

MITSUBISHI GRAPHIC ARTS SYSTEM

CP-800S

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1. INTRODUCTION

We at Mitsubishi are very grateful to you for selecting the Silver Master Platemaker CP-800S. The Silver Master Platemaker CP-800S is a completely new multi-purpose platemaking system which, in combination with the Silver Master RII (SLM-II) or Silver Lithoplate (SLP-F) -- Silver Master film version --, produces offset master plates directly from the original copy with a simple operation, eliminating the need for any intermediate film process. It covers A2 (16.5" × 23.4") to A1 (23.4 " × 33.1") size plates.

This operation manual provides detailed information on the machine structure operating procedures for ensuring continued satisfactory operation of the system.

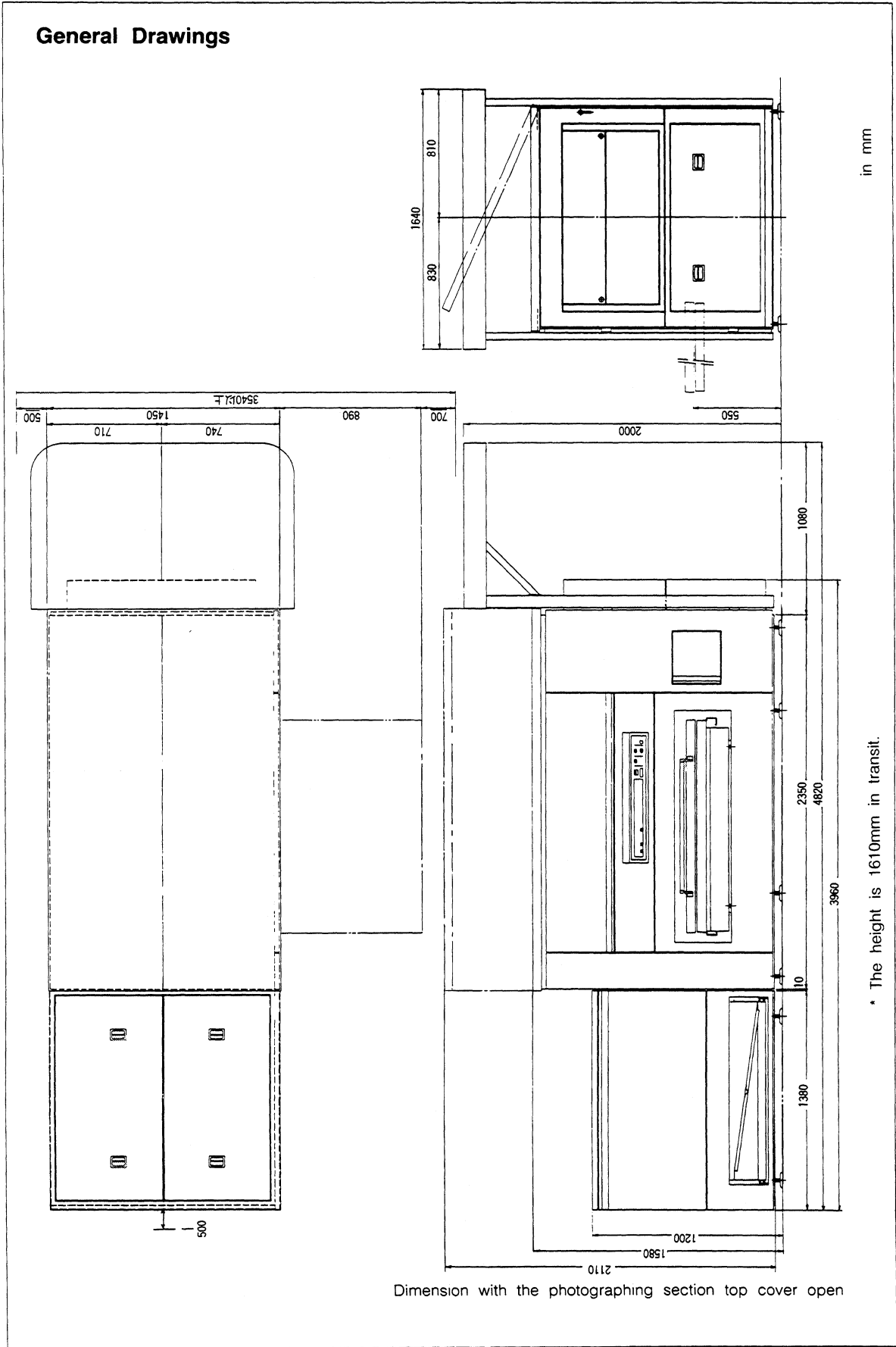
Before using the system, be sure to read this manual to fully understand all of its excellent features.

For information on printing methods, please refer to our separate booklet, "Silver Master Technical guide." (In this manual, the master material -- Silver Master paper or film -- is referred to as master.)

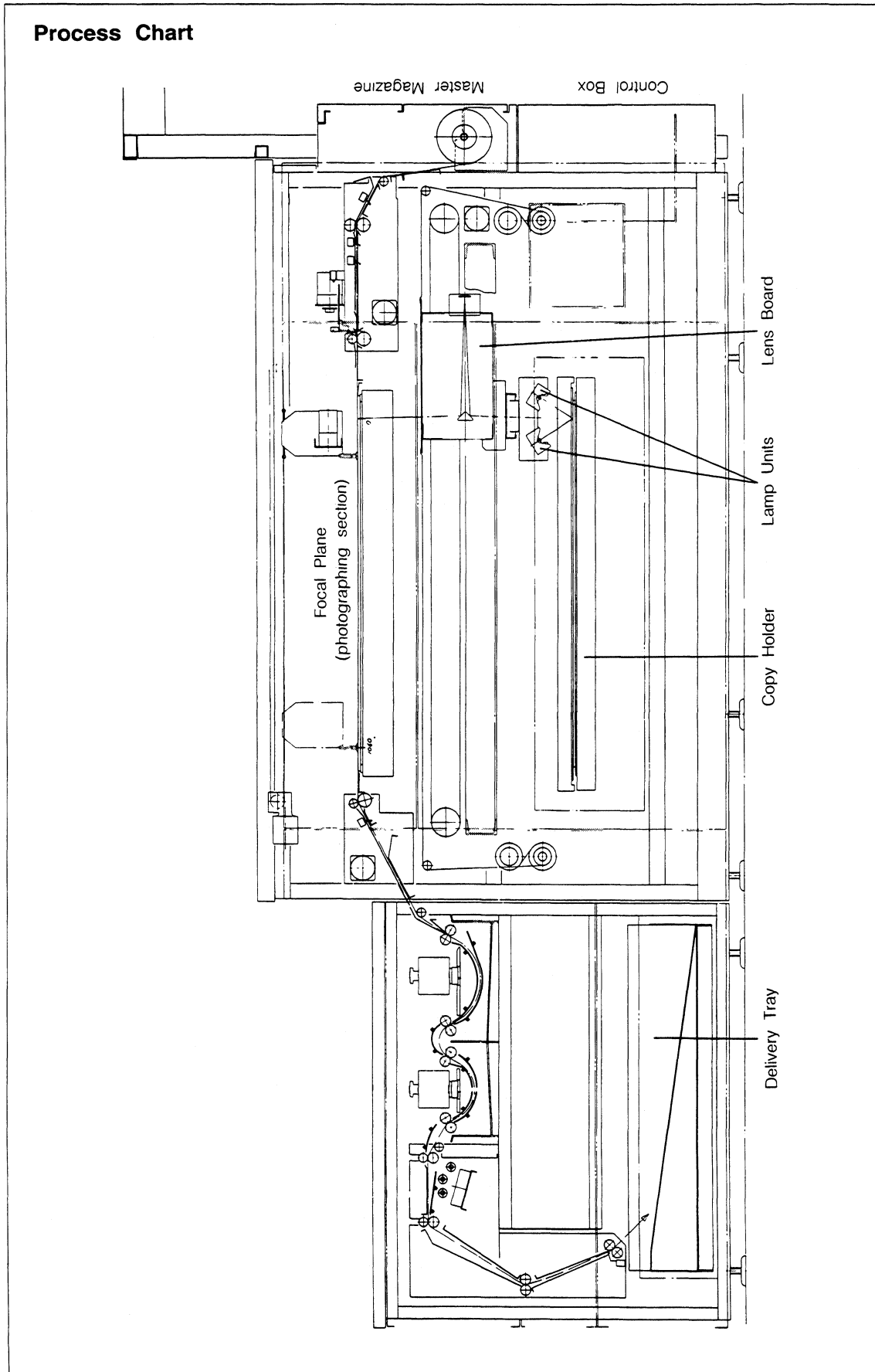
2. SPECIFICATIONS

Master material:	SLM-R11, SLP-F, available in 75m roll
Master width:	508mm (20"), 550mm (21.7"), 820mm (32.3")
Master length:	600 ~ 1090mm (23.6" ~ 42.9")
Effective image area:	820 × 1090mm (32.3" × 42.9")
Blank exposure area:	820 × 1090mm (32.3" × 42.9")
Max. copy size:	820 × 1090mm (32.3" × 42.9")
Magnification:	100%
Lens:	focal length 360mm, in mirror type
Light sources:	Two halogen lamps 150V, 1.5kW
Exposure control:	Power thyristor (with light level control dial)
Master splice detection:	Buzzer alarm, automatic overcut
Copy mounting method:	Vacuum drawer-type copy holder, copy emulsion face up
Multiple exposure:	NORMAL-MULTI exposure switch available
Platemaking rate:	(Master length 1000mm) Initial 4'00"/4'48" (60Hz/50Hz) Cyclic 1'45"/2'05" (60Hz/50Hz)
Miniature darkroom:	Provided on the master magazine as a set
Processor tank capacity:	Activator 34 1, stabilizer 24 1
Replenisher bottle capacity:	Activator 4 1, stabilizer 4 1
Activator temperature control:	three 100V 530W panel heaters with thermo-control
Dryer:	Blast blower heater: 200V 2.8kW
Dimensions:	4820 (W) × 1640 (D) × 2000 (H) mm (height: 2110mm when the photographing section top cover is open)
Weight:	2,000kg (main unit 1,550kg, processor 450kg) approx. 2,100kg (processing chemicals and a master roll included)
Electricity:	100V, 3.0kW, single-phase 200V, 7.3kW, single-phase
Option:	Winch for lifting the processing racks Mixer for preparing processing solutions

3. GENERAL DRAWINGS



4. PROCESS CHART

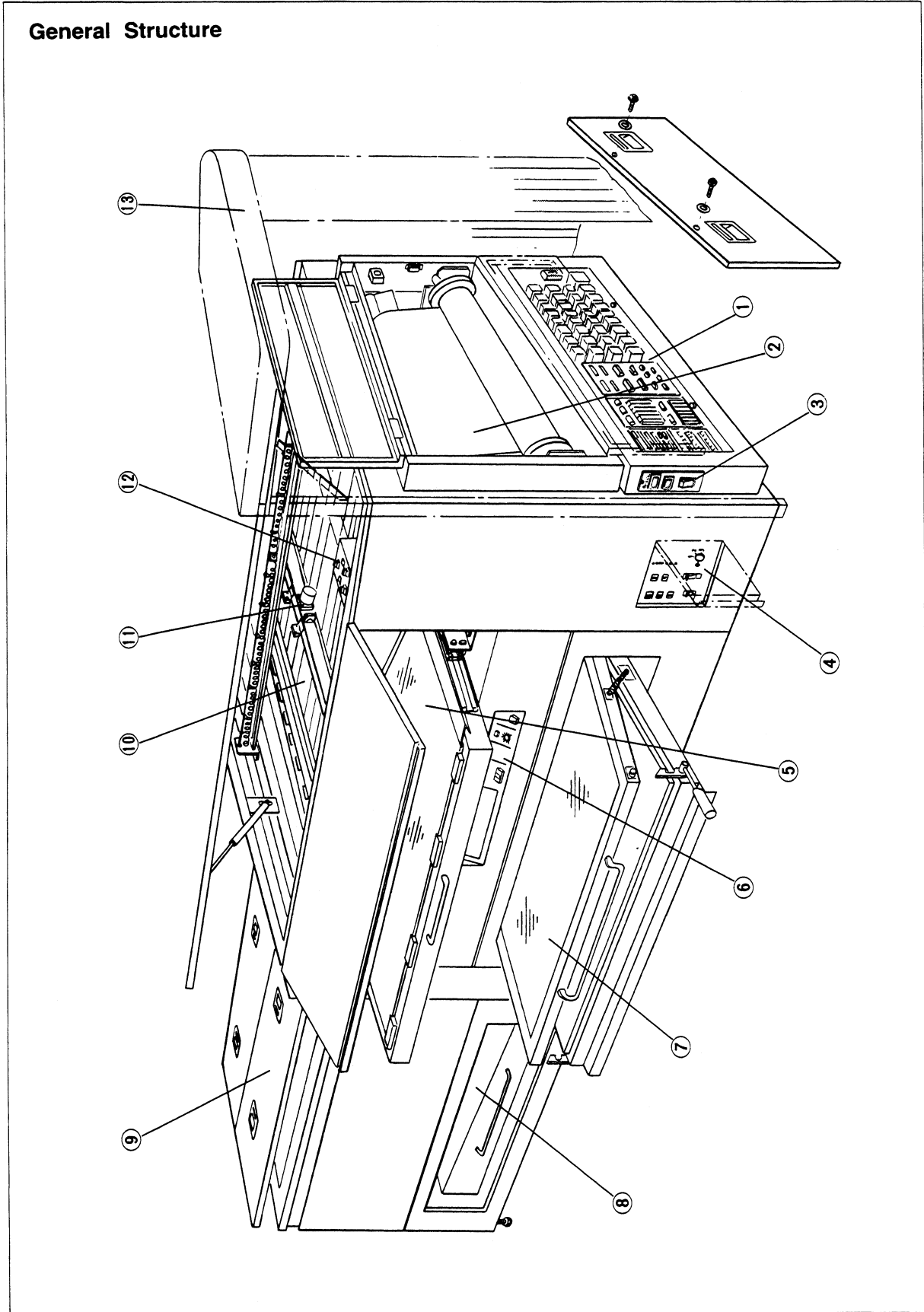


5. SITTING CONDITIONS AND PRECAUTIONS

- ① The wiring should have a sufficient capacity to withstand electric power of 100V 3.0kW and 200V 7.3kW single-phase, and fluctuations should be within $\pm 10\%$.
Particularly, since the machine incorporates a microcomputer, it may malfunction if the power supply capacity is insufficient.
In areas where service voltage is unstable, it is recommended that a voltage stabilizer.
- ② The room where the machine is installed should meet the following conditions.
 - 1) Room temperature: 10 ~ 30°C (50 ~ 86°F)
 - 2) Room humidity: 40 ~ 70%
 - 3) No vibration
 - 4) Even floor surface
 - 5) The floor is solid enough to withstand the machine weight (2,100kg when the processing tanks are filled and a master roll is loaded.)
 - 6) There is no possibility of exposure to direct sunlight.
 - 7) Dust free area. Do not install the machine near a printing press where dust and paper powder is generated.
 - 8) The room is well ventilated.
- ③ Space requirements
Be sure to keep a clear space around the machine for inspection.
For the machine dimensions, refer to 3. GENERAL DRAWINGS.

6. MACHINE DESCRIPTION

6-1 General Structure

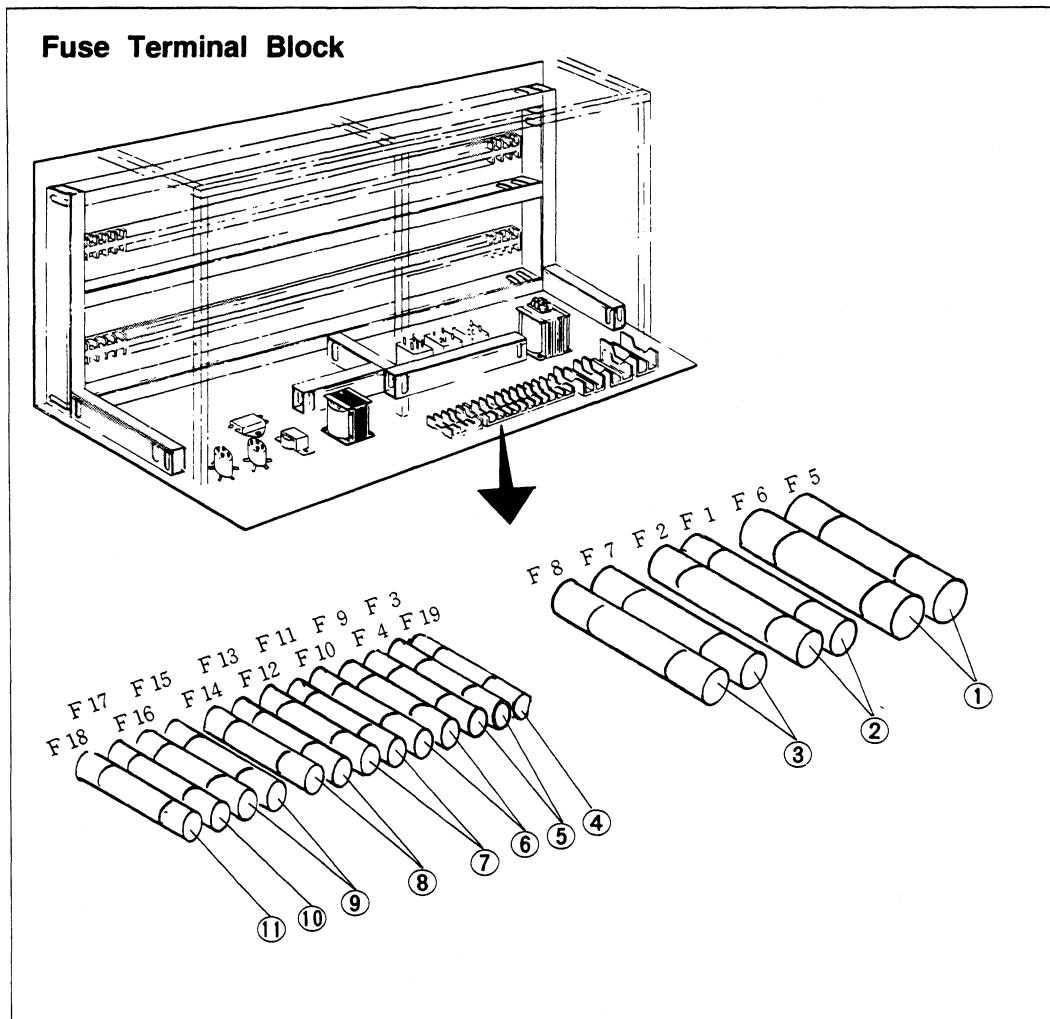


- ① **Control box**
Houses the power supply board, CPU board, I/O board, INPUT board, light control circuit board, and other electric parts.
- ② **Master magazine**
- ③ **Defogger switchboard**
Holds the defoggers (dehumidifiers) which prevent the lens, mirror, copy holder glass and exposure glass from being fogged.
- ④ **Main panel**
Holds various electric controls and pilot lamps such as the 100V and 200V POWER switches, buzzer sound volume control, DRYER switch, multiple exposure switch, LENS switch, activator heater switch, processor motor switch and START OK CHECK pilot lamps.
- ⑤ **Exposure (focal plane) glass**
Raise the front cover and lock it with two stays on both sides, and you can draw out the exposure glass.
- ⑥ **Contol panel**
Holds the START button switch, MULTI/NORMAL exposure switch, EXPOSURE control, vacuum pump switch for the copy, master feed length set digital switches, counter, and process and status indicators.
- ⑦ **Copy holder**
The copy is held by vacuum.
- ⑧ **Delivery Tray**
- ⑨ **Processor**
Incorporates the developing and stabilizing tanks and racks, replenisher bottles and dryer.
- ⑩ **Photographing section**
- ⑪ **Carrier**
Master suction and carrying devices are provided.
- ⑫ **Operation board**
Holds the cutter, master suction (chucks) and pressure contact (setters) check switches.
- ⑬ **Miniature darkroom**
Houses a darkroom safelight.

6-2 Descriptions of the Main Components

6-2-1 Control Box

1) Fuse Terminal Block



- ① **Light source fuses (F5, F6)**
Two enclosed fuses (30A) are provided to protect the light source circuit.
- ② **Dryer heater (F1, F2)**
Two glass tube fuses (15A) are provided to protect the dryer heater circuit.
- ③ **Processor heater fuses (F7, F8)**
Two glass tube fuses (20A) are provided to protect the processor heater circuit.
- ④ **Defogger 2 fuse (F19)**
A glass tube fuse (10A) is provided to protect the Defogger 2 circuit.
- ⑤ **Dryer fan fuses (F3, F4)**
Two glass tube fuses (3A) are provided to protect the dryer fan circuit.
- ⑥ **Processor motor fuses (F9, F10)**
Two glass tube fuses (3A) are provided to protect the processor drive motor circuit.
- ⑦ **Master transport control circuit fuses (F11, F12)**
Two glass tube fuses (10A) are provided to protect the master transport control circuit.
- ⑧ **Copy holder control circuit fuses (F13, F14)**
Two glass tube fuses (10A) are provided to protect the copy holder control circuit.
- ⑨ **24V DC circuit fuses (F15, F16)**

Two glass tube fuses (3A) are provided to protect the 24 V DC circuit for relays, I/O board and microswitches.

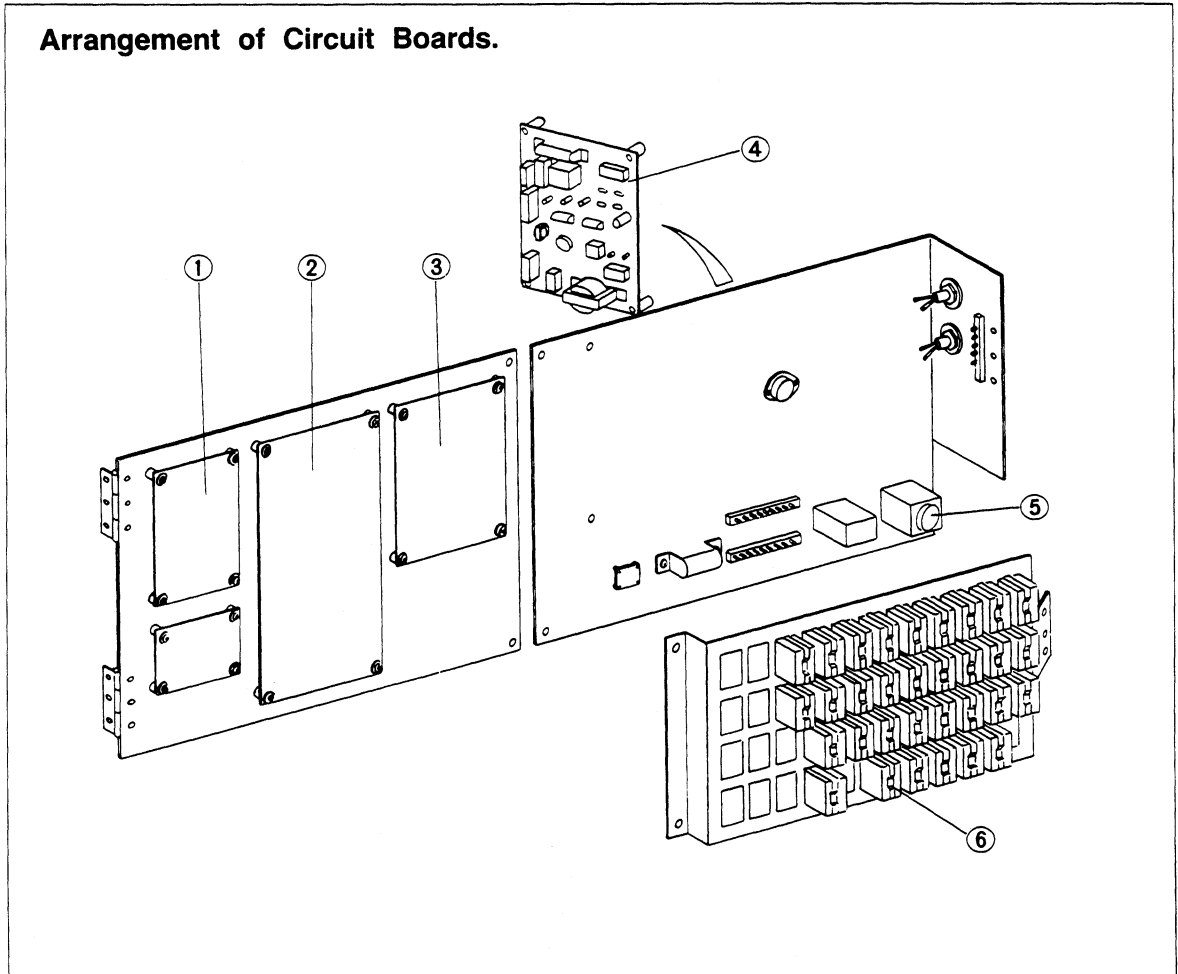
⑩ **5 V DC, 12 V DC circuit fuse (F17)**

A glass tube fuse (0.5A) is provided to protect the 5 V DC/12 V DC circuit.

⑪ **Processor fan fuse (F18)**

A glass tube fuse (1A) is provided to protect the processor fan circuit.

2) Circuit Boards



① **CPU board**

Incorporates a microcomputer.

② **I/O board**

Transmits information (signals) to, and receives from, the microcomputer.

③ **INPUT board**

Incorporates dip switches on which reference data such as reference master length is set.

④ **Light control circuit board**

A circuit board for the lamps as light sources for photographing. Reference voltages for the lamps on this board are set.

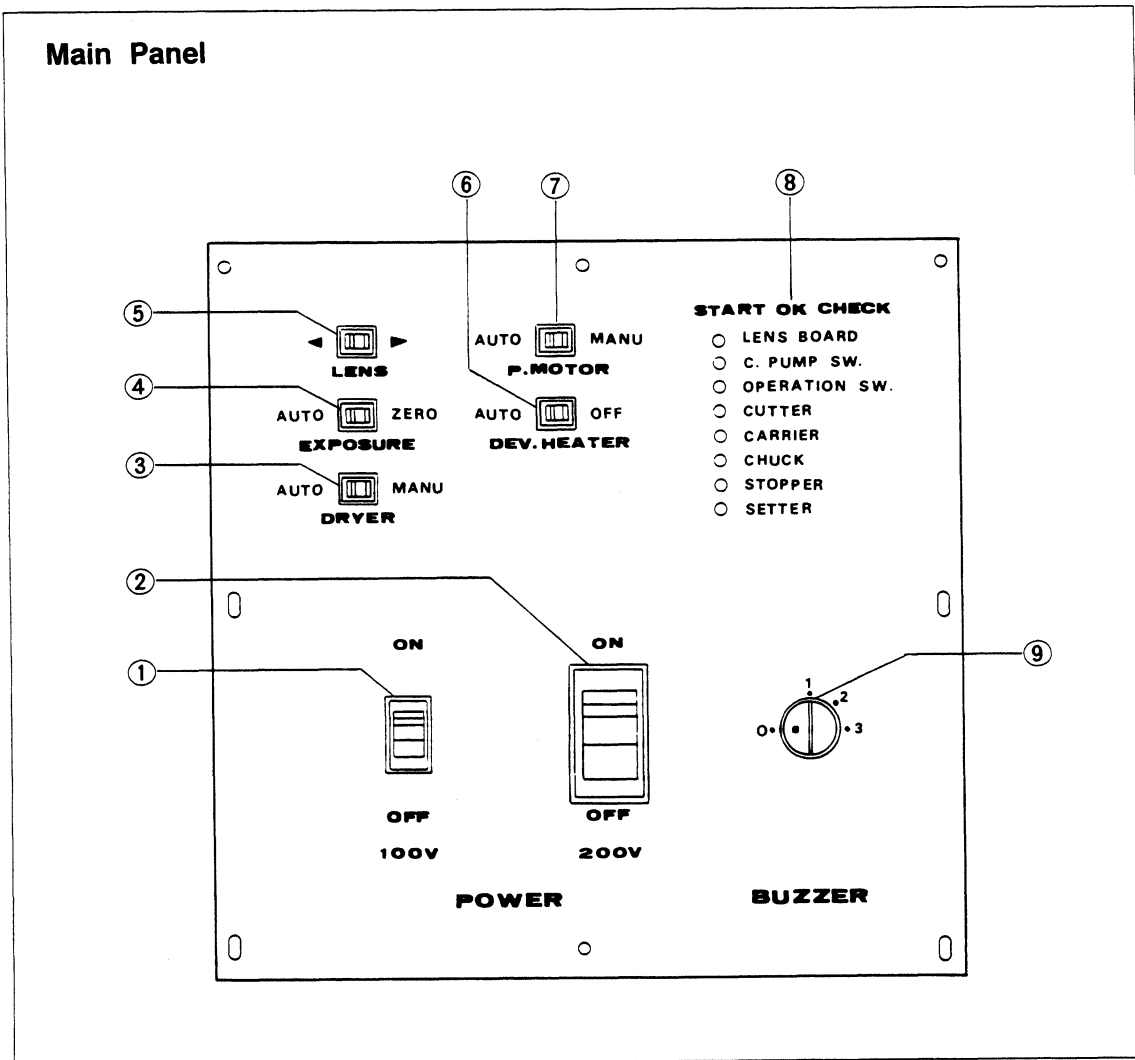
⑤ **Timer**

This timer is designed to set the running time for Defogger 1. The running time should range from 0 to 60 min. It is usually set at 30 min.

