# fujimoto

# IMAGE PROCESSOR

# *CP-31*

## SERVICE MANUAL

## I. Entrance Rack

◇ Symptom: Play is observed when setting the rack in the main frame.

Check : Are the spacers on both sides of the rack properly positioned?
Is the main frame warped?

Adjustment (Fig. 1):

1. Loosen the screws that fix the spacers.
2. Set the rack in the main frame.
3. Tighten the screws at where no play is given.

★ Replacement of roller and gear (Fig. 2)

1. Remove the E-rings on both ends of the shaft on which the roller and gear to be replaced are fixed.
2. Slide and pull out the roller.
3. When replacing the gears, pull out the old gear and put on the new gear. Make sure that the knock pin is fitted in the groove of the gear.

## II. Processing Rack

◇ Symptom: Play is observed when setting the rack in the main frame.

Check : Is the rack warped?

Adjustment (Fig. 1):

1. Place the rack upside down on a flat stand.
2. Loosen the screws that fix the top plate.
3. Confirming the rack is straightened, tighten the screws.

◇ Symptom: Paper does not come out.

Check 1. Is the rack properly set?
2. Is there any crack on gears?
3. Is the crossover guide properly set?
4. Is the pressure spring out of place?

◇ Symptom: Scratches on paper

Check 1. Scratches at intervals of 15mm
a. Is the crossover guide properly set?
b. Is there any scratch on the guide?

Check 2. Scratches at regular intervals along the paper feed direction
a. Is there any scratch on the roller?

◇ Symptom: Worm gear is worn out.

★ Replacement of worm gear (Fig. 6)

1. Turn the main frame upside down and remove the bottom cover.
2. Remove the sprocket fixed on the drive shaft. (2 set screws)
3. Remove the drive shaft holders. (Each 4 screws)
4. Take out the drive shaft ass'y.
5. Pull out the roll pin of the worm gear.
6. Replace the worm gear.

◇ Symptom: Main gear and worm gear are in shallow mesh.

★ Adjustment of meshing of gear

1. Give about two turns to loosen the screw that fix the drive shaft holder.
2. Insert a spacer under the drive shaft holder.
3. Tighten the screws to fix the holder.

◇ Symptom: Circulation pump does not rotate.

Check : Is there air in the pump? → Refill with the solution.

↓ NO YES

Is 100V power supplied to the pump?

↓ YES ↓ NO

The pump is defective. The Control PCB is defective.

↓ ↓

Replace the pump. Replce the Control PCB.

★ Replcement of pump (Fig. 7)

1. Turn the main frame upside down and remove the bottom cover.
2. Remove the hoses connected with the suction and the discharge ports of the pump.
3. Remove the pump.
4. Disconnect the terminals.
5. Replace the pump and connect the hoses. Apply adhesives to the hoses and fasten them with the hose clamps.

(Caution) Prevent the adhesives from getting into the pump through the port.

IV. 1. General Circuit Diagram (Fig. 11)

2. Parts Location Diagram - Control PCB, Operation PCB (Fig. 12)

3. Parts Location Diagram - Motor Control PCB (Fig. 13)

4. Terminal Connection Diagram (Fig. 14)

5. Adjustment and standard

① Supply power: ± 8 ± 0.5V

a. P3 - P2 + 8 ± 0.5V

b. P3 - P1 − 8 ± 0.5V

② Temperature setting: No. 1 bath

(Example: To set the solution temperature to 33.0℃)

a. Press the SET button continuously for more than 2 seconds.

b. HIGH SET (50℃) is displayed. Press the DOWN button to set the temperature to 33.3℃.

c. Press the SET button. LOW SET (−20℃) is displayed.

d. Set the temperature to 33.0℃ with the UP button and press the SET button.

(If the solution temperature is below 33.0℃, ▼ mark is displayed on the LCD panel.)

e. Pour hot water into No. 1 bath to make the temperature over 33.3℃.

f. The red LED (WARNING) lights up if functioning normally. ( ▲ mark is displayed on the LCD panel.)

