



BREADMAKER SERVICE MANUAL

CAUTION

BEFORE SERVICING THE UNIT, READ THE
SAFETY PRECAUTIONS IN THIS MANUAL.

MODEL : HB-154CJ / 204CJ



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PREFACE

1. SAFETY PRECAUTIONS

Follow basic safety precautions before using electrical appliances.

1. READ ALL INSTRUCTIONS.

2. To protect against electrical shock, do not immerse cord, plug, or appliance in water or other liquid.
3. Do not touch hot surfaces. Always use oven mitts when handling the hot bread pan of bread.
4. Close supervision is necessary when the appliance is used by or near children.
5. Unplug the unit from the outlet when not in use and before cleaning. Allow the breadmaker to cool before attaching or removing parts.
6. Do not touch moving parts.
7. Do not operate the appliance with a damaged cord or plug or after the appliance malfunctions, or it has been dropped or damaged in any manner. Return the appliance to the nearest authorized service facility for examination, repair, or mechanical adjustment.
8. Attachments that are not recommended or sold by the appliance manufacturer should not be used.
9. Do not use outdoors.
10. Do not let the cord hang over the edge of the table or counter or touch hot surfaces.
11. Do not place on or near a gas or electric burner, or in a heated oven.
12. To disconnect, grip the plug and pull it out from the wall outlet. Never pull the cord.
13. Do not use the appliance for other than the intended use.
14. This product is intended for household use only.

2. SERVICING PRECAUTIONS

The following cautions should be observed when troubleshooting.

- a) As the appliance is made to be serviced only by properly qualified service personnel, it cannot be repaired by the user.
- b) Before servicing, you should keep your hands dry. The power cord must be unplugged to protect electrical hazards.
- c) Wear gloves when assembling or disassembling the appliance to avoid being injured by a sharp edge.

3. INSTALLATION INSTRUCTIONS

- a) Place the breadmaker allowing at least 4-inch air space around sides and top of the breadmaker.
- b) Always place the breadmaker on a heat-proof counter top or table during operation.
- c) This breadmaker must be placed on a firm, flat, and solid surface.
- d) 120/60Hz rated bread Machine has a polarized plug; one blade is wider than the other. 230V/50Hz rated bread Machine has to be earthed.
- e) Extension cords are available and may be used if care is exercised in their use.

♦ EXTENSION CORD IS USED ♦

1. The marked electrical rating of the extension cord should be at least as great as the appliance.
2. The longer cord should be arranged so it will not drape over the counter top or tabletop where it can be pulled by children or tripped over.