⑥ **Relay board**

Holds the relays for the operation circuits.

6-2-2 Main Panel



① 100V POWER switch

Contains a 30A circuit (no-fuse) breaker.

When the switch is turned on, the operation circuit, processor motor and activator heater are energized and ready for operation.

To reset the power, turn the switch off and then allow at least 5 seconds before turning it back on.

This interval is necessary to avoid machine trouble.

② 200V POWER switch

Contains a 50A circuit (no-fuse) breaker.

When the switch is turned on, the light sources and dryer are energized and ready for operation.

③ DRYER (dryer switch)

The 200V POWER switch should be ON when this switch is used.

1) MANU:

The dryer is energized and the heaters and fans actuated.

The thermo-control works to maintain the hot blast at about 35°C ~ 40°C (95°F ~ 104°F)

2) AUTO:

The dryer is energized the moment the START switch is pressed, and turned off the moment a processed plate is delivered.

This mechanism is designed for power saving.

However, when the ambient temperature is very low in winter, the dryer may not reach around 40°C in the AUTO mode before master enters it, therefore the switch should be turned to MANU 5 min. before starting operation in order to warm up the dryer.

④ **EXPOSURE (AUTO/ZERO switch)**

The 200V POWER switch should be ON when this switch is used.

1) AUTO:

When the START switch is depressed, the light sources are lit and an exposure is made with the light level as set on the EXPOSURE control. For photographing, the switch should be normally at AUTO.

2) ZERO:

When the START switch is depressed, the light sources don't light and the lens board moves and master is delivered as unexposed (silver-solid).

This position is used if misoperation is made in multiple exposure.

⑤ **LENS (lens switch)**

This switch is used to move the lens board independently.

While this switch is held to the right or left, the lens board moves in the corresponding direction. When held to the left (◀), the lens board moves in the direction opposite to the original position. When held to the right (▶), the lens moves toward the original position.

It is used when the lens must be shifted to the center for lens/mirror adjustment or inspection. After using it, return the lens board to the original position and make sure the (START OK CHECK) LENS BOARD pilot lamp goes out.

⑥ **DEV. HEATER (activator heater switch)**

1) AUTO:

The thermo-control circuit for the developing tank works to maintain the activator at 28 ~ 31°C. Be sure to keep the switch at AUTO while the activator is in use.

2) OFF:

The thermo-control circuit for the developing tank does not work. Be sure to turn it to OFF before draining or replacing the activator.

⑦ **P. MOTOR (processor motor)**

1) MANU:

The processor motor is energized and runs continuously, even when no exposure is made.

2) AUTO:

The processor motor immediately starts when the START switch is depressed, and works until plate delivery; this mechanism is devised to save power. It should be set at AUTO. While the liquid temperature is rising before the machine starts, be sure to keep it at MANUAL in order to attain a uniform distribution of liquid temperature.

⑧ **START OK CHECK (pilot lamps)**

The START indicator lamp (green) in the START switch lights to indicate that the machine is ready to start when the required preliminary conditions for starting exist, that is these pilot lamps are out except when the LENS BOARD and C. PUMP SW are on. If the START switch lamp is out and any of these START OK CHECK pilot lamps are on, take the necessary remedial procedures for the process in question. During operation, the START OK CHECK pilot lamps turn on and off in order according to the operational sequence.

1) LENS BOARD (orange lamp)

This pilot lamp lights up when the lens board is not at its original position (on the right).

Even when it is on, the machine can be started; as the START switch is pressed, the master plate is fed to the focal plane, then the lens board returns to the original position and exposure starts. In a continuous plate making mode, copy change can be done just after an exposure is made.

To use the same copy for continuous plate making, press the START switch continuously; master is set in place on the focal plane while the lens board is coming back to its original position, which increases the speed of platemaking cycle.

2) C. PUMP SW. (copy vacuum pump switch -- orange lamp)

This pilot lamp lights up when the copy holder is drawn out for copy change or another purpose, or when it is not at its original position (on the opposite side of the machine operation side). Even when it is on, the machine can be started; as the START switch is pressed, master is fed to the focal plane. While the C-VACUUM switch on the control panel is at AUTO, as the copy holder is moved to the original position, the vacuum pump runs and exposure starts.

3) OPERATION SW. (OPERATION switch -- red lamp)

This lamp lights up when the OPERATION switch is at MANU. It is usually set at AUTO.

4) CUTTER (red lamp)

This lamp lights up when the cutter assembly is not at its original position.

NOTE:

When the 100V POWER switch is reset (once turned off and back on), the cutter assembly returns to its original position.

When resetting the power, turn off the power and allow at least 5 seconds before turning it back on.

5) CARRIER (red lamp)

This lamp lights up when the carrier is not at its original position.

When the 100V POWER switch is reset, the carrier returns to its original position.

6) CHUCK (red lamp)

This lamp lights up when the chucks are in their LOWER position (master pick-up position) or MID position (master carrying position).

To turn off this lamp, turn the OPERATION switch on the operation board to MANU and the CHUCK switch to UPPER (for original position).

7) STOPPER (red lamp)

This lamp lights up when the stopper has come down to stop the carrier in alignment with the optical axis during master feeding after the START switch is pressed.

When the 100V POWER switch is reset, the stopper returns to its upper (original) position.

8) SETTER (red lamp)

This lamp lights up when master is held down on the focal plane by pressure.

To turn off the lamp, turn the OPERATION switch on the operation board to MANU and the SETTER switch to FREE (for original position).

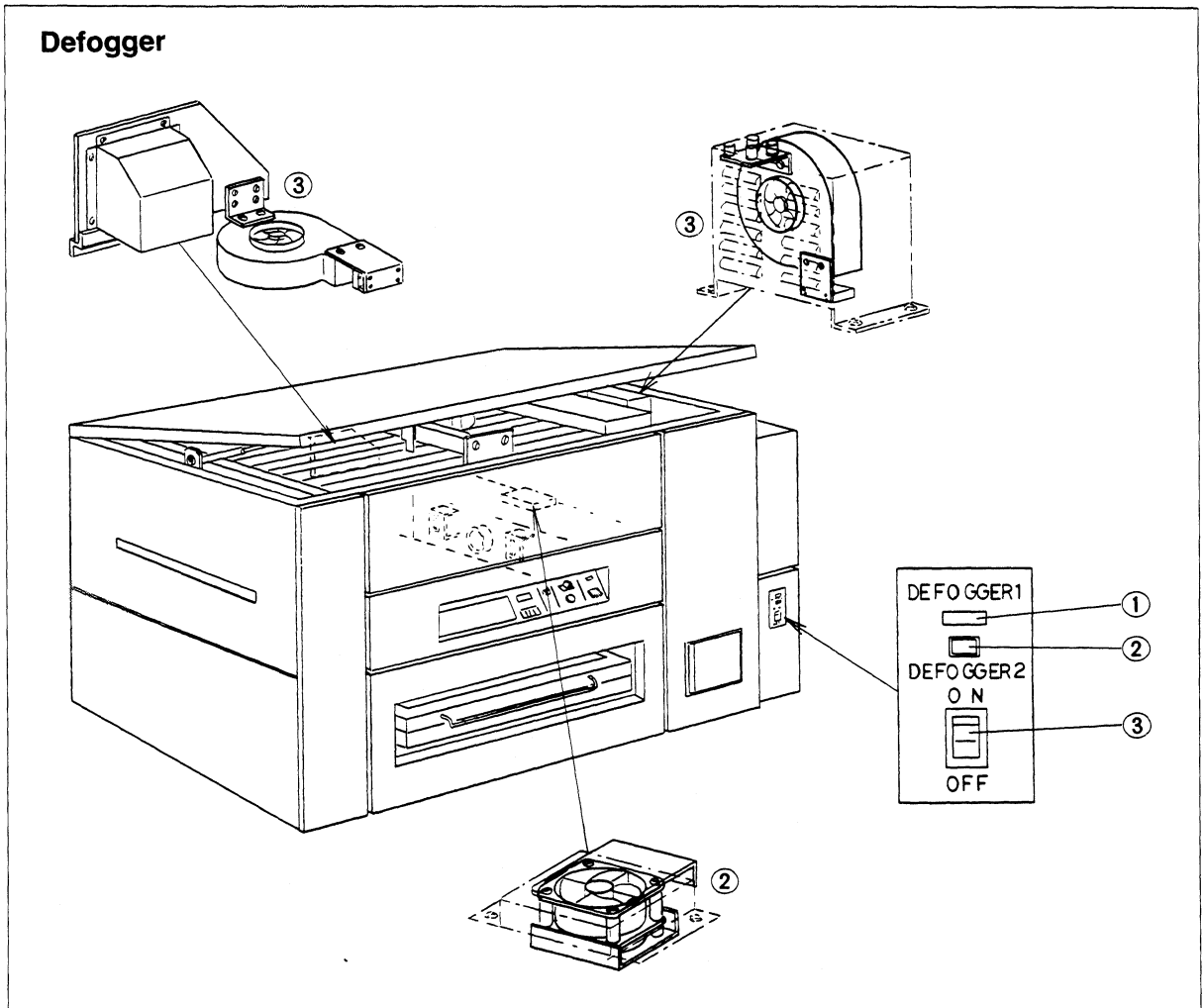
9) BUZZER

When a master roll is exhausted or a splice is detected, the buzzer sounds.

The buzzer sound volume dial has divisions from 0 to 3. Adjust the volume according to the working environment.

The buzzer sound volume can be thus increased in three steps -- 1, 2, 3 --(0: off).

6-2-3 Defogger Switchboard



① **DEFOGGER lamp**

When the DEFOGGER 1 button switch ② is depressed with the 100V and 200V POWER switches ON, the DEFOGGER 1 lamp lights to indicate that the Defogger 1 is working.

② **DEFOGGER 1 button switch**

When this button is pressed, the intake fans, located on the non-operation (farther) side of the photographing section and inside the lens-mirror assembly, run for the period as set on the timer (30 minutes). The fans blow air into the lens-mirror assembly and the photographing section in order to prevent the mirror, lens and exposure glass from being fogged due to a large temperature difference between the machine and the room. At the beginning of operation, press this switch to operate the fans.

③ **DEFOGGER 2 switch**

When the atmospheric humidity is high or room temperature variation in a day is very large so dew condensation might arise in the machine, the Defogger 2 switch (indicated as ③ above) is used to operate the dehumidifiers located in the master magazine and at the non-operation side in the photographing section.

When this switch is turned on, these dehumidifiers run, they blow hot air into the master magazine and the photographing section to remove moisture. The dehumidifiers will continue to run as long as this switch is on. Turn it ON and OFF according to the environmental conditions.

The dehumidifiers are protected by a main body fuse (F19 10A glass tube fuse) and a thermo-fuse (rated 70°C) for safety.

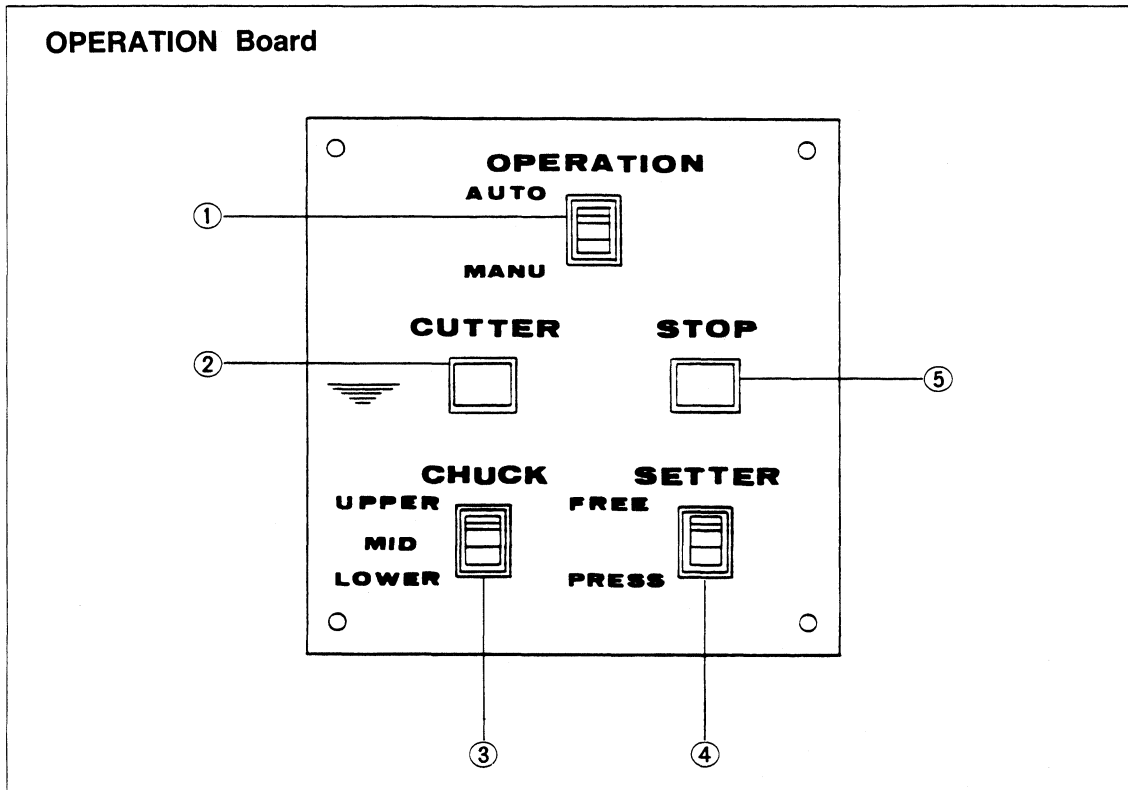
When the dehumidifiers should be used

- 1) When humidity is high.
- 2) When the temperature variation in a day is large.

Especially in winter, the temperature difference between the machine and the room might be large at the start of work day or when the room heater is turned on in the morning. This can cause dew condensation. If such is the case, turn on the DE-FOGGER 2 switch at the end of work day, and run it until the temperature difference between the machine and the room is very small.

* The dehumidifiers are provided with safety thermo-fuse for protection against overheating above 70°C.

6-2-4 OPERATION Board



① OPERATION switch

When the switch is at MANU, the CUTTER, CHUCK and SETTER switches mentioned below can be used to check the operation of the respective devices independently. While the switch is at MANU, the machine can not be started, therefore, the switch should usually be at AUTO.

② CUTTER button switch

When this switch is pressed with the OPERATION switch at MANU, the cutter can be operated independently.

This switch is used to test the cutting quality after cutter replacement.

③ CHUCK switch

This switch is used with the OPERATION switch at MANU to operate the chucks. When this switch is turned from UPPER to MID, the chucks do not move, but when it is turned to LOWER, the chucks move down to the master pick-up position.

When it is turned back to MID, the chucks move up to the master carrying position (approx. 2mm); when it is turned back to UPPER, they move back to the original position. It should usually be at UPPER.

- 1) UPPER: chuck original position
- 2) MID: master carrying position
- 3) LOWER: master pick-up position

④ **SETTER switch**

This switch is used with the OPERATION switch at MANU to operate the setters independently.

The master pressure contact condition or setter operation can be checked using this switch. Usually the switch should be at FREE so that the setters are in their original position.

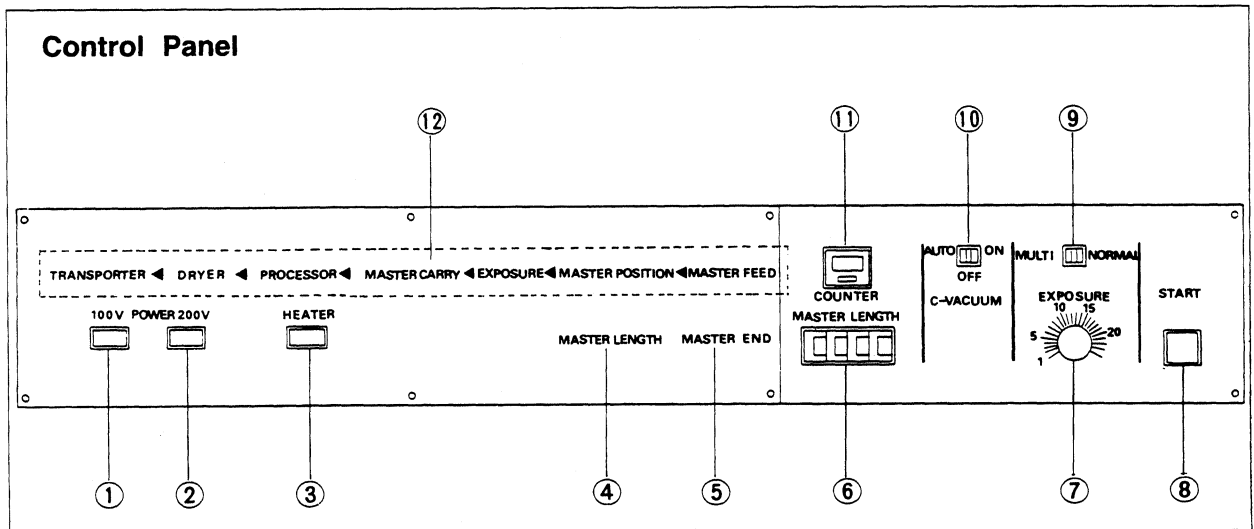
- 1) FREE: The setters are in their original position.
- 2) PRESS: The setter rubber plates are down for master pressure contact.

⑤ **STOP button switch**

When this switch is pressed during cutter operation, the cutter stops its operation and returns to its original position.

Also when the switch is pressed during a series of operations, such operations are stopped. To reset the machine, turn the 100V POWER switch off and then back on. To return the lens board to its original position, use the LENS switch on the main panel.

6-2-5 Control Panel



① **100V POWER lamp (green)**

When the 100V switch is turned on, this lamp lights to indicate that the 100V circuit is ready for operation.

② **200V POWER lamp (green)**

When the 200V POWER switch on the main panel is turned on, this lamp lights up to indicate that the 200V circuit is ready for operation.

③ **HEATER lamp (green)**

With the DEV. HEATER switch at AUTO and the 100V POWER switch at ON on the main panel, the activator heater turns on and this lamp lights up if the activator temperature is lower than preset on the thermo-control dial.

When the activator temperature reaches the preset level on the thermo-control dial, the lamp goes out, and then automatically turns on and off repeatedly to maintain the activator temperature.

④ **MASTER LENGTH (master length error indicator, red)**

When the set master length is not within the range of 60.0 to 109.0cm, this indicator

illuminates. In this case, the machine cannot be started. Re-enter a master length within the specified range.

⑤ **MASTER END (master end indicator, murex)**

1) As the master roll is exhausted, this indicator illuminates and the buzzer sounds. It also illuminates when the roll is not loaded properly. In such case, reload the roll properly.

2) If a master splice (detection hole) is detected, it flashes and the buzzer sounds while the splice (hole) is passing the sensor.

⑥ **MASTER LENGTH set digital switches**

The master length is set within the range of 60.0 to 109.0cm in 0.1cm increments on these switches. When the START switch is pressed, the master is automatically fed by the set length, and cut to that length.

⑦ **EXPOSURE set control**

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

Higher number settings increase the amount of exposure while lower number settings decrease it.

⑧ **START button switch (green)**

When the indicator lamp built in this switch lights green, the machine is ready for operation.

On depression of the START switch, the lamp goes out and a series of operations including exposure, development and delivery are performed according to the pre-determined sequence.

While the lamp is out, the switch is ineffective.

⑨ **MULTI/NORMAL exposure switch**

1) NORMAL

When the START switch is pressed, a series of operations automatically proceed (start → master feed → cut → movement to optical axis → positioning → exposure → master carrying → development → drying → delivery).

Usually, the switch should be in this NORMAL position.

2) MULTI

More than one exposure of an original copy can be made when the switch is in this position. In this mode, the master is not moved after the first exposure, but waits for another exposure on the same sheet.

Before pressing the START switch for the last exposure on the same master, never forget to turn the switch to NORMAL.

If you should forget to do so, turn the switch to NORMAL and turn the EXPOSURE AUTO/ZERO switch to ZERO, and press the START switch. With this, the lamps for photographing (exposure) will not light so the master will be delivered out of the machine as unexposed.

⑩ **C-VACUUM switch (vacuum pump switch for copy)**

1) AUTO

While the switch is in this position, the vacuum pump for copy stops running when the copy holder is drawn out. As the copy holder is pushed back in its original position and the START switch is pressed, the vacuum pump starts running.

Usually it should be in this AUTO position.

2) ON

While the switch is in this position, the vacuum pump for copy runs even when the copy holder is out, so that the copy contact condition can be checked.

This position is used for checking the condition of a thick copy mounted in the copy holder.

3) OFF

When the switch is turned to this OFF position, the vacuum pump for copy stops running even during exposure.

⑪ **COUNTER**

This counter indicates the number of processed master plates.

Press its reset button to reset the counter to zero after changing processing solutions or loading a new master roll.

⑫ **Process indicators**

On depression of the START switch, these indicators light in sequence while the machine is in the respective stages from master feed to master delivery.

If any of these indicators flash, it means there is a master jam in the corresponding stage. If so, check and remove the jammed master.

If, in successive platemaking operation, a preceding master plate is jammed in either of the stages PROCESSOR, DRYER and TRANSPORTER, the corresponding indicator (words) flashes and, if operation for a next plate has already started, the indicator MASTER CARRY and the START switch lamp also flash where the next plate is not carried to the processor but stops moving.

In this case, take the following remedial steps: first remove the jammed master in the processor and press the START switch again. The flashing indicator goes out and the master is carried to the processor and delivered out of the machine.

NOTE):

Don't turn off the 100V and 200V POWER switches (if they are turned off, the operation circuit will be reset). Remove the processor top cover and turn off the safety switch.

MASTER FEED : Master is being fed.

MASTER POSITION : Master positioning, or application of belt pressure are under way.

EXPOSURE : An exposure is being made.

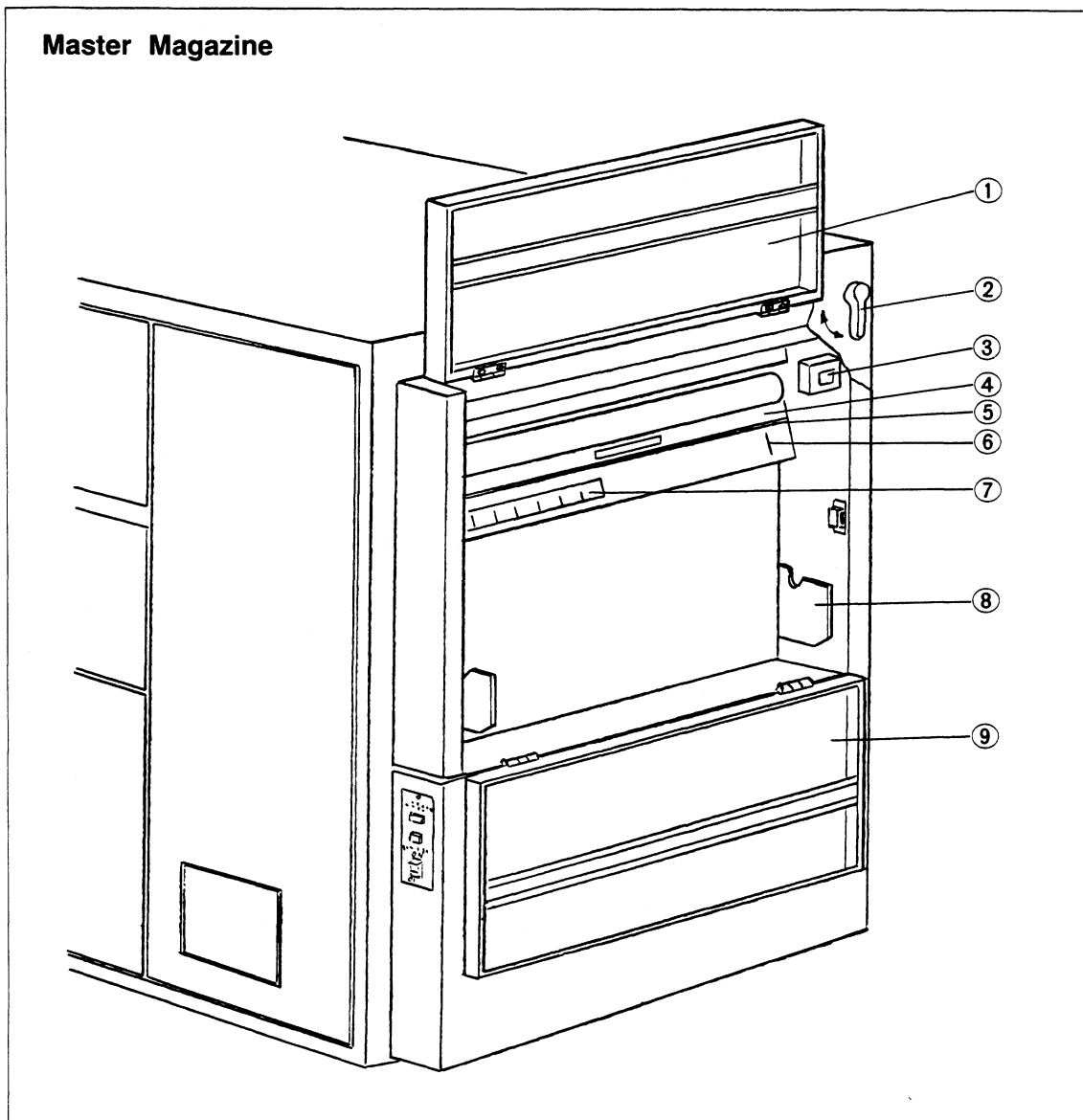
MASTER CARRY : Master is being carried.

PROCESSOR : Master is being processed with activator and stabilizer.

DRYER : Master is being dried.

TRANSPORTER : Master is being delivered out of the machine.

6-2-6 Master Magazine



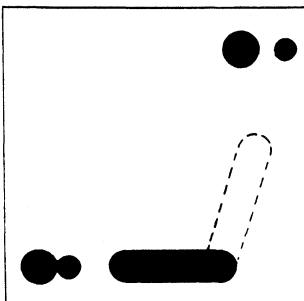
① Master magazine upper cover



The upper cover is locked with a knob screw at each side; the knob screw at the right should be turned clockwise and the one at the left counterclockwise to lock the cover.

NOTE:

When opening both the upper and lower covers, open the upper one. When closing them, first close the lower one.


② Nip roller lever



This is a lever for the nip rollers used for conveying the master. When this lever is at , the rollers are locked in contact with each other. When it is at , they are released from each other.

③ **Master set button switch**

When master plate leaves the master set OK limit switch provided on the nip rollers, the master set button switch indicator lamp lights red; on the other hand, when the switch detects the master, the lamp goes out.

