

MODEL: HM-101 and HM-101A

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INTRODUCTION

We are specializing in the manufacture of electric belt cutting machines. We use micro computer to control step motor and motor reducer. The operation of the machine is very easy, and the cutting length is very precise.

Our machine has very high feeding speed. The highest feeding speed can reach to 80,000 m/m per minute. The length setting is by numerical display, easy to read. The shortest length setting is 1 m/m, and the longest length setting is 99,999 m/m.

The quantity setting is also by numerical display for the convenience of reading. The machine is with jog movement and cutting switch for the convenience of operation and for the precision of material cutting.

The machine is with urilic roller which has longer life than the normal roller, and the material is not easy to drop under the urilic roller.

Our machine is suitable for the industry of leather, plastic, shoe-making, electronic, textile and handcraft, etc..

1. THE MEASUREMENT OF THE MACHINE

The dimensions of the machine

length = 660 m/m

width = 650 m/m

height = 1,110 m/m

Packing dimensions

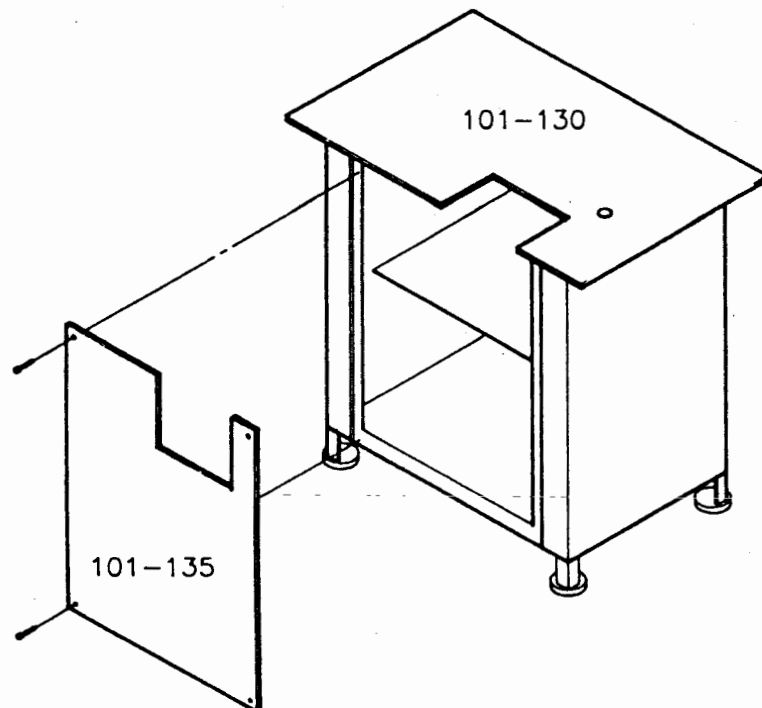
80 cm x 65 cm x 123 cm

Net Weight : about 117 kgs

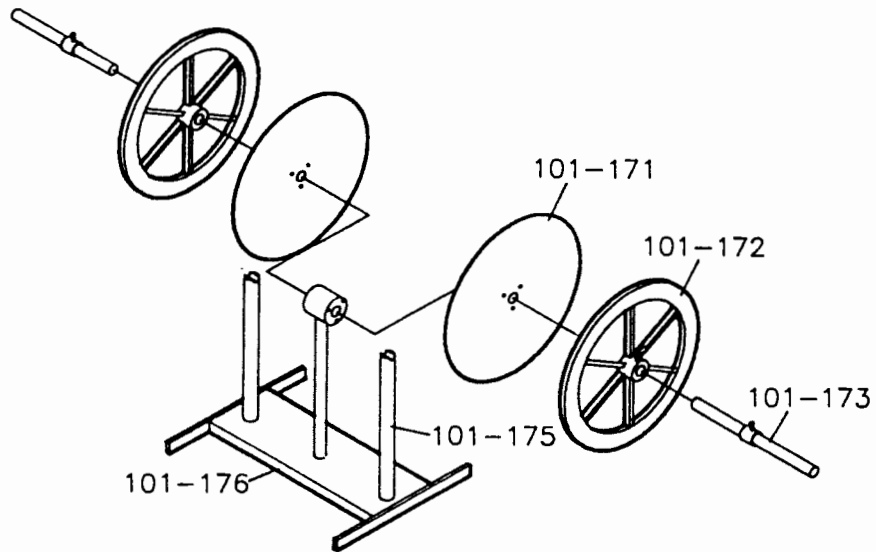
Gross Weight: about 170 kgs

2. THE STEPS OF ASSEMBLING THE MACHINE

- (1) Open the cover of the rear box as the figure shown.
- (2) Take all the articles out of the box.
- (3) Close the cover of the rear box.
- (4) Clean the rust-preventative oil on the machine.



(5) Assemble the feed rack as the figure shown.

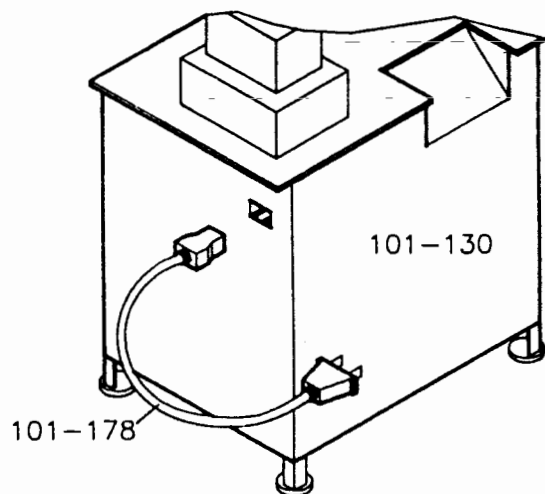


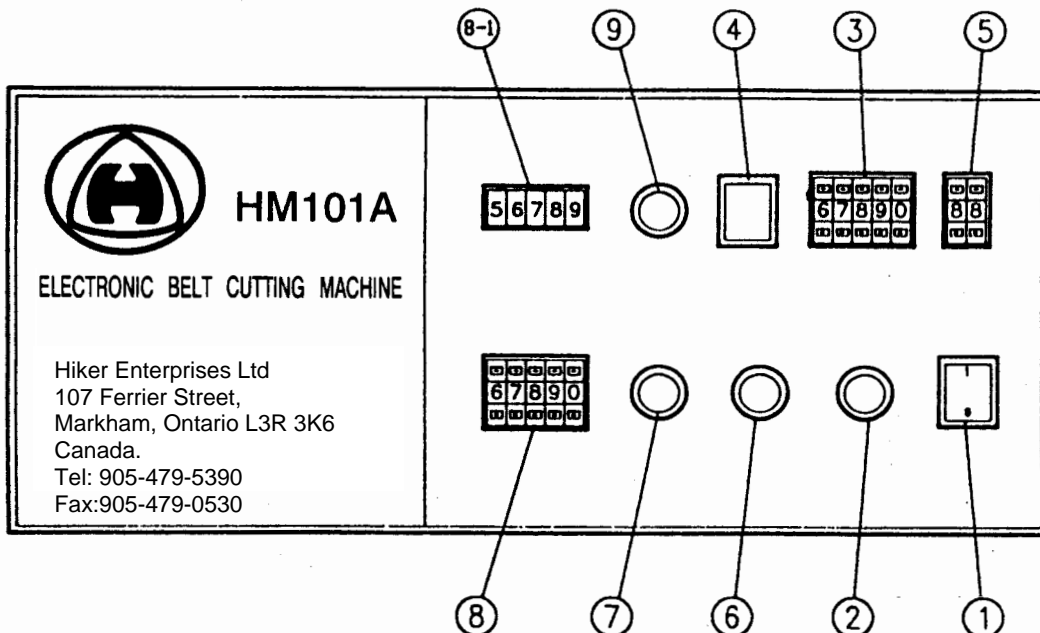
(6) Plug in the power as the figure shown.

Please check if the voltage is same as the indication on the machine.

(7) Running test

(8) After machine is in normal condition under all kinds of operation, you can start to use this machine for actual cutting.





3. THE OPERATIONAL PANEL

(1) Main Switch

Push 1 to switch on the power.
The lamp will be lighted.
Push 0 to switch off the power.
The lamp will be extinguished.



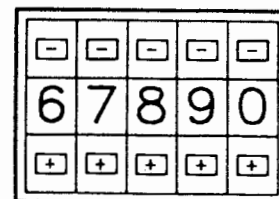
(2) Jog Switch

Push the jog switch, the rollers will run slowly. Release the Jog Switch, the rollers will stop running.



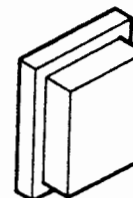
(3) Length Setting Buttons

Push the top buttons to increase the length. Push the bottom buttons to reduce the length.



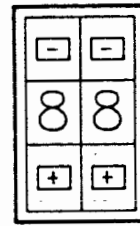
(4) Start Button

Push this button, the machine will start to work.



(5) Speed Setting Buttons

According to the gravity of speed, set your desire feed speeds. 01 is the lowest speed, and 99 is the fastest speed. fastest speed.



(6) Stop Button

Push this button, the cutter will return to its original position, then the machine will stop.



(7) Cutter Switch

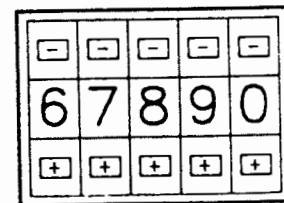
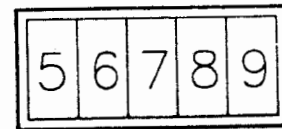
Push this button, the cutter will cut once. Keep on pushing the button, the cutter will keep on cutting.



(8) & (8-1)

Quantity Setting Buttons

Set your desire quantity. When the cutting quantity reaches to the setting quantity, the machine will stop cutting automatically. The setting quantity should not be less than 1.



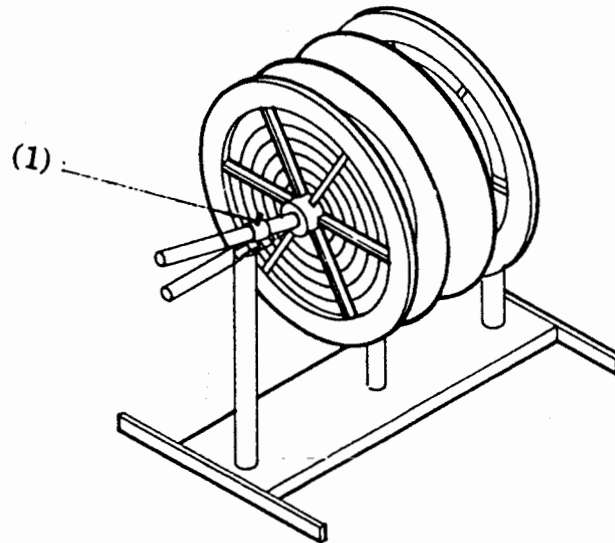
(9) Reset Button

Push this button, the quantity setting figures will all return to zero.

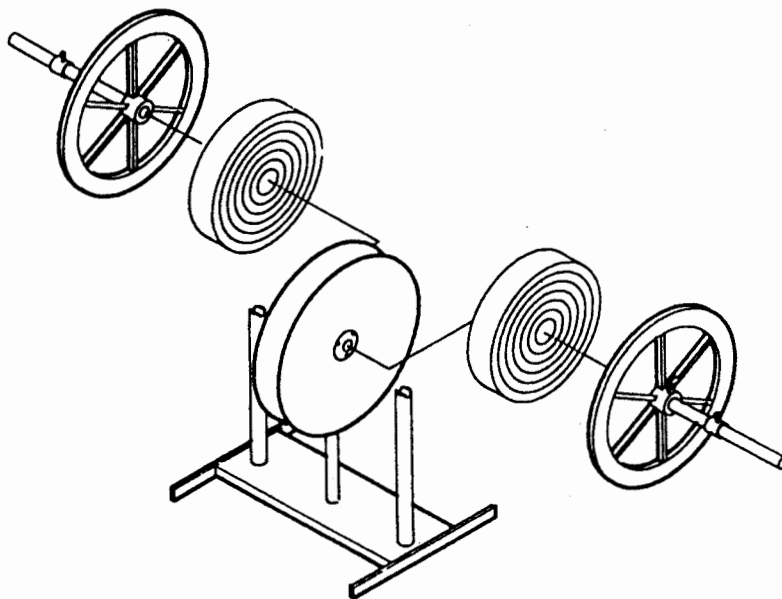


4. THE LOADING OF THE MATERIAL

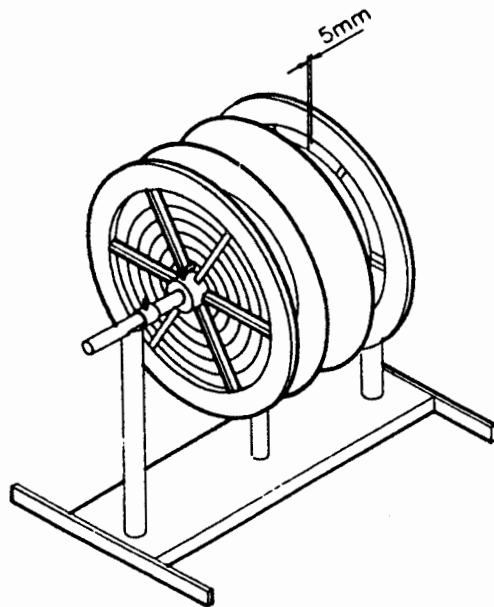
- (1) Loosen the bolt (1) as the figure shown.
Slope the left aluminum disk and take it out.



- (2) Insert the shaft in the center of the material, as the figure shown.

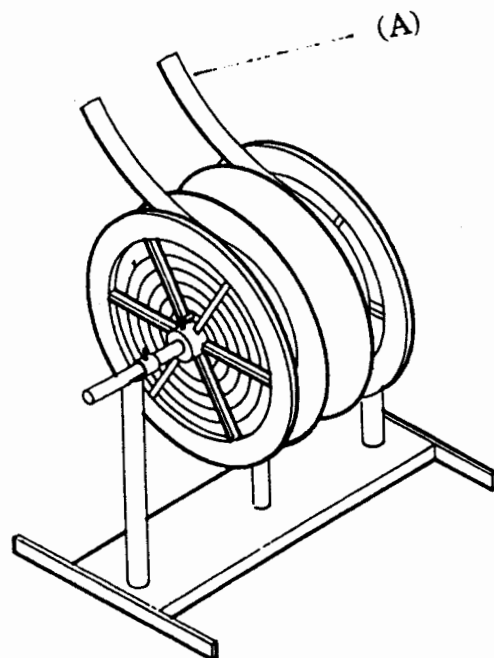


- (3) Put the material on the material rack. Push the aluminum disk inward, then move the disk backward a little bit to reduce the friction with the material.

