TM-2653
TM-2654

MAINTENANCE MANUAL

Automatic Blood Pressure Monitor

1183-1A-ME 1997.05.16

A&D Company, Limited

Contents

1. Introduction

Safety Terms Used in this Manual

All safety messages are identified by the following the words "WARNING", "CAUTION", and "NOTE". These words mean the following:

WARNING

Important information to alert you to a situation that might cause serious injury and damage to your property if instructions are not followed.

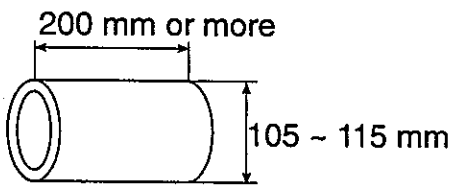
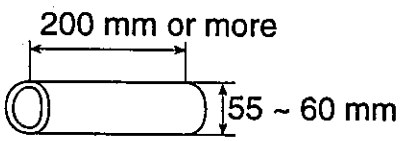
CAUTION

Important information that tells how to prevent damage to equipment, or how to avoid a situation that might cause minor injury.

NOTE **Important information that helps users operates the instruments.**

Equipment and tools required

For smooth maintenance, the products must be technically understood, and the required equipment and tools must be prepared. If the maintenance is performed under the unsatisfactory conditions, the proper operation can not be guaranteed because products is precision instruments.

Pillips screwdriver 3mm	
Pillips screwdriver 2mm	
Print paper	AX-WP-PP147
Stable pressure generator	Set point : 0mmHg, 50±2mmHg, 150±2mmHg, 280±2mmHg, 300mmHg, 325mmHg. Drift within ±0.1mmHg/sec.
Manometer	Range of 0 ~ 400mmHg, Error within ±0.5mmHg, Solution of 0.1mmHg
500cc air tank	
air valve & rubber tube	
Multi-meter	AC power line voltage, DC voltage, etc.
Dummy arm (Large)	
Dummy arm (small)	

2. Test Mode

Test mode list

The functions and performance of the TM2653/54 series can be confirmed in test mode.

Note: **RAM check in test mode clears the memory contents, such as date and time, user counter ,etc.**
If memory contents are required, do not execute test mode 2.

Test Mode No.	Function	Description
1	Monitor mode	Checks the pressure precision, and sensor leak.
2	RAM check mode	Checks RAM read/write operation.
3	Program version display	Displays the measurement software version and font version.
4	Key check mode	Checks key operation.
5	Adjustment mode	Pressure adjustment.
6	* Not set	
7	* Not set	
8	* Not set	
9	Total leak check mode	Checks the pressure time, total leak, and fast exhaust time.
10	* Not set	
11	* Not set	
12	Test print mode	Makes test printing.
13	* Not set	
14	Exhaust check mode	Check two valve for exhaust
15	LED check mode	Checks LEDs.

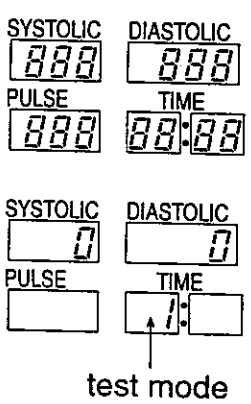
The way of entering test mode

Step 1 Turn power switch on while pressing and holding the ▲ button. Keep the ▲ button until all windows display 8 segments and clear these.

Step 2 Test mode number is displayed in TIME window.

Step 3 Test mode can select with the ▲ button or ▼ button. These buttons increase or decrease test mode number.

Step 4 To exist the test mode, turn off the power switch.



3. Troubleshooting

Preparation

Please confirm the following basic functions before maintenance.

The power line voltage

- ❑ There are two type about power source. Select your power line voltage.
  TM-2653EXA, TM-2654EXA use 100V ~ 115V.
  TM-2653EXB, TM-2654EXB, TM-2653FR, TM-2653CH, TM-2654FR and TM-2654CH use 220V ~ 240V.

The action when product is turned on.

- ❑ Confirm that clock is displayed, when the product is turned on.
- ❑ When the product displays clock, press emergency stop button and confirm the same action that the product is turned on.

Function of limit switches. (Positioning switches of winding side and home side)

- ❑ Confirm the following actions.
  When the **START/STOP** button is pressed without inserting anything into the cuff, the product starts the following actions.
  - Step 1 The product winds up the cuff.
  - Step 2 The product stops winding up the cuff by the winding side limiter and displays Err in PULSE window.
  - Step 3 The product unwinds the cuff.
  - Step 4 The product stops unwinding the cuff by home side limiter.

The action of winding arm.

- ❑ When the **START/STOP** button is pressed and the product winds up dummy arm, confirm the following actions.
  - Step 1 Dual air pumps act.
  - Step 2 Dual air pump stop around 160 mmHg.
  - Step 3 When the **START/STOP** button is pressed once more, measurement is stopped, air is exhausted and cuff is unwound.

The action of emergency stop button.

- ❑ Confirm the following actions.
  - Step 1 It is able to insert large dummy arm into cuff smoothly.
  - Step 2 When the **START/STOP** button is pressed during measurement, air is exhausted, cuff is unwound and large dummy arm can be removed easily.

The action of measuring and printing data.

- ❑ Perform the following steps and confirm actions.
  - Step 1 Set the DIP switch No. 2 and 3 only to ON for English version. (Set the DIP switch No. 1 to ON only for Japanese version.)
  - Step 2 Measure blood pressure.
  - Check that measurement data are right.
  - Check that **STANDBY** and **MEASUREMENT IN PROGRESS** are indicated in the front panel.
  - Check that the data are printed in right format after measurement.

Check list for basic function and performance

Checking Indicators

Step 1 Turn on the product with the power switch to ON.

Step 2 Make sure that the blood pressure monitor resets operation, the SYSTOLIC window displays 0 and the time is displayed in TIME window.

Checking the ROM Version

Step 1 Execute test mode 3.

Step 2 Make sure that the SYSTOLIC window displays the software version of control block, the DIASTOLIC window displays the software version of measurement block, and the PULSE window displays the font ROM version.

Note **The TM-2653 is not installed with the font ROM. No specific value (undefined value) is displayed on the TM-2653**

Checking switches operation

Step 1 Turn off all FUNCTION setting switches.

Step 2 Execute test mode 4.

Step 3 Turn on each FUNCTION setting switches. And make sure the response of the switches.

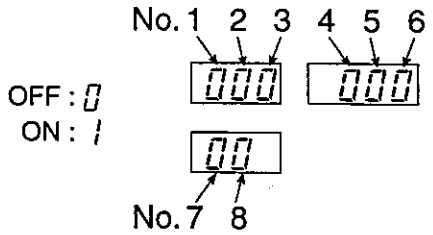
Step 4 Set No.1 of FUNCTION setting switch to ON.

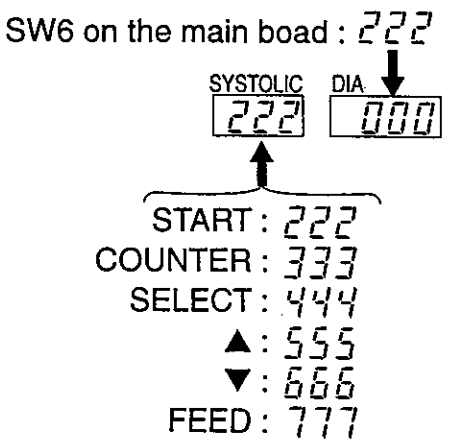
Step 5 Restart test mode 4.

Step 6 Turn on each button. And make sure that the values are displayed in the display windows.

Step 7 Home position switch and winding side switch light comment LED.

Step 7 To exit test mode 4, set all FUNCTION setting switches to OFF and turn off the product.



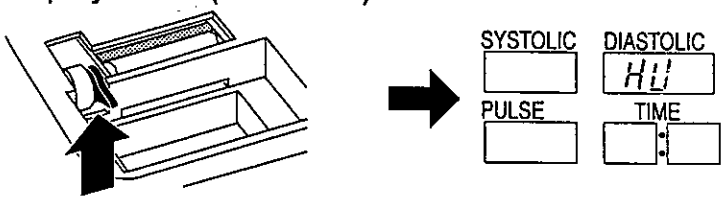


Checking LEDs

Step 1 Execute test mode 15.
Step 2 Make sure that all LEDs light at a proper brightness.

Checking the Paper Sensors (TM-2654 only)

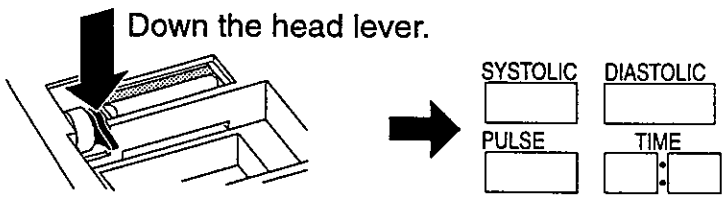
Step 1 Check paper sensors in normal measurement mode.
Step 2 Set the FUNCTION setting switches 1 and 8 only to ON.
Step 3 Lift up the head lever. And make sure that the DIASTOLIC window displays "HU" (HEAD UP).



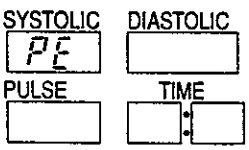
Up the head lever.

Step 4 Lower the head lever. And make sure that the display disappears.

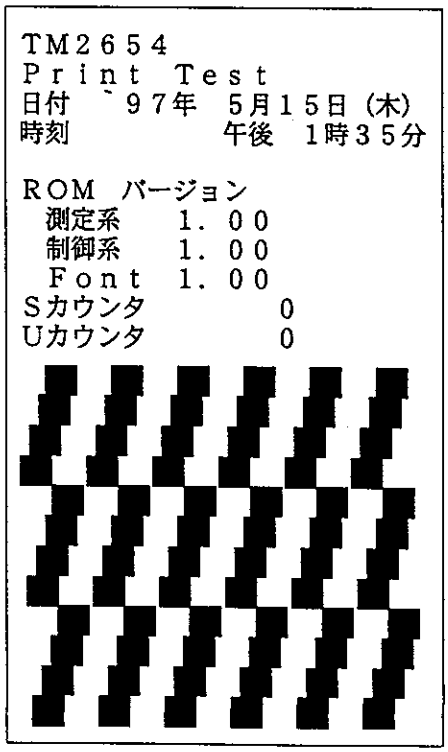
Down the head lever.



Step 3 Remove all papers and make sure that the SYSTOLIC window displays "PE" (PAPER EMPTY). Set printer papers and make sure that the display disappears.



Step 4 Set printer papers. Press and hold the FEED button. And make sure that the papers are fed.



Checking Printouts

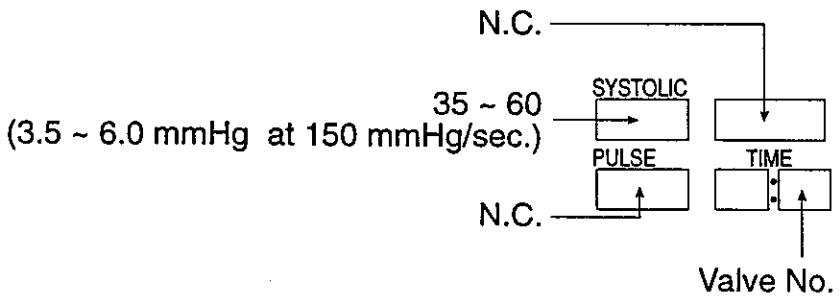
Step 1 Execute test mode 12.
Step 2 Make sure printing data that is even, does not miss any dot and does not occur paper feed error.

Note **Use the printer paper AX-WP-PP147. This printing test requires a paper of 20 cm.**

Check list for basic function and performance

Checking the Constant Exhaust Speed

Step 1 Set only the FUNCTION setting switches 1, 2, 3 and 4 to OFF.
Step 2 Turn on power switch while pressing and holding ▲ button.
Press ▼ button several times to display mode 14.
Step 3 Insert large dummy arm into the cuff.
Step 4 Press the START button.
Step 5 Make sure that the constant exhaust speed is within the following spec..
Step 6 Set only the FUNCTION setting switches 1, 2, 3 and 4 to ON.
Step 7 Press the START button.
Step 8 Make sure that the constant exhaust speed is within the following spec.