With the lamp out, when the nip roller lever is turned to its lock position  and this master set button switch is pressed, the master is carried to the cutting position and the START button switch lamp lights up to indicate the completion of the master setting.

④ **Magnet bar**

When cutting the master leading end in master loading, the magnet bar is placed on the master so that it is secured in position by pressure of the magnet against the guide plate.

⑤ **Guide plate (master cutting groove)**

To straighten the master leading end, cut the master end by moving the cutter edge along this groove.

⑥ **Master set reference line**

When setting master, align the right side of the master to this reference line.

⑦ **Master width guide plate**

This plate bears the marks which represent different master widths as distances from the reference line.

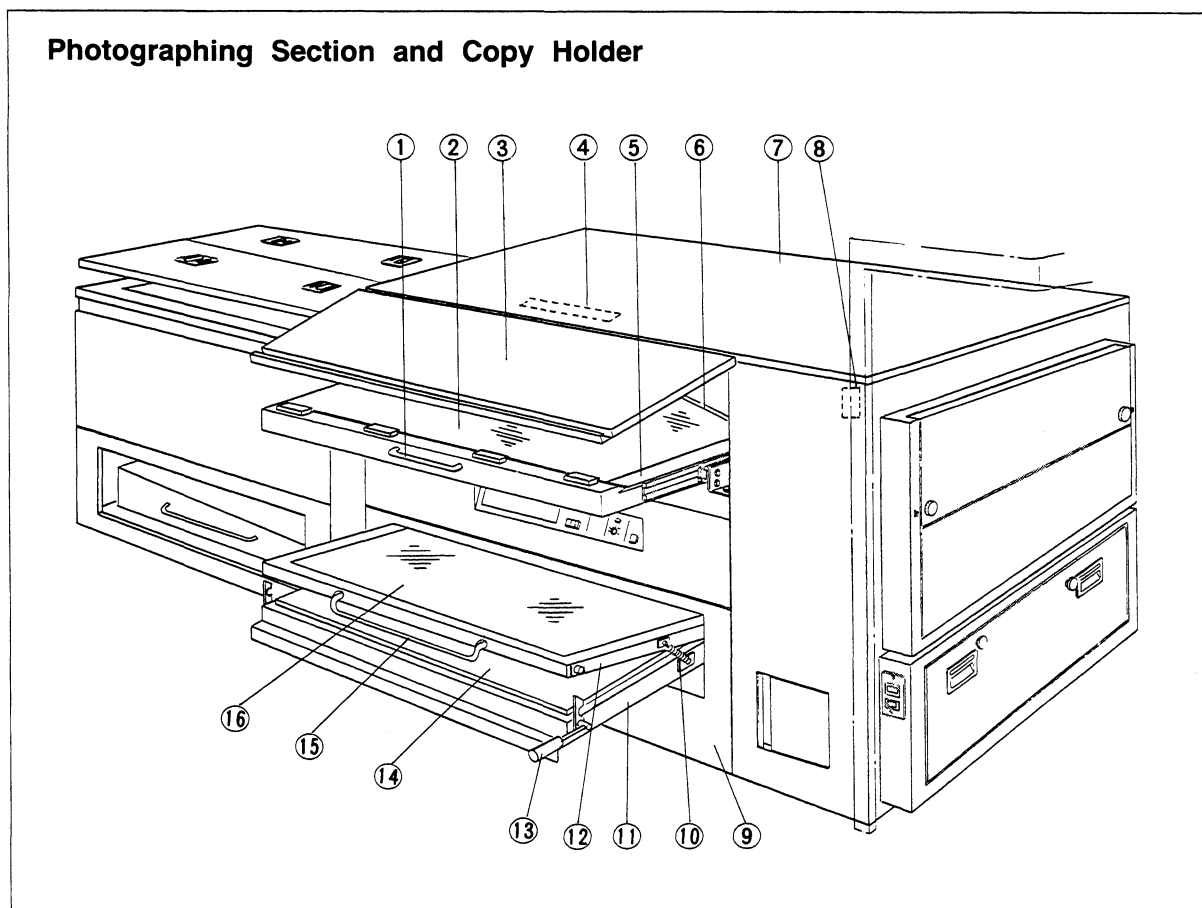
⑧ **Spool shaft bearings**

The spool on which a master roll is loaded is supported on these bearings at both sides.

⑨ **Master magazine lower cover**

The lower cover is locked with a left-hand and a right-hand magnet in the center. The same considerations as those for the upper cover should be taken into account in handling it.

6-2-7 Photographing Section and Copy Holder



① **Exposure glass frame handle**

The exposure glass frame is drawn out and pushed back using this handle.

② **Exposure glass**

Exposure is made through this glass with the master pressed down ON it. Clean frequently to avoid dust collection and fingerprint marking on it. If it is very dirty, wipe with a commercially available glass cleaner, then wipe off the cleaner completely.

③ **Photographing section front cover**

This cover shields the photographing section from external light. The cover is secured by the ball catch, so it must be a bit pulled and lifted out firmly to open it.

④ **Stay**

Located inside the photographing section. When the top cover of the photographing section is opened, this stay is used to hold the cover in its open position.

⑤ **Exposure glass frame**

This frame holds the exposure glass in it and moves on the slide rails.

CAUTIONS:

- 1) When drawing out or pushing in the exposure glass frame, make sure that the CHUCK switch is at UPPER and the SETTER switch is at FREE.
- 2) The exposure glass frame is secured by the ball catch, so it must be drawn out firmly.
- 3) To mount it, push the glass frame until it engages the ball catch completely. If it is not secure in place, the master might hit the exposure glass frame, causing the master jam.
- 4) When moving the exposure glass, handle it gently.

⑥ Cover supports

The cover supports are located at both sides inside the photographing section front cover.

1) To open the photographing section front cover,

- 1) Remove the cover supports with the photographing section front cover a little open.
- 2) Insert the cover supports into the cover support holes in the frame of the main body.
- 3) Tighten the fastening screws.

2) To close the photographing section front cover,

- 1) Loosen the fastening screws.
- 2) Lift the photographing section front cover and pull out the cover supports.
- 3) Install the cover supports on the photographing section front cover.
- 4) Push the photographing section front cover until it fully engages the ball catch.

NOTE: Imperfect engagement might cause master fogging due to light leaked from outside.

⑦ Photographing section top cover

This cover shields the photographing section from external light and prevents dust collection in the photographing section.

When this top cover is opened during operation, the photographing section drive stops for safety and the appropriate process indicator flashes for warning.

If the cover has been mistakenly opened during operation and the drive has stopped, proceed as stated below.

When inspecting or servicing the photographing section in its open state, insert the supplied service key into the photographing section safety limit switch; this starts the drive of the photographing section.

1) When the top cover is opened after the master is carried to the processor:

- 1) make sure that the master is delivered, and reset the 100V POWER switch,
- 2) remove the next master if it remains in the photographing section, and
- 3) return the lens board to its original position using the LENS switch on the main panel.

2) When the top cover is opened during photographing:

- 1) reset the 100V POWER switch,
- 2) remove the master from the photographing section, and
- 3) return the lens board to its original position using the LENS switch on the main panel.

⑧ Photographing section safety limit switch

This limit switch is designed to stop the drive of the photographing section for safety if its top cover is opened.

⑨ Copy holder front cover

This cover shields the copy holder from external light.

- 1) The copy holder front cover is secured by a ball catch, so it must be opened firmly in order to detach it.
- 2) To mount it, push the cover until it fully engages the ball catch.

⑩ Quick stays

When the copy holder upper frame is opened, it is immediately locked in position by these stays.

⑪ Copy holder lower frame

The copy positioning sheet, copy suction device and hook lever are located in this frame.

⑫ **Copy holder upper frame**

The copy cover glass is incorporated in this frame. The handle is on its outside.

1) To open the upper frame,

- 1) Push down and hold the hook lever to release the hook on the upper frame.
- 2) Hold the handle of the upper frame and raise it until it stops. As the upper frame is raised, the quick stays automatically work to hold the upper frame in position.

2) To close the upper frame,

- 1) Hold the upper frame handle and raise the upper frame once and then lower it. When the upper frame is once raised, the quick stays are released automatically, so the frame becomes free.
- 2) Close the upper frame and lock it with the hook.

NOTE:

When hooking it, be sure to hold the hook lever.

Don't attempt to hook it only by pushing down the upper frame.

⑬ **Hook lever**

This lever is used to hook or unhook the copy holder upper frame when the frame is closed or opened.

⑭ **Copy positioning sheet**

This sheet is used to determine the position of the copy in the copy holder.

⑮ **Copy holder upper frame handle**

This handle is used when the copy holder upper frame is opened and closed, and when the copy holder is drawn out and pushed in.

⑯ **Copy holder glass**

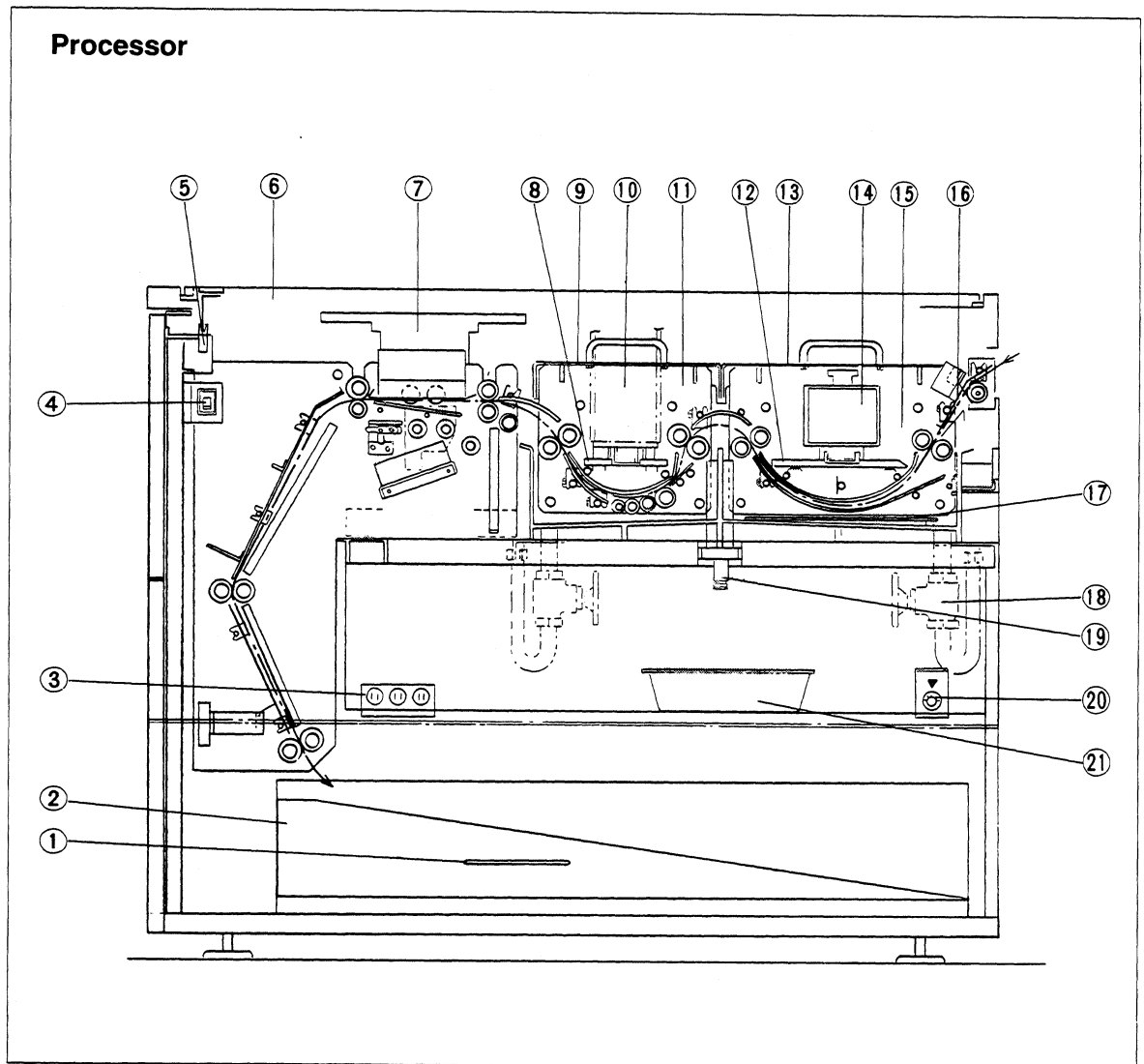
Both sides of the glass should be free from dust and fingerprint marks. Always take care to keep it clean. If it is very dirty, clean with a commercially available glass cleaner. Wipe off the cleaner completely.

CAUTIONS:

- 1) The copy holder moves on the slide rails. When drawing it out, it must be pulled firmly.
- 2) When putting the copy holder in position in the machine, push it until it is locked with the magnet.

This locking causes the START OK CHECK lamp C. PUMP SW. to go out.

6-2-8 Processor



① **Master delivery tray handle**

This handle is used when sliding the master delivery tray in and out.

② **Master delivery tray**

The tray slides along the slide rails. Initially the tray needs to be firmly pulled to release it from the magnet which secures it in position.

When taking out a finished master (plate), pull out the tray.

When returning the tray into the processor, be sure to push the tray until it is locked by the magnet.

NOTE:

If the tray is not secured properly, the master will be caught by the side board in the inmost part of the machine and cannot be delivered out of the machine.

③ **Electric outlets**

These are the electric outlets for the panel heaters for activator temperature control.

④ **Dryer temperature HIGH/LOW switch**

The degree of drying depends on the ambient temperature and on the material used (SLM-R11 or SLM-F).

Adjust the drying temperature by switching the dryer switch to HIGH or LOW depending on the master drying condition.

1) HIGH

When the ambient temperature is low as in winter, or when the SLP-F is not dried satisfactorily, turn this switch to the HIGH position.

2) LOW

When the ambient temperature is high as in summer, or when the SLM-R11 is dried excessively, turn the switch to the LOW position.

⑤ **Processor safety limit switch**

When the processor top cover is opened during operation, the machine stops operation and the appropriate process indicator flashes for warning.

When the processor top cover is opened by mistake during operation, take the following procedure:

(When the processor needs to be operated with its top cover open for inspection or service, insert the supplied service key into the processor safety limit switch.)

1) When the top cover is opened during photographing:

The machine stops operation after the exposure is completed and the appropriate process indicator flashes.

1) Turn the 100V POWER switch off then on.

2) Take out the master from the focal plane.

3) Return the lens board to the original position using the LENS switch on the main panel.

2) When the top cover is opened after the master has been carried to the processor:

1) Take out the master from the processor.

2) Turn the 100V POWER switch off then on.

3) Confirm that the START switch lamp lights up green.

⑥ **Processor top cover**

The cover shields the processor from external light and keeps the dryer temperature constant.

The top cover consists of two parts: an operation-side cover and a non-operation side cover. Inside the operation-side cover is the processor safety limit switch retainer while inside the non-operation side cover is the holder for the operation-side cover. Observe the following procedures when opening and closing the top cover.

1) To open:




Remove the operation-side cover first and then remove the non-operation side one.

2) To close:

1) Place back the non-operation side cover, fitting its center block into the guide groove.

2) Place back the operation-side cover, aligning its safety limit switch retainer with the safety limit switch of the processor.

NOTE:

Be sure to align the mark  on the processor frame with the mark  on the top cover 

⑦ **Dryer**

This dryer incorporates 3 heaters -- two lower heaters (1kW) and one upper heater (800W) -- fans and thermostats to dry the master.

Drying air temperature is kept at 35°C ~ 40°C by the thermostats.

⑧ **Stabilizing rack**

This rack incorporates conveyor rollers, conveyor guides and an anti-oxidation plate.

⑨ **Stabilizing tank cover**

This cover shields the stabilizing tank from light and dust.

Place the cover with its metallic side facing the dryer.

- ⑩ **Stabilizer replenisher bottle**
The bottle capacity is 4 liters. Fill it with stabilizer replenisher (SLM-ST solution) and place it in the right position of the stabilizing rack with its neck down.
- ⑪ **Stabilizing tank**
The tank capacity is 24 liters. The tank incorporates the stabilizing rack and conveyor guides. Fill it with stabilizer (SLM-ST solution).
- ⑫ **Developing rack**
This rack incorporates conveyor rollers, conveyor guides, a solution stirring bar and an anti-oxidation plate.
- ⑬ **Developing tank cover**
This cover shields the developing tank from light and dust. This cover should be placed so as to fit into the notched part of the microswitch block of the master insertion guide.
- ⑭ **Activator replenisher bottle**
The bottle capacity is 4 liters. Fill it with activator replenisher (SLM-AC solution) and place it in the right position of the developing rack with its neck down.
- ⑮ **Developing tank**
The tank capacity is 34 liters. The tank incorporates the developing rack, panel heaters for activator temperature control and conveyor guides. Fill it with activator (SLM-AC solution).
- ⑯ **Master insertion guide**
This guide incorporates a limit switch which detects the master. When the master insertion guide is once removed and placed back, confirm that the limit switch functions normally.
- ⑰ **Panel heaters**
Three 500W panel heaters for activator temperature control are provided. When the activator temperature is lower than the temperature set on the thermo-control, the panel heaters turn on. When the set temperature has been achieved, the panel heaters turn off and then they repeatedly turn on and off to maintain the activator at 28°C ~ 31°C.
- ⑱ **Drain valve**
A drain valve, provided on each of the developing tank and stabilizing tank, is used for draining the processing solutions.
To open the valve, turn the handle parallel to the hose; to close it, turn the handle at right angles to the hose.
- NOTE:**
Normally, be sure to close the valve (keep at right angles).
- ⑲ **Overflow pipe**
The processing solutions or replenishers which have overflowed from the tanks are discharged through this pipe.
- ⑳ **Thermo-control**
This is the control for setting the activator temperature. Set the dial division 30 to the mark ▼. The control dial divisions represent the temperatures to be set. When the activator temperature is not within 28°C ~ 31°C (82.4°F ~ 87.8°F) just after the HEATER pilot lamp has gone out, adjust the temperature with this control.
- ㉑ **Vat**
The overflow from the tank is collected in this vat so that it may not splash the inside of the processor.

7. FILLING THE PROCESSING TANKS

7-1 Procedure Before Filling the Processing Tanks

- ① Remove the developing rack, stabilizing rack and crossover guide, and wash them in water.
- ② Open the drain valves of the processing tanks and wash the tank inside water.
- ③ After draining all of the washing water, close the drain valves.
- ④ Wash the replenisher bottles with water.

7-2 Preparing the Processing Solutions and Precautions in Filling the Processing Tanks

(Refer to the booklet "Silver Master Technical Guide.")

- ① For preparing the processing solutions, use the exclusive measuring cup. When the same cup is used for both activator and stabilizer, wash it thoroughly in running water before using it for the other processing solution.
- ② Use 30°C (86°F) to 35°C (95°F) hot water when the tap water temperature is low.
- ③ Be careful not to mix the activator and stabilizer when pouring them since they have antipathy to each other.
- ④ Wipe off splashes of the processing solutions.

7-3 Filling the Processing Tanks

7-3-1 Filling the Developing Tank

(Tank capacity: 34 liters, replenisher bottle capacity: 4 liters)

Preparation of activator (SLM-AC)

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

- ① Add 17 liters of water to 17 liters of SLM-AC, the exclusive developing solution for the Silver Master. After stirring thoroughly, pour the mixture into the developing tank.
- ② Add 2 liters of water to 2 liters of SLM-AC. After stirring thoroughly, pour the mixture into the activator replenisher bottle.
- ③ Cap the bottle and place it in position on the developing rack with its cap down.
- ④ Confirm that the dial division of the thermo control is set at 30.

7-3-2 Filling the Stabilizing Tank

(Tank capacity: 24 liters, replenisher bottle capacity: 4 liters)

Preparation of stabilizer (SLM-ST)

(Mixture ratio of stabilizer to water 1:3)

- ① Add 18 liters of water to 6 liters of SLM-ST, the exclusive stabilizing solution for the Silver Master. After stirring thoroughly, pour the mixture into the stabilizing tank.
- ② Add 3 liters of water to 1 liter of SLM-ST. After stirring thoroughly, pour the mixture into the stabilizer replenisher bottle.
- ③ Cap the bottle and place it in position on the stabilizing rack with its cap down.

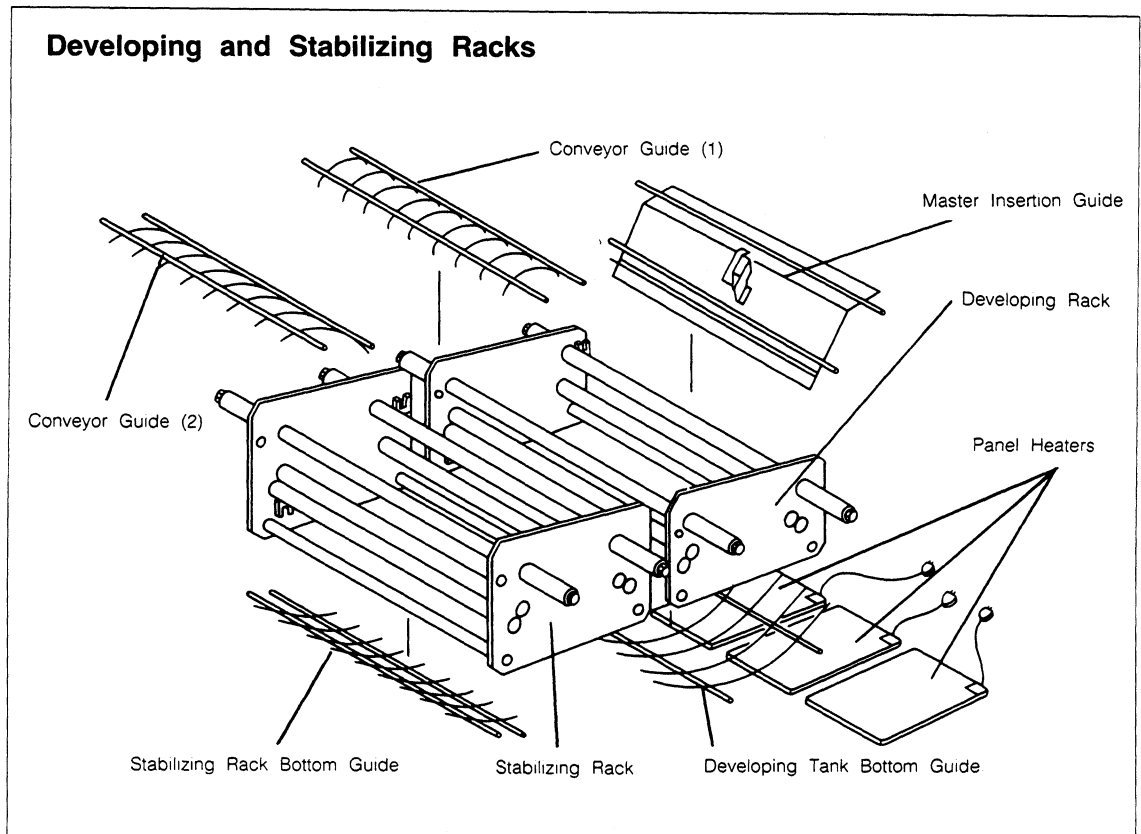
7-4 Frequency of Change of Processing Solutions

The table below shows the processing capacity of one fill of activator or stabilizer. Change the processing solution for fresh one when the useful life of solution has expired or when the number of plates processed has reached the limit of processing capacity.

If 4 weeks have passed after change of solution, even when the number of plates processed so far is within the prescribed range of processing capacity, change the processing solution, and vice versa.

Useful life	Processing capacity	Note
4 weeks	A2 size 600 plates (150m ²)	The replenisher bottles should always be filled with replenishers to ensure constant replenishment.
	A1 size 300 plates (150m ²)	

* When any size other than A1 and A2 sizes is used, calculate the max. number of plates one fill of solutions can process, from its area ratio to A1 or A2 size.



- ① Turn off the DEV. HEATER (heaters for activator) switch, 100V and 200V POWER switches on the main panel and main power source.
- ② Remove the processor top cover.
- ③ Remove the developing tank cover and stabilizing tank cover.
- ④ Remove the processor front cover.
- ⑤ Take out the activator and stabilizer replenisher bottles. Drain the bottles and wash them in water.
- ⑥ Remove the master insertion guide.

NOTE:

Be careful of the actuator of the limit switch when putting the guide.

- ⑦ Remove the conveyor guides (1) and (2) and wash them in water.
- ⑧ Open the drain valves to drain the remaining activator and stabilizer.
- ⑨ Remove the developing and stabilizing racks and wash them in water.
- ⑩ Wash the developing and stabilizing tanks in water.
Clean the inside of tanks thoroughly.
- ⑪ Drain the washing water and close the drain valves.
- ⑫ Mount the developing and stabilizing racks.

NOTE:

Be careful not to place them on the panel heaters.

- ⑬ Place back the conveyor guides.
- ⑭ Pour the prepared processing solutions into the respective processing tanks and replenisher bottles. For pouring the processing solutions, refer to "7.3. Filling the Processing Tanks."
- ⑮ Put the replenisher bottles in the respective processing racks.
- ⑯ Set the master insertion guide.

NOTE:

Check to see if the microswitch functions normally.

- ⑰ Wipe off splashes of the processing solutions.
- ⑱ Put the developing tank cover:
Fit the tank cover into the notched part of the microswitch block of the master insertion guide.
- ⑲ Put the stabilizing tank cover with its metallic side facing the dryer.
- ⑳ Put the processor top cover.
- ㉑ Turn on the main power source.
- ㉒ Turn on the 100V and 200V POWER switches.
- ㉓ Turn on the DEV. HEATER switch.

When the HEATER pilot lamp has gone out, the machine becomes ready for operation.

CAUTIONS:

- 1) For information on disposal of the waste solutions, refer to "Environmental Issues in the Silver Master System."
- 2) As the rollers in the processing racks are not heat-resistant, wash them in tepid water of less than 40°C temperature.
- 3) Never rub the rollers, conveyor guides, bottom guides and panel heaters with detergent, polishing sand or any hard stuff such as a brush.
Carefully wipe off any fluid sediment with a damp cloth or sponge.
- 4) If the conveyor guides or bottom guides are very dirty, master may be scratched. After washing the guides and drying them well, polish them with a metal polishing powder on a soft cloth until their surfaces become glossy.

