Operating manual

AKS 32 FP

Item code/code article: 060 970 288 B
Reference/référence: SAV UTIL 040 ed 01
Date/date: 12.1998

GROUPE PHOTO ME KIS

Advanced technology

SUMMARY GENERAL

INTRODUCTION

Before using this system, be sure to read this instruction manual carefully.

For the sake of safety, observe the precautions shown below in repair work.

PRECAUTIONS

1 - Before starting any maintenance work described in this manual, be sure to turn off the power completely. A failure to turn off the power may cause electric shocks, injury or damages to the film processor.

2 - The film processor is grounded with the 3-wired power cable, etc...
Never disconnect the grounding wire to avoid electrocution.

3 - On completion of repair work, make certain that all removed screws, pads, etc..., are attached in the proper positions.

4 - Do not use any substandard or nonstandard repair parts.

5 - Do not attempt to carry out any repair works not described in this manual.

6 - Never pull the cable to unplug the connector.

7 - After replacing or repair work, connect wire and cables carefully not to bring them into contact with burrs or sharp edges. In particular, do not bring wires and cables into contact with movable parts or driving parts.

8 - This system is used to process color negative roll film. Do not use it for other purposes.

9 - Operate your system properly according to this operation manual for safe and optimum performance.

10 - Always keep this operation manual near the system and observe all cautions and instructions as required.

11 - Follow the instructions in this operation manual and observe all caution labels. For details, refer to the "Description of Caution Labels".

12 - Install the system on a flat and stable surface, and do not expose the system to direct sunlight.

13 - The work environment conditions call for room temperature of 15°C - 30°C and relative humidity of 30% - 80%. An optional cooling unit is required to maintain the processing performance of the negative processor should room temperature exceed 30°C.

14 - The cabinet has ventilation holes to prevent a rise in temperature. Never block or cover the ventilation holes with any objects.

15 - Never insert your hand or any object into the ventilation holes of the cabinet ; otherwise, you may suffer eclectric shock.

16 - Except when indicaded in this operation manual and user maintenance manual, users are prohibited from serving this system (by disassembling, remodeling, adjusting or using parts not specified). Should you remove the cover not specified, you may be exposed to high voltage and the danger like electric shock and burning yourself.

17 - Turn off the power source before initiating any maintenance indicated in this operation manual or the user maintenance manual. Should the power not be switched off.
You may suffer electric shock.

18 - Never remove the attached caution labels.

19 - If this operation manual is missing, contact your dealer. Should caution labels peel off or become stained or otherwise damaged, replace them with new ones.

20 - To purchase an additional operation manual or caution labels, contact your dealer or our sales division as indicated on the back cover.

21 - When the waste solution is disposed of, contact an waste-article collector qualified by the national or local government according to the law requiation.

22 - Machine noise informations for order 3.GSGV,18.01.1981 : the maximum sound pressure level is 70dB (A) or less in accordance with ISO 7779.

SAFETY PRECAUTIONS

This machine has been checked in accordance with the laws pertaining to the various product safety regulations before leaving the factory.
When serving it, be sure to observe the following precautions.

1 - Do not use fuses other than those of the specified ratings.

2 - Never modify electrical circuit.

3 - Do not use unspecified replacement parts.

4 - Confirm that all screws, pads and wiring which were removed for serving have been re-installed in their original position.

5 - When disconnecting connectors, do not pull the wiring (particularly AC line wiring and high voltage parts).

6 - Do not perform any unspecified modifications.

7 - Do not run the power cord where it is likely to stepped on or crushed.

8 - Carefully clean off chemical solutions adhering to electrical units.

9 - After replacing or repair work, route wiring in such a way that it does not touch burrs or other sharp edges.

10 - Machine noise informations for order 3.GSGV,18.01.1981 : the maximum sound pressure level is 70dB (A) or less in accordance with ISO 7779.

IMPORTANTE NOTICE

Because inexperienced person servicing may causes hazards to people and to the equipment, we, KIS strongly recommendsthat all servicing is performed only by our trained service engineer.

This machine must be disposed of as industrial waste.
Be sure the contact any qualified waste-article collector.

SAFETY GUIDE (Precautions on using the system)

Operation	Precaution	Label position	Remark
1. Handling chemicals	Wear safety gloves, protective glasses and masks when handling solutions. If solutions contact your eyes or skin, wash off them with water for more than 15 minutes and get medical treatment. Chemicals may cause skin irritation.	W - 3	Instruction Section 7 Installation Section 4
2. Handling the sprocket for switching the power frequency	Fingers may be clipped! The power breaker must be switched off before handling the sprocket for swicthing the power frequency.	W - 4	Service Section 6
3. Handling the chain and sprocket	Fingers or hair may be clipped! The power breaker must be switched off before handling the chain for the sprocket.	W - 2	Service Section 6
4. Handling the drying heater	Your fingers may be burnt! When handling the dryer heater, be sure to turn off the power breaker and wait more than 15 minutes before initiating operation.	W - 1	
5. Replacing the cutter blade	Your fingers may be cut! The power breaker must be switched off when changing the cutter blade.	W - 5	Maintenance Section 2 Instruction Section 18
6. Replacing a fuse	You may suffer electric shock! The power breaker must be switched off before changing a blown fuse.	C - 1	Installation Section 3
7. Connecting the input power supply cord	See installation instructions before connecting to the supply.	L - 1	Installation Section 3
8. Handling the sprocket for switching the power frequency (installation & maintenance)	Fingers may be clipped! The power breaker must be switched off before handling the sprocket for switching the power frequency	W-4	Section 6
9. Handling the chain and sprocket (installation & maintenance)	Fingers or hair may be clipped! The power breaker must be switched off before handling chain for the sprocket.	W-2	Section 6

DESCRIPTION OF SIGNAL WORDS

- Signal words indicate the levels of potential danger.

- Signal words are categorized into three levels according to the possibility and seriouness of danger.

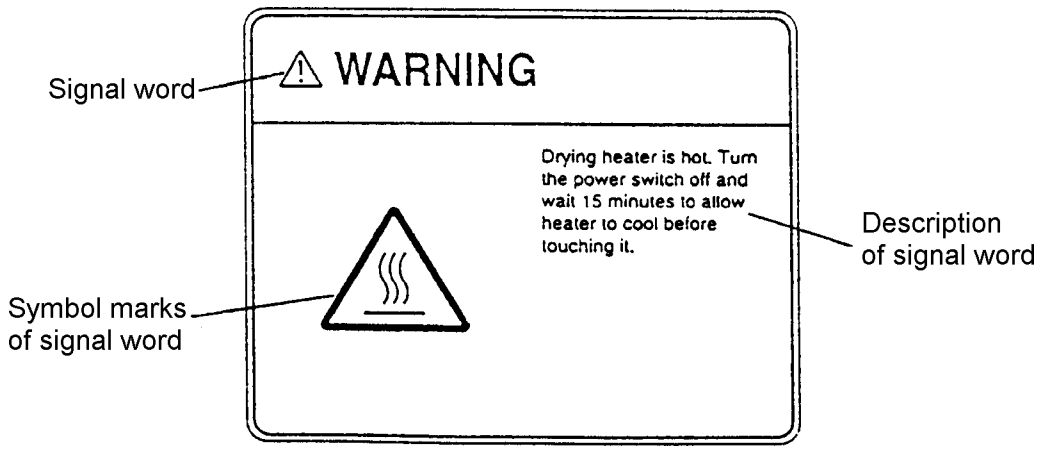
Danger : indicates a situation of immediate danger which may result in serious injury or death, if not avoided.

Warning : indicates a situation of potential danger which may result in serious injury or death, if not avoided.

Caution : indicates a situation of potential danger which may result in slight or minor injury. This term is also used for physical damage aside from personal risk and injury.

		Probability of damage	
		Damage is caused (High probality)	Damage may be caused (Low probality)
Injury (and physical damage)	Death or serious injury (Damage is serious)	Danger	Warning
	Medium or slight injury (Damage is slight)	Warning or Caution	Caution
Physical damage only		Caution	

- Example of the signal word.

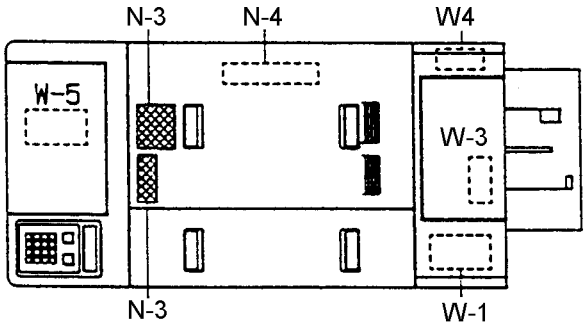


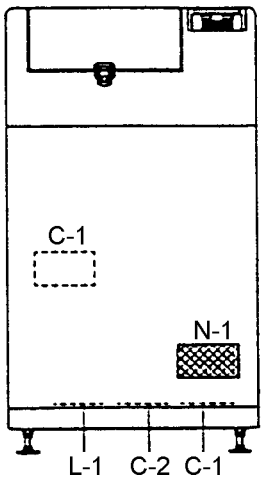
DESCRIPTION OF WARNING & CAUTION LABEL

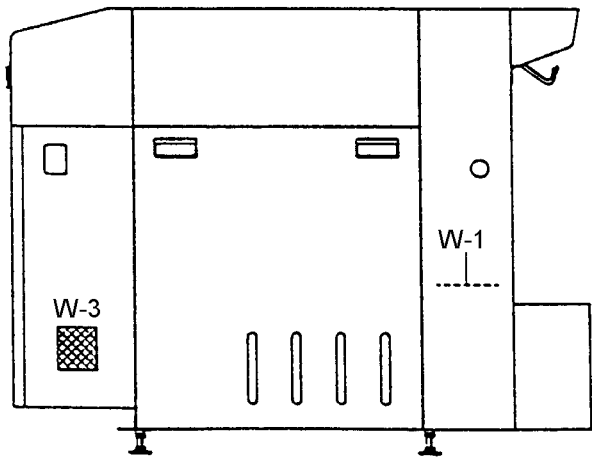
POSITION OF WARNING AND CAUTION LABELS TO BE ATTACHED

Note : ▭ Attached on the outside

▭ Attached on the inside

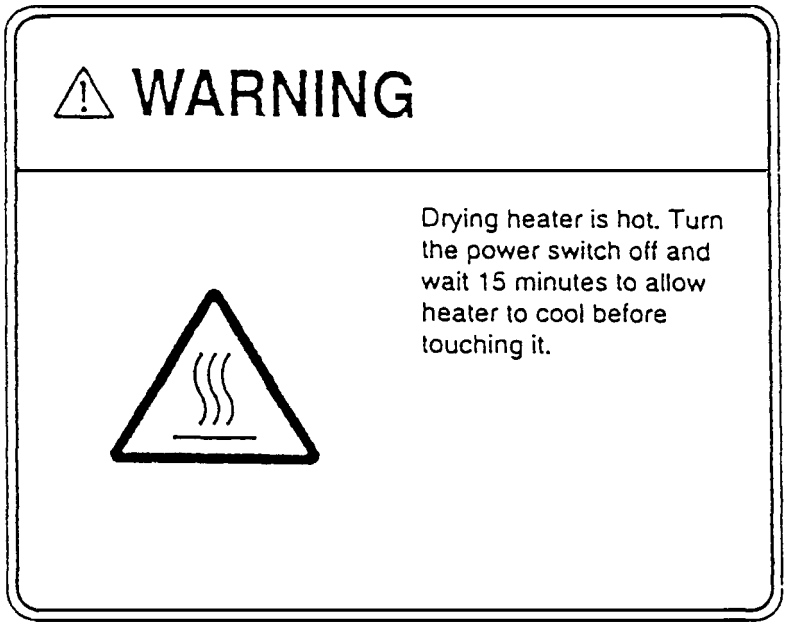
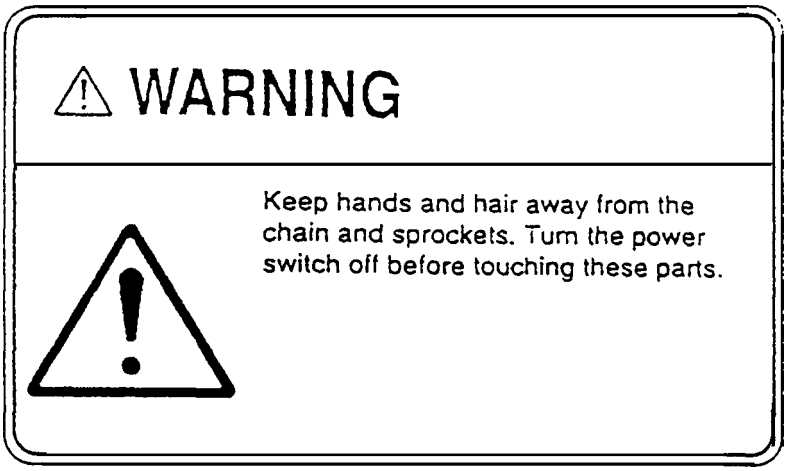


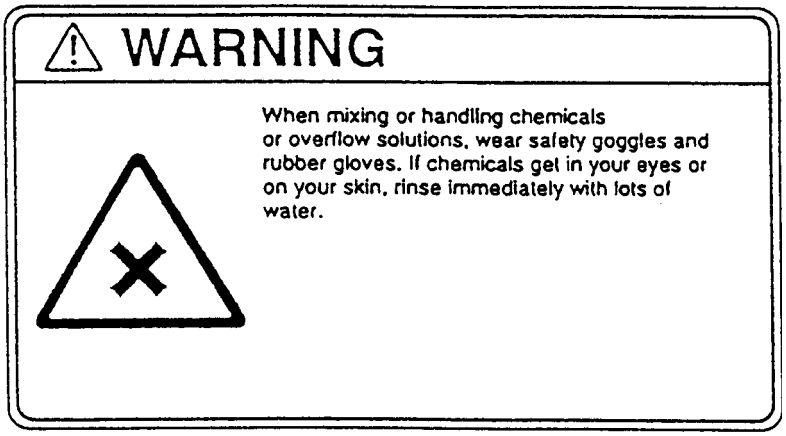
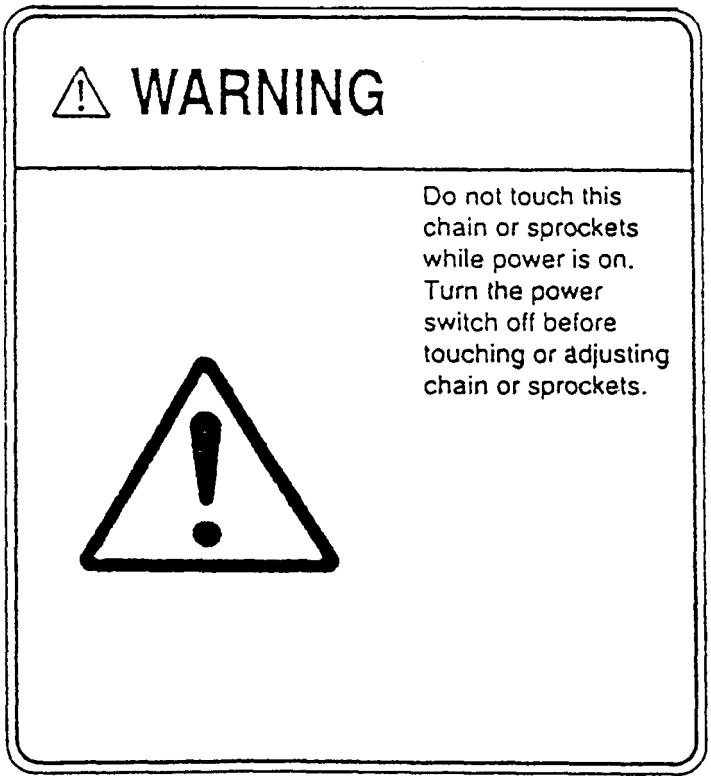


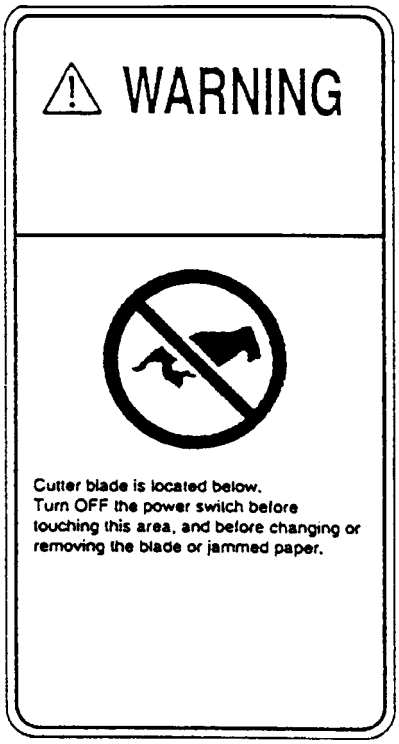


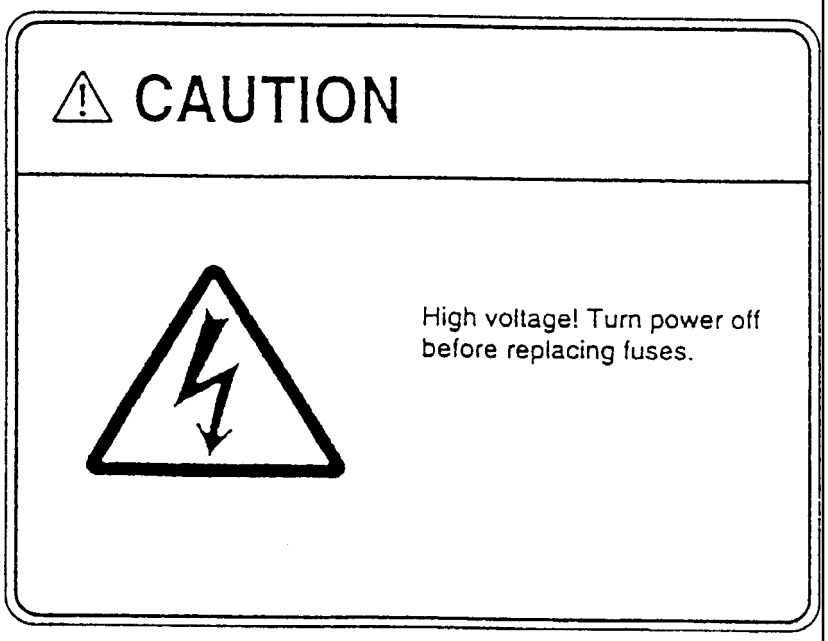
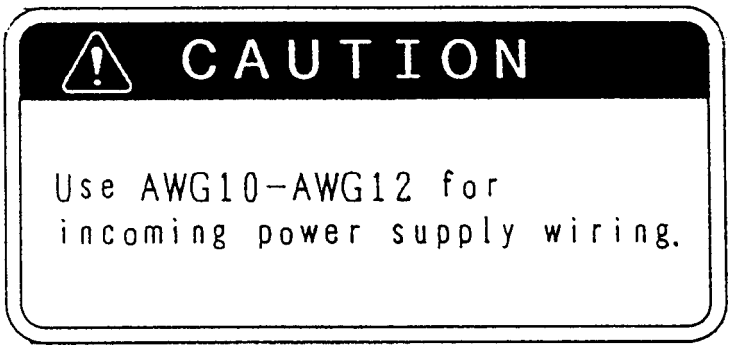
LISTING OF WARNING AND CAUTION LABELS

- Each warning or caution label should correspond to a position where it is attached.
- Order labels from the local office or sales division indicated on the back cover of this manual by referring to the part numbers.