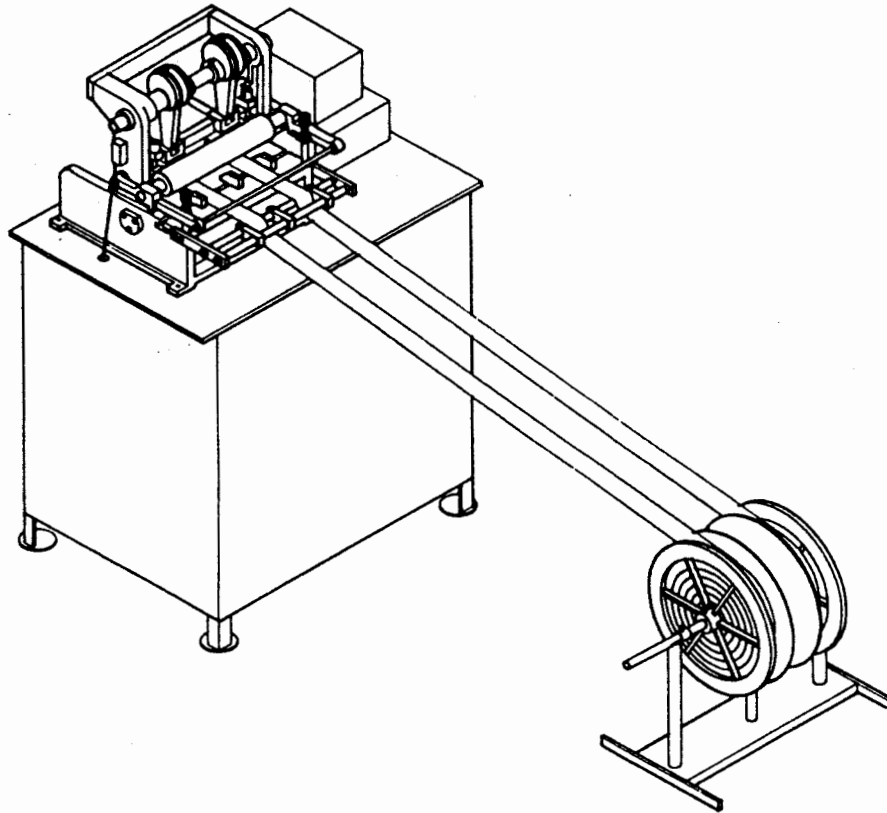


- (4) Pull out the belt ends as the figure (A) shown.

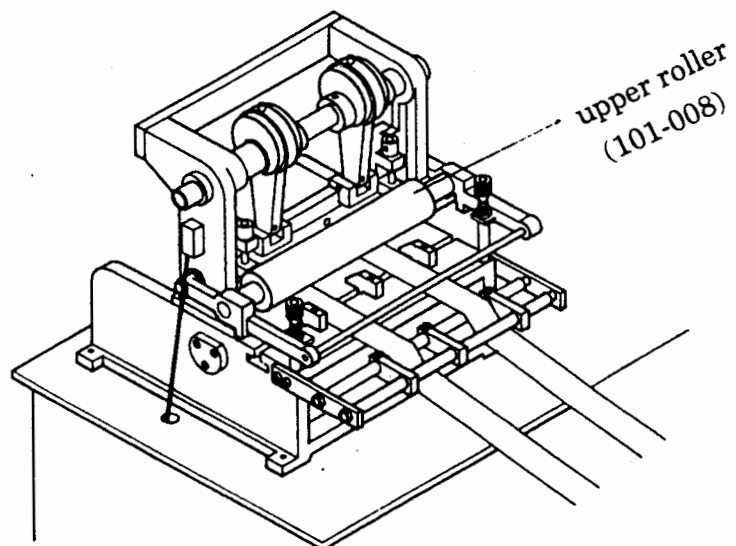
- (5) The procedure of the right feed wheel is shown as the figure. The left one is same.



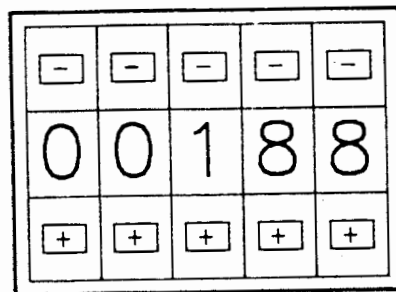
(6) Pull the belt ends on the machine desk as the figure shown.



(7) Insert the belt ends between the upper roller and the lower roller. Then, put down the upper roller as the figure shown.

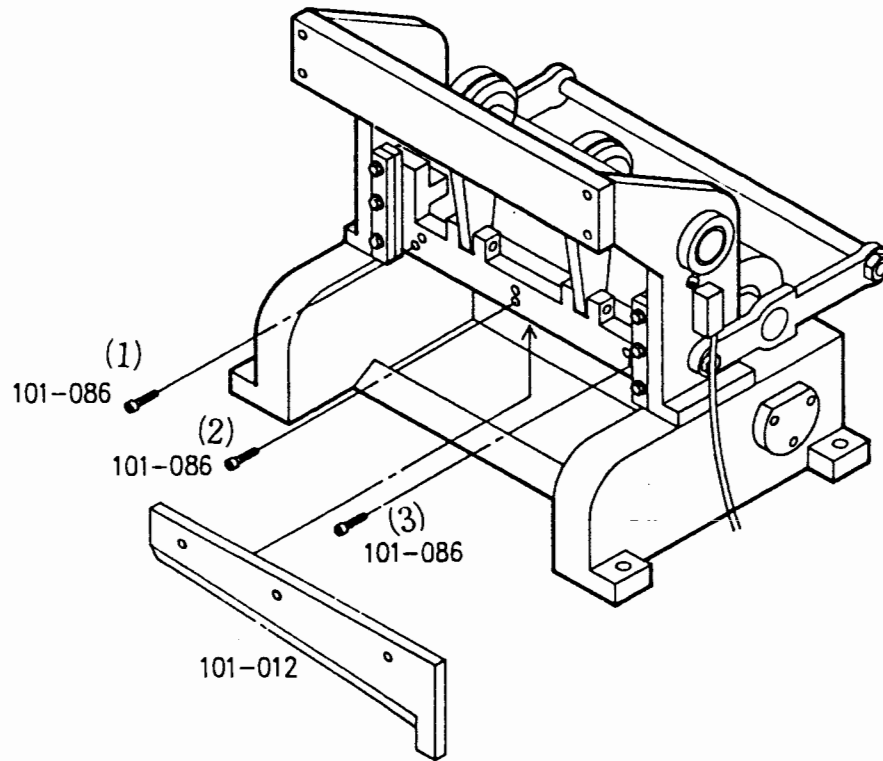


- (8) Switch on the power. Push the job button, and let the material stretch to the rear of the cutting desk. Then, push the cutter button to cut off the material neatly.
- (9) Setting the length (unit m/m)
For an example, if the desire length is 188 m/m, the figure will be 00188 m/m as the figure shown.
- (10) Setting the quantity on the quantity counter
- (11) Push the Start Button, the cutting will begin.
- (12) The cutting will stop automatically when the cutting quantity reaches to the setting quantity. If you want to cut again, you have to push Reset Button again.
If you want to terminate the cutting, just push Stop Button.

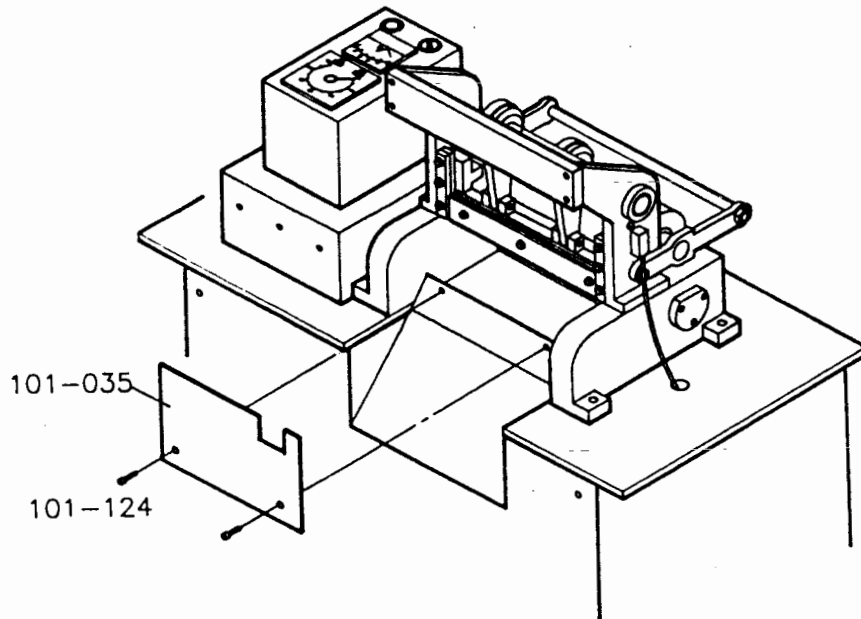


5. Change the cold cutter for an electric heat cutter

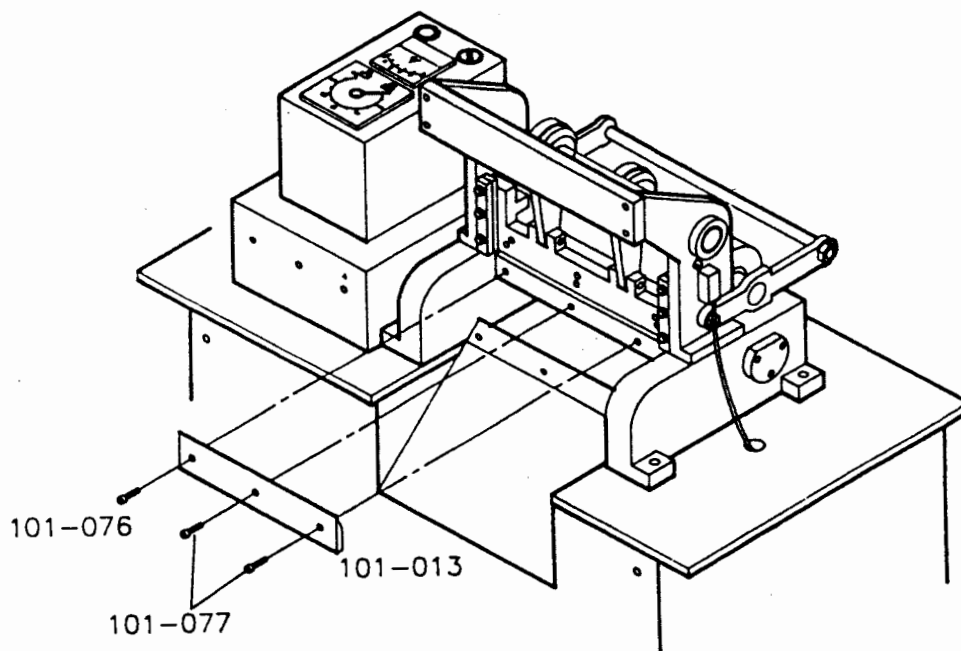
- (1) Loosen the bolts (1) (2) (3) and their nuts as the figure shown. Remove the cutter, and put it in the tool box.



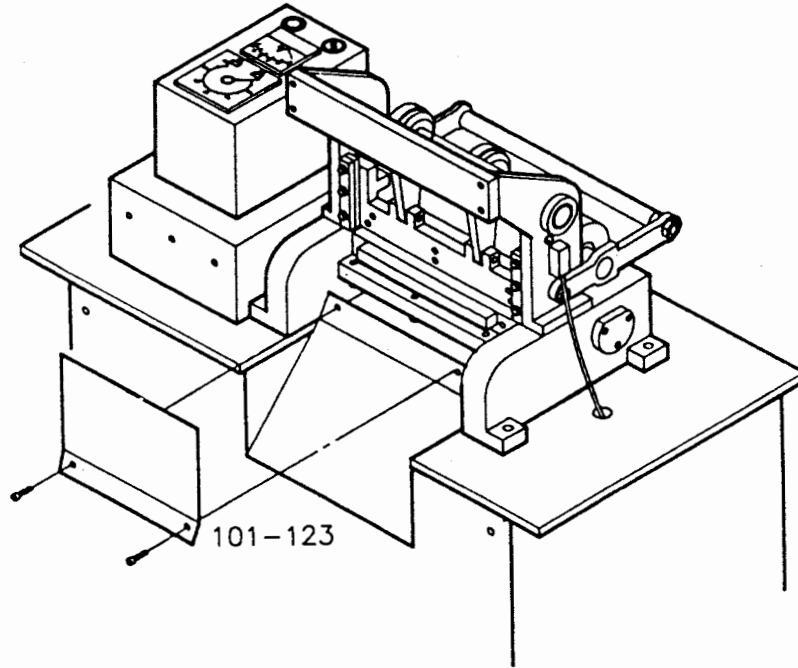
(2) Loosen the screws of the material loading board, and put this board in the tool box as the figure shown.



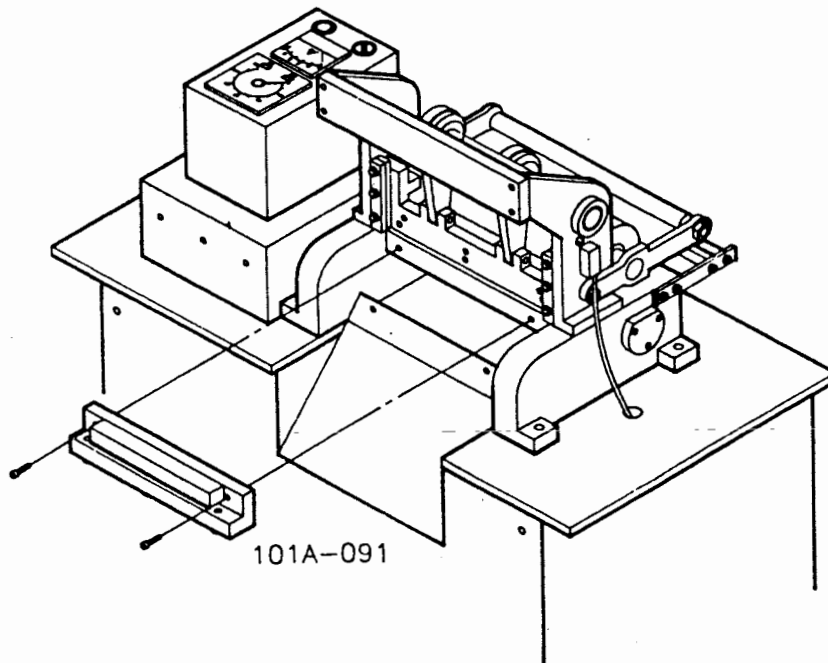
(3) Loosen the screw of the lower cutter, and remove this lower cutter as the figure shown.

