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## **1. INTRODUCTION**

We at Mitsubishi are very grateful to you for selecting the Silver Master Platemaker CP-500SII. The Silver Master Platemaker CP-500SII deals with a wide size range of plates from B4 to A3, in combination with the Silver Master RII (SLM-II) or Silver Litho-plate F (SLP-F).

This CP-500SII platemaker produces offset master plates directly from the original copy with a simple operation, eliminating the need for any intermediate film process.

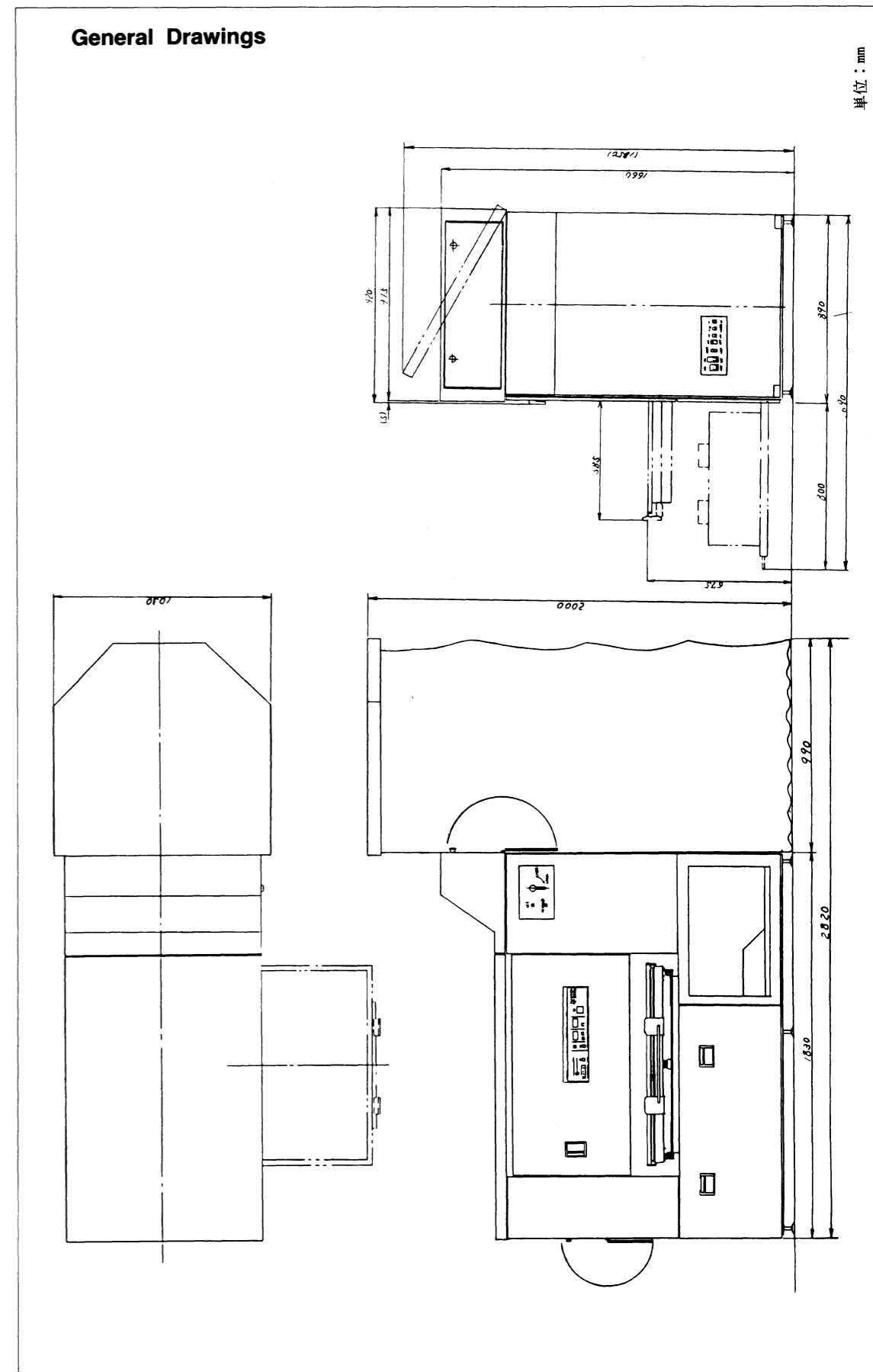
This operation manual provides information for ensuring continued satisfactory operation of the machine. Please read it prior to usage.

For information on printing methods, please refer to our booklet, "Silver Master Technical Guide."

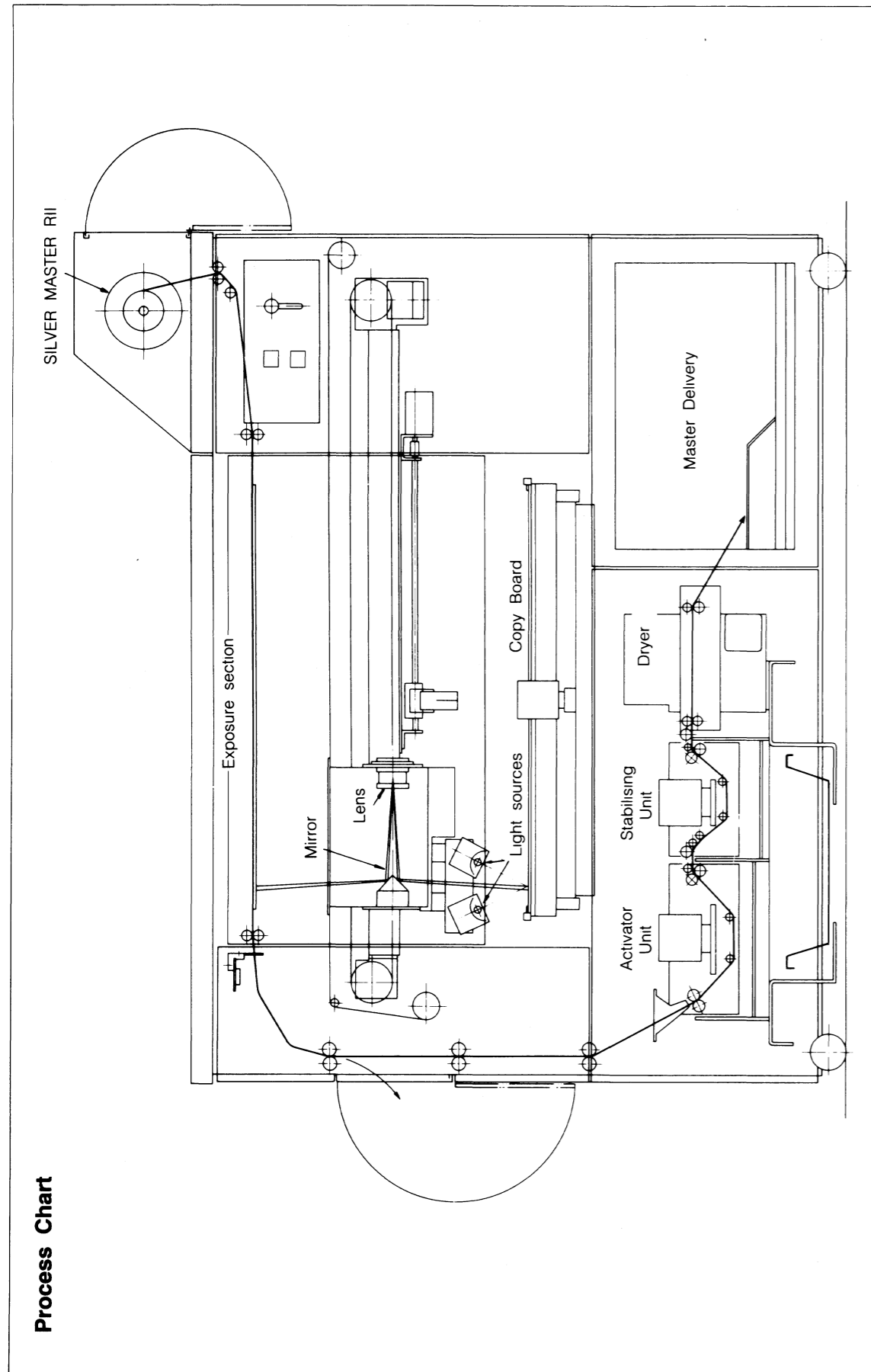
## 2. SPECIFICATIONS

Master width:	254mm (10"), 279mm (11"), 305mm (12"), 404mm (15.9") 508mm (20"), 550mm (21.5/8"), 570mm (22.4") Master roll is used with a size variable slide spool. (spool shaft diameter: 25)
Master to be used:	SLM-R11, SLP-F
Master feed length:	370mm ~ 820mm
Effective exposure size:	550mm × 790mm
Blank exposure:	570mm × 820mm
Max. copy size:	550mm × 790mm
Copy setting:	Drawer type copy board Copy loading with its image face up Copy positioning sheet available
Replenisher tank capacity:	Activator, stabilizer each 2 liters
Temperature control:	800W panel heater with
Dryer:	1 kW heater with thermo control and high-low switch
Double exposure mode:	(185 ~ 410mm) × 2
Lens:	f:260mm, in-mirror type
Magnification:	100% (fixed)
Exposure method:	Slit system (scanning by lens & light sources.)
Exposure control:	Power thyristor (with light-level slide control)
Light sources:	Two halogen lamps, 130V, 1.5 kW
Master rewind:	Auto rewinding with a button
Master splice detection:	Alarm buzzer, automatic over-cut
Dehumidifier:	Defogger fan & heater (usually ON)
Platemaking rate:	660mm/min Initial: 120 sec (60 Hz) 140 sec (50 Hz) Cyclic: 58 sec (60 Hz) 68 sec (50 Hz)
Machine dimensions:	1860 (W) × 920 (D) × 1660 (H) mm (top cover open: height 1850mm) 2020 (W) × 1030 (D) × 2000 (H) at use of miniature darkroom
Weight:	650kg (Main unit 550kg; Processor 100kg) 700kg (processing solutions and master roll included)
Electricity:	1ø 100~240V (50 ~ 60 Hz)
Option:	Total counter Miniature darkroom

## 3. GENERAL DRAWINGS



## 4. PROCESS CHART

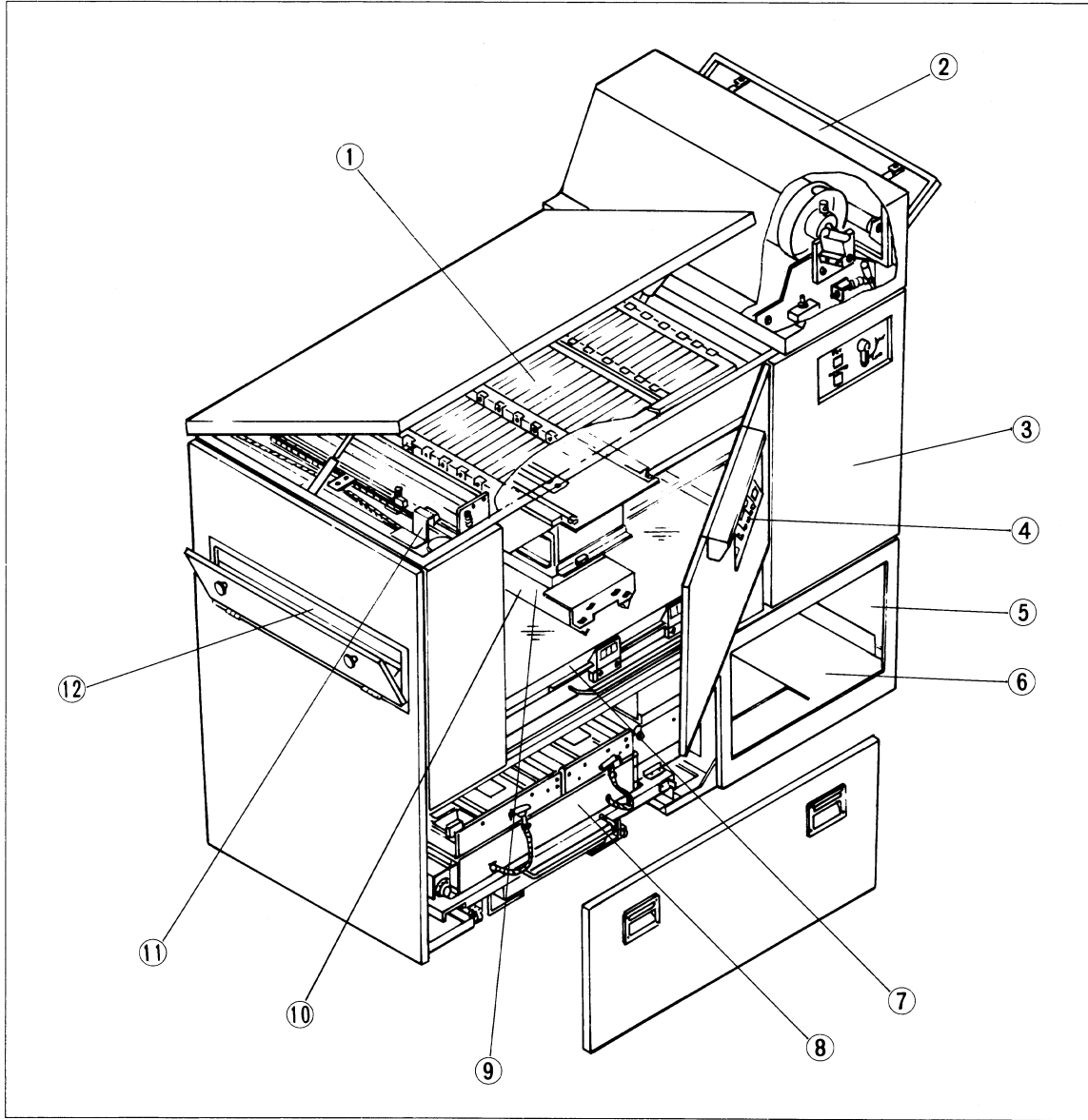


## 5. SITTING CONDITIONS

- ① Use wiring which has a sufficient capacity to withstand the power of 100V 1.2 kW and 200V 6.1 kW single-phase.  
The machine is provided with built-in microcomputer, so if the power supply capacity should become insufficient, the voltage would drop, which could cause malfunctions. In case the voltage may become unstable, it is advisable to install a constant-voltage device.
- ② The room where the machine is installed should meet the following conditions:
  1. Room temperature: 10 ~ 30°C
  2. Room humidity: 40 ~70%
  3. There is No vibration.
  4. Even floor surface is even.
  5. The floor is solid enough to withstand the machine weight (approx. 700kg when the machine stands by with chemicals for operation).
  6. There is no possibility of exposure to direct sunlight.

# 6. DESCRIPTIONS AND FUNCTIONS OF THE COMPONENTS

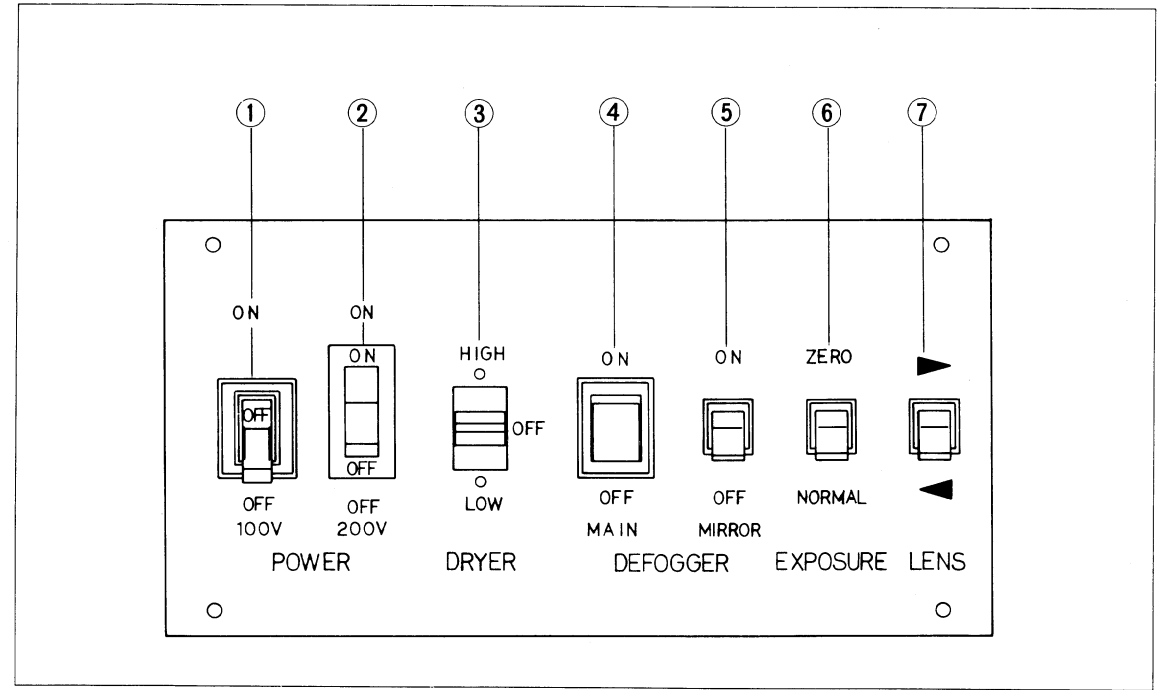
## 6-1 General Construction



- ① Exposure section
- ② Master magazine
- ③ Control box
- ④ Auxiliary control panel
- ⑤ Main control panel
- ⑥ Master delivery
- ⑦ Copy board
- ⑧ Processor
- ⑨ Light source
- ⑩ Lens-mirror assembly
- ⑪ Cutter assembly
- ⑫ Carrier (Master takeout hole)

## 6-2 Detailed Descriptions of the components

### 6-2-1 Main Control Panel



- ① **100V POWER Switch**  
A 15 A no-fuse breaker. When this switch is turned on, the operation circuit, processor motor and activator heater are energized and ready for operation.
- ② **200V POWER Switch**  
A 40 A no-fuse breaker. When this switch is turned on, the light sources and dryer are energized and ready for operation.
- ③ **DRYER Switch**  
This switch should be set in the HIGH, LOW or OFF position depending on the environment and the type of master.
  1. HIGH  
This position is used when the atmospheric temperature is low and the master might not be dried sufficiently or when the Silver Litho-Plate F (SLP-F) is used.
  2. LOW  
This position is used when the Silver Master RII (SLM-RII) is used.
  3. For power saving, this DRYER switch may be off while the 100V and 200V POWER switches are on though the machine is not to be operated for many hours.

NOTE:  
To restart the machine, first set the switch to the HIGH or LOW position, and press the START button after waiting a few minutes. If the START button is pressed immediately after it is set to either position, the master would not be dried well.
- ④ **MAIN DEFOGGER Switch**  
When this switch is turned on, the dehumidifier, located underneath the master magazine, runs. While the switch is on, the dehumidifier blows hot air into the machine to remove moisture on the focal plane glass, mirror, and lens and inside the machine. The dehumidifier is protected by a machine electric circuit fuse and a thermo-fuse for safety.

## How to use the dehumidifier

1. Run it when the atmospheric humidity is high.
2. Run it when the temperature difference is great. Especially when the heater is used, the temperature difference between the machine and the room might be great at the start of the work day or when the heater is turned on in the morning. This can cause dew condensation in the machine. If such is the case, turn on this switch at the end of the work day and run it until the temperature difference between the machine and the room is very small.