Position	Label	Part N°
W - 1		L43-A6324
W - 2		L43-A6327

Position	Label	Part N°
W - 3		L43-A7581
W - 4		L43-A6326

Position	Label	Part N°
W - 5		L43-A6325

Position	Label	Part N°
C - 1		L43-A6329
C - 2		L43-E0972

Position	Label	Part N°
N - 1	**NOTICE** Do not open this circuit box cover when processing films.	L43-A7579
N - 2	**NOTICE** For continued protection against risk of fire replace only same type fuse.	L43-A5190
N - 3	**NOTICE** When the power supply is held off, keep the top cover open to prevent condensation.	L43-A7580
N - 4	**NOTICE** To set the turn rack, make sure that its front and rear sides lock into place when fully inserted.	L43-A5198
L - 1	SEE INSTALLATION INSTRUCTIONS BEFORE CONNECTING TO THE SUPPLY	L43-A6320

PART A

INSTRUCTION MANUAL

SUMMARY - PART A

1. SPECIFICATIONS

1.1. MAIN SPECIFICATIONS

Type	Daylight type, non-wash, color negative roll film auto-processor
Transport system	Center-gear, short-leader transport system
Transport speed	392.5 mm/min
Process solution	C41RA
Processing time	9 min, 31 sec. (Time elapsed from DEV inlet to dryer outlet) DEV : 3min, 17 sec. BL : 61 sec. FIX-1 : 59 sec. FIX-2 : 62 sec STB-1 : 40 sec. STB-2 : 40 sec. STB-3 : 32 sec. DRY : 1 min, 20 sec.
Processing capability	135 (24EX) : 32 rolls/hour (The short leader is 247 mm long, and calculation is based on an interval of 80 mm.)
Processing films	110, 126, 135, 120, 220 (Dual processing) and 240 (APS)
Power source	Single-phase AC 200V-240V, 3.7 kW (3-phase/4-wire power unit are optional)
Dimensions	1.345 (L) x 580 (W) w 1.060 (H) mm (including short-leader receiving box)
Weight	Approx. 250 kg (total weight) = Approx. 170 kg (main unit) + Approx. 80 kg (weight of solution)

1.2. CONFIGURATION OF UNITS

Name of Unit	Description
Film set box	1 - Provided with a roll film end cutter. A - Provided with a cut failure detection mechanism. B - Repeats cutting three times when cutting is not done by turing on the cut switch. 2 - Provided with a film set box cover lock device.
Processing rack	1 - The twin-rack can process 120 films on the both lanes. 2 - The BL rack is provided with an aeration shower system.
Dryer unit	1 - Spray system to blow hot air through nozzles to emulsion side film. 2 - The drying temperature of 120 films is 10°C or 20°C higher than that for 110, 126 and 135 film (under automatic control).
Film outlet / Short-leader receiving box	1 - Outlet film ordering mechanism (up to five short-leaders).
Temperature regulation tank	1 - The independent heater controls the solution temperature of DEV, FIX-2, STB-3 tanks. 2 - The BL and FIX-1 tanks follow the FIX-2 tank in temperature regulation. 3 - The STB-1 and STB-2 tanks follow the STB-3 tank in temperature regulation. 4 - An error detection bimetal is positioned near each heater. 5 - Temperature regulation is controlled by a thermistor temp. sensor (inside the DEV, FIX-2 & STB-3 temp. regulation tanks). 6 - Solution filters are installed for all tanks.
Replenisher tank unit	1 - DEV, BL, FIX, STB Replenisher tanks are built in. 2 - Constant-volume replenishment is provided by independent bellows pump. 3 - Replenishing cycle is automatically changed per film size. 4 - The lower limit of liquid level is detected by a float switch.
Effluent unit	1 - The effluent tank (8Lx2) can be built inside the rear panel of the main unit. 2 - The upper limit of solution level is detected by a float switch. 3 - Provided with an automatic drainage valve in the effluent outlet.
Display	1 - Display A - The liquid crystal display (20 characters x 2 lines) is equipped with an LED back light. B - Both of "kana" and alphanumeric characters can be displayed. 2 - Switch A - Flat keys are employed. B - Switches mounted on top of the display unit are as follows. Run / Timer and Drive Switches. C - Power Switche (breaker).
Timer	1 - Calender timer function A - Daily time, days of the week can be set. B - Sets the start time of temperature regulation.
50 / 60 Hz changeobver	1 - The drive motor is changed by a two-throw sprocket. 2 - Drying airflow is changed by using a wind shielding plate. 3 - Replenishment rate setting is changed by setting a DIP swtch.
Low temperature guard	1 - With the timer on or the RUN switch set off by using a DIP swtich, the temperature regulation heater and circulation pump of each tank start operation immediately when DEV solution temperature drops below 20°C. 2 - Set the dryer standby temperature 40°C to 50°C. 3 - Turn off the cooling fan.
Counter of processed film	1 - The number of processed rolls is counted by film size. Daily and cumulative totals of processed rolls are also counted.
Replenishment counter	1 - Replenishment times of each chemical (DEV, BL, FIX, STB) is displayed. They can be reset.

1.3. STANDARD ACCESSORIES

*	(1)	Film set box	1 unit
*	(2)	Short leader receiving box	1 set
*	(3)	Chemical filter set	7 sets
*	(4)	Crank handle	1 pc.
	(5)	Tray for body	1 pc.
	(6)	Film splicer	1 set
	(7)	Short leader	15 sheets
	(8)	Splicing tape	1 pc.
	(9)	Control strip magazine (126)	1 pc.
	(10)	Bat	1 pc.
	(11)	Turn guide washing bat	1 pc.
	(12)	Splash guard	1 pc.
	(13)	Drain hose	1 pc.
	(14)	Tape cutter tray	1 set
	(15)	Wash bottle	1 pc.
	(16)	Tool set	1 set
	(17)	Spare fuse	1 set
	(18)	Spare parts	1 set
	(19)	120 film magazine	1 pc.
	(20)	110 film attachment	2 pcs.
	(21)	126 film attachment	2 pcs.
	(22)	240 (APS) film attachment	2 pcs.
	(23)	Ball	1set
	(24)	Cap	1 pc.

1.4. ACCOMPANYING DOCUMENTS

(1) Inspection slip

(2) Warranty

(3) Packing list

(4) One set of manuals

1.5. OPTIONS

(1) Cleaning unit

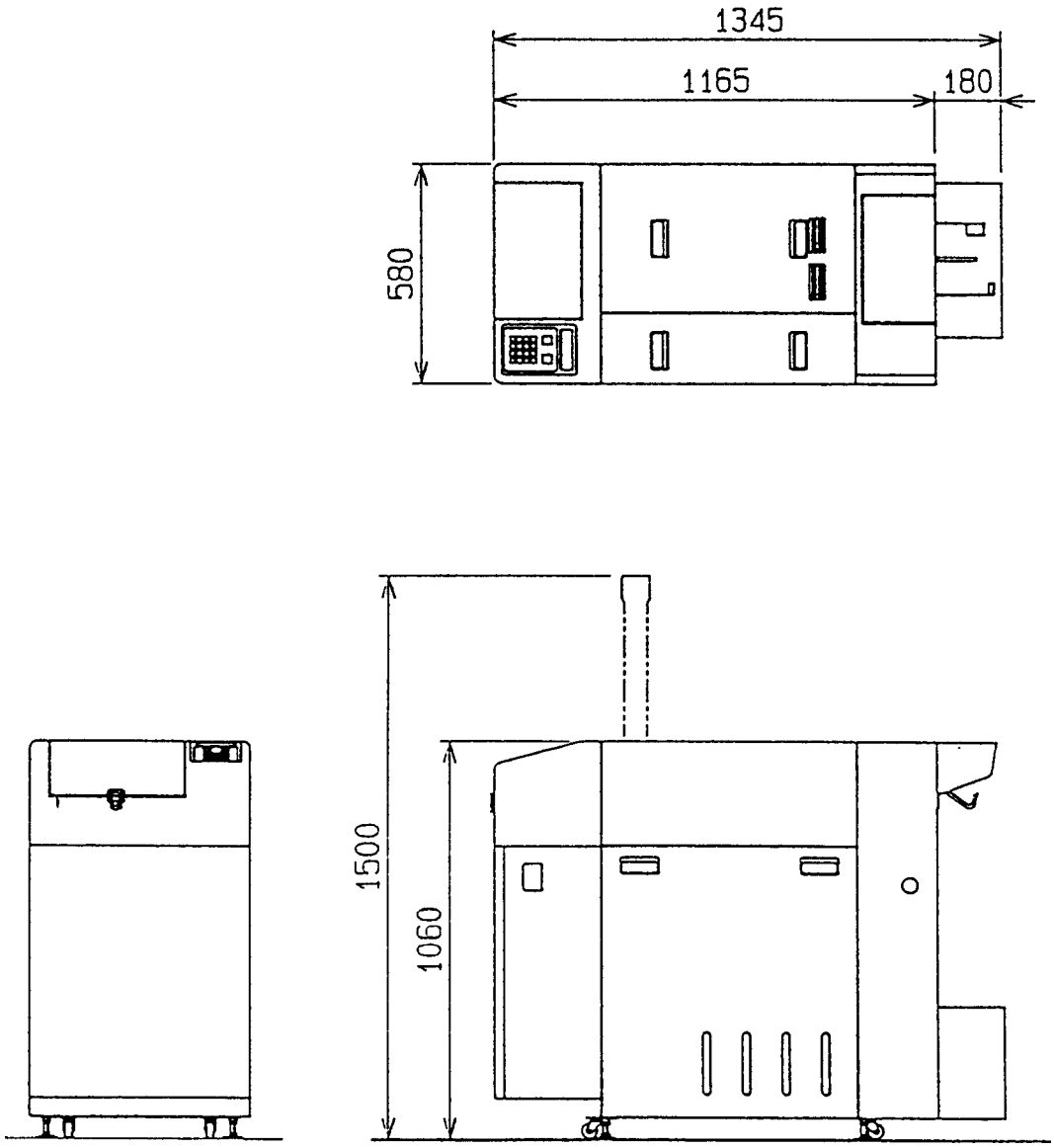
(2) Cooling fan unit

(3) Emergency dark bag

(4) DP bag holder

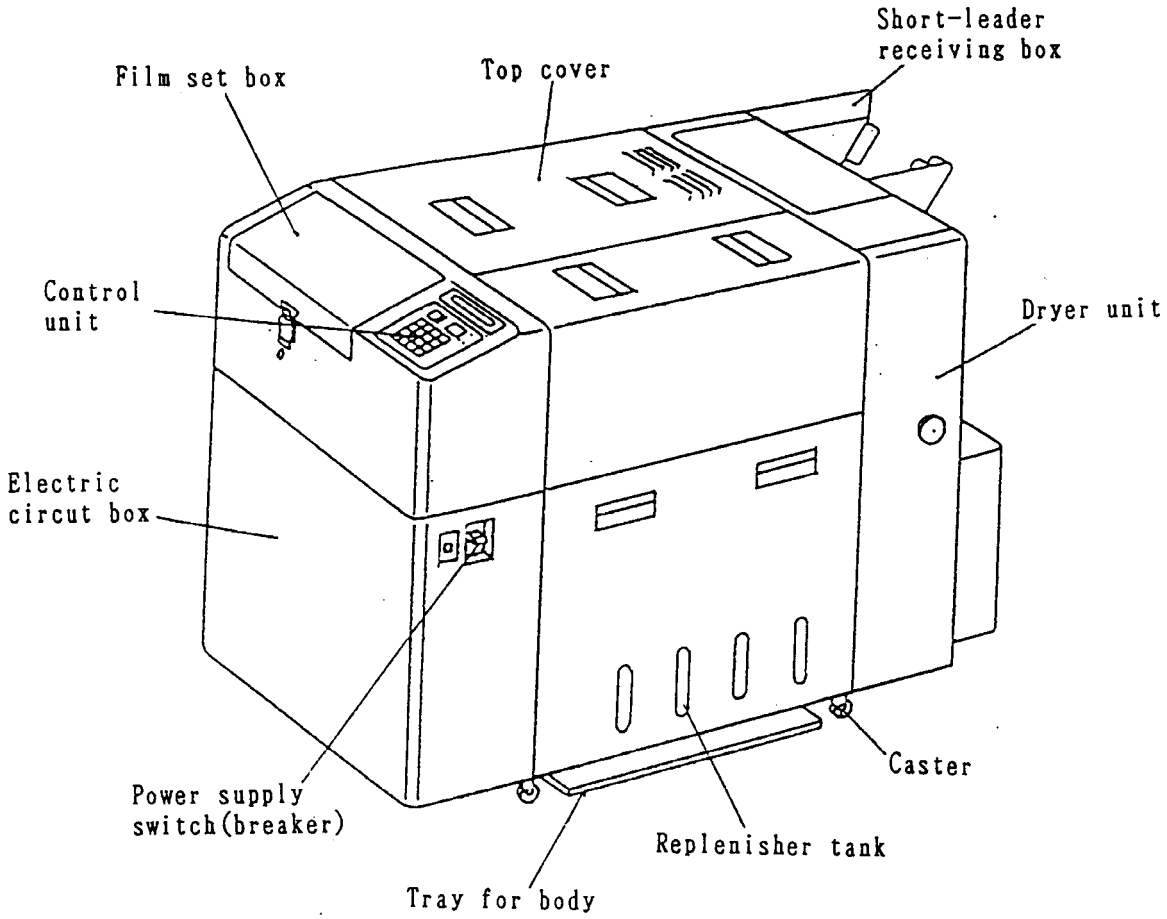
1.6. EXTERNAL VIEW

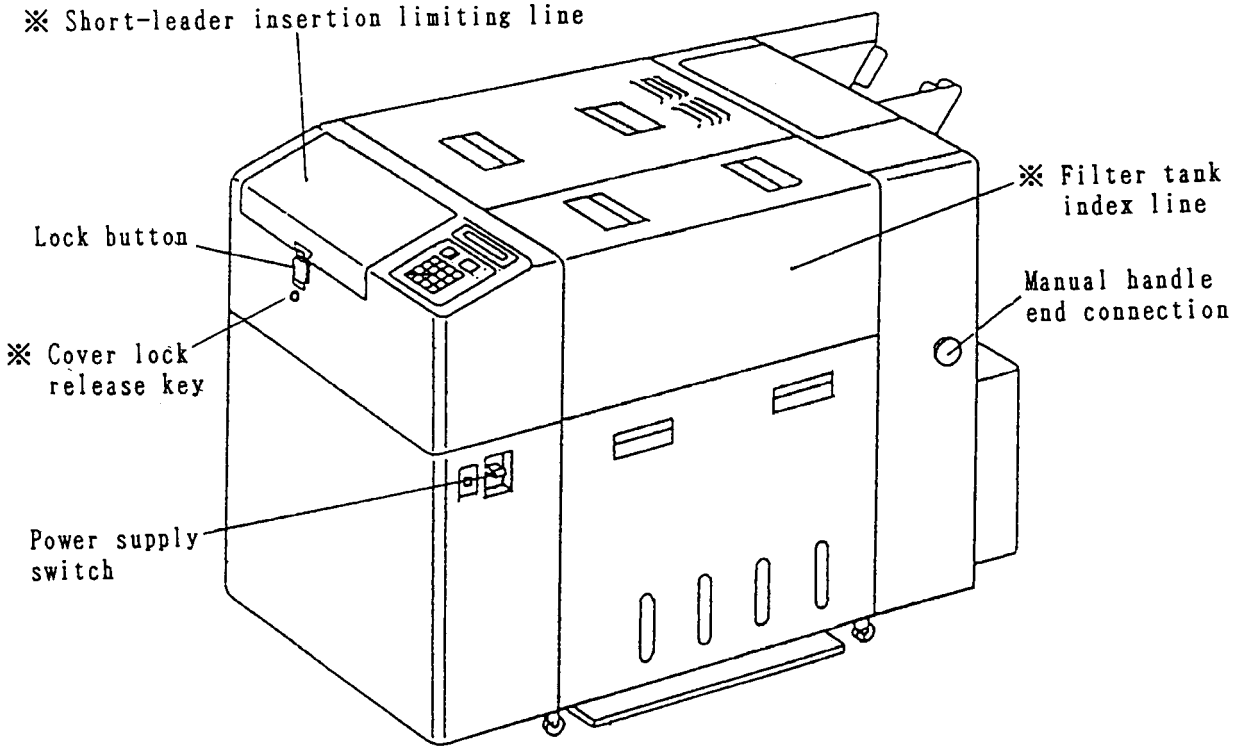
(Unit : mm)



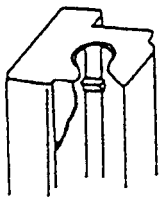
2. NAMES OF UNITS AND PART

2.1. NAMES OF PARTS

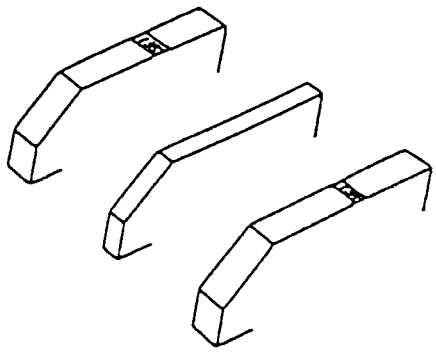




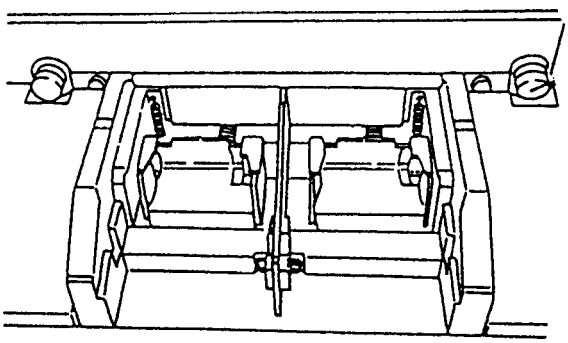
※ Filter tank index line



※ Short-leader insertion limiting line

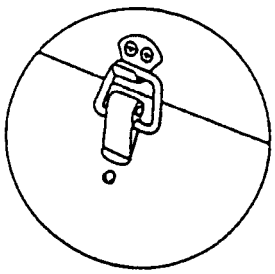


Manual film cut

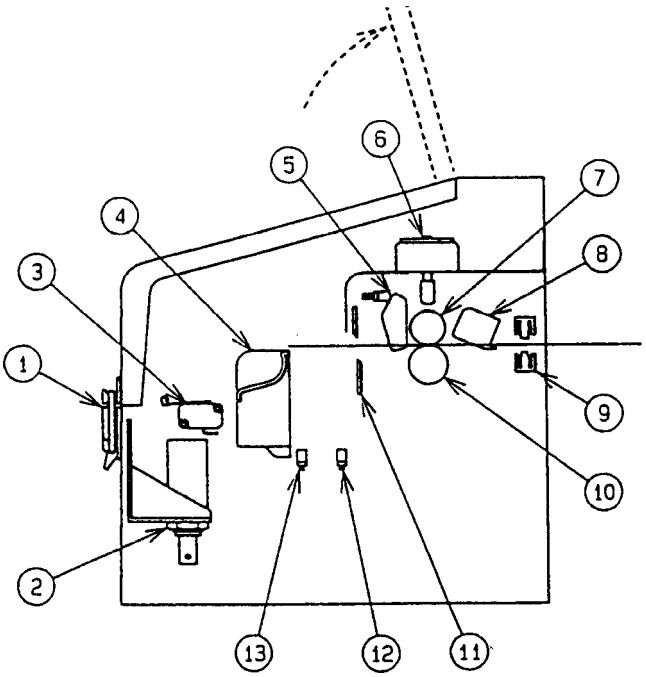


Manual cut knob

※ Cover lock release key

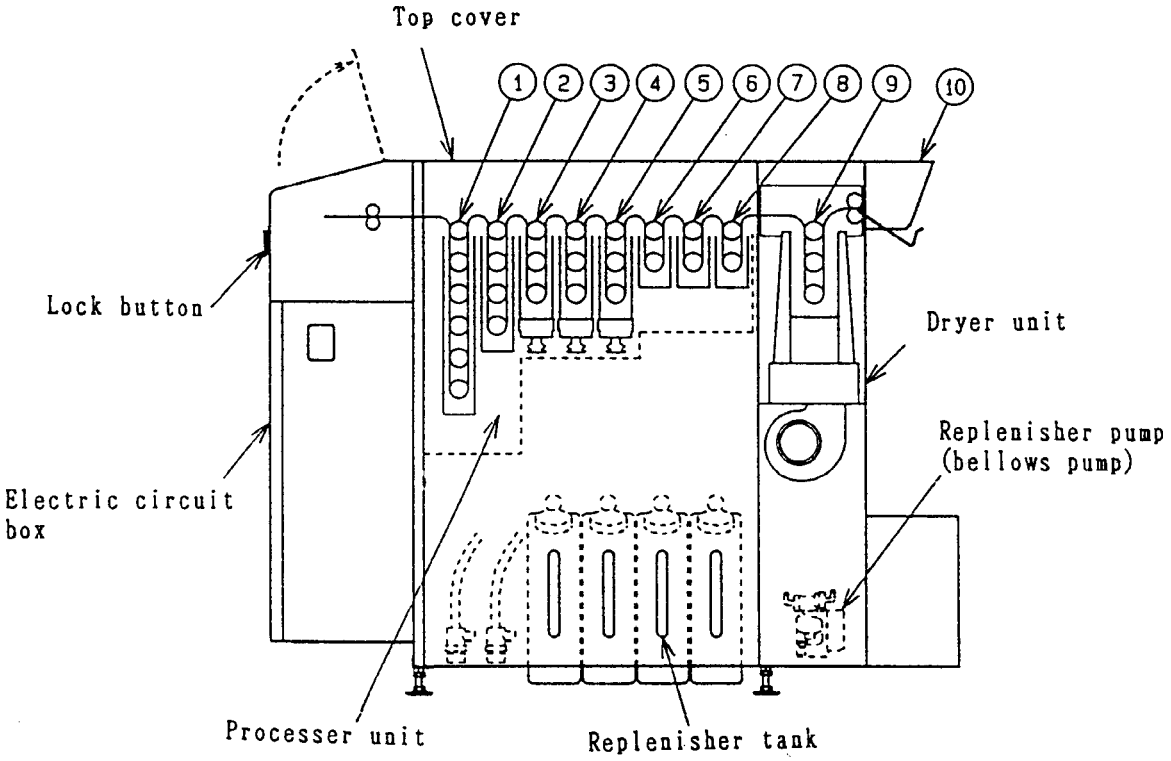


2.2. FILM SET BOX

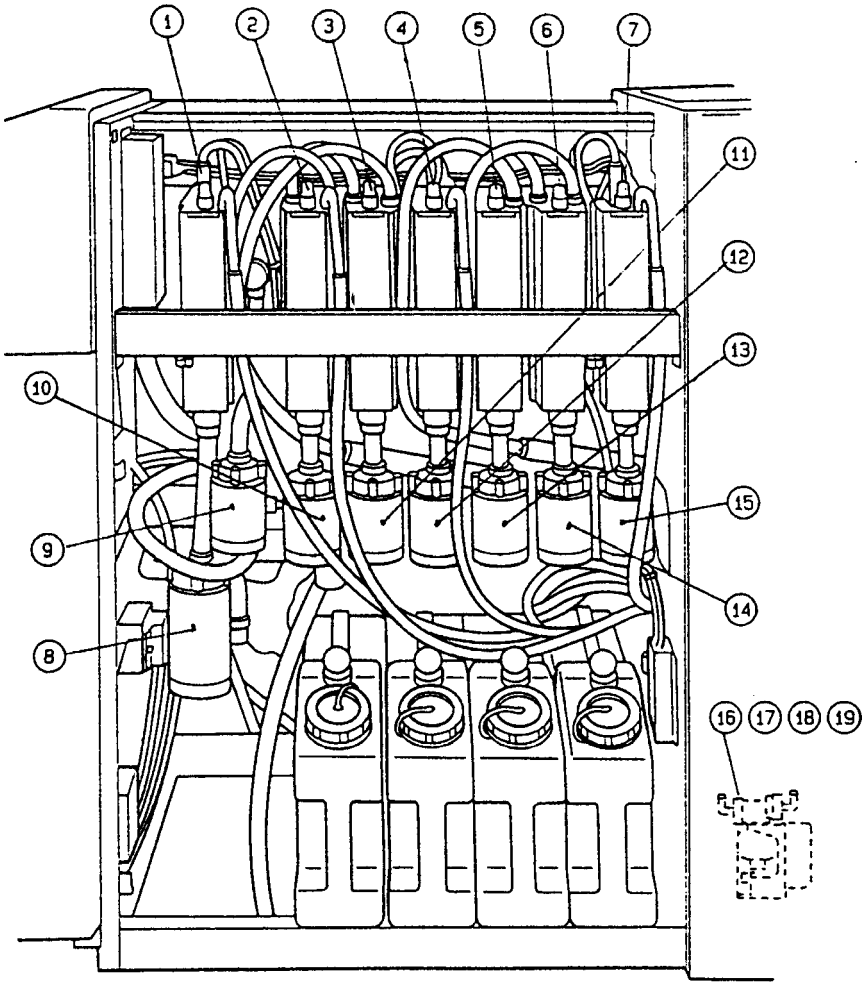


(1) Lock button
(2) Insertion unit cover interlock release solenoid
(3) Insertion unit cover interlock switch
(4) Patrone holder
(5) Short leader detection sensor
(6) Pressure-holding solenoid
(7) Pressure-holding roller
(8) Light shielding gate
(9) Film detection sensor
(10) Drive roller
(11) Film cutter
(12) Cutter sensor
(13) Push sensor