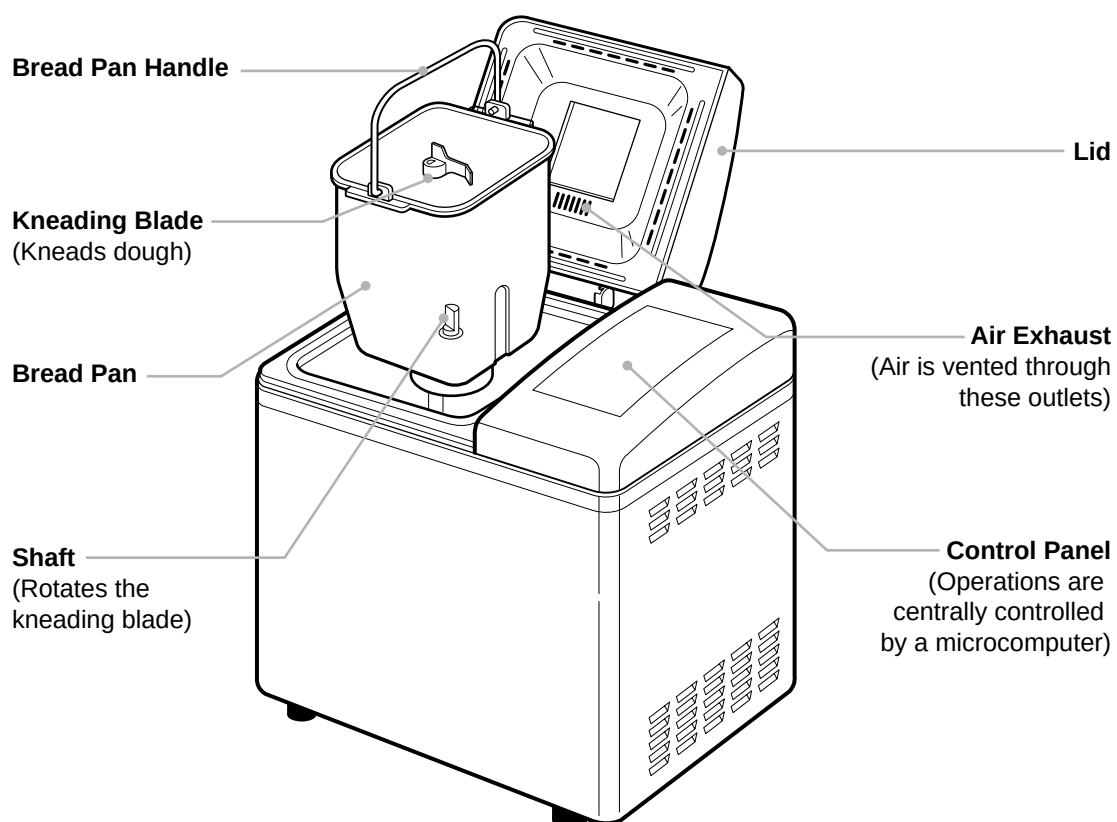
4. SPECIFICATIONS

DESCRIPTION		AUTOMATIC BREADMAKER
MODEL		REFER TO THE COVER PAGE
POWER SUPPLY		INDICATED ON THE RATING LABEL
POWER CONSUMPTION	MAIN HEATER	550W
	KNEADING MOTOR	100/110W
DIMENSIONS(W × D × H)		APPROX. 13 3/4" × 9" × 13 3/4" (35 × 23 × 35cm)
WEIGHT		APPROX. 14.4lb.(6.7kg)
TIMER		4:10 TO 13:00 HOURS DIGITAL TIMER
CORD LENGTH		APPROX. 3 FEET, 3.4 INCHES (1.0m)
THERMAL FUSE	MAIN HEATER PROTECTOR	291°F/144°C
	KNEADING MOTOR PROTECTOR	248°F/120°C/130°C
ACCESSORIES		MEASURING CUP, MEASURING SPOON(OPTION)
SERIAL NO.		INDICATED ON THE RATING LABEL WITH PERMANENT INK

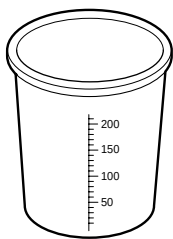
OPERATING INSTRUCTIONS

1. FEATURES AND CONTROL PANEL

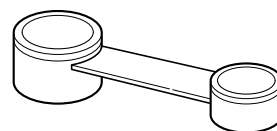
A. FEATURES



ACCESSORIES



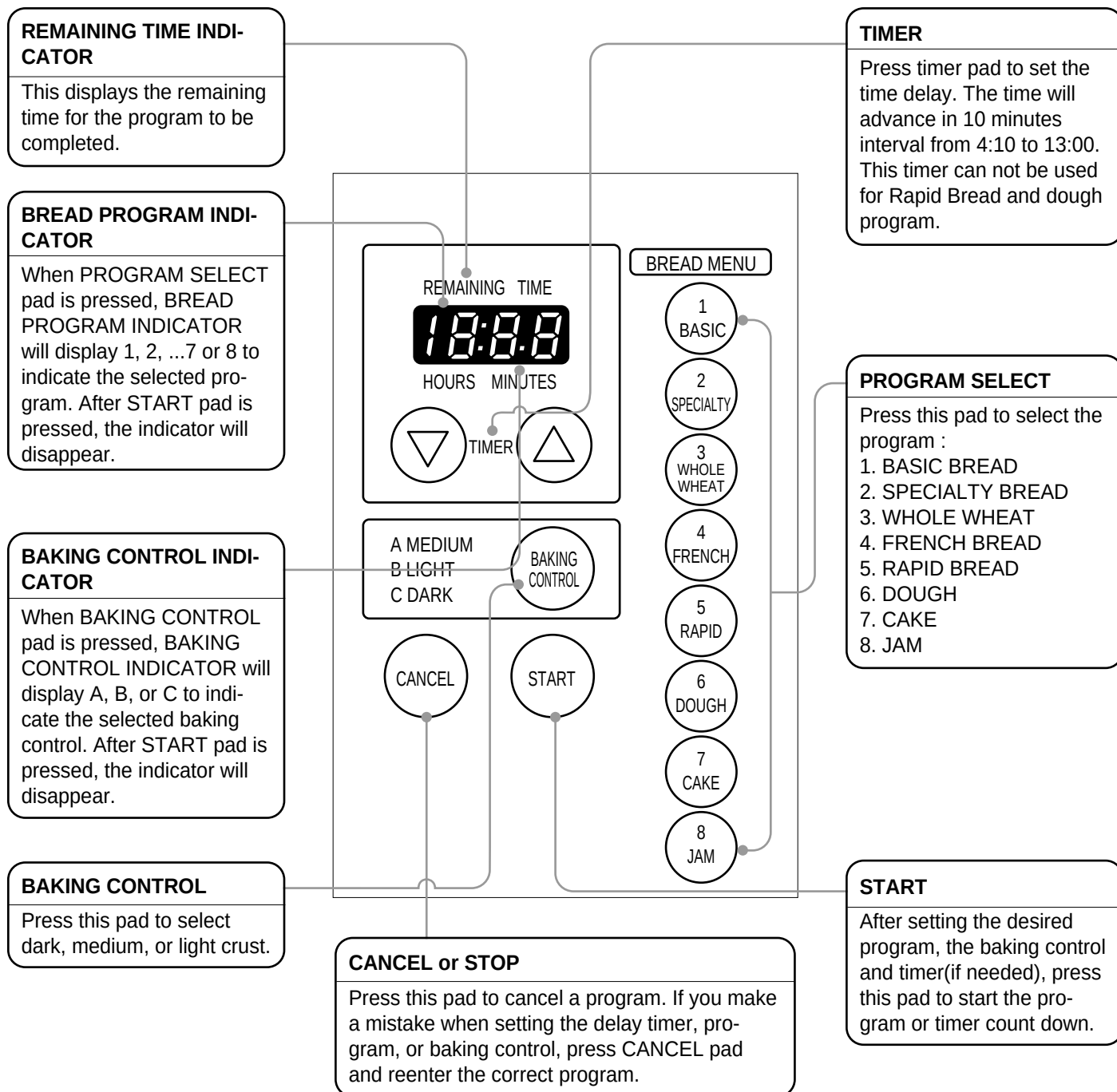
Measuring Cup



Measuring Spoon (OPTION)

B. CONTROL PANEL

* Control panel layout may vary according to the model



NOTE

If you want to cancel the selected program, press the CANCEL pad for more than 1 second at any time during the cycle.