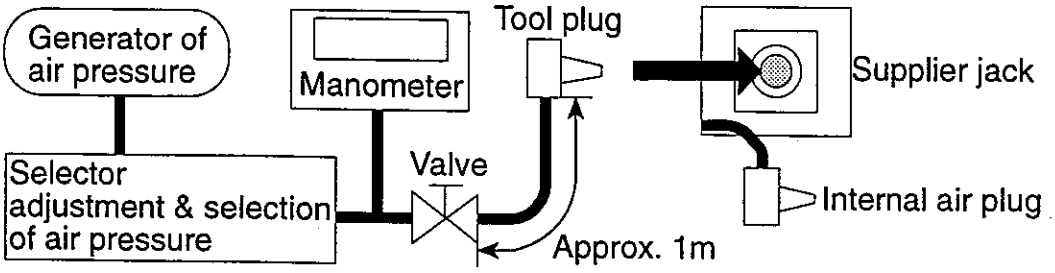


Checking Measurements

Step 1 Insert large dummy arm into the cuff.
Step 2 Press the START/STOP button.
Step 3 Make sure that the air pressure is applied.
Step 4 Press the START/STOP button during blood pressure measurement.
Step 5 Make sure that the air of cuff is exhausted, measurement is stopped and it is able to remove large dummy arm from cuff.
Step 6 Exchange large dummy arm to small dummy cuff.
Step 7 Press the START/STOP button.
Step 8 Make sure that the air pressure is applied.
Step 9 During constant exhaust, hold up the font side 5 cm and drop it twice.
Step 10 Make sure that the product shows no abnormality.
Step 11 Press the EMERGENCY STOP button during blood pressure measurement.
Step 12 Make sure that the air of cuff is exhausted, measurement is stopped, all display turns ON, electromagnetic valves is turned on/off for two seconds.
Step 13 During measurement, Make sure that "MEASUREMENT IN PROGRESS" LED is lighted, data is printed after measurement.

Checking the Pressure Precision

Step 1 Remove the Spec. panel from the rear side of the product.
Step 2 Remove the internal air plug.
Step 3 Connect a tool plug to supplier jack.



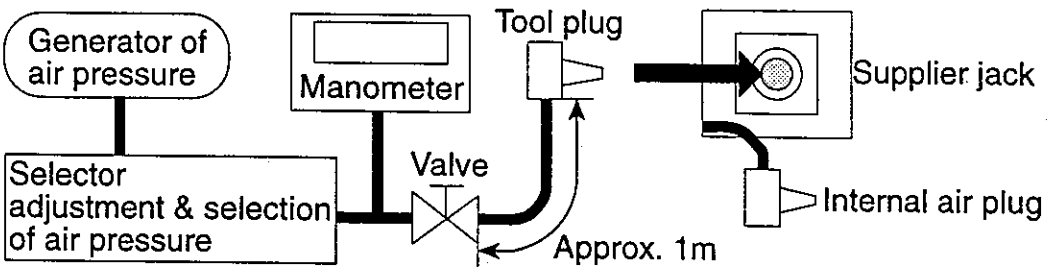
Step 4 Execute test mode 1 to check the pressure precision.
Step 5 Adjust each air pressures of 50±0.5mmHg, 150±0.5mmHg, and 280±0.5mmHg at selector.
Step 6 Make sure that the measurement value of product is same as setting air pressure.

Setting pressure	measurement value
0 mmHg	0 mmHg
50 mmHg	50±3 mmHg
150 mmHg	150±3 mmHg
280 mmHg	280±3 mmHg

Step 7 If the measurement values do not satisfy the above specification, perform pressure adjustment of section "Adjusting the Pressure".

Checking Sensor Leaking

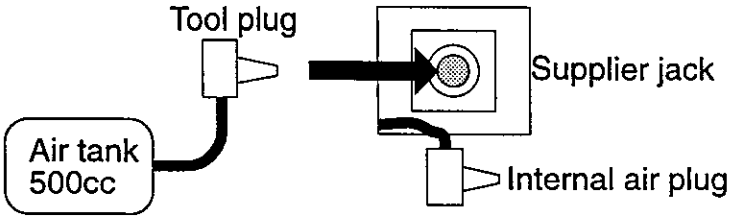
Step 1 Remove the Spec. panel from the rear side of the product.
Step 2 Remove the internal air plug.
Step 3 Connect a tool plug to supplier jack.



Step 4 Execute test mode 1 to check the pressure precision.
Step 5 Adjust air pressure to 300±0.5 mmHg.
Step 6 Close the valve for three minutes.
Step 7 Make sure that the drop of air pressure is within 4 mmHg.

Checking the Total Leaking

Step 1 Remove the Spec. panel from the rear side of the product.
Step 2 Remove the internal air plug.
Step 3 Connect a tool plug to supplier jack.

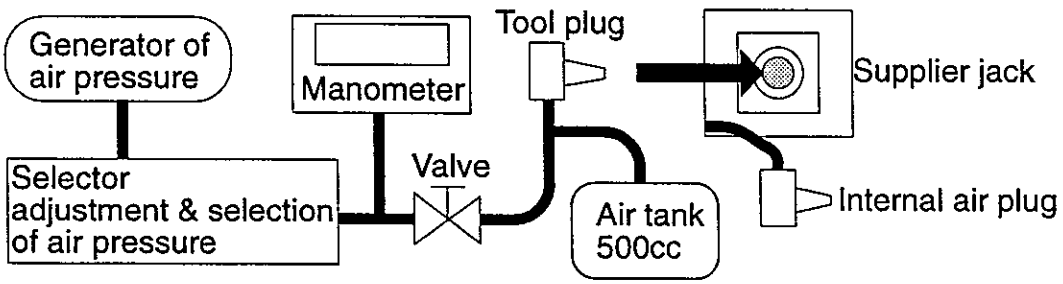


Step 4 Execute test mode 9 to check total leak.
Step 5 Press START/STOP button.
Step 6 Check in order of inflation time, total leak and exhaust time.

Display	Specification
Within 100 at SYSTOLIC	Inflation time during 0 ~ 300 mmHg is within 10 sec.
Less than 60 at DIASTOLIC	Total leak value is less than 6 mmHg after 30 sec.
Within 30 at PULSE	Exhaust time is within 3 sec.

Checking the Safety Mechanism

Step 1 Remove the Spec. panel from the rear side of the product.
Step 2 Remove the internal air plug.
Step 3 Connect a tool plug to supplier jack.

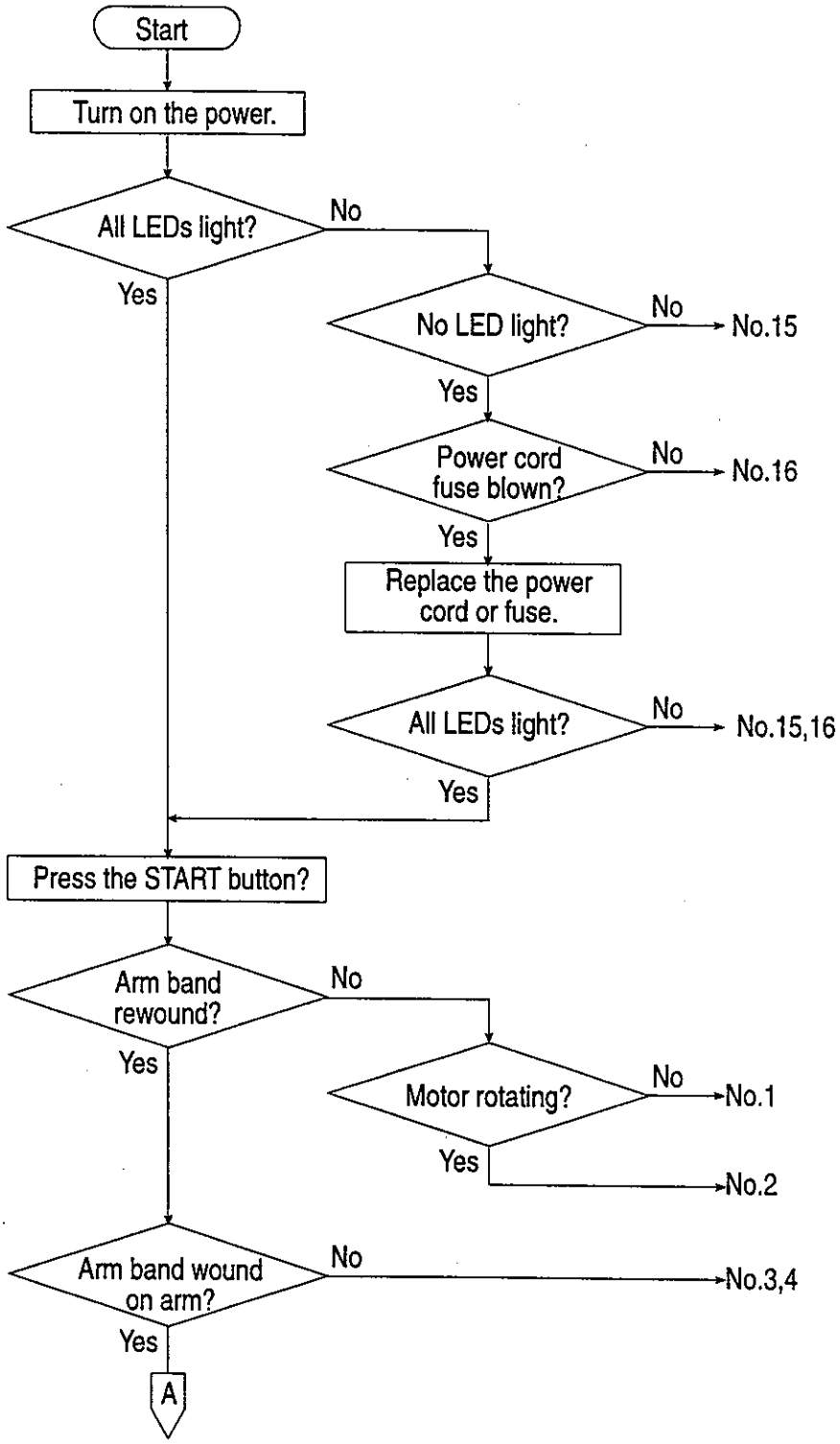


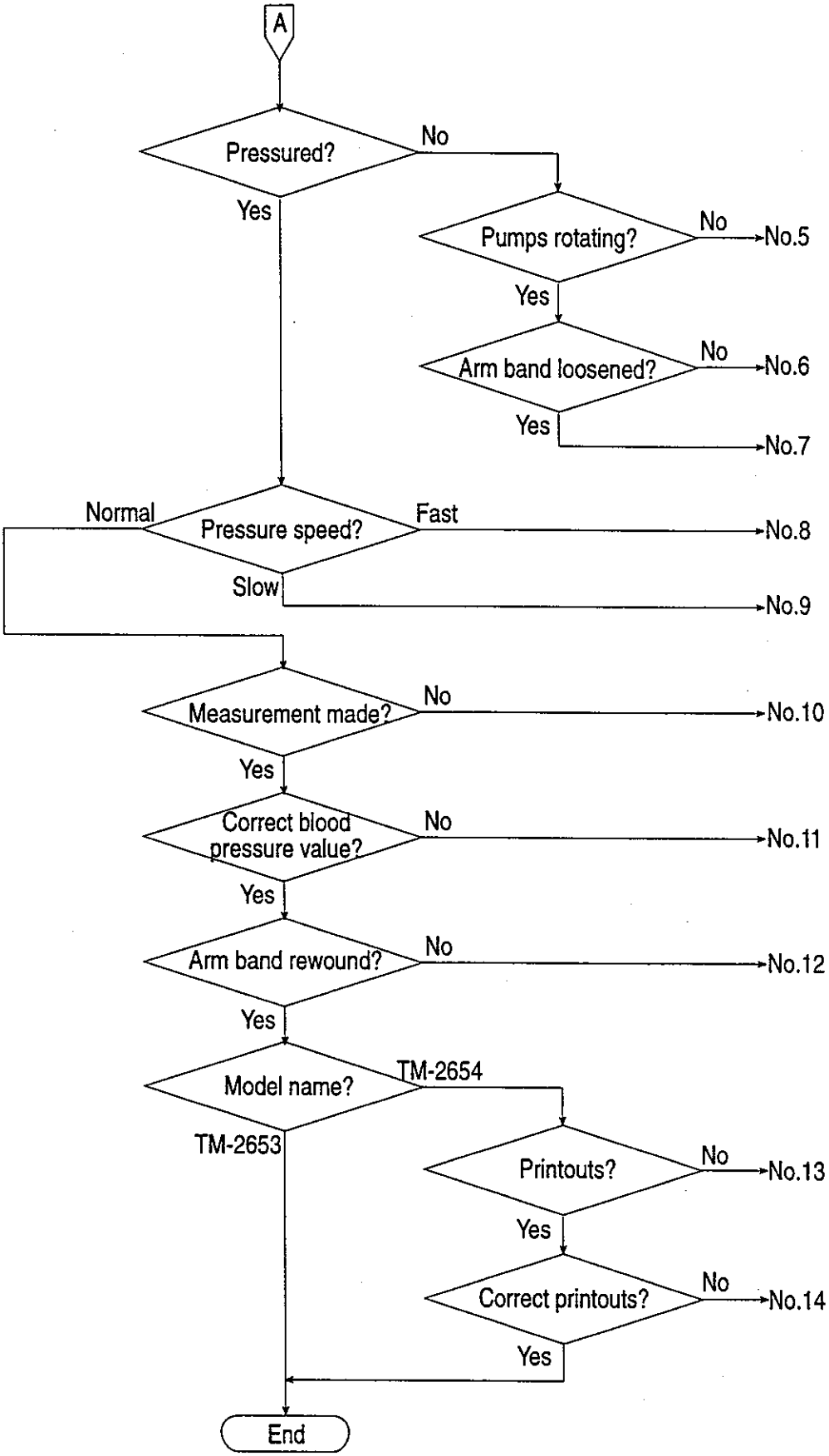
Step 4 Close the valve.
Step 5 Adjust air pressure to 325±0.5 mmHg with the selector.
Step 6 Insert small dummy arm in the cuff.
Step 7 Press START/STOP button to start measurement.
Step 8 Open the valve during measurement.
Step 9 Make sure that measurement is stopped, exhaust valve is opened, it is decreases in air pressure value of manometer and clock is displayed.