2.3. TRANSPORT SYSTEM

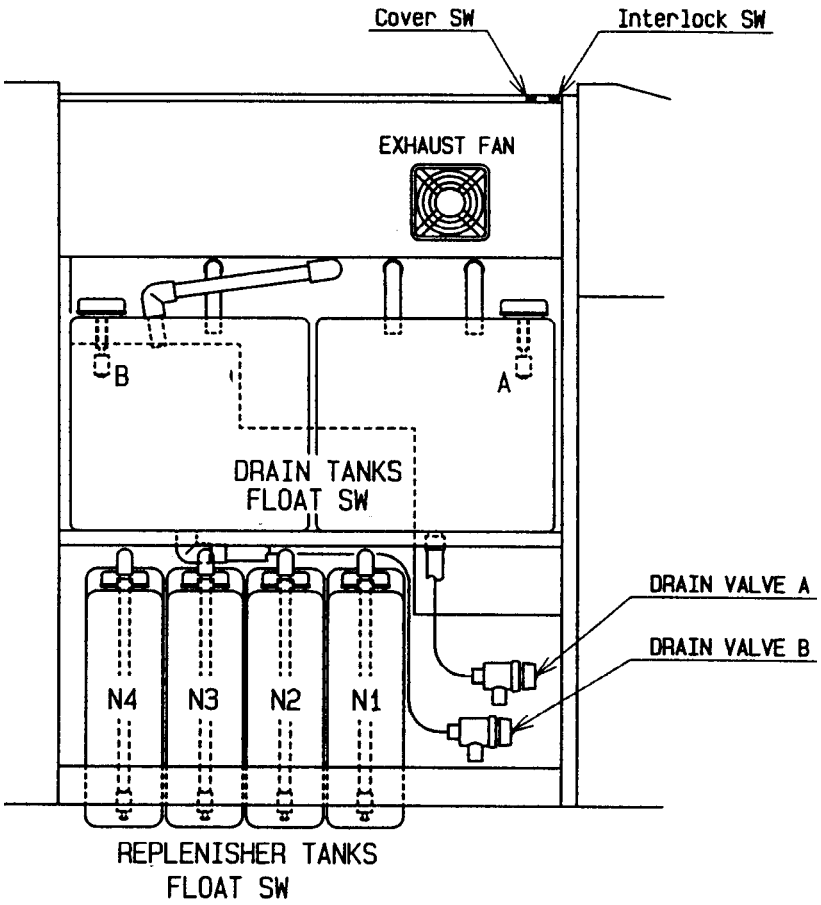


(1) Processing rack N°1
(2) Processing rack N°2
(3) Processing rack N°3
(4) Processing rack N°4
(5) Processing rack N°5
(6) Processing rack N°6
(7) Processing rack N°7
(8) Processing rack N°8
(9) Dryer rack
(10) Short-leader receiving box



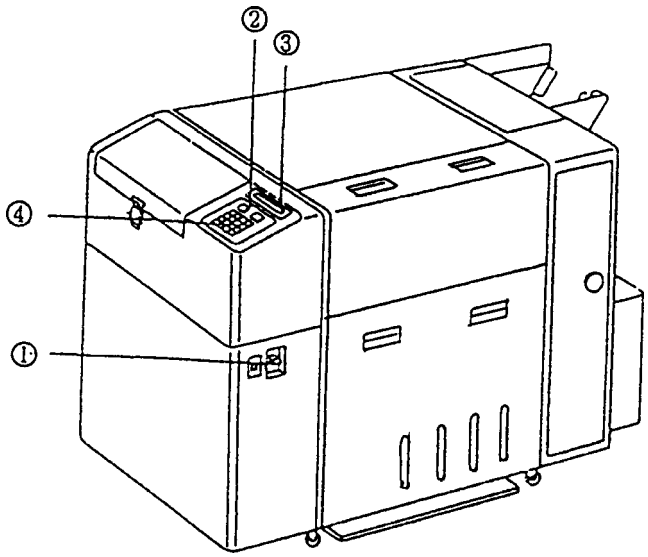
(1)	DEV	constant-temperature filter tank
(2)	BL	constant-temperature filter tank
(3)	FIX-1	constant-temperature filter tank
(4)	FIX-2	constant-temperature filter tank
(5)	STB-1	constant-temperature filter tank
(6)	STB-2	constant-temperature filter tank
(7)	STB-3	constant-temperature filter tank
(8)	DEV-1	circulation pump
(9)	DEV-2	circulation pump
(10)	BL	circulation pump
(11)	FIX-1	circulation pump
(12)	FIX-2	circulation pump
(13)	STB-1	circulation pump
(14)	STB-2	circulation pump
(15)	STB-3	circulation pump
(16)	DEV	replenisher pump
(17)	BL	replenisher pump
(18)	FIX	replenisher pump
(19)	STB	replenisher pump

2.5. EFFLUENT TANK (REAR COVER)



3. DESCRIPTION OF CONTROL SECTION

3.1. CONTROL SECTION

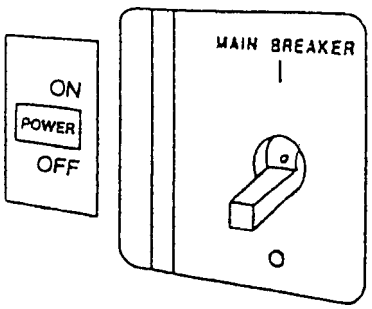


No.	Name of Unit	Description
1	Power supply unit	Power switch (breaker = circuit protector)
2	Control unit	RUN / DRIVE switch
3	Display unit	LCD for indicating commands and various data
4	Operation unit	Operation keys

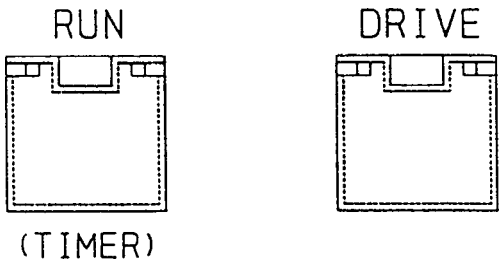
3.2. POWER SUPPLY SWITCH

1 - When the power is turned off, the circuit breaker is positioned as shown belows. (When the power is on, it is positioned on the opposite side).

2 - The circuit breaker opens automatically in case of over-voltage fows.



3.3. CONTROL UNIT



(1) RUN switch

Ready	The red lamp lights	The operation panel is working
Timer-mode	The red lamp blinks	Operation is under timer control Operation panel control is disabled
	The illumination is off	Operation is stopped

(2) DRIVE switch

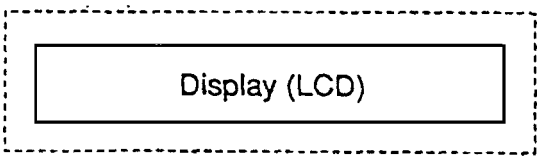
Busy	The orange lamp lights	The drive system is working
	The light goes off	The drive system is not working

3.4. DISPLAY UNIT (LCD : LIQUID CRYSTAL DISPLAY)

(1) LCD unit (hereafter called "display") of 20 digits by 2 lines

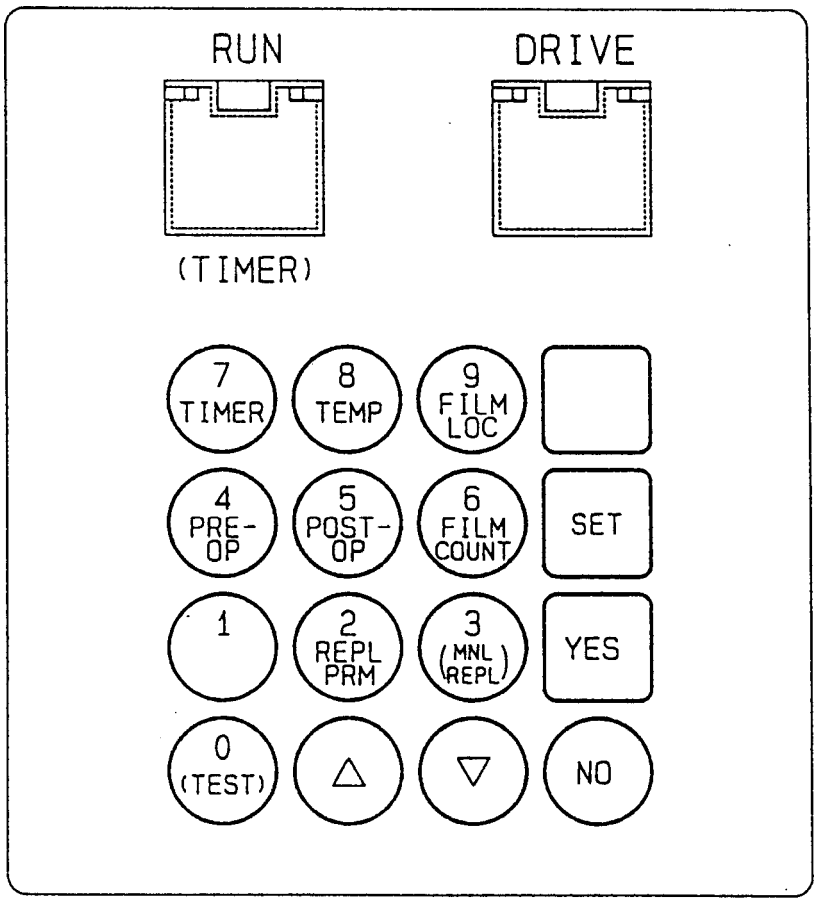
(2) Alphanumeric characters and symbols are displayed

(3) Data and commands are displayed



3.5. CONTROL PANEL

This section includes the various operation keys shown below (total of 16 keys).



3.6. OPERATION KEYS

No.	Notation	Name	Function
1	0 (TEST)	Test key	Used for the confirmation of program version and input / output tests. Used for numeral key "0".
2	1	INPUT key	Used for numeral key "1".
3	2 REPL PRM	REPL key	Used to set basic replenishment amount, repl. rate in % and pump replenishing rate. Used to check replenishment times. Used for numeral key "2".
4	3 (MNL) REPL	MNL REPL key	Used for manual replenishment. Used for numeral key "3".
5	4 PRE-OP	PRE-OP key	Used for pre-operation inspection. Used for numeral key "4".
6	5 POST-OP	POST-OP key	Used for post-operation inspection. Used for numeral key "5".
7	6 FILM COUNT	FILM COUNT key	Used to check the daily processed film counter and total processed film counter. Used for numeral key "6".
8	7 TIMER	TIMER key	Used to set the present time and timer. Used for numeral key "7".
9	8 TEMP	TEMP key	User to check either the set temperature of solutions and the dryer or their realtemperatures. Used for numeral key "8".
10	9 FILM LOC	FILM LOC key	Used to check the film location. Used for numeral key "9".
11	SET	SET key	Used to change the temperature, replenishment rate and time.
12	▲	UP key	Used to change (increase) the value or reverse the messages.
13	▼	DOWN key	Used to change (decrease) the value or advance the messages.
14	YES	YES key	Used to lock the changed value, confirm the message and reset the error message.
15	NO	NO key	Used to cancel the message.
16			

4. DAILY INSPECTION

4.1. INSTRUCTIONS FOR SAFE USE OF COLOR CHEMICALS

1) Keep the contact with the chemicals to the minimum.
   Treat them carefully to avoid spillage.

2) If the chemicals contact your skin, wash off with a lot of running water and then with soap.
   If the developer is spilt on your skin, the same step should be made.

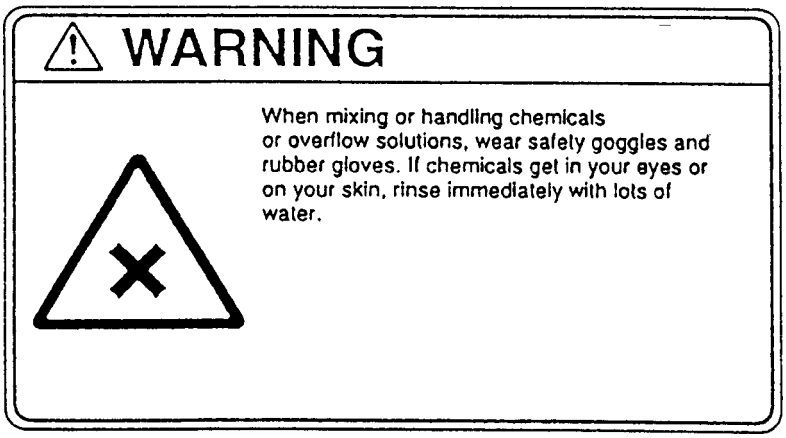
3) If the chemicals get in your eyes, wash out with lots of running water for about 15 minutes.
   If the pain remains, seek medical treatment.

4) Be sure to wash hands before eating, after handling the chemicals.
   Do not take food into chemical handling area.

5) The processing tanks for the machine must be used to keep or carry the chemicals.
   Do not use other containers, especially for food, to measure or keep the chemicals.

6) If the chemicals is drunk, drink salt water at once to spew it up.
   Seek medical treatment immediatly.

7) Keep the chemicals in a dark, cool place.
   Keep out of reach of children because of acid or alkaline components.



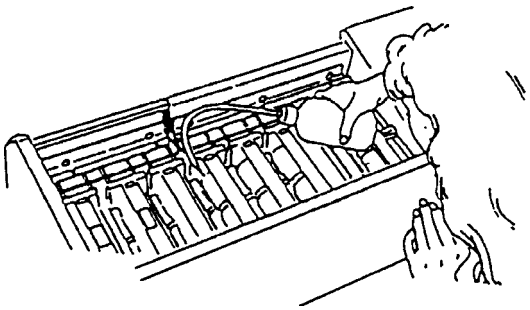
4.2. PREPARATIONS FOR PRE-OPERATION INSPECTION

CAUTION

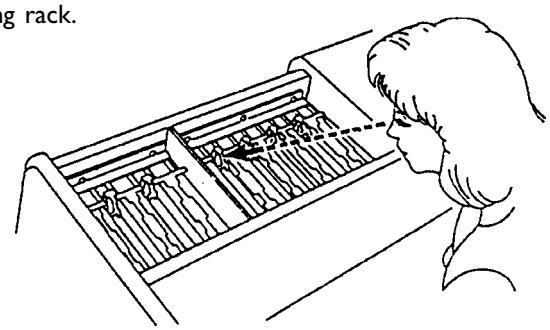
Be sure to turn off main breaker before pre-operation inspection.

(1) Take off the top cover.

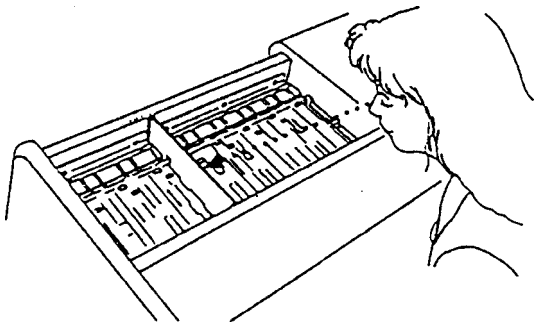
(2) Pour water from the wash bottle to the upper rollers the processing rack to wash them.



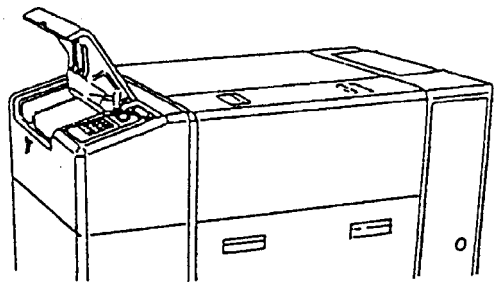
(3) Make sure to set the washer crossover rack onto the processing rack.



(4) Set the light shield plate.



(5) Set the top cover.



Now the preparations for pre-operation inspection is finished.
Turn on the main breaker.

4.3. PRE-OPERATION INSPECTION

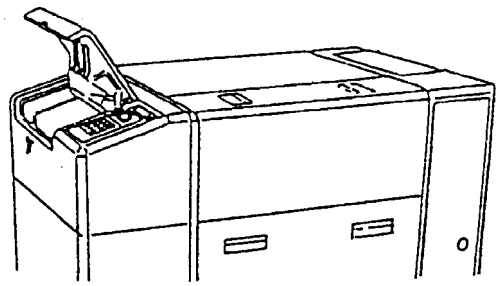
. Before you start operation, press (4 PRE-OP) key to enter the pre-operation inspection mode.

* Turn on RUN switch to display the pre-operation mode screnn when warm-up is completed in the timer mode.

Self test

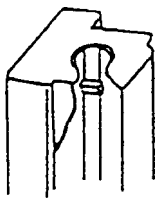
. Use (▼) key to proceed to the next item, then conduct inspection according to the displayed instructions.

Is top cover closed ?



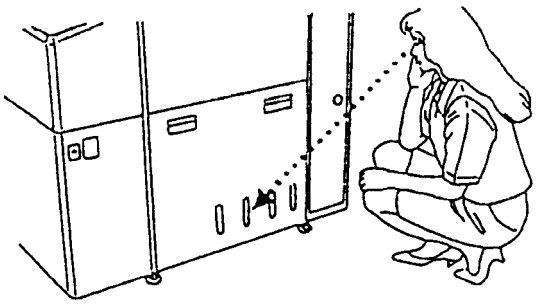
(▼)

Check processing tank level ?



(▼)

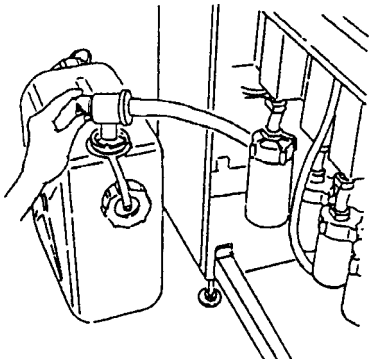
Check replenisher tank level ?



Check the amount chemical in each replenisher tank.
If it is insufficient, add the chemical in accordance with the instructions.

(▼)

Check effluent tank level ?



The pre-operation is now completed.

NO

Ready for processing
DEV : 38.0°C

Wipe spilled chemical off with cloth.

POINT

Before processing film, feed 2 or 3 short leaders into the film set box to confirm they come out of the dryer unit smoothly.

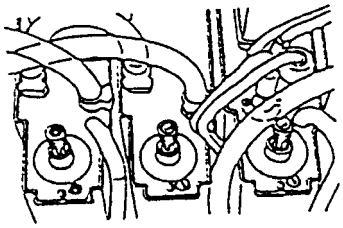
* Exchange filters if the following message is displayed during pre-operation or post-operation inspection.

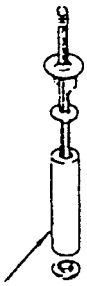
Replace circulation filter [YES]

POINT

. the message is displayed periodically.

. After replacing the filter, press YES key.





Each tank (DEV - STB) has its own chemical filter.