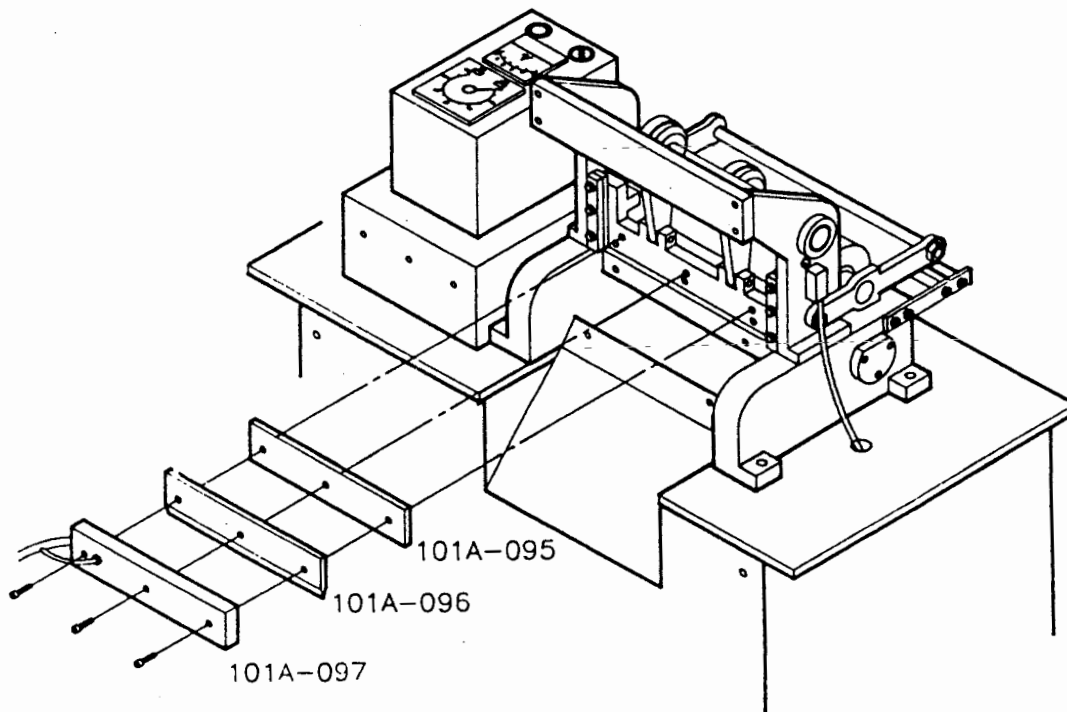


(5) Install the material collecting board as the figure shown.



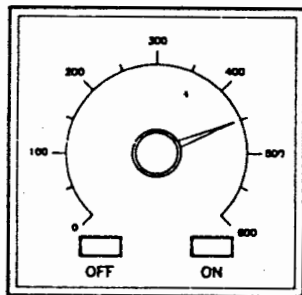
(4) Install the cutter gasket as the figure shown.



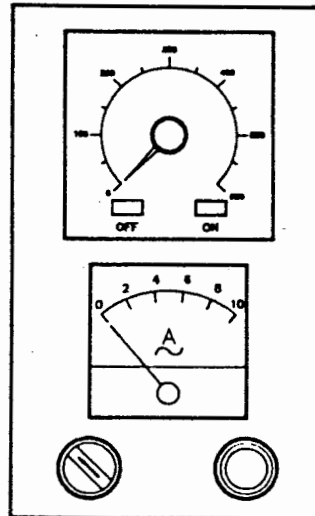


(6) Install Electric Heat Bronze Seat (101A-097),
Cutter (101A-096) and Heat Isolating Plate (101A-095)
as the figure shown.

- (7) Turn the Temp Control Selecti Switch clockwise to the ON position as the figure (A) shown.
- (8) Set the operating temperature according to the thickness of the material. Under normal condition, the temperature setting is at 450°C or so. See the Figure (B) shown.
- (9) When the temperature reaches the setting temperature, the Temp Control Selection Switch will return to OFF position. It means the machine is ready to work.



(B)

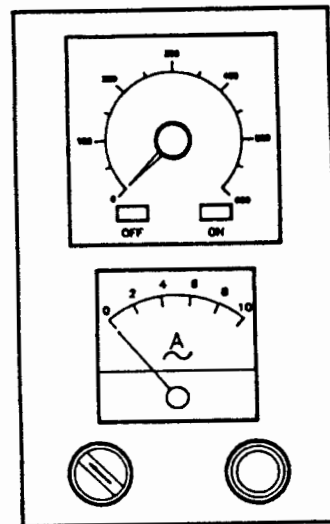


(A)

6. Change the electric heat cutter for a cold cutter

- (1) Turn off the power of the Temp Control Select Switch. (Turn in the counter-clockwise direction.) See Figure (A).

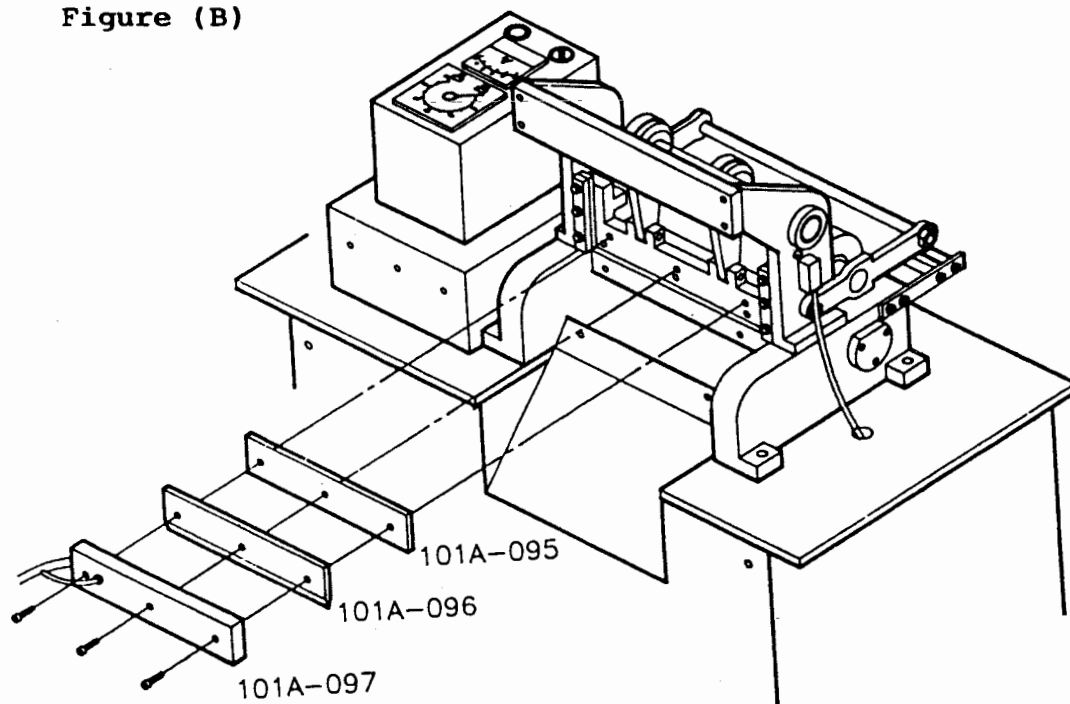
- (2) Remove the electric heat bronze seat, (101A-097), the electric heat cutter (101A-096) and the isolating plate (101A-095). Then, fix them on the left side of the machine with 3 screws as the figure (B) shown.



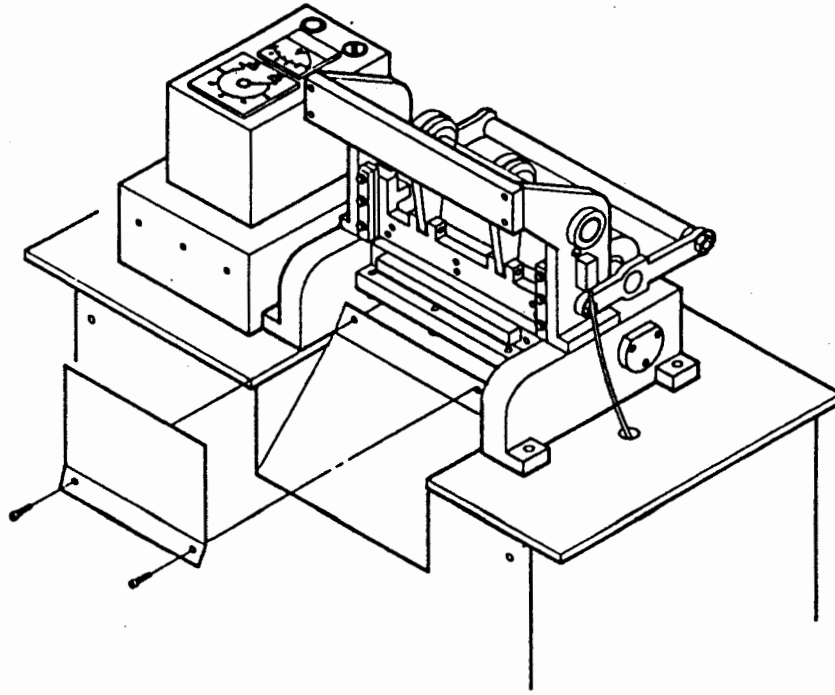
(A)

Caution: To remove the above parts, you have to wait till the parts are cooled.

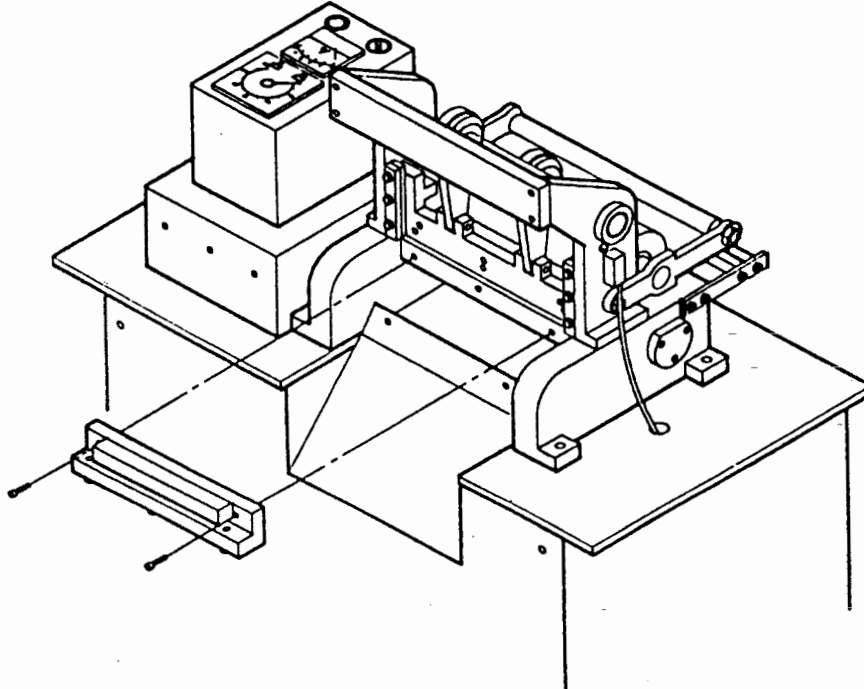
Figure (B)



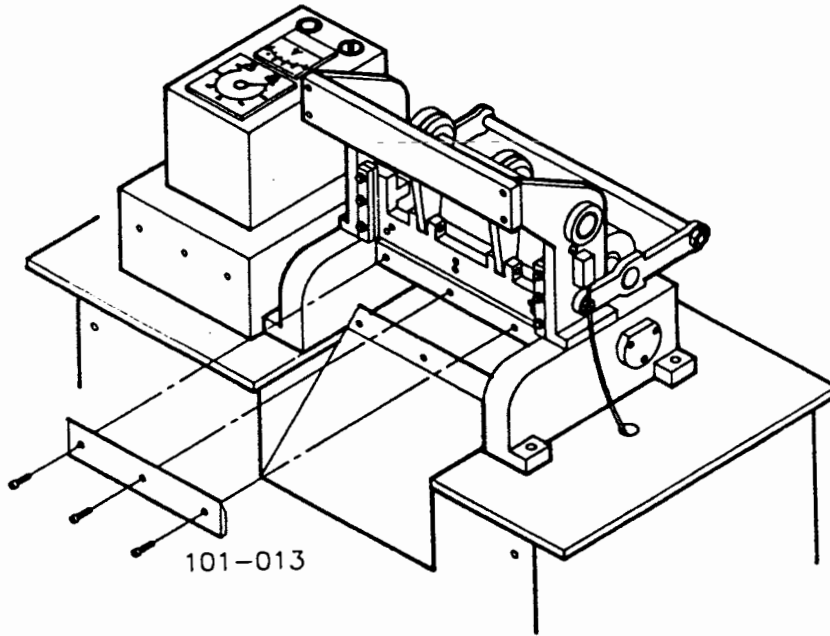
(3) Remove the material collecting plate, and put it in the tool box as figure shown.



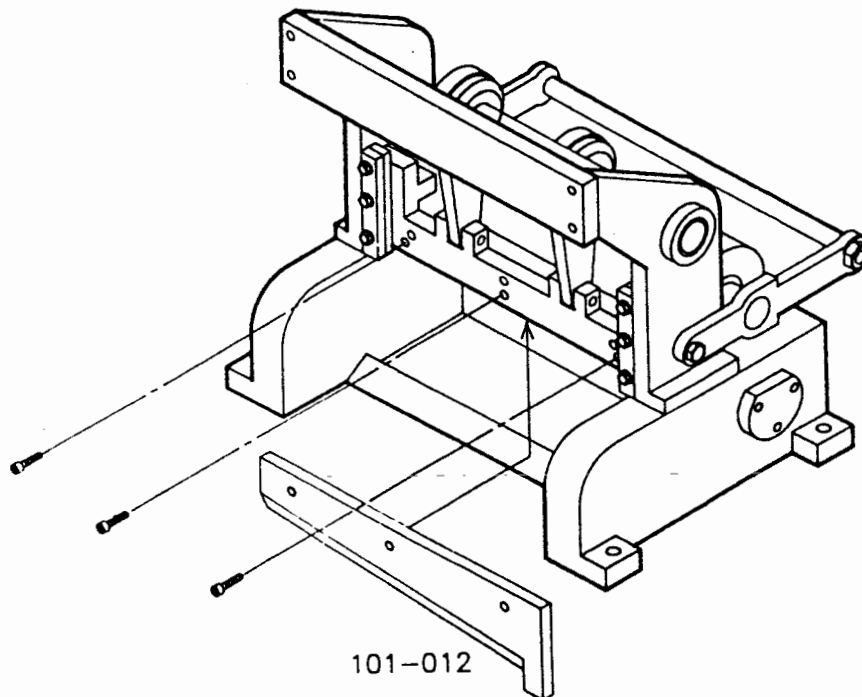
(4) Remove the cutter gasket, and put it in the tool box.



- (5) Install the lower cutter (101-013), and tighten the central holes with sala head screws.