Troubleshooting Flowchart

This flow chart guides the disposal number on the maintenance list.

Note **Confirm sections for "Preparation" and "Check list for basic function & performance" of "2.Troubleshooting" before using this flow chart.**




A
Pressured?
No
Yes
Pumps rotating?
No
No.5
Yes
Arm band loosened?
No
No.6
Yes
No.7
Normal
Pressure speed?
Fast
No.8
Slow
No.9
Measurement made?
No
No.10
Yes
Correct blood pressure value?
No
No.11
Yes
Arm band rewound?
No
No.12
Yes
Model name?
TM-2654
TM-2653
Printouts?
No
No.13
Yes
Correct printouts?
No
No.14
Yes
End

Maintenance list

This classification is based on the "troubleshooting flow chat".

No.	Cause	Disposal
1	Not smooth slide of the arm band or belt Wire or connector disconnected in the motor Faulty winding mechanism Loose motor pulley Faulty motor driver circuit	Remove any foreign matters. Check wiring. Replace the arm band unit. Replace the main board unit.
2	Wire or connector disconnected in the electromagnetic clutch of the belt pulley Faulty clutch driver circuit Winding wire rope cut Faulty rewinding mechanism	Check wiring. Replace the main board unit. Replace the arm band unit.
3	Too thin arm Limit switch error	Replace the arm band unit.
4	Limit switch error Faulty winding mechanism	Replace the arm band unit.
5	Wire or connector disconnected in the pump Faulty pump driver circuit Faulty pump	Check wiring. Replace the main board unit. Replace the air unit.
6	Air tube disconnected or broken Faulty air unit	Check the tube. Replace the air unit.
7	Wire or connector disconnected in the electromagnetic clutch of the shaft lock Faulty winding mechanism	Check wiring. Replace the arm band unit.
8	Cuff tube broken or clogged Stuck cuff	Replace the tube. Replace the cuff.
9	Air tube disconnected or drilled Faulty constant exhaust or emergency Faulty pump Faulty exhaust electromagnetic valve	Replace the tube. Replace the air unit.
10	Faulty sensor	Replace the main board unit.
11	Pressure adjustment error Faulty sensor Cuff tube broken or clogged	Adjust the pressure value again. Replace the main boar unit. Check the tube.
12	Limit switch error Faulty winding mechanism	Replace the arm band unit.
13	Wire or connector disconnected in the printer unit Faulty printer unit Faulty printer driver circuit Faulty printer No print papers	Check wiring. Replace the printer unit. Replace the main board unit. Insert print papers.
14	Incorrect print papers Faulty ROM	Use the specified print papers. Replace the ROM.

No.	Cause	Disposal
15	Faulty ROM Faulty main board unit Faulty display board Wire or connector disconnected	Replace the display board. Replace the main board unit. Check wiring.
16	Wire or connector disconnected in the power unit Switching regulator error Incorrect power line voltage by selector	Check wiring. Replace the power supply unit. Correct voltage range on the main board.

4.Adjustment

Selecting the supply voltage

Note: Before operation, turn off the power.

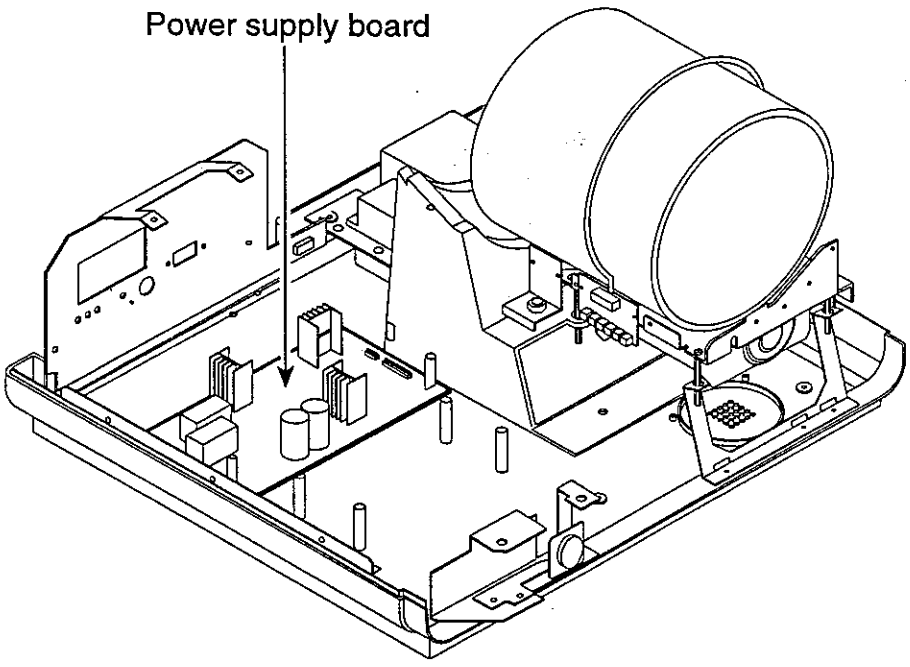
Step 1 Turn off power switch of the product and remove power line cable form receptacle.

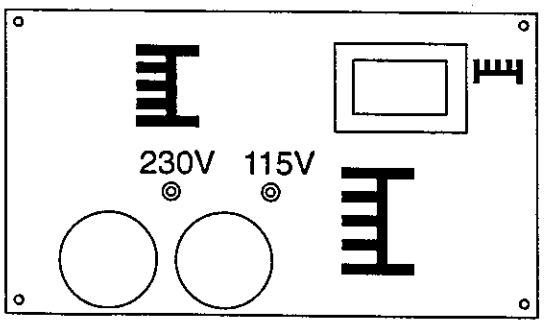
Step 2 Remove upper case, front case, display board, main board. (Refer to "Dissembling and assembling units"

Step 3 Set the jumper wire on the power supply board to select the supply voltage.

Step 4 Build up these units.

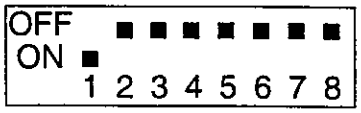
Jumper position	Supply voltage range
115V	AC 85V ~ 132V
230V	AC 170V ~ 265V





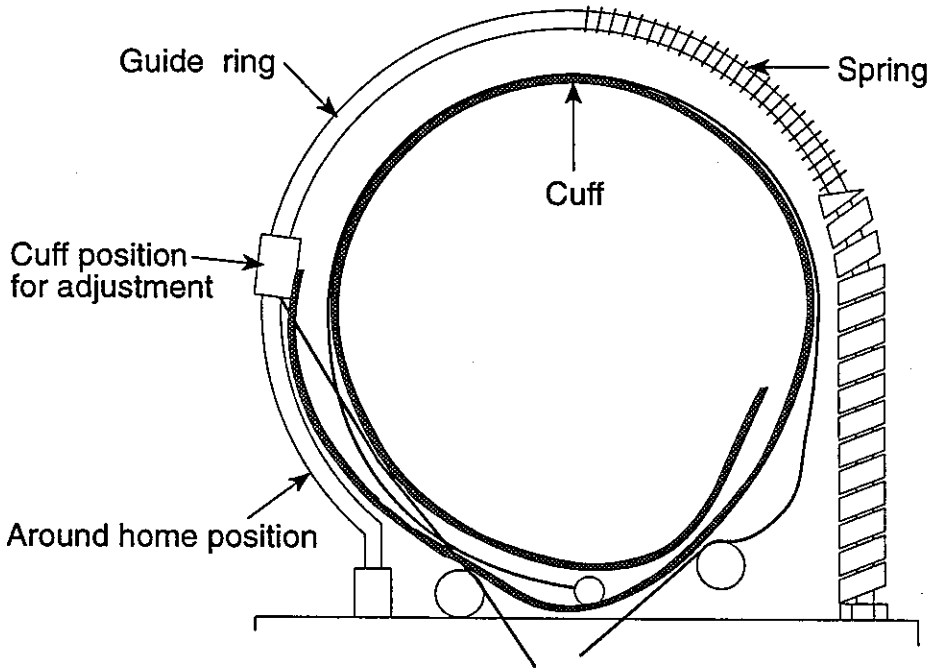
Preparation of air supply system

Step 1 Set switch No.1 only to ON and others to OFF of the FUNCTION setting switch on the rear panel.



Step 2 Set switch S6 to OFF on the main board unit.

Step 3 Set the cuff position to a rewind side from home position.

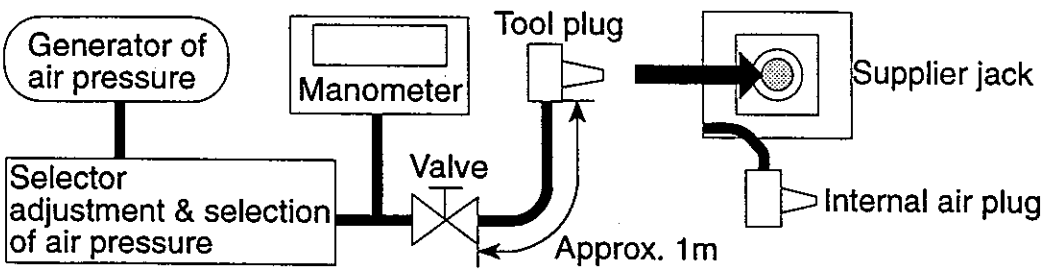


Step 4 Lift up the printer lever for the TM-2654

Step 5 Warm up the manometer at least several hours.

Step 6 Adjust zero position of manometer at room air pressure.

Step 7 Adjust selectable air pressure of the selector at 50±0.5 mmHg, 150±0.5 mmHg, 280±0.5 mmHg, 300±0.5 mmHg.



Adjusting the pressure

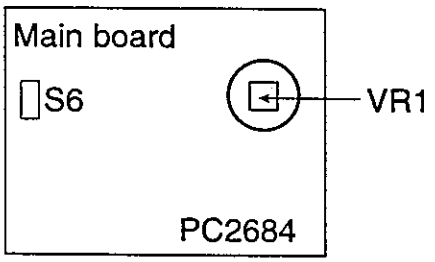
Note ❑ **Some manometer needs warm-up time for several hours to measure stable air pressure.**

❑ **Use stable air pressure for adjustment.**

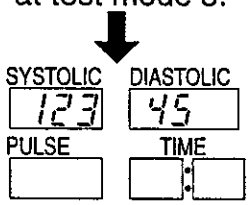
Preparation

Step 1 Perform section "**Preparation of air supply system**".
Step 2 Cancel zero offset value of manometer at room air pressure. (0.0 ±0.1 mmHg)
Step 3 Turn on the product.
Step 4 Set to test mode 5 and wait displaying zero automatically. (Automatic zero adjustment can be executed again with the START/STOP button.)