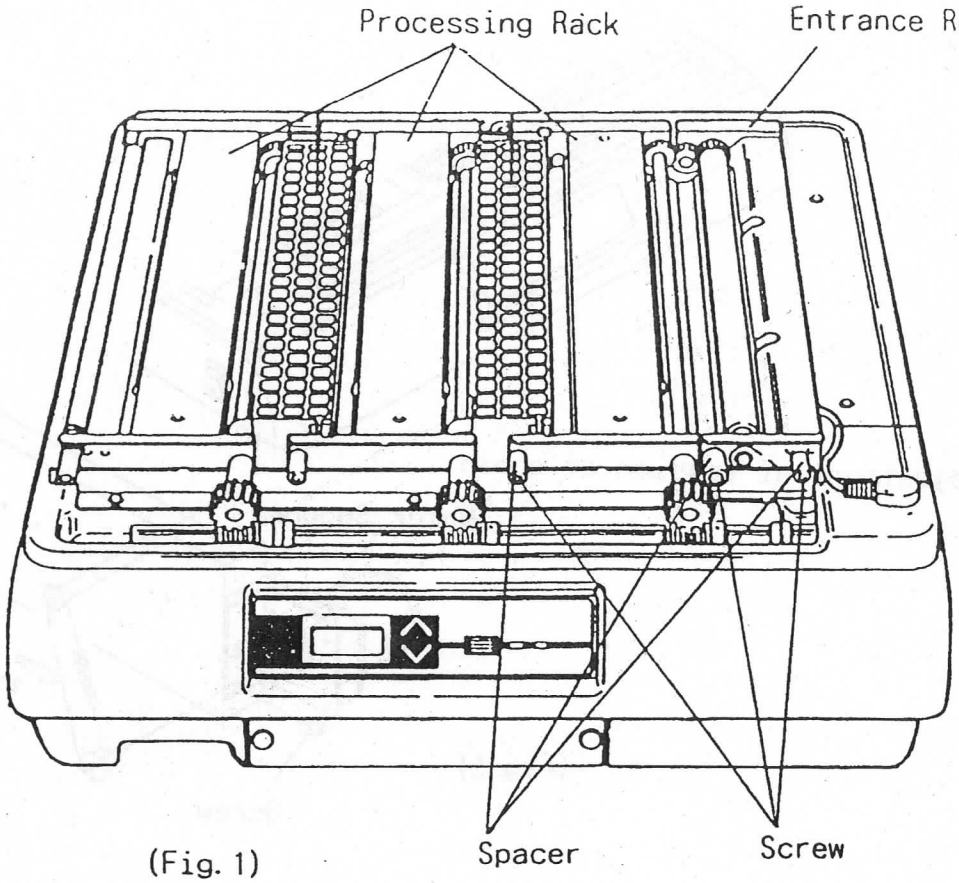
g. When the temperature setting can not be successfully completed, press the reset button and repeat the setting procedure from the step "a".

* To confirm whether or not the temperature setting for No. 1 bath has been successfully completed.

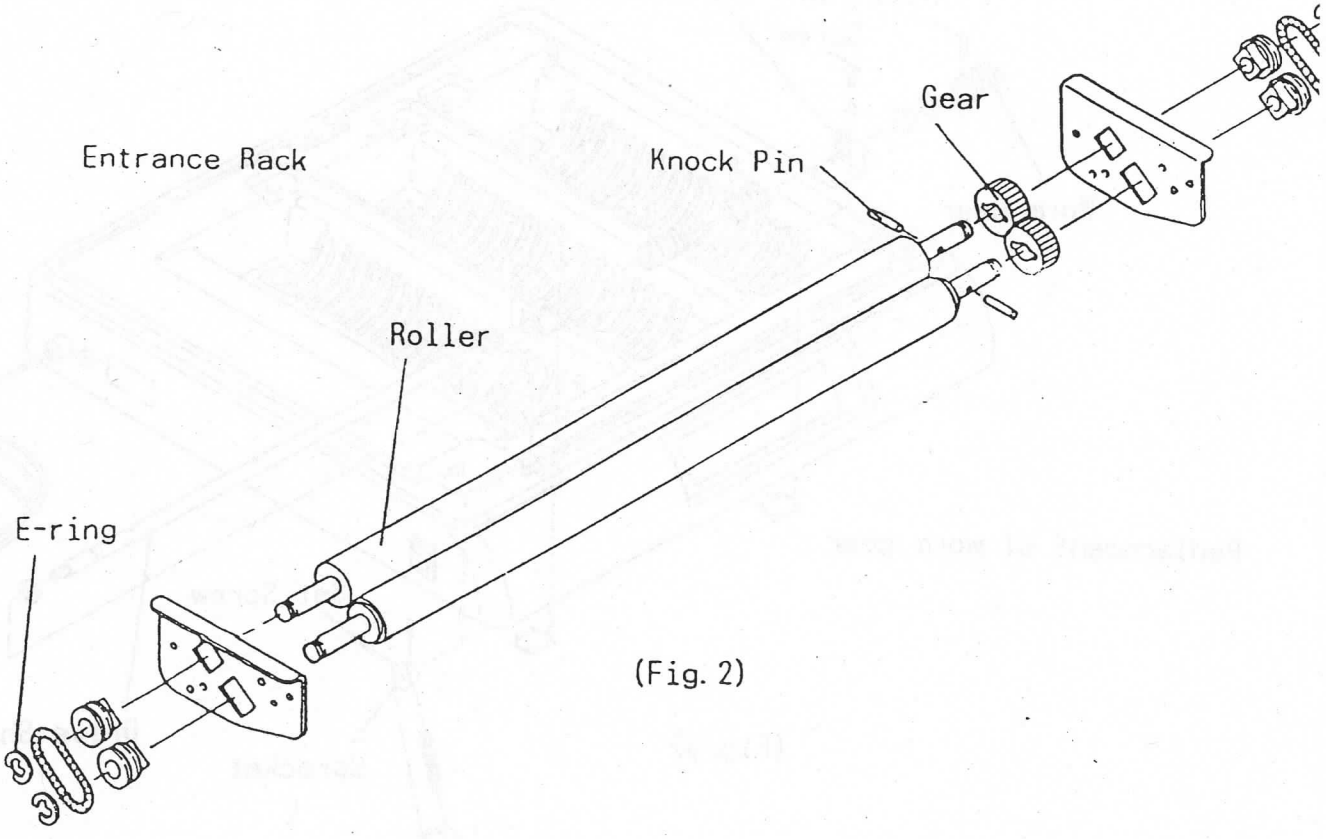
Pay attention to the small letters displayed at the lower part of LCD panel.