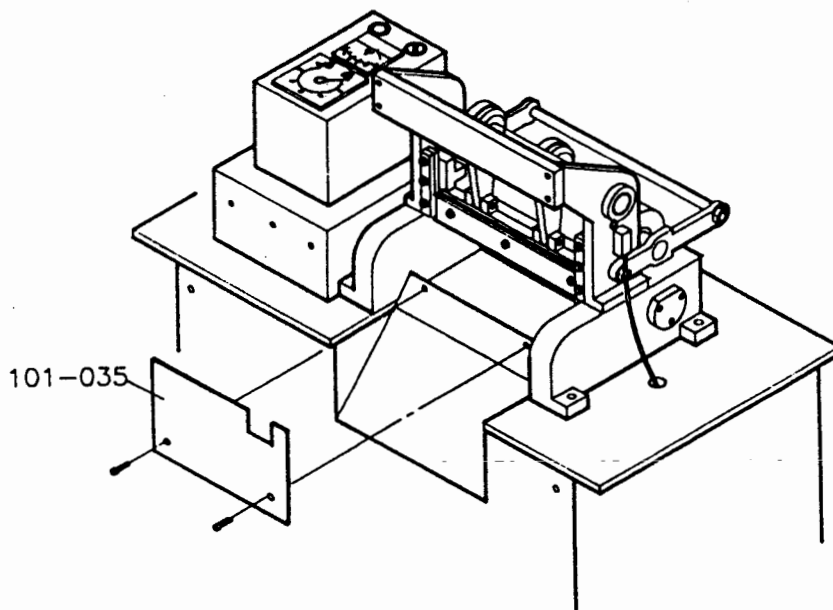


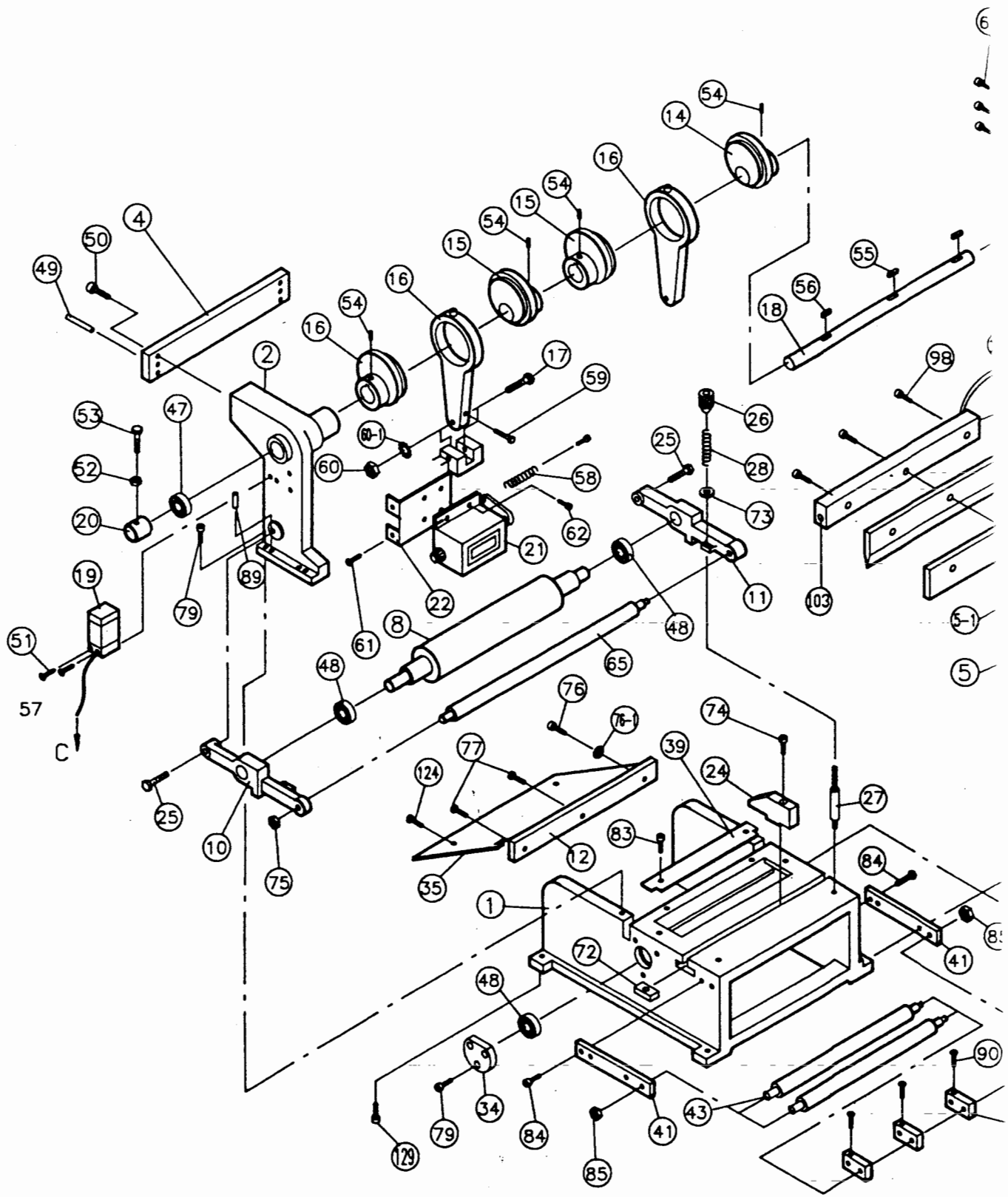
- (6) Install the upper cutter (101-012) as Figure shown.

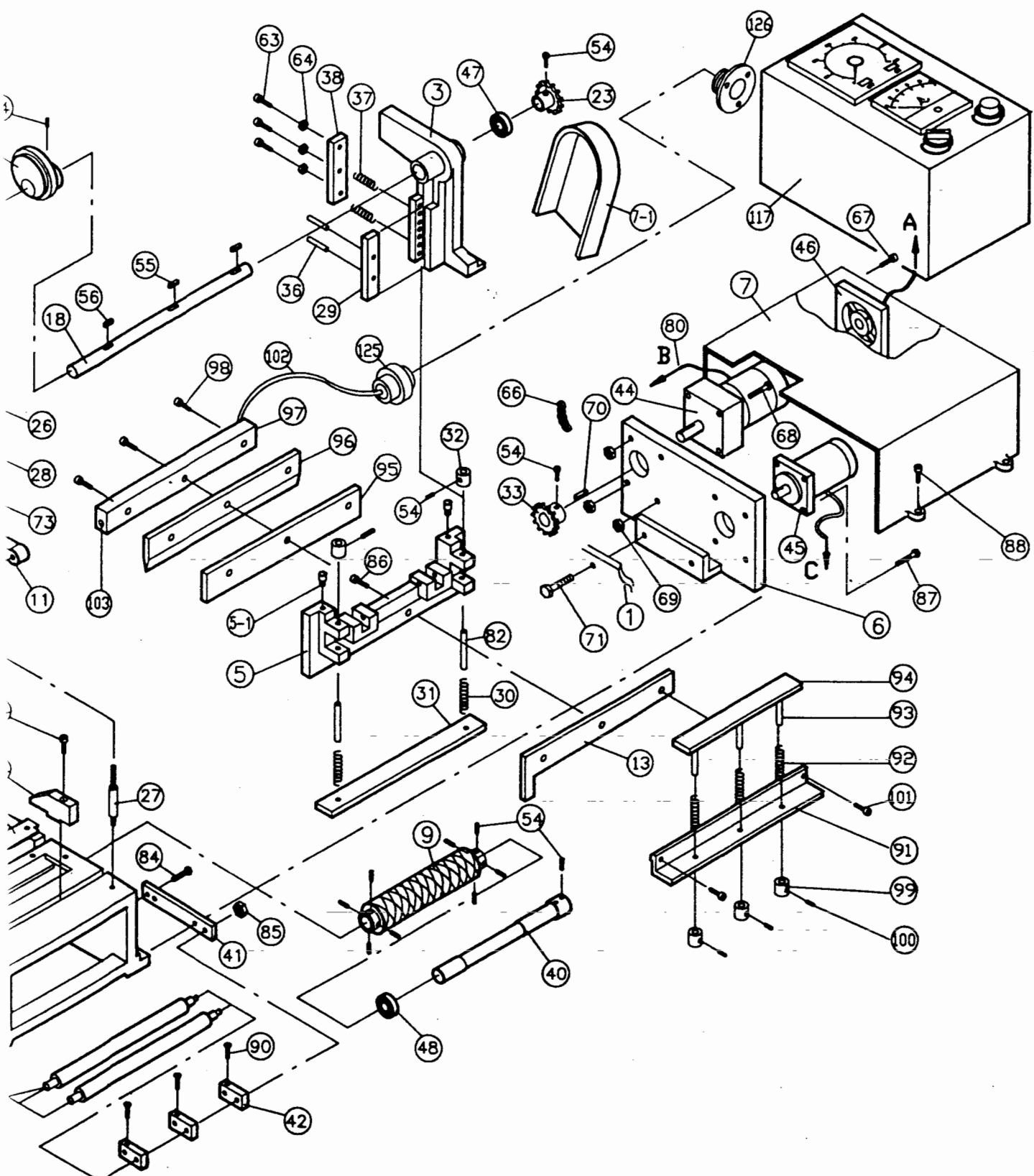


(7) Install the material collecting board (101-035) as Figure (A) shown.

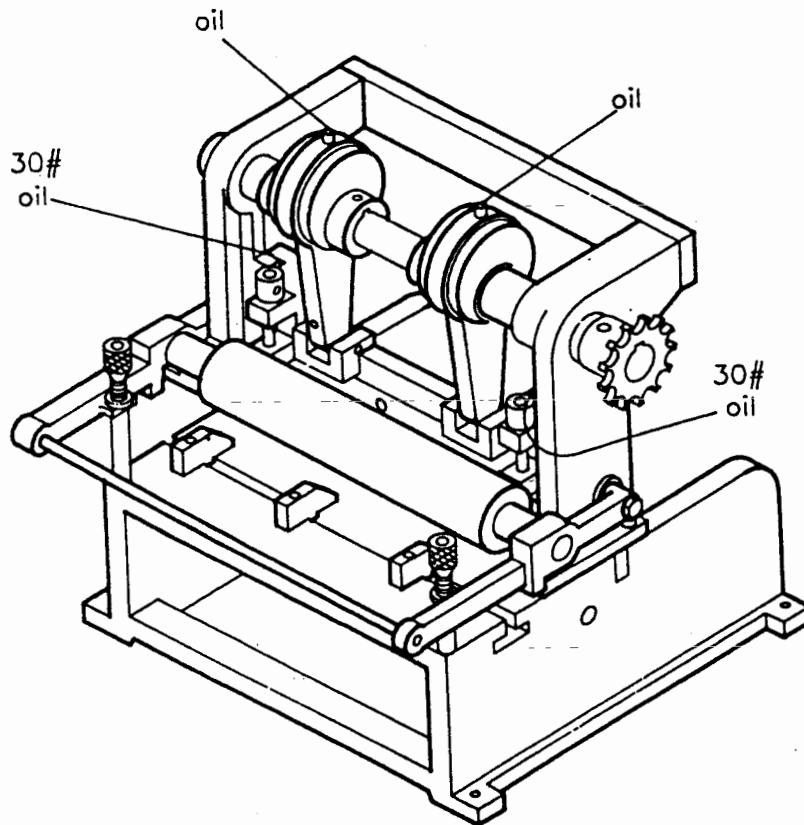
Figure (A)





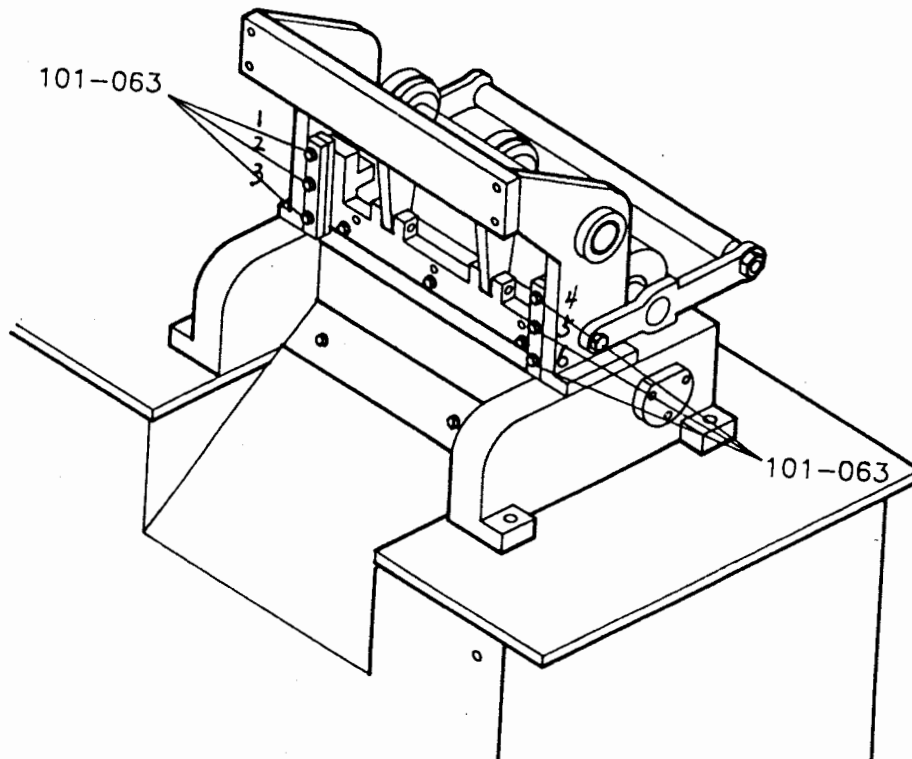


- (1) Before using the machine, fill the lubricant into the hole of crank shaft.
- (2) Lubricate both sides of the sliding seat with #30 lubricant.
- (3) Must switch off the power soon after operation is over.
- (4) After work, clean the machine, and spread some rust-preventative oil on the machine.