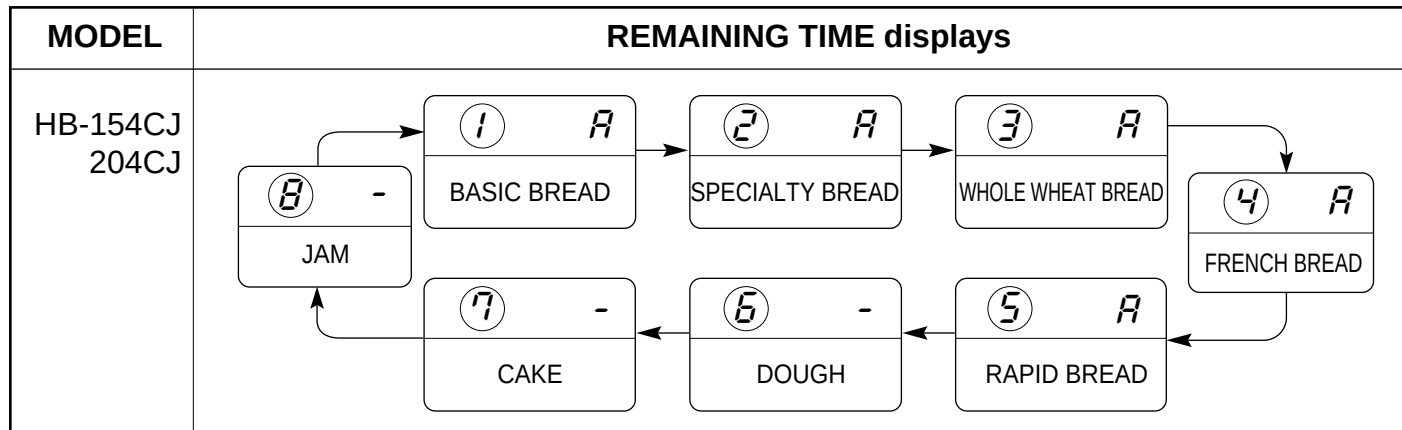
2. OPERATION CHECK

After installation or repair, the following sequence and results should be checked.

1. GENERAL OPERATION CHECK

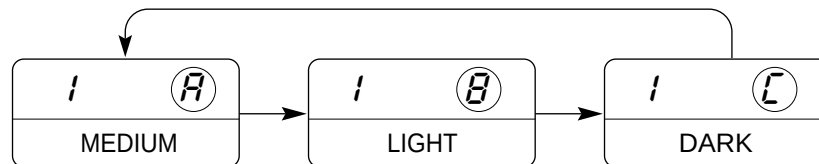
- Plug the power cord into a prolonged electrical outlet.
- The REMAINING TIME display **1 A** and Basic Bread is set already.
- Check the PROGRAM SELECT.**

Press the PROGRAM SELECT pad, then REMAINING TIME will advance as follows:



- Check the BAKING CONTROL** (except for CAKE or JAM and DOUGH program).

Press the BAKING CONTROL pad, then the REMAINING TIME will advance as follows:



- Check the TIMER**

Set the timer for how long you want to wait before the bread is done (from 4:10 to 13:00 in 10 minutes interval).

- Press TIMER UP PAD (▲) once, the REMAINING TIME DISPLAY 4:10.
 - When constant pressure is applied to the pad, the time will advance quickly from 4:10 to 13:00.
 - After 13:00 is set, press once more, then the REMAINING TIME displays 4:10.
 - If you pass the time that you wanted, press TIMER DOWN PAD (▼) to go back.
- After selecting PROGRAM SELECT and BAKING CONTROL, press the START pad. Then the colon on the REMAINING TIME blinks to indicate that the breadmaker starts to operate.
 - Press the CANCEL(STOP) pad to cancel all baking processes. If the START pad is already pressed, just press the CANCEL(STOP) pad and hold for MORE THAN 1 SECOND.

CAUTION

- The TIMER can not be used in CAKE AND JAM.
- After setting the time, press the START pad to operate the breadmaker. Check to see if the colon blinks.

2. TEST KEY PROGRAM CHECK

You can check the operating of each load by using the self-diagnosis program.