Full scale adjustment



ex. Measurement value is 123.45 mmHg at test mode 5.



Step 6 Apply a pressure of 280 mmHg from the pressure selector.
Step 7 The measurement value adjustment with the volume VR1.
Case 1 If the manometer value is bigger than the measurement value, decrease the measurement value by the same difference between the manometer value and the measurement value.
Case 2 If the manometer value is smaller than the measurement value, increase the measurement value by the same difference between the manometer value and the measurement value.
Step 8 Change the air pressure to room air pressure (0.0 mmHg).

Linearity check

Step 9 Press START buttom to cancel zero offset value.
Step 10 Apply a pressure of 280 mmHg from the pressure selector.
Step 11 Make sure that the measurement value is within ±3.00 mmHg from manometer value at 280 mmHg.
Step 12 Change the air pressure to room air pressure (0.0 mmHg).
Step 13 If the value at 280 mmHg is not correct, repeat from Step 6 to adjust the value again.
Step 14 Apply a pressure of 150 mmHg from the pressure selector.
Step 15 Make sure that the measurement value is within ±3.00 mmHg from manometer value at 150 mmHg.
Step 16 Change the air pressure to room air pressure (0.0 mmHg).
Step 17 If the value at 150 mmHg is not correct, repeat from Step 6 to adjust the value again.
Step 18 Apply a pressure of 50 mmHg from the pressure selector.
Step 19 Make sure that the measurement value is within ±3.00 mmHg from

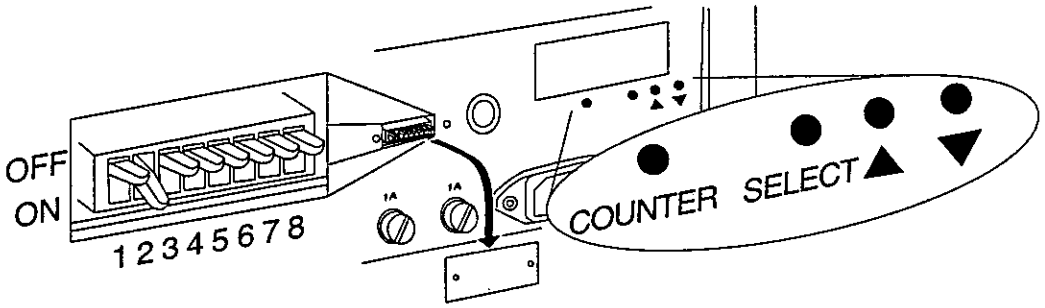
from manometer value at 50 mmHg.

Step 20 Change the air pressure to room air pressure (0.0 mmHg).

Step 21 If the value at 50 mmHg is not correct, repeat from Step 6 to adjust the value again.

5.Restoring parameters

Function setting switches



Print mode selection

△ OFF
▼ ON

Switch No. 1 2 3 4	TM-2654EX	TM-2654FR	TM-2654CH
△△△△	No printing	No printing	No printing
▼△△△	Japanese high speed printing	French high speed printing	Chinese high speed printing
△▼△△	Japanese 3-line printing	French 3-line printing	Chinese 3-line printing
▼▼△△	Japanese comment printing	French comment printing	Chinese comment printing
△△▼△	Japanese graph printing	French graph printing	Chinese graph printing
▼△▼△	Japanese table printing	French table printing	Chinese table printing
△▼▼△	English high speed printing	English 3-line printing	English graph printing
▼▼▼△	English 3-line printing	English 3-line printing	English 3-line printing
△△△▼	English 3-line printing	English 3-line printing	English 3-line printing
▼△△▼	English graph printing	English printing	English printing
△▼△▼	English table printing	English table printing	English table printing

The time for displaying measurement result

Switch No. 5 6	The time for displaying measurement result
△△	Continuous display
▼△	Display for 5 seconds
△▼	Display for 10 seconds
▼▼	Display for 20 seconds

Automatic inflation pressure

Switch No. 7 8	Automatic inflation pressure
△△	160mmHg
▼△	180mmHg
△▼	200mmHg
▼▼	220mmHg

Date and time

Step 1 Press the SELECT button at displaying clock. The product enters to clock adjustment mode.

Step 2 Select the number of year using ▲ or ▼ button. The year is displayed in PULSE window.
Number of 94 ~ 99 indicate 1994 ~ 1999.
Number of 00 ~ 93 indicate 2000 ~ 2093.

Step 3 Press the SELECT button to proceed to month input.

Step 4 Select the number of month using ▲ or ▼ button. The month is displayed in SYSTOLIC window.

Step 5 Press the SELECT button to proceed to day input.

Step 6 Select the number of day using ▲ or ▼ button. The day is displayed in DIASTOLIC window.

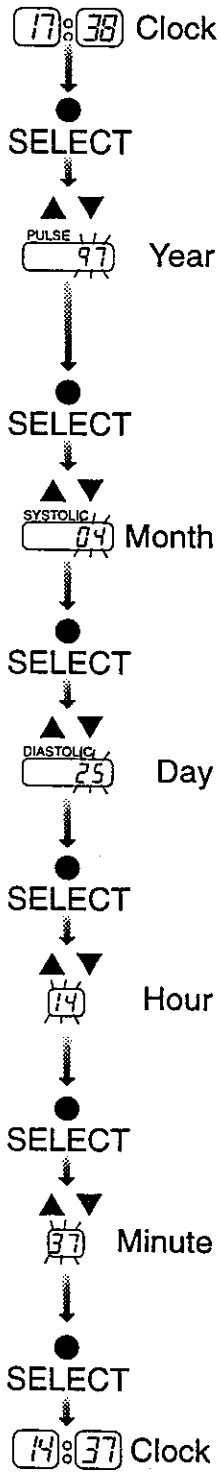
Step 7 Press the SELECT button to proceed to hour input.

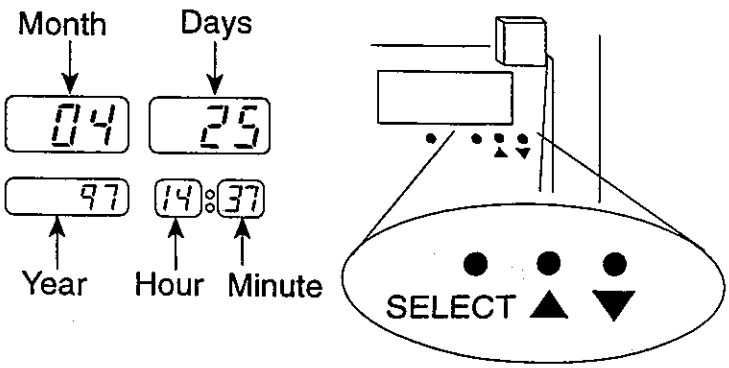
Step 8 Select the number of hour ▲ or ▼ button. The hour is displayed in clock window.

Step 9 Press the SELECT button to proceed to minute input.

Step 10 Select the number of minute ▲ or ▼ button. The minute is displayed in clock window.

Step 11 Press the SELECT button to exit and be normal mode with clock display.





Reset the user counter

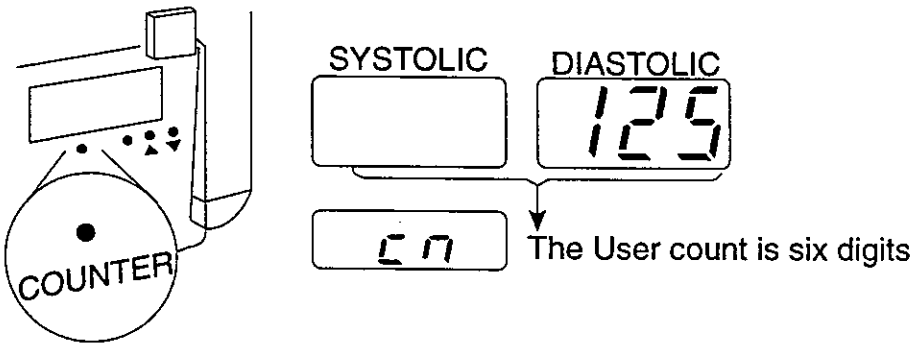
The user counter indicates the number of the user who used the blood pressure monitor.

Read user counter

Step 1 Press the COUNTER button to read the user counter.

Rest user counter

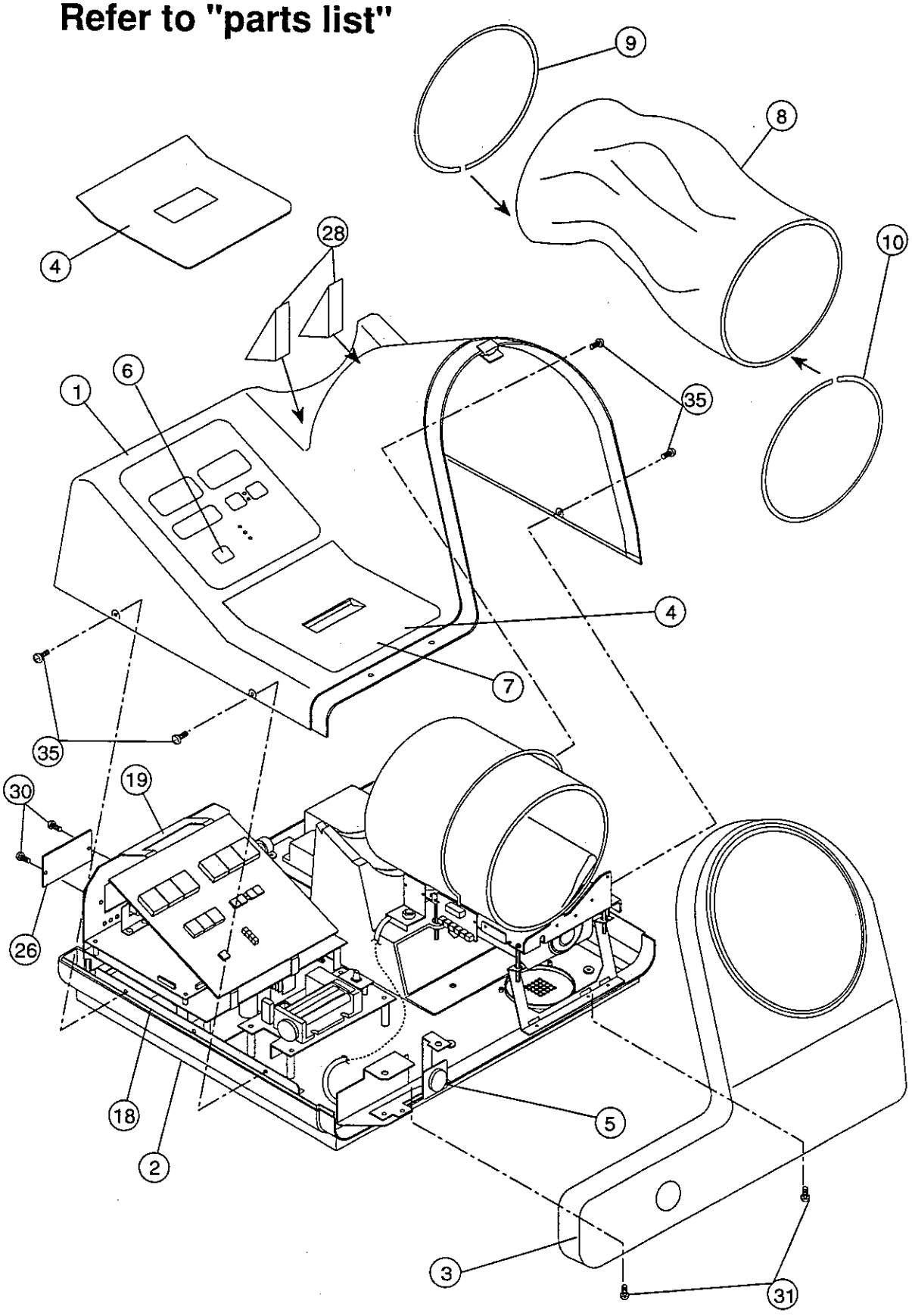
Step 1 Press and hold the COUNTER button on the rear panel until zero is displayed in the user counter.