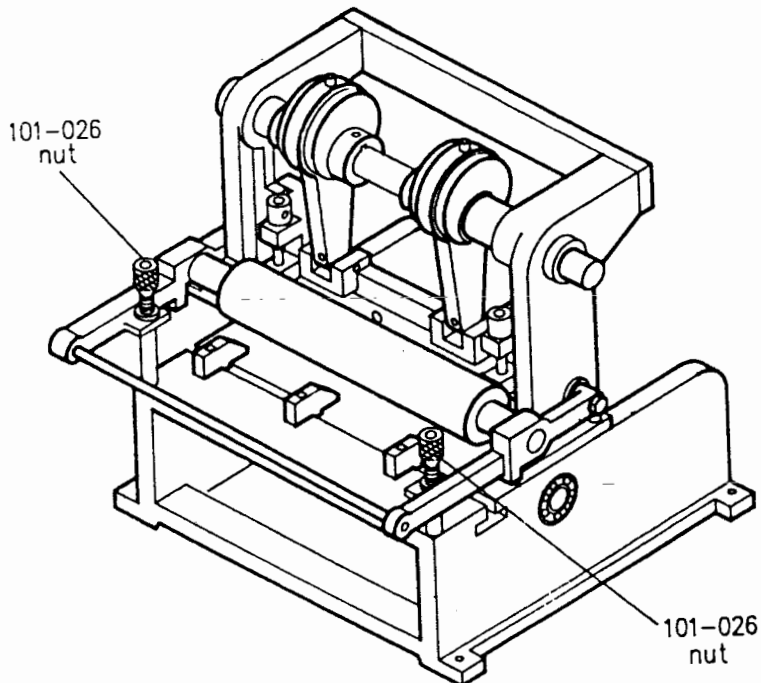
1. The Adjustment of the cutter

- (1) If the material cannot be cut off, please adjust the screws (101-063) of the sliding bar as the figure shown.
- (2) Loosen the nuts (2) and (4).
- (3) Loosen the nut (5).
- (4) Slightly turn the nut (5) clockwise
- (5) Tighten the nut (5).
- (6) Just lock the nut (2) and the nut (4). Do not lock them too tight.
- (7) Try the cutting.
- (8) If the cutting result is no good, please repeat the above process to adjust the cutter again.
- (9) The adjustment of the right cutter is same as the adjustment of the left cutter.



2. The Adjustment of the Cutting Length

When the cut length is different from the setting length, please adjust the two nuts (101-026) on both ends of the upper roller to strengthen the pressure of the sprins on both sides.



If the cut length is still shorter, the material must be flexible. Please increase the digital value on the Length Setting controller so as to reach the setting length.

3. THE STEPS OF SELF-TEST

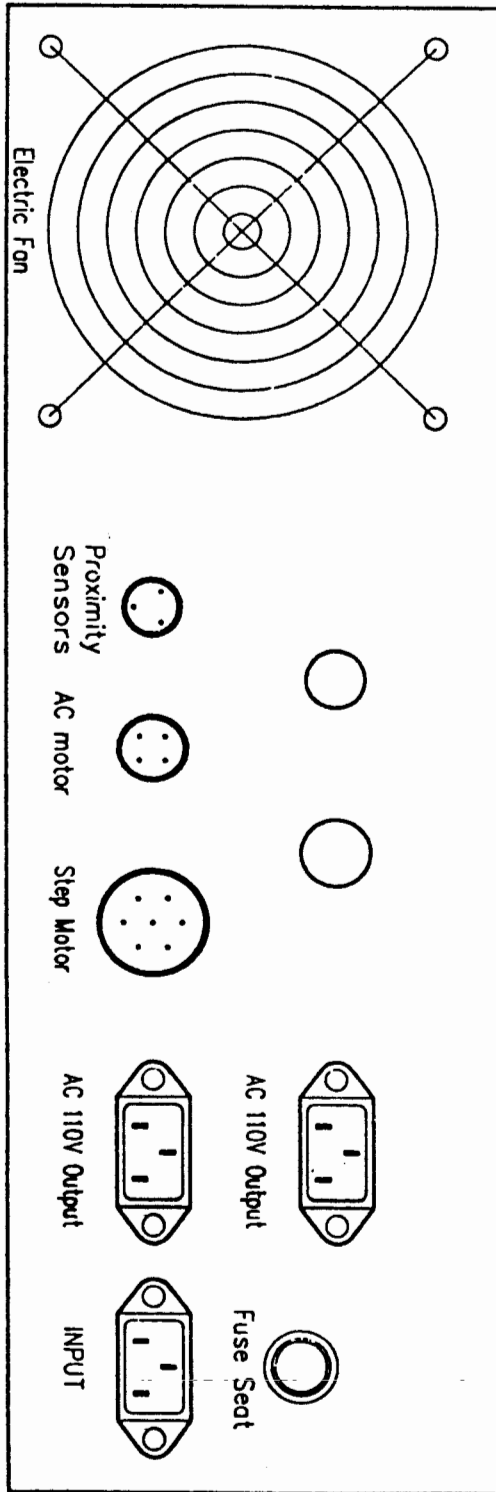
- (1) Press the Stop Button, and don't release it.
Then, press on the power button.
- (2) Release the Stop Button. The LCD display will appear "TEST". This is the self-test mode.
- (3) Push the Start Button for length test.
- (4) Push the Start Button again to restore the self-test mode.
- (5) Push the Reset Button for quantity test.
- (6) Push the Reset Button again to restore the self-test mode.
- (7) Push the Cutter Button for testing 99 cutting speeds.
- (8) Then, push the Start Button for testing the cutting condition normal or abnormal.
- (9) Push the Cutter Button again to restore the self-test mode.
- (10) Push the Jog Button, the LCD display will show the rpm value of the material feeding speed.
The speed is adjustable from outside.
- (11) Push the Start Button, the LCD display will show the high speed rpm value. The speed is adjustable from outside.

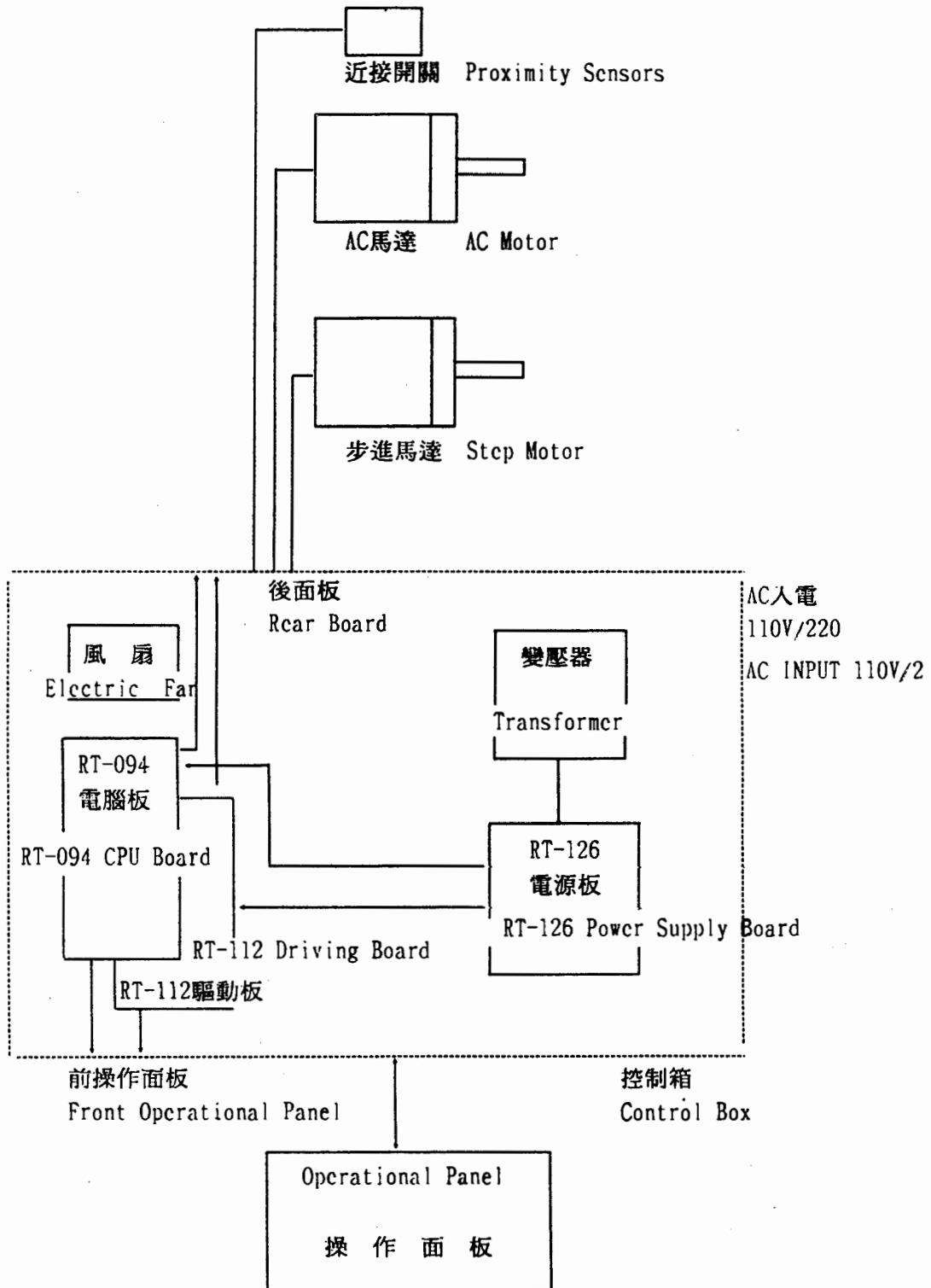
- (12) Push the Start Key again to restore the test mode of the material feed speed.
- (13) Push Jog Button to restore the self-test mode.
- (14) After completing the self-test, push Stop Button to restore the normal operation.

CHAPTER 4 OPERATIONAL PANEL AND FUNCTIONS

- A: Top view of HM-101 control box
- B: Operational Panel of HM-101
- C: Rear view of HM-101 control box
- D: Diagram of the functions

C: REAR VIEW OF HM-101 CONTROL BOX



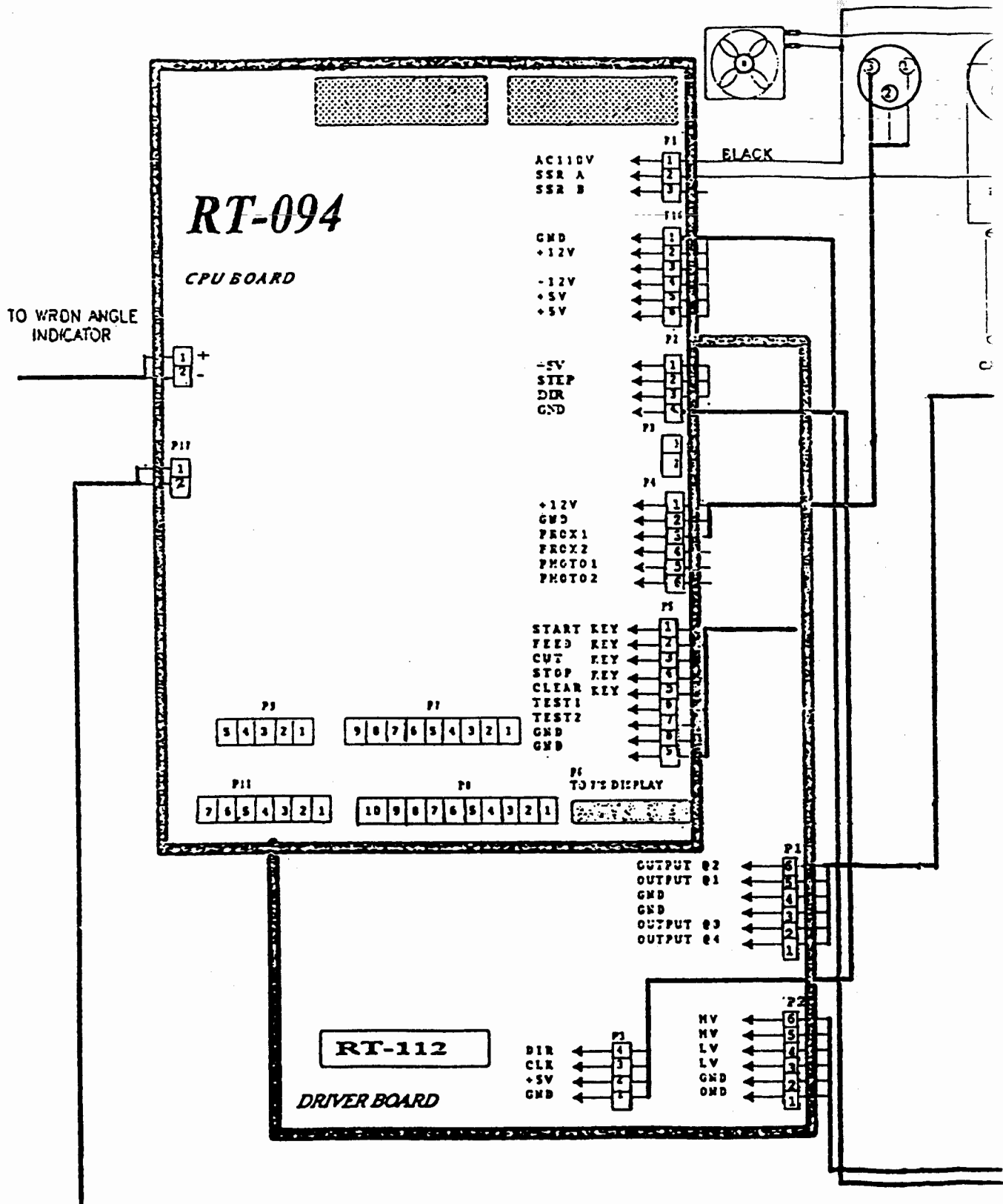


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1. WIRE CONNECTION OF CONTROL BOX