(a) OPERATION CHECK

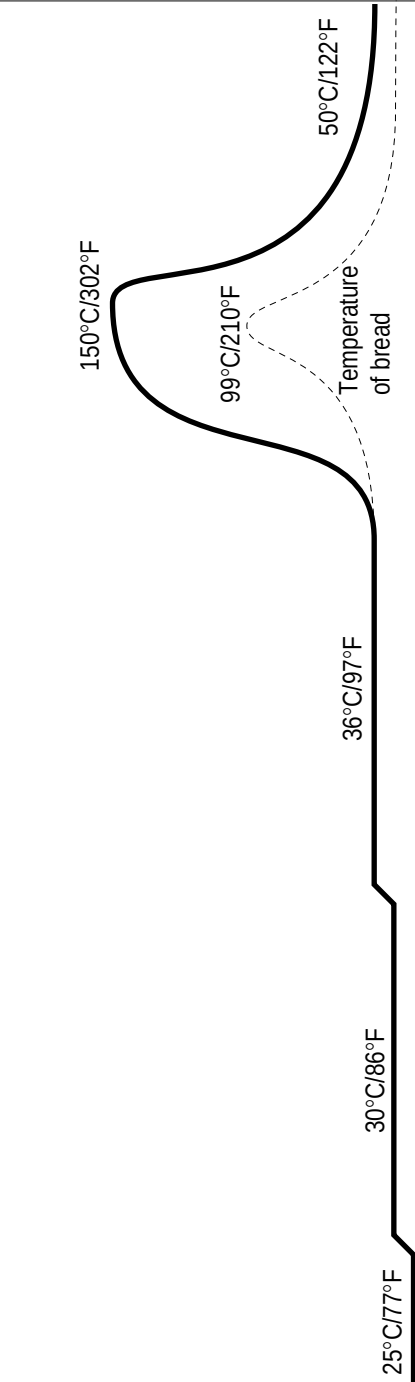
- 1) When power is supplied while pressing the TIMER UP PAD (▲) and TIMER DOWN PAD (▼) at the same time, the self-diagnosis program will start.
- 2) After checking 1), press the START pad, then the process will advance as follows.

REMAINING TIME display	<i>18:88</i>	<i>P: 1</i>	<i>P: 2</i>	<i>18:88 → P: 1 →</i>
OPERATION	LED CHECK	Kneading motor	Heater	

- 3) After 25 seconds from the starting points of processing, or if the CANCEL(STOP) pad is pressed, the self-diagnosis program will be canceled.

3. BREADMAKING PROGRAM

3-1) EXPLANATION OF BASIC PROGRAM (BASIC BREAD)

Process	Time Delay	1st Knead		Rest	2nd Knead	1st Rise	Gas Squeeze	2nd Rise	Gas Squeeze	3rd Rise	Bake	Cool	Warm	End	
Time	Max 8:50	2min.	5min.	5min.	12min.	40min.	4sec.	26min.	4sec.	60min.	Approx. 50min.	Approx. 20min.	3hours	-	
Remaining Time	Max 13:00	3:40	3:38	3:33	3:28	3:16	2:37	2:36	2:11	2:10	1:10	0:20	[:H]	End	
Process Indicator (OPTION)	Time Set	Knead				Rise					Bake	Cool	-	-	
Heater	On/Off														-
Kneading Motor	Off	On/Off	On	Off	On	Off	On	Off	On	Off					-
Temperature of oven case															
Micro-Computer Control	Time Delay	Knead				Rise				Bake	Cool	Warm	End		
	The temperature is controlled at 25°C (77°F).	Breadmaker starts to operate intermittently to proof flour splashed for 2 minutes. After mixing flour with water, kneading blade rotates with 250rpm for 5 minutes. After resting for 23 minutes, rotation again for 12 minutes. During knead and rest courses, the temperature is maintained at 30°C (86°F) by using the sensor and heater.				Accurate temperature control is essential during rising, (Dough temperature: Approx. 36°C (97°F). Microcomputer controls the power supply accurately to keep suitable dough temperature.				Bread is baked with high power. Bread is baked with a crisp golden crust and a fluffy inside.			Immediately after baking, bread can not be eaten because it's too hot.	Breadmaker maintains the bread at a suitable temperature (60°C/140°F) for 3 hours.	
														-	

3-2) PROGRAM SPECIFICATIONS

(1) Basic Bread (3:40)

Remark	Timer	Knead				Rise					Bake	Cool	Warm
		Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze	2' Rise	G/Squeeze	3' Rise			
Time	13hr	2min.	5min.	5min.	12min.	40min.	4sec.	26min.	4sec.	60min.	50min.	20min.	3hr

(2) Specialty Bread (3:40)

▼ Beep sounds 9 minutes before the end of 2nd kneading

Remark	Timer	Knead				Rise					Bake	Cool	Warm
		Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze	2' Rise	G/Squeeze	3' Rise			
Time	13hr	2min.	5min.	5min.	12min.	40min.	4sec.	26min.	4sec.	60min.	50min.	20min.	3hr

(3) Whole Wheat Bread (4:00)

▼ Beep sounds 9 minutes before the end of 2nd kneading

Remark	Timer	Pre Heat	Knead				Rise					Bake	Cool	Warm
			Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze	2' Rise	G/Squeeze	3' Rise			
Time	13hr	20min.	2min.	11min.	50min.	12min.	20min.	4sec.	15min.	4sec.	40min.	50min.	20min.	3hr

(4) French Bread (4:00)

▼ Beep sounds 9 minutes before the end of 2nd kneading

Remark	Timer	Pre Heat	Knead				Rise					Bake	Cool	Warm
			Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze	2' Rise	G/Squeeze	3' Rise			
Time	13hr	20min.	2min.	11min.	50min.	12min.	20min.	4sec.	15min.	4sec.	40min.	50min.	20min.	3hr

(5) Rapid Bread (1:59)

▼ Beep sounds 5 minutes before the end of 2nd kneading

Remark	Timer	Knead				Rise					Bake	Cool	Warm
		Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze	2' Rise	G/Squeeze	3' Rise			
Time	13hr	2min.	5min.	5min.	7min.	13min.	4sec.			52min.	35min.		3hr

(6) Dough (1:03)

Remark	Remaining	Knead				Rise	
		Mix	1' Knead	Rest	2' Knead	1' Rise	G/Squeeze
Time	13hr	2min.	4min.	5min.	12min.	40min.	4sec.