* If ou press 4 PRE-OP key or 5 POST-OP key during film processing, the message shown below is displayed.

Film being processed
wait for a While

* Press NO key to clear it.

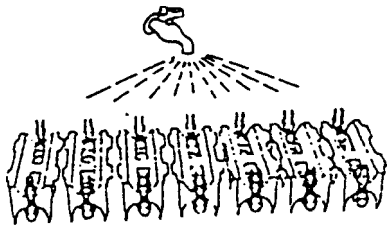
4.4. PREPARATIONS FOR POST-OPERATION INSPECTION

CAUTION

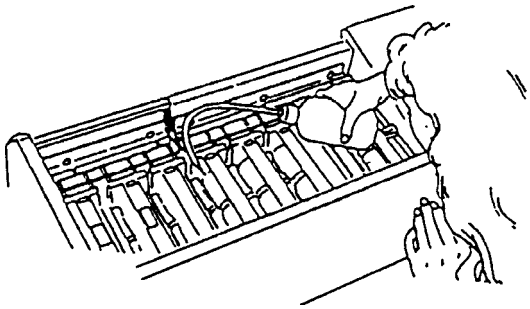
After the operation (Make sure that there is no film in the processor).
Turn off the main breaker.

(1) Take off the top cover.

(2) Washing the crossover rack.
First remove the light shield plate, and then take the crossover rack off the processing rack and put in on the crossover rack washing bat to wash it.



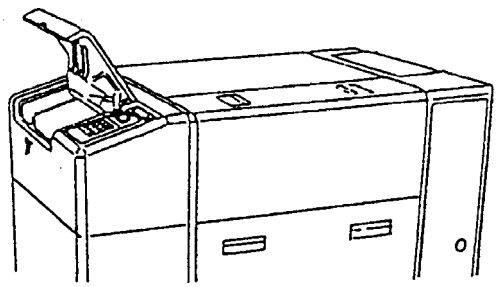
(3) Pour water from the wash bottle to the upper rollers of the processing rack to the them.



POINT

. If this work is not done correctly, chemicals on the rollers may crystallize during the night and leave stains on or damage the surface of film.
Clean the gears carefully because crystallized chemicals may easily adhere between them.
. Do not pour too much water.
. Do not pour water on the drive chain.

(4) Set the top cover.



Now the preparations for post-operation inspection is finished.
Turn on the main breaker.

4.5. POST-OPERATION INSPECTION

After film processing is completed :

- press (5 POST-OP) key

or

- RUN switch to enter the post-operation inspection mode.

Post-operation checking

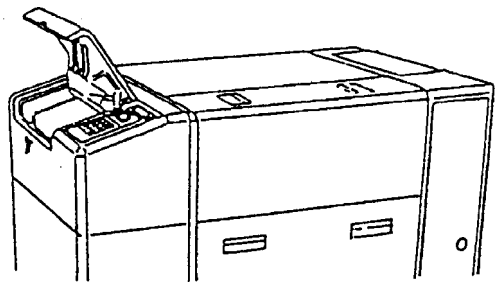
NOTE : If you do not turn off DRIVE switch after pressing RUN switch, the alarm sounds.

Use the ▼ key to advance the displayed items.

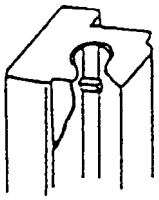
Make the inspection according to the displayed instructions.

Self-starting ??? ?? : ??	. Check the self-starting time in the timer mode. . If it is wrong, correct it in the timer setting mode (See part A, chapter "8.3. Switching to the timer mode).

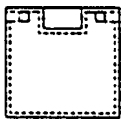
▼

Is top cover opened ?	

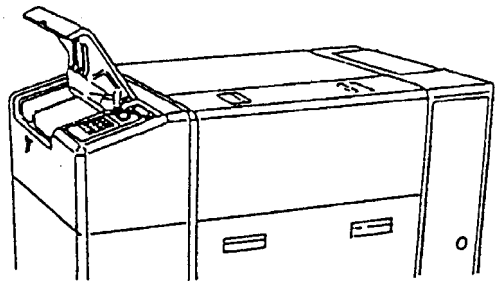
▼

Check processing tank level ?	

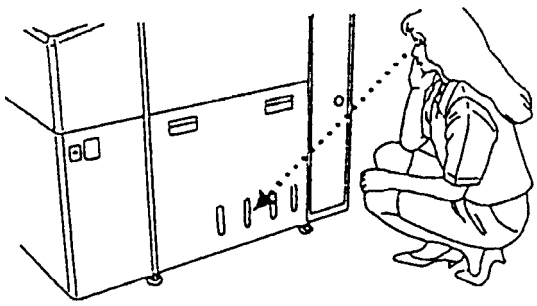
▼

Turn off DRIVE switch	Turn off DRIVE switch when this message is shown. 

Is set box cover
opened ?

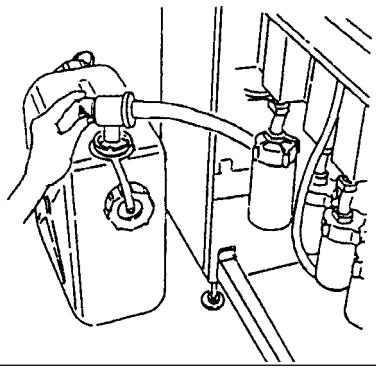


Check replenisher
tank level ?



Check the amount chemical in each replenisher tank.
If it is insufficient, add the chemical in accordance with the instructions.

Check effluent tank
level ?



Wipe spilled chemical off with cloth.

Turn off RUN switch

First impulse: the RUN switch blinding

Self-starting
??? ?? : ??

Second impulse: the RUN switch putting out

System idling

5. PREPARATIONS FOR OPERATION

5.1. CHECKING THE PRE-OPERATION INSPECTION ITEMS

```
Warm-up completed
  DEV : 37.8°C
```

When warm-up is completed and this message is displayed, press RUN switch to enter the pre-operation inspection mode.
See part A, chapter "4.3. Pre-operation inspection" to make the inspection.

5.2. CONFIRMING THE PROCESS READY STATE

(1) Checking the "Ready for processing" message

After pre-operation inspection, turn on DRIVE switch according to the displayed instruction.

```
Turn on DRIVE switch
  DEV : 37.8°C
```

Make sure the message "Ready for processing" is displayed on the screen.

If the error message is shown, check the machine according to the displayed instruction.

(2) Checking the temperature control

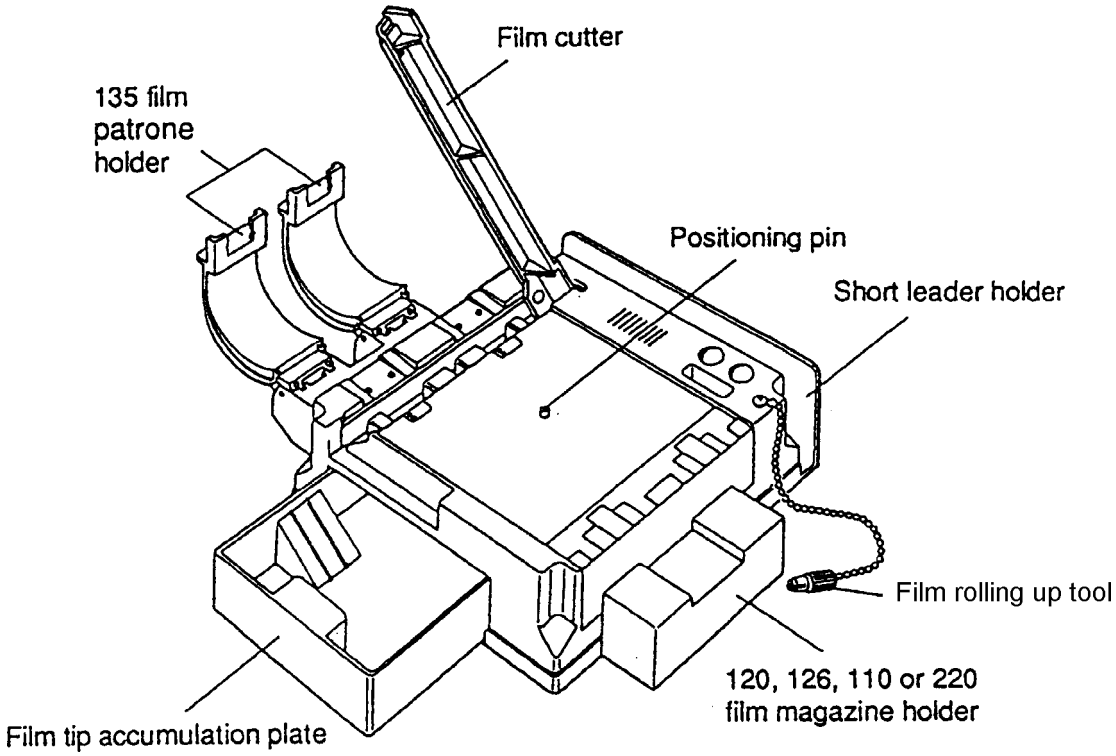
1) Enter the temperature displaying mode.	8 TEMP	Processing temperature
2) Check the temperature of each chemical.	▽	DEV Actual : 38.0°C Set : 38.0°C
3) Return to the processing ready mode.	NO	Ready for processing DEV : 38.0°C

(3) Checking the transport condition

Transport 2 or 3 short leaders into the set box to confirm they come out of the dryer unit smoothly.

6. HOW TO SPLICE FILM

6.1. EXTERNAL VIEW OF FILM SPLICER



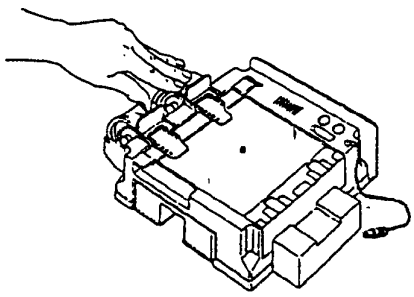
6.2. SPLICING 135 FILM

. When the film tip is wound inside the film cartridge, take it out.

. Basically two rolls of film should be spliced to one short leader (it is not recommended to splice films of different length to the same short leader).

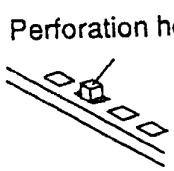
1) Take the film tip out of the patrone and set it on the patrone holder with the film emulsion side down.

. Align the film tip with the position of the film splicer as indicated in the figure.

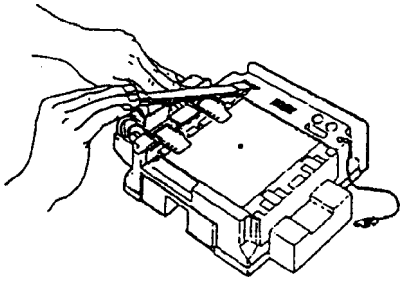


POINT

Insert the perforation hook into the film perforation.



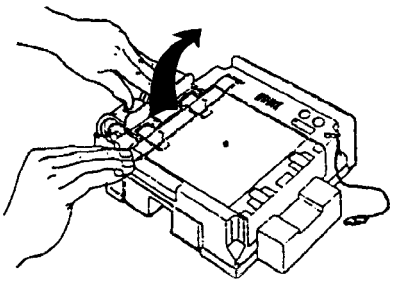
2) Cut the film tip with the film cutter.



3) Set the short leader into the film splicer.

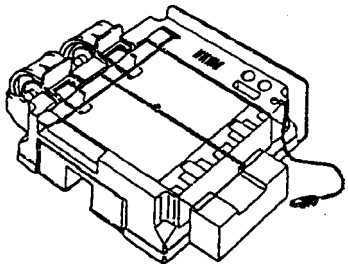
. Raise the film cutter slowly holding the film tip with your hand.

. The cut film tip drops into the film tip accumulation plate.



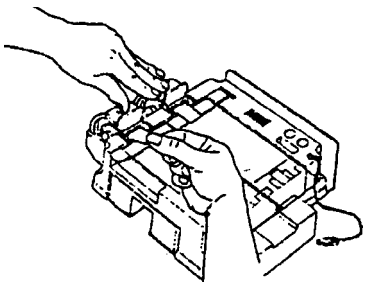
POINT

Set the 13th hole of the short leader on the projection of the splicer to set the short leader to the normal position.

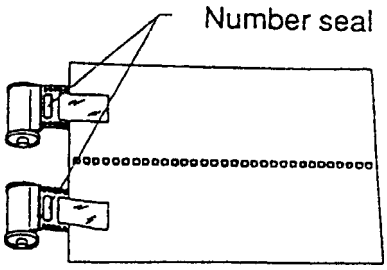


4) Attach the film tip protru-ding from the patrone to the short leader with the splicing tape.

. Turn over the short leader and patrone, then attach splicing tape from the reverse side.

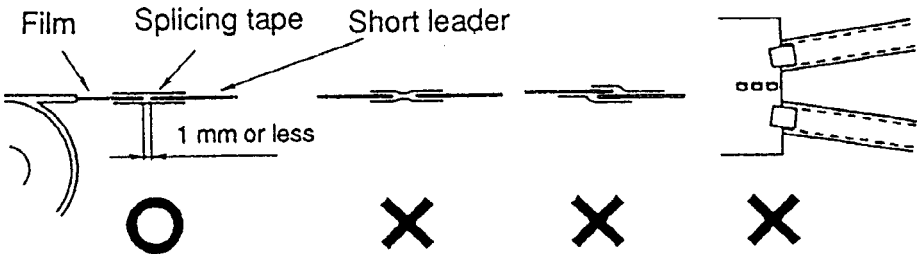


5) paste number seals on the DP envelope and film base side.



CAUTION 1

1. Be carefuly not to leave more than 1 mm between the film and short leader.
   Do not overlap or set them at an angle.



2. Be carefuly not to place the splicing tape outside the film edge.

3. Be sure to use the specified splicing tape.

CAUTION 2

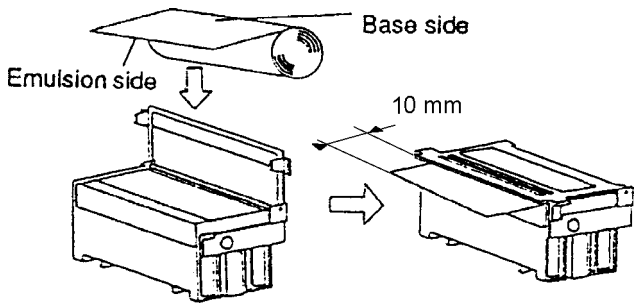
Film may be fogged if left in a bright place for a long time with the number seal and splicing tape wound into the patrone.

6.3. SPLICING 120 AND 220 FILM

. Use the special magazine for 120 and 220 film.
. Remove film from the backing paper in a dark box or darkroom.
  Cut the splicing tape on the film tip by hand.
  Leave the remaining splicing tape on the film side as it is.
. Wind film into 120 film magazine with the emulsion side inside.
  Be sure to wind the first exposed frame side (on which splicing tape is attached) first.

1) Wind film into the 120-film magazine and leave about 10 mm of film protruding from the magazine and close the magazine.

* In the dark box or darkroom.



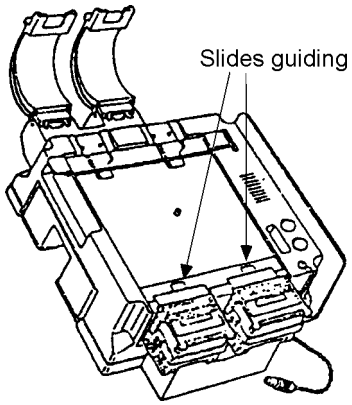
. Do not allow more than 10 mm of film to protrude from the magazine opening.

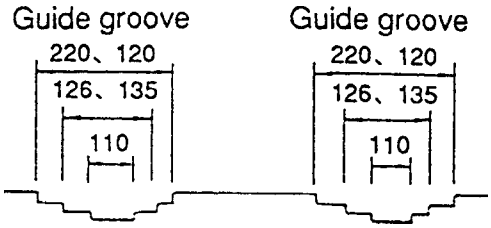
NOTE

Hold both ends of the cover to open and close the magazine covers
If you touch the cloth attached to the film-passing-opening, it may cause loght to leak or may damage the film.

2) Set the 120-film magazine into the 120, 126, 110 and 220 film magazine holder.

. Place the film on the guide groove.

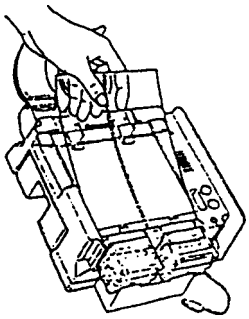




3) Set the short leader to the film splicer.

POINT

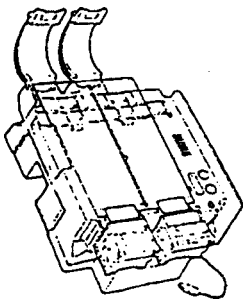
Put the 13th hole of the short leader on the projection of the splicer to set the short leader to the normal position.



4) Attach the film tip protruding from the magazine to the short leader with splicing tape.

POINT

. Cut splicing tape to the width of the 120 film
. Attach splicing tape from the reverse side.



NOTE

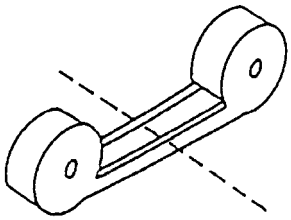
After splicing, hold both the short leader and magazine when carrying the magazine.

6.4. SPLICING 126 AND 110 FILM

. Fully wind the film into the take-up cartridge before hand.

1) Bend the cartridge in the dark box or darkroom.

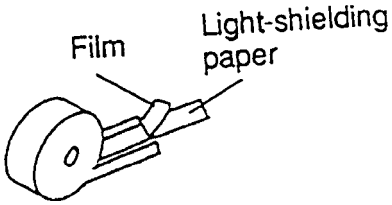
* In the dark box or darkroom.



. Bend the cartridge along the dotted line as shown in the figure.

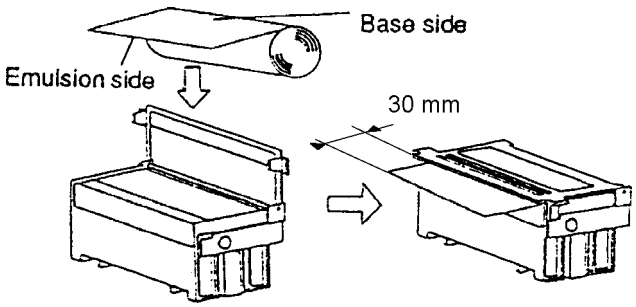
2) Pull the film out.

. Film comes out when you pull out the backing paper.



. Set film with the emulsion side down and let the film tip protrude about 30 mm out of the magazine.

3) Wind film by hand and set it.



NOTE

Be careful not to touch the emulsion side.

POINT

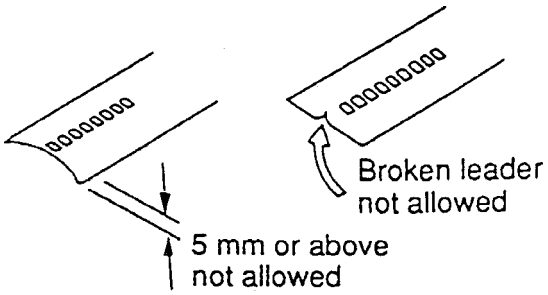
. Splice 110 film to the short leader in the same way as described for splicing 120 or 220 film in part A, chapter "6.3. Splicing 120 and 220 film".
. When splicing 110 film, cut splicing tape to the width of the 110 film and attach it. Be careful not to make splicing tape wider than the film width.

6.5. PRECAUSIONS FOR FILM SPLICING

1. Use the specified adhesive tape.
   The tape must be at least 40 mm long.

2. Do not use a curled or folded short leader or one with broken perforations, because the film may be jammed.

3. Gently rub the splicing tape with your fingernail to remove air caught between the tape and film or short leader.



4. Put adhesive tape on both sides of assembly (film/leader).

5. When splicing film, be sure to place the film on the guide groove on the splicer.
   If the film is not spliced properly, you can find it easily when the short leader is inserted into the film set box.
   In that case, pull out the short leader and splice the film to it again.

6.6. PRECAUSIONS FOR APS FILM SPLICING

For the APS film splicing, you must used the black leader (option).