HM-101

1 BLACK
2 BROWN
3 RED

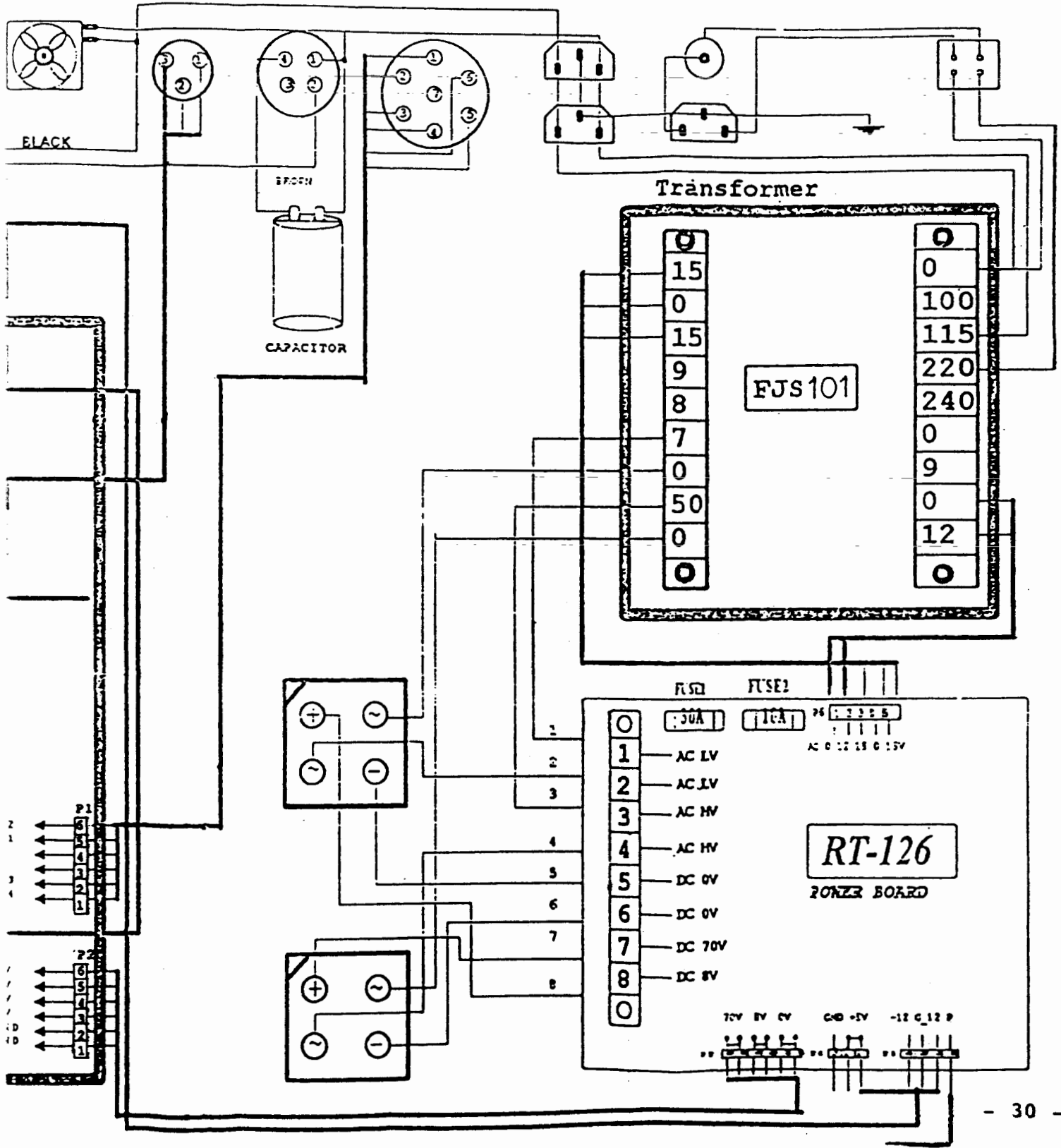


1 BLACK
2 BROWN
3 RED

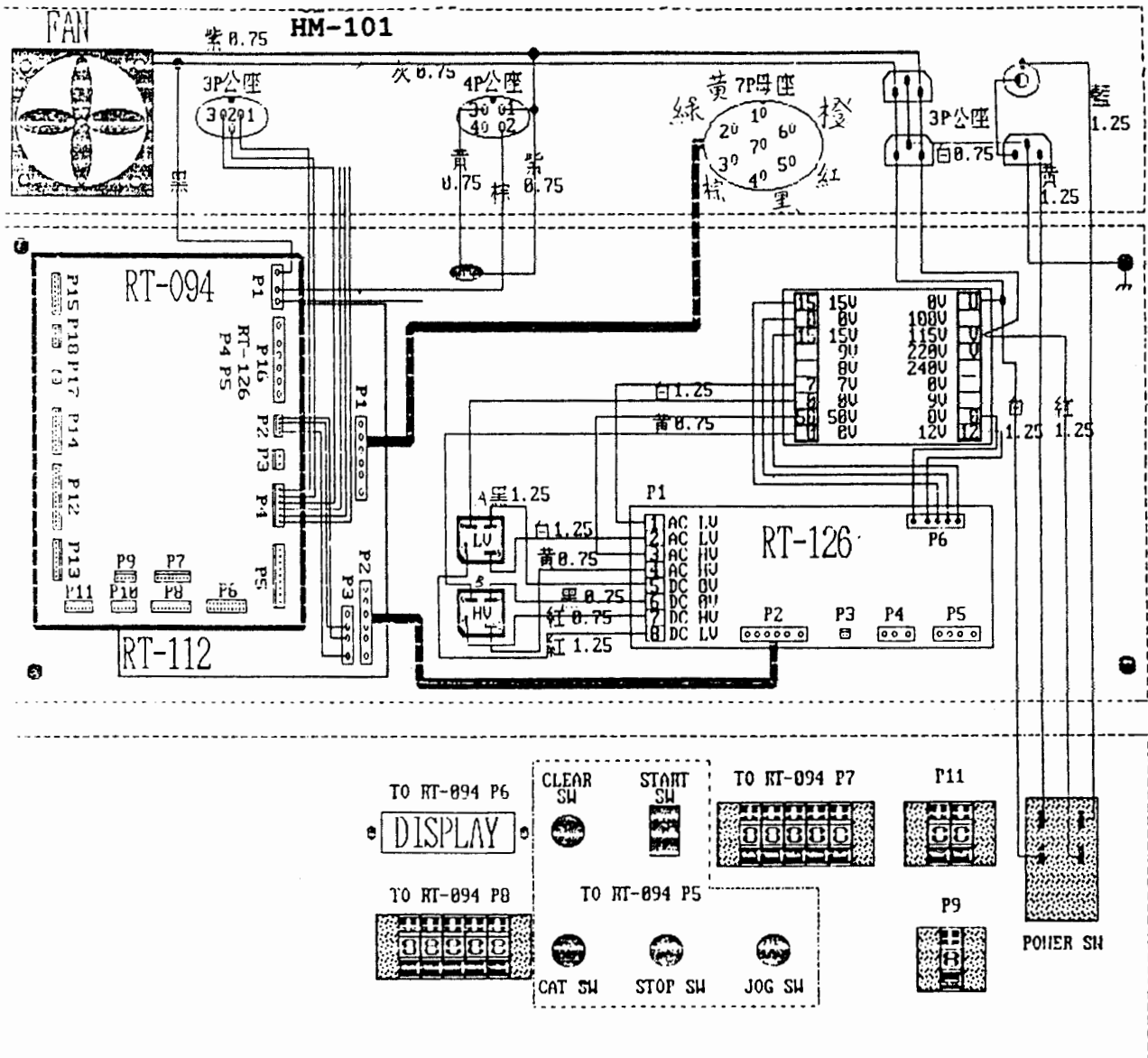
1 YELLOW
2 GREEN
3 BROWN
4 BLACK
5 RED
6 ORANGE

FUSE 10A

POWER SWITCH



2. WIRE CONNECTION FROM CONTROL BOX TO REAR BOARD
AND FRONT BOARD



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6a. POWER BOARD OF RT-126

1. Power board consists of two parts. One part is to supply the necessary voltage for the system. Refer you to 3-a. This part of power board is on P4 and P5.

Please check if the voltage at every connecting point is same as the standard. Tolerance is within 5%. If voltage is abnormal, please check INPUT P6, then measure the AC of the transformer.

2. P5.1 connects with P17 of RT-094. When the voltage is unstable, the whole system will not work under the protective model. Pull out P17, the system will come into the working model. The display of **HM-101AT** software will warn you that the system is in the protective model.
3. Another part of power board is to supply the Hi-Low voltage to the driver board.
Check every connecting point of P1 and the fuse. Low voltage's rectifier (rectifying element) and the fuse are easier to be damaged. Please check the fuse by ohmmeter or test meter. It is not precise to check by the naked eye.
4. When you check, please pull out P2 first, then measure the Hi-Low voltage so as to know where the trouble is. Hi voltage is about 70V, and low voltage is about 10V.

1. Hiker Enterprises series machines consist of 3 major parts. Namely, power board, driver board and computer board. Refer you to the functional panel 2-d.
2. When trouble happens, you should check if the power supply is normal. If the power supply is abnormal, it is useless to change for a new board.
3. Refer you to the description on every connecting point of 3a. This diagram shows you connecting points, voltages, polarities and the functions of all the circuit boards. When trouble happens, please pull out the connector of the step motor first, then begin to check power supply.

RT-126 is the power supply board. If you pull out the connectors of P2, P4 and P5 at this time, P4 and P5 still supply +5V and $\pm 12V$ direct current to the computer board and the driver board. If any set of the power supply is damaged, the whole machine will not work.

P2 supplies 70V high voltage direct current and 9V low voltage direct current to the driver board. If P2 has trouble, the step motor will be abnormal. For an example, if low voltage 30A fuse is broken, there is no low voltage. Thus, the step motor has no torsion force. If you turn the motor slightly, the motor will be turned.

4. If P4 and P5 voltages have trouble, please check if

the AC voltage supplied by the transformer is normal or not. If normal, then the circuit board is damaged. Please replace the damage one for a new one.

5. If P2 voltage is abnormal, please check the transformer first. If it is normal, then check the fuse and rectifying element. On most occasions the fuse is broken, not the rectifying element. However, sometimes the rectifying element is damaged.
6. Above description is to check the power supply. If the power supply is normal, then you have to check according to the process of repairing method.

6b. DRIVER BOARD RT-112

1. Pull out motor's copper connector.
2. Measure the voltage at P2 and P3. If the voltage is normal ?
3. If voltage at P3.2 is not +5V, then check power board.
4. If voltage at P2.3 is not +10V, then check power board.
If voltage at P2.5 is not +70V, then check power board.
5. Check the circuit board with eyes, if there is any burnt track ?
6. Is there any square wrinkle on the 3rd U4 ?
7. Use diode of the test meter to measure 8 pieces of C3042 and B861 on the bipolar respectively. Check if the resistance is different. If different, it means "damage".
8. Same method as above to check the 4 bipolars in the center.
9. Check if the copper's connecting point contacts P1 well.
10. If the roller driven by the step motor is jammed, the driver board is easy to be burnt.
11. If any of the 4-phases of the motor is damaged, the motor will shake, and motor's spindle will be without holding.
12. When the motor is not normal, check power board's hi-low voltage first.

6C. INSPECTION OF PUSH BUTTONS

When you switch on the machine for self-test, you push one key but the display shows a wrong figure. You have to find out whether the keyboard is out of order, or the computer board is out of order. The checking method is shown below.

- (1) If you change for a new computer board, the key test is still abnormal, maybe the keys are damaged.
- (2) If you think that the keys are damaged, you have to find out which key or keys is (are) damaged. Please pull out all the connectors of the keys. Then insert only one connector each time to make self-test. Thus, you can find the damaged key(s).
- (3) If you change for a new computer, all the key tests become normal. The computer board might be out of order. For an example, if you push 8, and the display shows 0. Push 9 and the display shows 1. It means that among the buses of wire 8, 4, 2 and 1, wire 8 loses its function. Maybe U13, U14 or AR8 is damaged, or maybe the bus system is short-circuit. Any case is possible, so we must use a meter to check them.
- (4) If keys are damaged, we may change for good keys. However if the computer board is damaged, we must check and find out where is the problem. If we change for a good IC board (computer board), and still cannot solve the problem, you have to contact our company for repair.
- (5) When the display shows abnormal figure, you have to change for a good computer board so as to know whether the original computer board is damaged or the key(s) is (are) damaged. However, if you don't have a good

computer board at that time, you may pull out all the connectors of the keys, then insert only one key each time for key's self-test. If the test result shows that not all of the figures are zero (some figures are not zero), or the message appears in the display is in a mess, then the computer board might be out of order. If the display shows all keys to be zero, then the computer board is normal.

At this time, you have to insert the key's length connector for test. If the test shows normal, then pull it out, and insert the key's quantity connector for test, ... etc.. Use this method to find out which key(s) is (are) out of order.

However, if the computer board is out of order, such as stated in (c):

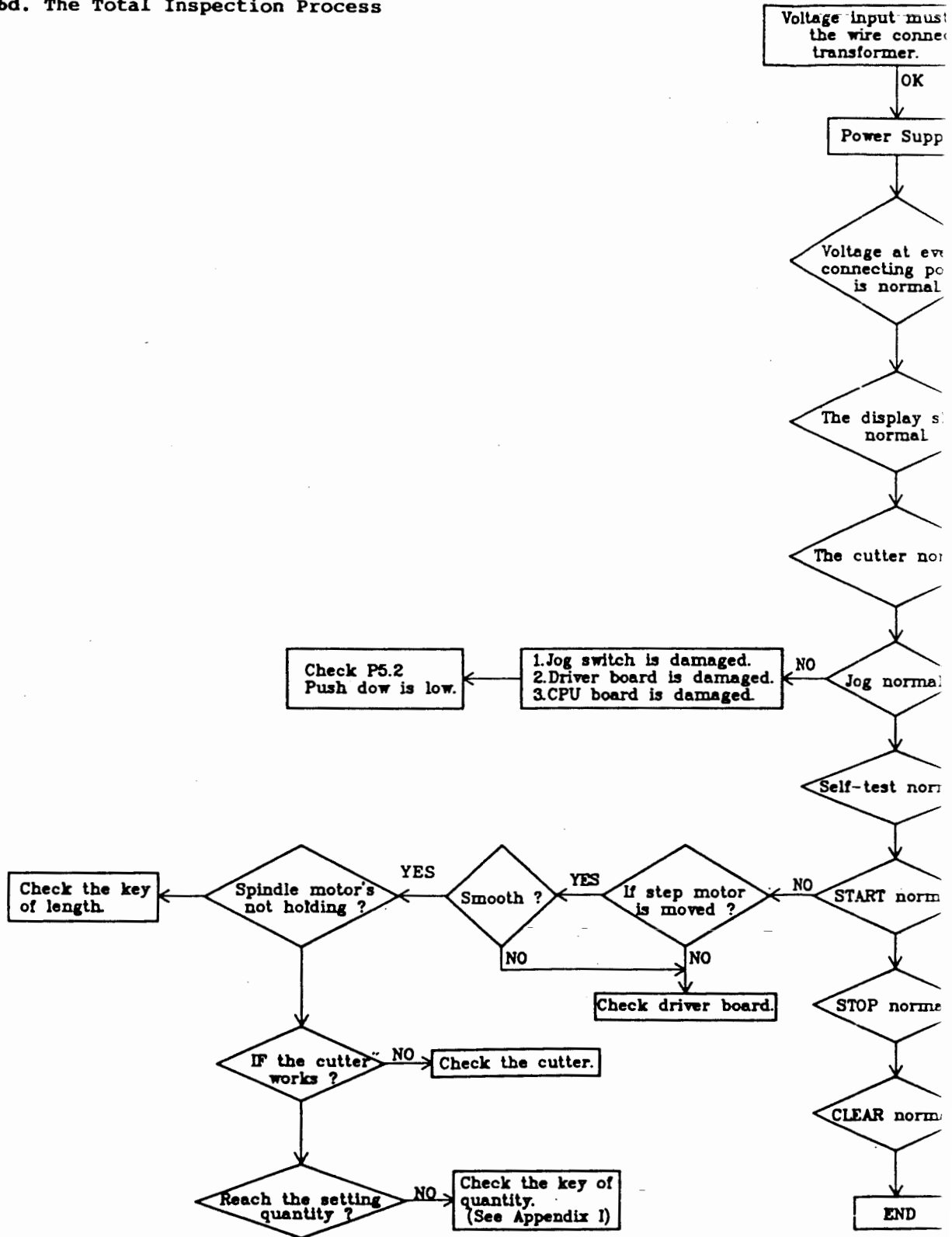
 You push 8, and the display shows 0.