### ⑤ MIRROR DEFOGGER Switch

When this button is pressed, the fan, located in the lens-mirror assembly, runs to prevent the mirror and lens from being fogged.

CAUTION: Before photographing, be sure to turn off this switch.

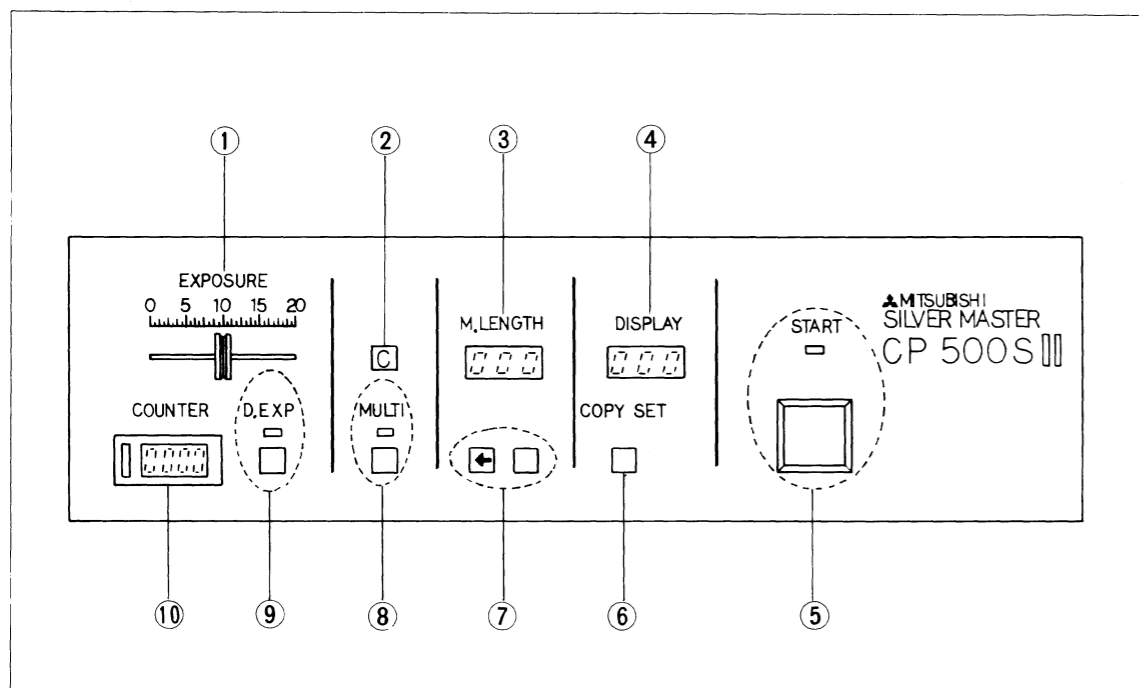
### ⑥ EXPOSURE Switch

When the START button is pressed with this switch at NORMAL, the light sources light up to expose the master. Usually the NORMAL position is used. When the START button is pressed with it at ZERO, the light sources do not light up but the prescribed operations are automatically performed, so the master is delivered unexposed. (This procedure is used, for example, in the case of an operational error in the use of the MULTI-EXPOSURE switch.)

### ⑦ LENS Switch

The lens-mirror assembly moves when this switch is pressed and held. Press up to move it away from the original position; press down to move it toward the original position. This switch is used in the adjustment or inspection of the machine. Here the light sources do not light.

## 6-2-2 Auxiliary Control Panel



### ① EXPOSURE (Exposure Control)

This control is used to control the exposure level according to the image density and type of the copy.

The larger numbers increase exposure while the small numbers decrease exposure.

### ② C (Clear Key)

This key is used for the following purposes:

1. To stop the sounding of the buzzer when the master is exhausted or jammed, and
2. To stop exposure,  
(When exposure is stopped by the Clear key, the master is delivered.)

### ③ M. LENGTH Readout

Indicates the master feed length in mm

### ④ DISPLAY

Indicates operational states and various errors by code. (Refer to "11. DISPLAY")

### ⑤ START (Exposure Start Lamp and Button)

The light is green when the machine is ready for photographing. When this button is pressed while the START lamp is on, photographing, developing, stabilizing and drying operations are automatically performed.

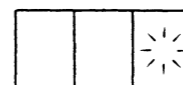
### ⑥ COPY SET Key




When this key is pressed, the fluorescent lamp for the copy board lights up. This key is used in positioning the copy.

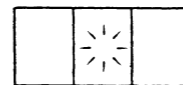
### ⑦ M. LENGTH (Master Feed Length Set Keys)


These keys are used to set the master length.

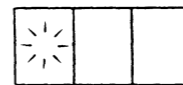
Proceed as follows to set the master length:




1. Pressing the left-hand  key once causes the first (right) digit (units) of the M. LENGTH readout to flash. A figure can be entered for the flashing place. Enter the desired figure for the units place by pressing the right-hand  key once or more times until that desired figure appears. Then press the left-hand  key once again.



2. This causes the tens (center) place to flash. Enter the desired figure for the tens place using the same procedure as above (1). Then press the left-hand  key again.



3. This causes the hundreds place on the left to flash. Enter the desired figure for the hundreds place using the same procedure. Then press the  key again.

### ⑧ MULTI (Multiple Exposure Set Lamp and Key)

When this key is pressed, the MULTI lamp will light. While the lamp is on, the master is not transported to the next stage even after one exposure is complete.

This button is used for making two or more exposures on the same plate. Be sure to turn the button off (make sure the lamp is off) before the last exposure for the same plate is started.

### ⑨ D. EXP (Double Exposure Key)

When this key is pressed, the D. EXP. lamp lights and the machine enters the double exposure mode. When the key is pressed again, the D. EXP lamp goes out and the double exposure mode is cancelled. This mode can be used when the set master feed length is between 184 and 410mm. If the key is pressed when the set master feed length is not within this range, **Err** appears on the DISPLAY and exposure cannot be started.

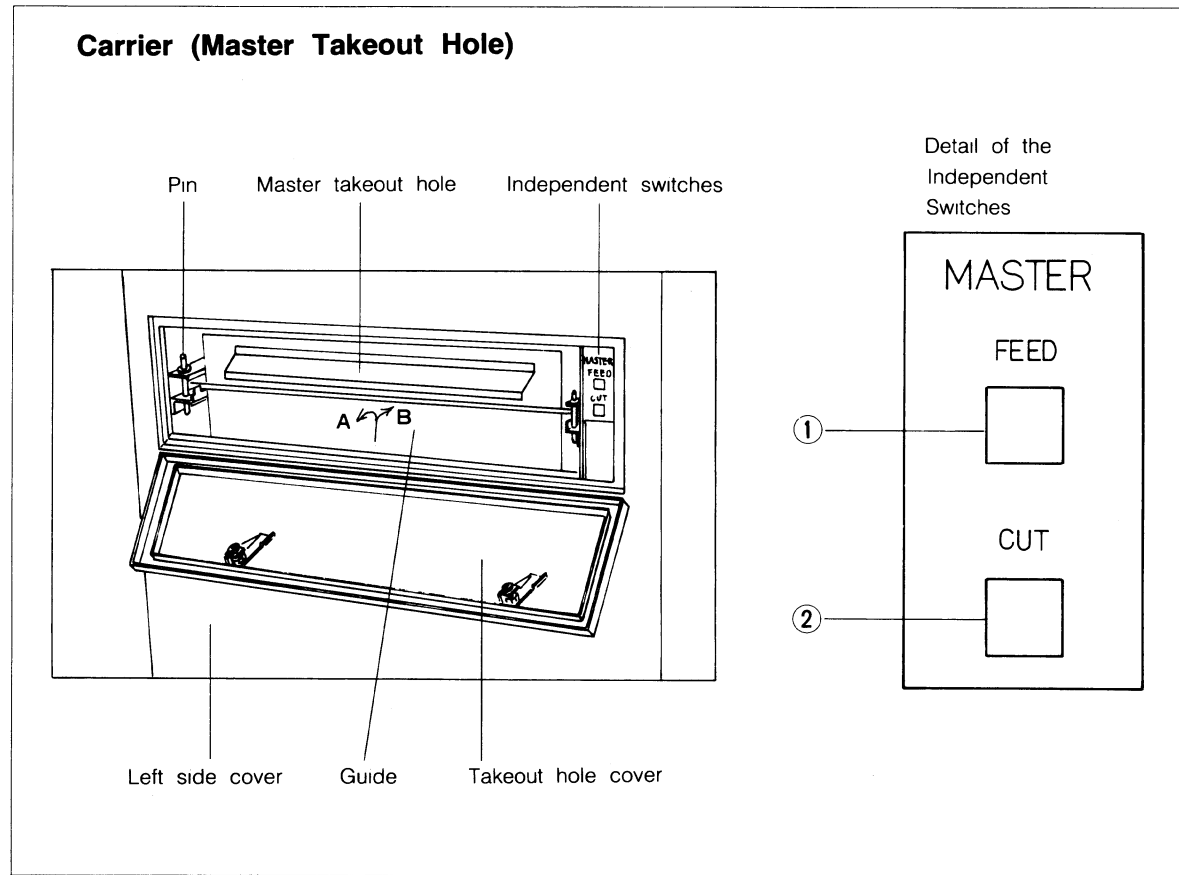
In the double exposure mode, after the first exposure is made, the master moves by the amount equivalent to the set master feed length; then the second exposure is made and the master moves by the same amount and is cut into a plate (where the first and second exposures are included); finally the plate is carried into the processor.

### ⑩ COUNTER

Indicates the number of plates so far made. When the reset switch is at the lock position, the counter is not reset even if the button is pressed by mistake. Usually during operation, it should be at the lock position.

### 6-2-3 Carrier (Master Takeout Hole)

The structure inside the master takeout hole cover is shown in the figure below. When a master roll is loaded, this hole can be used for removing the fogged leading part of the roll. (Normally, be sure to keep the cover closed.)



#### ① FEED (master feed switch)

Master can be fed when this switch is pressed and held. The switch is used for removing the fogged leading part of a roll just loaded. Lift the guide a bit to move it to the B position (to close the carrier), and the master will not be transported into the processor but will come out of the machine, at the takeout hole.

Be sure to press and hold the switch until the master leading part appears (about 35cm) from the takeout hole. Then press the CUT switch and take out the cut piece by hand.

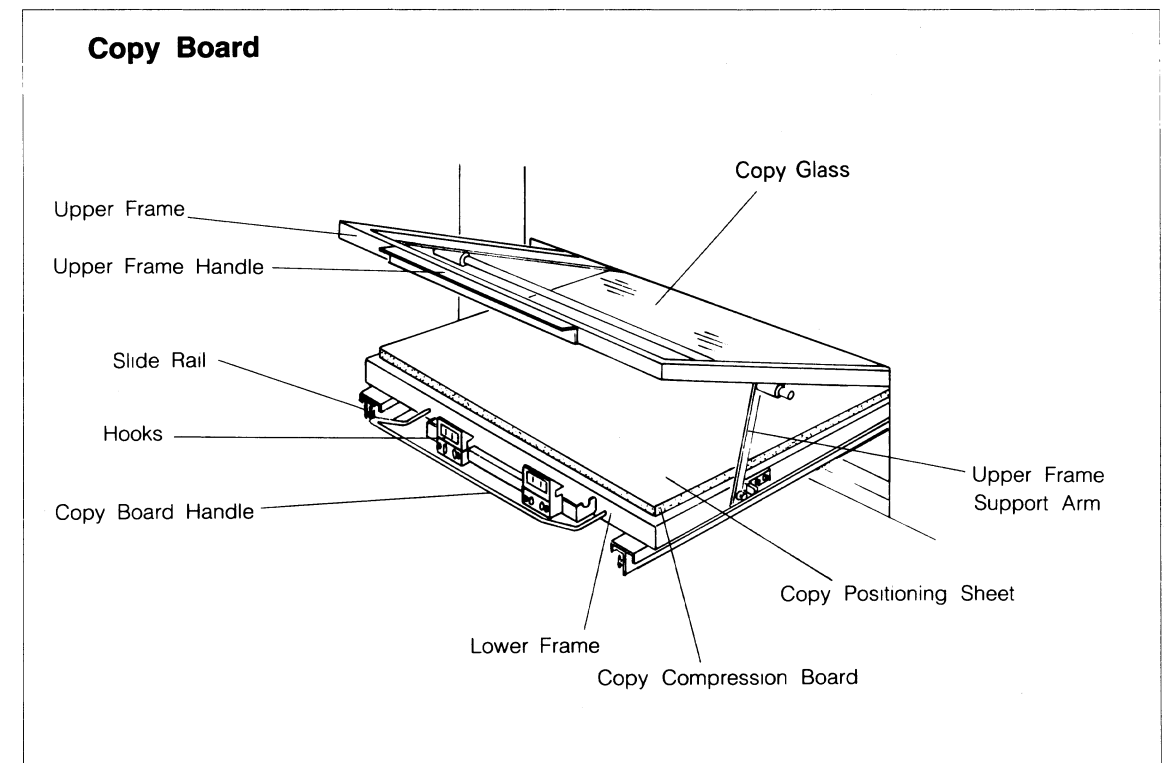
NOTE:

If the guide remains in the B position, the START lamp does not light and exposure cannot be started while **000** is on the DISPLAY. Be sure to place the guide in the A position (to open the carrier) when making an exposure.

#### ② CUT (cut switch)

When this switch is pressed, the cutter can be independently operated. Use this switch, for example, after feeding the master using the FEED switch, for test cutting after the replacement of the cutter blade or when checking the exposure condition.

### 6-2-4 Copy Board



#### 1) Loading the copy

① Draw out the copy board slowly holding the copy board handle. The copy board pulls out along the slide rails and stops in the specified position by the magnet effect. When drawing the copy board, at first it does not slide very smoothly because of the magnet effect.

② After releasing the hooks, hold the upper frame handle and lift the upper frame gently. The upper frame will be stopped in the specified position automatically by means of the upper frame support arm linked with it.

Take care not to handle the copy board abruptly because it stands still by the magnetic effect.

③ Place the copy on the copy positioning sheet with its image face up. (Refer to next page) Positioning the Copy.)

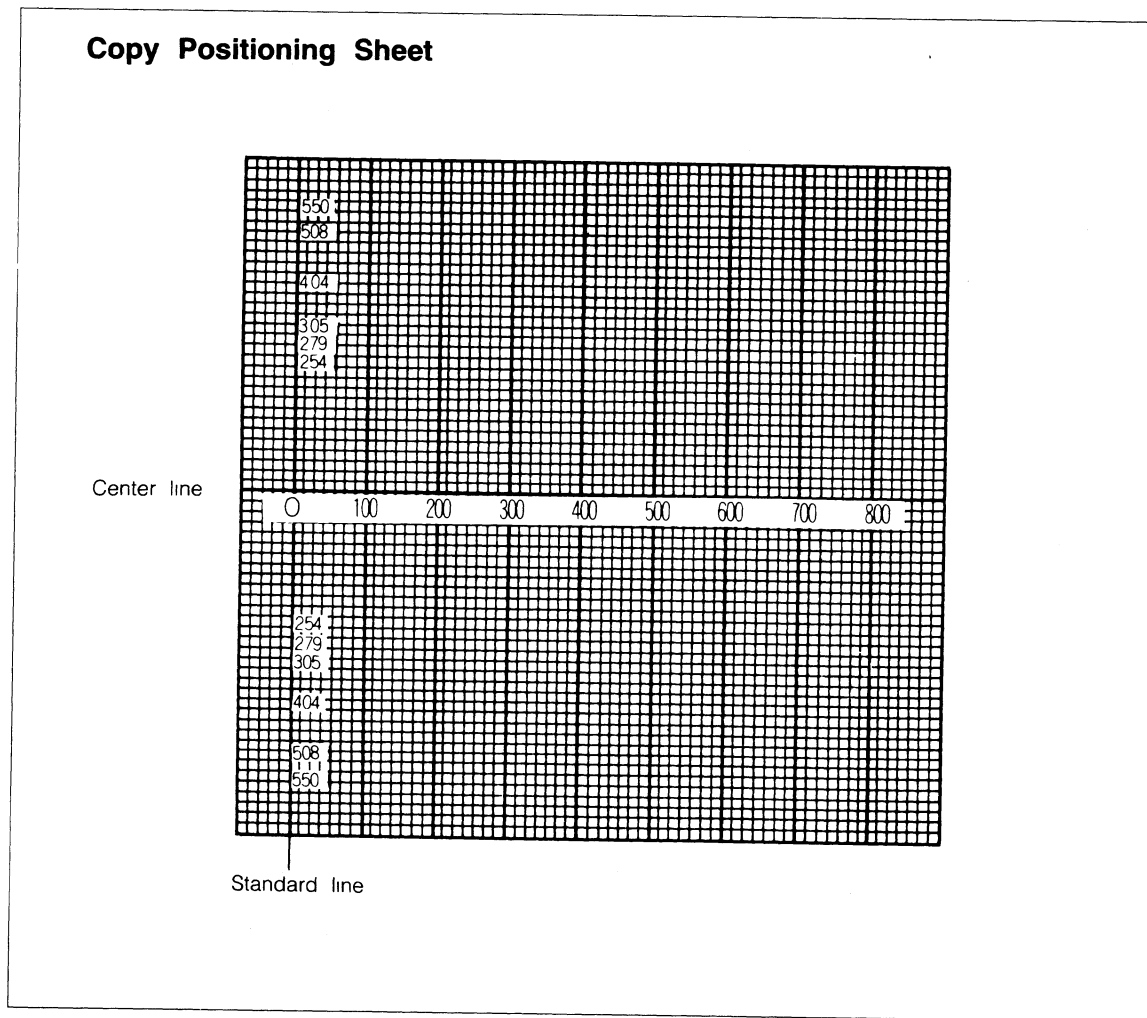
④ Holding the upper frame handle, push down the upper frame support arm a bit toward you and close the upper frame.

⑤ After locking the hook securely, push the copy board back to its original position slowly until it touches the magnet.

CAUTION:

Be sure to draw out the copy board all the way; otherwise the light source unit may be damaged by opening the upper frame.