7-5 Precautions for Handling Chemicals

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

8. LOADING A MASTER ROLL

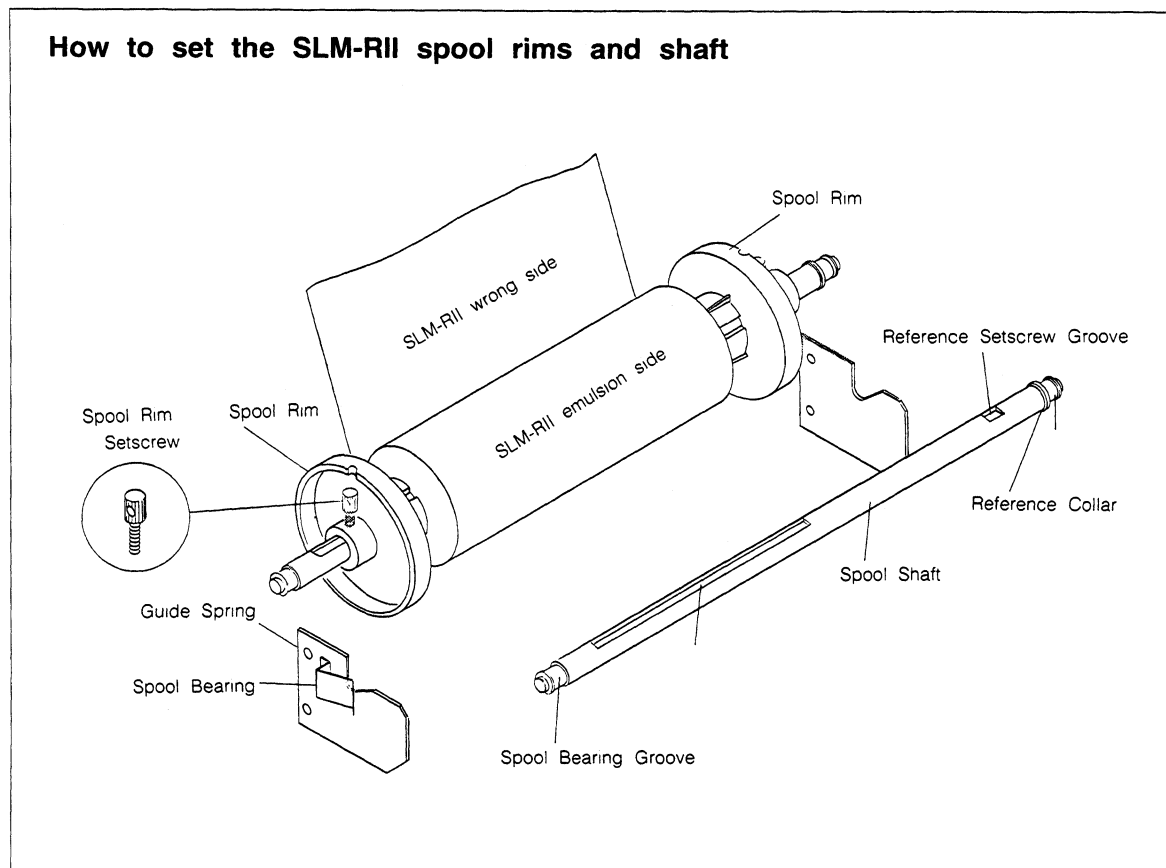
A master roll should be loaded in the miniature darkroom with its curtain closed.

8-1 Loading a Silver Master RII (SLM-RII) Roll

8-1-1 How to Set the Spool Rims and Shaft

NOTE:

The reference collar of the spool shaft should be on the right side as you face the magazine. Do not pull out the reference collar since it is pin-secured.



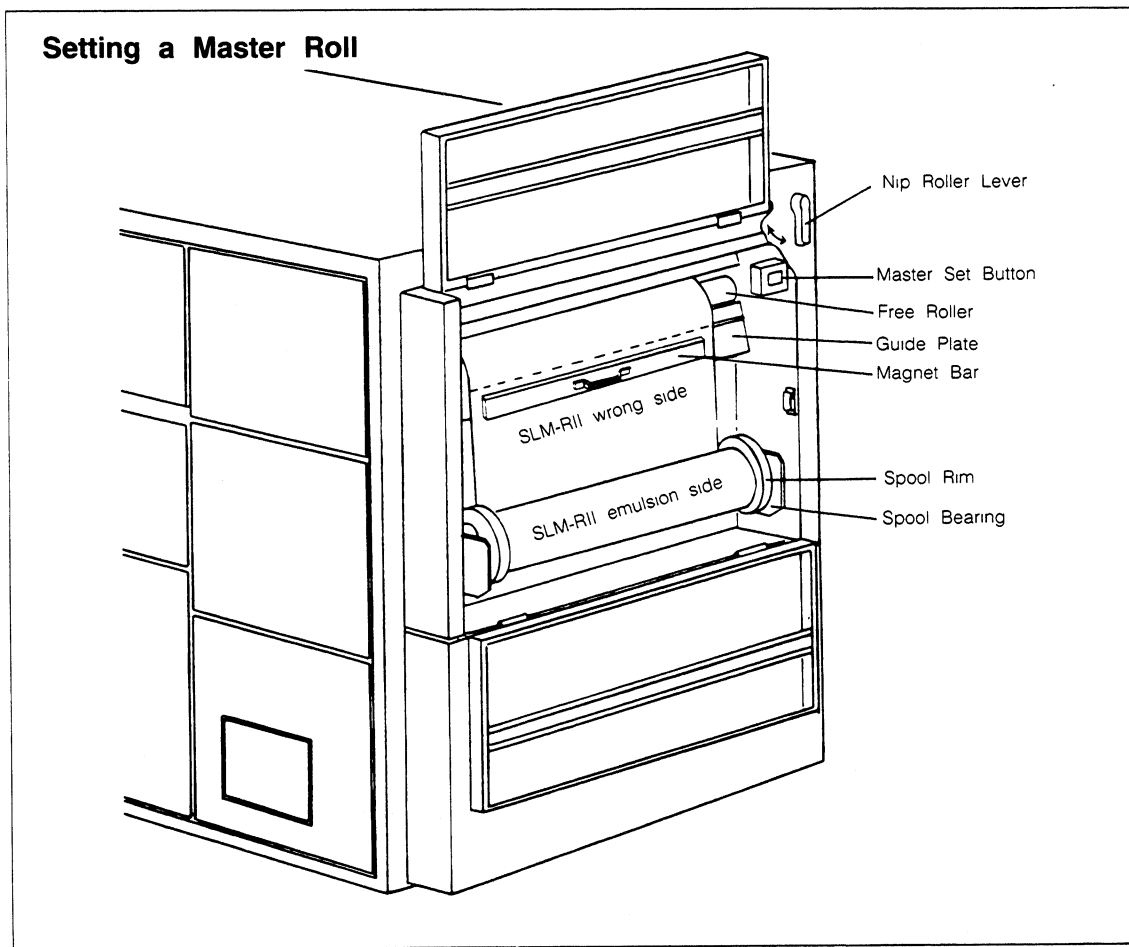
- ① Attach one spool rim to the spool shaft with the setscrew side of the spool rim on the reference collar side of the shaft.
- ② Fit the setscrew into the reference setscrew groove. Tighten the spool rim setscrew pressing the spool rim against the reference collar.
First tighten the setscrew by hand, and insert a stick through the hole of the knob of the setscrew and turn the stick to fasten the spool rim securely.
- ③ Pass the spool shaft through the master roll core hole to fit the master roll core to the spool rim

NOTE:

The winding of the master roll should be counterclockwise as viewed from the reference collar side.

- ④ Fit the spool rim setscrew into the setscrew groove, and attach the other spool rim to the end of the master roll and push the spool rim until its inside touches the master roll. Then fix the spool rim with the spool rim setscrew.

8-1-2 Setting a Master Roll into Magazine



- ① Open the magazine upper cover and lower cover.
- ② Fit the spool shaft with a master roll to the spool bearings. The reference collar of the spool shaft should be on the right side as you face the magazine. Be sure to fit the spool bearing grooves of both ends to the bearings.
- ③ Move the master leading edge to the free roller and hold it on the guide plate with the magnet bar.

NOTE:

The emulsion side of the master should be down.

- ④ Cut the master edge with a blade (e.g. NT cutter) to align it with the guide plate: Cut the edge along the cutting groove of the guide plate with an NT cutter.
- ⑤ Turn the nip roller lever to ●.
- ⑥ Insert the master along the guide plate on the free roller until the master set button lamp goes out, and then turn the nip roller lever to ●.
- ⑦ Holding the master in the middle by hand lightly, rewind the master a little by turning the spool rim in order to pull up the slack of the master.

NOTE:

Master rewinging should be done after the master set button lamp has gone out. Confirm that both sides of the master roll correspond to the master set reference line and the appropriate master width guide line respectively.

Be sure to position the master roll straight; otherwise a master jam can occur in the following stages

- ⑧ Press the master set button:
The master is fed to the cutting plane and positioned there automatically, the START switch lamp (green) lights up, and the machine becomes ready for start.
- ⑨ Close the magazine lower cover and upper cover:
When these covers are closed, the curtain of the miniature darkroom may be opened.

8-2 Loading a Silver Master F (SLM-F) Roll

- ① Since a SLM-F roll is factory attached to the spool, it can be directly loaded with the spool into the magazine.
CAUTIONS:
 - 1) If the spool rim should be removed, the SLM-F master edge part would be exposed or fogged by external light (room light). Therefore, never remove or loosen the spool rim.
 - 2) When the roll is loaded in the darkroom, the spool attached to the SLM-F roll may be replaced by the spool for SLM-RII rolls. In this case, when the master is re-wound, the spool which was attached to the SLM-F roll should be reattached to the roll.
- ② The SLM-F roll has about 2m long leading paper for lightproofing; remove it before use.
- ③ For loading the SLM-F roll, follow the procedure stated in "8-1 Loading a Silver Master RII (SLM-RII) Roll."
Use the spool which is provided with the SLM-F roll. Remove the spool rim setscrew from the SLM-RII roll, and use it for the SLM-F roll.

9. MASTER SPLICE DETECTION SYSTEM

9-1 Master Splice Detection

Some master rolls have splices. When a splice is going through the photographing section, the buzzer sounds once. The master which involves a splice is cut to a size longer or shorter than the length preset on the MASTER LENGTH digital switches.

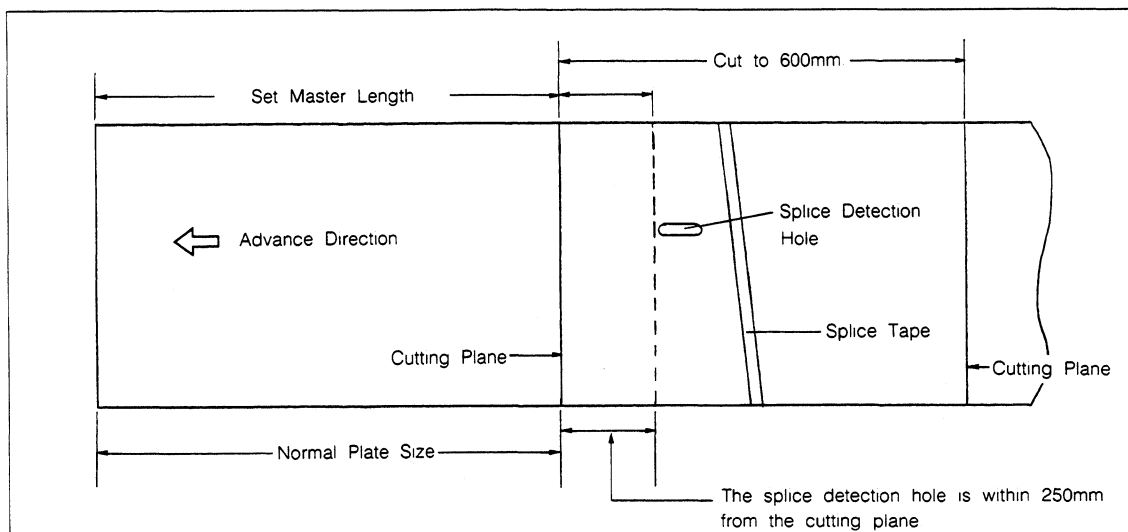
This incompleteness in size is limited to only one plate and subsequent plates are normally sized as preset.

Whether an exposure can be made or not on splice detection depends on the distance of the splice from the cutting plane and the preset master length, as shown below.

9-1-1 When the splice is detected beyond the set master length:

After depression of the START switch, when the splice detection hole is detected after the set master length is reached, the master is exposed and processed normally while the splice-inclusive part is not exposed.

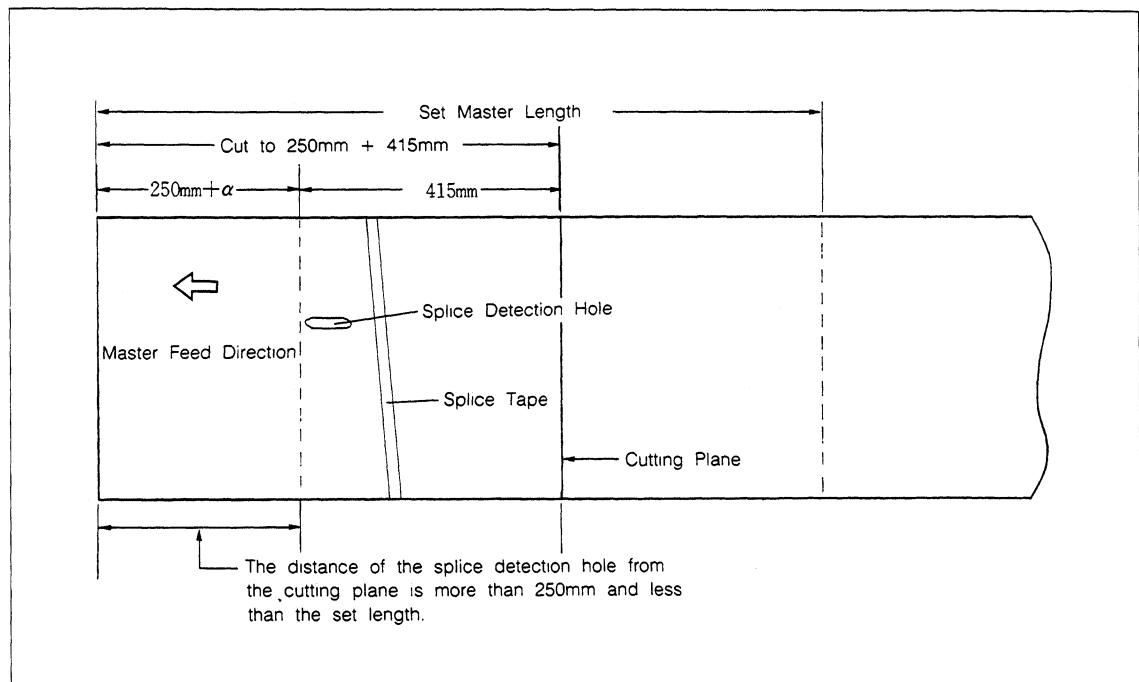
The exposed sheet is a normal press plate.



- ① When a splice detection hole is detected, the buzzer sounds.
- ② The master is cut to the normal preset size and the cut sheet is exposed and then conveyed to the processor.
- ③ After the sheet enters the processor, the MASTER END indicator on the control panel flashes and the buzzer sounds for two seconds.
- ④ The following master part including the splice is fed by 600mm, cut and conveyed to the processor directly.
- ⑤ The MASTER END indicator stops flashing.
- ⑥ The START switch lamp lights for another plate.

9-1-2 When the splice is detected within the set master length:

After depression of the START switch, when the splice detection hole is detected before the set master length is reached, the master is fed approx. 415mm from the hole and cut and conveyed to the processor without being exposed. This unexposed sheet can not be used as a press plate.



- ① When a splice detection hole is detected where the set length is not reached, the buzzer sounds.
- ② The master is fed by approx. 415mm from the hole, cut and conveyed to the processor directly without being exposed.
 - 1) If the previous sheet remains in the processor, the splice-inclusive sheet stands in the CARRY state.
 - 2) When the previous sheet exits the processor, the splice-inclusive sheet enters the processor.
 - 3) Then the START switch lamp lights, and the machine becomes ready for another plate.

9-2 Master End Detection

After depression of the START switch, when the master end is detected during master feeding, the MASTER END indicator on the control panel lights up and the buzzer sounds. As the master end is detected, the built-in microcomputer controls the machine operation according to the situation. After verifying the master delivery by looking at the process indicators on the control panel, take the necessary steps such as master loading.

9-2-1 When the master end is detected beyond the set master length:

After depression of the START switch, when the master end is detected at the point beyond the set master length, the master is not cut but the whole remaining master is exposed, and processed as a single sheet as usual.

As the sheet enters the processor, the MASTER END indicator lights up and the buzzer sounds.

The processed master is used as a normal press plate by cutting it to size.

9-2-2 When the master end is detected within the set master length:

After depression of the START switch, when the master end is detected at a point short of the set master length, either of the following processes follows depending on the situation.

① **When the master end is detected at the point from 600mm to the set master length:**

After depression of the START switch, when the master end is detected at the point from 600mm to the set master length, the master is conveyed directly to the processor, without being exposed, and delivered out of the machine.

This unexposed short master can not be used as a press plate.

② **When the master end is detected at the point below 600mm:**

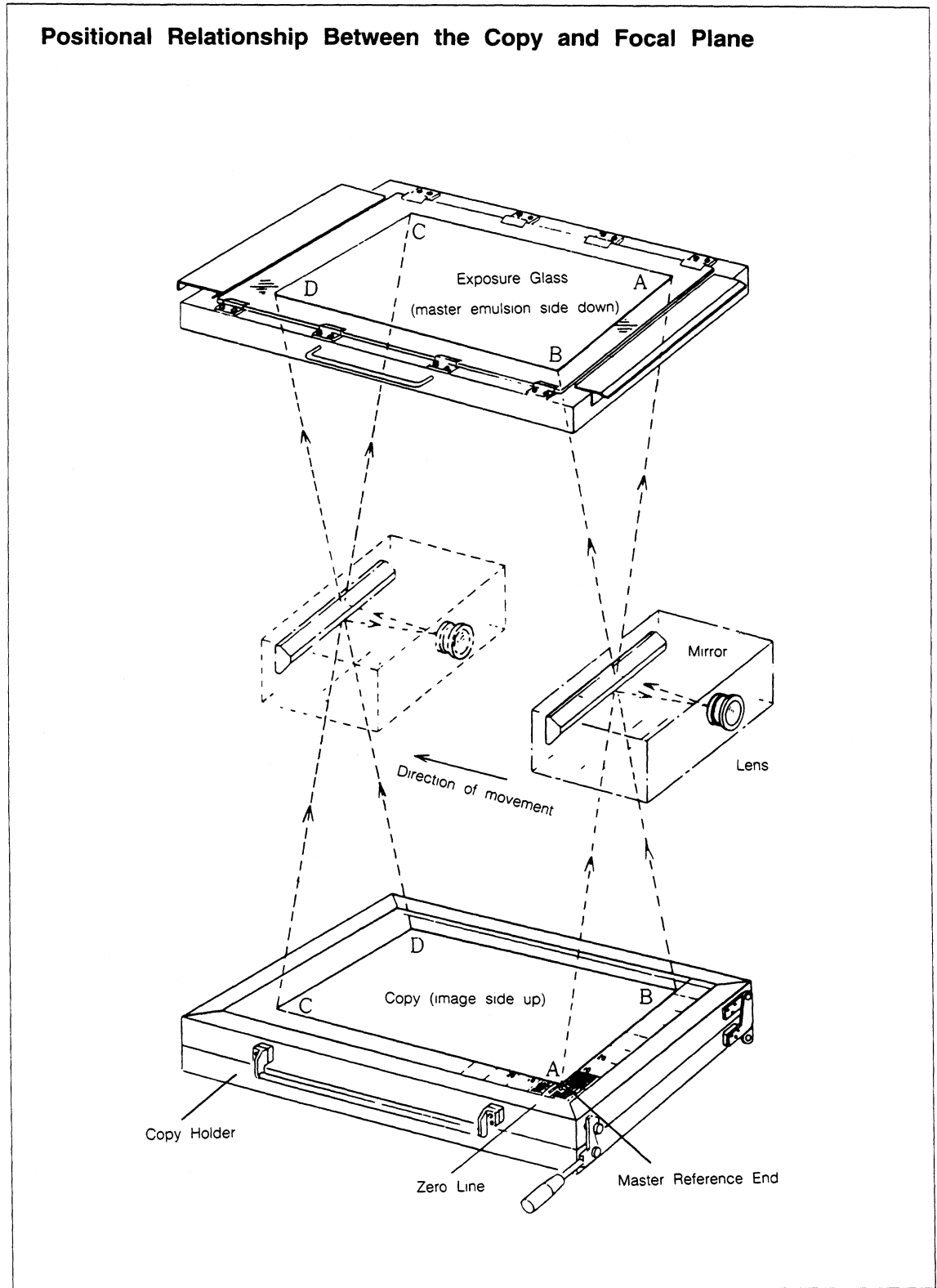
After depression of the START switch, when the master end is detected at the point short of 600mm, the sheet concerned does not reach the conveyor rollers, but stops on the exposure glass.

After verifying the previous master sheet delivery by looking at the process indicators on the control panel, open the photographing section top cover and remove the said last master sheet.

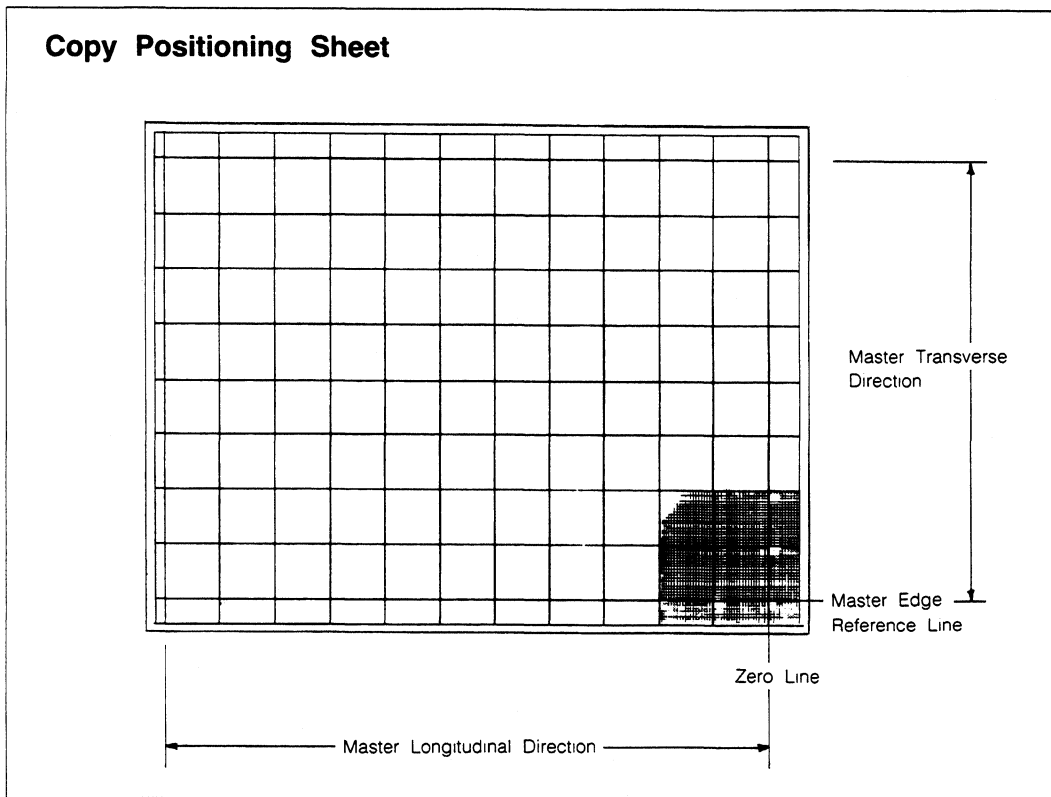
10. MOUNTING THE COPY

10-1 Positional Relationship Between the Copy and Focal Plane

The copy is positioned with respect to the focal plane (position of the master to be exposed) as follows:



10-2 Positioning the Copy



The copy positioning sheet is graduated at 5mm intervals vertically and horizontally.

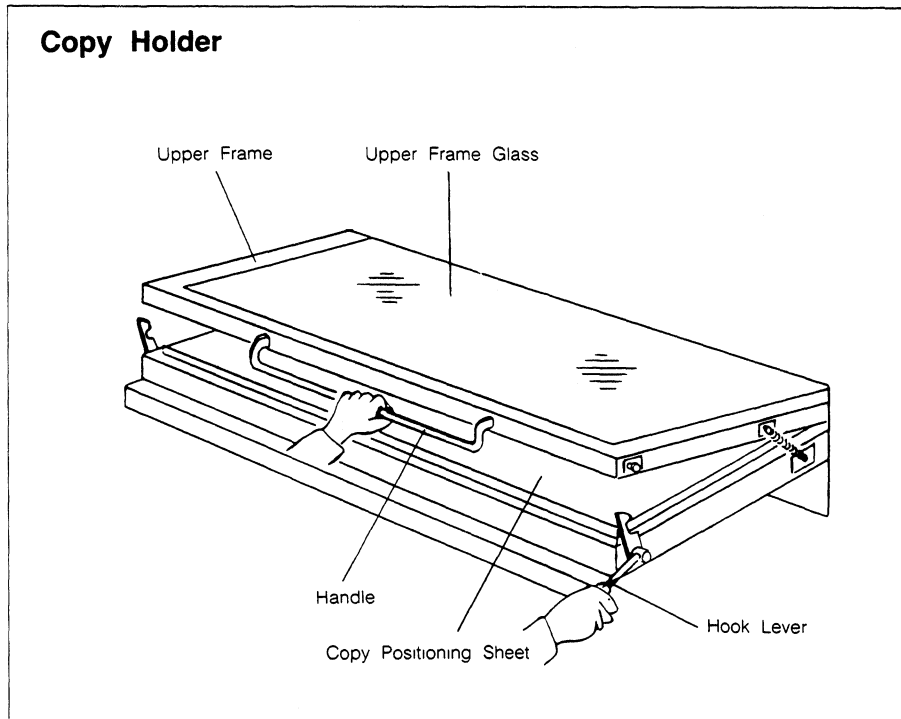
① Vertical scale

- 1) The zero line on the right represents the reference line along which the master edge is positioned in the master feed direction.
- 2) The effective area for exposure is the area on the right of the zero line.
- 3) Determine the position of the copy from the zero line according to the set master length.

② Horizontal scale

- 1) The master edge reference line from which the master width is indicated as the distance is on the nearest side in the longitudinal direction.
- 2) The width of the effective exposure area corresponds to the distance of the master width used from the master edge reference line.
- 3) Determine the position of the copy from the master edge reference line according to the master width used.

10-3 Setting the Copy Holder



- ① Holding the handle, draw out the copy holder.
- ② Open the upper frame:
Press the hook lever down and lift the upper frame gently holding the handle until the upper frame is stopped in the specified position automatically.
- ③ Position the copy:
Position the copy on the copy positioning sheet with its image side up according to the master width used and the set master length.
- ④ Close the upper frame:
Holding the upper frame handle, lift the upper frame and lower it again. This causes the stays to be disengaged, and closes the upper frame.
Hold the hook lever to hook the frame securely.
- ⑤ Set the copy holder:
Put the copy holder back gently until it is locked by the magnet.

11. PLATEMAKING (PHOTOGRAPHING) METHOD

Two exposure modes are available:


① Standard Photography

One exposure of an original copy is made on a plate.

② Multiple Exposure

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.


11-1 Start-up Procedure

- ① Confirm that there is enough activator and stabilizer in the developing and stabilizing tanks, respectively.
- ② Confirm that there is enough replenisher in the activator and stabilizer replenisher tanks, respectively.
- ③ Turn on the 100V and 200V POWER switches.
- ④ Make sure that the DRYER, EXPOSURE and DEV. HEATER switches are at AUTO.
- ⑤ Turn the P. MOTOR switch to MANU.
- ⑥ Make sure that the processor runs normally.
- ⑦ Check the copy holder glass for dirt, scratches, etc.
- ⑧ Turn the nip roller lever to 
- When the master has been all rewound on the spool, set the master in position on the focal plane.
- ⑨ Make sure that the temperature of each processing solution is between 28°C and 31°C.
- ⑩ If the temperature of the processing solution is not between 28°C (82.4°F) to 31°C (87.8°F), turn the P. MOTOR switch on the main panel to AUTO.

NOTE:

Use the DEFOGGER 1 and DEFOGGER 2 depending on the environmental condition (humidity, temperature variation).

11-2 Shut-down Procedure

- ① Turn off the 100V and 200V POWER switches and the main power source.
- ② Turn the nip roller lever to 
- When the machine is to be shut down for a long period of time. Rewind all the master to the spool and keep it in a black bag.