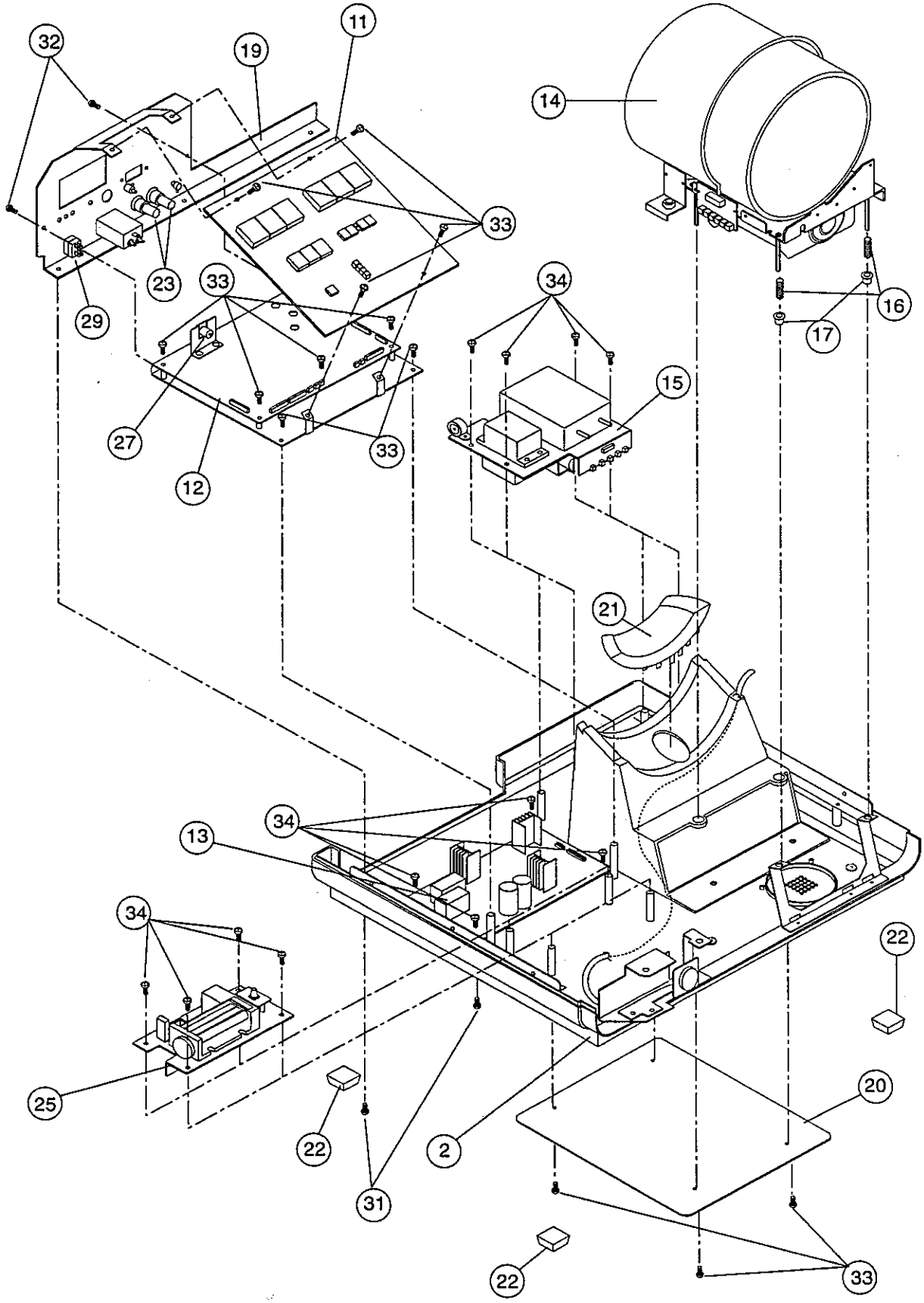
6.Configuration

Configuration

Refer to "parts list"



Refer to "parts list"



Parts list

Units (Refer to "configuration")

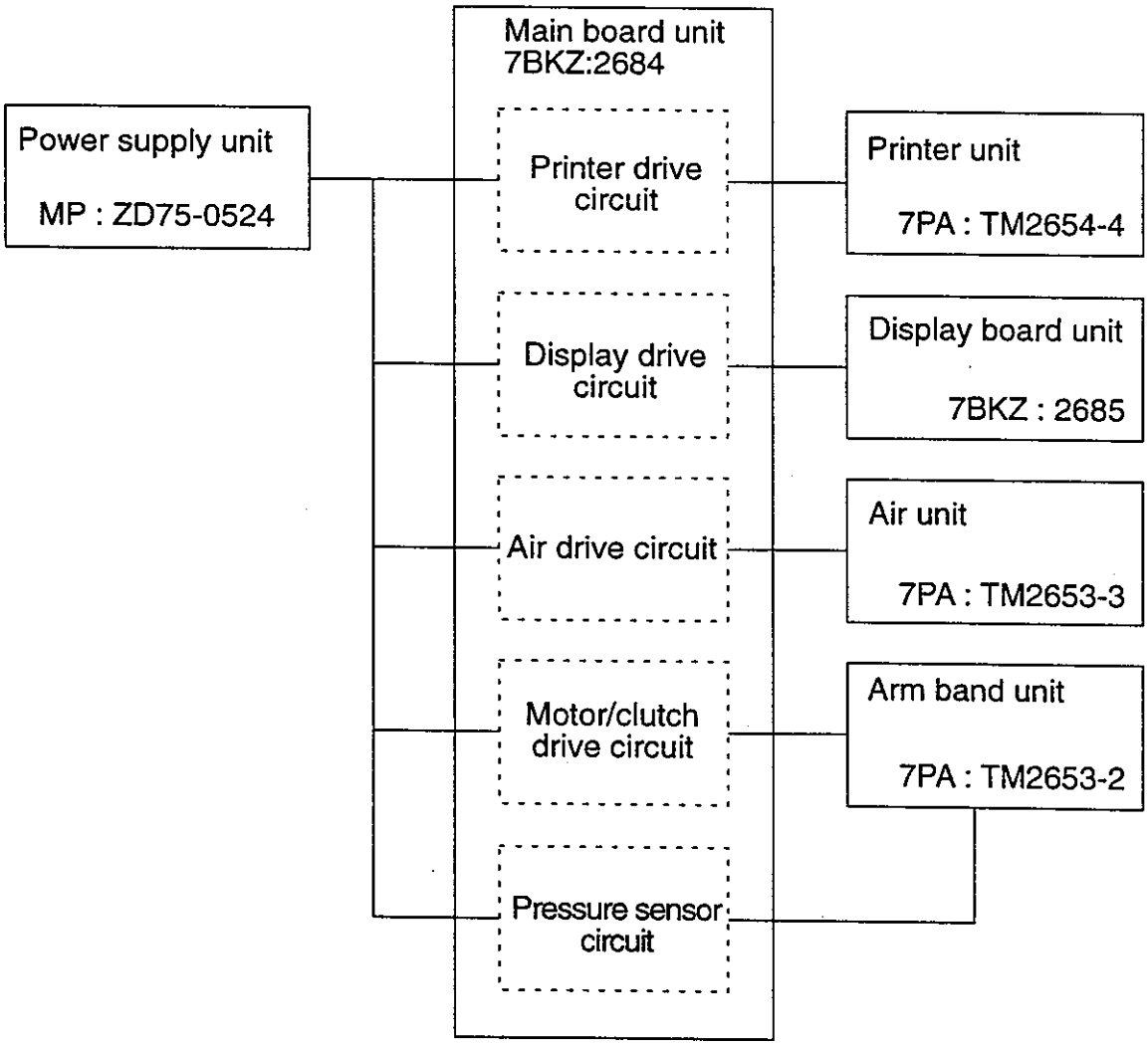
No.	Part number	Name		Quantity
1	7PA : A10230CH-1	Upper case unit	AD : TM2653CH	1
	7PA : A10230EX-1	Upper case unit	AD : TM2653EX	1
	7PA : A10230FR-1	Upper case unit	AD : TM2653FR	1
	7PA : A10230CH-2	Upper case unit	AD : TM2654CH	1
	7PA : A10230EX-2	Upper case unit	AD : TM2654EX	1
	7PA : A10230FR-2	Upper case unit	AD : TM2654FR	1
2	07 : A10231	Lower case		1
3	7PA : A10232CH	Front case unit	AD : TM2653CH/54CH	1
	7PA : A10232EX	Front case unit	AD : TM2653EX/54EX	1
	7PA : A10232FR	Front case unit	AD : TM2653FR/54FR	1
4	7PA : B31563-1	Paper cover unit	AD : TM2653 Series	1
	7PA : B31563-2	Paper cover unit	AD : TM2654 Series	1
	7PA : B31563CH-2	Paper cover unit	AD : TM2654CH	1
	7PA : B31563EX-2	Paper cover unit	AD : TM2654EX	1
	7PA : B31563FR-2	Paper cover unit	AD : TM2654FR	1
5	07 : C43483	Emergency Stop Switch		1
6	07 : U46121-1	Key top		1
7	10 : NO-1677	Mini latch		1
8	13 : B31946A	Cuff cloth		1
9	04 : C4347B	Fabric sleeve ring		1
10	06 : 4000060A	Fabric sleeve holder		1
11	7BKZ : 2685	Display board unit		1
12	7BKZ : 2684	Main board unit		1
13	MP : ZD75-0524	Power supply unit		1
14	7PA : TM2653-2	Arm band unit		1
15	7PA : TM2653-3	Air unit		1
16	05 : 4001790	Floating spring		4
17	10 : 80F0605	Oilless tube		4
18	04:B31567	Attachment		1
19	7PA : 4002490-2	Rear panel unit	AD : TM2653/54EXA/EXB	1
	7PA : 4003114	Rear panel unit	AD : TM2653/54CH	1
	7PA : 4002491	Rear panel unit	AD : TM2653/54FR	1
20	04 : C42878	Bottom panel		1
21	06 : 3000940	Elbow rest pad		1
22	10 : NO-5837	Rubber foot		4
23	FS:EAK-1A	Fuse (1A) for AC115V position		2
	FS:EAK-0.5A	Fuse (0.5A) for AC230V position		2
24		Power cord		1
25	7PA : TM2654-4	Printer unit	TM2654 Series only	1
26		Spec. panel		1
27	07:U42452D	Air supplier jack		
28	06:C43702	Cushion		2
29	ST:SDDJ-DPST	Power switch		1

Screw list (Refer to "configuration")