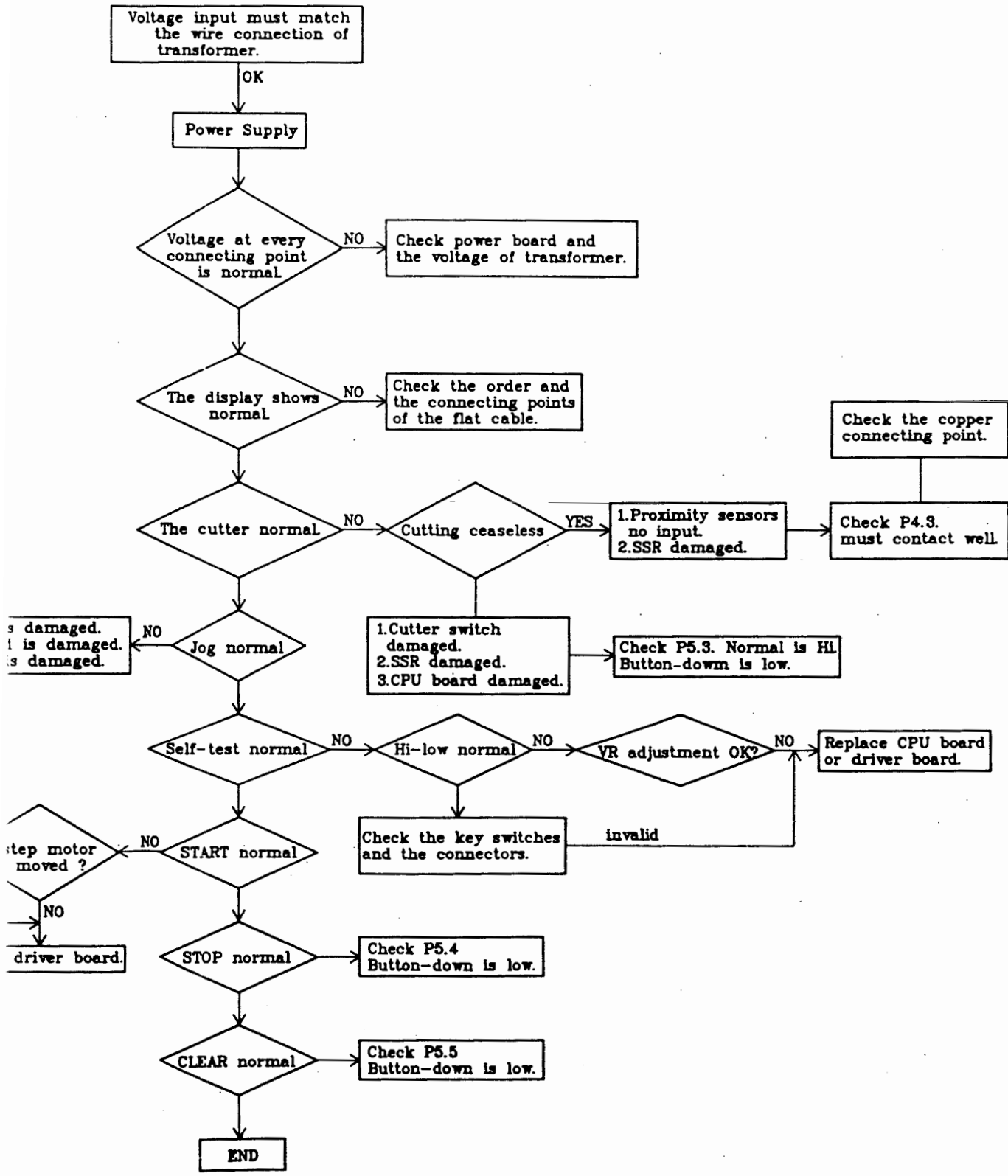
 You push 9, and the display shows 1.

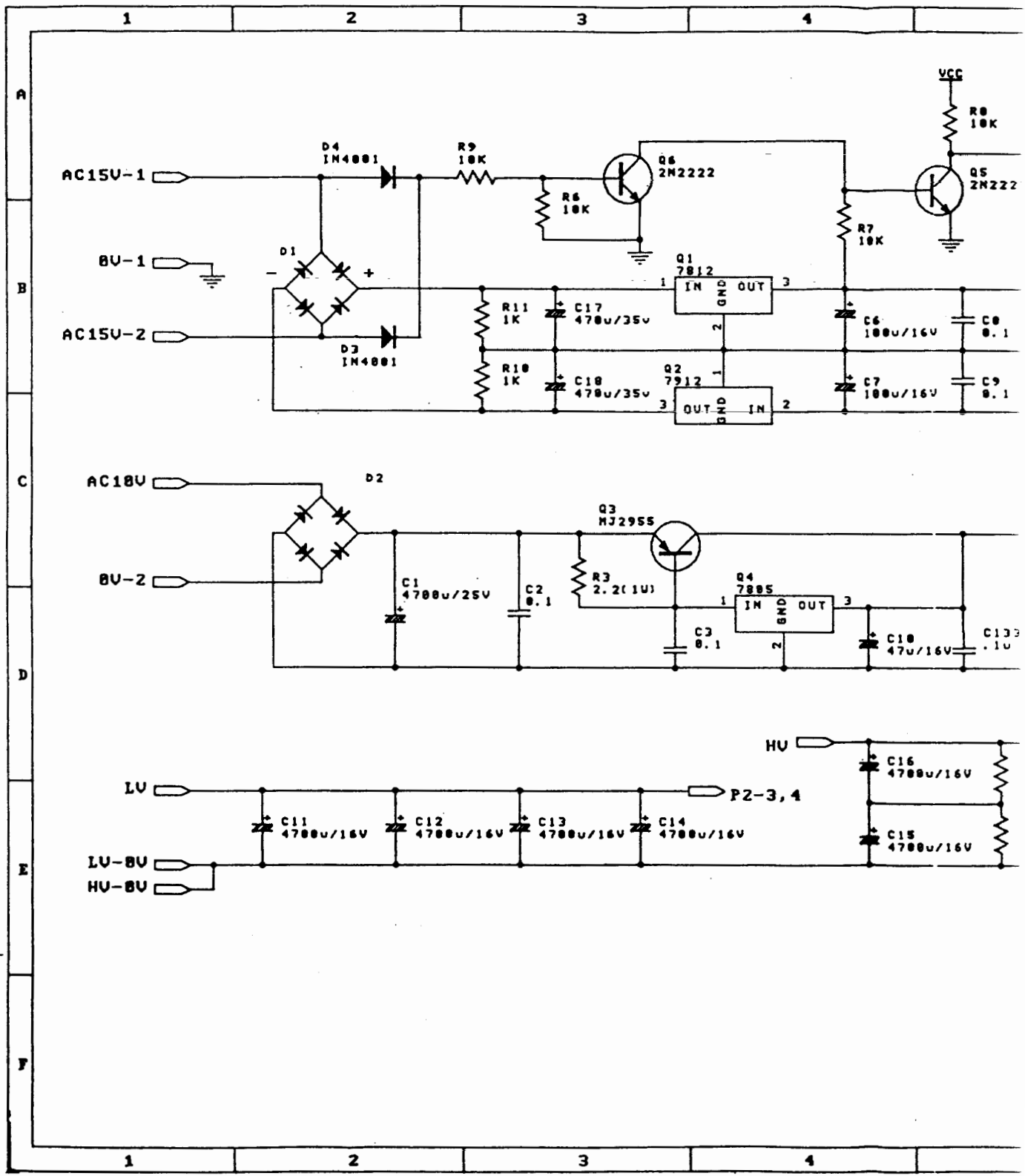
 etc...

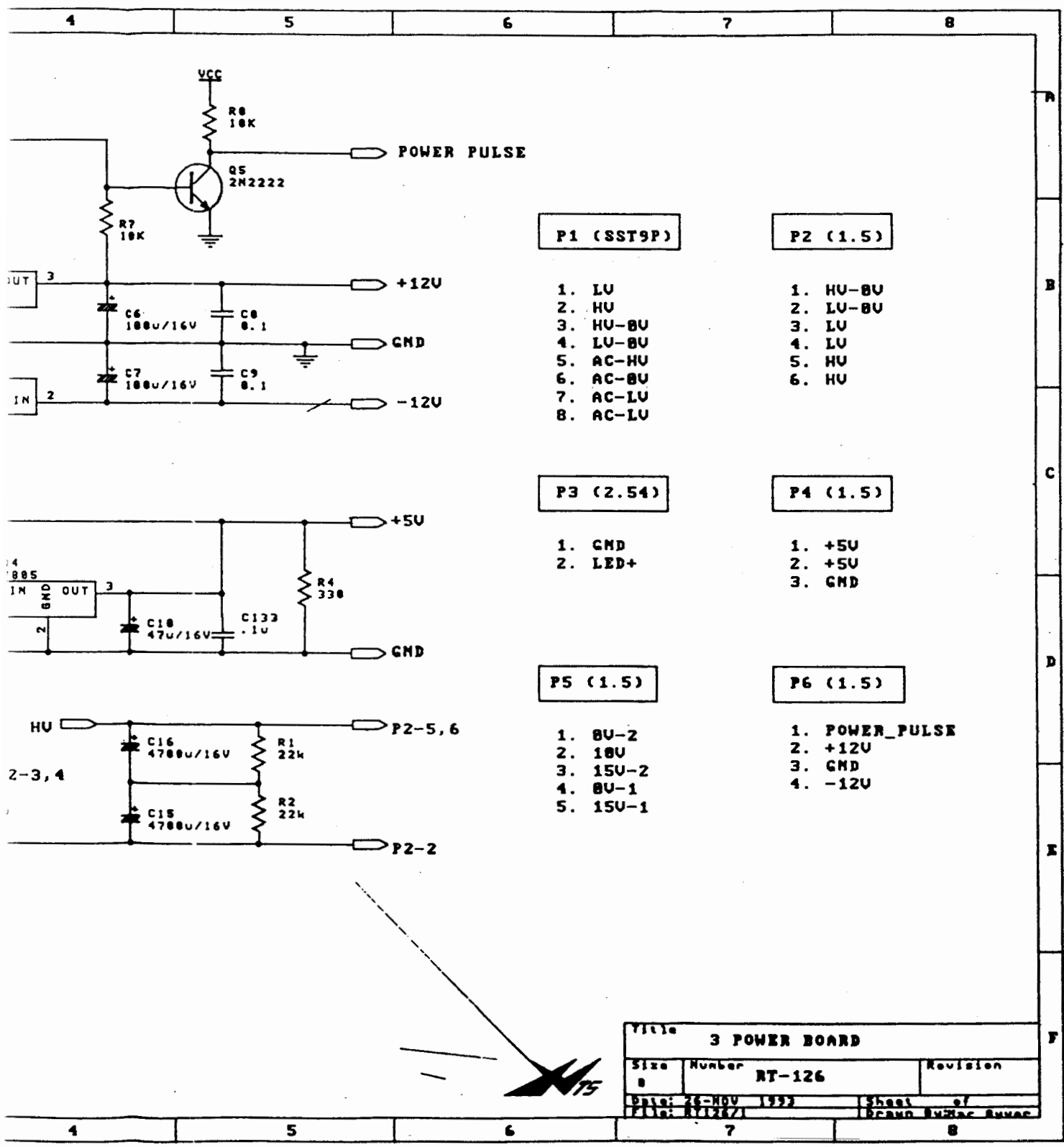
then any connector of the key you insert for test, the display shows the same figure.