THERMOMETER TEMP. CONTROLLER II POINT

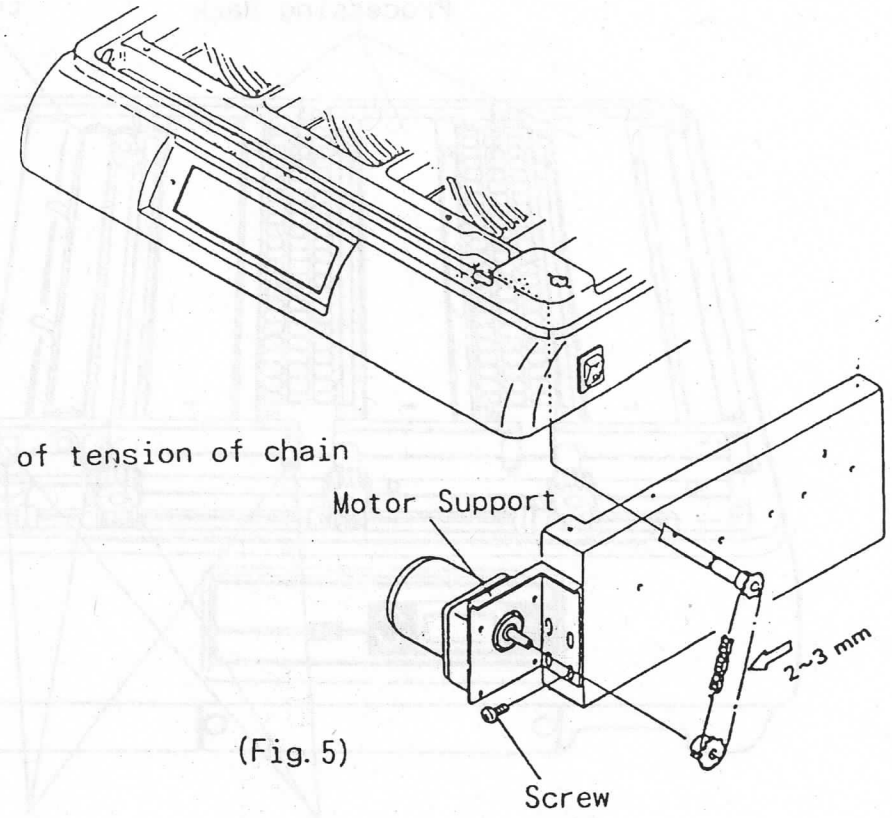
The part marked ≈≈≈≈ must always indicate "II". If "I" is displayed, reset and display the temperature once again.