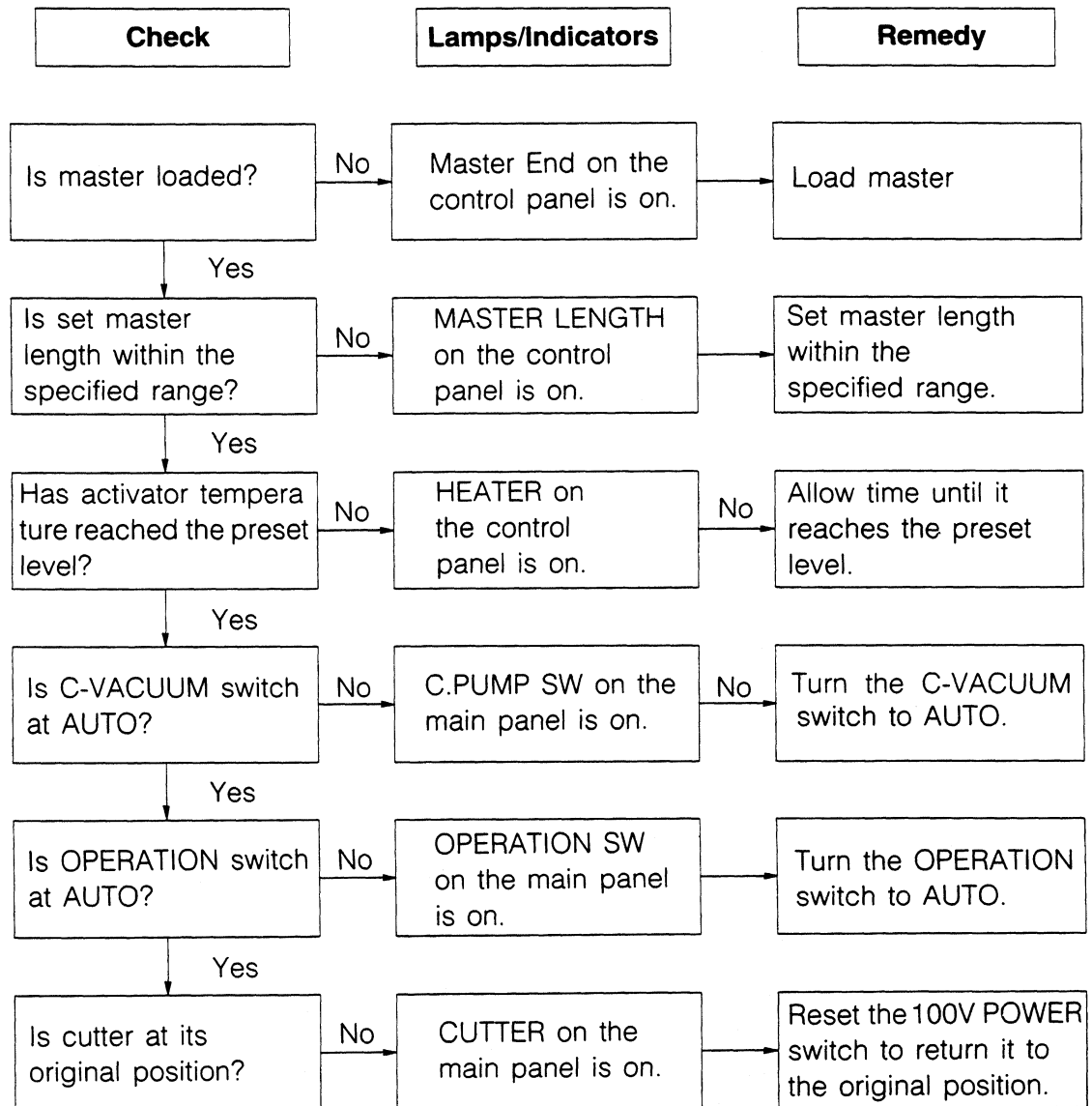
11-3 Platemaking (Photographing) Procedure

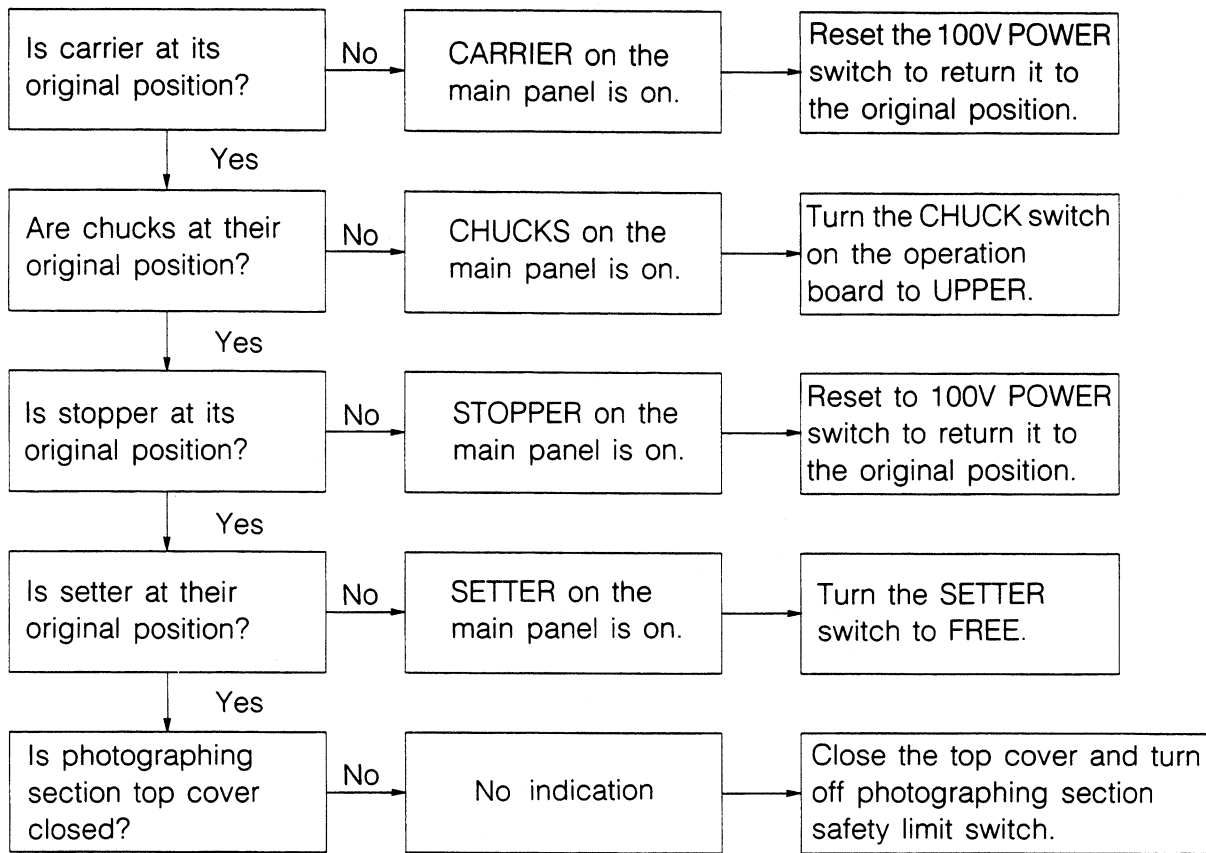
11-3-1 Starting Conditions

The following conditions should exist before starting platemaking operation. Carry out the following before starting starting the machine.

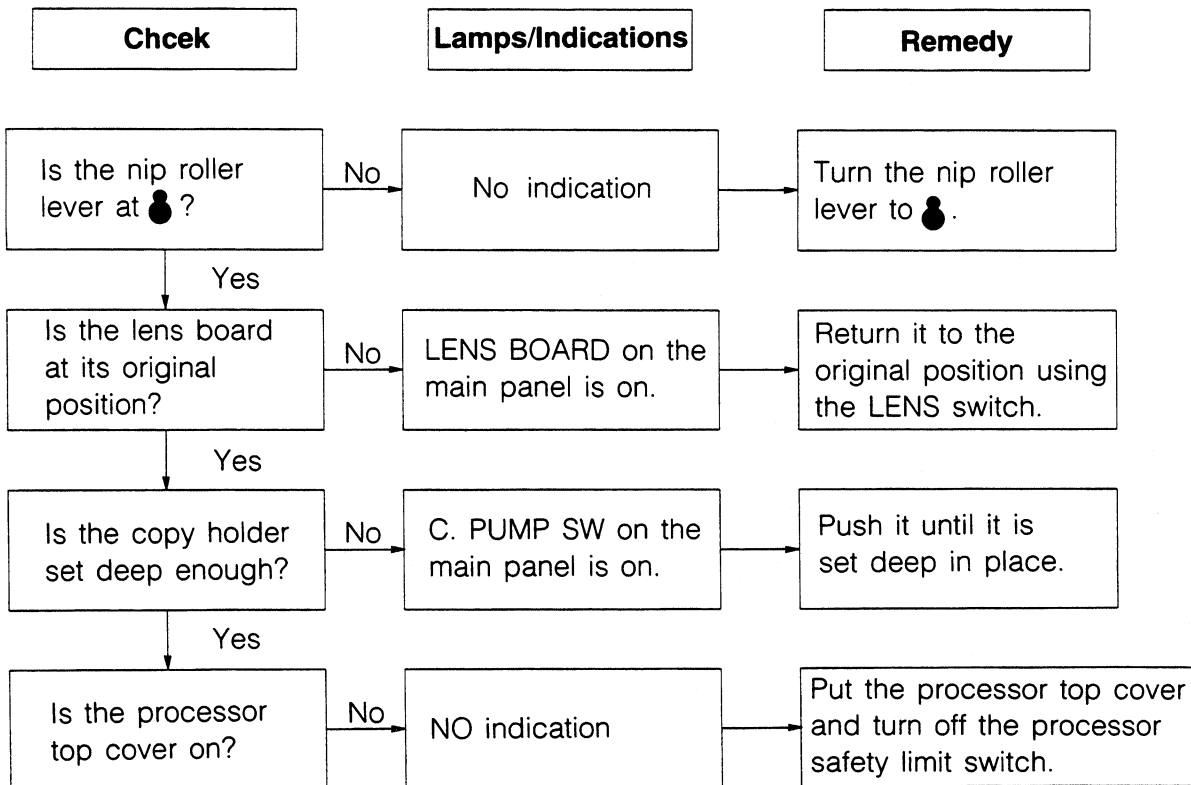
- ① Turn on the 100V and 200V POWER switches and the main power source.
- ② Make sure that the DRYER, EXPOSURE, DEV. HEATER and P. MOTOR switches are at AUTO.

1) When the **START** switch lamp does not light, check according to the following procedure.





2) The START switch lamp is on, but the machine can not be started.



11-3-2 Standard Photography

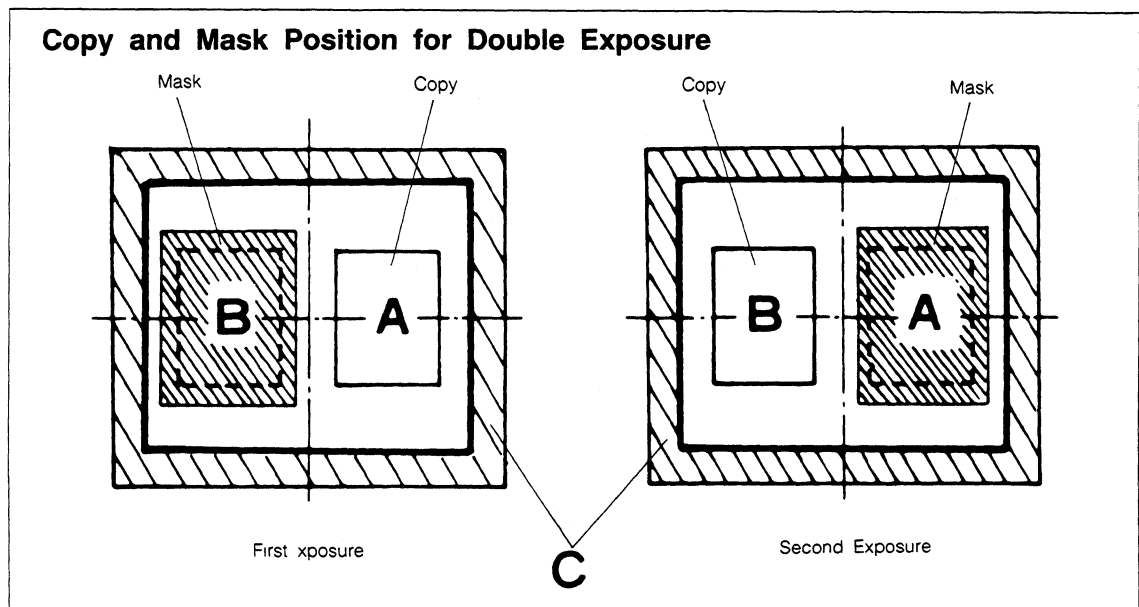
- ① Mount the copy with its image side up and set it in the desired position using the scales of the positioning sheet.
- ② Set a master length according to the required press plate size using the MASTER LENGTH set digital switches on the control panel.
The master feed length should be between 60.0 ~ 109.0cm.
- ③ Set the exposure level suitable for the copy using the EXPOSURE control on the control panel.
- ④ Turn the MULTI/NORMAL switch to NORMAL.
- ⑤ Press the START switch, and the operation should start and the plate is produced automatically.
* After exposure, when the lens board begins to return to the original position, it is possible to draw out the copy holder for copy change.

11-3-3 Multiple Exposure

When multiple exposure is made, the non-copy area should be masked to prevent the corresponding area of the master from being exposed. Prepare black paper a little larger than the copy size.

NOTE:

Use black paper with reflection density over 2.0 (e.g. Mitsubishi LK black) for masking.



Example: Double exposure

- ① Determine the copy position:
Determine positions A and B for the copy.
- ② Mount the copy:
Put the copy in position A for the first exposure.
- ③ Place the mask:
Put the mask, which should be a little larger than the copy, in position B for the first exposure.

- ④ Select the multiple exposure mode:
Turn the MULTI/NORMAL switch on the control panel to MULTI.
- ⑤ Set the master length:
Set it within the specified range according to the required press plate size using the MASTER LENGTH set switches.
- ⑥ Make the first exposure:
Press the START switch for the first exposure.
- ⑦ Move the copy:
Move the copy from position A to B for the second exposure.
- ⑧ Move the mask:
Move the mask from position B to A for the second exposure.

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 will occur).

- ⑨ Turn the MULTI/NORMAL switch to NORMAL.

NOTE:

Also in case of making 3 or more exposures, never forget to turn the switch to NORMAL before the last exposure.

- ⑩ Make the second (last) exposure:
Press the START switch for the second (last) exposure.
After the second exposure, the master is carried to the processor.

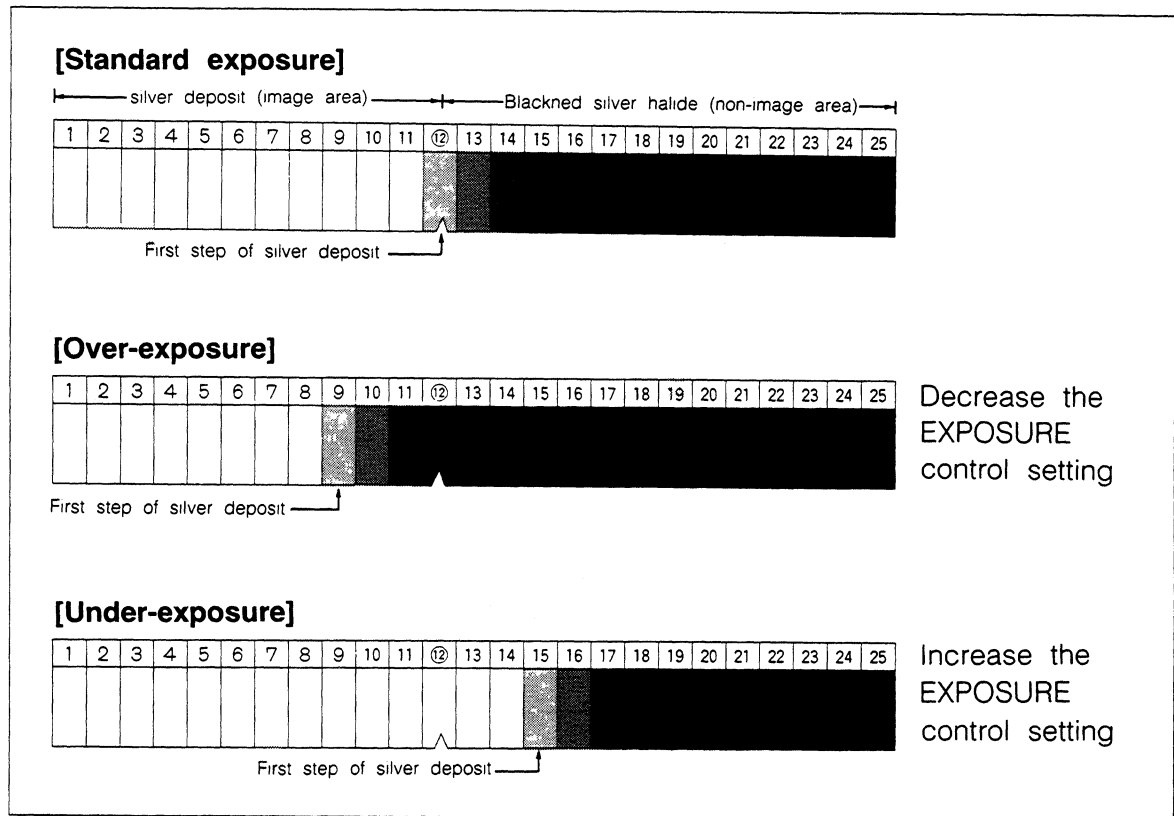
CAUTIONS:

- 1) The procedure is also similar to the above in case of making 3 or more exposures. However, the exposure level should be changed depending on the reflection density of the mask.
- 2) It is recommended that the area outside the area corresponding to the master size (C in the figure) be also masked.

11-4 How to Determine Standard Exposure

Standard exposure is the exposure where the minimum noticeable silver deposit is seen in the 12th step (with a wedge) of the gray scale as in the supplied sample.

Since standard exposure is the base for determining the optimum exposure for each copy, determine it accurately.



- ① Make an exposure of the test chart according to the procedures stated in 11-3-1 and 11-3-2.
- ② Evaluate the gray scale of the exposure thus made. Compare it with the supplied sample gray scale to find the exposure level with which the test chart wedged step 12 in the exposure is the step where noticeable silver deposit starts (the first step of silver deposit).
 - 1) Over-exposure
If the number of the first step of silver deposit is smaller than 12 (wedge step) -- for example, step 9 --, the exposure is over-exposure.
Decrease the EXPOSURE control setting.
 - 2) Under-exposure
If the number of the first step of silver deposit is larger than 12 -- for example, step 15 --, the exposure is under-exposure.
Increase the EXPOSURE control setting.
- ③ Record the exposure level (control setting) determined in ② for Standard exposure.

CAUTION:

- 1) The Silver Master is coated with silver-halide emulsion; its sensitivity may somewhat vary among lots. Before using a new lot, check its sensitivity.
- 2) The standard print sample may fade with time. Store it in a drawer or dark place.

11-5 How to Determine the Optimum Exposure Level

The optimum exposure level varies according to the type of the original copy being used. Also the adequate exposure control setting differs according to the user's printing conditions (press, printing paper, ink, etc.).

Under-exposure may cause a thickened image or scumming on the background of the plate. Over-exposure may cause a too thin image or lost image.

Correct exposure is essential for the high quality Silver Master RII and Silver Master F to deliver the best performance.

Refer to the Silver Master Technical Guide.

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)

12. MAINTENANCE

For ensuring high plate quality, practice of simple routine inspections and maintenance procedures are essential. Such practice will not only assure a long service life but also prevent serious machine trouble.

12-1 Daily Inspection and Maintenance

- ① Cleaning the exposure glass.
Clean the exposure glass occasionally, for example, before starting operation and when the master roll is exhausted.
- ② Cleaning the copy holder glass.
Clean the copy holder glass occasionally, for example, when starting operation and when changing the copy.
- ③ Cleaning the processor
Wipe the splashed parts carefully.
* If the exposure glass or copy holder glass is very dirty, wipe with a commercially available glass cleaner. Wipe thoroughly with a dry cloth not to leave any cleaner liquid.

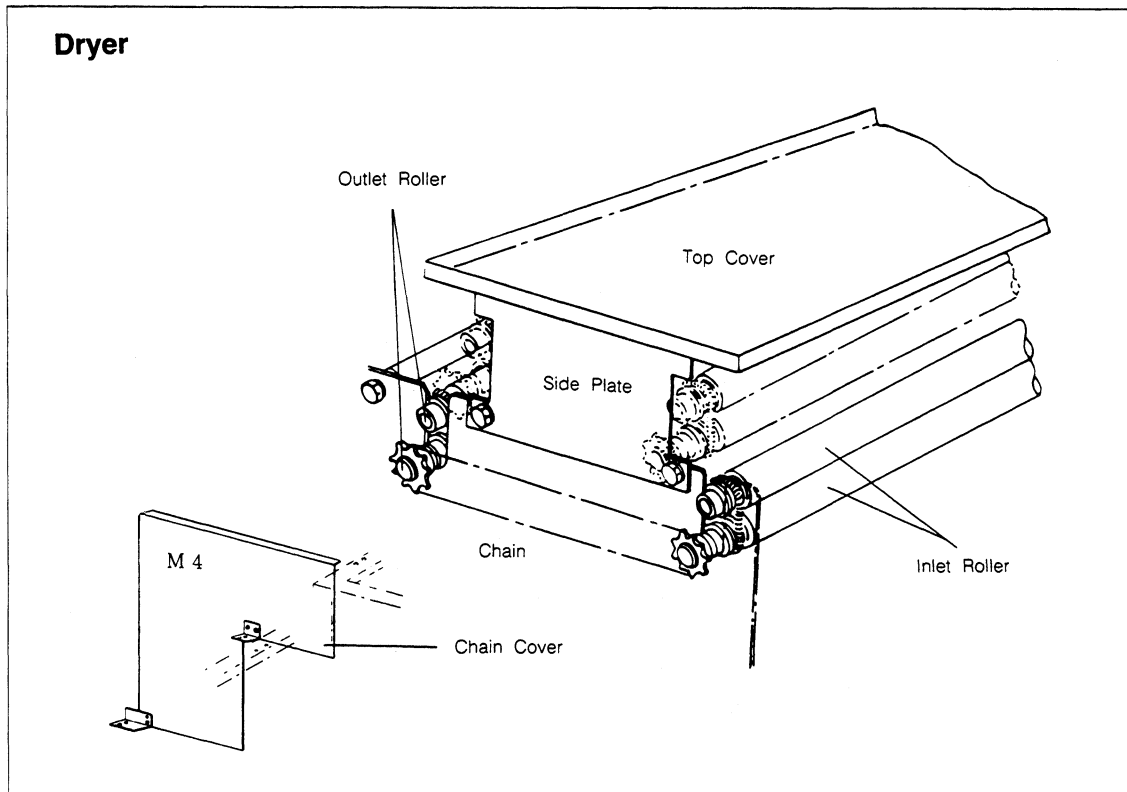
12-2 Periodic Inspection and Maintenance

12-2-1 Care of the Components

- ① Cleaning the filters of Defogger 1 and Defogger 2 (every 6 months)
Wash the filters above the lens board and in the fan attached on the upper rear cover of the master carrying section with running water, and dry them completely, and replace them as they were.
CAUTIONS:
 - 1) If the filter mounted is wet, the filter may splash over the lens and mirror, which could cause damage to the lens or mirror.
 - 2) Don't use a dryer or any high temperature source.
- ② Cleaning the developing and stabilizing racks (when changing the processing solutions)
Be sure to clean the conveying guides, bottom guides and conveyor rollers when changing processing solutions. Silver, paper powder or chemicals from the master can stick to them, and could scratch or stain the master emulsion. for the method of changing processing solutions, see 7-4.
- ③ Cleaning the processing tanks (when changing the processing solutions)
As many plates are produced and processed continuously, silver and paper powder from the master adhere to the processing tanks and panel heaters. Clean them when changing the processing solutions.

④ Cleaning the dryer (when changing the processing solutions)

Clean the inlet rollers and outlet rollers when changing the processing solutions.



- 1) Turn off the 100V and 200V POWER switches and the main power source.
- 2) Remove the processor top cover.
- 3) Remove the processor front cover.
- 4) Remove the chain cover.
- 5) Lift the inlet and outlet rollers by hand and let them rest on the notched parts in the side plate.
- 6) Wipe the inlet and outlet rollers with rags moistened with water.

NOTE:

Don't rub the rollers with polishing powder or a hard brush. Use a soft moistened cloth not to scratch the master.

- 7) Replace the rollers and covers as they were.

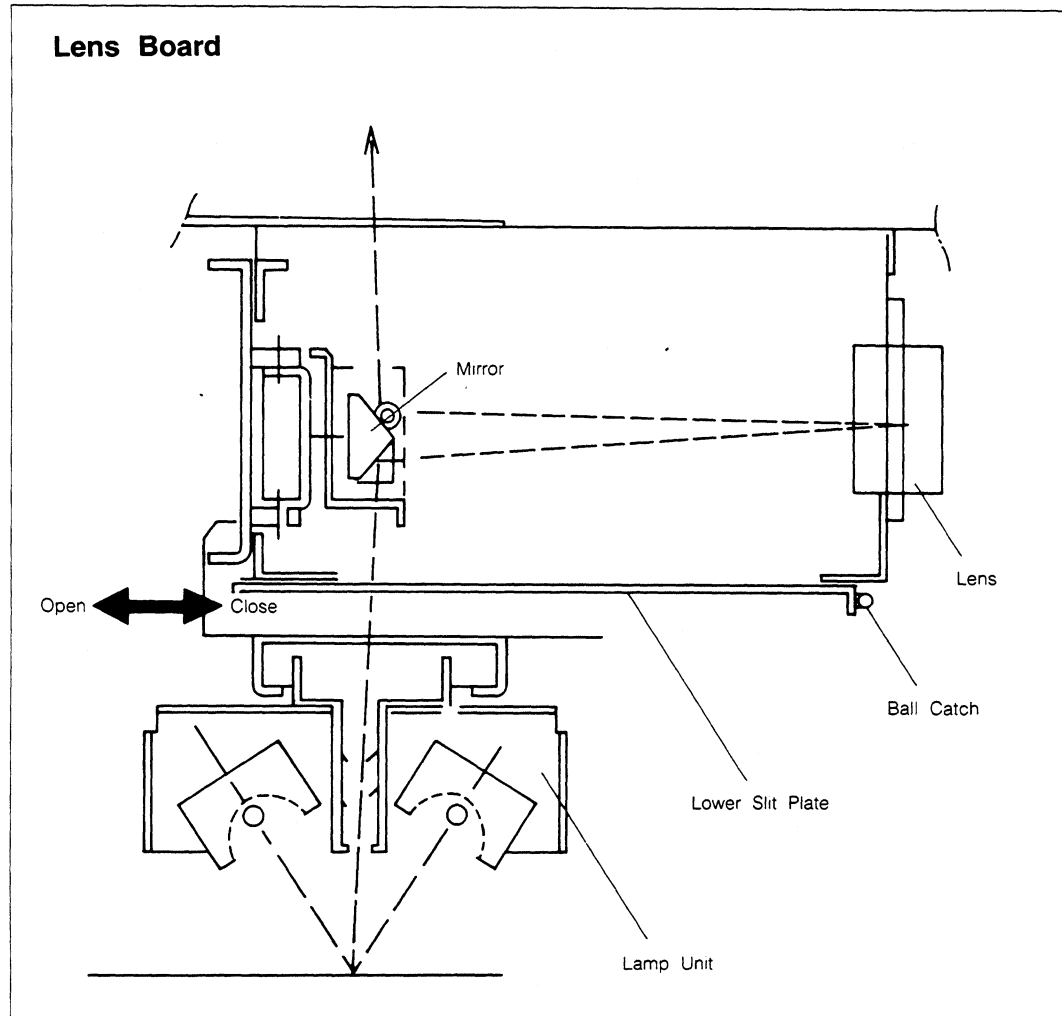
For re-assembling, reverse the above removal procedure.

⑤ Cleaning the lens and mirror (monthly)

As the mirror is long used, it may collect dust and the optical system may deteriorate in performance. This may cause out-of-focus, under-exposure, master property trouble and other factors which affect platemaking unfavorably. So be sure to clean the lens and mirror periodically.

NOTE:

Handle the lens and mirror carefully not to leave fingerprint marks, saliva, oil, chemical or scratches.



