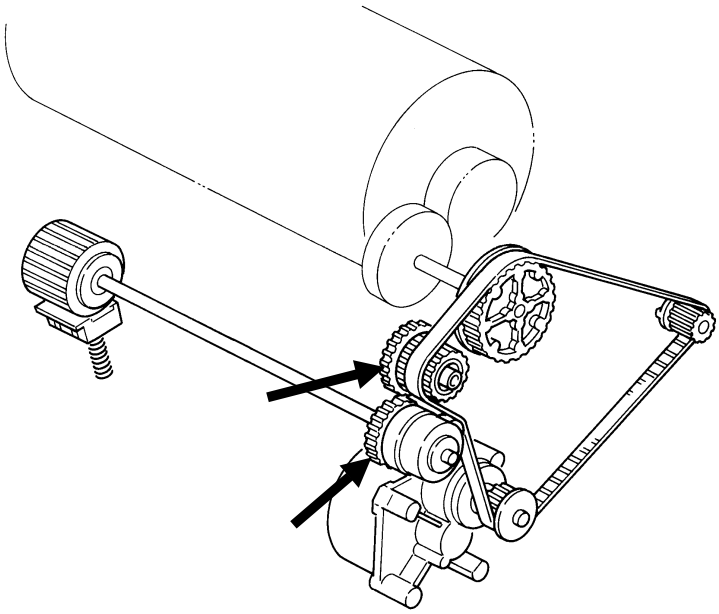
Lubricant: Grease (Albania #2)



C225M505.wmf

2.4 FEED ROLLER DRIVE GEARS

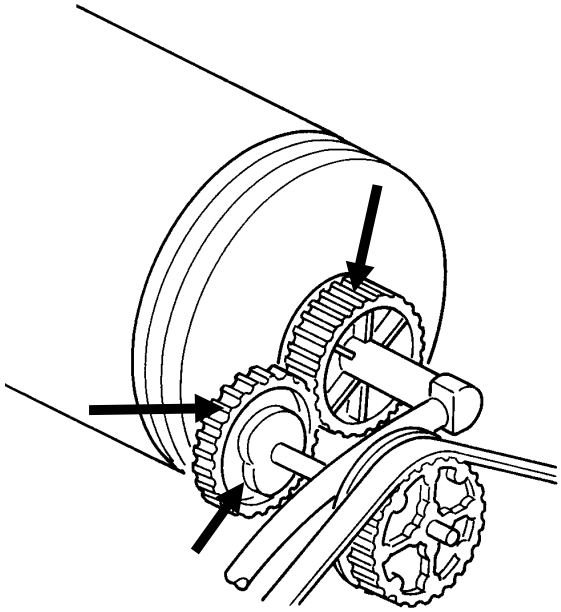
Lubricant: Grease (Albania #2)



C225M501.img

2.5 DRUM DRIVE GEARS AND CAM

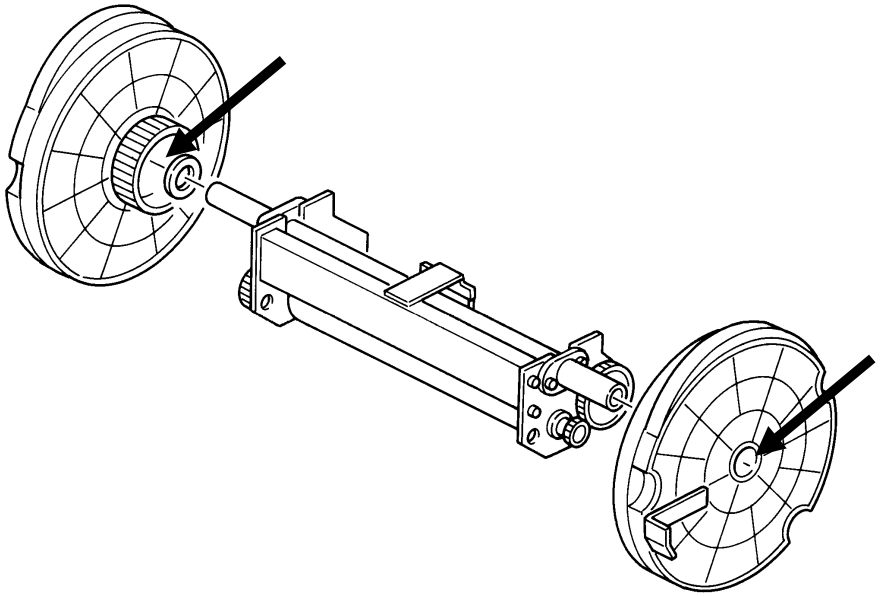
Lubricant: Grease (Albania #2)



C225M502.img

2.6 DRUM FLANGE BUSHING

Lubricant: Motor Oil



C225M503.img

3. SPECIAL OPERATION MODES

3.1 SKIP FEED MODE

Customers can select the number of rotations of the drum for one print by the following key operation.