Processing Rack
Entrance Rack
Spacer
Screw

(Fig. 1)

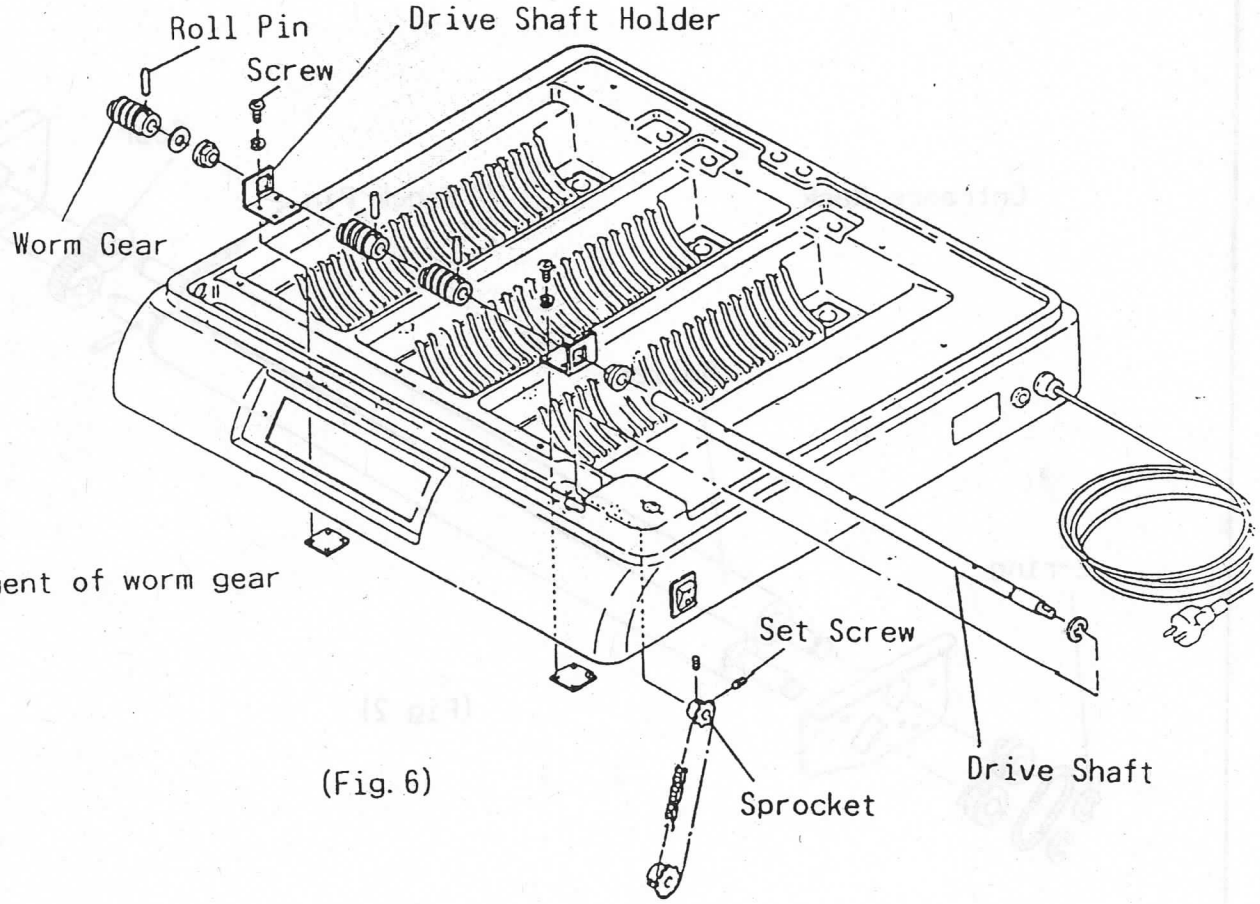

Gear
Entrance Rack
Knock Pin
Roller
E-ring

(Fig. 2)