- 1) Move the lens board to the center of the copy holder.
Use the LENS switch on the main panel to move the lens board.
- 2) Turn off the 100V and 200V POWER switches and the main power source.
- 3) Remove the copy holder front cover.
- 4) Cover the copy holder glass with a cloth or the like.
Use a cloth or soft cover not to scratch the glass.
- 5) Disconnect the lamp unit connector.
See 12-3-2. "Replacement of the Lamp (halogen lamp)."
- 6) Pull out the lamp unit and put it with the lamp up.
See 12-3-2. "Replacement of the Lamp (halogen lamp)."
- 7) Remove the bottom slit plate.
Pull it out to the left as indicated by the arrow for removal.
The bottom slit plate is secured by the ball catch so that it must be pulled out

firmly for removal.

NOTE:

The slit plate is long and slightly heavy. So it is easy to drop.

- 8) Clean the lens and mirror.
 - Clean the surface of the lens and mirror using a commercial brush available at ordinary camera shops.
 - If extremely dirty, apply a very small amount of industrial ethyl alcohol (commercially available) to lens paper (available at ordinary camera shops) and wipe with it gently.

NOTE:

Since the lens and mirror surfaces are very soft, special care must be taken; avoid air brushing and rubbing strongly.

- 9) Re-attach the removed parts.
Use the reverse procedure of removal.

CAUTIONS:

- Insert the bottom slit plate deep enough until it fully engages the ball catch.
 - For the method of installing the lamp for exposure, see 12-3-2-⑩.
- 10) Turn on the main power source and the 100V and 200V POWER switches.
 - 11) Return the lens board to its original position using the LENS switch on the main panel.

12-2-2 Lubrication (monthly)

Lubricate the chain, gear and other drive parts monthly.

- Use SHELL THERUS 27 or equivalent as a lubricating oil.
 - Use silicon grease or equivalent as a grease.
- ① Drive rail in the exposure section (oil)
The driving rail is well polished; foreign matter on the rail may unfavorably affect the photographic quality. Keep it clean.
 - ② Cutter chain(oil)
Open the top cover of the photographing section and remove the cutter cover.
 - ③ Drive chain in the photographing section (oil)
Remove the master magazine and the master carrying section upper rear cover.
 - ④ Dryer drive chain (oil)
See 12-2-1-④.
 - ⑤ Copy holder sliding rails (grease)
Draw out the copy holder and lubricate the rollers on the sliding rails.
 - ⑥ Processor drive worm wheels (grease)
Remove the processor top cover.
 - ⑦ Carrier drive rails (grease)
Open the photographing section top cover.
 - ⑧ Pressure belt transmission gear in the photographing section (grease)
Remove the master magazine and master carrying section upper rear cover.

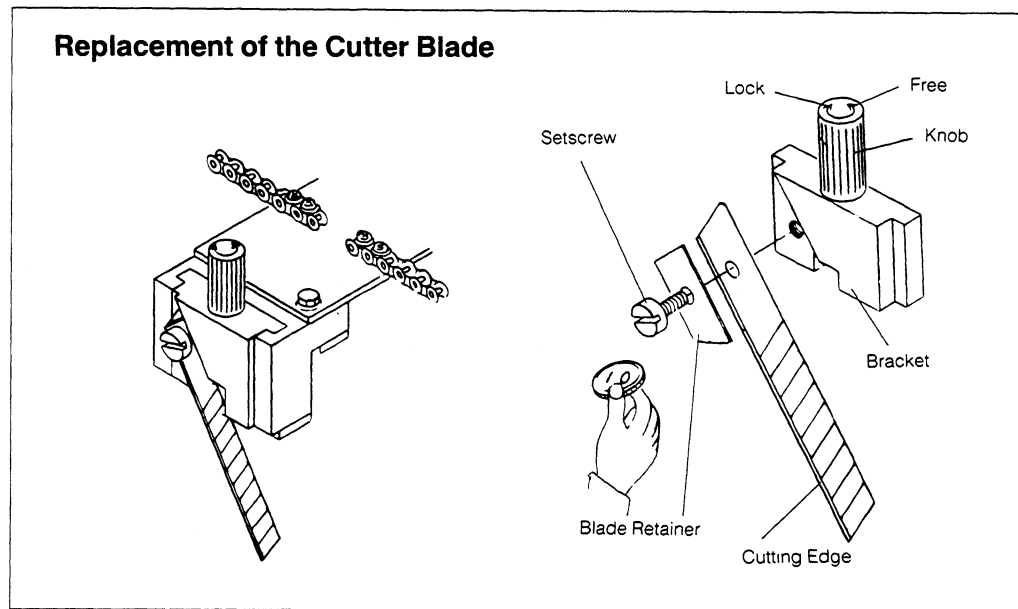
12-3 Replacement of Parts

When replacing parts or fuse or when checking the electric circuit, be sure to turn off the 100V and 200V POWER switches and the main power source.

12-3-1 Replacement of the Cutter Blade

Replace the cutter blade when it has made cuts 300 times, or 30 days after the blade replacement regardless of the number of cuts made.

* Use a commercial cutter such as an "NT" cutter.



- ① Turn off the 100V and 200V POWER switches and the main power source.
- ② Open the photographing section top cover.
- ③ Remove the cutter assembly cover.
- ④ Remove the cutter bracket:
Turn the knob counterclockwise and the bracket will be released. Lift and pull it out.
- ⑤ Remove the setscrew.
- ⑥ Replace it with a new blade and mount it on the bracket:
Put the blade retainer on the cutter blade and tighten the setscrew with a coin or the like.
- ⑦ Insert the bracket:
Tighten the knob of the bracket securely.
- ⑧ Check the cutter blade motion:
Shift the blade about 10cm by hand to see if it smoothly moves along the guide, and return it to its original position.
- ⑨ Turn on the main power source and the 100V and 200V POWER switches.
- ⑩ Insert the service key into the photographing section safety limit switch.
- ⑪ Check the cutter operation:
Turn the OPERATION switch on the operation board to MANU and press the CUTTER button switch to check the cutter operation.

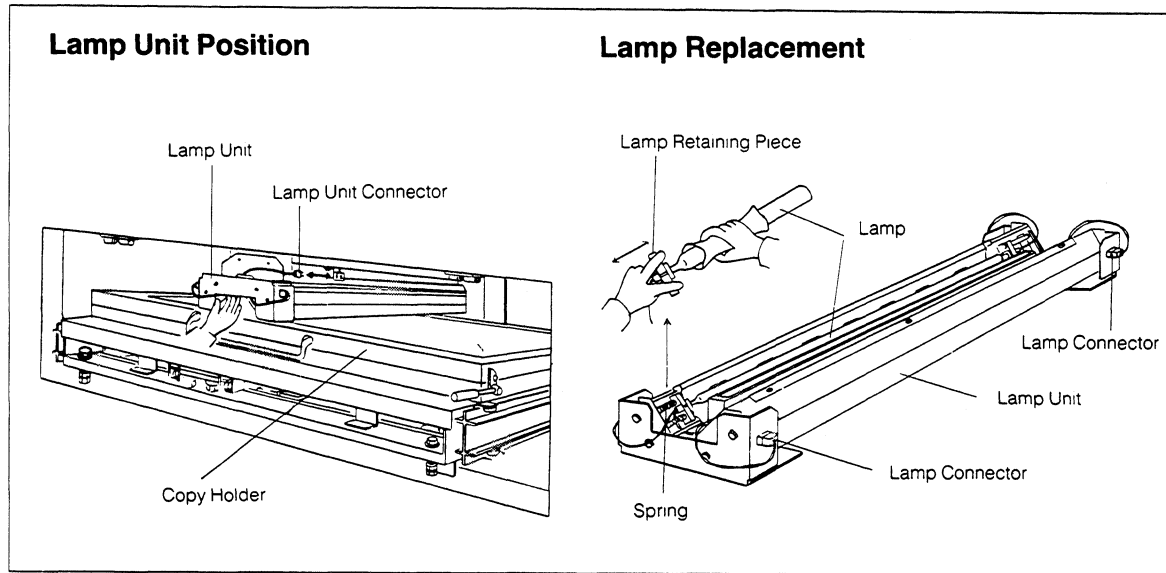
NOTE:

After check, be sure to return the OPERATION switch to AUTO.

- ⑫ Remove the key from the photographing section safety limit switch.
- ⑬ Close the photographing section top cover.
- ⑭ Check the master cut face:
Make a test exposure to check the cut face.

12-3-2 Replacement of the Lamp (halogen lamp)

The machine uses two 150V 1.5kW halogen lamps as light sources for exposure. Prior to replacing the lamp, never fail to make sure that the lamp and the reflector have cooled down. A careless touch on them may burn yourself.



- ① Move the lens board to the center of the copy holder.
Use the LENS switch on the main panel to move the lens board.
- ② Turn off the 100V and 200V POWER switches and the main power source.
- ③ Remove the copy holder front cover.
- ④ Cover the copy holder glass with a cloth or the like.
Use a cloth or soft cover not to scratch the glass.
- ⑤ Disconnect the lamp unit connector.
- ⑥ Pull out the lamp unit and place it with the lamp side up.
The lamp unit is secured by the ball catch so that it must be pulled out firmly for removal.

CAUTION:

- 1) The slit plate is long and slightly heavy. It is easy to drop.
 - 2) Don't touch the lamp or reflector with bare hands.
- ⑦ Disconnect the lamp connector.
 - ⑧ Remove the lamp.
Pull it out from the lamp retaining piece by pulling the retaining piece toward the frame side of the lamp unit (to the left).

CAUTION:

- 1) Hold the lamp with a clean dry cloth or gloves on your hand. Never hold it with bare hands. Take care not to smear finger-marks on the lamp surface; otherwise not only uneven illumination may occur but also the stained part of the lamp may break. If the lamp should be finger-marked or smeared, apply a very small amount of commercial alcohol to lens paper (available at ordinary camera shops) and lightly wipe with the lens paper.
 - 2) When pulling out the lamp, don't prize off the lamp.
- ⑨ Install a new lamp:
Pull the lamp retaining piece toward the frame side of the lamp unit (to the left) to fit the lamp insulator into the retaining piece.

NOTE:

When installing the lamp, don't prize it off.

- ⑩ Insert the lamp connector:
Make sure that the connector is properly inserted.
- ⑪ Install the lamp unit:
Push the unit until it fully engages the ball catch.
NOTE:
Align the ▲ mark of the lamp unit with the ▼ mark of the lamp unit mounting frame (▼). If this alignment should not be made, uneven distribution of illumination could occur.
- ⑫ Connect the lamp unit connector:
Make sure that the connector is properly connected.
- ⑬ Remove the copy holder glass cover and attach the copy holder front cover:
Make sure the copy holder front cover is secured by the ball catch.
- ⑭ Turn on the main power source and the 100V and 200V POWER switches.
- ⑮ Return the lens board to its original position using the LENS switch on the main panel.
- ⑯ Determine standard exposure.
When a new lamp is installed, the light intensity or the amount of exposure may change. Make an exposure of the test chart to determine standard exposure.

12-3-3 Replacement of Fuses

See 6-2-1-①.

- ① When changing the fuse, never fail to turn off the 100V and 200V POWER switches and the main power source.
- ② Use fuses only with the specified capacity.

12-4 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 Make an exposure of the test chart:
For the test chart, use an exposure level higher than standard.
- ② Compare the exposure of the test chart with the original test chart:
When the resolution of the exposure is 8 lines/mm or more, the focus is satisfactory.
* This resolving power chart is a duplicate and does not indicate absolute values.

12-5 Order and Replacement of Parts

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

When ordering, please let us know the following:

- ① Whether parts only are needed, or whether both parts and installation (replacement) service are needed.
- ② The information given in the certificate or the nameplate of your machine.
 - 1) MODEL (CP-800S)
 - 2) MFG NO.85080-0151
- ③ Descriptions of parts and quantities required, date of delivery, etc.

NOTE:




- 1) Specifications are subject to change without notice.
- 2) We assume 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 our approval.

13. TROUBLESHOOTING

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

CAUTIONS:

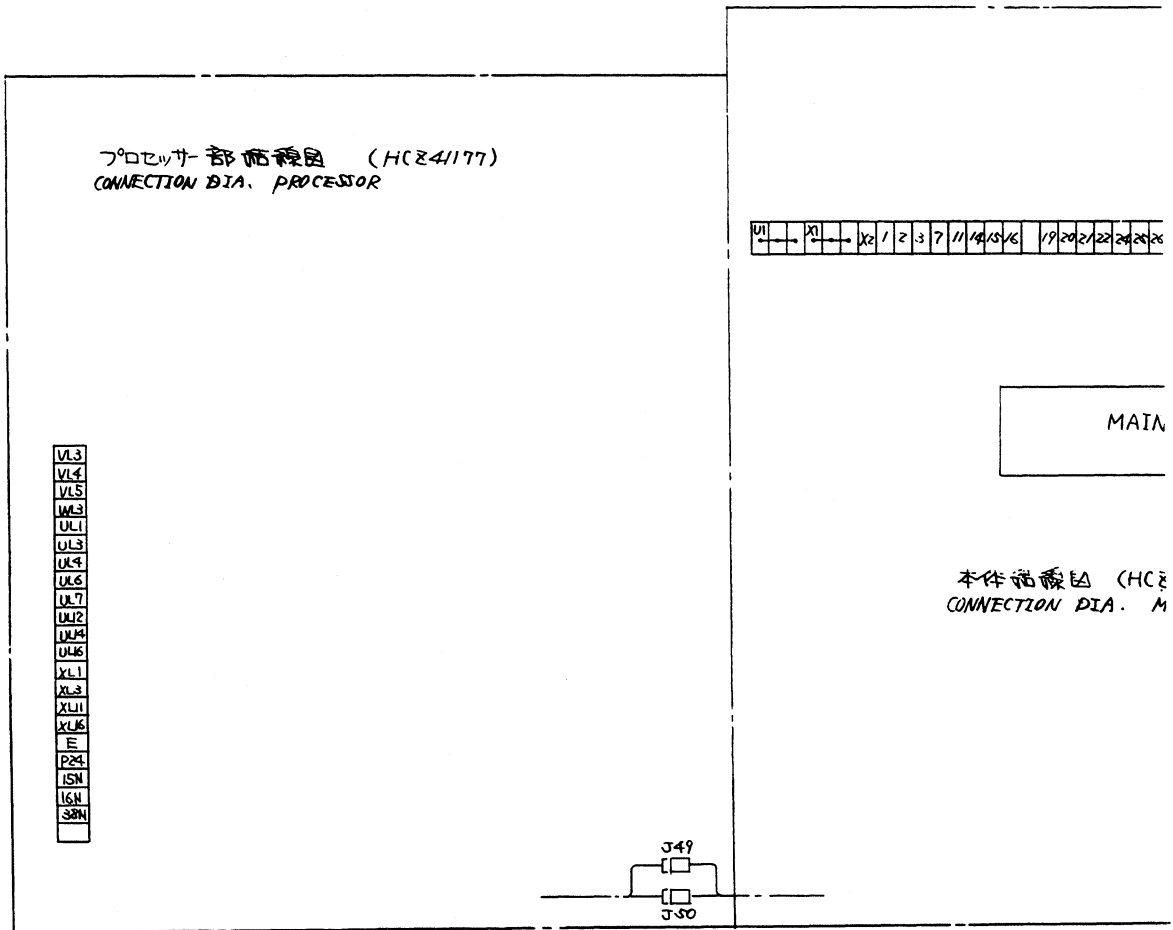
- 1) When checking the electric circuit for fuse replacement or other purpose, turn off the 100V and 200V POWER switches and the main power source.
- 2) To "reset" the power, once turn off the power and allow at least 5 seconds before turning it back on.

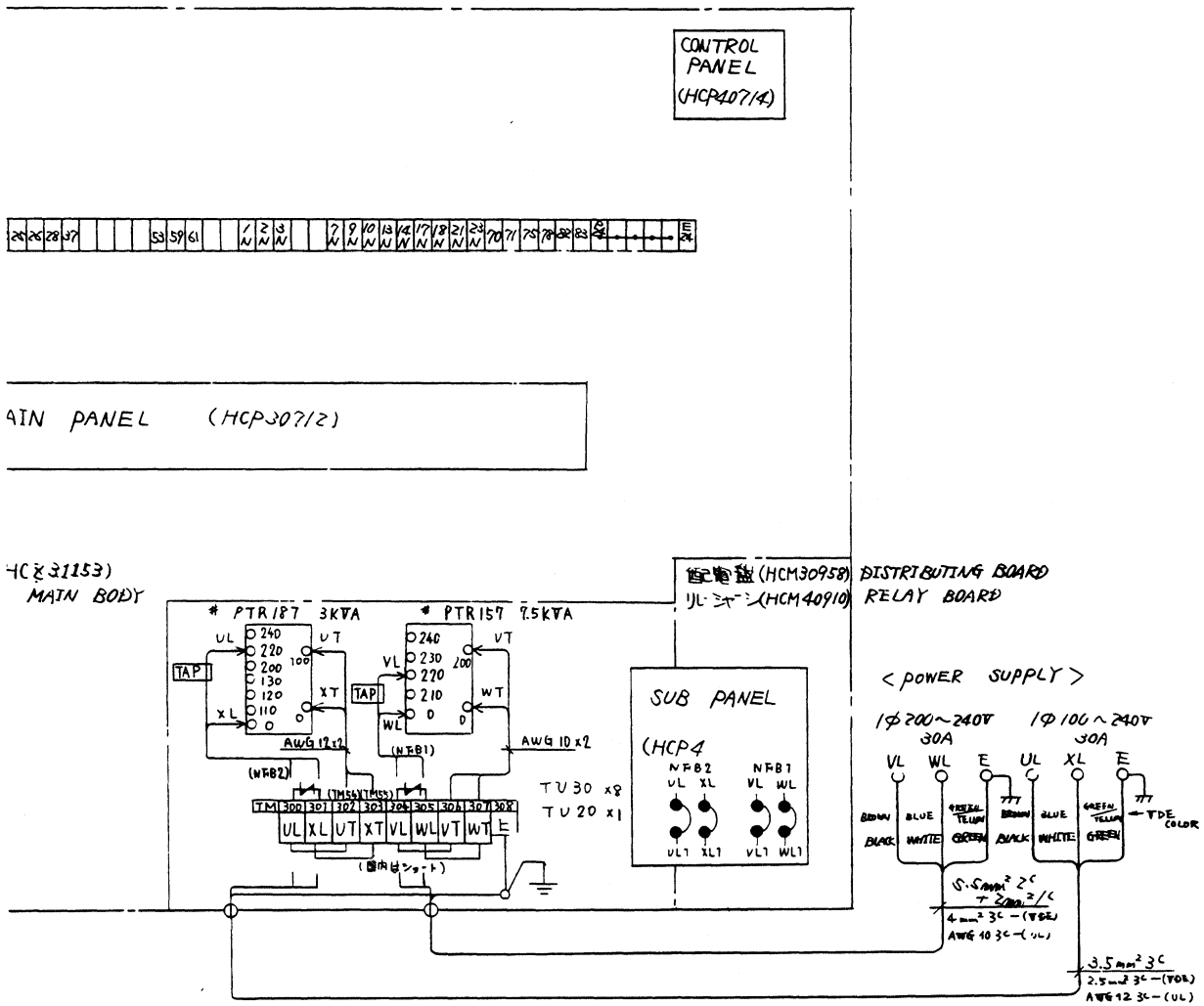
Trouble	Probable Cause	Remedy
1. START lamp will not Light	<ol style="list-style-type: none"> 1. Master out of position. 2. Cutter is not at the original position. 3. Set master feed length is out of the specified range. 4. OPERATION switch at MANU. 5. Carrier not at the original position. 6. Chucks not at the original position. 7. Setters not at the original position. 8. No master loaded. (MASTER END lamp on.) 9. Photographing section top cover open. 	<ol style="list-style-type: none"> 1. Turn nip roller lever to  and press master set button. 2. Reset the 100V POWER switch and return the cutter to the original position. 3. Set it within the specified range (60.0 ~ 109.0cm). 4. Turn it to AUTO. 5. Reset the 100V POWER switch to return it. 6. Turn the CHUCK switch to UPPER. Reset the 100V POWER switch. 7. Turn the SETTER switch to FREE. Load a new master roll. 9. Close the cover.
2. START switch lamp, process indicator PROCESSOR, DRYER or TRANSPORTER flash.	<ol style="list-style-type: none"> 1. Master jammed in processor, dryer or master delivery hole. 	<ol style="list-style-type: none"> 1. Remove the jammed master. Press the START switch.
3. Light sources will not light.	<ol style="list-style-type: none"> 1. 200V power not supplied. 2. EXPOSURE switch at ZERO. 3. Lamp burned out. 4. Blown fuse (F5, F6 30A). 5. Light control board defective. 	<ol style="list-style-type: none"> 1. Turn on the 200V POWER switch. 2. Turn it to AUTO. 3. Replace the lamp. 4. Replace fuse. 5. Replace the board.
4. Master not fed.	<ol style="list-style-type: none"> 1. Nip roller lever at . 2. MULTI/NORMAL switch at MULTI. 3. Chucks not at the original position. 4. Chucks failed to pick up the master properly. 	<ol style="list-style-type: none"> 1. Turn it to . 2. Turn it to NORMAL. 3. Turn the CHUCK switch to UPPER. Reset the 100V POWER switch. 4. Adjust the chuck lower position and check the suction pump hose for air leaks.

Trouble	Probable Cause	Remedy
5. Exposure not made. (Process indicator MASTER POSITION lights.)	<ol style="list-style-type: none"> 1. Lens board not at the original position. 2. C. VACUUM switch at OFF. 3. Copy holder not in place. 	<ol style="list-style-type: none"> 1. Return it to the original position with the LENS switch. 2. Turn it to AUTO or ON. 3. Push it until START OK CHECK lamp C.VACUUM SW. goes out.
6. Processor will not work.	<ol style="list-style-type: none"> 1. Blown processor fuse (F9, F10 3A) 2. Processor safety limit switch is working. 3. Processor connector disconnected. 4. 100V POWER switch OFF. 	<ol style="list-style-type: none"> 1. Replace the fuse. 2. Align the processor top cover mark (☒). 3. Connect connectors J49 and J50 securely. 4. Turn it on.
7. Low activator temperature. (below 28 ~ 31°C)	<ol style="list-style-type: none"> 1. DEV. HEATER switch at OFF. 2. Blown processor fuse (F7, F8 20A) 3. Heater plug disconnected. 4. Missetting of thermocontrol. 	<ol style="list-style-type: none"> 1. Turn it to AUTO. 2. Replace the fuse. 3. Connect it properly. 4. Set it correctly. (30°C)
8. Master not cut properly.	<ol style="list-style-type: none"> 1. Dull cutter blade. 2. Cutter end limiter contact failure. 3. Cutter relay contact failure. 4. I/O board connector CN15 contact failure. 	<ol style="list-style-type: none"> 1. Replace the blade. 2. Operate the cutter end limiter (non-operation side) by hand for check. (N.B.) Be sure to turn off 100V, 200V and main power beforehand. 3. Push relay RY7 deep enough or replace it. 4. Push it deep enough.
9. Master not dried well.	<ol style="list-style-type: none"> 1. 200V POWER switch off. 2. DRYER switch at AUTO. 3. Blown dryer heater fuse (F1, F2 15A) 	<ol style="list-style-type: none"> 1. Turn on the 200V POWER switch. 2. Turn the DRYER switch to MANU. 3. Replace the fuse.
10. Fuzzy image (low photographic density)	<ol style="list-style-type: none"> 1. Dirty lens, mirror exposure glass or copy holder glass. 	<ol style="list-style-type: none"> 1. Clean them. Turn on DEFOGGER switches 1 and 2.
11. Silver deposit in the plate.	<ol style="list-style-type: none"> 1. Dirty lens, mirror exposure glass or copy holder glass. 2. Dirty first developing rollers and dryer rollers. 	<ol style="list-style-type: none"> 1. Clean them. 2. Clean the rollers.
12. Partially scratched plate.	<ol style="list-style-type: none"> 1. Conveyor rollers dirty or oreign matter on them. 2. Conveyor guides dirty or foreign matter on them. 	<ol style="list-style-type: none"> 1. Clean the rollers. 2. Clean the conveyor guides.