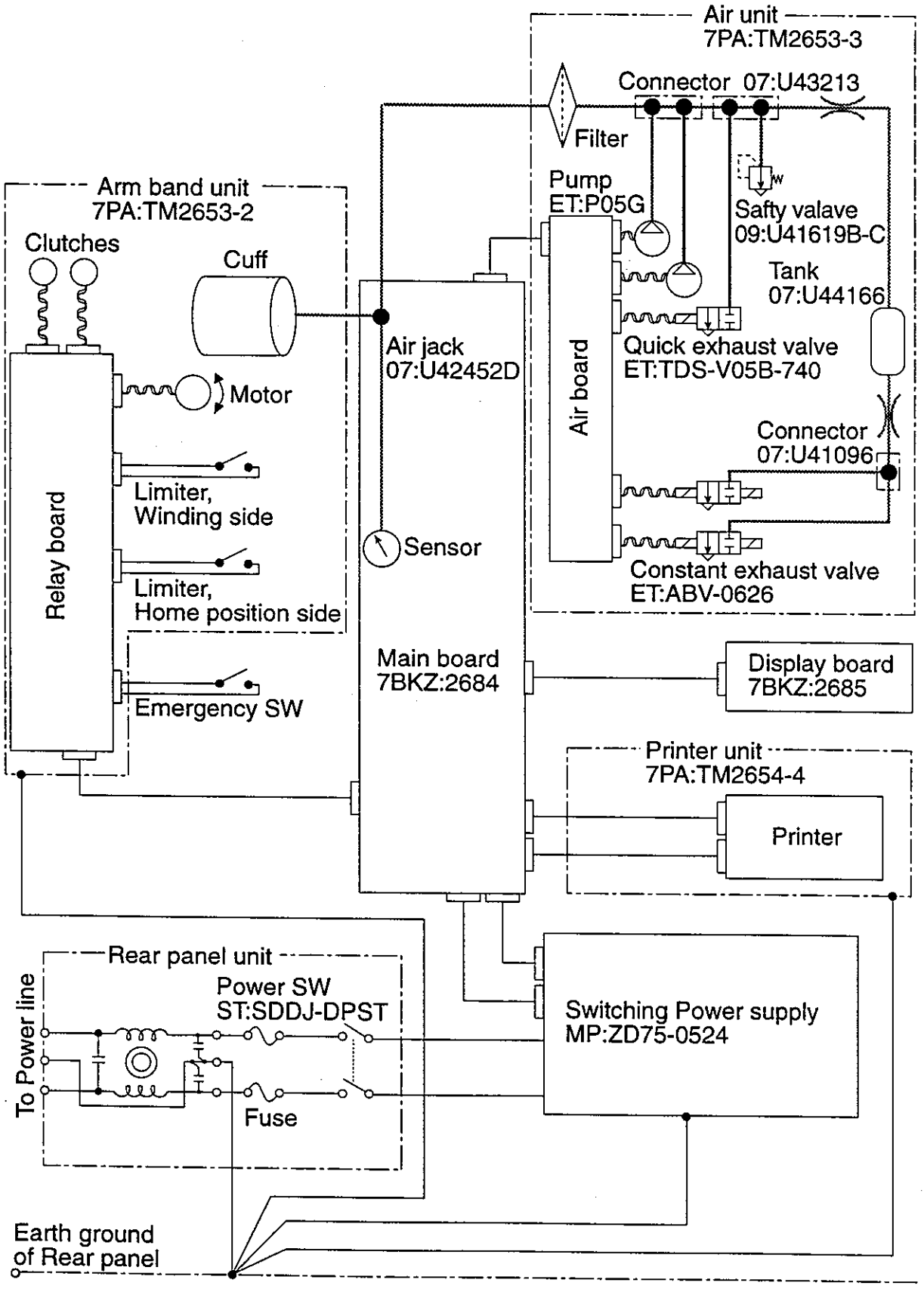
No.	Part number	Name	Quantity
30		Binding head screw, M2x4	
31		Binding head screw, M3x10	
32		Flat head screw, M3x6	
33		Pan head screw, M3x6	
34		Pan head screw, M3x8	
35		Truss head screw, M4 x 10	

Block diagram

The TM2653/54 Series consist of functional units: main board unit, power supply unit, printer unit (TM2654 only), display board unit, air unit, arm band unit, cases (upper, lower, and front), and rear panel.



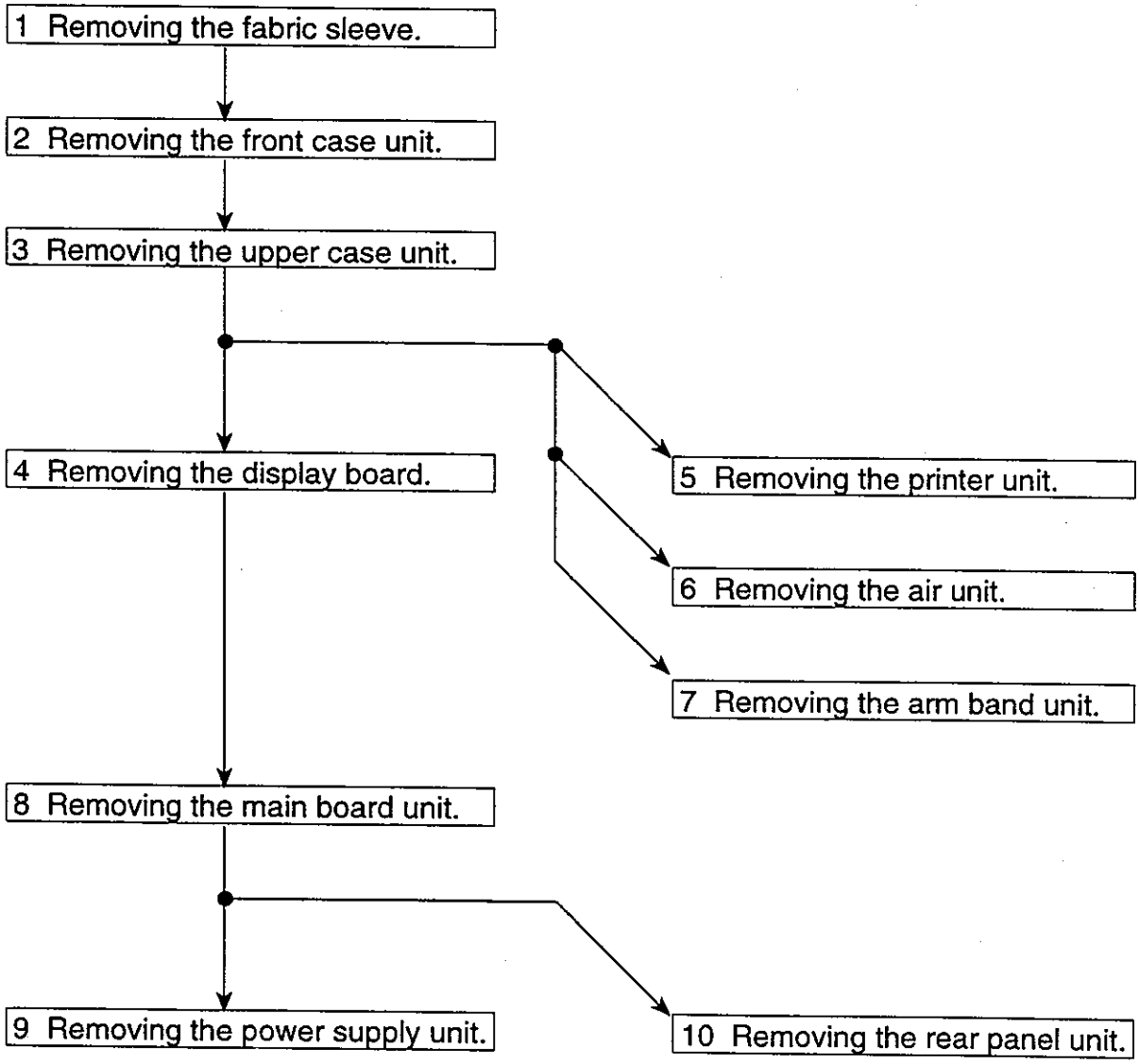
Wiring and piping diagram



7.Disassembling and Assembling units

Disassemble process

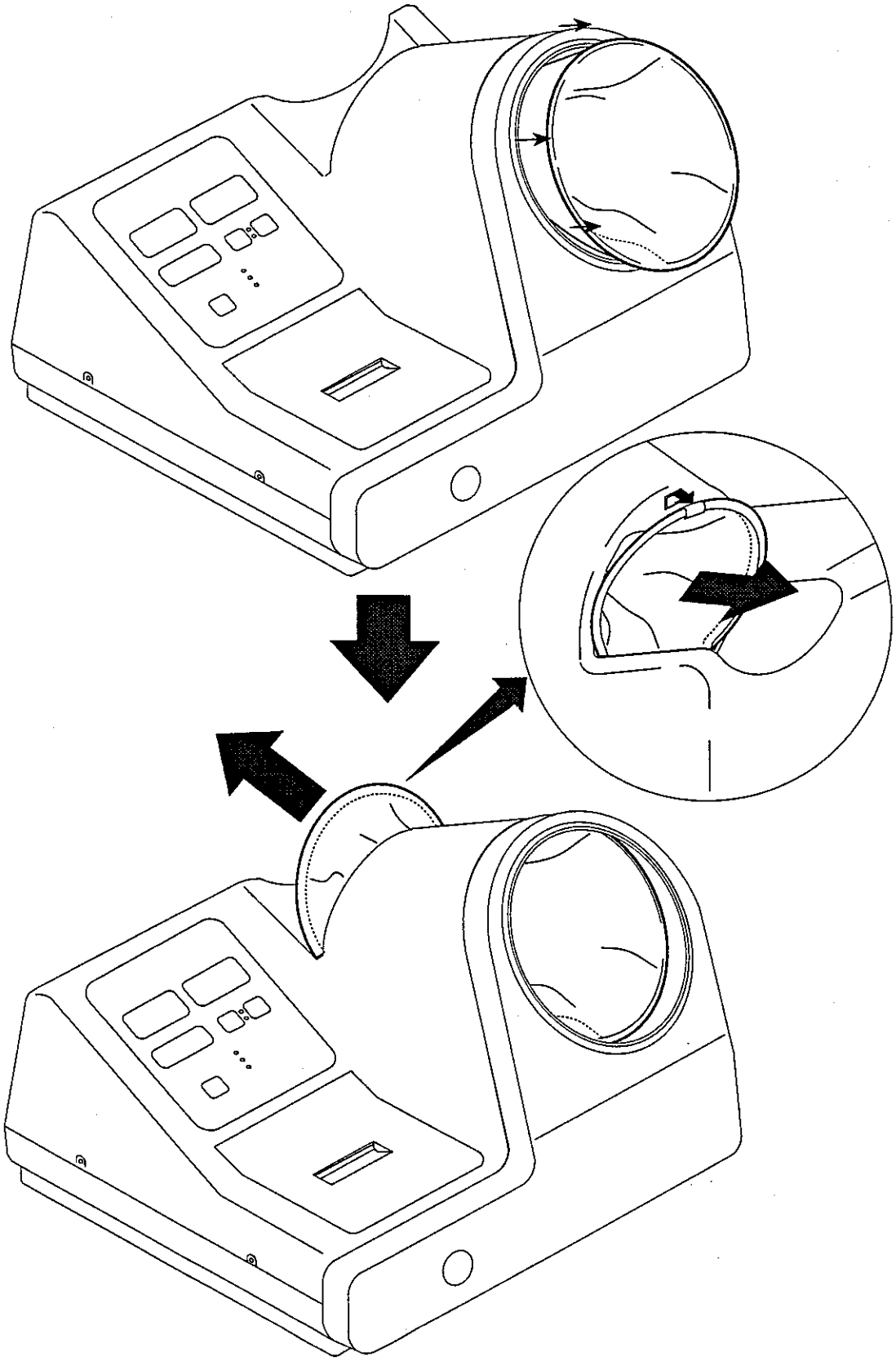
The blood pressure monitor consists of several units and can be disassembled easily. This chapter provides disassembling procedures. Disassemble the blood pressure monitor according to the flowchart shown below.



Removing the fabric sleeve

Step 1 Pull forward the fabric sleeve from the grooves in front of the front case unit.

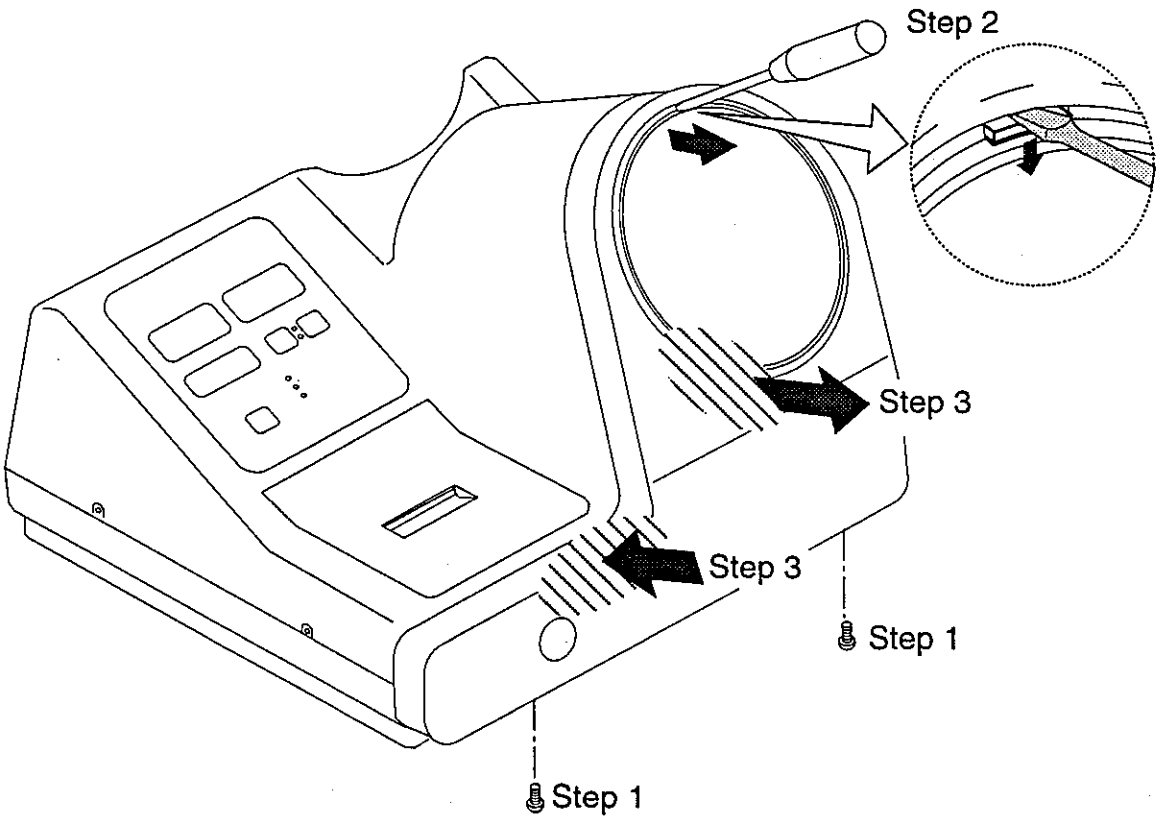
Step 2 Remove the fabric sleeve from the Velcro tape securing the sleeve in the upper case unit, then pull it back.