Adjustment of tension of chain

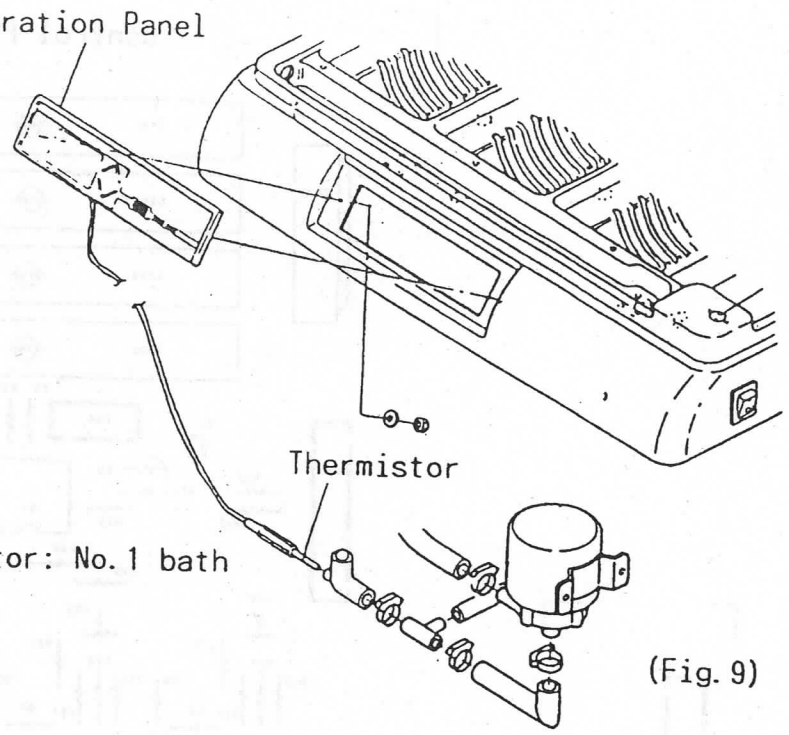
(Fig. 5)




Replacement of worm gear

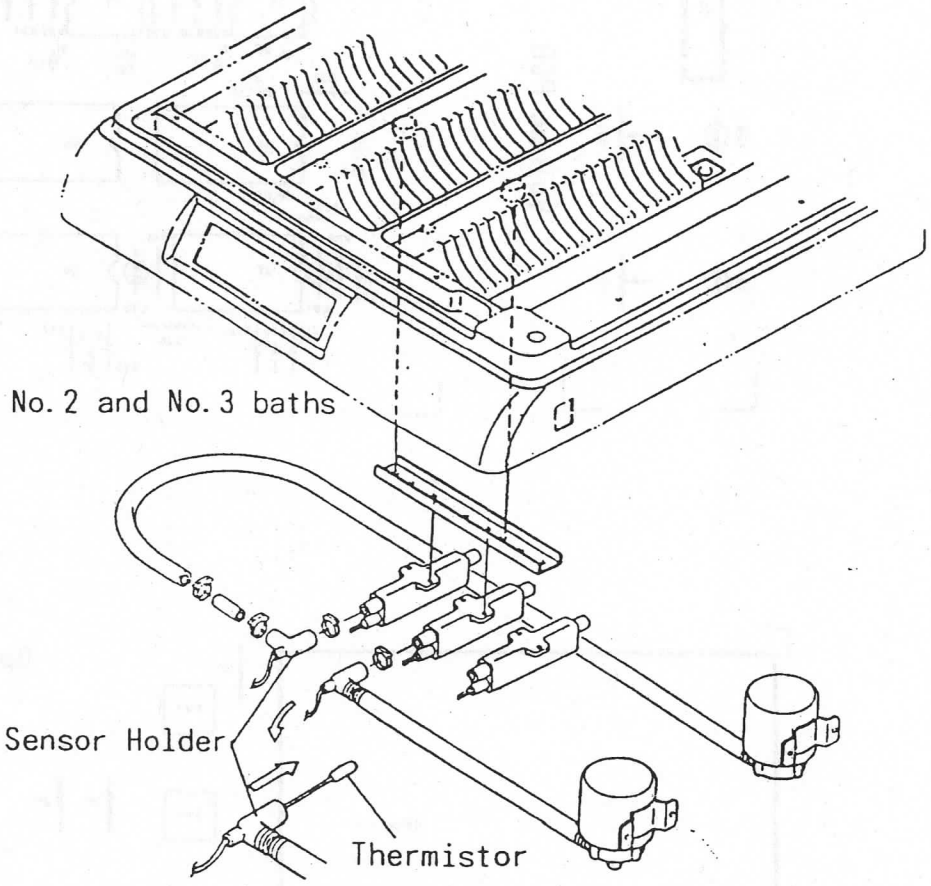
(Fig. 6)