## 2) Positioning the copy

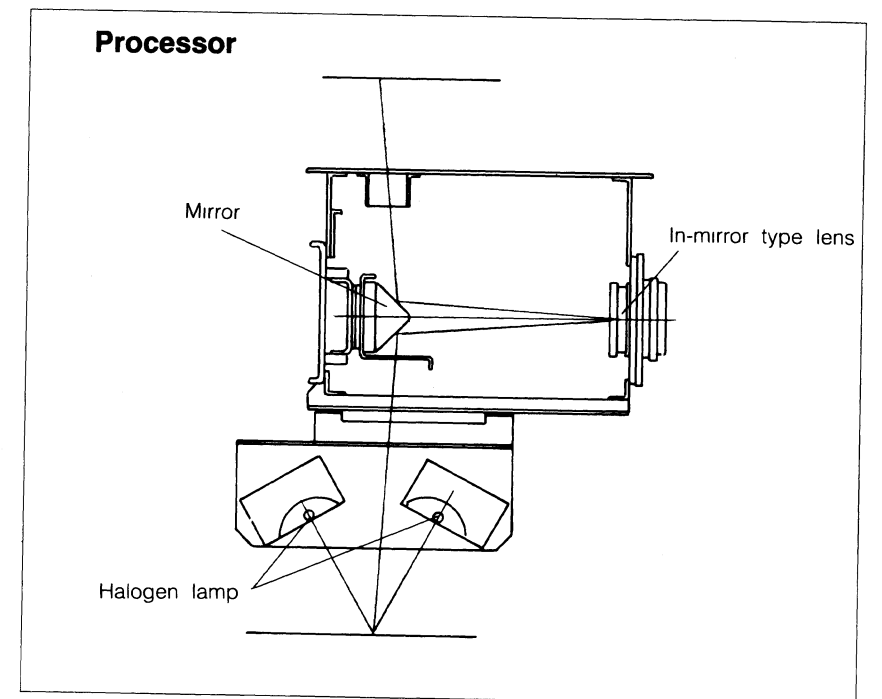
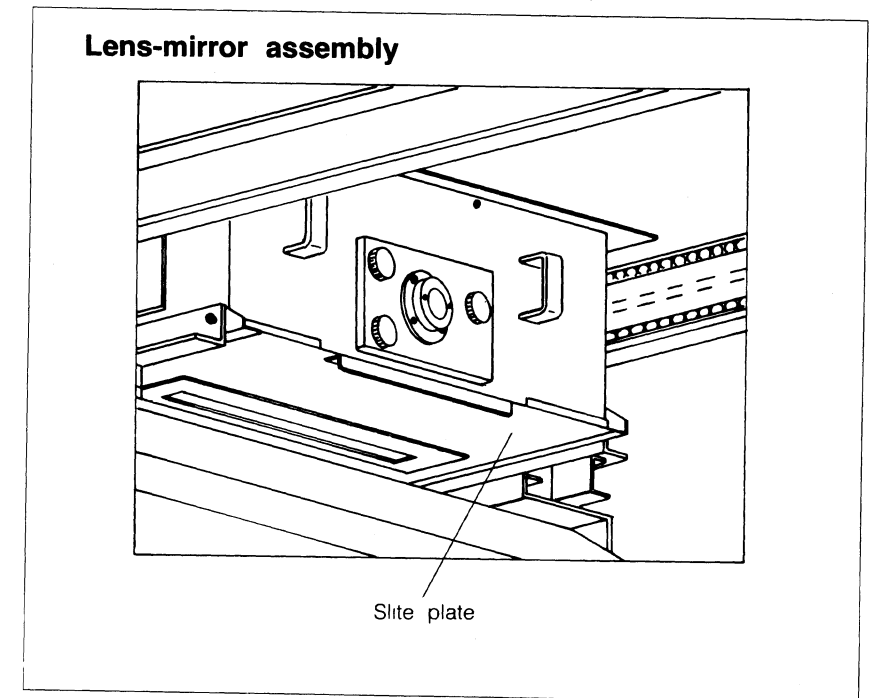


- ① The standard line "0" in the copy positioning sheet corresponds to the leading end of the master.
  - ② In the vertical axis, the scale graduated in 5mm divisions indicates the master feed length.
- Since the double-exposed part due to the slit exposure method appears at the leading end of the master, the effective exposure area is not from the standard line "0".
- (The scales of the sheet can be used for centering the copy.)

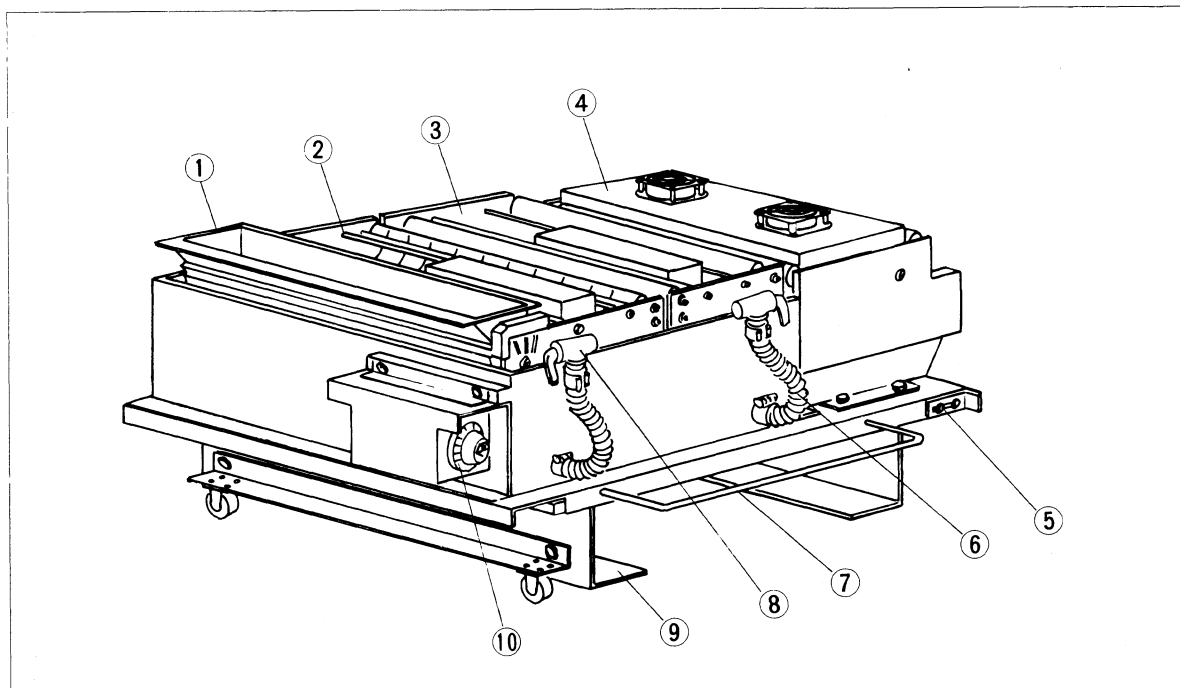
## 6-2-5 Lens-Mirror Assembly

The machine employs an in-mirror type lens with a focal length of 260mm and a diameter of 100mm.

The lens and the mirror appear when the bottom slit plate of the lens-mirror assembly is removed. Never touch them even when cleaning the machine.







① **Master guide**

The master is conveyed from the exposure section to the processor along this guide.

② **Developing tank**

The capacity of the tank is 18 liters. The capacity of the activator replenisher tank is 2 liters.

The developing tank is equipped with a 800W panel heater, thermostat and conveyor unit. The temperature of the activator is kept constant by the panel heater and thermostat while the processor is under power.

③ **Stabilizing tank**

The capacity of the tank is 16 liters. The capacity of the stabilizer replenisher tank is 2 liters. The stabilizing tank is equipped with a conveyor unit.

④ **Dryer**

Turn on the 200V POWER switches and then the DRYER switch on the main control panel. This will energize the dryer and operate the heater on top and the fans in the dryer.

The thermostat maintains hot air around 50°C to dry the master.

⑤ **Processor lock lever**

⑥ **Drain hose**

⑦ **Handle**

⑧ **Drain valve**

⑨ **Drain vat holder**

⑩ **Activator thermo-control**

This thermo-control is used for controlling the temperature of the activator in the developing tank.

Align the dial division 30 with the index mark (▲) of the knob. The dial divisions represent the temperatures to which activator is to be set. If the activator temperature is not high enough when [Ld] disappears on the display, the dial setting should be increased by the equivalent of the temperature deficiency, and vice versa.

## 7. FILLING THE PROCESSING TANKS

Refer to the booklet "Silver Master Technical Guide."

- ① For preparing the processing solutions, use the exclusive measuring cup.
- ② Use 30°C to 35°C hot water when tap water temperature is low in winter.
- ③ Be careful not to mix the activator and stabilizer when pouring them since they have an antipathy to each other.

NOTE:

The replenisher tanks should always each contain properly prepared replenisher above a lower limit of level. As the replenisher is exhausted, the liquid surface in the processing tank would be lowered and the liquid fatigue hastened, which could cause deterioration in the plate quality.

### 7-1 Developing Tank (Tank capacity: 18 liters)

**(Mixture ratio of SLM-AC to water 1:1)**

- ① Add 9 liters of water to 9 liters of SLM-AC (undiluted), exclusive developing solution for the Silver Master and stir thoroughly. Then, pour the mixture into the developing tank.
- ② Pour 2 liters of the activator prepared in the same ratio (1:1) into the activator replenisher tank, cap the tank and mount it on the developing tank unit properly with its cap down.
- ③ The developing tank is equipped with a panel heater with a thermo-control. Bring the dial division 30 to the mark (▲). The dial divisions represent the temperatures to which activator is to be set. Adjust the activator temperature using this control if the actual activator temperature is not adequate (The moment [Ld] has disappeared, the activator should be 28 ~ 31°C.)

### 7-2 Stabilizing Tank (Tank capacity: 16 liters)

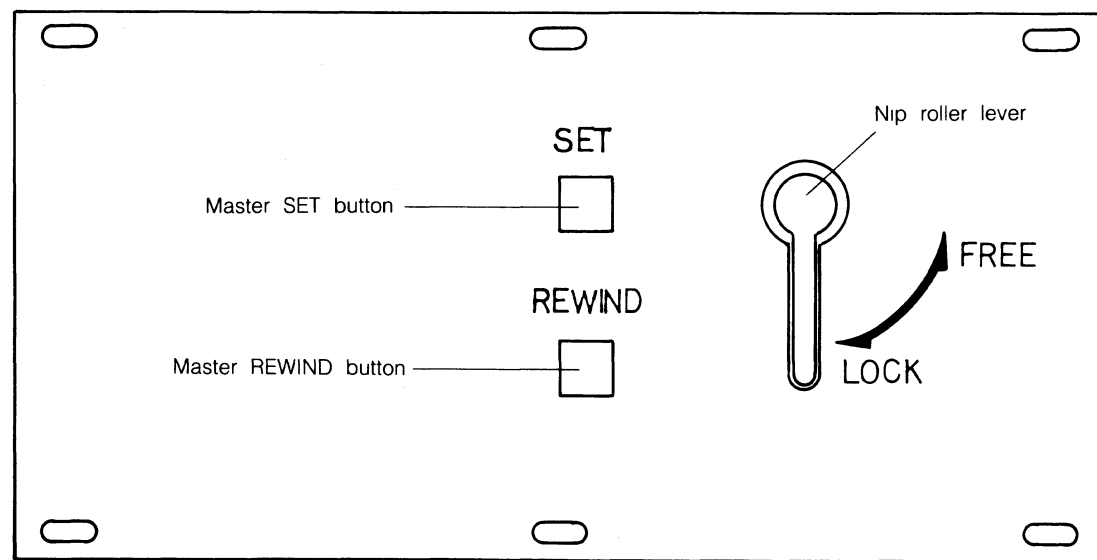
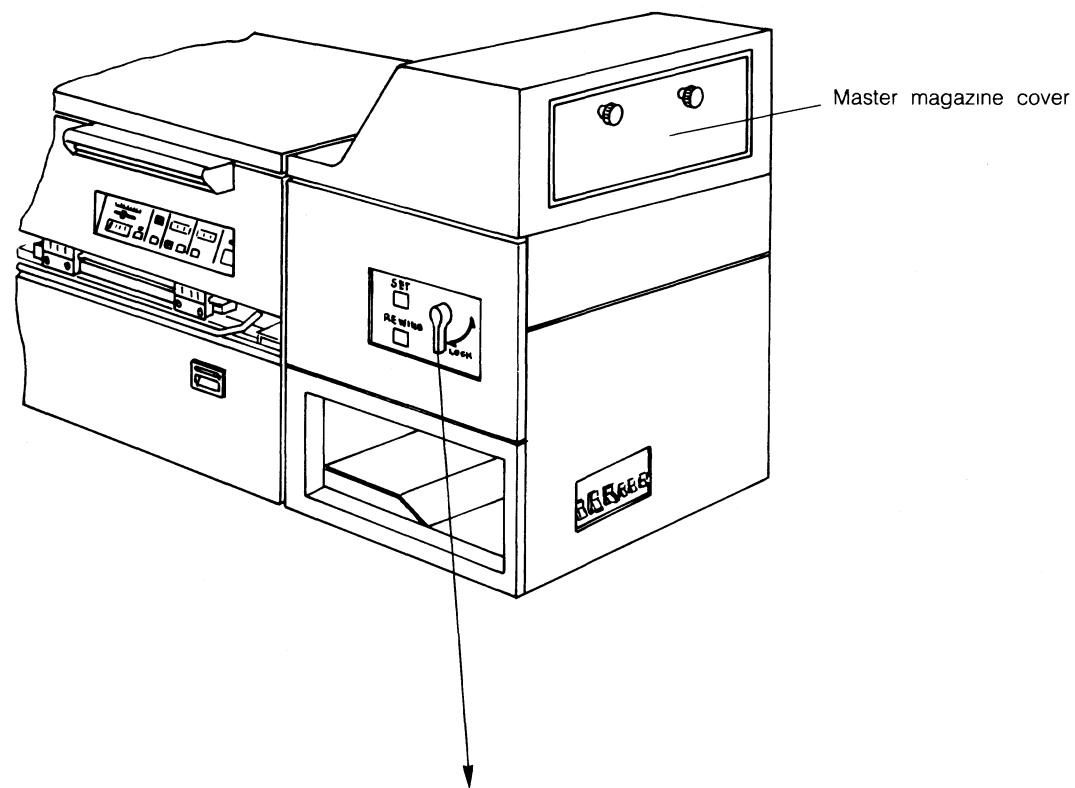
**(Mixture ratio of SLM-ST to water 1:3)**

- ① Add 12 liters of water to 4 liters of SLM-ST (undiluted), exclusive stabilizer for the Silver Master and stir thoroughly. Then, pour the mixture into the stabilizing tank.
- ② Pour 2 liters of the stabilizer prepared in the same ratio of 1:3 into the stabilizer replenisher tank, cap the tank and mount it on the stabilizing unit properly with its cap down.

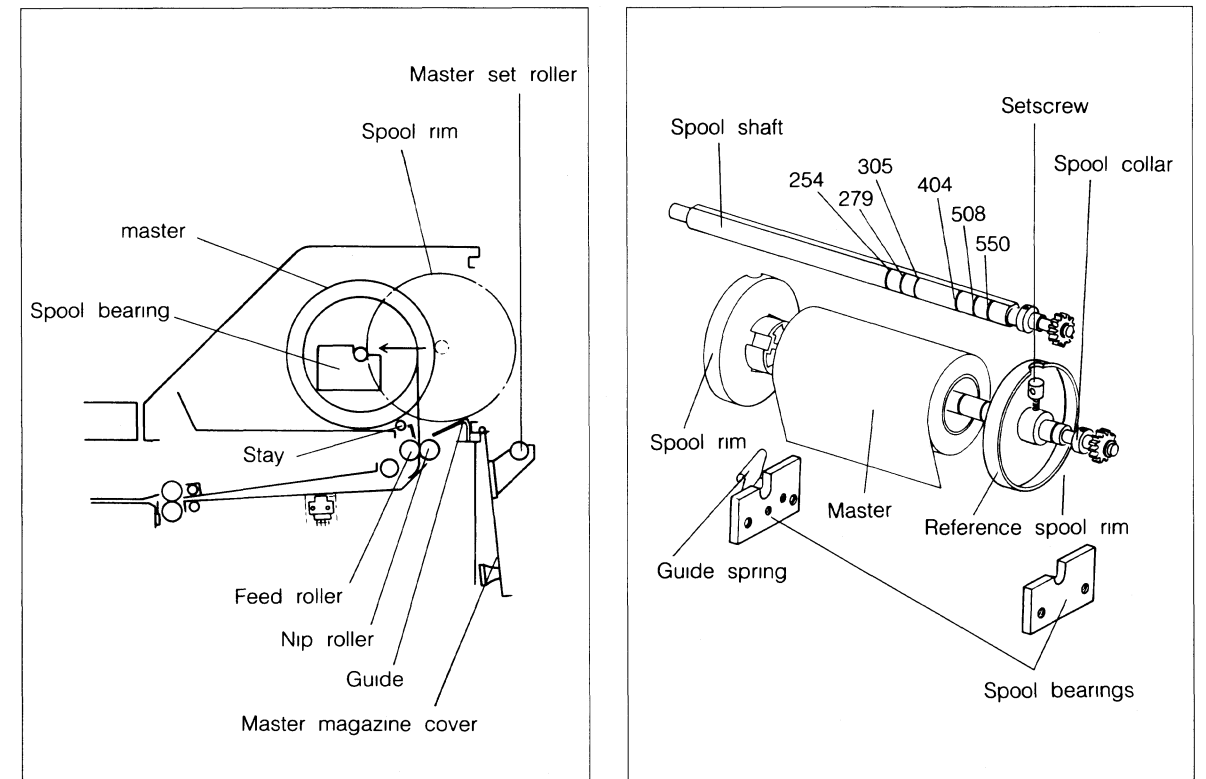
### 7-3 Precautions in Handling Chemicals

- ① Never swallow or get into eyes. Should such happen, see a doctor.
- ② If your skin or clothes are splashed, immediately wash thoroughly in running water thoroughly.
- ③ Strictly observe the handling instructions.
- ④ Keep chemicals out of reach of children.

## 8. LOADING A MASTER ROLL



## 8-1 Loading the Silver Master RII (SLM-RII) Roll



- ① Open the master magazine cover.
- ② Attach the reference spool rim to the spool shaft on the coupling collar side, align it with the appropriate mark on the shaft depending on the width of the master roll in use and fix it with the setscrew.
- ③ Pass the spool shaft through the master roll core hole to fit the master roll core to the reference spool rim.  
(The winding of the master roll should be counterclockwise as viewed from the reference spool rim side.)
- ④ Attach the other spool rim to the end of the master roll core securely and fix it with a screw.
- ⑤ Hold the spool with the master roll emulsion side hung facing down, and temporarily let it rest on the guide and the stay located at the inlet of the master magazine.
- ⑥ Then push the spool rims by hand to set the spool shaft on the spool bearings.
- ⑦ Completely remove the adhesive tape fixing the leading part of the master roll; otherwise the remaining tape adhesive may cause scratches on the surface of the rollers or the image projection (focal) plane.
- ⑧ Turn the nip roller lever to FREE.
- ⑨ Pull out the master approx. 200mm long and insert it into the gap between the feed roller and the nip roller, aligning it with the appropriate mark depending on the master roll width.
- ⑩ Then turn the nip roller lever to LOCK.
- ⑪ Close the master magazine cover.
- ⑫ Depress the master SET button, and the master is conveyed to the image projection plane and set there automatically, the START lamp lights, and the machine becomes ready for platemaking.

## 8-2 Loading the Silver Litho-Plate F (SLP-F) Roll

- ① Since the SLP-F roll is factory attached to the spool, directly load the roll together with the spool in the magazine.

CAUTION:

If the spool rims should be removed, the SLP-F master edge part would be exposed or fogged by external light (room light). Therefore, never remove or loosen the spool rims.

- ② For loading the SLP-F roll, follow the procedure stated in "8.1. Loading the Silver Master RII (SLM-II) Roll."

CAUTION:

Be sure to use the spool which is provided with the SLP-F roll.

- ③ The SLP-F roll has about 2m of leading paper for lightproofing; remove it before use.

## 8-3 Rewinding and Reloading the Master

The following procedure should be used when the machine is to be shut down for many hours or when the master roll is changed.