(7) Cake (1:10)

Remark	Timer	Bake	Cool	Warm
Time		60min.		3hr 10min

(8) Jam (1:20)

Remark	Timer	Pre Bake	Bake	Cool
Time		10min.	60min.	10min.

NOTE

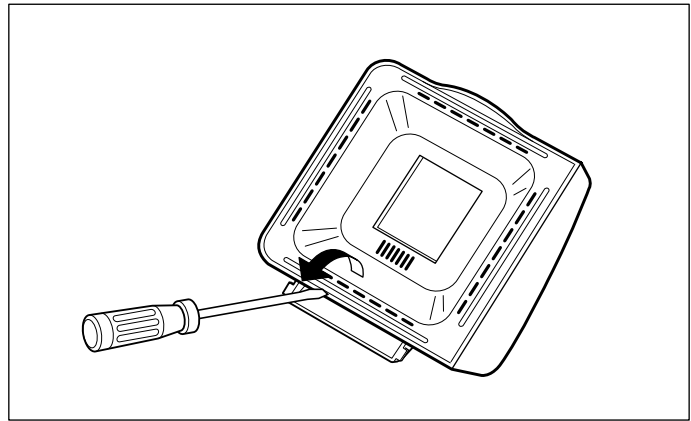
1. The Specialty Bread, Whole Wheat Bread, and French Bread Programs contain an audible signal (8 beeps) which sounds 9 minutes before the end of the 2nd knead (5 minutes before the end of the 2nd knead for Rapid Program). For specialty bread, add additional ingredients at this time (i.e. raisins, nut, vegetables, etc.).
2. The Basic Bread, Specialty Bread, Whole Wheat Bread, and French Bread Programs contain an audible signals (4 beeps) at the end of the baking cycle (20 minutes of cooling time remain).
3. The beeper beeps 8 times at the end of each program to indicate the program is finished.

DISASSEMBLY INSTRUCTION

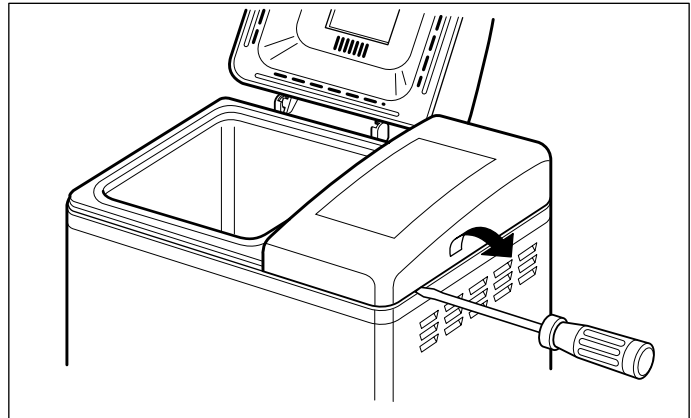
• PAY ATTENTION TO THE FOLLOWING IN SERVICE AND INSPECTION.

- (a) Protect against electric shock:
Pull out the plug for service and inspection. Don't touch live components when service and inspection are made.
- (b) Restore the original conditions of components and wire layout; Safety provisions are made by using tube and the other insulation material and by preventing wire from contact with heat generating or movable components by means of layout and binding. They should be restored to the original conditions.
- (c) Safety inspection after service is required as follows: confirm that screws, nuts, components, and wires removed for service are restored. Check the deterioration around service components, and check for insulation.

- 1.** Turn the Top Cover assembly upside down and pull out the inner cover and the viewing window.

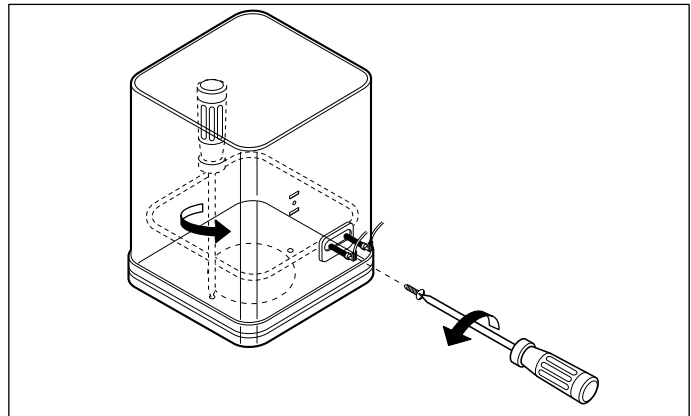


- 2.** Pull out the control panel.

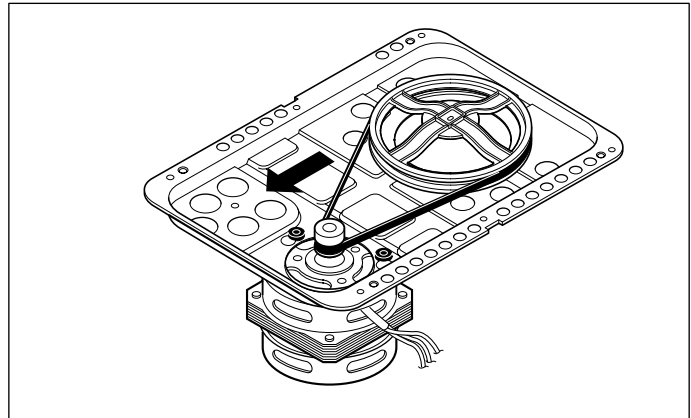


- 3.** After disconnecting leads, remove the oven case main assembly from the chassis by unscrewing two machine screws fixing oven case main assembly.