Replacement of thermistor: No. 1 bath

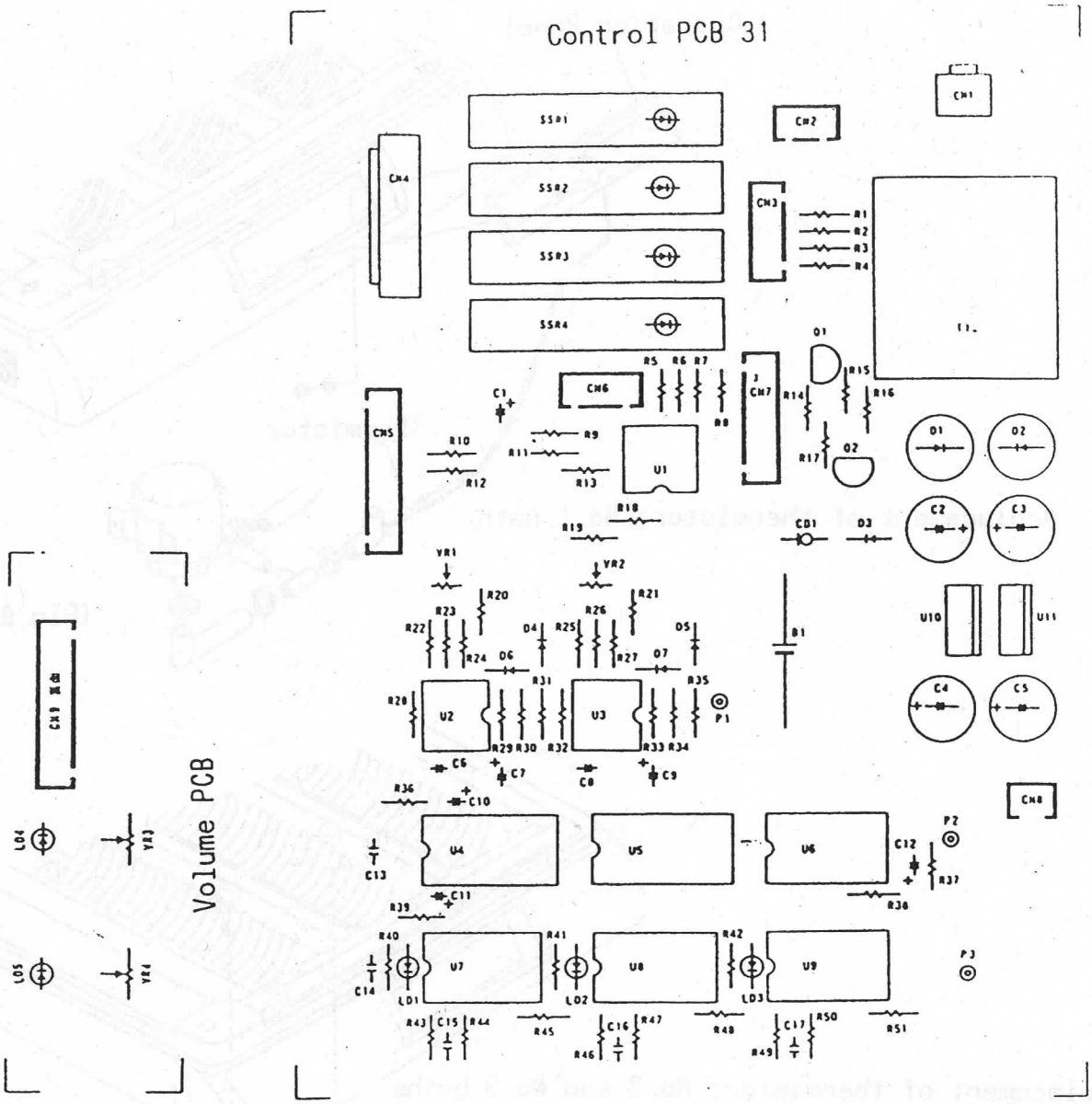


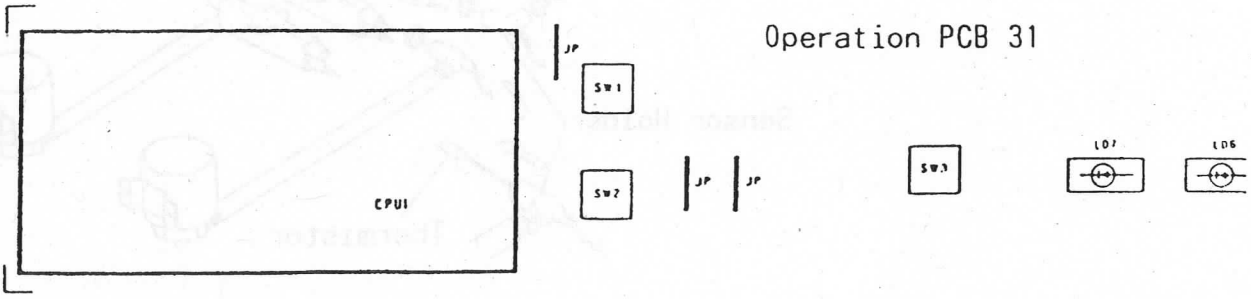

(Fig. 9)