- ① Turn the nip roller lever to LOCK.
- ② Press the master REWIND button and the master is automatically rewound.
- ③ To reset the master after rewinding, turn the nip roller lever to LOCK and press the master SET button.

## 8-4 Master End

As the master is going to be exhausted while it is being fed, **End** appears on the M. LENGTH readout and the buzzer sounds.

Here, the cutter motion does not take place but all the remaining master is delivered. Be sure to let all the remaining master go out of the machine before loading a new master roll.

## 8-5 Master Splice Detection

Some master rolls have a splice. If the splice passes through the exposure section, the buzzer sounds while **SP L** appears on the display.

### 1) In case of normal exposure and multiple exposure

- ① If the length between the master leading end and the splice ( $\alpha$ ), plus 260mm is shorter than the set master feed length, the master is automatically cut to the set length, and transported out to the processor.

$\alpha + 260 < \text{set master feed length} \rightarrow$  Master of set length will be cut and transported out.

- ② If the length between the master leading end and the splice, plus 260mm ( $\alpha$ ) is longer than the set length, the master is automatically cut to  $\alpha + 260\text{mm}$ , and transported out.

$\alpha + 260 > \text{set master feed length} \rightarrow$  Master of ( $\alpha + 260\text{mm}$ ) length will be cut and transported out.

### 2) In case of double exposure

- ① When the splice is detected during the first feed of master, it is automatically cut to the length between the master leading end and the splice ( $\alpha$ ), plus 320mm, and transported out. Without pressing the START key, the first exposure is automatically started after the splice is transported out.

Master of  $\alpha + 320\text{mm}$  will be cut and transported out.

- ② When the splice is detected during the second feed of the master;
    - i) In case that the set master feed length is longer than 260mm, and when the length between the second feed start position and splice ( $\alpha$ ), plus 260mm is longer than the set master feed length, the master is automatically cut to the first feed length, plus  $\alpha$ , plus 260mm, and transported out.  
 $\alpha + 260\text{mm} > \text{set master feed length}$   
 $\rightarrow$  Master of the first feed length +  $\alpha + 260\text{mm}$  will be cut and transported out.  
or  $\alpha + 260\text{mm} < \text{set master feed length}$   
 $\rightarrow$  Master of the first length + set master feed length will be cut and transported out.
    - ii) In case that the set master feed length is less than 260mm, master of the first feed length +  $\alpha + 260\text{mm}$  will be cut and transported out.
- NOTE) When the splice is detected during the second feed of the master, repress the START button after the splice of the master is transported out, and start operation from the first exposure.

## 9. PHOTOGRAPHING

Three exposure modes are available according to the application purpose.

- ① Standard Photography (set master feed length 370 ~ 820mm)  
One exposure of an original copy is made on a plate
- ② Multiple exposure (set master feed length 370 ~ 820mm)  
This mode is used when only one original copy is available and two or more exposures of it should be made on a plate, or when part of the copy is extremely different in density from the rest of it.
- ③ Double Exposure (set master feed length 185 ~ 410mm)  
It is possible to make two exposures of an original copy on a plate automatically. After the second exposure is completed, the master is cut and transported to the processor automatically.

### 9-1 Start-up Procedure

- ① Confirm that there is enough activator and stabilizer in the developing and stabilizing tanks and enough replenishers in the activator and stabilizer replenisher tanks, respectively.
- ② Turn on the 100V and 200V POWER switches.
- ③ Make sure that the processor runs normally.
- ④ Check the copy board glass for dirt, scratches, etc.
- ⑤ Turn the nip roller lever to LOCK.
- ⑥ Press the master SET button to set the master on the image projection plane.

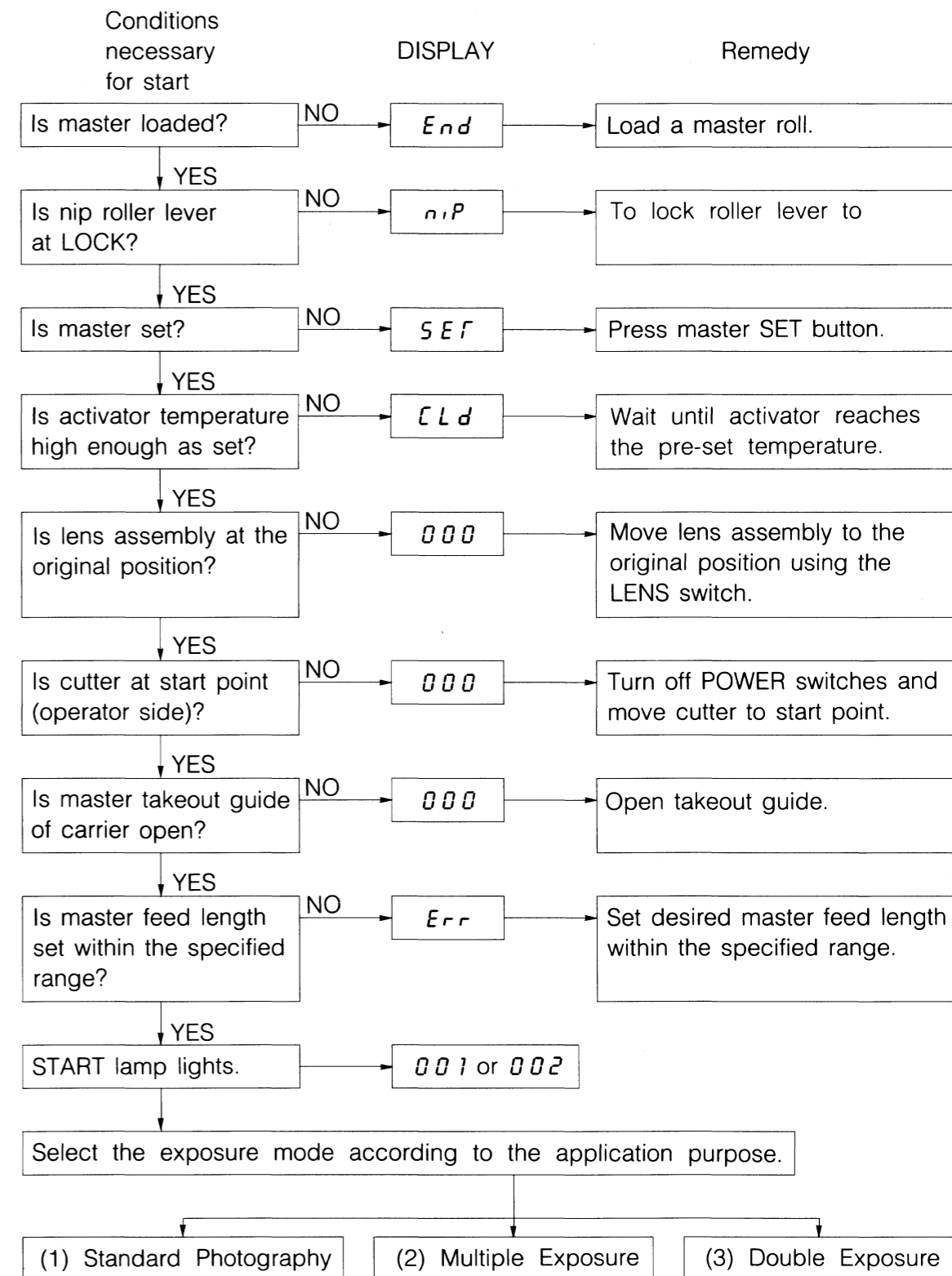
NOTE: There must be an adequate amount of properly mixed solution in each replenisher tank. Running out of replenishers results in lowering the solution level in the developing and stabilizing tanks, and accelerates deterioration of solutions. As a result, it may cause poor image quality.

### 9-2 Shut-down Procedure

- ① Turn the nip roller lever to LOCK.
- ② Press the REWIND button to rewind the master  
SET on the display indicates the completion of rewinding.
- ③ Turn off the 100V and 200V POWER switches.

## 9-3 Photographing Procedure

- ① Turn on the 100V and 200V POWER switches.
- ② Set the DRYER switch: HIGH or LOW
- ③ Set the DEFOGGER switches: Turn on the MAIN or the MIRROR as required.

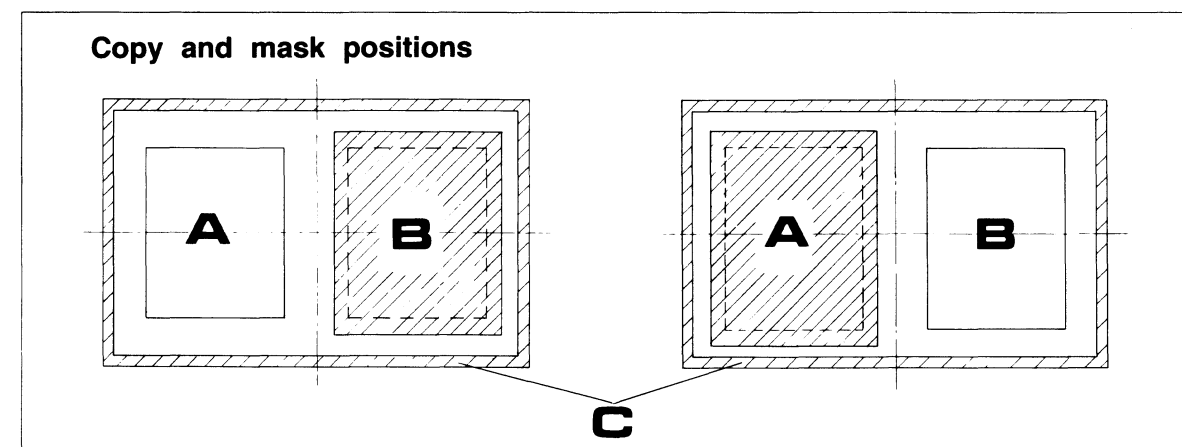


## 9-4 Standard Photography

Mount the copy	.....	Mount the copy with its image side up and set it in the desired position using the scale of the positioning sheet.
Set the master feed length	.....	Set a master length according to the desired plate size using the M. LENGTH input keys. The master feed length should be 370 ~ 820mm.
Set the exposure level.	.....	Set the exposure level suitable for the copy using the exposure slide control.
Press the START button.	.....	The START lamp lights and <b>001</b> appears on the display. By pressing the START button, the photographing operation is started and the plate is produced automatically.

CAUTION: During photographing, the MIRROR DEFOGGER switch should be off.

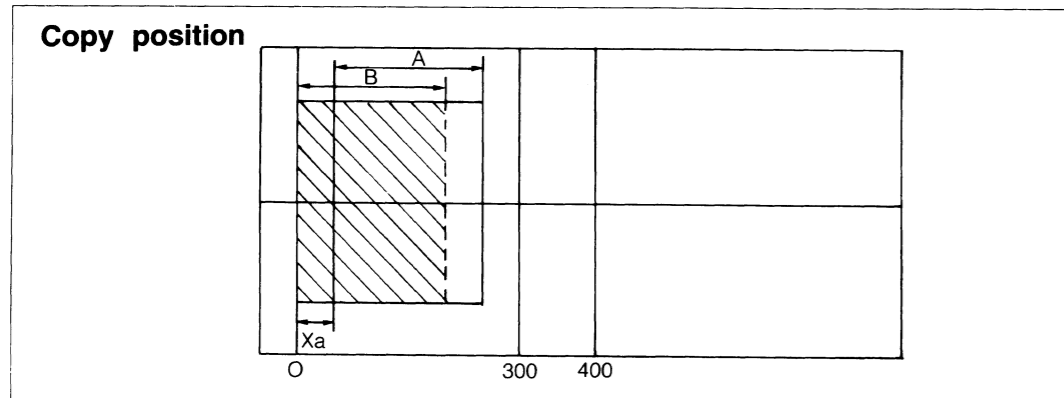
## 9-5 Multiple Exposure



Determine the copy positions.	.....	Determine the positions for the copy (A and B).
Mount the copy.	.....	Put the copy in position (A).
Place the mask.	.....	Put the mask, which should be larger than the copy, in position (B). NOTE: As a mask, use black paper with over 2.0 reflection density.
Select the Multiple Exposure mode.	.....	Press the MULTI key. Confirm that the lamp above the MULTI key is on.
Set the master feed length.	.....	Set it between 370 ~ 820mm according to the desired plate size.
First exposure.	.....	Press the START button for the first exposure.
Move the copy.	.....	Move the copy from position (A) to (B) and replace the mask in position (A). NOTE: Care should be taken in positioning the mask; if the position of the mask overlaps its previous position, the overlapping portion will be unexposed (silver deposit).
Final exposure	.....	Press the MULTI key, and after confirming that the lamp above the MULTI key is out, press the START button. NOTE: The procedure similar to the above is used in case of making 3 or more exposures. Pay attention to the exposure level which depends on the reflection density of the mask.

## 9-6 Double Photography

The master length should be within the range of 185 ~ 410mm in the Double Exposure mode.



- Mount the copy** ..... Set the copy in position (A)  
 Position (A) where the copy should be set for the first exposure, is a short distance from away by the distance  $X_a$  from the zero line of the positioning sheet (indicated by  $X_a$ ). The distance of  $X_a$  depends on the master feed length and the copy size as follows:  
 $X_a = (\text{master feed length}) - (\text{copy size})$   
 $X_a$ : the distance between the zero line and the position where the copy should be set  
 (e.g.) Master feed length: 255mm  
 Copy size: A4  
 $X_a = 255 - 210 = 45\text{mm}$   
 The position (A) where the copy should be set for the first exposure is 45mm from the zero line.

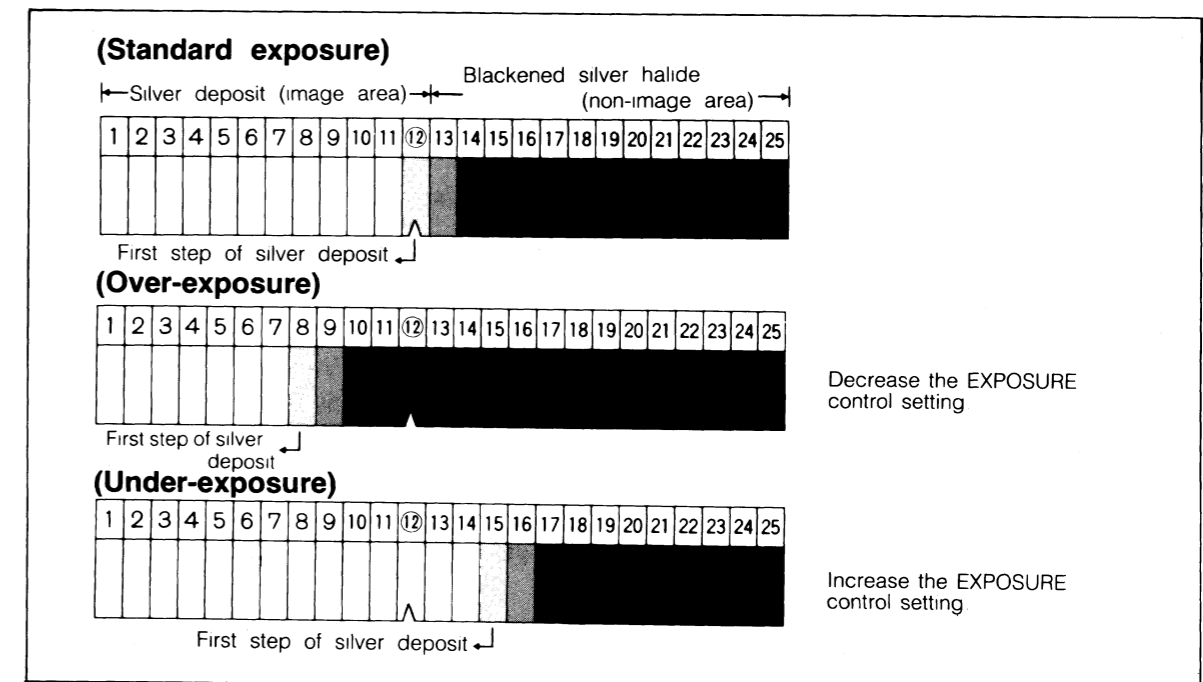
- Select the Double Exposure mode.** ..... Press the EXP. key.  
 Confirm that the lamp above the D. EXP key is on.
- Set the master feed length.** ..... Set it according to the desired plate size using the M. LENGTH input keys. It should be within 185 ~ 410mm.
- Set the exposure level.** ..... Set the exposure level suitable for the copy using the exposure slide control.
- First exposure** ..... Press the START button for the first exposure.  
 After the exposure, the master is fed by the amount equivalent to the set master feed length.
- Move the copy** ..... Move the copy from position (A) to (B).  
 Copy position (B) for the second exposure should be on the zero line regardless of the master feed length setting.
- Second exposure** ..... Press the START button for the second exposure.  
 After the second exposure is completed the master is fed by the amount equivalent to the set master feed length, and the master or plate which bears the first and second exposure is transported to the processor.

## 9-7 How to Determine Standard Exposure

Since the Silver Master is coated with silver-halide emulsion, its sensitivity may somewhat vary among lots. Before using a new lot, check its sensitivity.  
 Under-exposure may cause a thickened image or scumming on the background of the plate. Over-exposure may cause a very thin image or lost image.  
 Correct exposure is essential for the high quality Silver Master RII and Silver Litho-plate F to deliver the best performance.

Refer to the Silver Master Technical Guide.

- ① The CP-500SII is supplied with test charts and standard print samples. Make an exposure of a test chart and compare it with the standard print sample to determine standard exposure.
  - ② Examine the gray scale in the exposure of the test chart. Adjust the exposure level with the exposure slide control to obtain the standard exposure.
- Standard exposure: the exposure where the minimum noticeable silver deposit is seen in the 12th step with gray scale as in the supplied sample.



NOTE: The standard print sample may fade with time. Store it in a drawer or dark place.

## 9-8 How to Determine the Optimum Exposure Time

- ① The optimum exposure level varies according to the type of the original being used.
- ② The optimum exposure control setting differs according to the user's printing conditions (press, printing paper, ink, etc.). The table below shows the suggested exposure control settings for various types of copies with some defect. Individual users should find the best exposure control setting for each copy under their own printing conditions.

### Suggested Exposure Control Settings For Various Copies

Copy		Increase/Decrease from Standard Setting
State	Type	
Letters or lines are too thin or blurred.	Written with pencil	0 ~ -20% Decrease to the extent that non-image area will not become whitish.
	Duplication	
	Photocomposition	-10 ~ +20%
Letters are too thick and battered, or dark background	Typewritten	0 ~ +30% (Increase)
	Halftone	+20 ~ +30% (Increase)

## 10. MAINTENANCE

### 10-1 Routine Maintenance

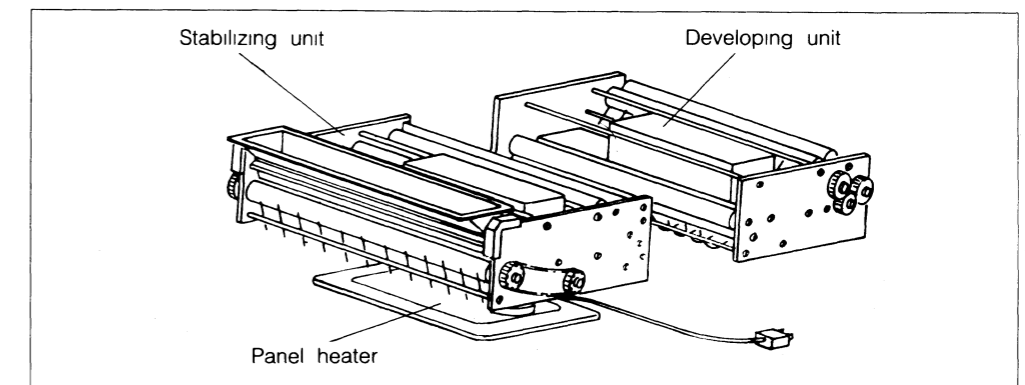
#### 10-1-1 Processor

##### 1) Frequency of change of processing solutions

One fill of activator or stabilizer is capable of processing 1400 plates of B4 size, 1800 plates of A3 size or 400 plates of A2 size. Even when the number of plates processed so far is within the prescribed range of processing capacity, change the processing solution to fresh solution 4 weeks after mixing it.