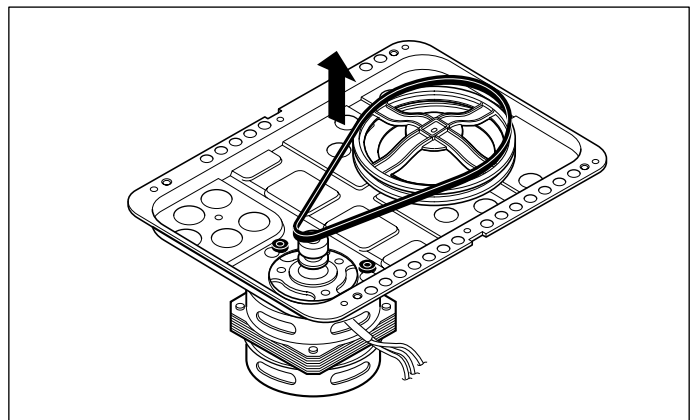
- 4.** Remove the leadwire assembly and sheath heater assembly from the oven case main assembly.



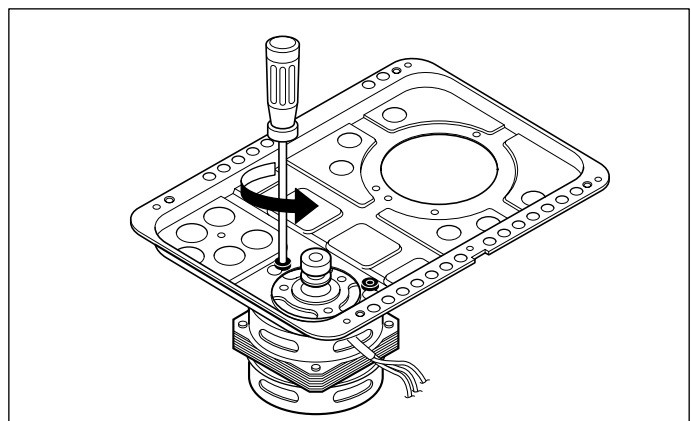
- 5.** Turn the breadmaker upside down. Remove four legs and base cover by unscrewing. Pull out the power cord assembly on the bottom of the unit. Remove the chassis assembly from the out case.



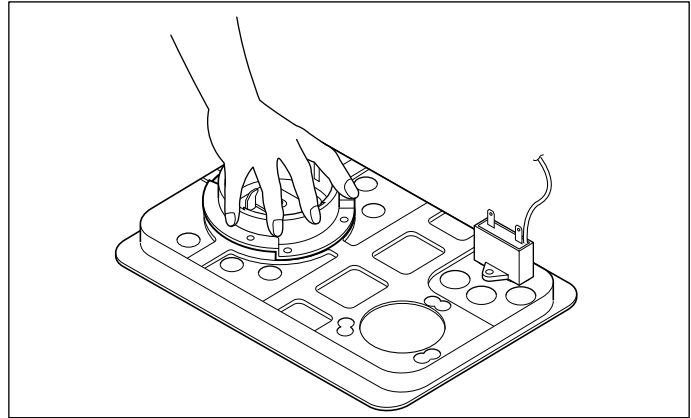
- 6.** Remove the poly V-belt.
Remove nut and pulley washer, then kneading pulley can be disconnected.
Remove the E-ring, washer, and pulley shaft assembly.



- 7.** Remove the motor pulley from the motor shaft by removing one machine screw. Remove three fixing screws, then the kneading motor and motor cushion can be disassembled.

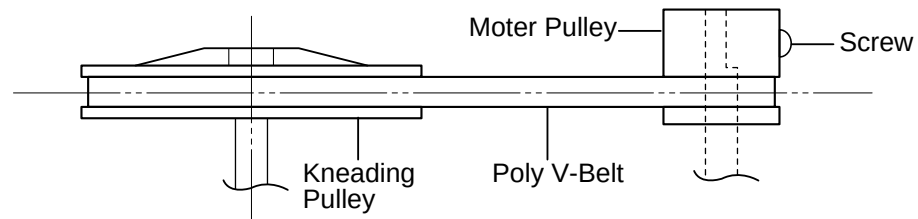


8. Turn the chassis upside down and remove the oven base and the capacitor.



CAUTION

When you reassemble the kneading pulley, poly V-belt, and motor pulley after service or repair; adjust the center of the kneading pulley, poly V-belt, and motor pulley as follows.