14. WIRING DIAGRAMS

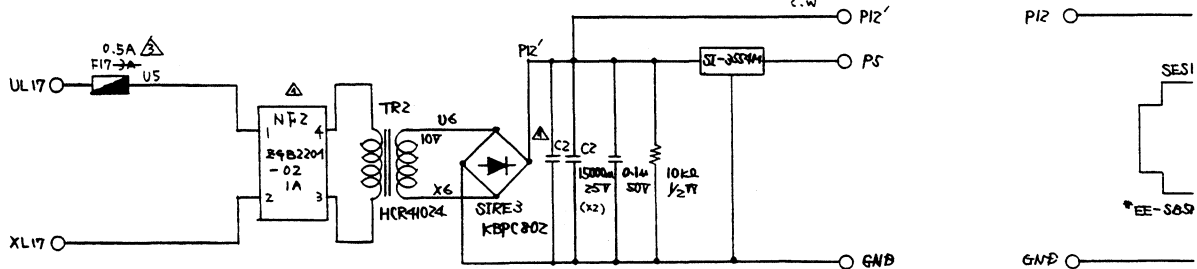
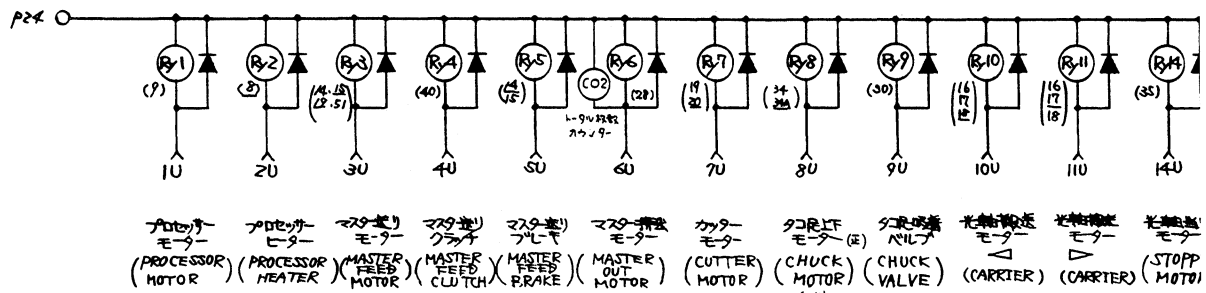
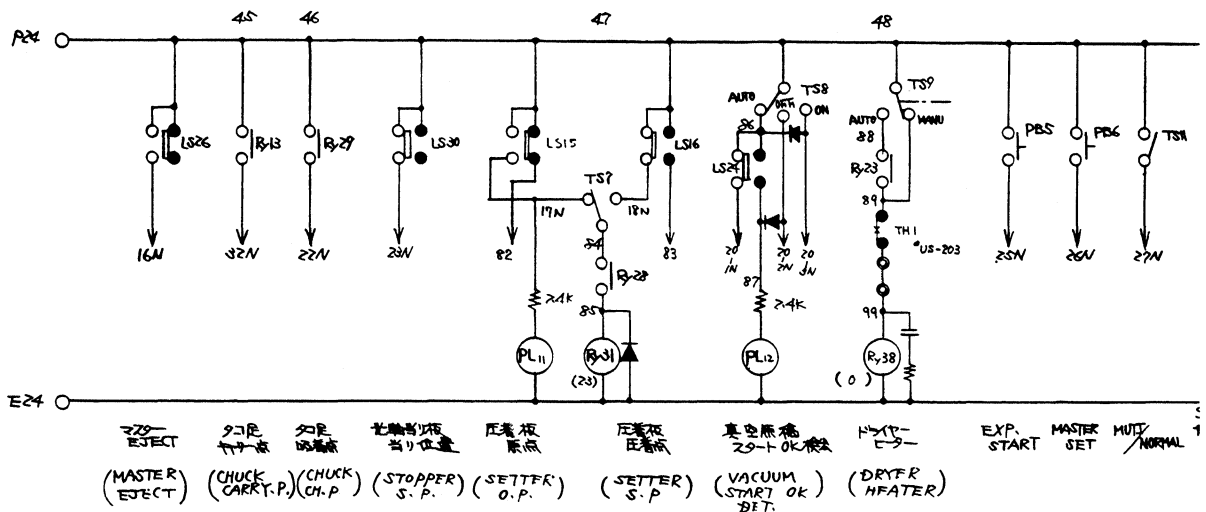
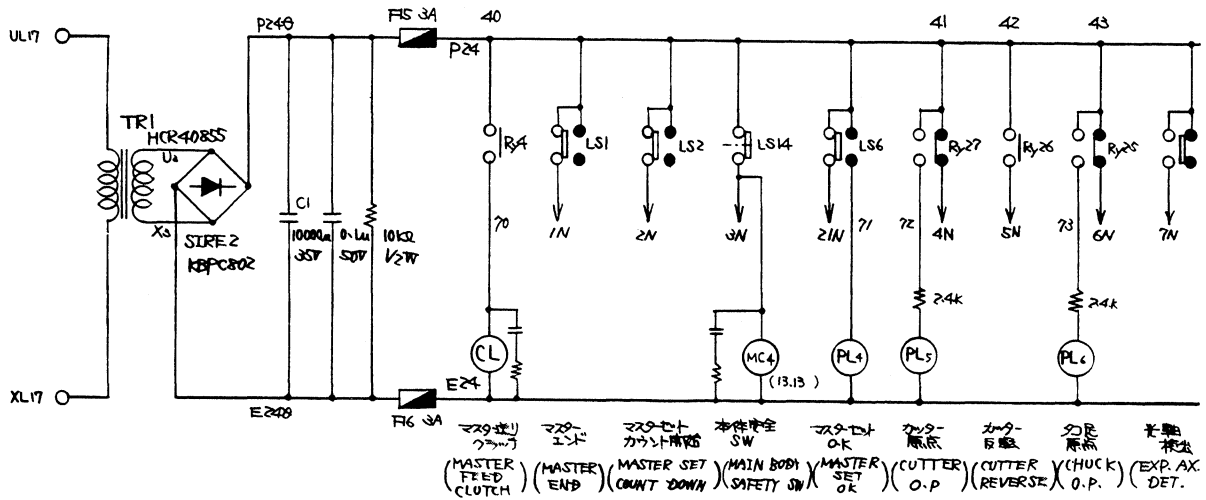
接続図参照図面	REFERENCE	
1. 系統図 (交流)	HCS 31723	(WIRING SYSTEM DIA. A.C.)
2. " (DC)	HCS 31697	(WIRING SYSTEM DIA. D.C.)
3. メインパネル部接続図	HCP 30720	(CONNECTION DIA. MAIN PANEL)
4. サブパネル部	HCP 40760	(CONNECTION DIA. SUB PANEL)
5. コントロールパネル部	HCP 40714	(CONNECTION DIA. CONTROL PANEL)
6. 配電盤部	HCM 31090	(CONNECTION DIA. DISTRIBUTING BOARD)
7. リレーボード部	HCM 40910	(CONNECTION DIA. RELAY BOARD)
8. 本体	HCE 31415	(CONNECTION DIA. MAIN BODY)
9. プロセッサ部	HCE 41177	(CONNECTION DIA. PROCESSOR)
10. 本体部系統図	HCS 42101	(WIRING SYSTEM, DEFOGGER2)

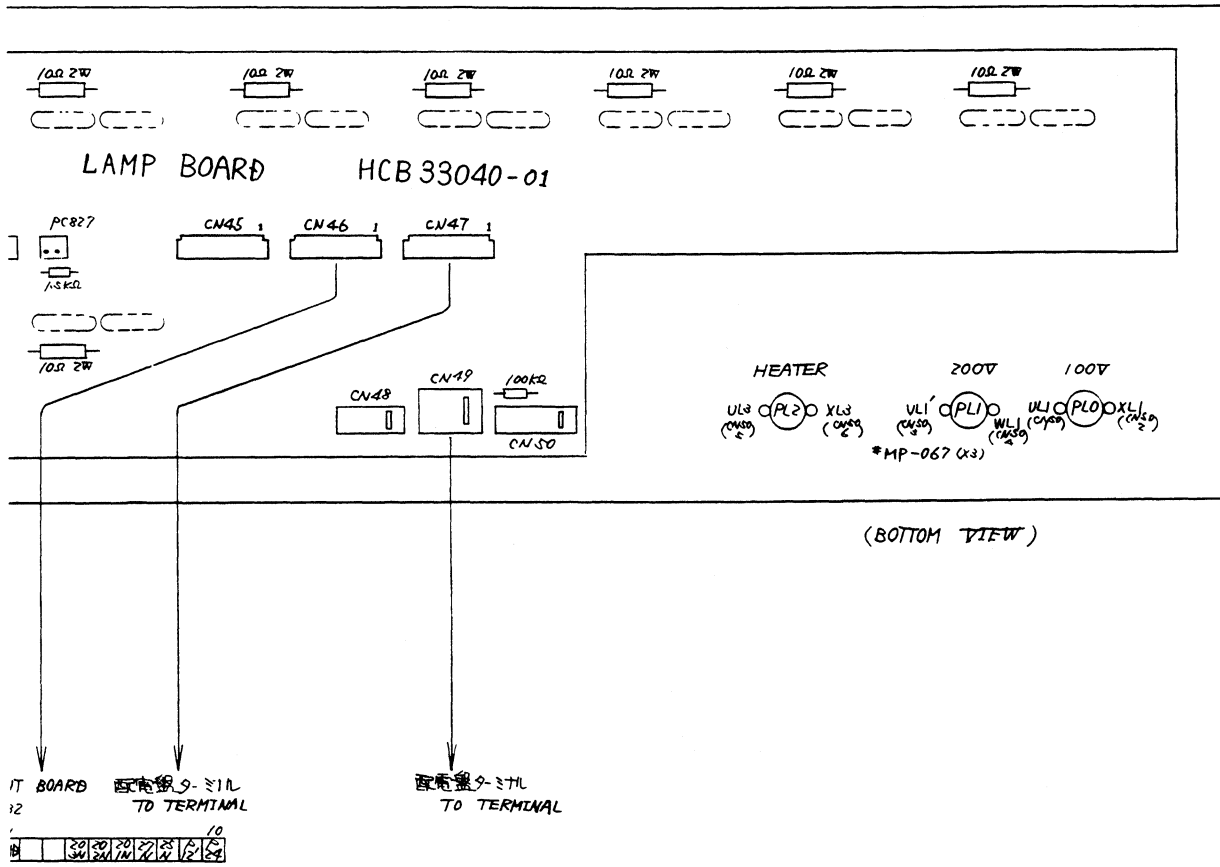




主 電源電圧 AC100V, AC200Vの場合はトランス不附

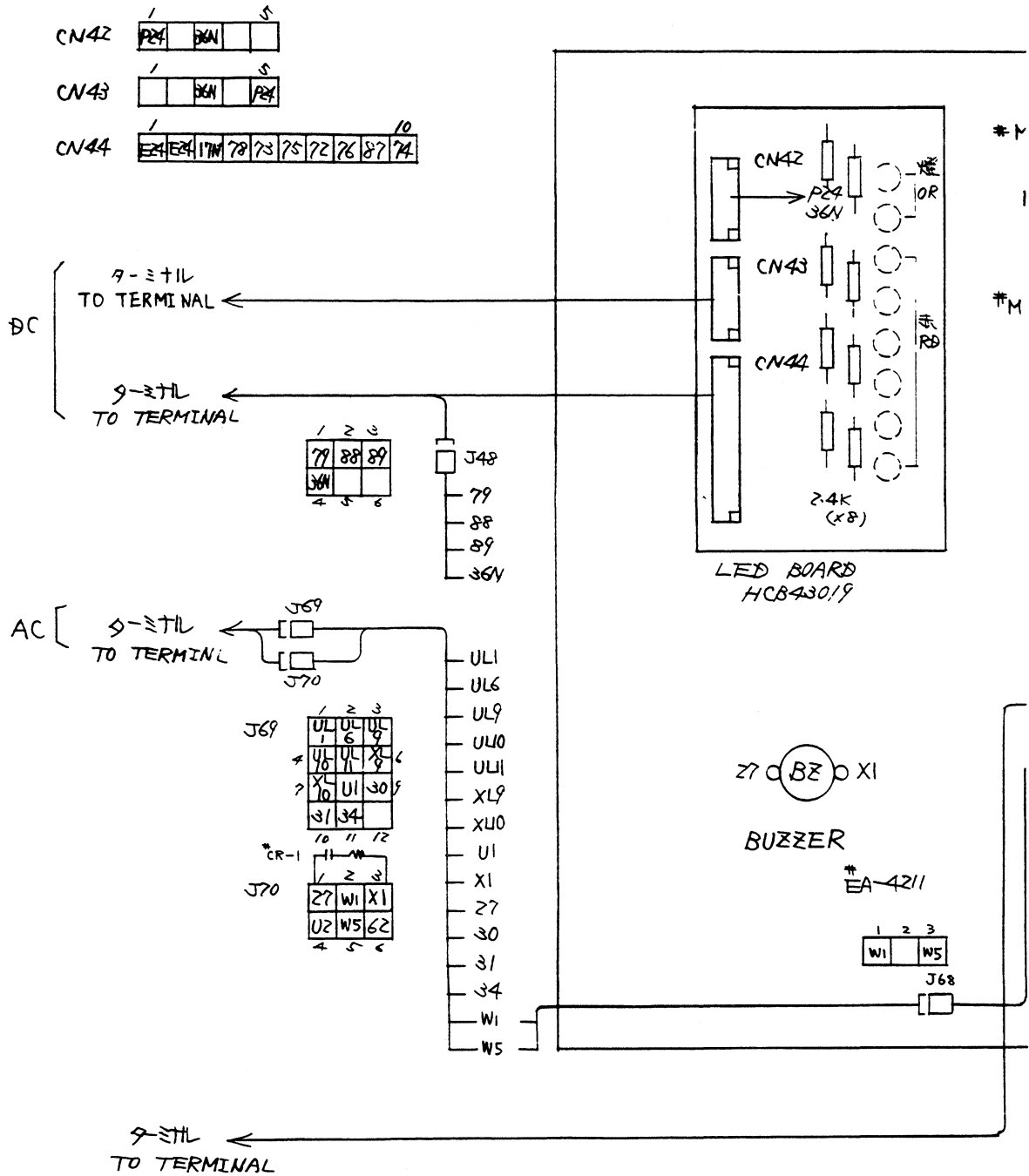
ト : ENB4R1D-14A





注) 指定ワイヤ線は 0.5mm² を使用

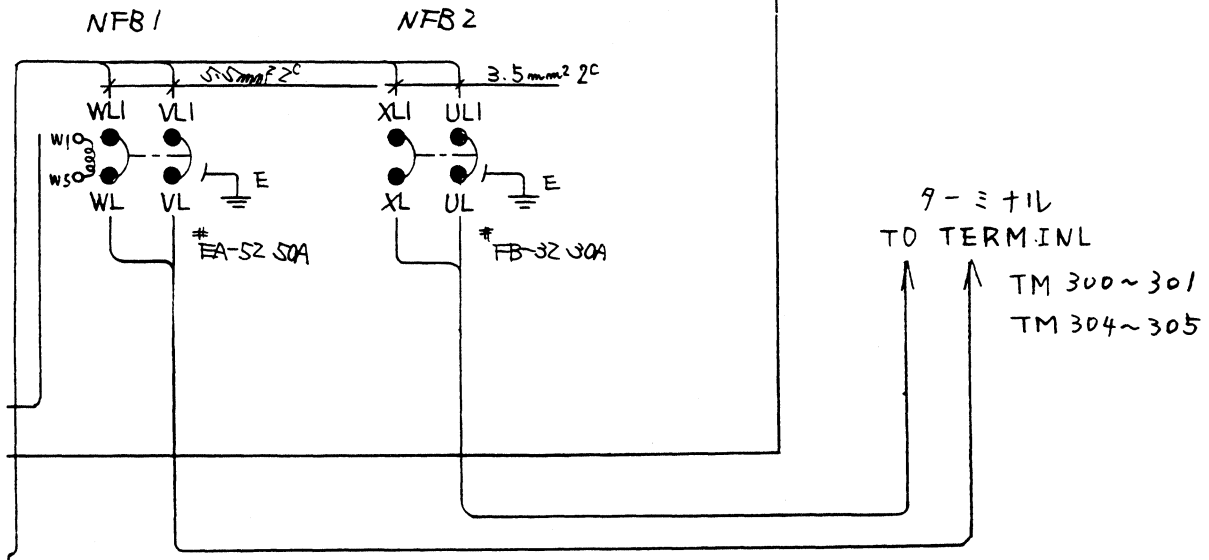
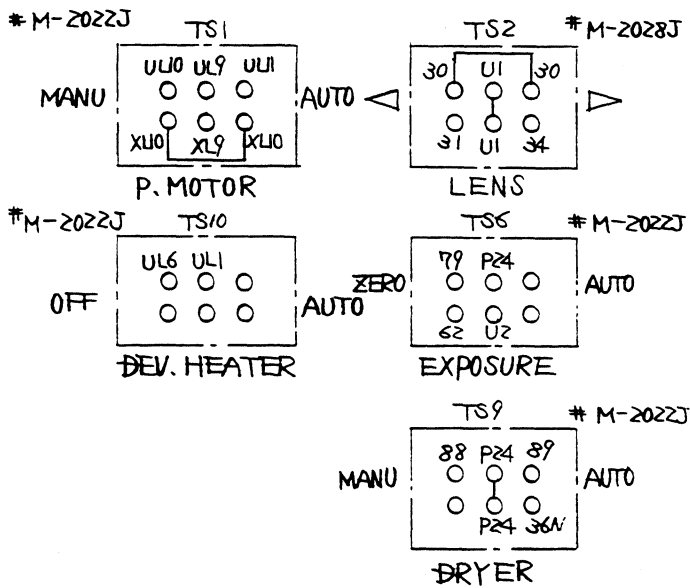
NOTE: ALL WIRES ARE 0.5mm² UNLESS OTHERWISE SHOWN.



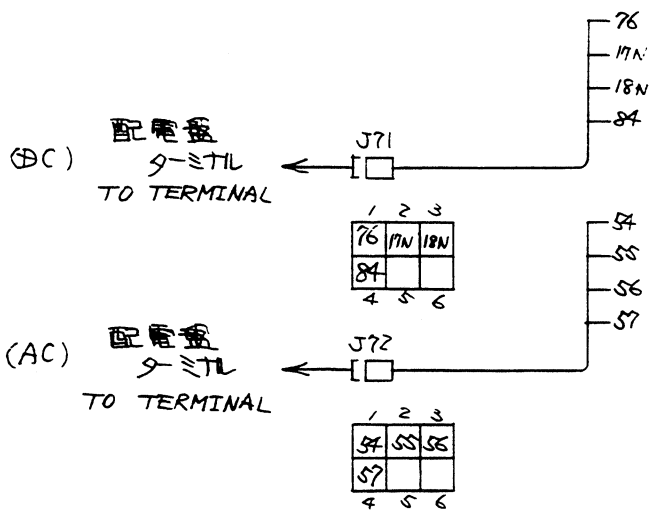
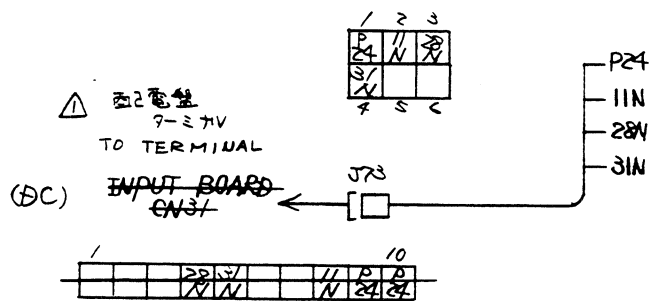
注) 指定の線径は0.5mm²使用。
 AC、DCは区別して配線すること。

NOTE: ALL WIRES ARE 0.5mm² UNLESS
 DISTINGUISH BETWEEN A.C. LIA

(BOTTOM VIEW)



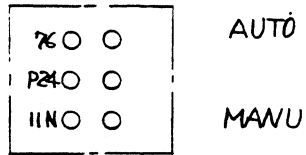
AS OTHERWISE SHOWN.
LINES AND DC. LINES AND BUNDLE.



≡)

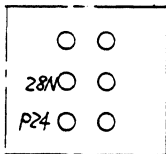
NOTE

OPERATION



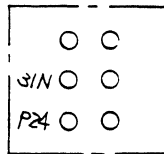
#M-2022J

STOP



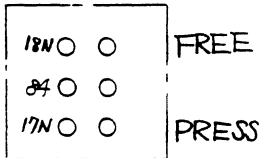
*EB-2061

CUTTER



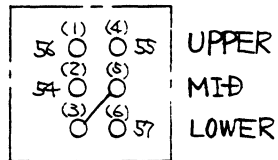
*EB-2061

SETTER



#M-2022J

CHUCK



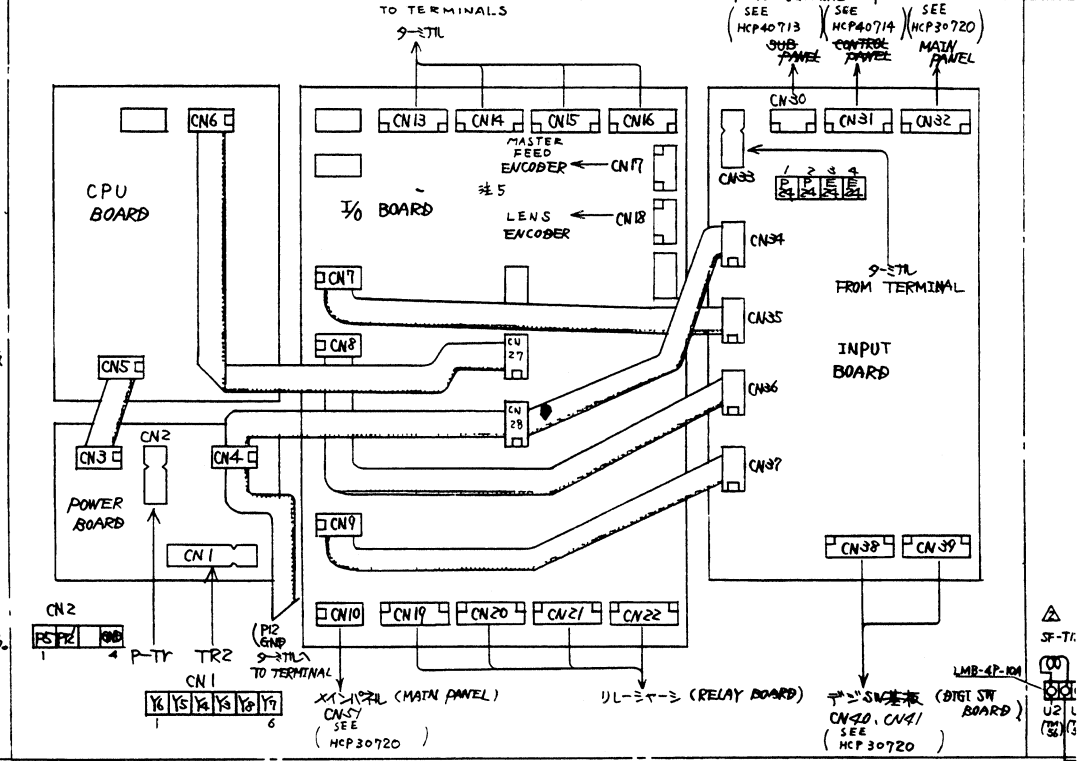
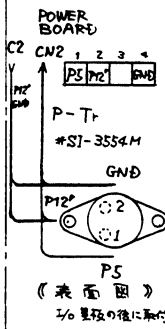
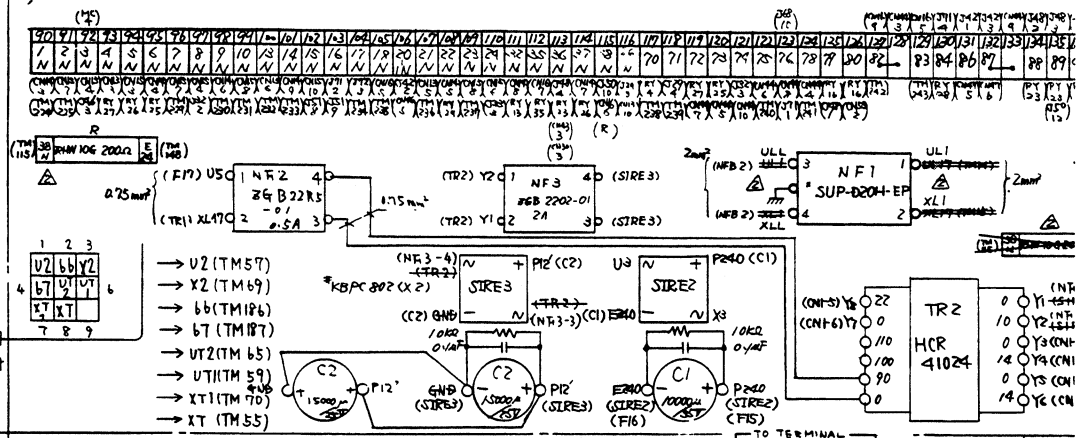
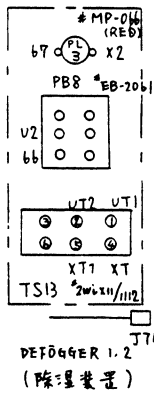
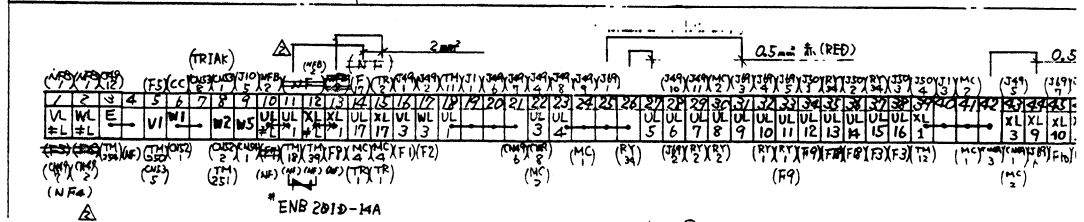
#M-2020J

(BOTTOM VIEW)

主) 指定なき線は0.5mm²使用。
AC・DCは区別して積束すること。

OTE: ALL WIRES ARE 0.5mm² UNLESS OTHERWISE SHOWN.
DISTINGUISH BETWEEN A.C. LINES AND D.C. LINES
AND BUNDLE.

- TM1~TM2
TU-30 (x2)
- TM3~TM15
TU-30S (x13)
- TM16~TM159
TU-15 (x79)



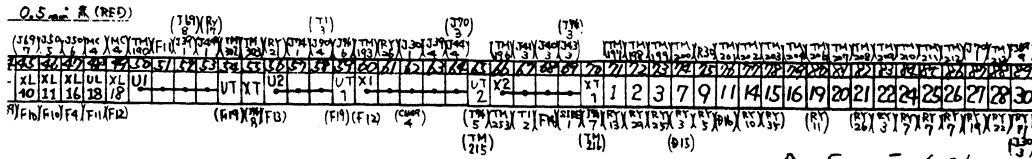
PS
《表面図》
I/O 基板の後に接続
※注意>>
端子板
S1-3554M付
両面とも、且両面
にてネジを挿入し、
端子板に取り付け
けること。
また取り付け後
IC表面と端子板の
導面を密着させ、
無断で（絶縁）で
あることを確認する。

CN3	CN3A	CN3B	CN3C	CN3D	CN3E	CN3F	CN3G	CN3H	CN3I	CN3J	CN3K	CN3L	CN3M	CN3N	CN3O	CN3P	CN3Q	CN3R	CN3S	CN3T	CN3U	CN3V	CN3W	CN3X	CN3Y	CN3Z
1	PI2	16	N24																							
2	PI2	15	N24																							
3	GND	14	GND																							
4	GND	13	GND																							
5	P5	12	P5																							
6	P5	11	P5																							
7	P5	10	P5																							
8	N5	9	N5																							
9																										
10	26N																									

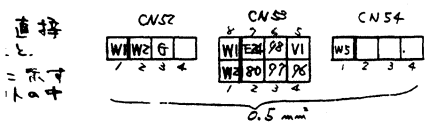
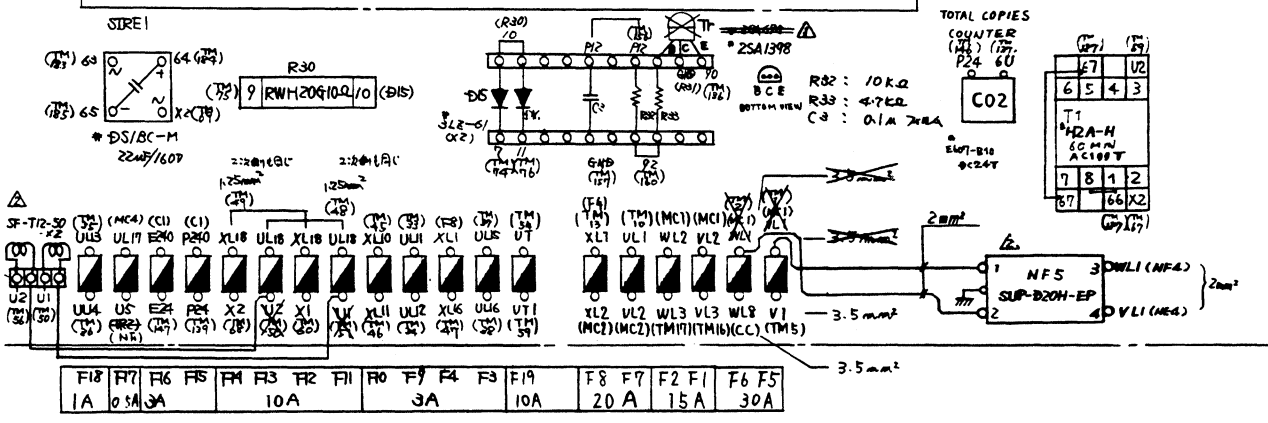
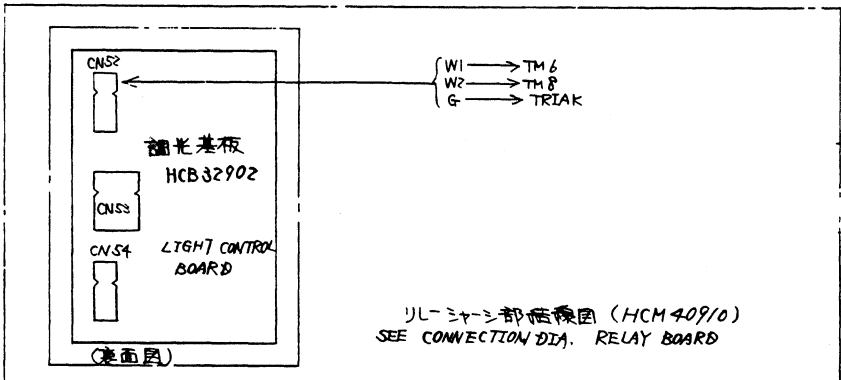
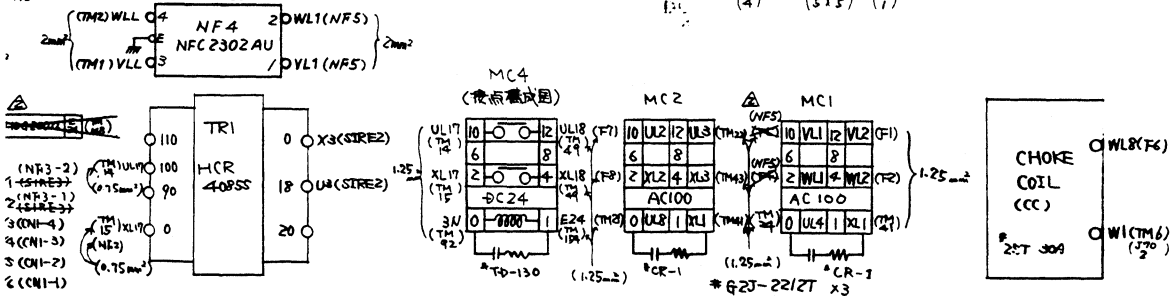
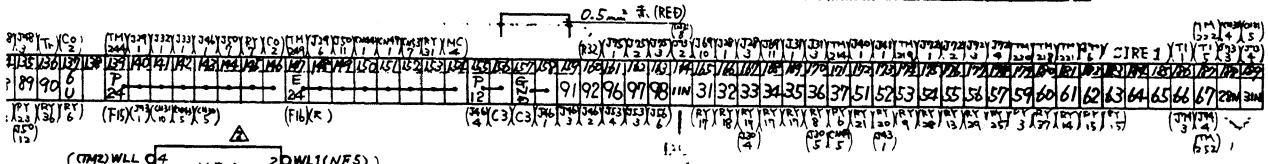
CN4	CN4A	CN4B	CN4C	CN4D	CN4E	CN4F	CN4G	CN4H	CN4I	CN4J	CN4K	CN4L	CN4M	CN4N	CN4O	CN4P	CN4Q	CN4R	CN4S	CN4T	CN4U	CN4V	CN4W	CN4X	CN4Y	CN4Z
1	PI2	16	PI2																							
2	NI2	15	NI2																							
3	NS	14	NS																							
4	NS	13	NS																							
5	PS	12	PS																							
6	GND	11	GND																							
7	GND	10	GND																							
8	PI2	9	PI2																							