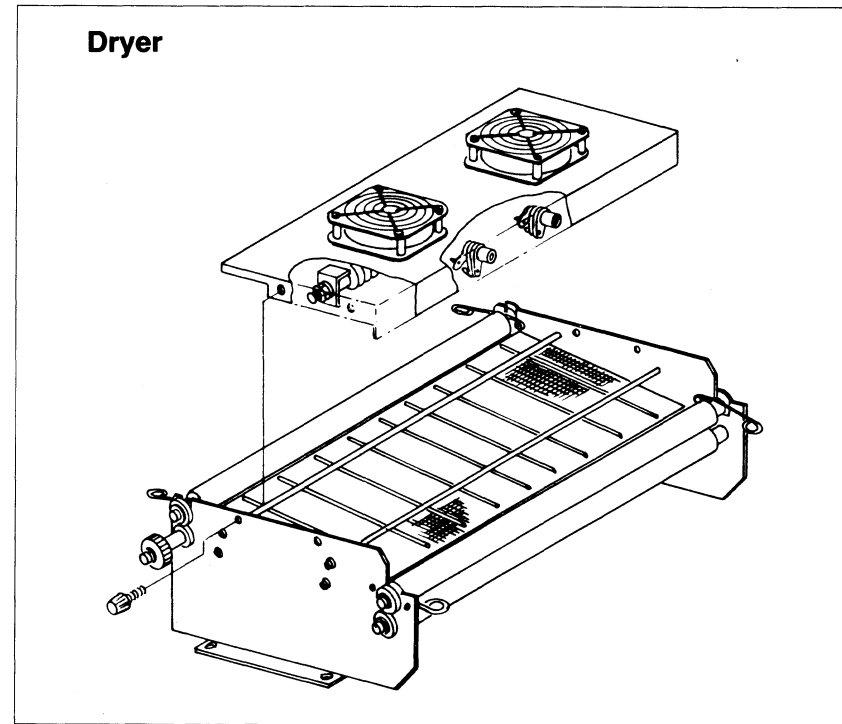
##### 2) Cleaning the processing tanks

Be sure to clean the tanks when changing the processing solutions. Otherwise, silver, paper powder or chemicals from the master can stick to the tanks, and scratch or stain the master emulsion as many master plates are processed.



- ① Turn off the POWER switches.  
NOTE: If the switches remain ON, the developing tank would be heated even while it is empty, which would cause the heater to be damaged.
- ② Remove the cover of the processor.
- ③ Take out the replenisher tanks.
- ④ Take out the drain vat and lay down the drain hoses, and then open the drain valves.
- ⑤ After the processing tanks are drained completely, shut the valves and then put the drain hoses back into the clamps
- ⑥ Remove the developing unit, stabilizing unit and heater from the processing tanks and wash them.
- ⑦ Carefully wipe off any sediment with a damp cloth or sponge.  
CAUTION: As the rollers of the developing and stabilizing units are not heat-resistant, use tepid water of less than 40°C. Do not use any detergent or polishing compound on them.
- ⑧ Clean the inside of the developing and stabilizing tanks with water.
- ⑨ If the fingers of the master guides at the bottom of the developing and stabilizing units are very dirty, the master may be scratched. If so, wash them with water and wipe dry. Then, polish them with a metal polishing compound on a soft cloth until their surfaces are glossy.  
NOTE: This care is essential for high quality reproduction.
- ⑩ Open the drain valves once more. After draining the tanks completely, close the drain valves and pour fresh processing solutions into the respective tanks.

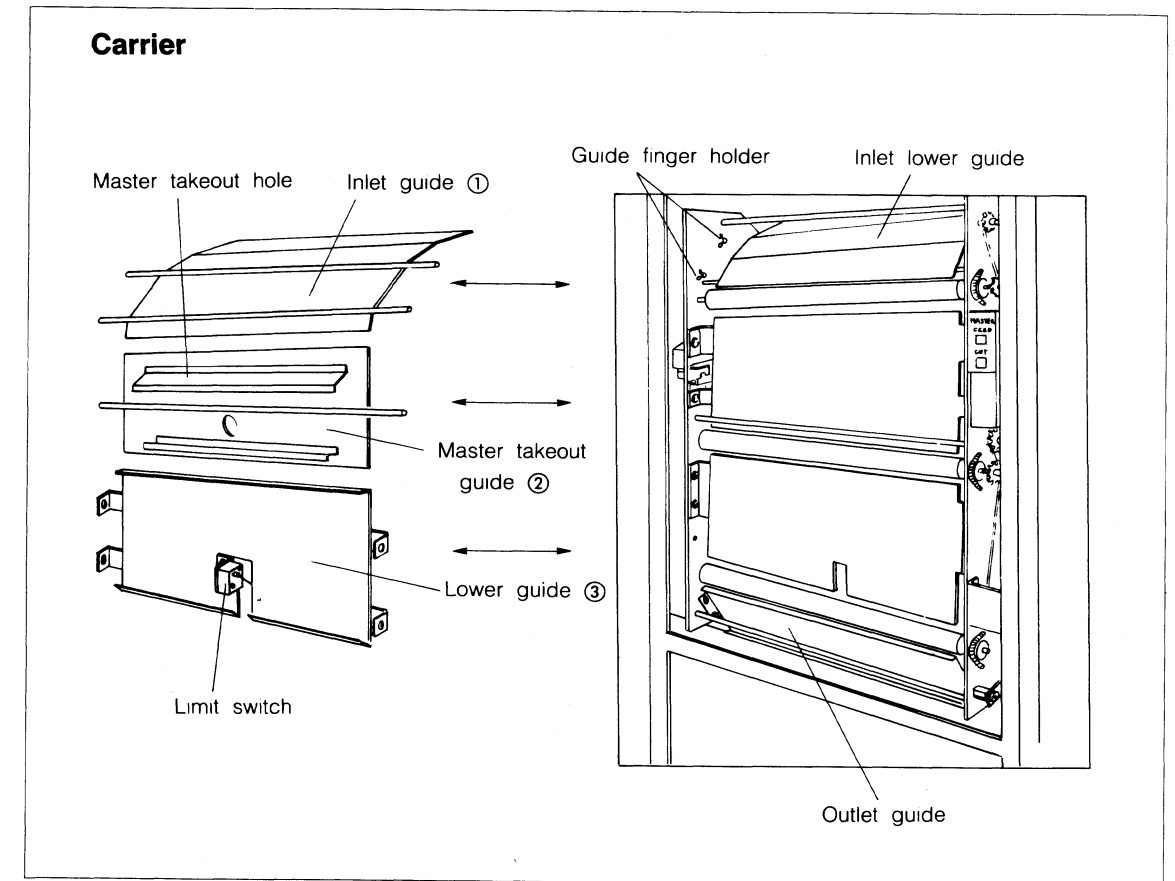
### 3) Dryer



- ① Turn off the 100V and 200V POWER switches and also the user's power source.
- ② Remove the cover for the processor.
- ③ Take out the processor.
- ④ Loosen the 4 knob screws and take out the top block by lifting.
- ⑤ Remove the counter springs on the rollers and remove the rollers.
- ⑥ Wipe the dirt off the rollers and the bottom guide plate with a moistened cloth.
- ⑦ Place the rollers and other parts back in the reverse order.

### 10-1-2 Carrier

When the left side cover is removed, the carrier appears as shown below. In case of master jamming or cleaning the guide plates, the following procedure is used.

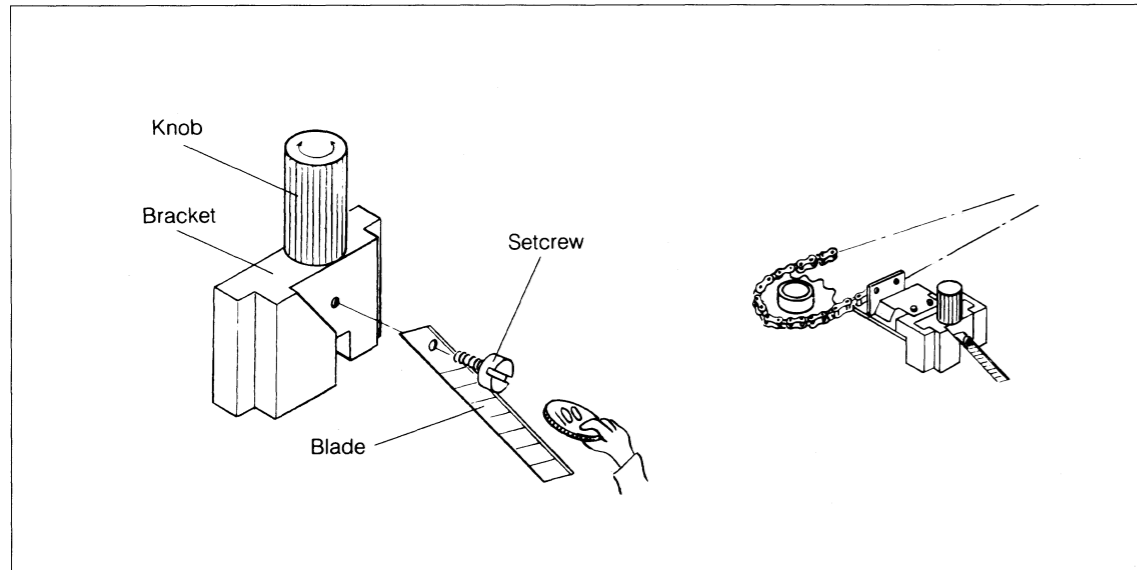


- ① If the master jams, do not open the left side cover but open the master takeout hole cover, and remove the master takeout guide ② by pulling out the pins. Then, remove the jammed paper.
- ② If a short master has been cut by mistake, remove the left side cover and the inlet guide ① to remove the master.
- ③ If the carrier causes the master to be scratched, remove the guide plates and clean them.



### 10-1-3 Replacement of the Cutter Blade

The cutting capacity of the cutter blade is approx. 220 plates (two 75m rolls) per blade. Replace the blade every 30 days regardless of the number of cuts made.



- ① Rewind the master.
- ② Turn off the 100V and 200v switches.
- ③ Open the top cover of the exposure section.
- ④ Remove the cover of the cutter assembly.
- ⑤ Remove the bracket of the cutter assembly. Turn the bracket knob counterclockwise to loosen it, and lift up the bracket.
- ⑥ Remove the cutter blade. Loosen the setscrew with a flat-blade screwdriver or a coin.
- ⑦ Replace it with a new cutter blade. An NT cutter blade available on the market is used. Take care not to set the blade the wrong way.
- ⑧ Reassemble the cutter assembly in the reverse order.

### 10-1-4 Copy Board

As the copy glass is liable to be stained by dust or fingermarks, inspect it daily. If stained, wipe it with a soft cloth using a glass cleaner (available on the market), taking care not to leave the cleaner chemical behind.

### 10-1-5 Lens-Mirror Assembly

The lens and mirror located in the lens-mirror assembly do not become dirty very easily. With time, however, their optical performances may be deteriorated due to dust or other reasons. Therefore, carefully clean them as follows.

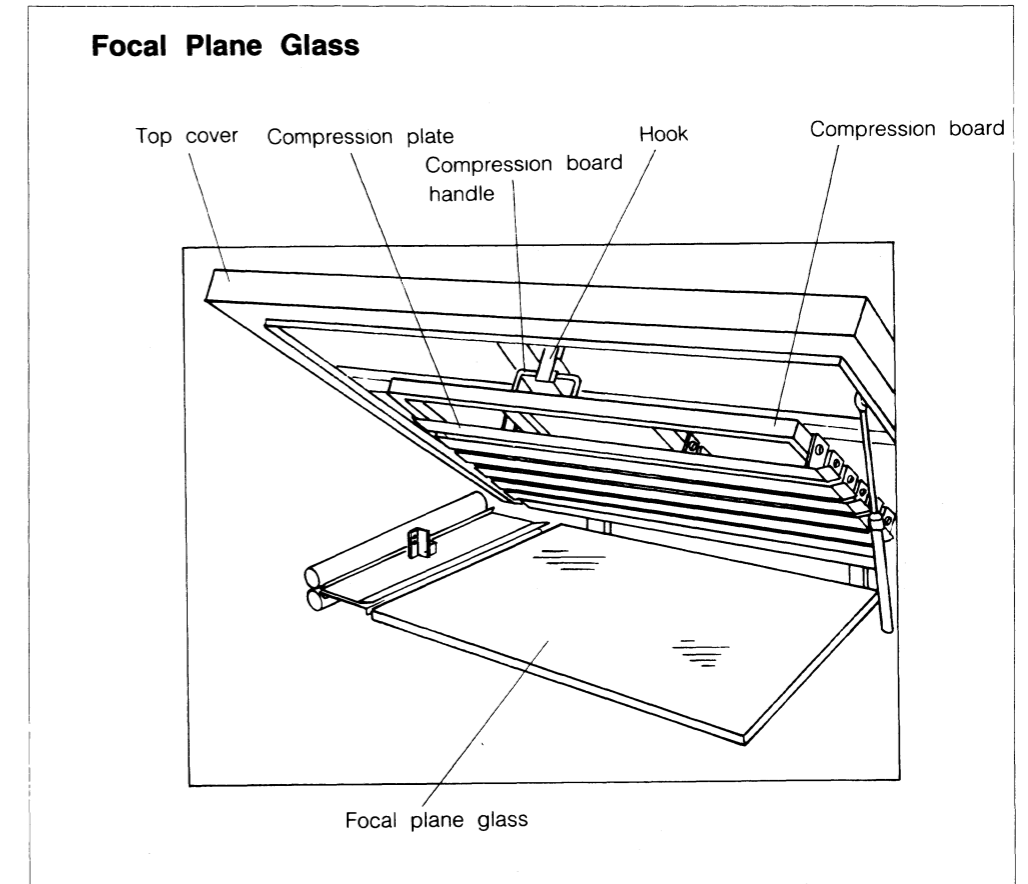
- ① Loosen the two setscrews on the bottom slit plate, and pull out the slit plate: the lens and mirror appear.
- ② By using the air brush, gently dust off the lens and mirror every month.
- ③ In case they are extremely dirty, lightly wipe them with lens paper (available at general camera shops) moistened with very little ethyl alcohol for industrial use (available on the market).

#### CAUTIONS:

- 1) Since the surfaces of the lens and mirror are very soft, special care must be taken not to hit them with the air-brush or wipe their surfaces strongly.
- 2) When pulling out the bottom slit plate, take care not to drop it.
- 3) Don't touch the slit width adjust screw in the lens-mirror assembly.

### 10-1-6 Focal Plane Glass

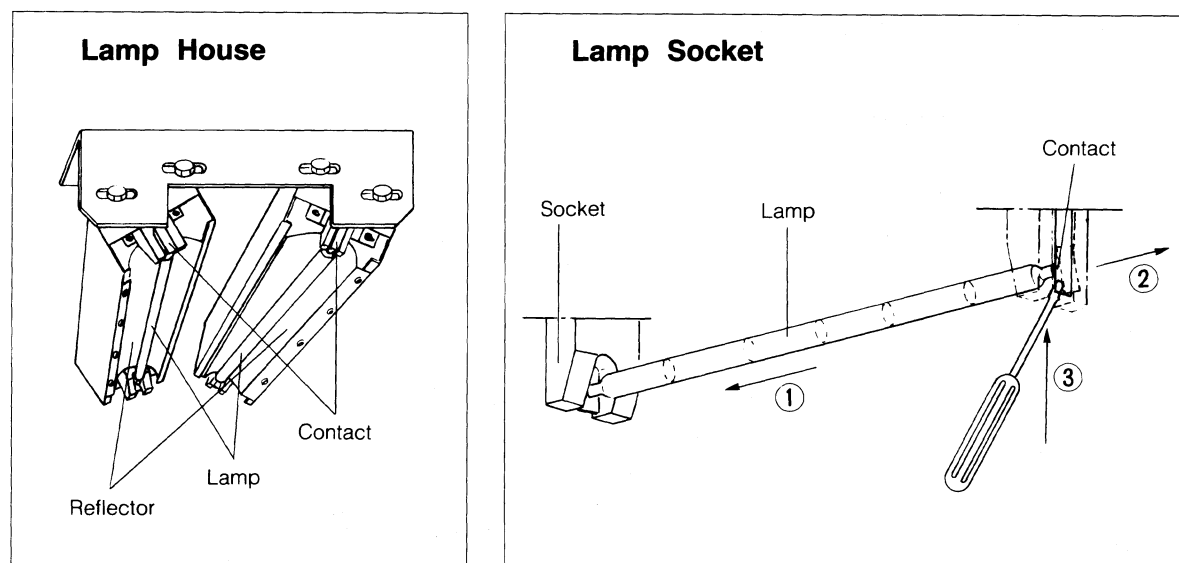
The focal plane (exposure glass, located inside the top cover, does not become dirty easily. However, dust or tape adhesive left on the glass surface may cause a master jam or affect the plate quality. Check the glass every replacement of a master roll. If it is dirty, clean with a soft cloth and glass cleaner (on the market). Take care not to leave the cleaner chemical behind.



- ① Open the top cover, and it stops in the specified position by the effect of gas springs.
- ② Hold the compression board handle and lift the board to hook it to the hook on the top cover.
- ③ After checking or cleaning the focal plane glass, gently put down the compression board and then close the top cover.

### 10-1-7 Replacement of the Light Source (halogen lamp)

The machine uses two 130V, 1.5 kW halogen lamps as light sources. Prior to replacing the lamp with a new one, always make sure that the lamp and the reflector have cooled down. A careless touch on them could burn yourself.



- ① Turn off the 100V and 200V POWER switches.
- ② Open the auxiliary control panel (cover).
- ③ Remove the light shielding plate by loosening the left-hand knob screw and shifting horizontally.

#### NOTES:

- 1) Cover the copy glass with rags or something like that to protect it.
- 2) Hold the lamp with a clean dry cloth or gloves on your hand. Never hold it with bare hands. Take enough care not to smear or fingermark the lamp surface. Such stain could cause not only an uneven illumination but also damage to the lamp. If the lamp should be fingermarked or smeared, apply a very small amount of commercial alcohol to lens paper (available at general camera shops) and lightly wipe with the lens paper.
- ④ Install the lamp in such a way that its portion bearing an inscription of ratings (130V, 1500W) is closer to the operator side
- ⑤ The lamp is secured into the sockets by springs. Push the lamp end into the contact in the direction of the arrow as in figure ①, and spread the opposite (operator side) contact outward with a screwdriver or a similar tool as ②. Push the lamp upward as shown and fit the lamp end into the pin contact as ③.
- ⑥ After installation of the lamp, turn the lamp a bit to check if it is secure in place.