TROUBLESHOOTING GUIDE

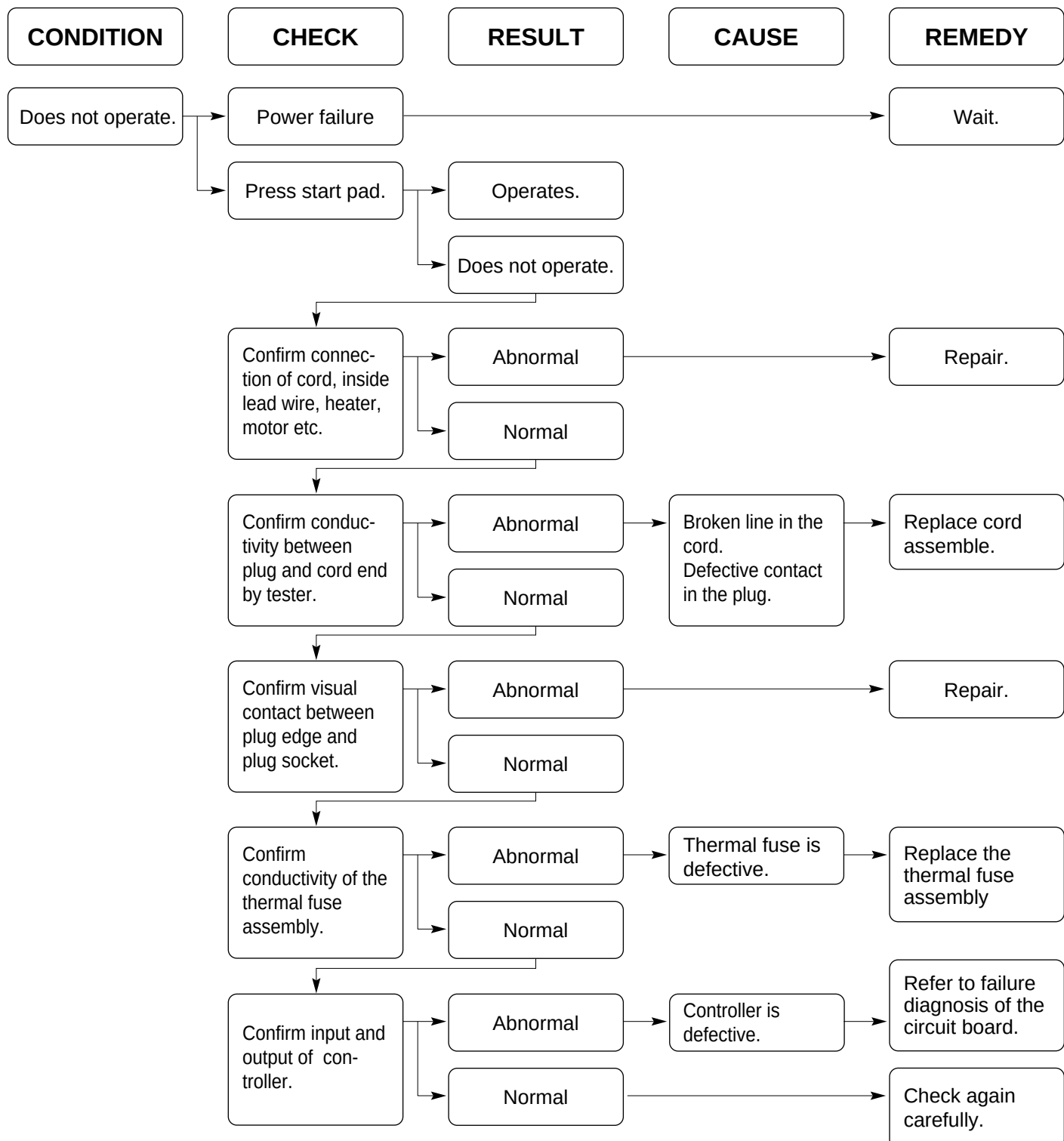
When you get a complaint from your customer, evaluate the complaint carefully before going to the customer's home. If there are the following symptoms, please instruct the customer for the proper use of the breadmaker. This can save an unnecessary service call.