- 指定寸法線は0.75mmを使用のこと
- 1/2インチフルゲ-のア-スは、最短距離で直に
カメラ本体のア-ス端子に取り付けること。
- 1/2インチフルゲ-の一次側端子端子板に示
強電ライン(200Vラインを含む)は、ゲ-ットの
区違はすること。
- A.C.ラインとD.C.ラインは区別して結果L.F
ゲ-ットには入れないこと。
- シ-ルト線もGNDに落とすこと。

A. L. 寸法



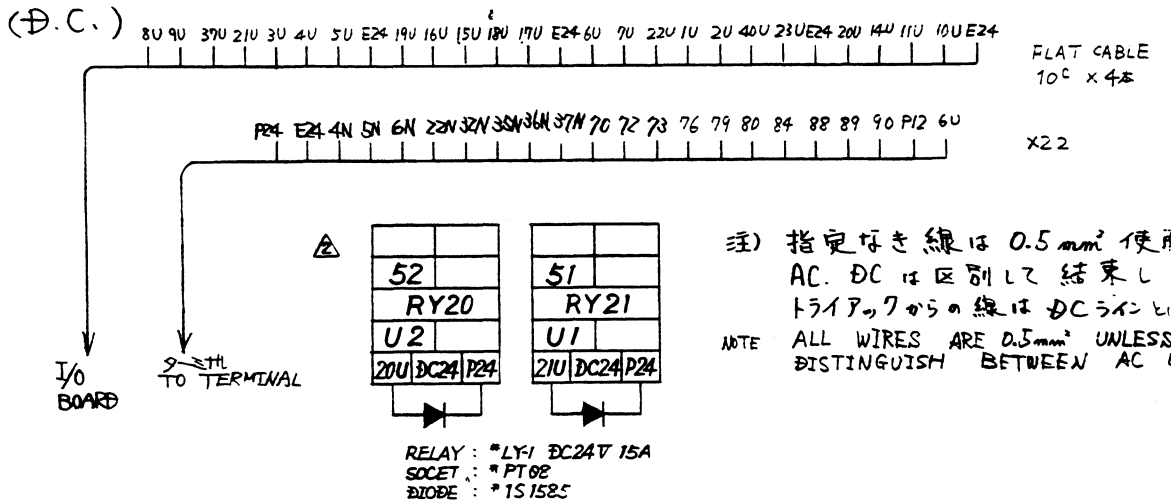
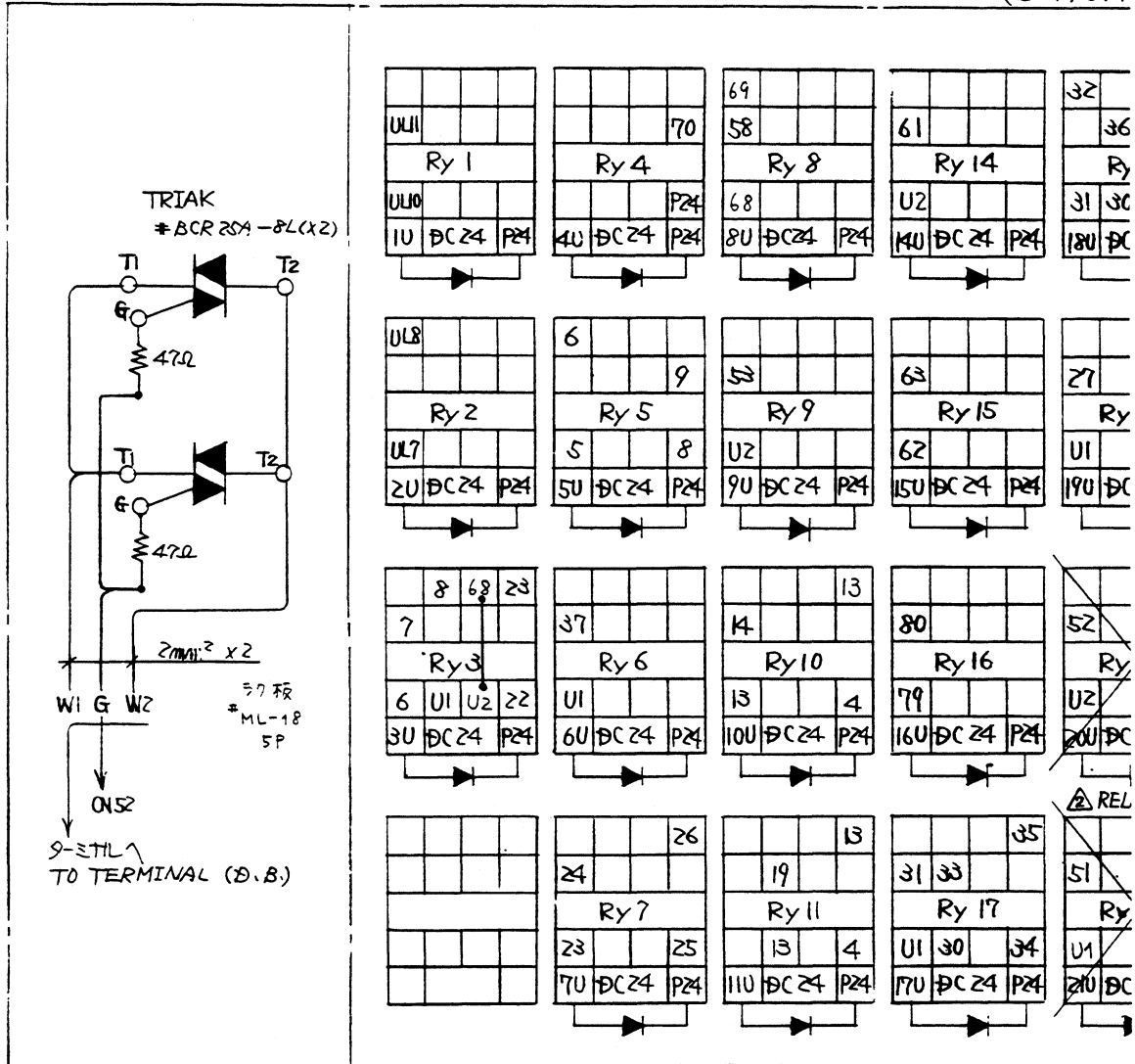
A. C. 寸法



L. 用

- △ *LY-1 DC24 15A
- RELAY *MY-4 DC12V 3A
- *MY-4 DC24V 3A
- *MY-4 AC100V 3A

(BOTTOM)

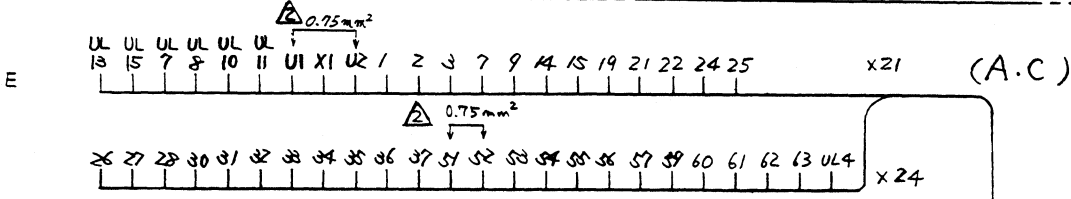
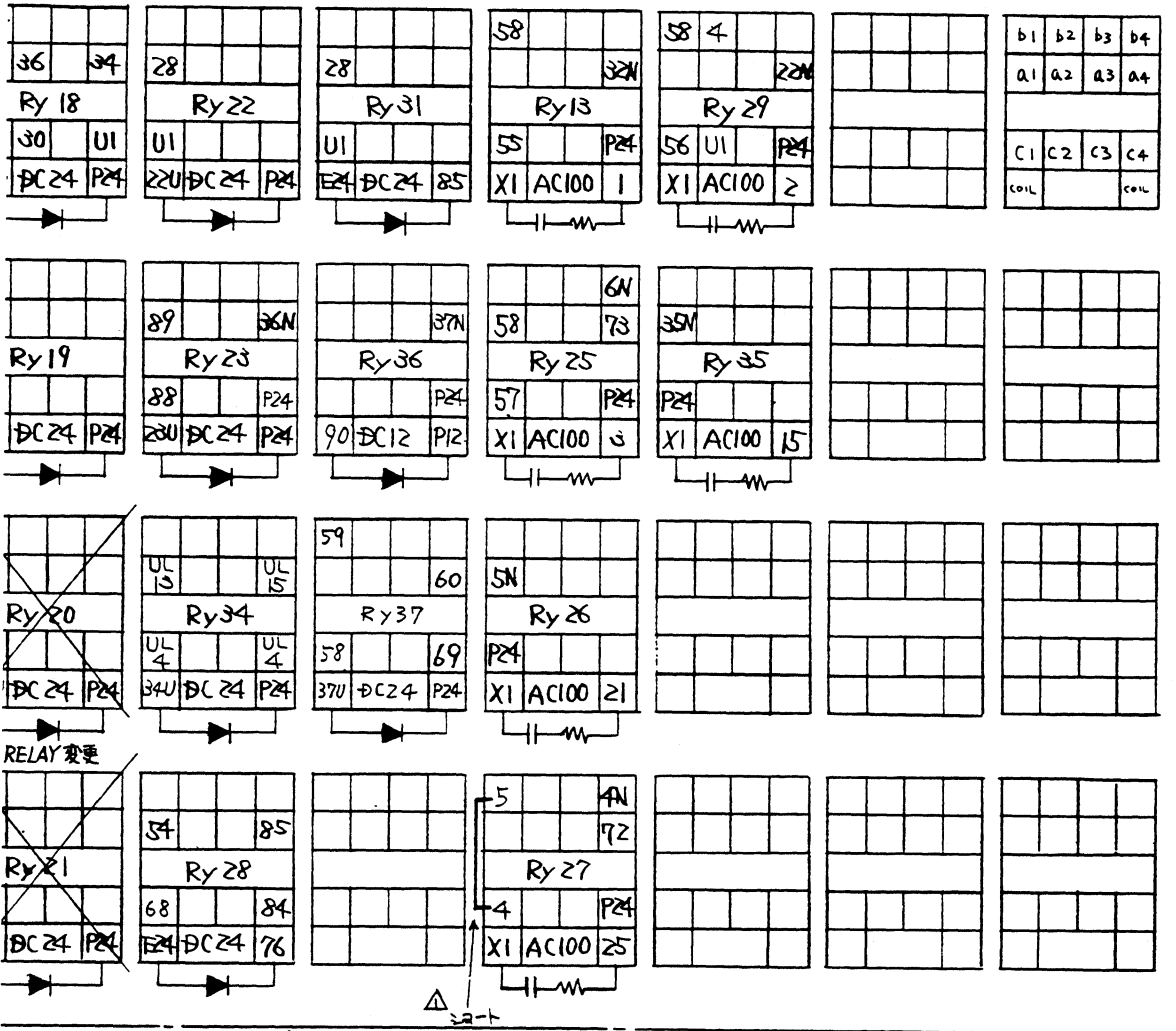


<NOTE>

→ : IS1585

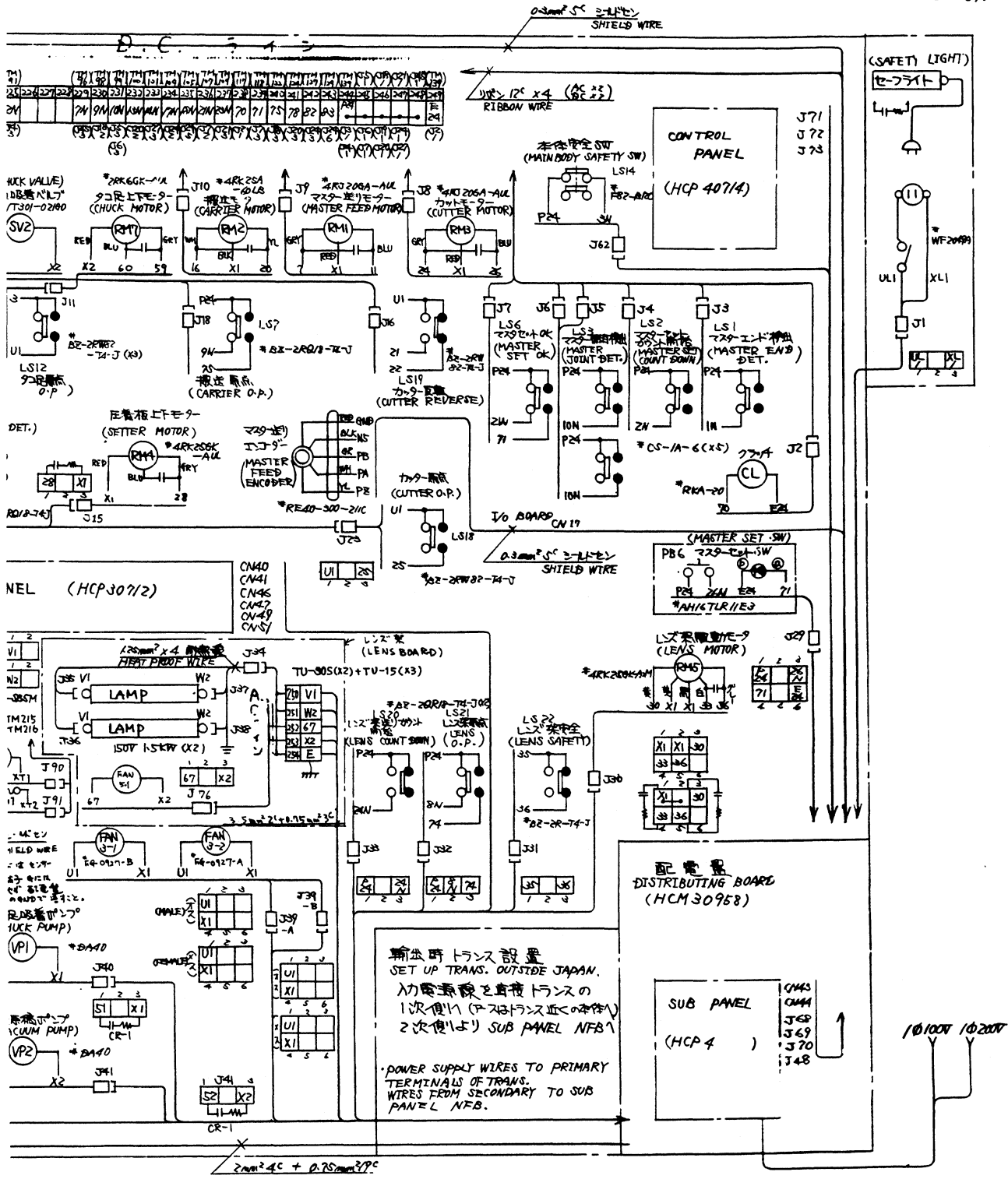
—|—|—| : CR-1

IM VIEW)



→ TO TERMINAL

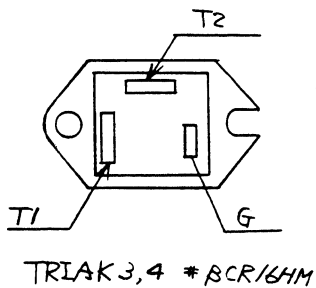
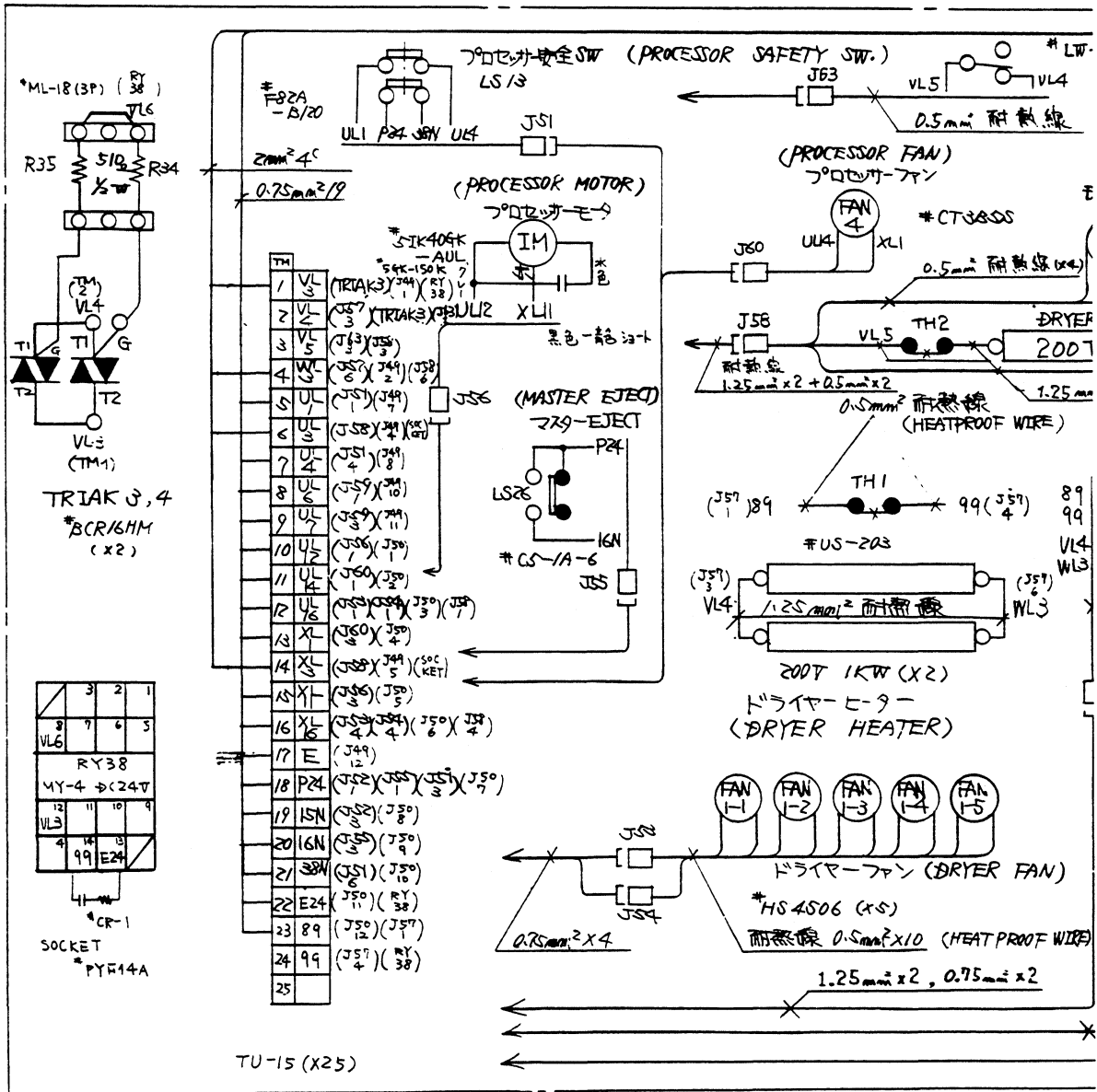
使用
 1. 分離したターミナルも、アーク防止
 ・とははばに配線する
 ESS OTHERWISE SHOWN.
 : LINES AND DC LINES AND BUNDLE



34
23
11
N2 E
56

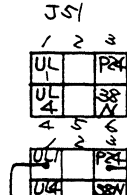
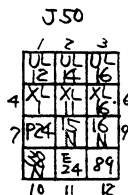
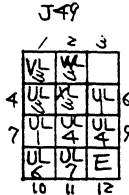
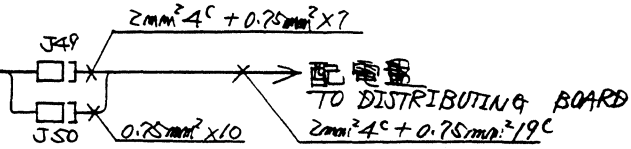
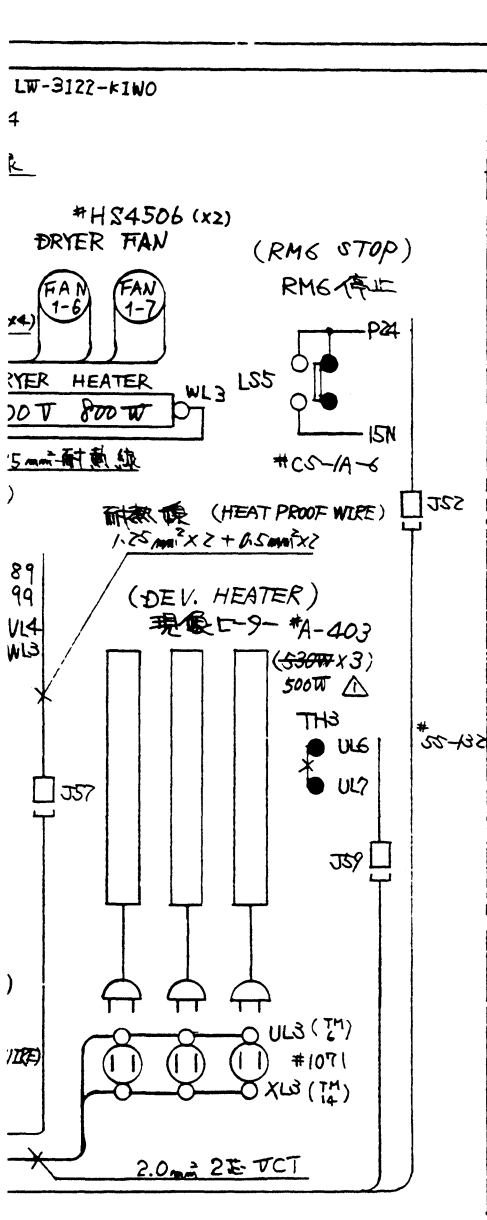
- 注 1) 指定付き線は 0.5mm² を使用のこと
 2) AC ラインと DC ラインは区別して 結束し、同じ
 ケットの中には入れないこと
 3) 温度ヒューズは 702012-2M の端子で止めること

(1230-133)

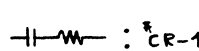
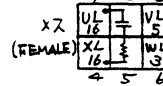
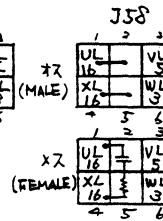
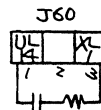
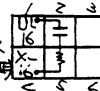
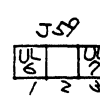
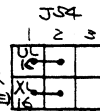
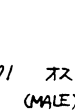
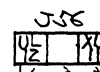
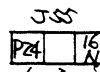
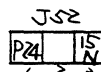


- 注
- 1). 指定なき線は0.5mm²を使用
 - 2). A.C.ラインとD.C.ラインは区別し

NOTE: 1). ALL WIRES ARE 0.5mm² UNLESS:
2) DISTINGUISH BETWEEN AC LINES

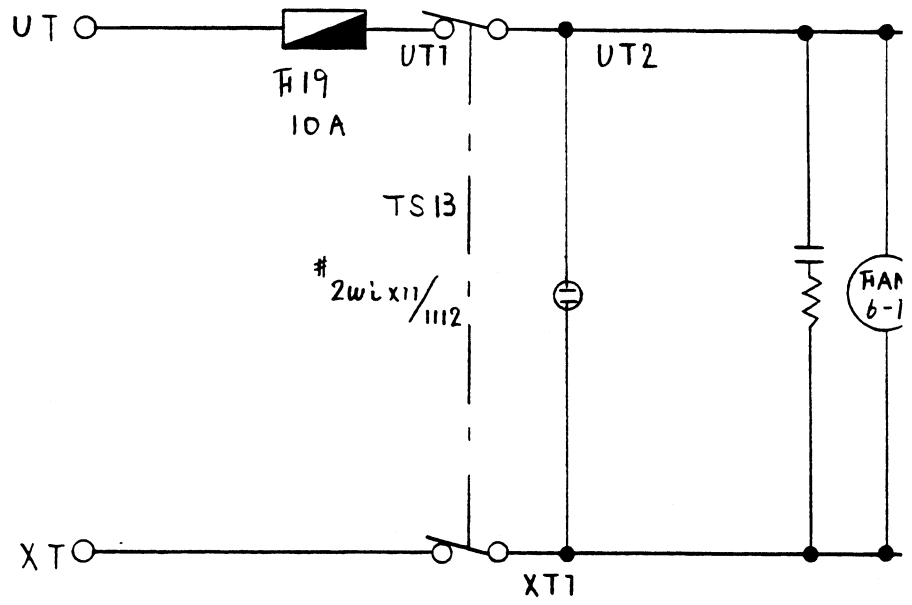


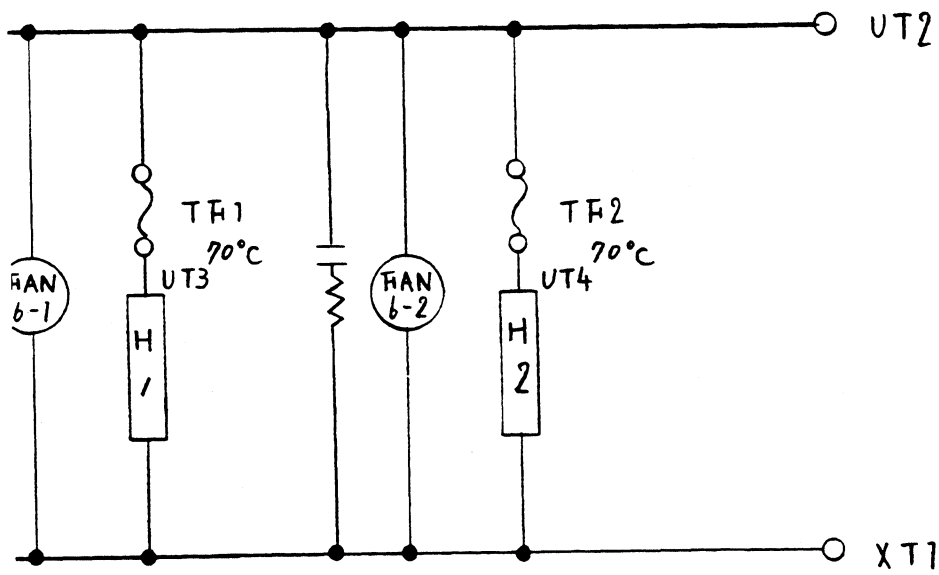
(國內向け)
不規則



1. 1として結束すること。

LESS OTHERWISE SHOWN.
NES AND D.C. LINES AND BUNDLE





DEFÖGGER

HEATER & FAN
(除湿装置)

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Mitsubishi Paper International, Inc.:
520 Madison Avenue New York, N.Y. 10022 U.S.A. Tel.212-980-9644

(Printed in Japan 88032HKB-JB)