7. FILM PROCESSING PROCEDURE

7.1. OPERATION

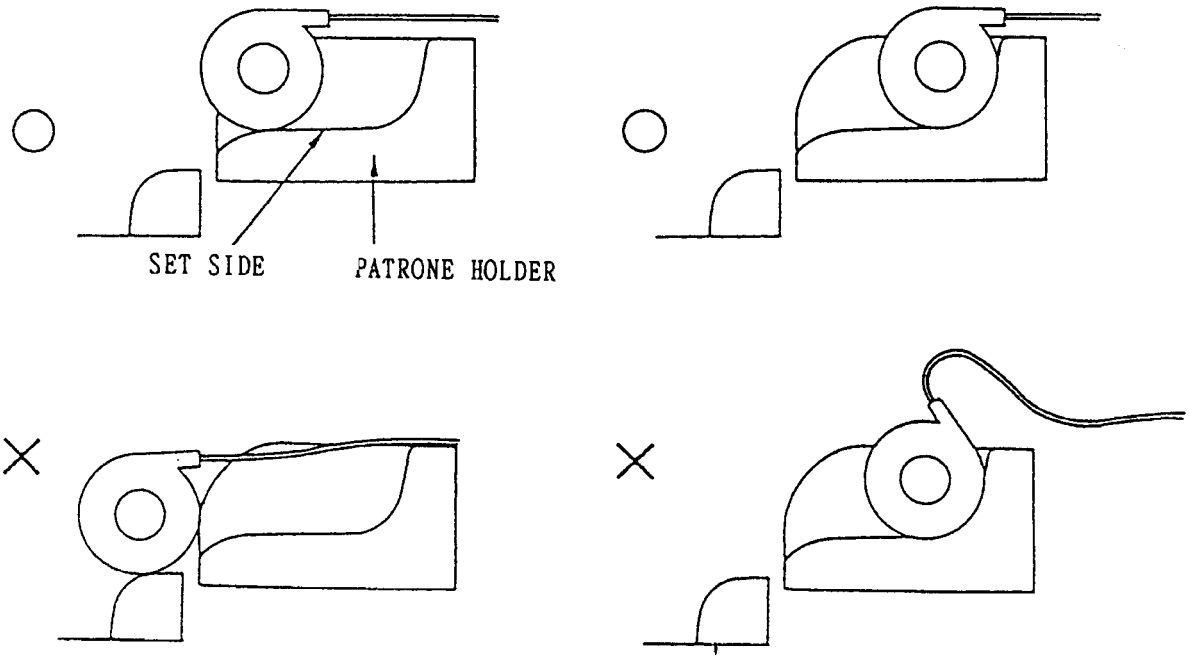
① Pre-operation inspection

a. See part A, the chapter "5. Preparation for operation" for details.
b. Make sure that the following message is display.

Ready for processing DEV : 37.8°C

② Open the film set box cover.

③ Insert the film attached short leader into the film inlet with the emulsion side down, then set the patrone properly on the set surface of the patrone holder (for 135 film).



The following message is displayed.

Close set box cover

When processing 120, 126 or 110 film, place the magazine on the front groove of the patrone holder.

④ When inserting the short leader, align the end of the short leader with the mark.

(5) Close the film set box cover and lock it by pressing the lock button.

The short leader is automatically transported after the film set box cover is closed.

```
Short leader
    in set box
```

(6) Film is in the film set box.

After the film set box cover is closed, the following messages are displayed in the sequence.
You can check the film size by them.

```
Film size
  being identified
```

```
L : 135  R : 135
Film in set box
```

(7) Film cutting

Film is cut when its end is detected.
When the film end is in the set box, the automatic lock is released.

```
Film in set box
```

```
Ready for processing
  DEV : 38.0°C
```

NOTE

Do not open the lock button unitl the "Ready for processing" message is shown.

(8) Processing is finished

The processed film is sent out of the dryer outlet and into the short leader holder.
At this time, the beeper sounds to indicate that film processing is completed.
(For long film such as 36EX film, the beeper may sounds later).

(9) Removing the processed film

Never forcibly remove the processed film unitl the film end comes out of the dryer outlet.
It may cause film meandering or damage to the film surface.
Do not leave more than five short leaders in the leader holder.
It may also damage film surface.
After removing the film from the short leader, remove all slpicing tape attached to the short leader.
Be sure to wipe off any splicing tape remaining on the short leader with ethyl alcohol.

POINT

Wash the used short leader with water.

7.2. COUNTERMEASURES AGAINST POWER FAILURE DURING FILM PROCESSING

Use the manual handle in the case of power failure during film processing.
Turn the crank handle according to the instruction attached below the cover of the handle shaft (18 seconds for each turn).
In the case of power failure when there is a film cartridge in the film set box, the film must be cut manually after tension is applied using the crank handle.
Put the emergency dark bag over the film set box, and open the top cover and press down the manual cut knob to remove the film from the cartridge.

NOTE 1

If you forcibly turn the crank handle, the short leader may be damaged and inhibit proper film transport.

NOTE 2

The breaker must be switched off to avoid electric shock.
Electric current may be sent suddenly.

8. HOW TO USE THE TIMER

8.1. SETTING THE PRESENT TIME AND HOUR

You can set the present time by the following key operation.

1) Display the present time


```
Timer setting
```

2) Press key to enter the setting mode

```
Present time                MON
  ' 95 / 06 / 12        15 : 45 : 00
```

3) Press "SET" key for display the cursor


```
Present time                MON
  ' 95 / 06 / 12        15 : 45 : 00
```

4) Press ∇ key for move the cursor and input the correct value by numeral key

```
Present time                MON
  ' 95 / 06 / 12        15 : 47 : 00
```

EX. 45min. → 47min.

POINT

The day of the week is automatically changed by entering the year, month and day.

5) Confirm the display and lock it


```
Present time                MON
  ' 95 / 06 / 12        15 : 47 : 00
```

```
Present time                MON
  ' 95 / 06 / 12        15 : 47 : 02
```

The cursor disappears and the clock starts going.

6) Now the present time and hour setting is finished. For return to the "Ready for processing" mode, press "NO" key.

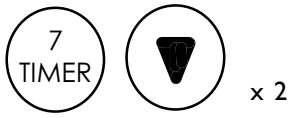

```
Ready for processing
   DEV : 38.0°C
```

8.2. SETTING THE OPERATING DAYS AND NON-OPERATING DAYS OF THE WEEK

You can set the machine operating days and non-operating days.
The machine is turned on automatically at the set time on the operating day.

8.2.1 Setting Holidays

1) Display the machine operating days of the week.




```
Set operating day
```

```
SU MO TU WE TH FR SA
ON ON ON ON ON ON ON
```

2) Press SET key to enter the setting mode.

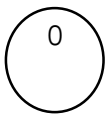

```
SU MO TU WE TH FR SA
ON ON ON ON ON ON ON
```

The cursor is appeared.

3) Move the cursor to where you want to change the setting.

```
SU MO TU WE TH FR SA
ON ON ON ON ON ON ON
```

4) Set operating days (the timer is used) and non-operating days (the timer is not used).




```
SU MO TU WE TH FR SA
- - ON ON ON ON ON ON
```

The timer is used
1 = ON

The timer is not used
0 = - -

5) Confirm the display and lock it.


```
SU MO TU WE TH FR SA
- - ON ON ON ON ON ON
```

```
SU MO TU WE TH FR SA
- - ON ON ON ON ON ON
```

When the setting is finished, the cursor is disappeared.

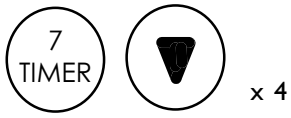
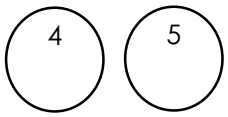
6) Now holiday setting is finished. For return to the "Ready for processing" mode, press "NO" key.


```
Ready for processing
   DEV : 38.0°C
```

8.2.2 Setting the starting day and hour

You can set the day on which the machine is automatically turned on at the different time from the regualr set time.

EX. If you want to set Monday as the special day and to set teh self-starting time 6:45 (the regular self-starting time is 6:30).

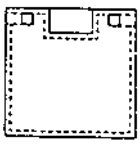
1) Display the self-starting time		Setting time SUN 06 : 30
2) Select the day		Setting time MON 06 : 30
		Setting time MON 06 : 30 The cursor is appeared.
3) Move the cursor to where you want to change the setting (Ex. in this case, move to the "minute" position)		Setting time MON 06 : 30
4) Input the value you need		Setting time MON 06 : 45
5) Confirm the display and lock it		Setting time MON 06 : 45
		Setting time MON 06 : 45 When the setting is finished, the cursor is disappeared.
6) Starting day and hour setting is finished. For return to the "Ready for processing" mode, press "NO" key.		Ready for processing DEV : 38.0°C

8.3. SWITCHING TO THE TIMER MODE

Press RUN switch to enter the time mode. The red lamp starts blinking.

<Timer Mode>

RUN



(Timer)

Blinks

(1) Stop drive switch

(2) The "Self-starting time" message is display up to machine is start

```
Self-starting  time
Low guard   MON  08 : 00
```

(3) During the automatique restarting of the machine, the temperature is display

```
System  warming  up
  DEV : 25.7°C
```

(4) When warm-up is completed

```
Warm-up  completed
  DEV : 38.0°C
```

(5) After warm-up is completed, press drive switch.

```
Ready  for  processing
   DEV : 38.0°C
```

9. SETTING THE PROCESSING TEMPERATURE

9.1. CHECKING THE PROCESSING TEMPERATURE

The processing temperatures of DEV - FIX2 - STB3 tanks and DRY are displayed by the following procedure.

1) Enter the temperature mode.	8 TEMP	Processing temperature
2) The processing temperature of the DEV - DRY are displayed (use ∇ and Δ arrows for another tanks).	∇ or Δ	DEV Actual : 38.0°C Set : 38.0°C

9.2. SETTING THE TEMPERATURE

The temperature of the DEV - DRY are set by the following key operation.
Do not set a temperature exceeding the setting temperature range (see table no. 9-1 next page).

1) Enter the temperature mode.	8 TEMP	Processing temperature
2) The set temperature and actual temperature of the DEV are displayed.	∇	DEV Actual : 38.0°C Set : 38.0°C
3) Press SET key to enter the setting mode.	SET	DEV Actual : 38.0°C Set : 38.0°C The cursor is displayed and you can change the value.
4) Enter the new value.	3 7 8	DEV Actual : 38.0°C Set : 37.8°C

5) Confirm the display and lock it.

YES

DEV Actual : 38.0°C
Set : 37.8°C

DEV Actual : 38.0°C
Set : 37.8°C

When the setting is finished, the cursor is disappeared.

POINT

You can set all the processing temperatures of chemicals and the dryer (DEV - DRY) by repeating the key operation from 3) to 5).

Use  or  key to display the temperature you want to change.

6) Now temperature setting is finished. For return to the "Ready for processing" mode, press "NO" key.

NO

Ready for processing
DEV : 38.0°C

TABLE 9-1

	DEV	FIX-2	STB-3	DRY
Original setting	37.8°C	37.0°C	37.0°C	50°C

10. HANDLING THE EFFLUENT TANK

10.1. EMPTYING THE EFFLUENT TANK

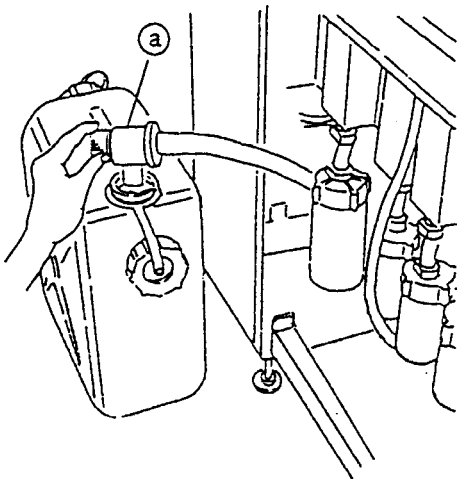
1) The "Effluent tank is full" message is displayed and the buzzer soinds when the effluent tank is full.

Effluent tank full
(*)

- Reset the buzzer by pressing YES key.

2) Dispose of the waste solution.

- Take off the side frame and turn the drain cock (a) to discharge the waste solution. The capacity of the effluent tank is 7 litres.



3) When the effluent tank is emptied, restore the tank in the original place.

Ready for processing
DEV : 38.0°C

POINTS

Since the waste solution is the drain cock outlet, be careful not to spill it when taking the drain out of the plastic tank.

* Wipe spilled chemical off with cloth (see part A, the chapter "4.1. Instructions for safe use of color chemicals").

11. DISPLAYING FILM PROCESSING LOCATIONS

The film location can be displayed.

1) Enter the film location displaying mode.

Film location
display mode

2) Press this key to display the film location.

DEV → BL → FIX → STB → DRY → 02

Film location — The number of film in process

POINTS

The film location is indicated by "→" and the number of film in process is indicated in the bottom right corner of the display.

3) "Ready for processing" mode returns. For return to the "Ready for processing" mode, press "NO" key.

Ready for processing
DEV : 38.0°C

12. SETTING THE REPLENISHMENT RATE IN %

12.1. SETTING THE REPLENISHMENT RATE IN PERCENTAGE

* When you set the basic replenishment rate use INSTALLATION (see the **Technical manual**, part A, chapter "5. Setting of basic replenishment amount"".
  To settle the rate, ask the engineer for advice by giving them information such as daily processed film number, kind of film and control strip condition.

  You can set the replenishment rate of DEV - STB in percentage by the following key operation.

1) Enter the replenishment rate setting mode.


```
Repl. rate in %
  setting mode          50
```

2) Select the chemical.

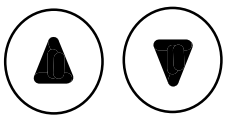
```
DEV Repl. rate +        0%
 ( 41.8 mL  25.5 s )    50
```

3) Press SET key to display the cursor.


```
DEV Repl. rate +        0%
 ( 41.8 mL  25.5 s )    50
```

Cursor

4) Change the percentage of replenishment rate.



```
DEV Repl. rate +        30%
 ( 54.3 mL  33.2 s )    50
```

(30%)

Pump replenishing rate and replenishing time are also altered by changing the replenishment rate in %.

5) Confirm the display and lock it.


```
DEV Repl. rate +        30%
 ( 54.3 mL  33.2 s )    50
```

```
DEV Repl. rate +        30%
 ( 54.3 mL  33.2 s )    50
```

When the setting in finished, the cursor is disappeared.

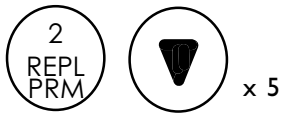
6) Now replenishment rate in % is set. For return to the "Ready for processing" mode, press "NO" key.


```
Ready for processing
   DEV : 38.0°C
```

12.2. DISPLAYING REPLENISHING TMES

* Each chemical is replenished every 2 m of film (135EXP) processing.
The replenishing times counter runs every time the above replenishment is finished.

1) Enter the replenishing times displaying mode.



Replenishing times
counter

2) Check the replenishing times of each chemical.

DEV Repl. times
counter 53

* If you don't want to change the replenishing times,

press NO key.

Ready for processing
DEV : 37.8°C

3) When you want to reset the counter, press this key.

Clear Replenishing
times counter

4) Press YES key to input the code number.

YES

Input code number
* * * *

(code n°0232)

5) Press YES key to confirm the message.

YES

Confirm code number
* * * *

Clear Replenishing
times counter

6) Now the counter is reset. For return to the "Ready for processing" mode, press "NO" key.

NO

Ready for processing
DEV : 37.8°C

12.3. MANUAL REPLENISHMENT

* The set amount of chemical for 1 replenishment is supplied to the tank.
(the basic repl. amount + the repl. rate in percentage)

1) Enter the manual replenishment mode.


```
Manual Replenishment
    Mode
```

2) Select the replenishing pump.


or


```
DEV Replen. time
            33.2sec        50
```

Select DEV 50 Hz

3) Press YES key to make the pump operate.


```
DEV Replen. time
            29.1sec        50
```

The time is counted down on the display.
When the replenishment is finished, the buzzer sounds.

```
DEV Replen. time
            33.2sec        50
```

4) Now replenishment is finished.


```
Ready for processing
   DEV : 38.0°C
```

13. PROCESSED FILM COUNTER

The cumulative number of processed film is displayed on this counter.

Table 13-1 : Film size to be displayed

No.	Size of film	No. of frames
1	135	12 . 15 EXP
2	135	18 EXP
3	135	24 EXP
4	135	27 EXP
5	135	36 . 39 EXP
6	126	12 EXP
7	126	24 EXP
8	110	12 EXP
9	110	24 EXP
10	120	6 EXP
11	120	12 EXP
12	220	--------
13	240	15 EXP
14	240	25 EXP
15	240	40 EXP

13.1. DAILY PROCESSED FILM COUNTER

1) Enter the processed film number is displaying mode.

2) Select the film size.

Processed film number

Daily processed film number is displayed per film size in order of the table 13-1 by pressing  key.

Daily processed film number △△△△

135 : 12 - 15 EXP △△△
135 : 18 EXP △△△

135 : 24 EXP △△△
135 : 27 EXP △△△

135 : 36 - 39 EXP △△△

126 : 12 EXP △△△
126 : 24 EXP △△△

110 : 12 EXP △△△
110 : 24 EXP △△△

120 : 6 EXP △△△
120 : 12 EXP △△△

220 : △△△

240 : 15 EXP △△△
240 : 25 EXP △△△

240 : 40 EXP △△△
△△△

△: Processed film number

13.2. TOTAL PROCESSED FILM COUNTER

1) Display the total processed film counter.

x 11

Total processed film number △△△△△△

2) You can check the total processed film number for each film size by pressing DOWN key.

135 : 12 - 15 EXP △△△△△ total

x 11

240 : 40 EXP △△△△△ total

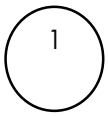
13.3. CLEARING THE COUNTER

You can reset the counter by the following key operation.

1) Enter the counter clear mode.


```
Clear film counter
  1 : Daily          2 : total
```

. When you want to clear the daily counter, enter "1".



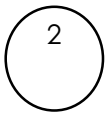

```
Clear daily film
   counter                [ YES ]
```

. Press YES key to confirm the message.


```
Clear film counter
  1 : Daily          2 : total
```

* When the counter is cleared, the original message shown above is displayed.

2) When you want to clear the total counter, enter "2".




```
Clear film counter
  1 : Daily          2 : total
```

. Input the code number (0232)

```
Clear total counter
  code number        0 0 0 0
```

. Press YES key to confirm the message.


```
Clear film counter
  1 : Daily          2 : total
```

* When the counter is cleared, the original message shown above is displayed.

3) Now the counter is cleared.

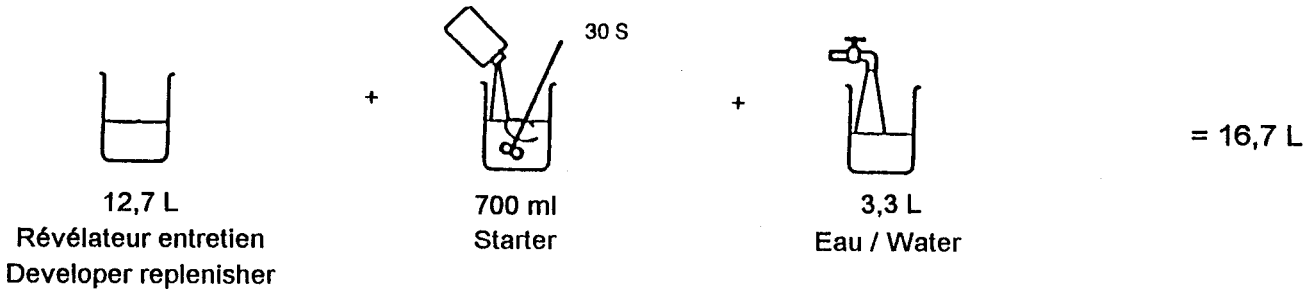

```
Ready for processing
   DEV : 38.0°C
```

14. CHEMISTRY PREPARATION

14.1. PROCESSOR CHEMISTRY

14.1.1. Developer

Prepare 13,6 liters of replenisher developer according the instructions for AKS 32 FP (4 x 3,4 liters).



Use the excess as replenisher developer.

14.1.2. Bleach (ready to use solution)

Pour the bleach solution in the bleach tank.

14.1.3. Fixer

Prepare 10,8 liters of replenisher fixer (2 x 5,4 liters) according the instructions for AKS 32 FP. Fill the two tanks of fixer.

FIXER 1 : 4,2 liters
FIXER 2 : 4,6 liters

Use the excess as replenisher fixer.

14.1.4. Stabilizer

Prepare 10,8 liters (2 x 5,4 liters) of stabilizer replenisher according the instructions for the AKS 32 FP.

Fill the three tanks of stabilizer.

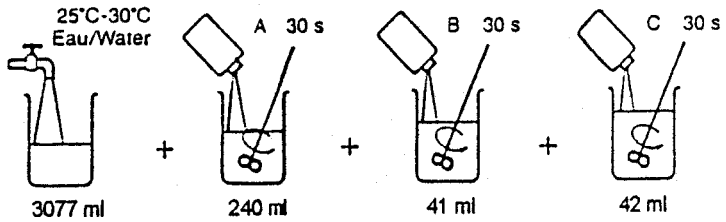
STAB 1 : 3,2 liters
STAB 2 : 3,4 liters
STAB 3 : 3,8 liters

Use the excess as replenisher stabilizer.

14.2. REPLENISHER TANK CHEMISTRY

14.2.1. Developer

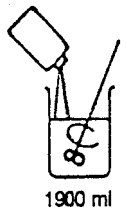
RED cap



= 3400 ml

14.2.2. Bleach

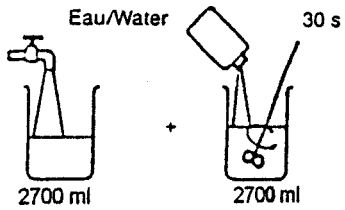
WHITE cap



= 1900 ml

14.2.3. Fixer

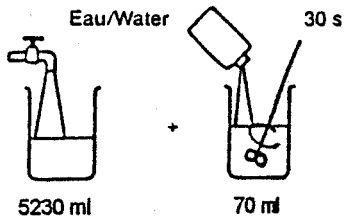
BLACK cap



= 5400 ml

14.2.4. Stabilizer

BLUE cap



= 5400 ml

CAUTION: PREPARE BLEACH AND FIXER BATHS BEFORE THE DEVELOPER.