Removing the front case unit

Step 1 Remove two screws (M3 x 10 bind) securing the front case.
Step 2 Push down and remove the tab securing the front case unit back in the fabric sleeve grooves in the upper right of the front case unit.
Step 3 Apply the right hand at the point shown in the shaded portion in the figure. Push the point and twist the case forward to remove it.

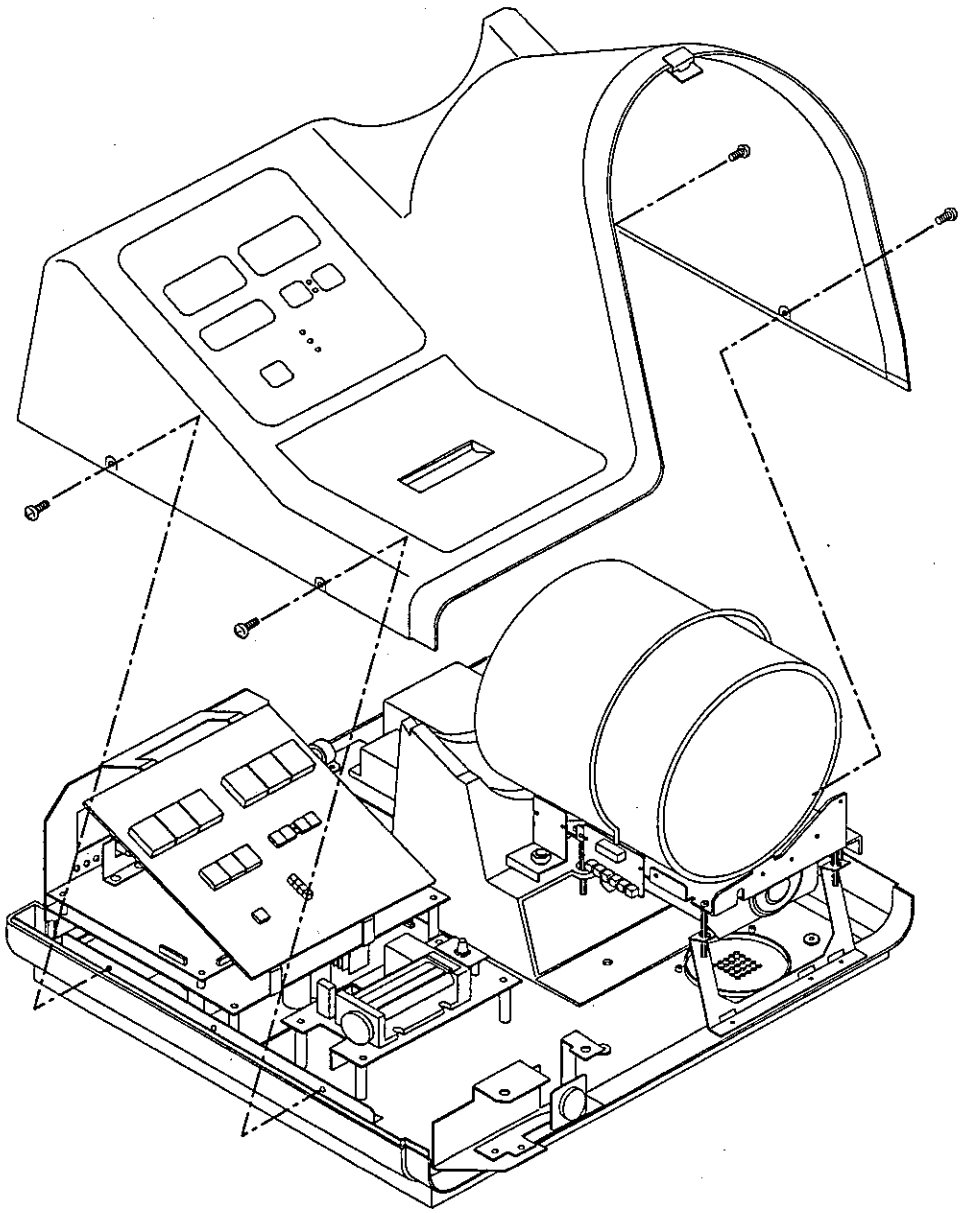
Note The tab at point A in the figure may be easily broken. If you feel any resistance when twisting it forward, do not force it and adjust the degree to twist and retry to twist it forward.



Removing the upper case unit

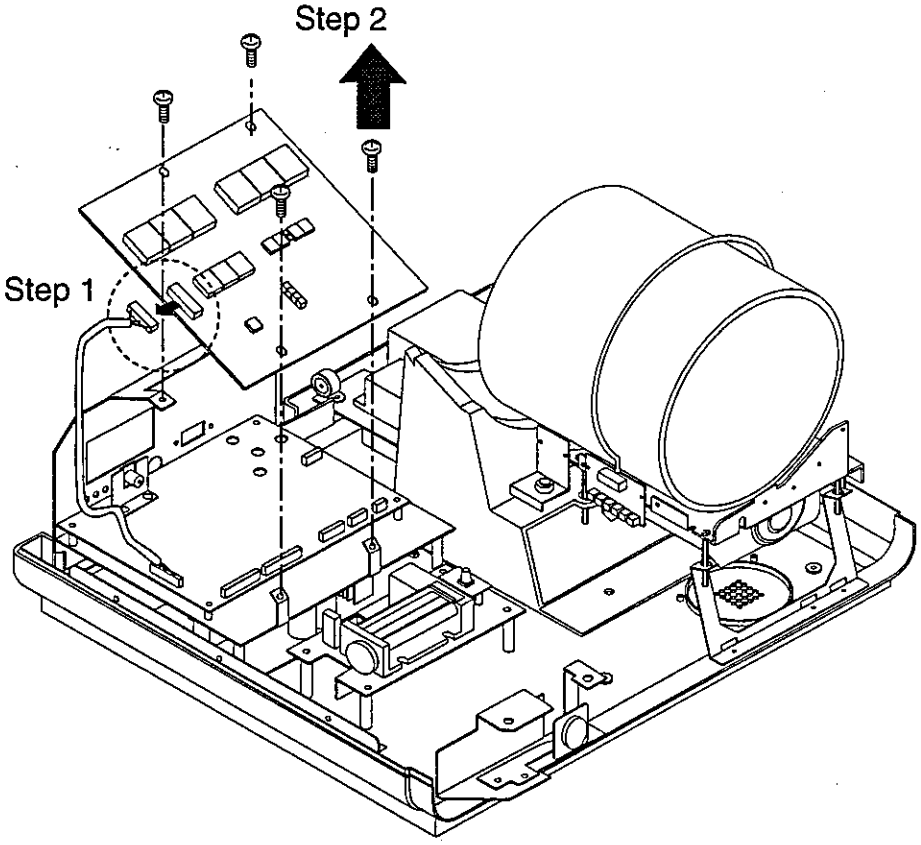
Step 1 Remove four screws (M4 x 10 truss head) on the right and left sides of the upper case.

Step 2 Hold up the upper case unit slowly to remove it.



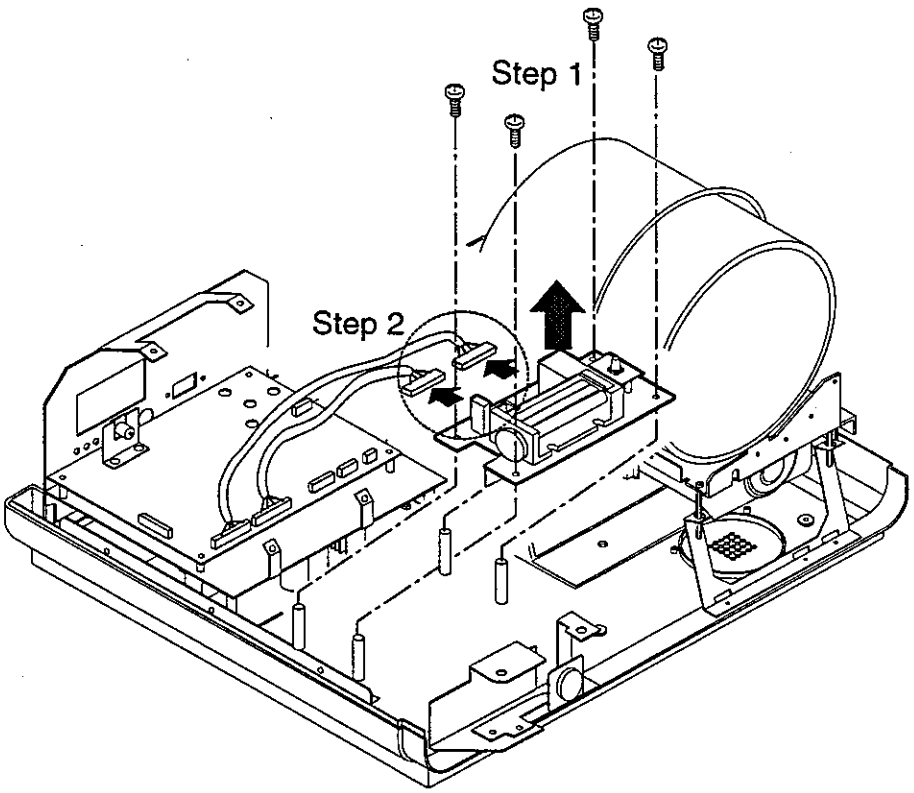
Removing the display board

Step 1 Remove the connecting cable from J1 on the display board unit.
Step 2 Remove the four screws (M3 x 6S tight) securing the display board.



Removing the printer unit

Step 1 Remove four screws (M3 x 8P tight) securing the printer unit.
Step 2 Remove the connecting cables J1 and J2 on the cable relay board (PZ: 2738).

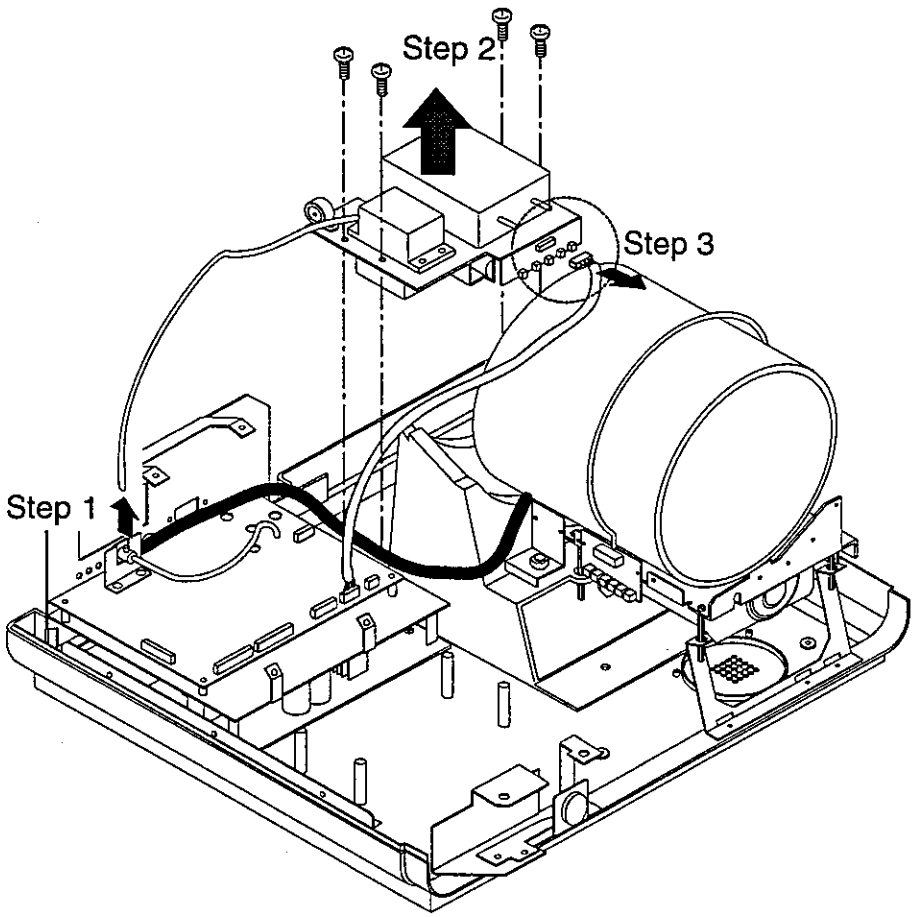


Removing the air unit

Step 1 Remove the silicon tube connected to the main board unit from the air socket of the main board unit.