Replacement of thermistor: No. 2 and No. 3 baths



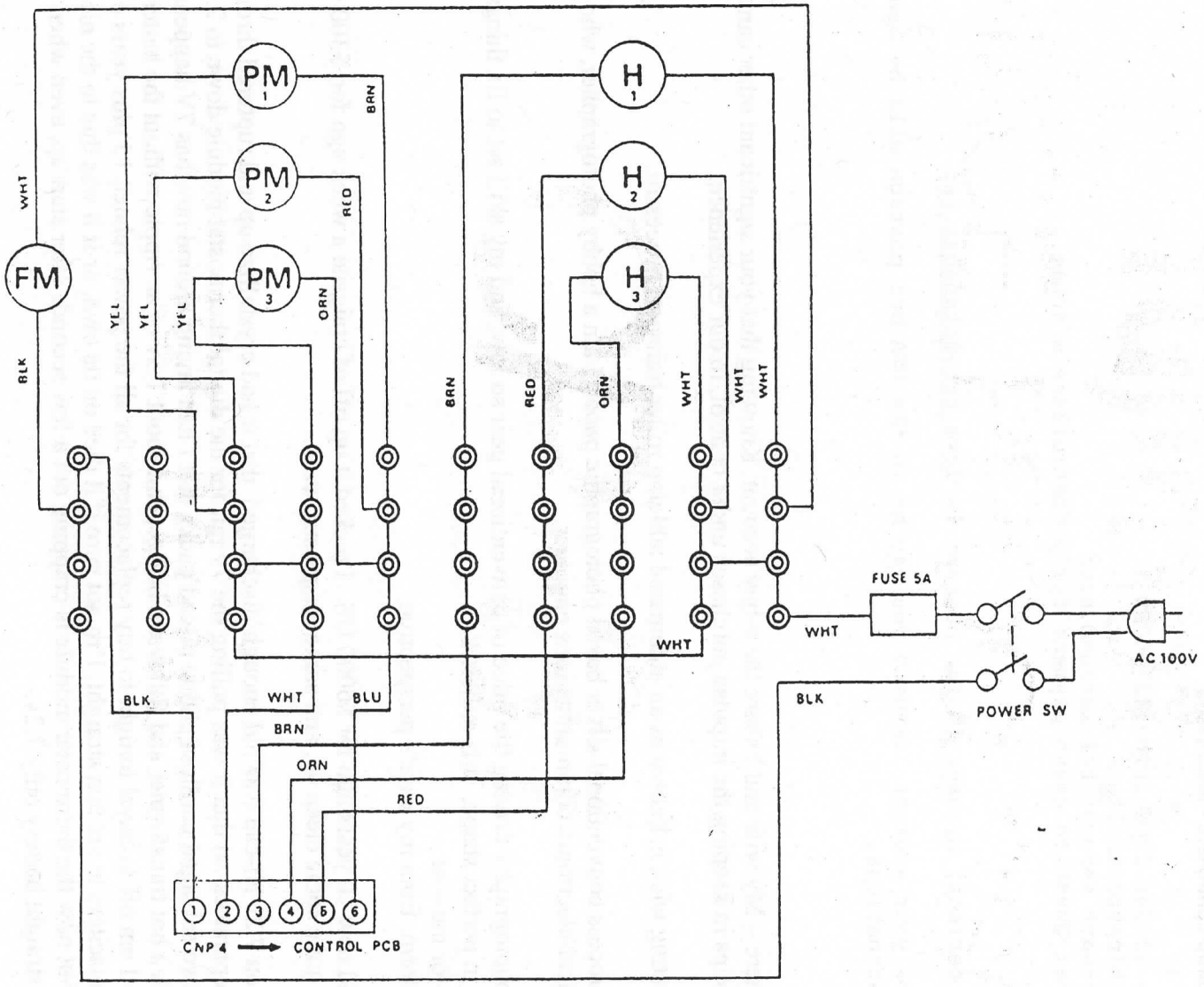

(Fig. 10)




Parts Location Diagram: Control PCB, Operation PCB

(Fig. 12)




# CP-31

Terminal Connection Diagram

(Fig. 14)

# Fujimoto Maintenance Guide

To preserve optimum print quality using Fujimoto processors, a regular maintenance schedule should be implemented. Following is our suggested routine.

## Daily Maintenance:

Turn the CP51 processor off. Slowly lift the second rack straight up if you own a CP51, or the third rack if you own a CP31. Raise it until it is completely out of the solution. Tip one end higher so the excess solution drips off the opposite end. When the dripping stops rinse the rack with warm running water. Be sure to turn the main gear while rinsing. Turning the gear will allow you to thoroughly rinse all the rollers.