#### NOTES:

- 1) In case one person carries out the replacement, the person must take care not to damage the lamp and do the job while spreading the contact springs. In case two persons do the job, removal of the rear (middle) cover is suggested for working ease.
- 2) A fingermark or crack in the lamp could cause it to be broken during exposure (i.e. when the lamp is on and the lens-mirror assembly is moving). Therefore, never look into the machine. This could lead to possibilities of fingermarking or hitting it.

### 10-1-8 Focus

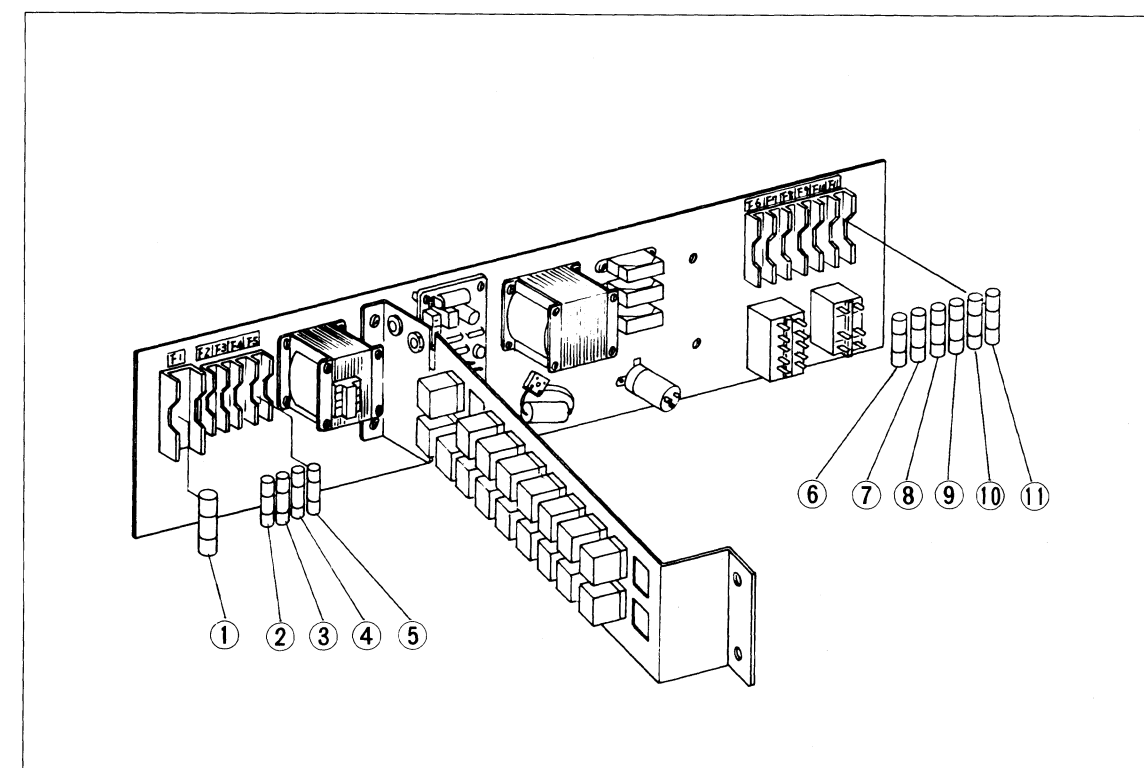
The focus is thoroughly inspected before shipment. However, recheck it when necessary by making an exposure of the resolving power chart (included in the test chart).

- ① For the test chart, use an exposure level higher than standard.
- ② When the resolution of the exposure is 8 lines/mm or more, the focus is satisfactory. (This resolving power chart is a reproduction and does not indicate absolute values.)

## 10-2 Functions of the Fuses in the Control Box

#### CAUTIONS:

- 1) When changing the fuse, always turn off the 100V and 200V switches as well as the user's power source.
- 2) Do not use any fuse with a capacity not specified.



#### ①: (EXP. LIGHT (F1) (Lamp fuses)

A 30A enclosed fuse to protect the light source circuit.

#### ②: DRYER HEATER (F2) (Dryer heater fuse)

A 10A glass tube fuse to protect the dryer heater circuit.

#### ③: DRYER FAN (F3) (Dryer fan)

A 0.5A glass tube fuse to protect the dryer fan circuit.

#### ④: LIGHT CONTROL (F4) (Light control circuit fuse)

A 0.1A glass tube fuse to protect the light control circuit.

#### ⑤: DEFOGGER HEATER (F5) (Defogger heater fuse)

A 5A glass tube fuse to protect the main defogger circuit.

#### ⑥: DEV. HEATER (F6) (Activator heater fuse)

A 15A glass tube fuse to protect the activator heater circuit.

#### ⑦: CONTROL CIRCUIT (F7) (Control circuit fuses)

A 3A glass tube fuse to protect the control circuit.

#### ⑧: FAN (F8) (Fan fuse)

A fuse to protect the copy surface cooling fan, mirror defogger fan and exhaust fan.

⑨: **24 VDC CIRCUIT TRANS (F9) (Weak current circuit fuse)**

A 2A glass tube fuse to protect the 24 VDC weak current circuit transformer.

⑩: **PROCESSOR MOTOR (F10) (Processor motor fuse)**

A 1A glass tube fuse to protect the processor drive motor circuit.

⑪: **COPY SET (F11) (Copy set fuse)**

A 0.5A glass tube fuse to protect the COPY SET lamp circuit which is used when the copy is set.

**10-3 Lubrication**

The required frequency of lubrication depends on the frequency of operation. The following frequencies are recommended for the parts to be lubricated.

- ① Processor drive chain ..... once a week  
(Draw out the processor and the dryer.)
- ② Conveying chain ..... once a month  
(Open the master takeout hole cover.)
- ③ Cutter chain ..... once a month  
(Open the top cover of the exposure section.)
- ④ Exposure section drive chain ..... once a month  
(Open the upper rear cover.)
- ⑤ Master feed chain ..... once a month  
(Open the master magazine cover.)

**10-4 Order and Replacement of Parts**

The machine incorporates various kinds of parts. Some of them can be installed easily by the customers and others can be installed only by trained service personnel.

When ordering, please let us know the following:

- ① Whether parts only are needed or both parts and installation (replacement) service are needed.
- ② The information given in the certificate or the nameplate of your machine.
  - a) MODEL (CP-500SII)
  - b) MFG NO.
- ③ Descriptions of parts and quantities required, date of delivery, etc.

**NOTES:**

- 1. Specifications are subject to change without notice.
- 2. The manufacturer assumes no responsibility for any trouble caused by any modification made by the user or by the use of another company's equipment or parts with the machine without the manufacturer's approval.

**10-5 Troubles and Remedies**

With a correct understanding of the machine operation, you can clearly grasp the nature of the trouble which has arisen. Basic remedies are listed below. Carry out checks systematically.

**CAUTIONS:**

- 1. When checking the electric circuit for fuse replacement or other purpose, turn off the POWER switch and the user's power source.
- 2. After the power has been turned off, allow at least 5 seconds before turning it back on.

Trouble	Probable Cause	Remedy
1. Master cannot be set.	1. Blown fuse (F7, F0) 2. Nip roller lever is at FREE.	1. Replace the fuse. 2. Turn nip roller lever to LOCK. (Also check the inside of magazine.)
2. Machine will not start. (START lamp will not light.)	1. Master out of position. 2. Lens assembly is not at the original position. 3. Cutter out of position. 4. Takeout hole guide is closed. 5. Set master feed length is out of the specified range. 6. Setting of master feed length not complete yet.	1. Turn nip roller lever to LOCK and press master SET button. 2. Return lens assembly to the original position. 3. Return cutter to the start point. 4. Open the takeout hole guide. 5. Set it within the specified range. 6. Complete the setting.
3. Light sources will not light.	1. 200V power not supplied. 2. EXPOSURE switch is at ZERO. 3. Lamp burned out. 4. Blown fuse (F1, F4)	1. Turn on 200V power switch. 2. Turn it to NORMAL. 3. Replace the lamp. 4. Replace the fuse.
4. Master not fed.	1. Nip roller lever is at FREE. 2. Multiple exposure mode is selected.	1. Turn it to LOCK. 2. Cancel it.
5. Master not cut properly.	1. Dull cutter blade	1. Replace the blade.
6. Processor will not work.	1. Blown fuse (F10)	1. Replace the fuse.
7. Low activator temperature.	1. Heater plug disconnected 2. Missetting of thermo control 3. Blown fuse (F6)	1. Connect it. 2. Set it correctly. (30°C) 3. Replace the fuse.
8. Master not dried well.	1. 200V power not supplied 2. DRYER switch is OFF.  3. Blown fuse (F2)	1. Turn on 200V power switch. 2. Turn the DRYER switch to HIGH or LOW. 3. Replace the fuse.

# 11. DISPLAY

Various messages appear on the DISPLAY of the auxiliary control panel according to the situation. If an error message appears, it means that the machine is in trouble. Correct the trouble according to the instructions for remedy stated in 11.2.

Before taking the remedial steps, observe the following precautions:

- ① Before opening the cover, be sure to turn off the POWER switches and the user's power source
- ② To "reset" the power, turn off the power and allow at least 5 seconds before turning it back on.

## 11-1 General Messages

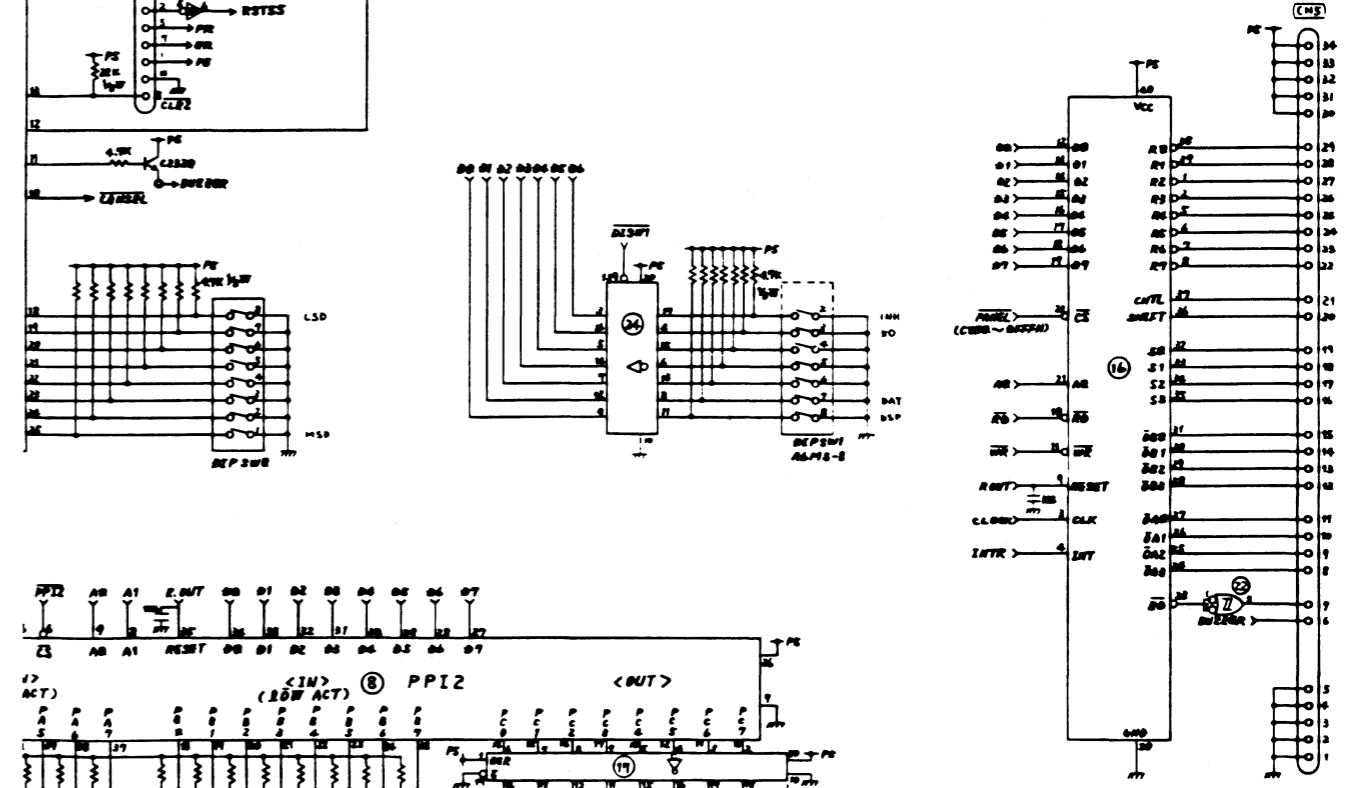
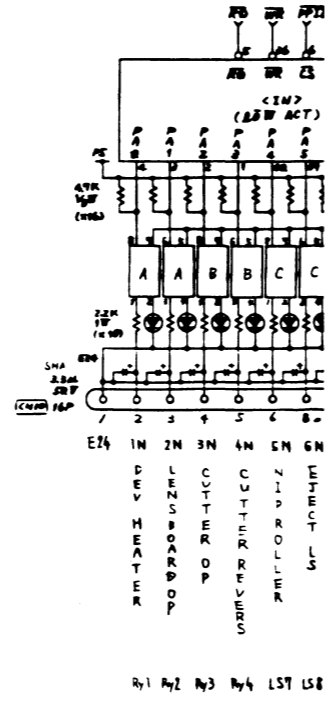
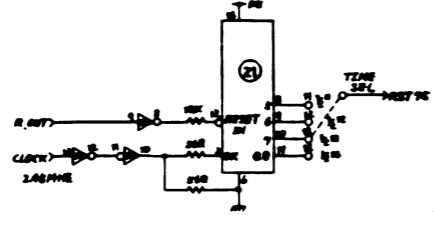
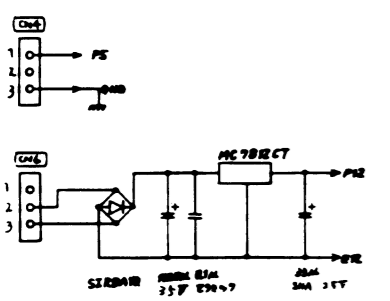
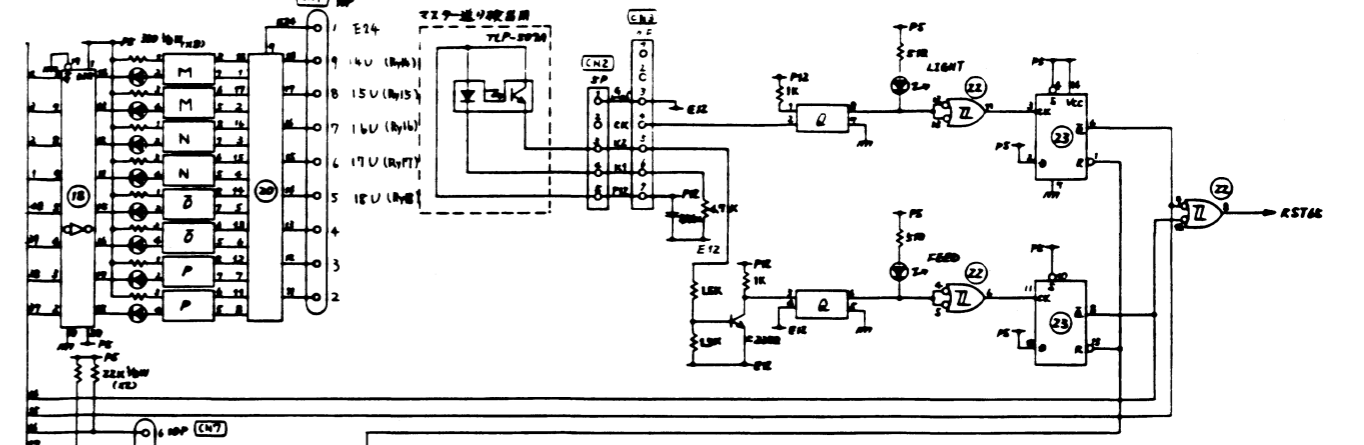
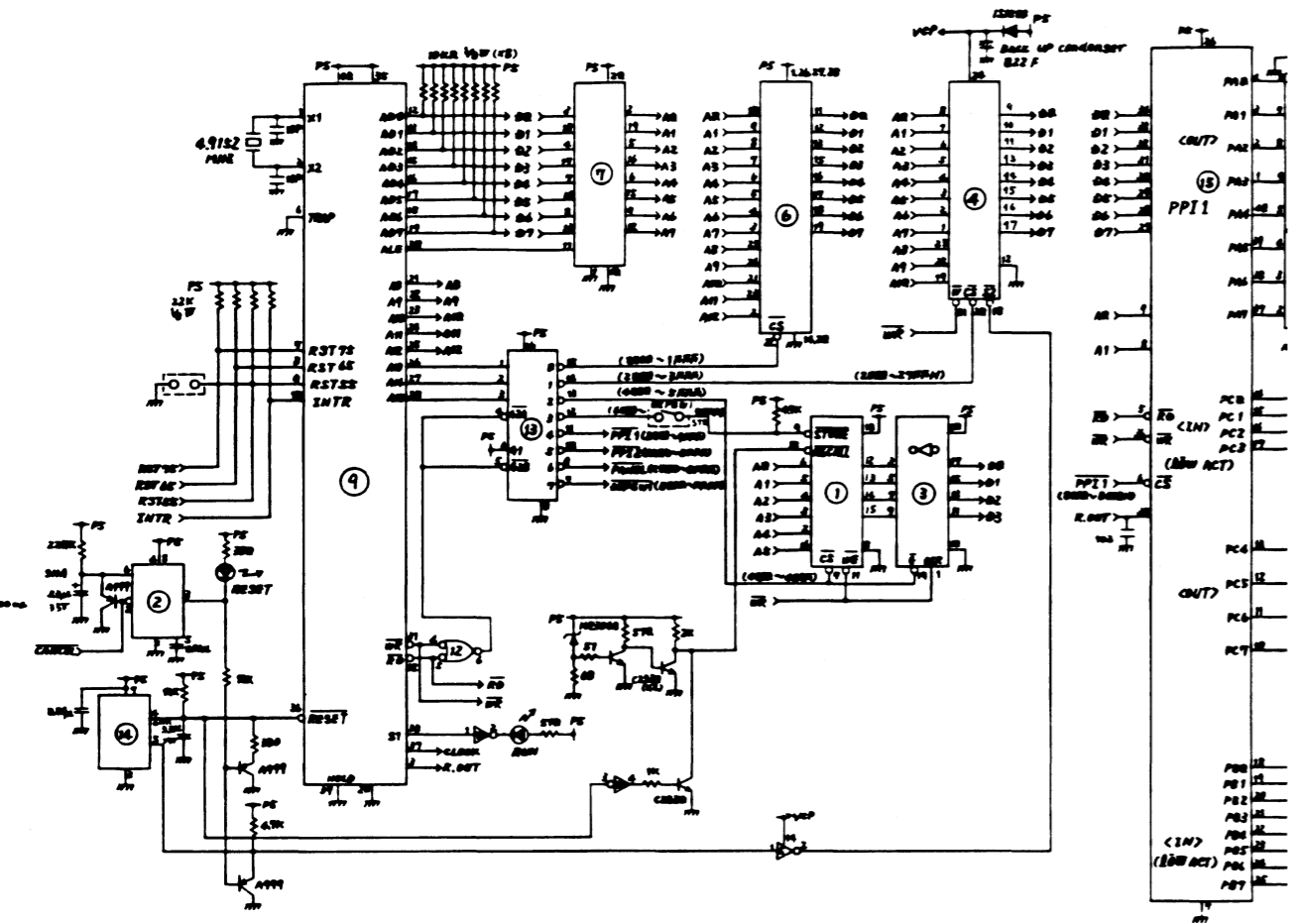
M.LENGTH	DISPLAY	Buzzer	Content	Remedy
	--- Flashing		Flashes when the FEED button is pressed and master is being set.	
	002 Flashing		Flashes until the first exposure is completed in the double exposure mode.	
	001 Flashing		Flashes until the second exposure in the double exposure mode or the exposure in the multiple exposure or standard photography mode is completed.	
000 Flashing	002 or 001		M. LENGTH readout flashes during master feeding after exposure until it is cut (when the lens assembly is at the original position.)	
	002		This means the machine is ready to start double exposure.	
	001		This means the machine is ready to start the second exposure in the double exposure mode or the exposure in the multiple exposure or standard photography mode.	
	CUT		This means the master is being cut.	
	SPL (splice)	pee. pee	Continues from the detection of a master splice till delivery of that master.	Remake the plate.
	UP Flashing (up)		Flashes while the master is being rewound, and stops flashing on completion of rewinding, and changes to "SET"	