Step 2 Remove the four screws (M3 x 8P tight) securing the air unit.

Step 3 Remove the connecting cable from J1 on the cable relay board (PZ: 2752).



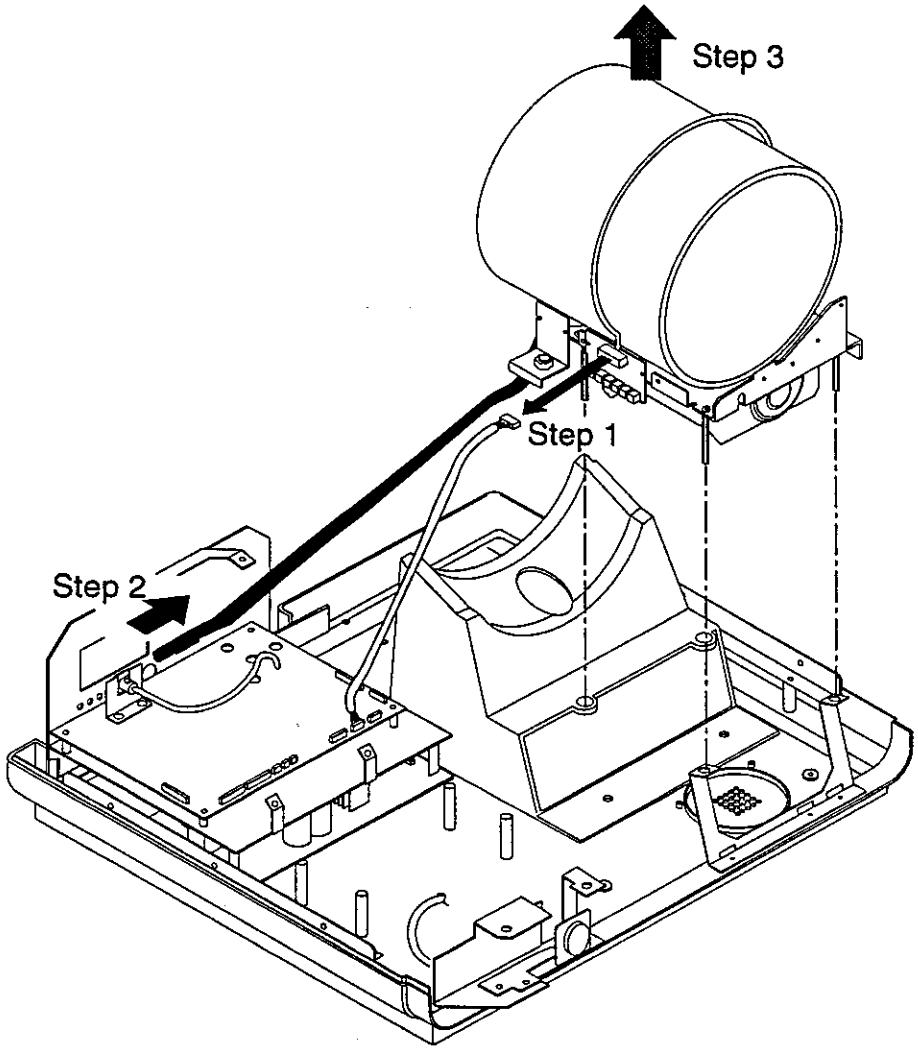
Removing the arm band unit

Step 1 Remove the connecting cable from J1 on the cable relay board (PZ: 2779).

Step 2 Remove the socket of the air hose connected to the cuff of the arm band unit from the air socket on the main board unit.

Step 3 Hold up the arm band unit straight.

Note **The floating spring and oilless bearing on the front are also removed.**



Removing the main board unit

Step 1 Remove the silicone tube connected to the air unit from the air socket on the main board unit.

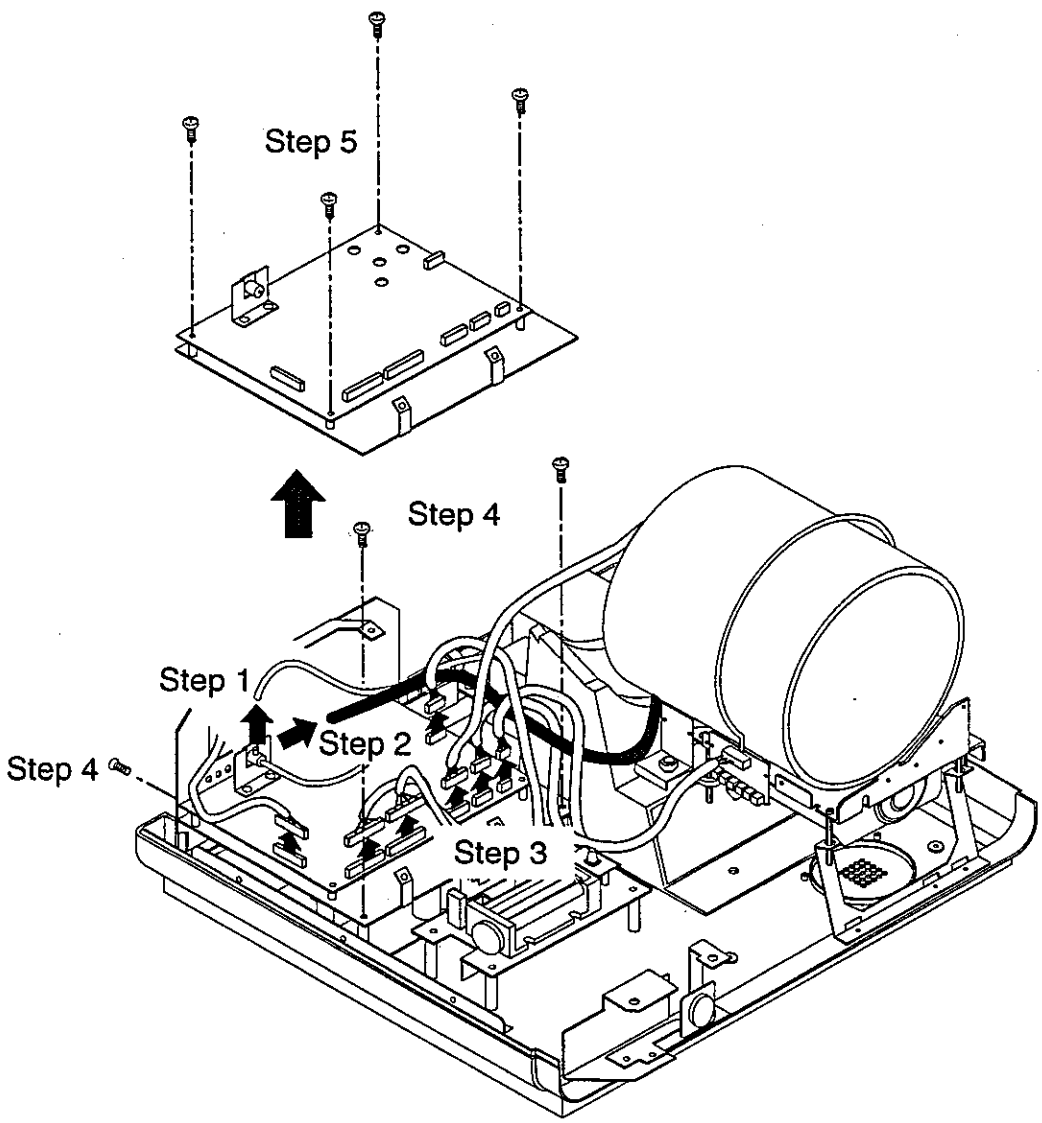
Step 2 Remove the socket of the air hose connected to the cuff of the arm band unit from the air socket on the main board unit.

Step 3 Remove the connecting cables from connectors connect to other units.

Step 4 Remove two screws (M3 x 6P tight) securing the main board panel and four screws (M3 x 6 flat head) securing the rear panel.

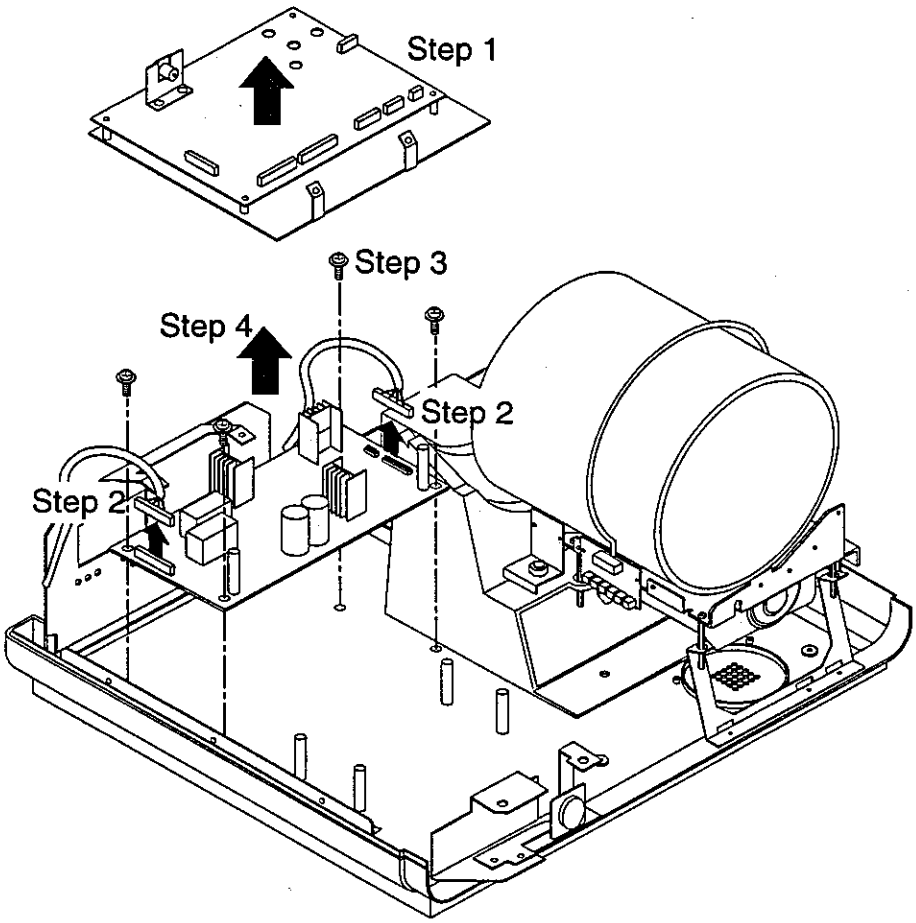
Note **When removing the main board unit to remove the power supply board unit, the power supply board can be removed while it is mounted on the main board panel as shown below.**

Step 5 Remove four screws (M3 x 6S tight) securing the main board unit.



Removing the power supply unit

Step 1 Remove the main unit.
Step 2 Remove the cable connected to the power supply unit.
Step 3 Remove four screws (M3 x 8P tight) securing the power supply unit.
Step 4 Remove the power supply unit.



Removing the rear panel unit

Step 1 Remove the cable connected to the main power switch from CN1 on the power supply unit.
Step 2 Remove the ground cable connected to the rear panel unit on the connected unit.
Step 3 Remove four screws (M3 x 10 bind) securing the rear panel from the bottom panel of the blood pressure monitor.

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