15. ERROR DISPLAY

15.1. ERROR MESSAGES AND ERROR POSITION

Error Messages take preference over any messages during normal film processing.

N°	Messages	Buzzer reset	Error description & how to manage them
1	Film Cutter malfunction L * R * * Number of cutting operations	YES	. This is displayed when the cutter has failed to operate correctly for 3 consecutive cuts. 1) Cut the film manually. 2) Press the manual cut knob and check that cutter blade is neither warped nor strained. 3) Check the connection of the connectors. 4) Check the sensors in the test mode. Enter the input test mode. Press DOWN key. Check that "1" is displayed when the patrone holder is pushed fully. 5) Contact the service engineer when the situation is not improved.
2	Film end not cut off L * R * * Number of cutting operations	YES	. This is displayed when the cutter has failed to operate correctly for 2 consecutive cuts. 1) Contact the service engineer when the situation is not improved.
3	Solution level down **** * Area of fault	YES	. This is displayed when the surface of the solution in the processing tank is lowered. 1) Pour water from the pitcher until the surface reaches the line. 2) Check if the solution does not leak out. 3) Check the sensors in the test mode. Enter the input test mode. Press DOWN key 7 times. Check that "1" is displayed when water is poured into the tank. 4) Contact the service engineer when the situation is not improved.
4	Temp sensor malfunction **** * Area of fault	YES	. This is shown when the temperature is kept lower than 20°C for more than 3 minutes. 1) Contact the service engineer.

N°	Messages	Buzzer reset	Error description & how to manage them
5	Temp out of range **** 38.0°C * Area of fault	YES	. This is shown when the temp. of the solution exceeds the range of set temperature. DEV : -0.3 ~ +0.3°C FIX : -2.0 ~ +4.0°C STB : -4.0 ~ +8.0°C 1) Compare the temp. on the display with the real temperature. a) The displayed temp. = the set temp. = the real temp. Contact the service engineer. b) The set temp. = the displayed temp. = the real temp. Check that the filters are clean and the surface of solution is not lowered. 2) Contact the service engineer when the situation is not improved.
6	Effluent tank full (*) * Number of cutting operations	YES	. This is shown when the effluent tank is full. 1) Open the drain cock and let the waste flow into the plastic tank. 2) Check the sensors in the test mode. Enter the input test mode. Press DOWN key 9 times. Check that "1" is displayed when the effluent tank is empty. 3) Contact the service engineer when the situation is not improved.
7	*** Replenisher tank empty * Area of fault	YES	. This is shown when the replenisher tank is empty . 1) Supply the chemical into the replenisher tank. 2) Check the sensors in the test mode. Enter the input test mode. Press DOWN key 8 times. Check that "1" is displayed when the chemical supply is finished. 3) Contact the service engineer when the situation is not improved.
8	Cutter sensor * malfuntion * Area of fault	YES	. This is shown when the connectors are not connected properly. 1) Check the connection of each connector. 2) Check the sensors in the test mode. Enter the input test mode. Press DOWN key. Check that "1" is displayed when the patrone holder is pushed fully. 3) Contact the service engineer when the situation is not improved.
9	Push roller sensor * malfunction * Area of fault	YES	. This is shown when the connectors are not connected properly. 1) Check the connection of each connector. 2) Check the sensors in the test mode. Enter the input test mode. Press DOWN key twice. Check that "1" is displayed when the patrone holder is pushed fully. 3) Contact the service engineer when the situation is not improved.

N°	Messages	Buzzer reset	Error description & how to manage them
10	Close top cover	YES	. This is shown when the connectors are not connected properly. 1) Check that the connections arre secure. 2) Check the sensors in the test mode. Enter the input test mode. Check that "1" is displayed when the film is set. 3) Contact the service engineer when the situation is not improved.
11	Film sensor malfunction **** * Area of fault and the film size	YES	. This is shown when the connectors are not connected properly. 1) Check that the connections arre secure. 2) Check the sensors in the test mode. Enter the input test mode. Check that "1" is displayed when the film is set. 3) Contact the service engineer when the situation is not improved.

PART B

USER MAINTENANCE MANUAL

SUMMARY - PART B

1. FILM LOADING SYSTEM

2. PRESENTATION

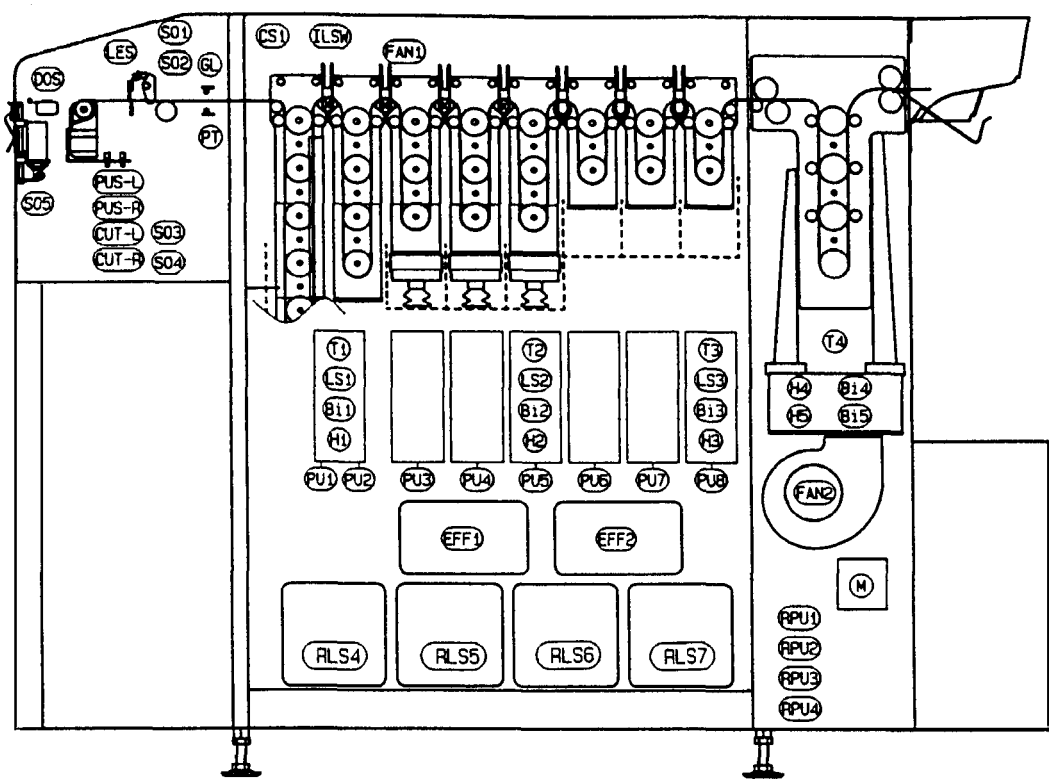
3. ERROR MESSAGES

4. TEST MODES

5. MAINTENANCE AND INSPECTION

1. FILM LOADING SYSTEM

1.1 PROFILE OF FILM LOADING SYSTEM



LS1	Liquid level detection float switch 1 (DEV)
LS2	Liquid level detection float switch 2 (FIX-2)
LS3	Liquid level detection float switch 3 (STB-3)
RLS4	Liquid level detection float switch 4 (DEV Repl. tank)
RLS5	Liquid level detection float switch 5 (BL Repl. tank)
RLS6	Liquid level detection float switch 6 (FIX Repl. tank)
RLS7	Liquid level detection float switch 7 (STB Repl. tank)
EFF1	Liquid level detection float switch 8 (Effluent tank)
EFF2	Liquid level detection float switch 9 (Effluent tank)
T1	Temp. sensor thermistor 1 (DEV)
T2	Temp. sensor thermistor 2 (FIX-2)
T3	Temp. sensor thermistor 3 (STB-3)
T4	Temp. sensor thermistor 4(DRY)
Bi1	Terminal swich (DEV)
Bi2	Terminal swich (FIX-2)
Bi3	Terminal swich (STB-3)
Bi4	Terminal swich (DRY)
Bi5	Terminal swich (DRY)
GL	Film detection light emitter infrared ray LED
PT	Film detection light receptor sensor photo-transistor
CUT-L	Left cut sensor photo-interrupter
CUT-R	Right cut sensor photo-interrupter
PUS-L	Left push sensor photo-interrupter
PUS-R	Right push sensor photo-interrupter
LES	Leader detection sensor photo-interrupter
DOS	Set box lid detection switch micro-switch

PU1	Circulation pump (DEV); Magnet pump
PU2	Agitation pump (DEV); Magnet pump
PU3	Circulation pump (BL); Magnet pump
PU4	Circulation pump (FIX-1); Magnet pump
PU5	Circulation pump (FIX-2); Magnet pump
PU6	Circulation pump (STB-1); Magnet pump
PU7	Circulation pump (STB-2); Magnet pump
PU8	Circulation pump (STB-3); Magnet pump
RPU1	Replenishing pump (DEV); bellows pump
RPU2	Replenishing pump (BL); bellows pump
RPU3	Replenishing pump (FIX); bellows pump
RPU4	Replenishing pump (STB); bellows pump
H1	Temperature control heater (DEV)
H2	Temperature control heater (FIX-2)
H3	Temperature control heater (STB)
H4	Dryer heater (DRY); Nichrome wire
H5	Dryer heater (DRY); Nichrome wire
M	Driving motor; Synchronous motor
FAN1	Exhaust fan
FAN2	Dryer fan; Sirocco fan
CS1	Top cover sensor
ILSW	Interlock switch
SO1	Cut solenoid (L)
SO2	Cut solenoid (R)
SO3	Push solenoid (L)
SO4	Push solenoid (R)
SO5	Lock solenoid

1.2 FONCTION AND OPERATION LIST

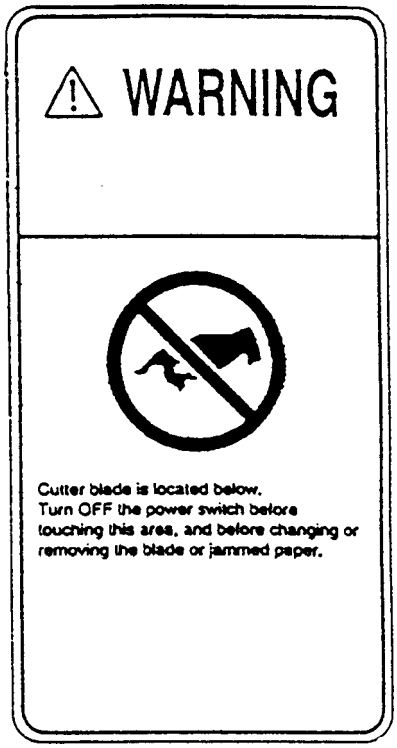
No.	Symbol	Name & type	Description	
1	LS1	Liquid level detection float switch 1 (DEV)	DEV	Detects the low level in the processing tank.
2	LS2	Liquid level detection float switch 2 (FIX-2)	FIX-2	Detects the low level in the processing tank.
3	LS3	Liquid level detection float switch 3 (STB-3)	STB-3	Detects the low level in the processing tank.
4	RLS4	Liquid level detection float switch 4 (DEV)	DEV	Detects the low level in the replenisher tank.
5	RLS5	Liquid level detection float switch 5 (BL)	BL	Detects the low level in the replenisher tank.
6	RLS6	Liquid level detection float switch 6 (FIX)	FIX	Detects the low level in the replenisher tank.
7	RLS7	Liquid level detection float switch 7 (STB)	STB	Detects the low level in the replenisher tank.
8	EFF1	Liquid level detection float switch 8 (Effluent tank)	Detect the high level (upper limit) in the effluent tank.	
9	EFF2	Liquid level detection float switch 9 (Effluent tank)	Detect the high level (upper limit) in the effluent tank.	
10	T1	Temperature sensor thermistor 1 (DEV)	DEV	Measure the processing temperature in the temp control tank.
11	T2	Temperature sensor thermistor 2 (FIX-2)	FIX-2	Measure the processing temperature in the temp control tank.
12	T3	Temperature sensor thermistor 3 (STB-3)	STB-3	Measure the processing temperature in the temp control tank.
13	T4	Temperature sensor thermistor 4 (DRY)	Measure the processing temperature in the dryer unit.	
14	Bi1	Terminal swich (DEV)	DEV heater	solution temperature in DEV temperature control tank
			OFF	47°C or more
			ON	35°C or less
15	Bi2	Terminal swich (FIX-2)	FIX-2 heater	solution temperature in FIX-2 temperature control tank
			OFF	47°C or more
			ON	35°C or less
16	Bi3	Terminal swich (STB-3)	STB-3 heater	solution temperature in STB-3 temperature control tank
			OFF	47°C or more
			ON	35°C or less

No.	Symbol	Name & type	Description
17	Bi4 Bi5	Terminal swich (DRY) Terminal swich (DRY)	Dryer heater: The temperature of the dryer unit OFF: 80°C or more ON: 50°C or less
18	GL	Film detection light emitter infrared ray LED	A light emitter for detecting the beginning of the film
19	PT	Film detection light receptor sensor photo-transistor	A light receptor for detecting the beginning of the film
20	CUT-L	Left cut sensor photo-interrupt.	Detects the end of the left 135 film
21	CUT-R	Right cut sensor photo-interrupter	Detects the end of the right 135 film
22	PUS-L	Left push sensor photo-interrupter	Detects the end of the left 135 film is pushed
23	PUS-R	Right push sensor photo-interrupter	Detects the end of the right 135 film is pushed
24	LES	Leader detection sensor photo-interrupter	Detects the short leader
25	DOS	Set box lid detection switch micro-switch	Detects opening or closing of the set box lid
26	PU1	Circulation pump (DEV-1); Magnet pump	A circulation pump for the DEV processing solution. Always operating during temperature control.
27	PU2	Circulation pump (DEV-2); Magnet pump	These magnet pumps are turned OFF When the temp. control of FIX-2 solution is completed. ON When the temperature of FIX-2 solution lowers. The pumps are running while there is film in the film processor.
28	PU3	Circulation pump (BL); Magnet pump	
29	PU4	Circulation pump (FIX-1); Magnet pump	
30	PU5	Circulation pump (FIX-2); Magnet pump	
31	PU6	Circulation pump (STB-1); Magnet pump	These magnet pumps are turned OFF When the temp. control of STB-3 solution is completed. ON When the temperature of STB-3 solution lowers. The pumps are running while there is film in the film processor.
32	PU7	Circulation pump (STB-2); Magnet pump	
33	PU8	Circulation pump (STB-3); Magnet pump	
34	RPU1	Replenishing pump (DEV); bellows pump	DEV The pump for replenishing the chemical to the processing tank.

No.	Symbol	Name & type	Description
35	RPU2	Replenishing pump (BL); bellows pump	BL The pump for replenishing the chemical to the processing tank.
36	RPU3	Replenishing pump (FIX); bellows pump	FIX The pump for replenishing the chemical to the processing tank.
37	RPU4	Replenishing pump (STB); bellows pump	STB The pump for replenishing the chemical to the processing tank.
38	H1	Temperature control heater (DEV); Cartridge heater	DEV Controls the processing solution.
39	H2	Temperature control heater (FIX-2); Cartridge heater	FIX-2 Controls the processing liquid. *BL and FIX-1 solutions are also controlled indirectly by this heater.
40	H3	Temperature control heater (STB-3); Cartridge heater	STB-3 Controls the processing liquid. *STB-1 and STB-2 solutions are also controlled indirectly by this heater.
41	H4 H5	Dryer heater (DRY) Nichrome wire	Heats up air for drying.
42	M	Driving motor; Synchronous motor	Drives the rack units.
43	FAN1	Exhaust fan	Exhausts vapor and heat from the processing units.
44	FAN2	Dryer fan; Sirocco fan	A fan for drying hot air.
45	CS1	Top cover sensor	Detects opening or closing of the top cover.
46	ILSW	Interlock switch	The safety device which stop the drive motor compulsorily when the top cover is opened.
47	SO1	Cut solenoid (L)	A solenoid for cutting the end of the left 135 film.
48	SO2	Cut solenoid (R)	A solenoid for cutting the end of the right 135 film.
49	SO3	Push solenoid (L)	A solenoid for pushing the left film.
50	SO4	Push solenoid (R)	A solenoid for pushing the right film.
51	SO5	Lock solenoid	A solenoid for locking the set box lid.

2. ACTIONS AGAINST FAILURES

2.1 POWER FAILURE



Turn off the power

Turn the crank handle in the arrow direction to feed the film
18 seconds for 1 turn

If the handle rotates lightly
(Film has been cut)

Keep turning the handle until the film comes out from the dryer outlet

Dry the film
* Note that quick drying promotes the film to curl intensely

If the handle is stuck halfway
(Film end is not cut)

Set the emergency dark bag

Unlock the lock buttom and open the set box cover

Cut the film manually

When the power is supplied, turn on the switch.

Wait to start film processing until temperature control is completed and the "Ready for processing" message is displayed.

POINT

In manual cutting, the right and left films may have different lengths. See the film ends before cutting.

2.1.1 How to use the Emergency dark bag

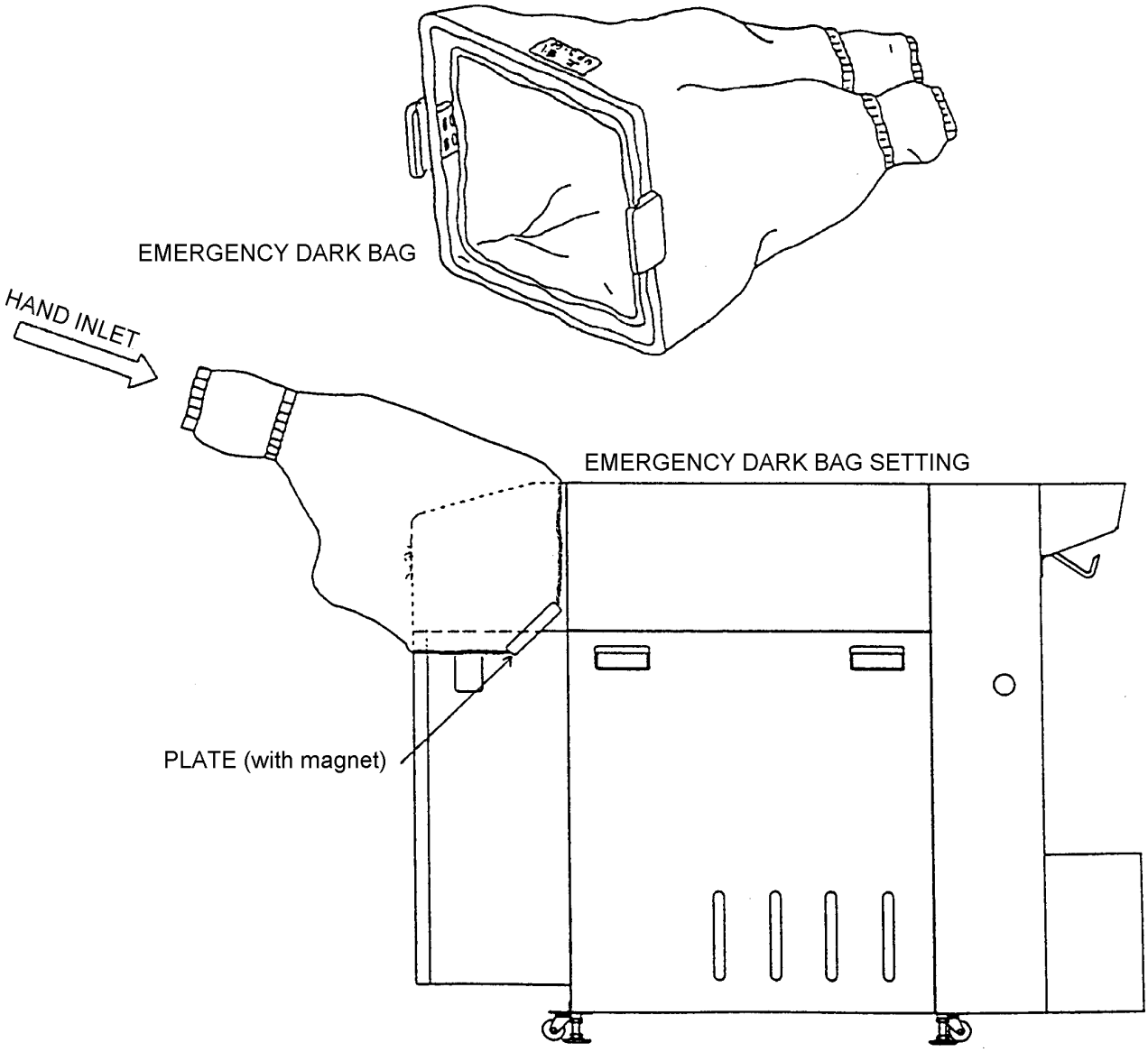
CAUTION

Be sure to turn off the power of the machine before using the dark bag.

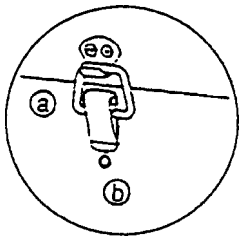
1) How to attach the dark bag

- Attach the right and left magnets to the side panels of the processor with the UPSIDE mark up.

- Do not leave any space between the emergency dark bag and the processor.