## 11-2 Error Messages

M.LENGTH	DISPLAY	Buzzer	Message appears when:	Remedy
	CLd (cold)		The activator temperature is below the preset level.	1. Wait until the message disappears. 2. Press the C key; However, in this case, the machine can be started but the plate produced may have a poor quality due to low activator temperature.
	End (End)	pee..p	1. Master is exhausted. 2. No master is loaded. 3. Master is improperly loaded.	1.2. Load a new roll. 3. Reload the roll properly.
	nIP		The nip roller is free.	Turn the nip roller lever to LOCK
	SET (Set)		1. No master is set in the exposure section. 2. Reset button is pressed during machine operation.	Press the SET button.
	Err (Error)		The set master feed length is out of the specified range.	Reset the master feed length within the range.
			1. The lens assembly is not at the original position. 2. The cutter is not at the start point. 3. The master takeout guide of the carrier is closed. 4. M. LENGTH is being set.	1. Return the lens assembly to the original position using the LENS switch. 2. Reset the 100V POWER switch and return the cutter to the start point. 3. Open the master takeout guide. 4. Set the M. LENGTH (Enter data until all places stop flashing.)
	CHC (Check)	pee..p	Within 30 seconds after pressing the SET button, the master is not detected in the exposure section.	Turn off the power and reset the master.
	CHP (Check paper)	pee..p	Master is jamming in the carrier after master cutting.	Remove the jammed master. Reset the power and reset the master.
	5a5	pee..p	The lens/mirror assembly has stopped during exposure (lamps are off).	Turn off the power and return the lens/mirror assembly to the original position using the LENS switch.

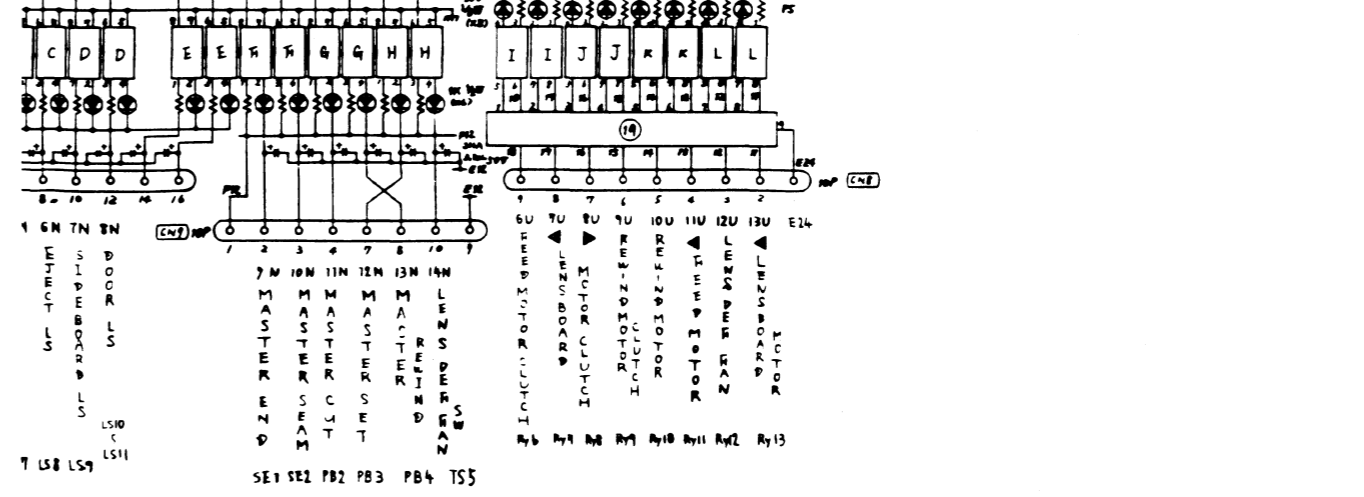
# 12. WIRING DIAGRAMS

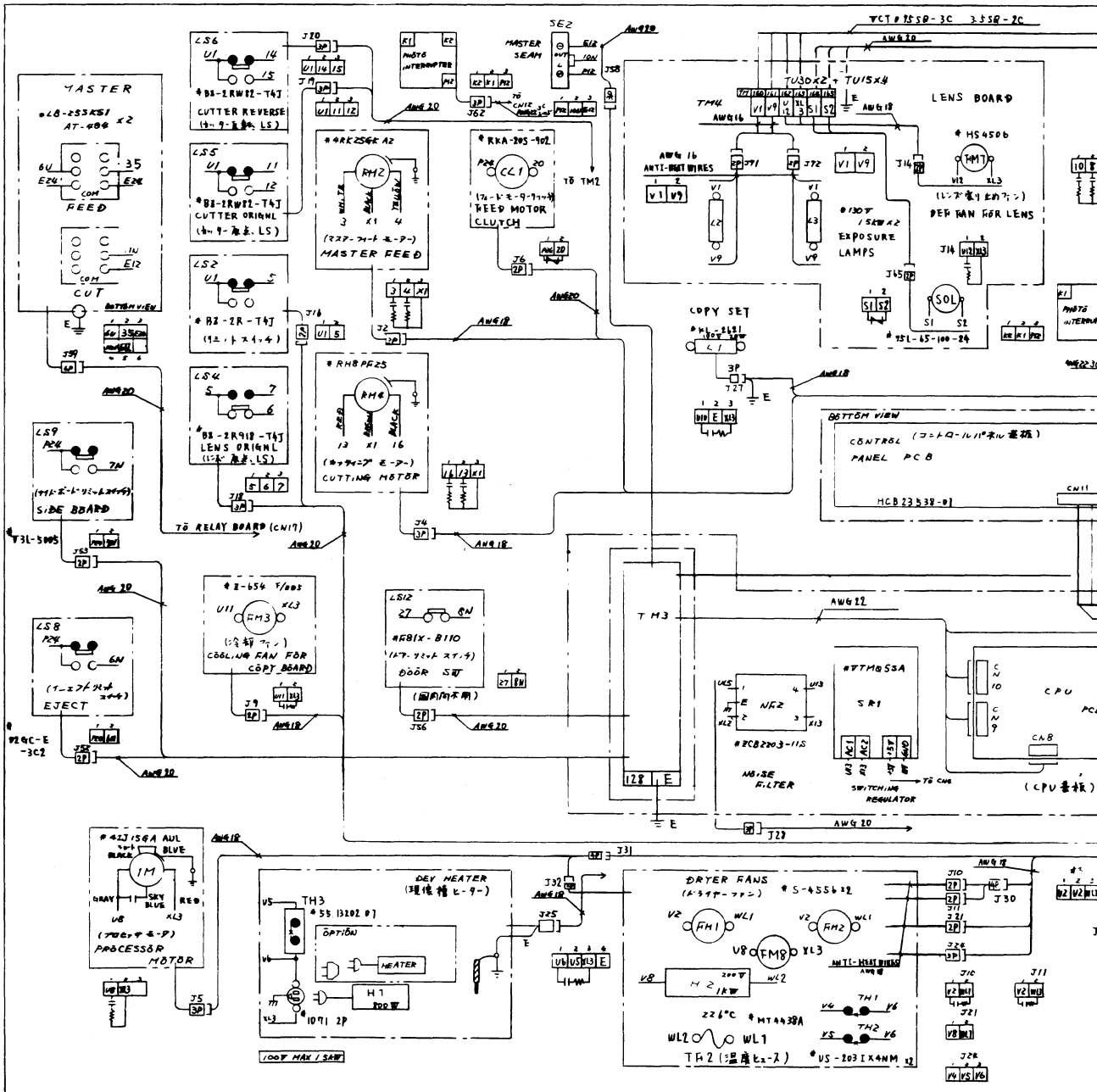
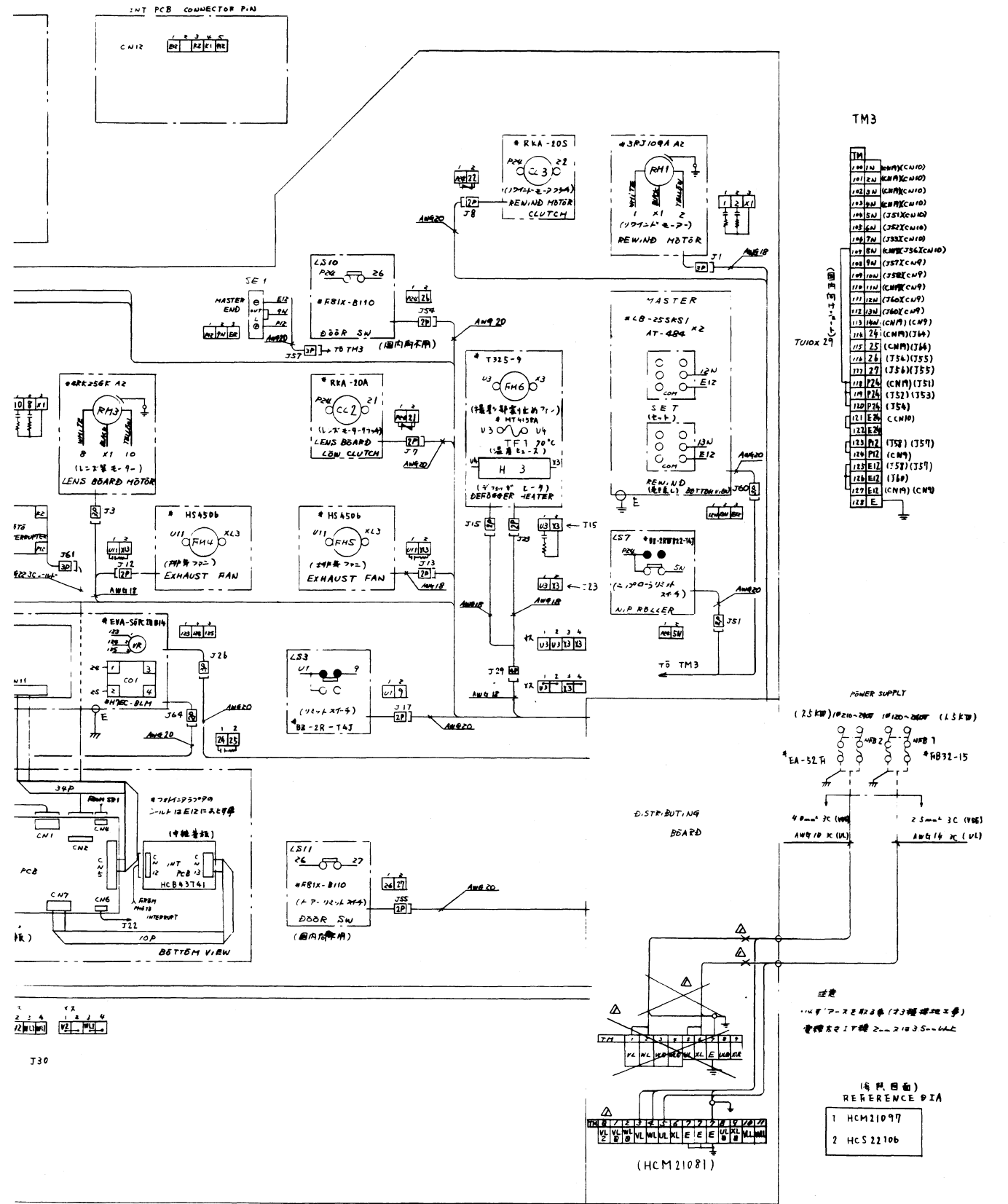
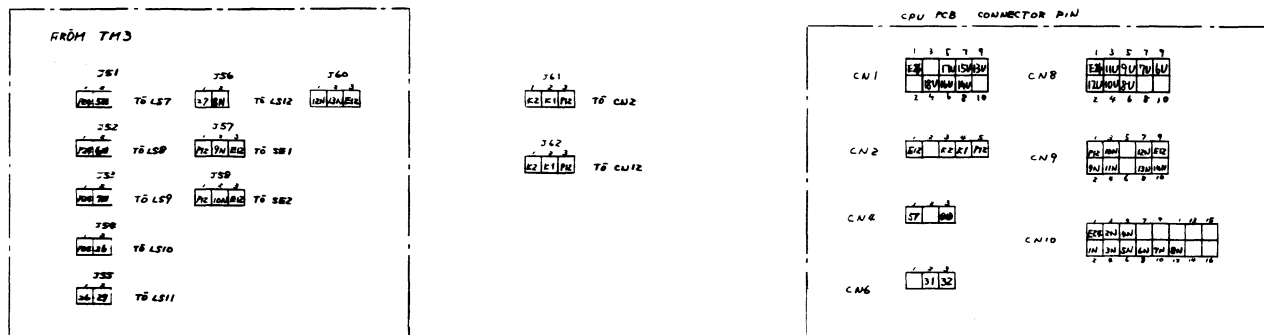
- 14U LENS BOARD MOTOR
- 15U CUTTING MOTOR
- 16U EXP LIGHT
- 7U ALARM
- 18U COPY SET



1	X 2210	16	M5C 0279	
3	PT 10	SN 768245	19.20	M5C 032P
4	PS 110	21	M5C 016P	
5	TC 0000	22	SN 768132	
6	P 2764	23	SN 768196	
7	SN 768137	24	SN 768160	
8	MEL 0255	A~R	PC 827	
9	P 8085A	LED	TLR 102A	
10	SN 768130	2	M 57841P	
14	PS 7610A			
12	SN 768130			
13	SN 768130			

1 地線に接続する場合は  
2 為りて接続しなす





注意事項

- CR1
- LS10, 11, 12 の SAFETY SW 10 個は各々の配線は不同 (個々 TH3)
- コネクタはユニバーサルタイプに注意
- T-2 箇所は付帯材料のみ使用可能
- モーターは必ず T-2 型を使用
- T-10 のモーターは必ず T-2 型を使用
- L1 の安定器は CR-1 型に注意

J31

J33 付有モーター J33 付有

注意

1. 4 箇所は必ず T-2 型を使用 (T-2 型は必ず T-2 型を使用)

電線は必ず T-2 型を使用 (T-2 型は必ず T-2 型を使用)