Remove the subsequent racks and rinse as described above. Be very careful not to contaminate one solution with the other. After rinsing all racks, wipe the processor down with a damp cloth.

If a Wash/Dry Module is in use, turn the water off. Remove the wash racks. If water was not running for at least 10 minutes since the last print, rinse the racks in running water. Hang the wash racks up to dry.

*Always turn off the water before removing the wash racks. This prevents the water level in the wash tanks from increasing.

If a Stabilize/Dry Module is in use, carefully remove the racks and rinse as described above.

For the Wash/Dry Module and the Stabilize/Dry Module, remove the dryer rack and hang it up.

If you own floating lids for your processor, place them on the chemical baths now. Replace the covers on all modules, then open the in-feed lid on the Main Body (this reduces condensation).

Rack Storage: If the processor is used daily, we recommend the racks for any chemical module be allowed to soak in water overnight. This procedure allows a thorough rinsing.

**Note:** Never wash the entrance rack with water because damage to the circuit board could occur. Simply wipe down the rollers with a cloth. Always keep the entrance rack dry.

Wipe up any dripped chemistry from the processor, table and floor using damp and/or dry paper towels.

Check the chemical overflow containers and empty if needed.

If the chemistry in the replenisher uptake containers is exposed to air, you may wish to put the chemistry in a container better suited to chemical storage. In this case, the replenisher containers should be rinsed. Leave a small amount of water in the bottom of the replenisher container. Reinsert the uptake tubes into the replenisher containers for the night.

## Weekly Maintenance:

When the Fujimoto processor will not be in use for several days, such as over the weekend, the following steps should be taken.

After completing the daily maintenance, drain all tanks. If the chemistry will be used again it is best to store it in air-tight containers, with floating lids to minimize oxidation. Wash tanks should be drained to prevent the formation of algae.

Fill the replenishment uptake bottles with water.

Lift the entrance rack off the gear and lay it on the right so it will not turn once power is restored. Slip two sheets of 8 x 10 paper side-by-side into the entrance rack so the paper feed sensors will trigger the replenishment system.

Fill all the chemical tanks with water, less than 50 degrees C, until water is coming out the overflow hoses. Be sure there is plenty of room in the overflow containers.

Turn the machine on and allow it to run for 5 or 6 minutes. The purpose is to take up enough water to flush out the replenishment system. This precaution prevents small amounts of chemistry left in the system from crystallizing and damaging the unit.

Turn the unit off. Drain all the tanks. Put fresh water in the replenishment uptake bottles and repeat the cleaning process outlined above.

**Note:** When storing the processor be sure the replenishment uptake lines are primed with water. This step will prevent the check valves on the replenishment pumps from drying out.

**Note:** If a Stabilize/Dry module is in use, replace the stabilizer weekly regardless of use. Before pouring fresh chemistry into the tank, remove the rack, wash it thoroughly and wash the racks.

## Monthly Maintenance:

In addition to the maintenance described above the following steps should be taken at least once a month:

Use a non-abrasive scrubbing pad to scrub all the transport rack rollers. Be sure the scrubbing pad does not contain any soap. Dishwashing pads that are safe for use with Teflon pans are best. Rinse racks and inspect them closely. Use a small tooth brush for hard to reach places. With use it is normal for some or all the rollers to become discolored. As long as the rollers are kept clean, this discoloration has no effect on performance.

After draining the chemistry and flushing the tanks and replenishment system one time, drain the rinse water and scrub the tanks with the scrubbing pad. Pay special attention to the area around the top of the tank where the chemistry meets the air. Use paper towels to mop up any loose particles.

Refill the tanks and run for 5 or 10 minutes. Drain the unit again and clean the processor using Processor Clean II. Complete directions are on the package.

Replace all filters. Use damp towels to wipe off the polished surfaces and paper guide on the in-feed lid. Dry the unit completely.

Inspect and clean all parts of the processor that need attention. Be sure to check between modules.

Inspect the dryer rack rollers and wipe down with a damp sponge if needed. Apply silicone grease to the worm gears in the dryer module. This lubrication will prevent the gears from drying out.

Pull the filter drawer out of the bottom of the dryer module and wash the filter under warm running water. Pat the filter dry with clean paper towels and reinstall.

If the equipment is used heavily, you may want perform the monthly cleaning routine more often.

Attention to these procedures will prolong the life of the machine and keep service visits to a minimum