- While pressing the Clear key and Stop key, select the number of rotations of the drum while one sheet of paper is fed using the Number keys (1 to 9 can be selected.).

To cancel the skip feed mode, follow one of the procedures below.

- While pressing the Clear key and Stop key, select 1 using the Number key.
- While pressing the Reset key, press the Clear key.
- Turn the main switch off and on.

3.2 ECONOMY MODE

Customers can select this mode by the following key operation. If this mode is selected, the thermal head energy (pulse width) is reduced by 15%. The image will be lighter and ink consumption will be reduced.

- While pressing the Clear key and Image Density key, press the Image Mode key.

To cancel the economy mode, follow one of the procedures below.

- While pressing the Reset key, press the Clear key.
- Turn the main switch off and on.

3.3 QUALITY START MODE

This mode increases the image density of the 1st print. Normally, the first print after the proof print is made at the selected copy speed (70, 100 or 130 rpm). If the Quality Start mode is selected by the following key operation, the 1st print is made at 30 rpm.

- While pressing the Clear key, press the and keys.

To cancel the quality start mode, follow one of the procedures below.

- While pressing the Reset key, press the Clear key.
- Turn the main switch off and on.

4. INPUT/OUTPUT CHECK MODE

The electrical components can be checked with this program. The input check mode can check if the sensors or switches function correctly. The output check mode can manually activate the electrical devices, such as motors and solenoids.

4.1 ACCESS PROCEDURE

1. Turn on the main switch while holding down the Print Start, Stop, and Clear keys at the same time.
2. The memory indicator displays "01", which indicates that the Input Check mode is selected.
3. To select the Output Check mode, press the Memory/Class key. The memory indicator displays "00".

4.2 DRUM FREE RUN MODE

1. Select either the Input or Output Check mode.
2. Select the Photo mode by pressing the Image Mode key.
3. To start the free run, press the Image Density key. Operation depends on the Image Density selection as follows:

Image Density Selection	Drum Speed
Lighter	30 rpm
Normal	Stop
Darker	30 rpm
Darkest	70/100/130 rpm (see Note)

NOTE: The drum speed can be changed with the Speed key.

4.3 INPUT CHECK MODE

By entering a number listed below after accessing the input check mode, the input level from each electrical device can be checked. Depending on the electrical device's condition, the beeper sounds and the machine status indicators light.

No.	Device	Conditions when the beeper sounds
1	Feed Start Timing Sensor	The sensor is actuated
2	Feed Jam Timing Sensor	The sensor is actuated
3	Exit Jam Timing Sensor	The sensor is actuated
4	Master Eject Position Sensor	The sensor is actuated
5	Drum Master Sensor	The sensor detects a master on the drum
6	Cover Safety	The scanner unit is open
7	Master End Sensor	The sensor detects no master
8	Master Cut Switch	The switch is pressed
9	Right Cutter Switch	The switch is actuated
10	Left Cutter Switch	The switch is actuated
11	Paper End Sensor	The sensor detects no paper
12	Registration Sensor	The sensor detects paper
13	Exit Sensor	The sensor detects paper
14	Master Clamper Switch (Open)	The clamper is open
15	Master Clamper Switch (Close)	The clamper is closed
16	Original Set Sensor	The sensor detects an original
17	Original Registration Sensor	The sensor detects an original
18	ADF Open Switch	The ADF is closed
19	Master Eject Sensor	The sensor is actuated
20	Pressure Plate H.P. Sensor	The sensor is actuated
21	Full Master Sensor	The sensor is actuated
22	Paper Table Set Switch	The switch is on
23	DIP SW 103-1	The switch is on
24	DIP SW 103-2	The switch is on
25	DIP SW 103-3	The switch is on
26	DIP SW 103-4	The switch is on
27	DIP SW 103-5	The switch is on
28	DIP SW 103-6	The switch is on
29	DIP SW 103-7	The switch is on
30	DIP SW 103-8	The switch is on

4.4 OUTPUT CHECK MODE

You can turn on each electrical device listed below individually. The procedure is as follows:

1. Select the output check mode.
2. Enter the number of the device which you would like to turn on.
3. Press the Print key to turn on the device.
4. To turn off the device, press the Clear key.

NOTE: Some of these are devices are turned on only while the Print key is pressed (marked with *).

⚠ CAUTION:

1. Do not turn the drum manually nor by using the output mode when the clamper is opened with the output mode.
2. Do not open the clamper when the drum is not at the master feed or eject positions. Use the drum stop functions (No. 15 or 16) before opening the clamper.