6d. The Total Inspection Process





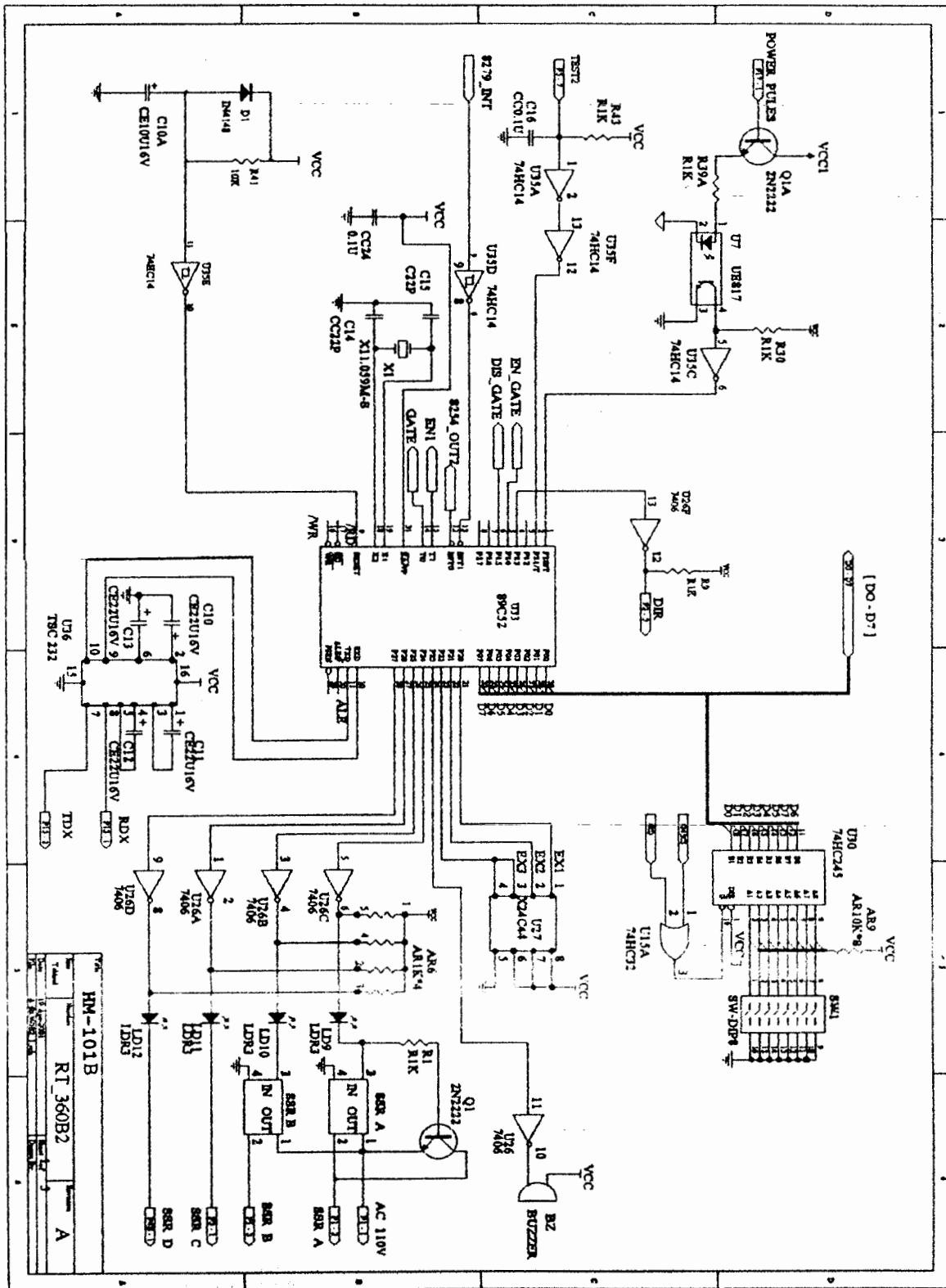


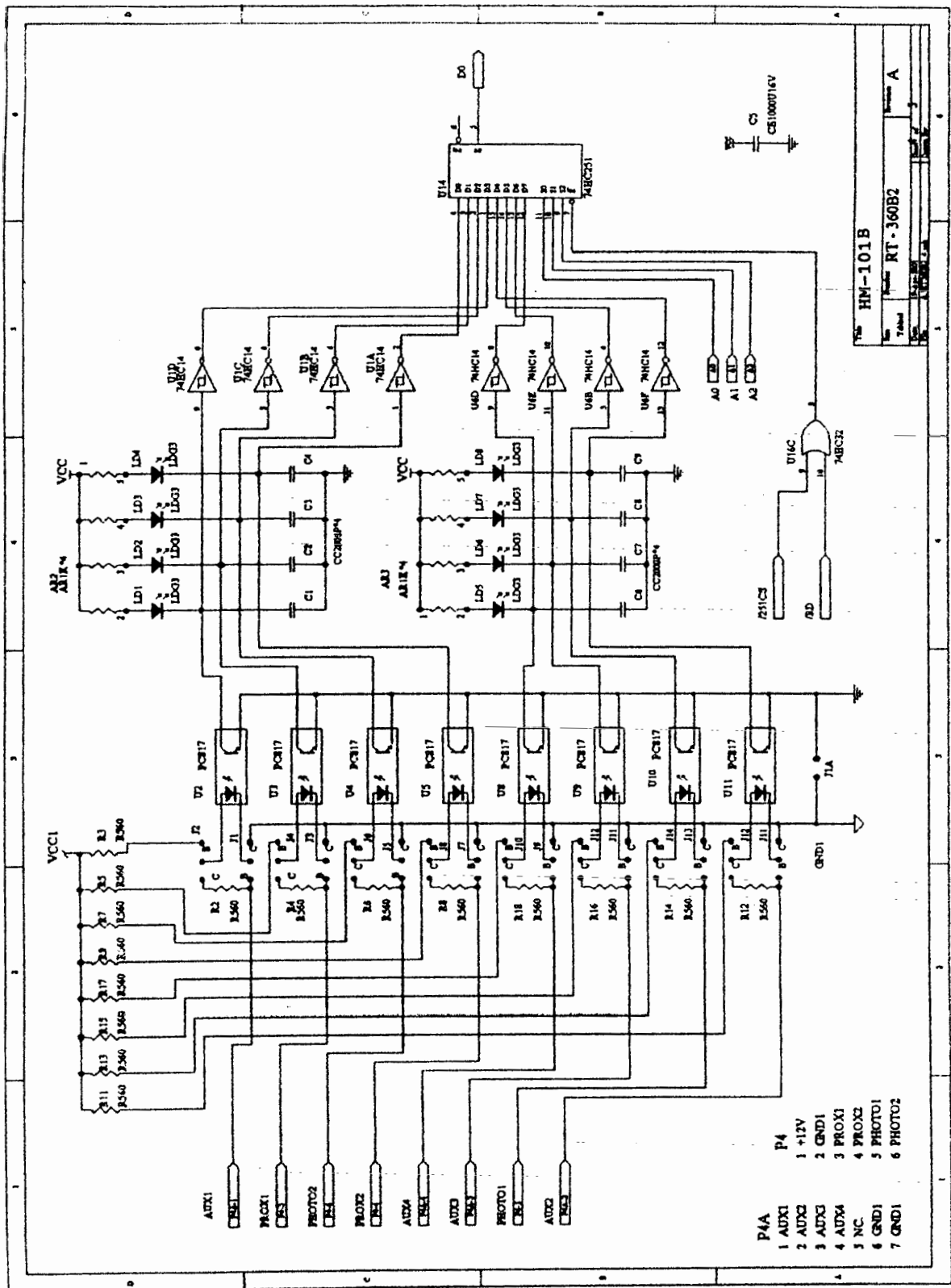


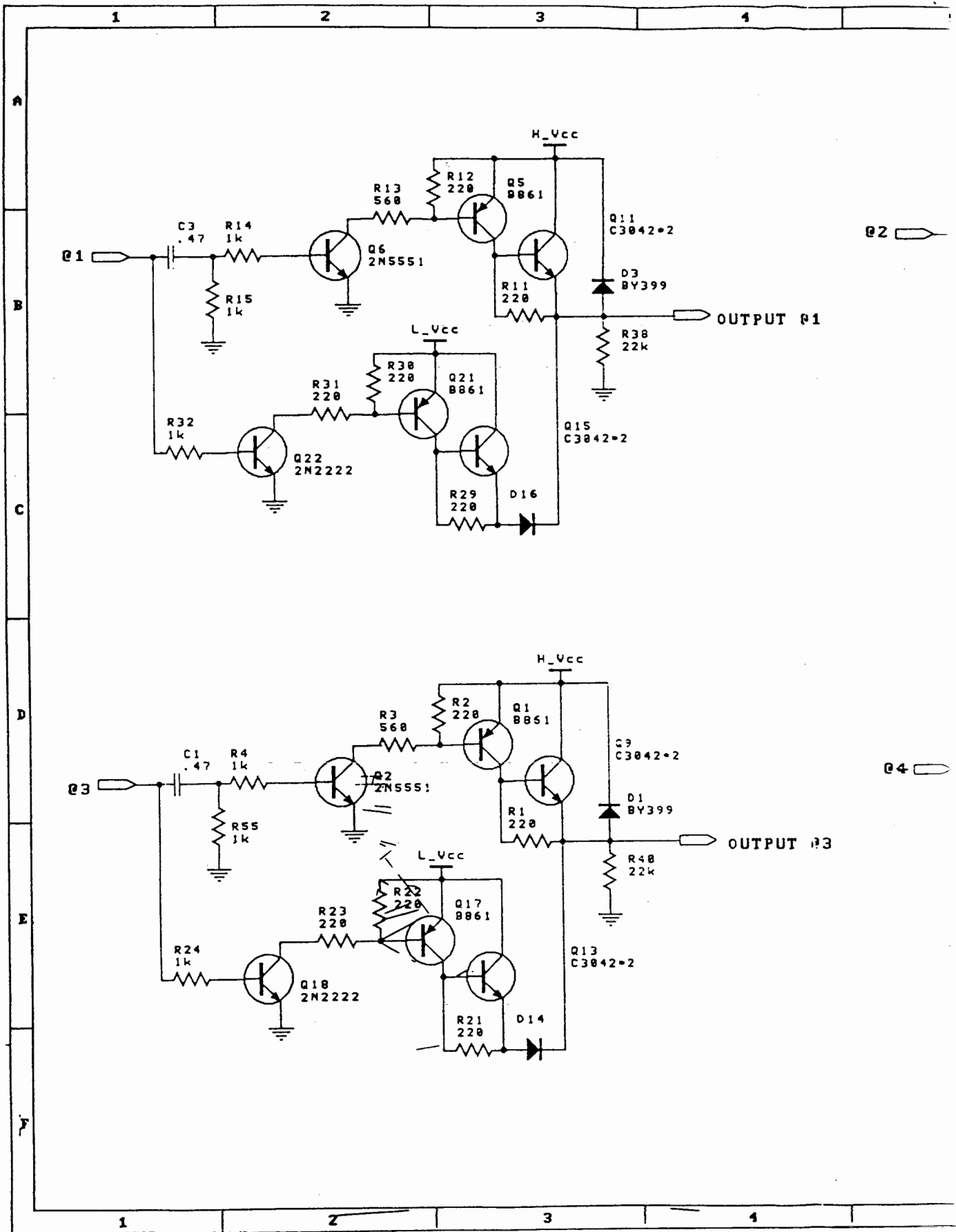
Title			3 POWER BOARD		
Size	Number	Revision			
B	RT-126				
Date:	26-NOV 1992	Sheet	of		
File:	RT126/1	DRAWN BY: Mac Suvar			

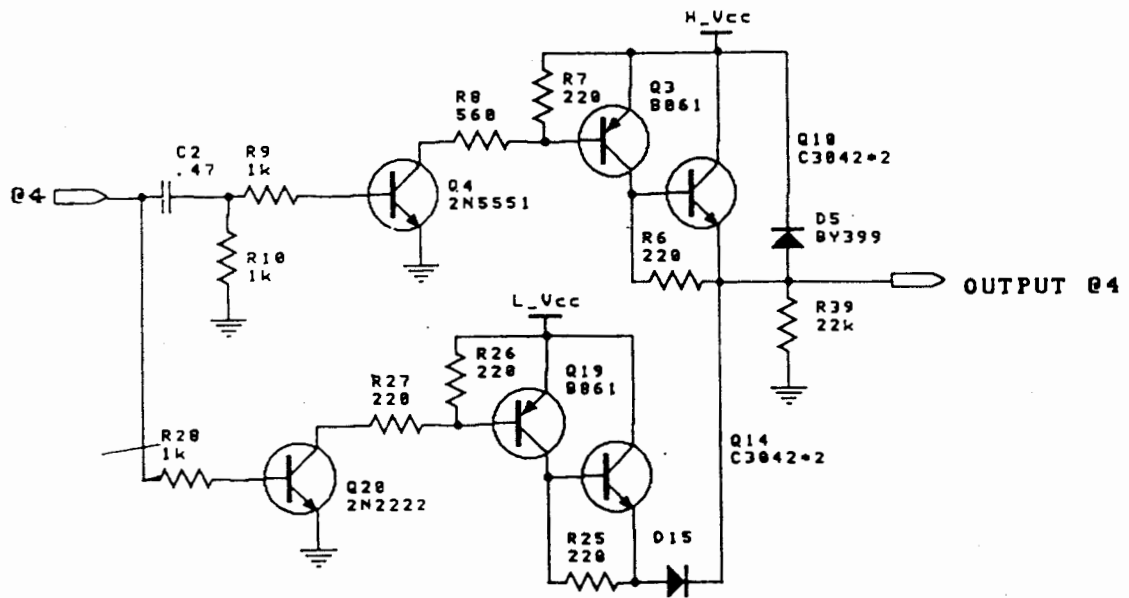
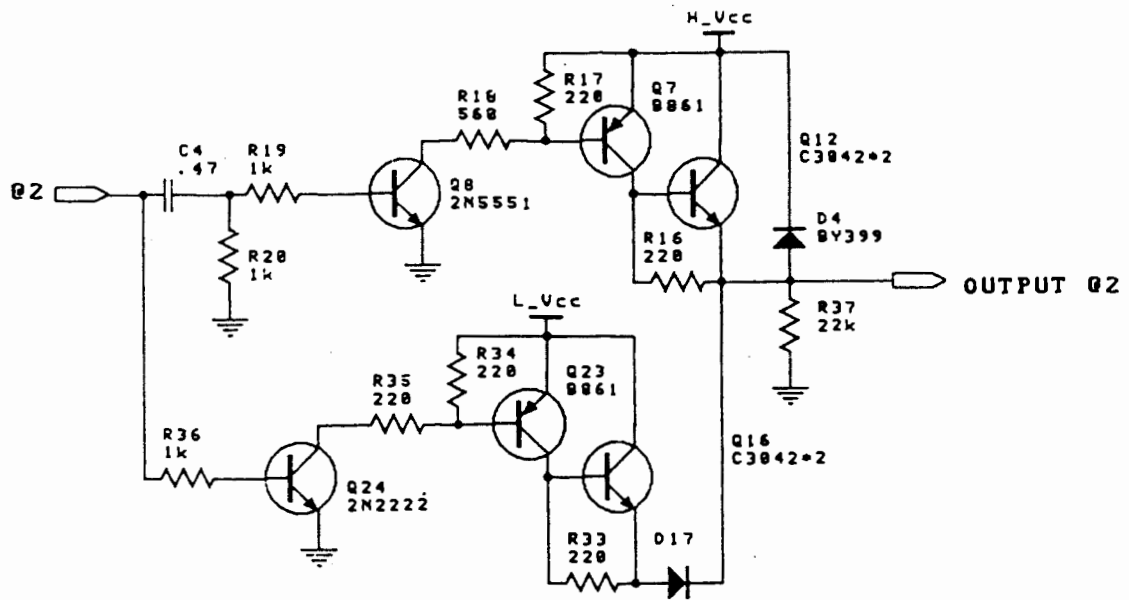
<p>P1</p> <ol style="list-style-type: none"> AC 110V SSR A OUT SSR B OUT 	<p>P2</p> <ol style="list-style-type: none"> +5V STEP DIR GND 	<p>P3</p> <ol style="list-style-type: none"> SSR C OUT GND 	<p>P4</p> <ol style="list-style-type: none"> +12V GND1 PROXI PROX2 PHOTO1 PHOTO2 	<p>P4A</p> <ol style="list-style-type: none"> AUX1 AUX2 AUX3 AUX4 NC GND1 GND1 	<p>P4B</p> <ol style="list-style-type: none"> SSR D GND NC 	<p>P6</p> <ol style="list-style-type: none"> A SEGMENT B SEGMENT C SEGMENT D SEGMENT E SEGMENT F SEGMENT G SEGMENT P SEGMENT DIGIT_0 DIGIT_1 NC NC NC NC DIGIT_2 DIGIT_3 DIGIT_4 DIGIT_5 DIGIT_6 DIGIT_7 NC NC NC NC 				
<p>P5</p> <ol style="list-style-type: none"> START FEED CUT STOP CLEAR NC TEST2 R0 R0 	<p>P7</p> <ol style="list-style-type: none"> COM 0 COM 1 COM 2 COM 3 COM 4 BUS 1 BUS 2 BUS 3 BUS 4 	<p>P8</p> <ol style="list-style-type: none"> COM 5 COM 6 COM 7 COM 8 COM 9 BUS 1 BUS 2 BUS 3 BUS 4 NC 	<p>P9</p> <ol style="list-style-type: none"> COM 10 BUS 1 BUS 2 BUS 3 BUS 4 	<p>P10</p> <ol style="list-style-type: none"> COM 11 BUS 1 BUS 2 BUS 3 BUS 4 NC 	<p>P11</p> <ol style="list-style-type: none"> COM 12 COM 13 BUS 1 BUS 2 BUS 3 BUS 4 NC 	<p>P12</p> <ol style="list-style-type: none"> C0 C1 C2 C3 C4 R0 R1 R2 A SEGMENT B SEGMENT C SEGMENT D SEGMENT E SEGMENT 	<p>P13</p> <ol style="list-style-type: none"> RDX TDX GND NC NC 	<p>P16</p> <ol style="list-style-type: none"> GND +12V (VCC1) GND1 -12V +5V (VCC) +5V (VCC) 	<p>P17</p> <ol style="list-style-type: none"> POWER PULSE POWER PULSE 	<p>P18</p> <ol style="list-style-type: none"> NC POWER PULSE POWER PULSE NC

HM-101B
RT-360B2
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