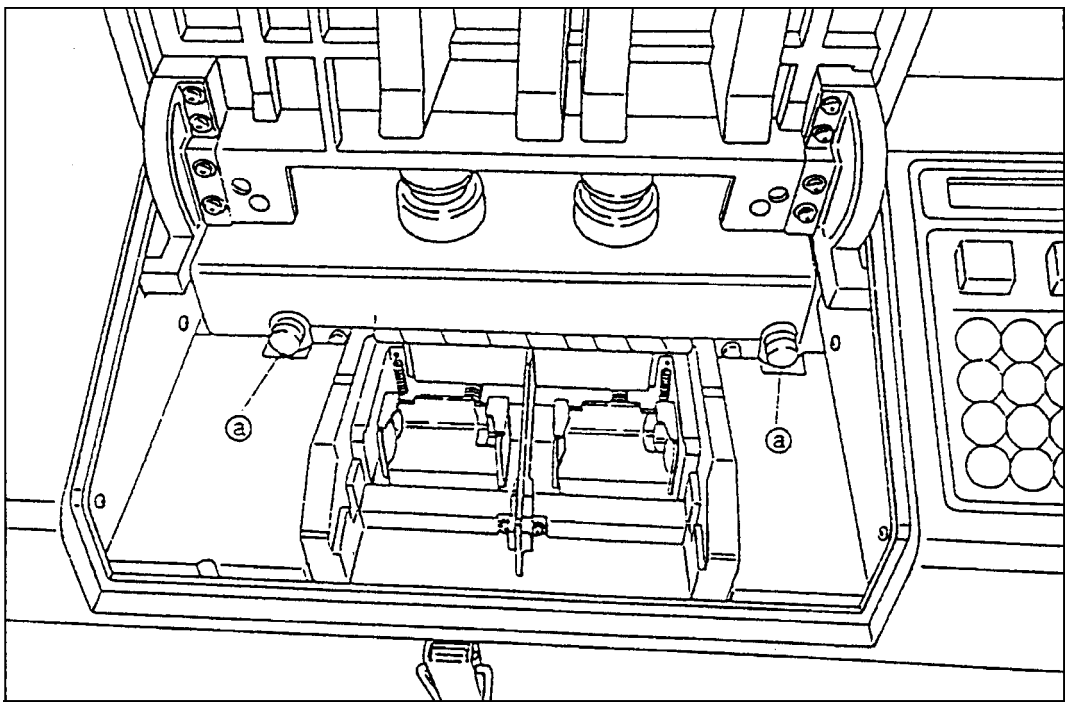
2.1.2 How to reset cover lock



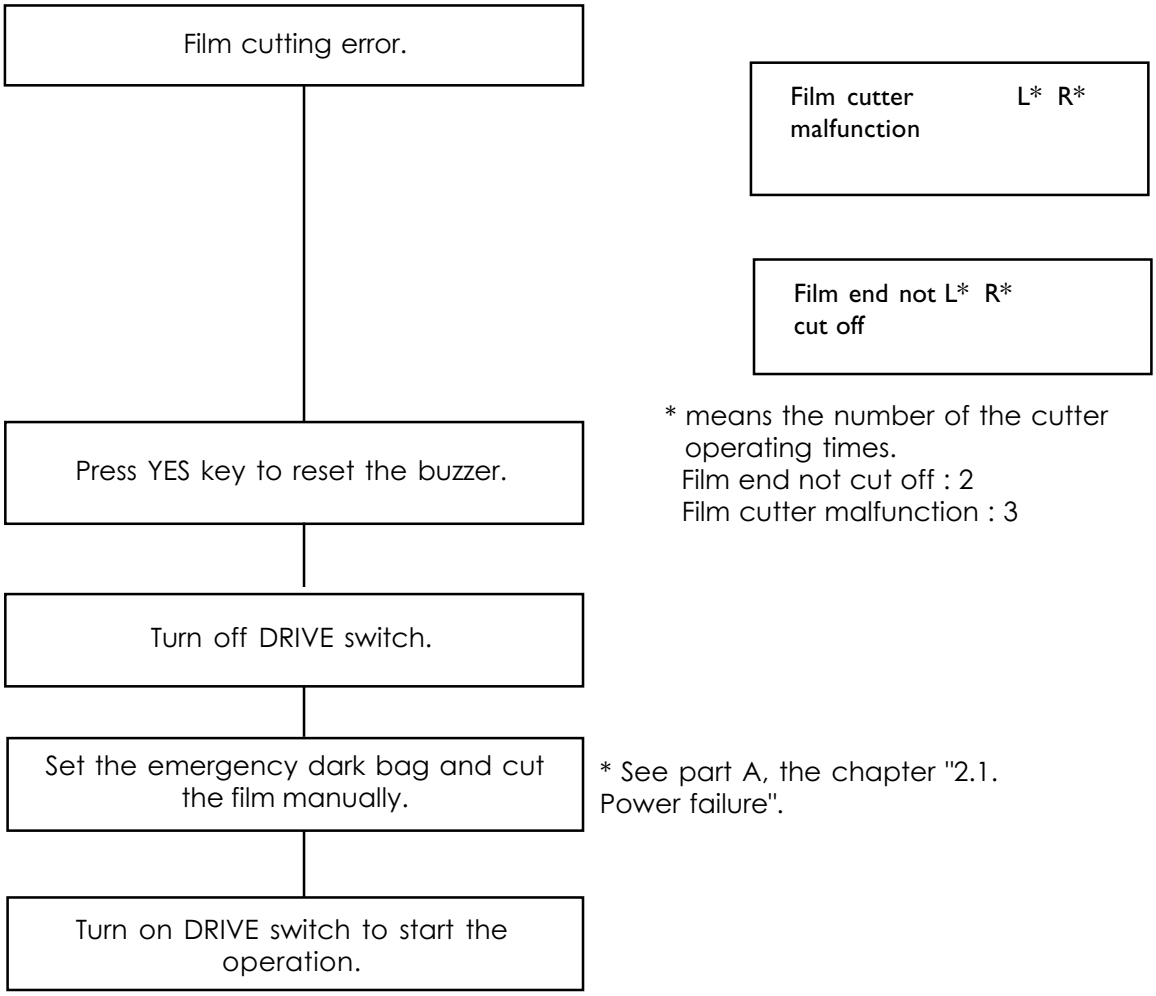
Inlock the buckle (a) and open the set box cover.
(The cover lock reset key (b) is released in the case of power failure.
If it is not, reset it by pushing it with a cross-head screwdriver).

2.1.3 Manual cutting

Press down the manual cutting knob (a) to cut the film.



2.2 FILM CUTTING ERROR



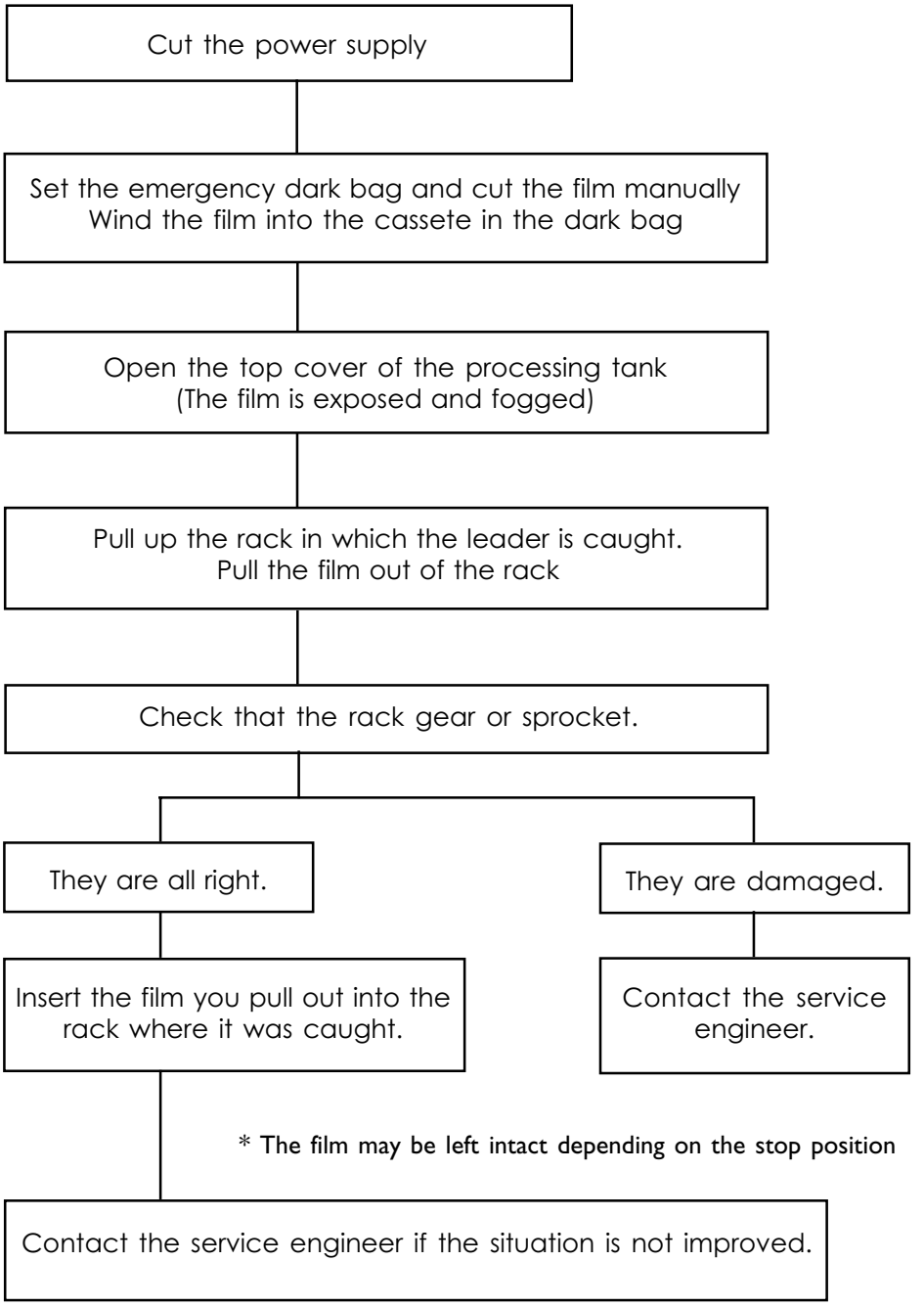
POINTS

- If the film is not transported when DRIVE switch is turned on after manual cutting, the film must be jammed in the processing tank.
- If the film end is not cut properly, the cutter automatically operates 3 times.
- When the cutter operate only twice, the "film end not cut off" message is displayed. If the film is cut by these 2 operations, the message is cleared.
- If the cutter fails to operates correctly for all the 3 consequentive cuts, the "Film cutter malfunction" message is displayed.
  In this case, the proper action should be taken.

2.3 FILM JAM

CAUTION

Be sure to shut off the main power before taking the following steps

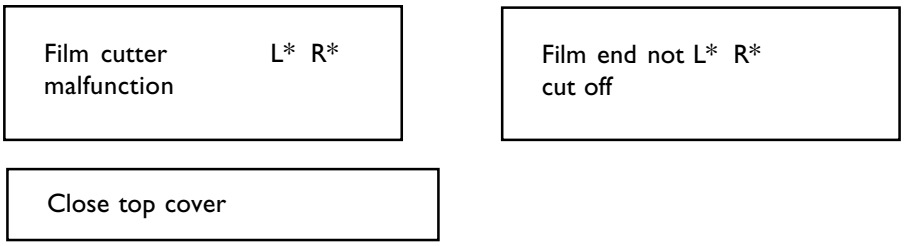


3. ERROR MESSAGES

3.1 ERROR MESSAGES

1) If an error occurs in the ready for processing condition, an error message is desplayed immediately.

2) Any error messages except the ones shown below are not displayed until film procesing is finished and the cover is unlocked.



3) When more than 2 errors occur, the latest is displayed.
When the message is cleared, the other errors are displayed in the order of priority.
Press YES key to reset the buzzer, and use DOWN key to display the next error message.

3.2 PRECAUTIONS FOR RESETTING ERRORS

- Before starting film processing, be sure to take the proper actions for displayed error.
1) Press YES key to clear the message.
2) Take the proper action for it.
3) If the proper action is not taken after resetting, the same message is displayed again when a short leader is loaded.

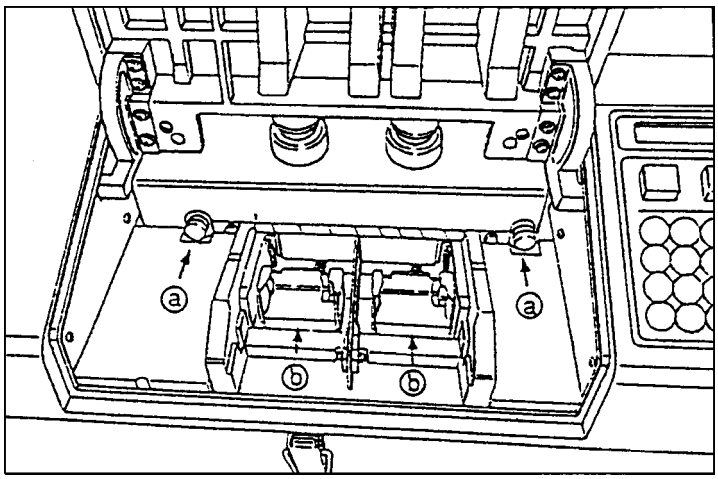
3.3 ACTIONS FOR ERROR MESSAGES (SHOWN IN THE ORDER OF PRIORITY)

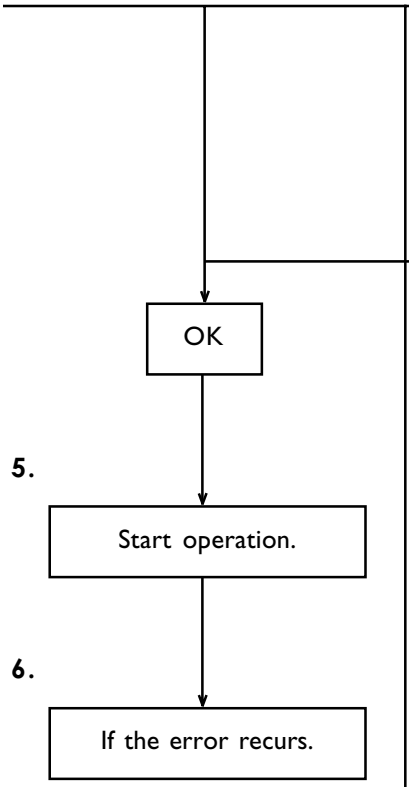
1) Film cutter malfunction.
2) Film end not cut off.
3) Solution level down.
4) Temp. sensor malfunction.
5) Temp. malfunction.
6) Effluent tank full.
7) Replenisher tank empty.
8) Cutter sensor malfunction.
9) Push roller sensor malfunction.
10) Film sensor malfunction.
11) Close top cover.

3.3.1 Film cutter malfunction

DISPLAY	Film cutter L * R * malfunction * : number of cutting operations
HOW TO RESET	Press [YES] key
ERROR CONDITION	- This is displayed when the cutter has failed to operate correctly for 3 consecutive cuts.

ACTIONS

PROCEDURES	DESCRIPTION
1. Cut the film manually	- See 2.2 FILM CUTTING ERROR
2. After film processing, check the following points.	 - Press down the manual cut knob (a) to check that the cutter blade is neither warped nor strained.
3. Check the cutter blade.	NG → Contact the service engineer.
OK	
4. Check the sensor.	- Check the sensor in the test mode. Enter the input test mode. Press DOWN key once. Cutter sensor L/R * * 1: ON Detection plate provided 0: OFF Detection plate not provided



- Check the sensor by pushing and releasing the patrone (cassete) holder (b).
  "1" is displayed when the holder is pushed fully and
  "0" is displayed when it is released.

Contact the service engineer.

- Contact the service engineer.
  The possible reasons are as follows:

  1) Sensor is defective.
  2) Cutter is defective.
  3) Connections are not secure.
  4) Printed circuit board is defective.

3.3.2 Film end not cut off

DISPLAY	Film end not L * R * cut off * : number of cutting operations
HOW TO RESET	Press [YES] key
ERROR CONDITION	- This is displayed when the cutter has failed to operate correctly for 2 more additional trys.

ACTIONS

PROCEDURES	DESCRIPTION
1. Film is cut by the 2 additional trys.	- When the film is cut, the message is cleared and the film is transported.
2. Film is not cut by the 2 additional trys.	- If the cutter operates 3 times and still the film is not cut properly, see part B, the chapter "3.3.1. Film cutter malfunction".
3. If the error recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective. 2) Cutter is defective. 3) Connections are not secure. 4) Printed circuit board is defective.

3.3.3 Solution level down

DISPLAY	Solution level down * * : Area of fault.
HOW TO RESET	Reset automatically
ERROR CONDITION	- This is displayed when the surface of the solution in the processing tank is lowered.

ACTIONS

PROCEDURES	DESCRIPTION
1. Check the solution level in the problem tank.	- Open the outer and inner lids of the tank to check the solution level.
NG	
OK	- Turn off the breaker. - Pour water from the pitcher until the surface reaches the line. - Turn on the breaker.
2. Check liquid leakage.	Check the connections of the pipe welded to the processing tank and the vinyl pipe carefully.
NG	Contact the service engineer.
OK	
3. Check the float switch in the test mode.	Enter the input test mode. Press DOWN key 7 times.

Tank level	DEV *	FIX2 *	STB3 *

1: ON Enough chemical
0: OFF No chemical

Check that "1" is displayed when the solution surface reaches the line.

4.	* If it is not displayed, contact the service engineer.
If the error recurs.	- Contact the service engineer. The possible causes are as follows: 1) Liquid leakage 2) Sensor is defective 3) Connections are not secure. 4) Chemical is not fed properly. 5) Printed circuit board is defective.

3.3.4 Temp sensor malfunction

DISPLAY	Temp sensor malfunctions * * : Area of fault
HOW TO RESET	Press YES key
ERROR CONDITION	- This is displayed when the temperature sensor wire is broken or short circuited, or the sensor is defective.

ACTIONS

PROCEDURES	DESCRIPTION
1. Measure the actual temperature of the solution.	
2. Set temperature = / Displayed temperature / = actual temperature	- Contact the service engineer.
3. If the error recurs.	- Contact the service engineer. The possible errors are as follows: 1) Sensor is defective. 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.5 Temp malfunction

DISPLAY	Temp. out of range * * 38.5°C * : Area of fault.
HOW TO RESET	Cannot be reset
ERROR CONDITION	- This is displayed when the temperature of the solution exceeds the range of set temperature.

ACTIONS

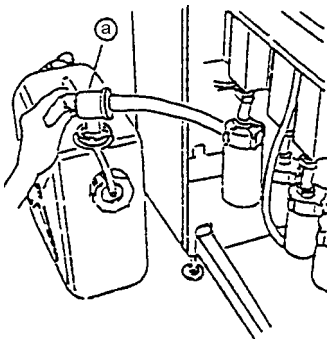
PROCEDURES	DESCRIPTION
	* The range of set temperature DEV : -0.3~+0.3°C FIX-2 : -3.0~+3.0°C STB-3 : -4.0~+8.0°C
1. Compare the displayed temperature with the actual temperature	- Pull out the chemical filter and measure the temps.
	Displayed temp ≠ Set. temp. = /Actual temp. → Contact the service engineer.
Displayed temperature = actual temperature / = set temperature	
2. Check the following items	
3. The filter	- If the filter is dirty enough, clean or change it
4. The solution level	- If the solution level is too low, pour water from a pitcher up to the marked line.
After dealing with them,measure the solution temp.	
	NG → Contact the service engineer.
OK	
If the error recurs.	- Contact the service engineer. The possible causes are as follows: 1) Heater is broken 2) Sensor is defective 3) Connections are not secure. 4) Circulation pump is defective. 5) Printed circuit board is defective.

3.3.6 Effluent tank full

DISPLAY	Effluent tank full (*) * : Area of fault.
HOW TO RESET	Reset automatically
ERROR CONDITION	- This is displayed when the effluent tank is full.

ACTIONS

PROCEDURES	DESCRIPTION
1. Check the effluent tank.	
If tank is full	- Take off the side frame and turn the drain cock (a) to discharge the waste solution * The effluent tank capacity is 7 litres.



Wipe spilled chemical off with cloth.

PROCEDURES	DESCRIPTION
If the tank is not full.	
Check the sensor in the test mode.	Enter the input test mode. Press DOWN key 9 times.

Effluent tank level	A	B
	*	*

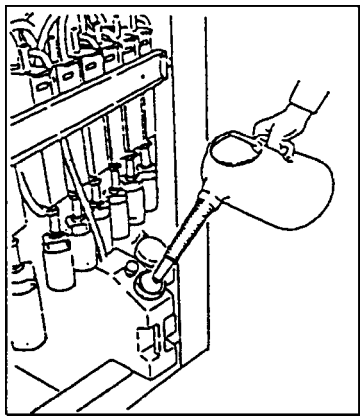
1: ON Tank is not full of waste (normal condition)
0: OFF Tank is full of waste

PROCEDURES	DESCRIPTION
	- Check that "1" is displayed when the effluent tank is emptied. * If it is not displayed, contact the service engineer.
If the error recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.7 Replenisher tank empty

DISPLAY	Replanisher tank (*) * : Area of fault.
HOW TO RESET	Reset automatically
ERROR CONDITION	- This is displayed when the replenisher tank is empty.