No.	Device/Function	Note
1	Thermal Head	Power is applied to the thermal head for 30 seconds after the Print key is pressed. While the power is applied to the thermal head, the beeper sounds.
2	Paper Feed Clutch *	
3	Pressure Release Solenoid *	
4	Master Eject Motor *	
5	Ink Supply Motor *	
6	Master Cutter Motor	The motor stops when one of the cutter time sensors is activated.
7	Print Counter	The counter is increased by one each time the Print key is pressed.
8	Master Counter	The counter is increased by one each time the Print key is pressed.
9	Exposure Lamp	
10	Master Clamper Motor (Open) *	The motor stops when the master clamper switch detects the clamper open condition.
11	Master Clamper Motor (Close) *	The motor stops when the master clamper switch detects the clamper closed condition.
12	Master Feed Motor	
13	Original Feed Motor	
14	Shading Distortion Correction	The shading distortion memory is rewritten.
15	Drum Stop (Master Exit)	The drum turns and stops at the master eject position automatically.
16	Drum Stop (Master Feed)	The drum turns and stops at the master feed position automatically.

No.	Device/Function	Note
17	Pressure Plate Motor * (To Home Position)	The motor moves pressure plate towards to the home position. The motor stops when the pressure plate H.P. sensor is actuated.
18	Pressure Plate Motor * (To the Compression Position)	The motor moves the pressure plate towards to the master compression position. The motor stops when the full master box sensor is actuated.
19	Air Knife Motor *	
20	Vacuum Motor	
21	Operation Panel Indicators	Turns on all the indicators on the operation panel.

5. SERVICE TABLES

5.1 TEST POINT TABLE

Main PCB

No	Usage
TP101	–12 V
TP102	Ink Level (Standard Pulse)
TP103	Ink Level (Detection Pulse)
TP104	GND–b
TP105	+12 V
TP106	+24 V
TP107	4MHz Clock
TP108	+38 V
TP109	+5 V
TP110	GND–a
TP111	Original Registration Sensor

A/D Conversion PCB

No	Usage
TP201	OS Signal (CCD Output)
TP202	VS Signal (Inverted and Amplified CCD Output)
TP203	GND
TP204	Scan Line Trigger

5.2 VARIABLE RESISTOR TABLE

Main PCB

No	Usage
VR101	Ink Detection Adjustment
VR102	Original Registration Sensor Adjustment

A/D Conversion PCB

No	Usage
VR201	White Level Adjustment

Power Supply PCB

No	Usage
VR301	Factory Use Only (+5V Adjustment)
VR401	Thermal Head Voltage Adjustment

5.3 DIP SWITCH TABLE

Main PCB

DPS 101	OFF	ON
1	Outputs a Test Pattern	-
2	Dither Matrix (Screw Pattern)	-
3	Dither Matrix (Bayer Pattern)	-
4	Dither Matrix (8 x 8 Pattern)	-
5	Dither Matrix (6 x 6 Pattern)	Dither Matrix (4 x 4 Pattern)
6	Normal	Edge Emphasis in Photo Mode
7	Normal	Enable Data Noise Filter
8	Production Use Only	**Must be ON**

Factory Setting

DPS 101	
1	ON
2	ON
3	ON
4	ON

DPS 101	
5	ON
6	OFF
7	OFF
8	ON

If two or more of DPS 101-2 ~ 6 are OFF, the image will not be produced.

DPS 102	
1	Not Used

DPS 102			
2	**3**	**4**	**Leading Edge Registration Adjustment**
OFF	OFF	OFF	+2.4 mm
OFF	OFF	ON	+1.6
OFF	ON	OFF	+0.8
OFF	ON	ON	0 (Standard)
ON	ON	ON	–0.8
ON	ON	OFF	–1.6
ON	OFF	ON	–2.4
ON	OFF	OFF	–3.2

DPS 103			
1	**2**	**3**	**Vertical Magnification**
OFF	OFF	OFF	+1.75%
OFF	OFF	ON	+1.25
OFF	ON	OFF	+0.75
OFF	ON	ON	0 (Standard)
ON	OFF	OFF	–0.75
ON	OFF	ON	–1.25
ON	ON	OFF	–1.75
ON	ON	ON	–2.25

DPS103		Description
4	**5**	Trailing Edge Erase Margin Adjustment
OFF	OFF	+1mm
OFF	ON	+2 mm
ON	OFF	+3 mm
ON	ON	–1mm

DPS 103	OFF	ON
6	Normal	Enable Key Counter Operation
7	LG version	A4 version
8	Normal	Print and master counters do not change.

5.4 LED TABLE

Main PCB

LED #	OFF	ON
101	Insufficient Ink	Sufficient Ink
102	–	During Paper Feed

5.5 FUSE TABLE

Main PCB

FUSE #	Rated Current	Protect	
		Voltage	**Device**
101	630 mA	24 V	Master Cutter, Master Clamper, and Pressure Plate Motors
102	4 A	38 V	Air Knife Motor