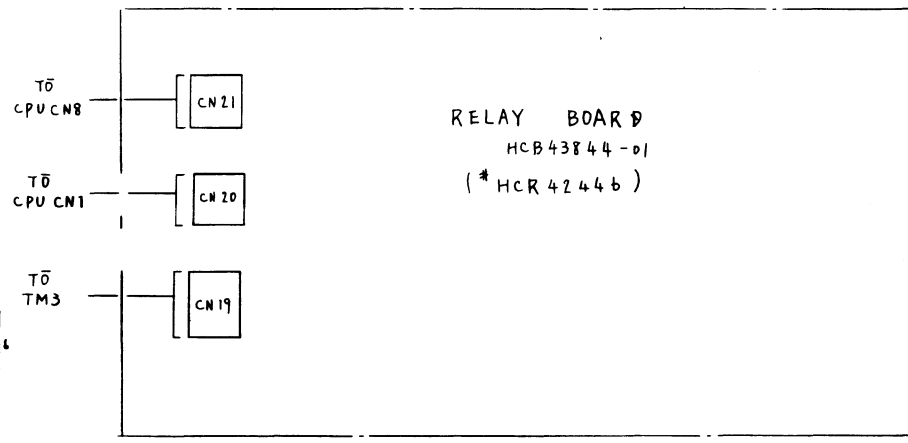
参考図面

1 HCM21097

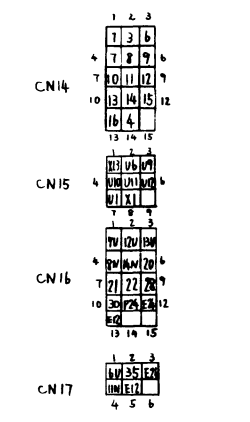
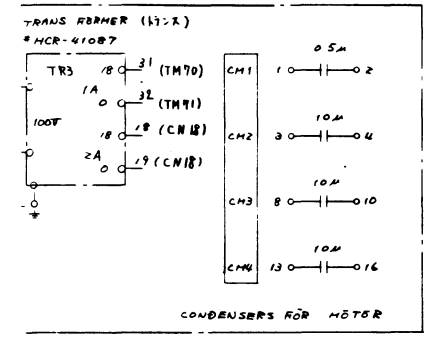
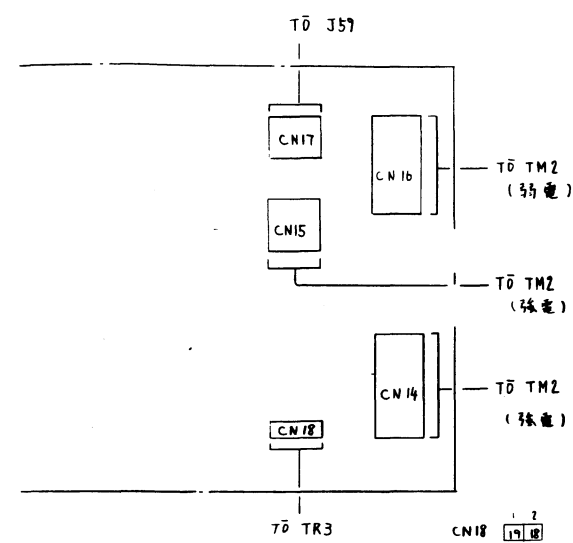
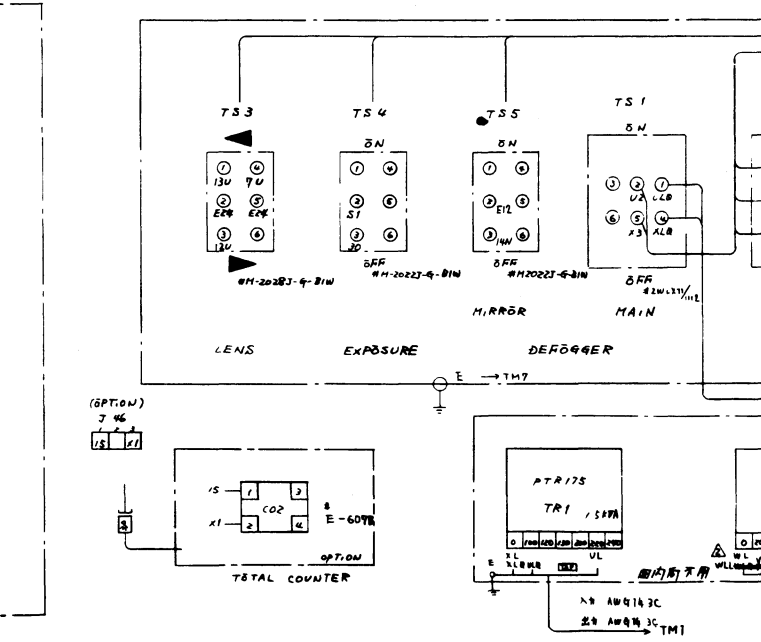
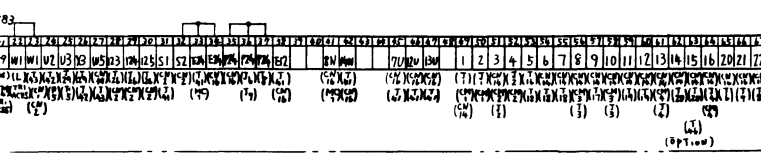
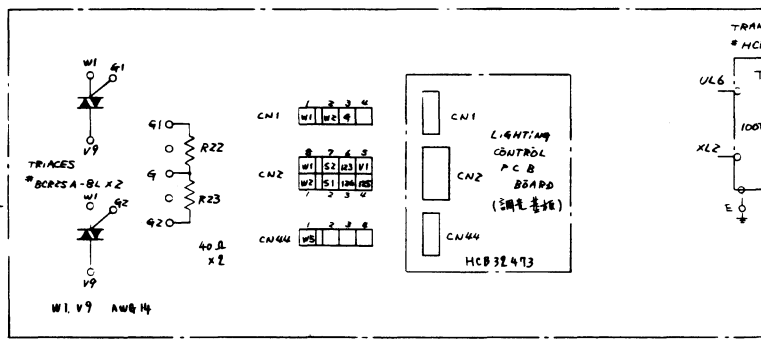
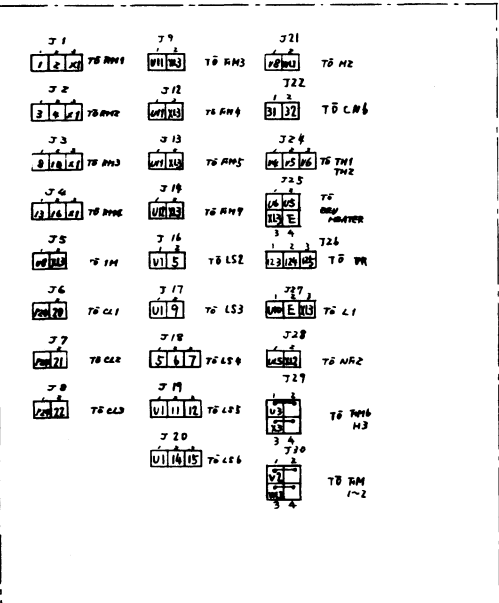
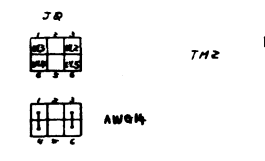
2 HCS22106

(HCM21081)

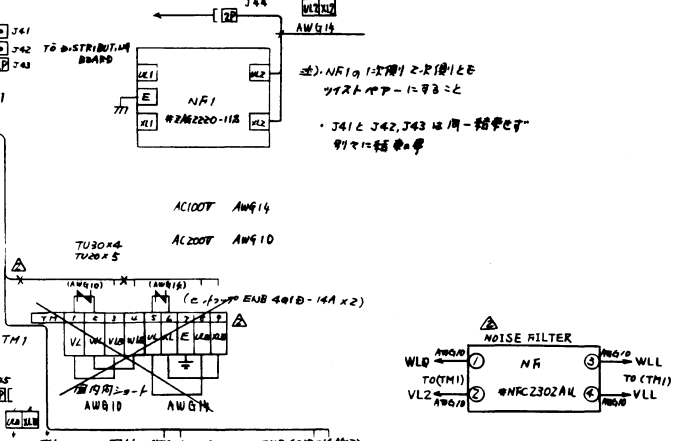
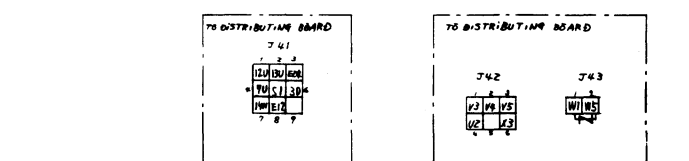
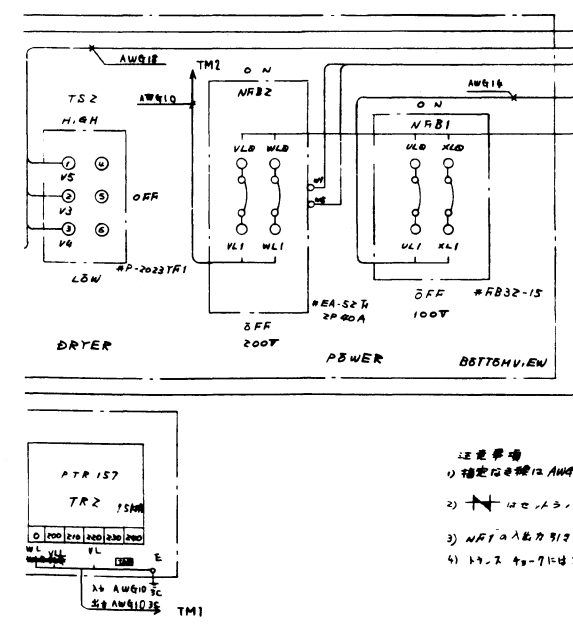
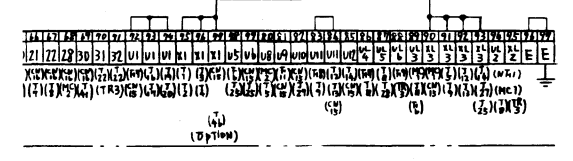
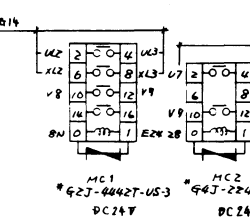
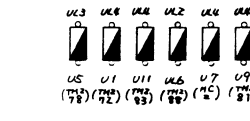
仕様  
 - RY1~RY4 MY-2 AC100V  
 - RY6~RY8 MY-2 DC24V  
 - RY14 MY-4 DC24V  
 - 12V 1.5A 1S1585  
 - WWH-12 V-E-3- CR-1



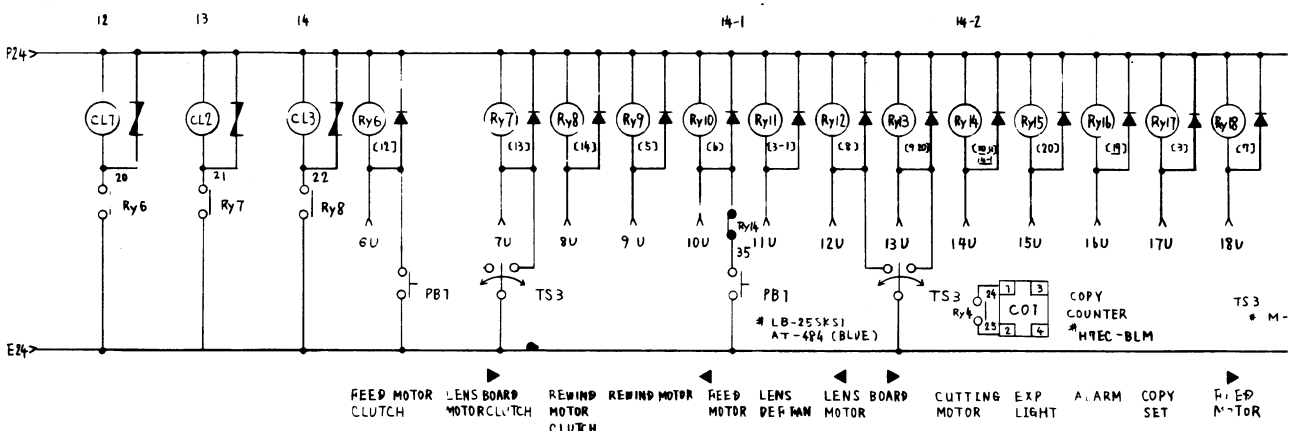
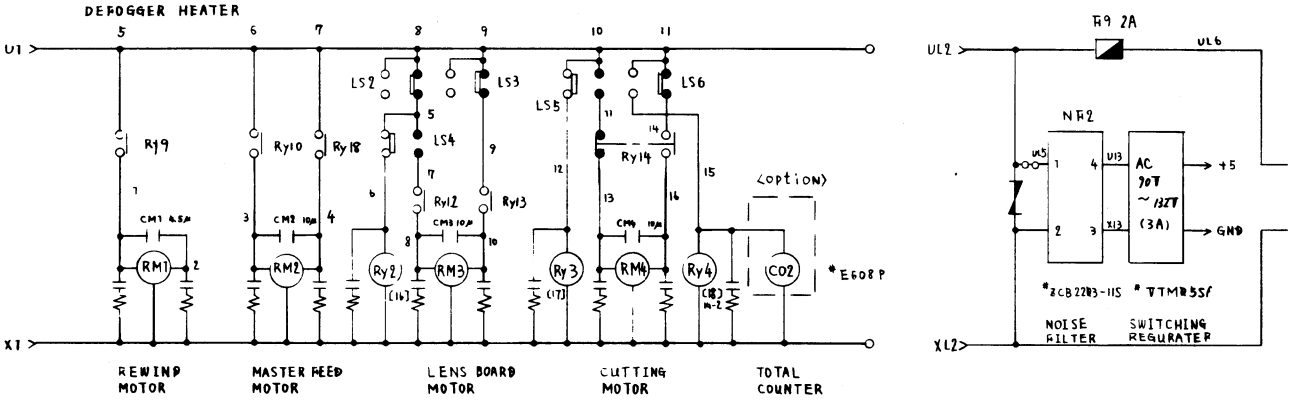
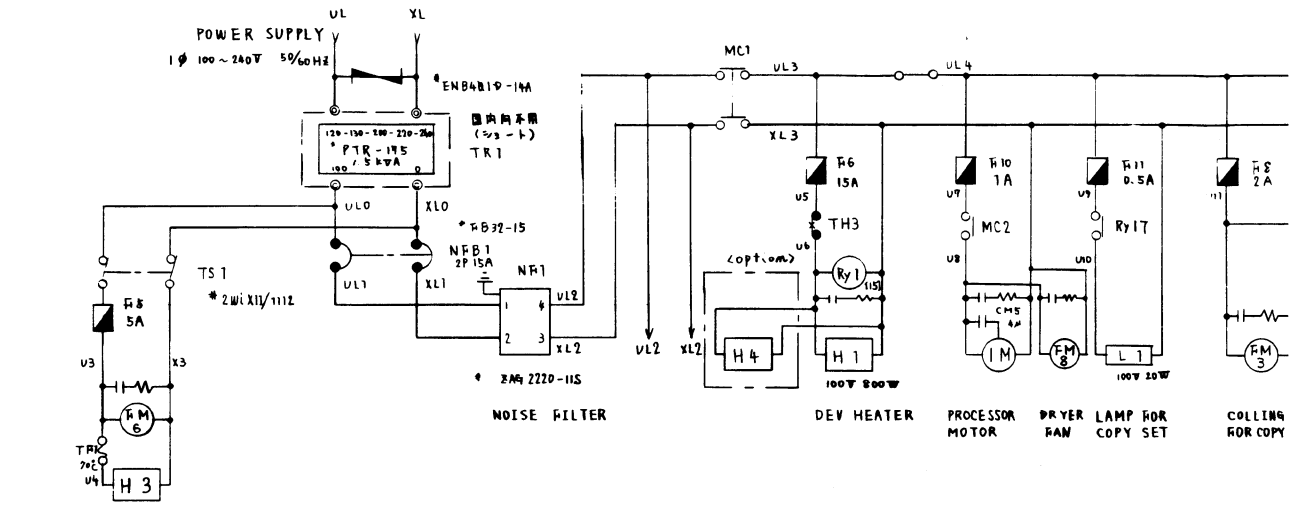
仕様  
 E1 E2 E3 E4 E5  
 30A 10A 0.5A 0.1A 5A  
 250V  
 0.5A (AWG14) 1.0A (AWG12) 2.0A (AWG10) 5.0A (AWG8)



E6 E7 E8 E9 E10 E11  
 1.5A 3A 2A 2A 1A 0.5A  
 125V  
 (AWG14) (AWG12) (AWG10) (AWG8) (AWG6) (AWG4)



注意事項  
 1) 指定品番は AWG20 まで  
 2) 100V 1.5A (ENB 241D-14A)  
 3) NFI の入力端子は 1.5A まで  
 4) トランスは 715J-30 に対応した品番

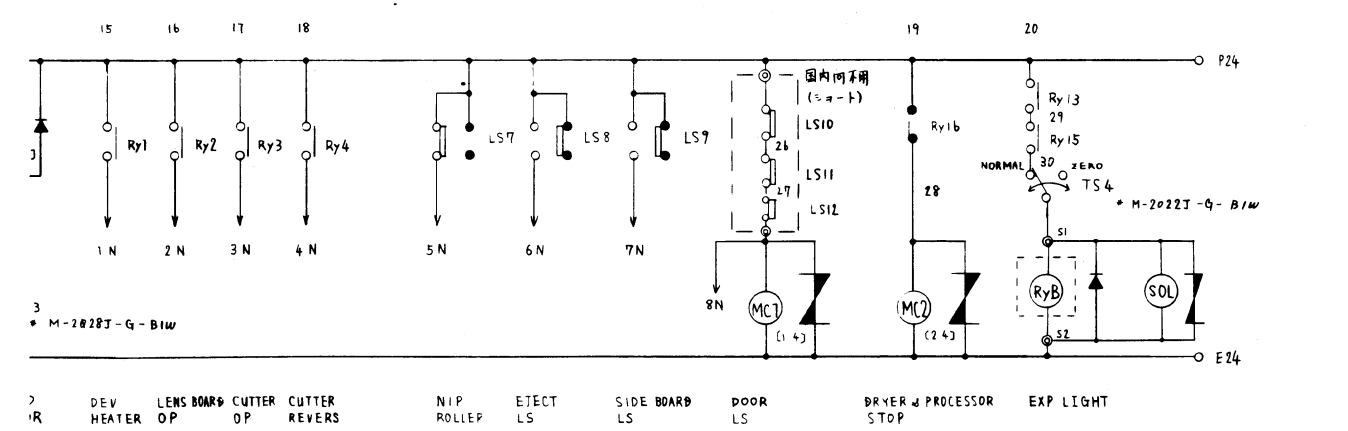
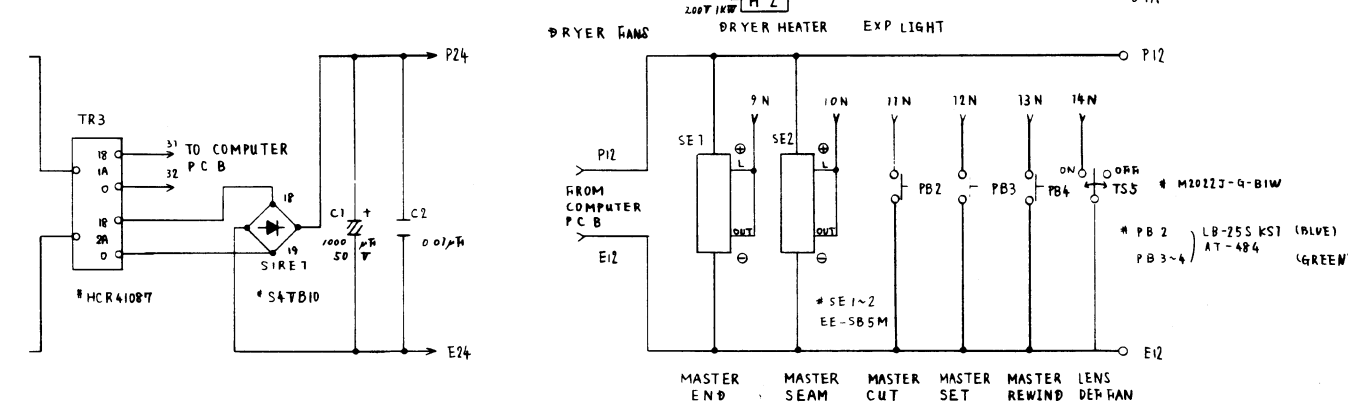
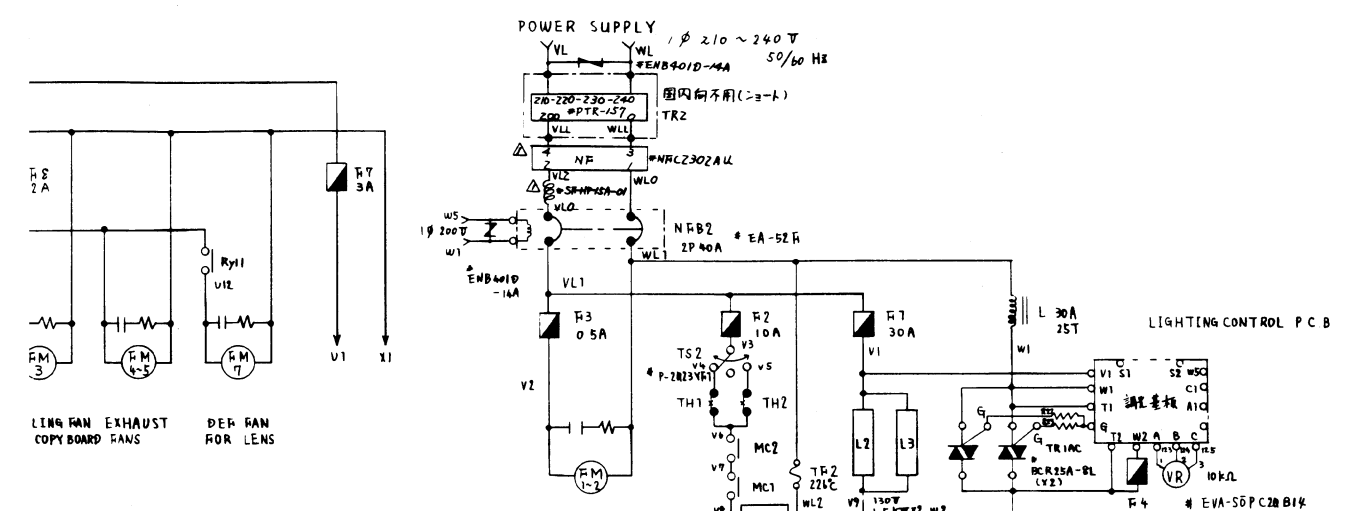


NOTE :

—|—|—| \* IS1585

—|—|—| \* CR-1

—|—|—| \* ENB2010-14A



Ry 1~4 \* MY-2 100V

Ry 6~19 \* MY-2 24V

\* MC1 92J-4442T-US-3

MC2 64J-2242T-US