ACTIONS

PROCEDURES	DESCRIPTION
1. Check the replenisher tank.	
If tank is empty	supply the tank with the chemical.
	- Take off the side frame - Draw out the replenisher tank by approx. 10cm. - Pour water according to the instructions. * The replenisher tank capacity is 10 liter.
	
If the tank is not empty.	
Check the sensor in the test mode.	Enter the input test mode. Press DOWN key 8 times.

Repl.	D	B	F	S
tank level	*	*	*	*

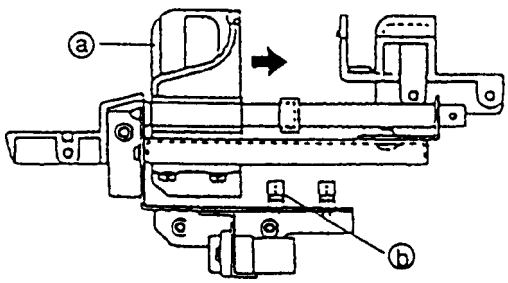
1: ON Tank is not empty (normal condition)
0: OFF Tank is empty

	- Check that "1" is displayed when fill the tank with the chemical. * If it is not displayed, contact the service engineer.
If the error recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.8 Cutter sensor malfunction

DISPLAY	Cutter sensor * malfunction * : Area of fault.
HOW TO RESET	Press [YES] key to reset
ERROR CONDITION	- This is displayed when the cutter sensor keeps active for 5 seconds or more.

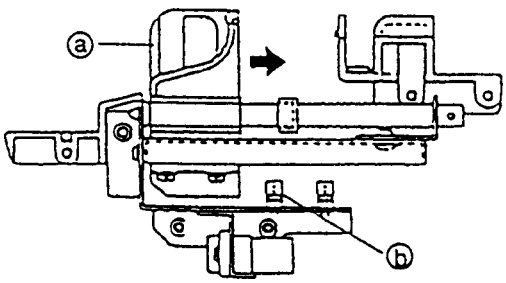
ACTIONS

PROCEDURES	DESCRIPTION
1. Check the sensor in the test mode.	Enter the input test mode. Press DOWN key. Cutter sensor L/R * * 1: ON Detection plate provided 0: OFF Detection plate not provided  - Check that "1" is displayed when the patrone (cartridge) holder (a) to the position (b) where the sensor is installed and "0" is displayed when the holder is released. * If they are not displayed correctly, contact the service engineer.
If the error is recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.9 Push roller sensor malfunction

DISPLAY	Push roller sensor * malfunction * : Area of fault.
HOW TO RESET	Press YES key to reset
ERROR CONDITION	- This is displayed when the sensor keeps active for 10 minutes or more when film is not detected.

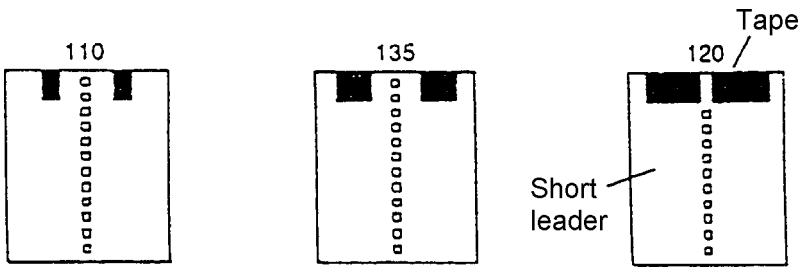
ACTIONS

PROCEDURES	DESCRIPTION
1. Check the sensor in the test mode.	Enter the input test mode. Press DOWN key twice. Push sensor L/R * * 1: ON Detection plate provided 0: OFF Detection plate not provided  - Check that "1" is displayed when the patrone (cassete) holder (a) to the position (b) where the sensor is installed and "0" is displayed when the holder is released. * If they are not displayed correctly, contact the service engineer.
If the error is recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.10 Film sensor malfunction

DISPLAY	Film sensor * malfunction * : Area of fault and the film size.
HOW TO RESET	Press YES key to reset
ERROR CONDITION	- This is displayed when the sensor keeps active for 6 minutes 20 seconds or more.

ACTIONS

PROCEDURES	DESCRIPTION
1. Check the sensor in the test mode.	Enter the input test mode. 110L/R 135L/R 120L/R * * * * * * 1: ON Film detected 0: OFF No film detected  - Attach film or tape of a certain width to the proper position of short leader. - Check that "1" is displayed for the correct film size when the short leader passes through the sensor. * If it is not displayed correctly, contact the service engineer.
If the error is recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

3.3.11 Close the top cover

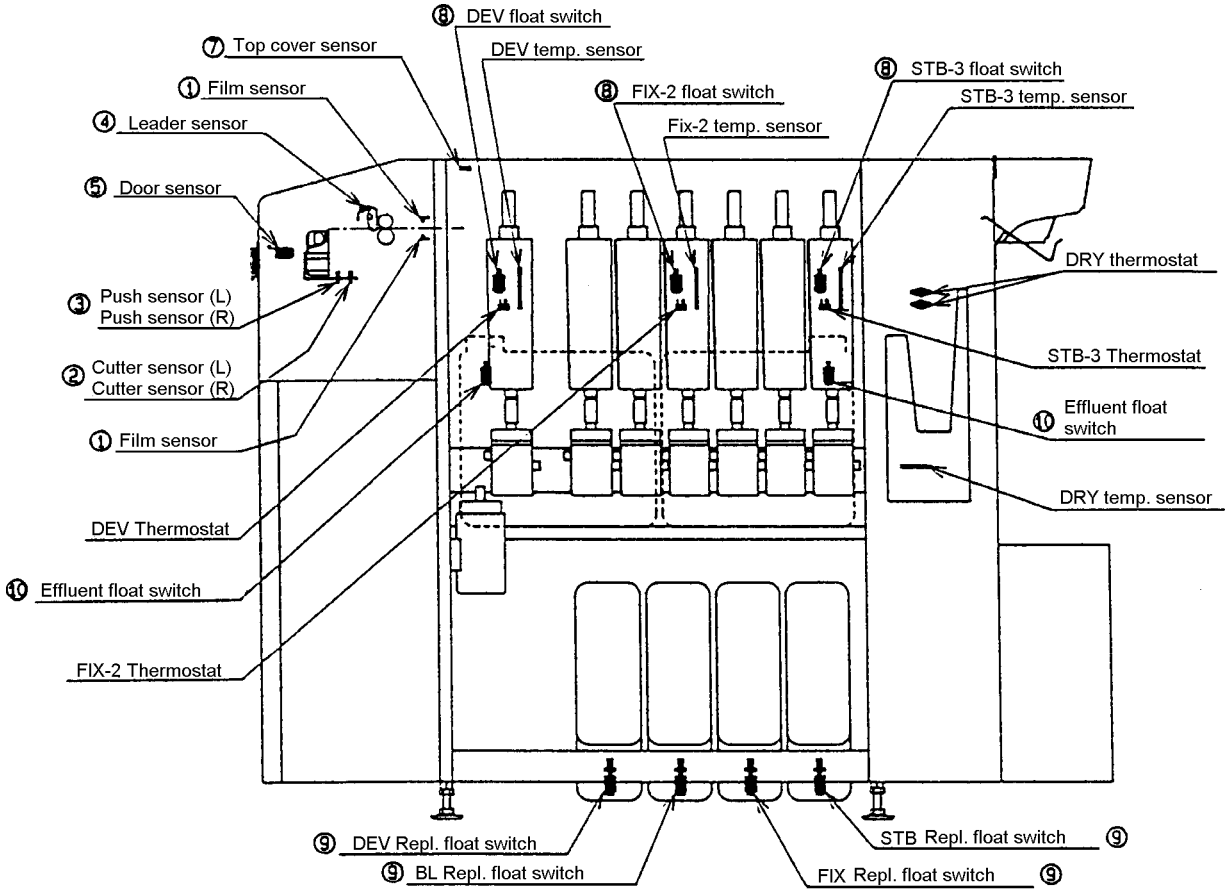
DISPLAY	Close top cover
HOW TO RESET	Reset automatically.
ERROR CONDITION	- This is displayed when the top cover is not closed properly.

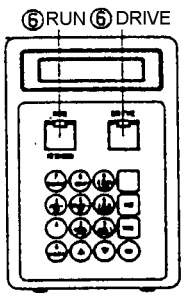
ACTIONS

PROCEDURES	DESCRIPTION
1. Check the top cover	- Close the top cover.
Open	Close is properly again.
Closed	
2. Check the sensor in the test mode.	Enter the input test mode. Press DOWN key 6 times. Top cover * 1: ON Closed 0: OFF Open - Check that "1" is displayed when the cover is closed and "0" is displayed when the cover is opened. * If they are not displayed correctly, contact the service engineer.
If the error is recurs.	- Contact the service engineer. The possible causes are as follows: 1) Sensor is defective 2) Connections are not secure. 3) Printed circuit board is defective.

4. TEST MODES

4.1 INPUT TEST ITEM LAYOUT





4.2 DETAILS FOR TEST MODES

Test modes have input test mode and output test mode.
Input test mode : this is mainly used to check the sensors.
10 items are included
Output test mode : this is for the service engineer. Users should not use it.

4.3 TEST MODE SELECTION

1) Enter the input test mode.	0 (TEST)	Input test mode
	YES	Input test mode start? [Y/N]
2) Cofirm the display	YES	

4.4 INPUT TEST

N°	Displayed messages	Conditions	Remarks
1	110L/R 135L/R 120L/R ** ** **	1: Film provided 0: film not provided	
2	Cutter sensor L/R * *	1: Detection plate provided 0: Detection plate not provided	
3	Push sensor L/R * *	1: Detection plate provided 0: Detection plate not provided	
4	Leader sensor *	1: Detection plate provided 0: Detection plate not provided	
5	Door sensor *	1: Closed 0: Open	
6	Panel RUN/DRIVE switch * *	1: OFF 0: ON	
7	Top cover *	1: Closed 0: Open	
8	Tank DEV FIX2 STB3 * * *	1: Liquid in tank 0: No liquid in tank	
9	Repl. D B F S tank level * * * *	1: Liquid in tank 0: No liquid in tank	
10	Effluent A B tank level * *	1: Not full of tank 0: Full of tank	

5. MAINTENANCE AND INSPECTION

5.1 REPLACEMENTS

1) Consumables

Part name	Part N°	Q'tt	Frequency
Chemical filter	43-55187	7	DEV : 1 or 2 / month BL-STB Every other month
Roller cleaning leader	43-86834		
Cleaner J	43-45400-Z	1	Every 6 month
Short leader	23-A7341-2	1	
Splicing tape	43-Z0010		

2) Parts to be replaced periodically

Part name	Part N°	Q'tt	Frequency
Drive roller (loading unit)	33-55032-1	1	Every 2 years
Push roller (loading unit)	44-A6784-1	2	Every 2 years
Squeeze roller	43-65211-1	1	Every year
Air filter (Dryer unit)	43-A4038	1	Every year
Sprocket 15T	43-05076-1	8	Every 2 years
Bellows coupling	33-45488	3/6	Every 2 years
Filter holder	43-A4044	7	Every 2 years
Cap	43-A6792	2	Every year

5.2 MAINTENANCE AND INSPECTION LIST

Made by ⓤser △:Engineer

Inspection: INSP Cleaning:CLNG Adjustment:ADJ Lubrification:LBN
Replacement:RLT Tightening:TTNG

Section	Item	Daily	Weekly	Monthly	3 mths	6 mths	Yearly	2 years	Made by	Remark
Main unit	Pre-op./Post-op. inpections	INSP							○	
	Cleaning inside the machine			CLNG					○	
	Drive chain		ADJ LBN						△ △	
	Drive sprocket & bearing shaft holder					INSP	RLT		△	Sprocket
	Piping hose						INSP		△	
	Rubber socket & elbow					INSP			△	
Loading Section	Cutter blade		CLNG						○ △	
	Film detection sensor			INSP		CLNG	ADJ		△	
	Patrone (cassete) holder			INSP	ADJ LBN				○ △ △	1400g ±300g
	Carrying torque		INSP ADJ						△ △	4kg or more
	Drive roller			CLNG				RLT	○ △	
	Interlock (position)			ADJ					△	
	Push solenoid cap						RLT		△	
	Set screw			TTNG					△	
Processing Section	Processing temperature			INSP					○	Actual temp.
	Rack operation		INSP						△	
	Processing racks & tank (cleaning)			CLNG			CLNG		△	solution is recycled

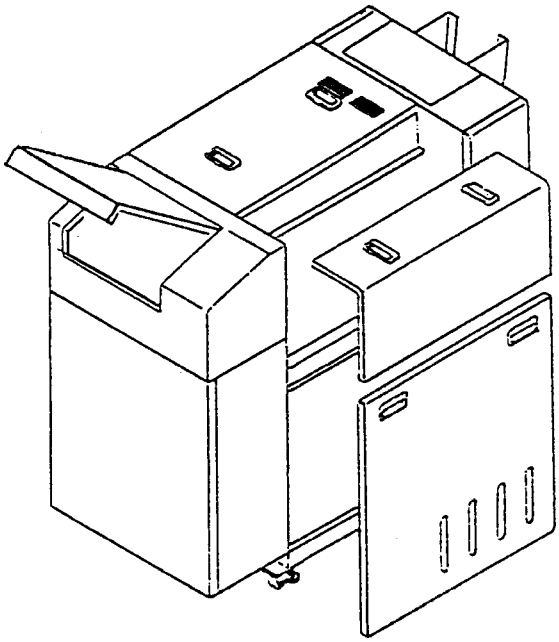
Section	Item	Daily	Weekly	Monthly	3 mths	6 mths	Yearly	2 years	Made by	Remark
	Crossover rack STB-3 rack		CLNG						△	
	Crossover rack	CLNG	INSP						○	
	STB-3 sq. roller	CLNG					RTL		△	
	Chemical filter		CLNG	RLT				RLT	○ ○ △	DEV:1 or 2/month
	Circulation pump replenishing pump			INSP					△	
	Processing tank (leakage)					INSP			△	
	Temperature control heater					INSP			○	
	Sprocket 15T (processing rack)							RLT	△	
	Bellows coupling							RLT	△	
Dryer Section	Air filter		CLNG					RLT	○ ○	
	Dryer rack						ADJ		△	

5.3 DAILY INSPECTION

1) Pre-Operation & Post-Operation Inpections.
   Make a inspection according to the INSTRUCTION MANUAL.

5.4 WEEKLY INSPECTION

1) Cleaning inside of the machine.

1) Detach the side cover.	- Remove the corner cover and the side cover 
2) Clean the inside.	- Clean the following parts carefully with wet cloth. Circulation pump Temperature control tank Vinyl hose joints Reservoirs in the film processor

2) Cleaning cutter blade

CAUTION

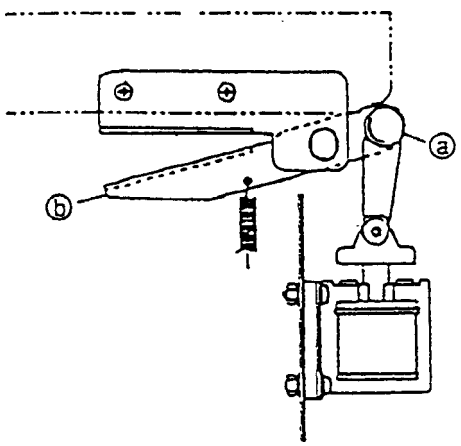
Be sure to turn off the power before cleaning the cutter blade.

1) Turn off the power

2) Open the set box cover

3) Clean the cutter blade

- Press down the manual cutting knob (a) to move up the blade (b)
- Clean the cutter blade with a blower brush.



POINT

Be careful not to get the blower brush caught by the cutter blade.

3) Inspection of patrone (cassete) holder

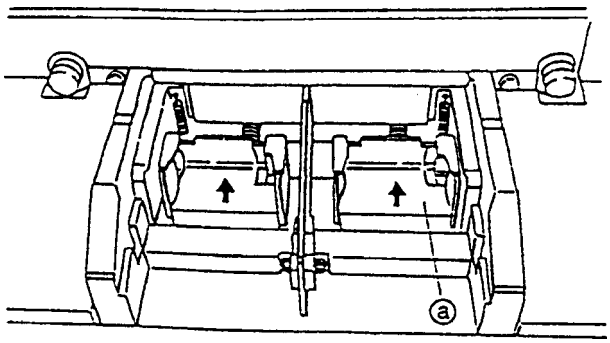
CAUTION

Be sure to turn off the power before checking the patrone holder.

1) Turn off the power

2) Open the set box cover

3) Check the patrone holder operation

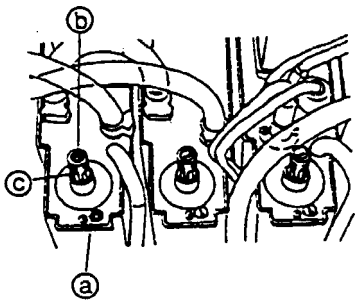
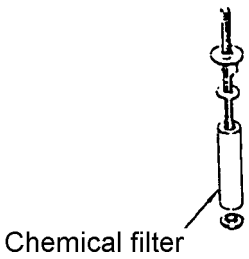


- Press the patrone holder (a) by hand to check that it moves smoothly in the direction of the arrow ↑

POINTS

- Make certain that the right and left holders have equivalent resistance.
- If the holders do not move smoothly, contact the service engineer.

4) Cleaning chemical filter

1) Detach the chemical filter	- Align the mark (a) on the temp. control tank with the mark (b) on the filter rod. - Holder the filter rod (c) and pull up the filter.	
2) Clean the chemical filter	- Clean the chemical filter carefully. (Remove dust and foreign materials from the filter completely). - If it is so dirty, change it.	

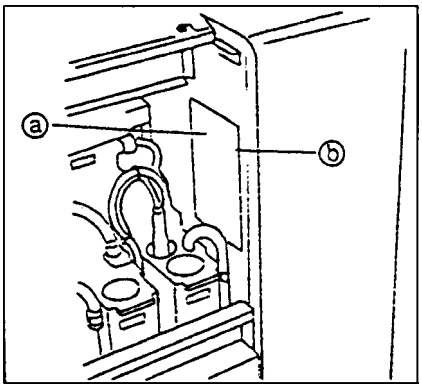
POINTS

- Cleaning and replacement frequencies are as follows,

	CLEANING	REPLACEMENT
DEV	Every week	1 or 2 / month
BL	Every 2 weeks	Every 2 months
FIX-1	Every 2 weeks	Every 2 months
FIX-2	Every 2 weeks	Every 2 months
STB-1	Every 2 weeks	Every 2 months
STB-2	Every 2 weeks	Every 2 months
STB-3	Every 2 weeks	Every 2 months

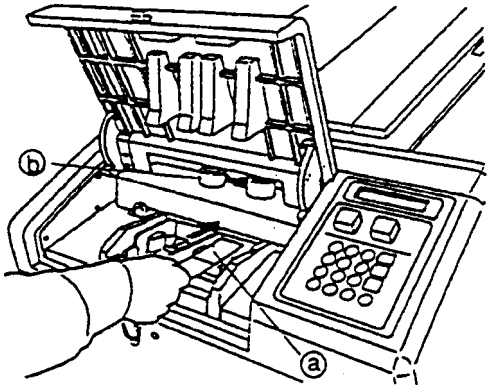
- The message for chemical filter replacement is displayed in the pre-operation & post-operation inspections automatically when the replacement time is reached.

5) Cleaning dryer air filter

1) Detach the air filter	- hold the air filter (a) and take it out of the frame (b) 
2) Clean the air filter	- Clean air filter with a vaccum cleaner. If it does not work sufficiently, wash it gently with water, dry it completely and attach it. Be careful not to rub when washing. Replace the filter after 4 or 5 washes. - Replace the filter if it is quite dirty, torn or cracked.
3) Attach the air filter	- Attach it after it is dried completely.

5.5 MONTHLY INSPECTION

1) Cleaning driving roller

1) Moisten the cleaning leader with water.	- Moisten the both sides of the fabric of the leader. Absorbing excess water with dry cloth.
2) Open the leading box cover.	
3) Clean the driving roller. (TURN on DRIVE switch)	- Insert the leader fabric (a) into the center of the lane until the end is hardly seen. 
	- Press the push solenoid (b) to clean the roller.
	POINTS - Do not push the solenoid too hard not to get the leader pulled into the rollers. - 5 ~ 10 seconds shold be taken for cleaning.
4) Clean the other lane.	- Clean the other lane in the same way. Be careful not to use the soiled part of the leader for cleaning.

POINTS

- Release the solenoid when the cleaning leader is about to be inserted.
- Never more the patrone (cassete) holder during cleaning.
- Dry the roller completly by driving them for 5 - 10 minutes after cleaning.
- Wash the used cleaning leader with soap.
- Replace the cleaning leader when it is quite dirty or gets frayed.

2) Checking processing temperature

Measure the temperature in the processing tank with the standard thermometer, and make sure that it is same as the set temp. and the displayed temp.

3) Replacing chemical filter

See part B, the chapter "5.4.4. Cleaning chemical filter".

5.6 SIX-MONTH INSPECTION

1) Checking processing tank leakage

   Check the tank bottom, vinyl hose joints and elbow joints carefully.

5.7 YEARLY INSPECTION

1) Changing dryer rack air filter

   See part B, the chapter "5.4.5. Cleaning dryer air filter".

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