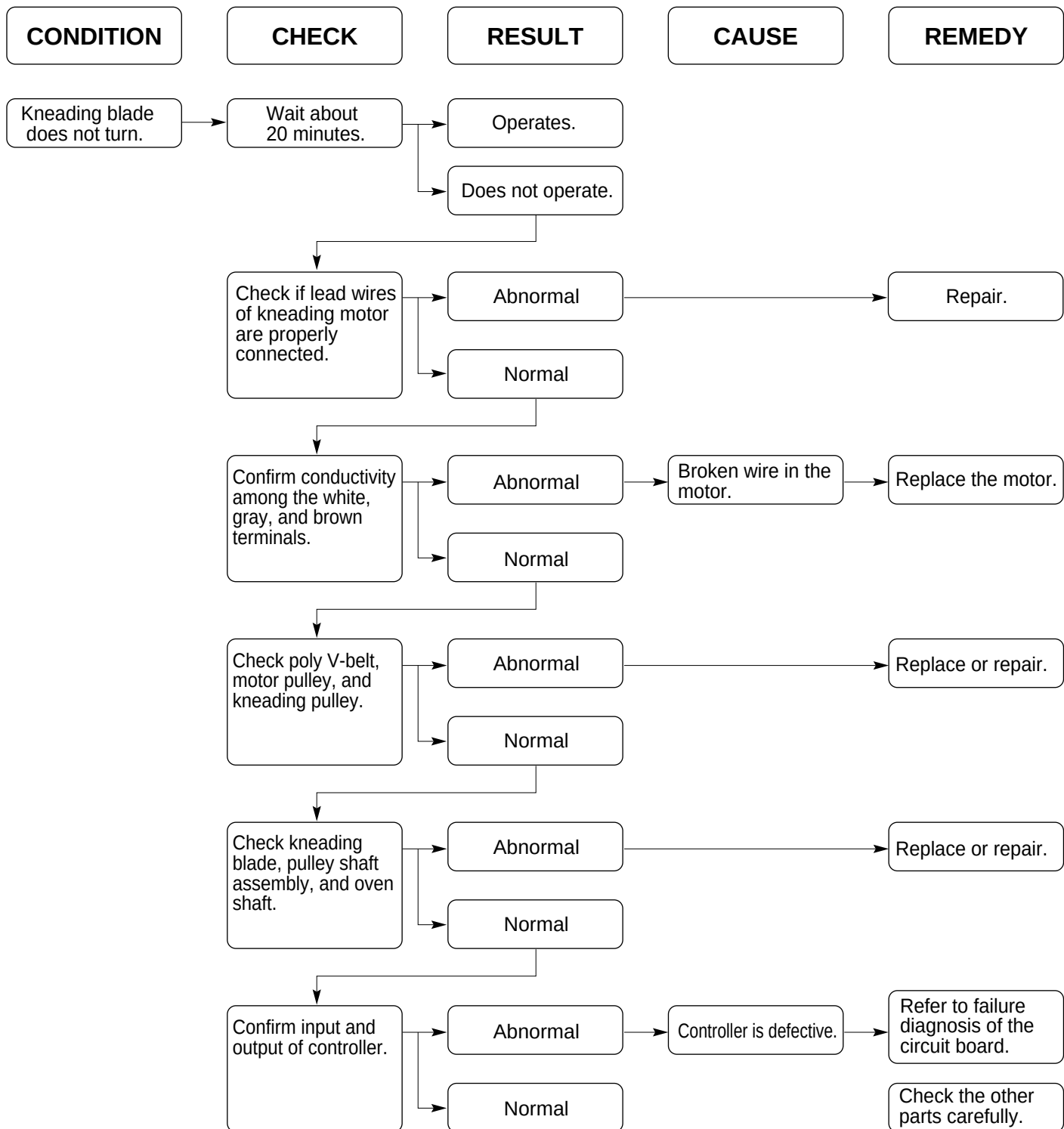
A. CHECKING POINTS BEFORE SERVICE

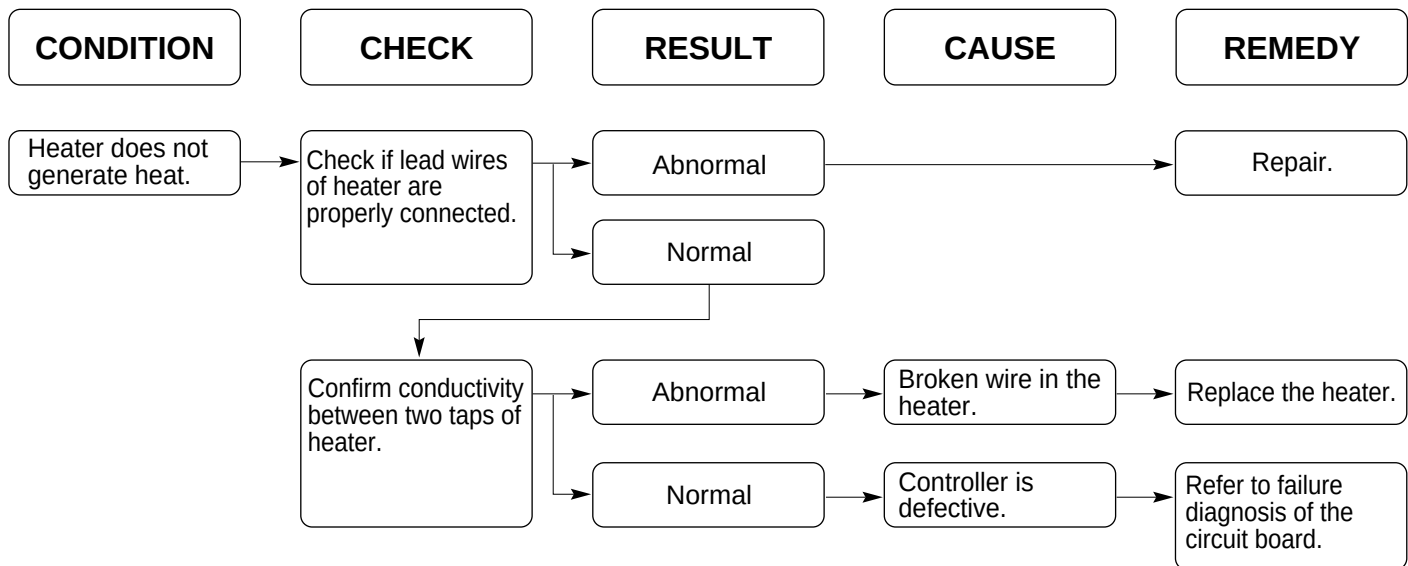
CONDITION	CAUSE	REMEDY
Breadmaker does not work.	Electric power is interrupted.	Wait.
	Remaining time display shows [HI] and does not work. (Inside of breadmaker is too hot.)	Wait until cool.
	Breadmaker plug is not Inserted tightly.	Insert breadmaker plug securely.
Breadmaker operates but does not knead.	Kneading blade is extracted.	Fix the kneading blade securely.
Breadmaker does not operate and display <i>!A</i> on remaining time display window after start.	Electric power has been interrupted during operation.	Empty bread pan and operate again.
A little smoke is emitted from the breadmaker.	Some material is spilled in the breadmaker when measuring ingredients.	Clean the inside of breadmaker and operate again.
Bread is not made well.	Water used is too hot or too cold.	Regulate the ingredients used. Referring the owner's manual.
	Ingredients are spoiled by being open for long time.	
	Used ingredients are not measured accurately.	

B. TROUBLESHOOTING GUIDE EXCEPT CIRCUIT BOARD

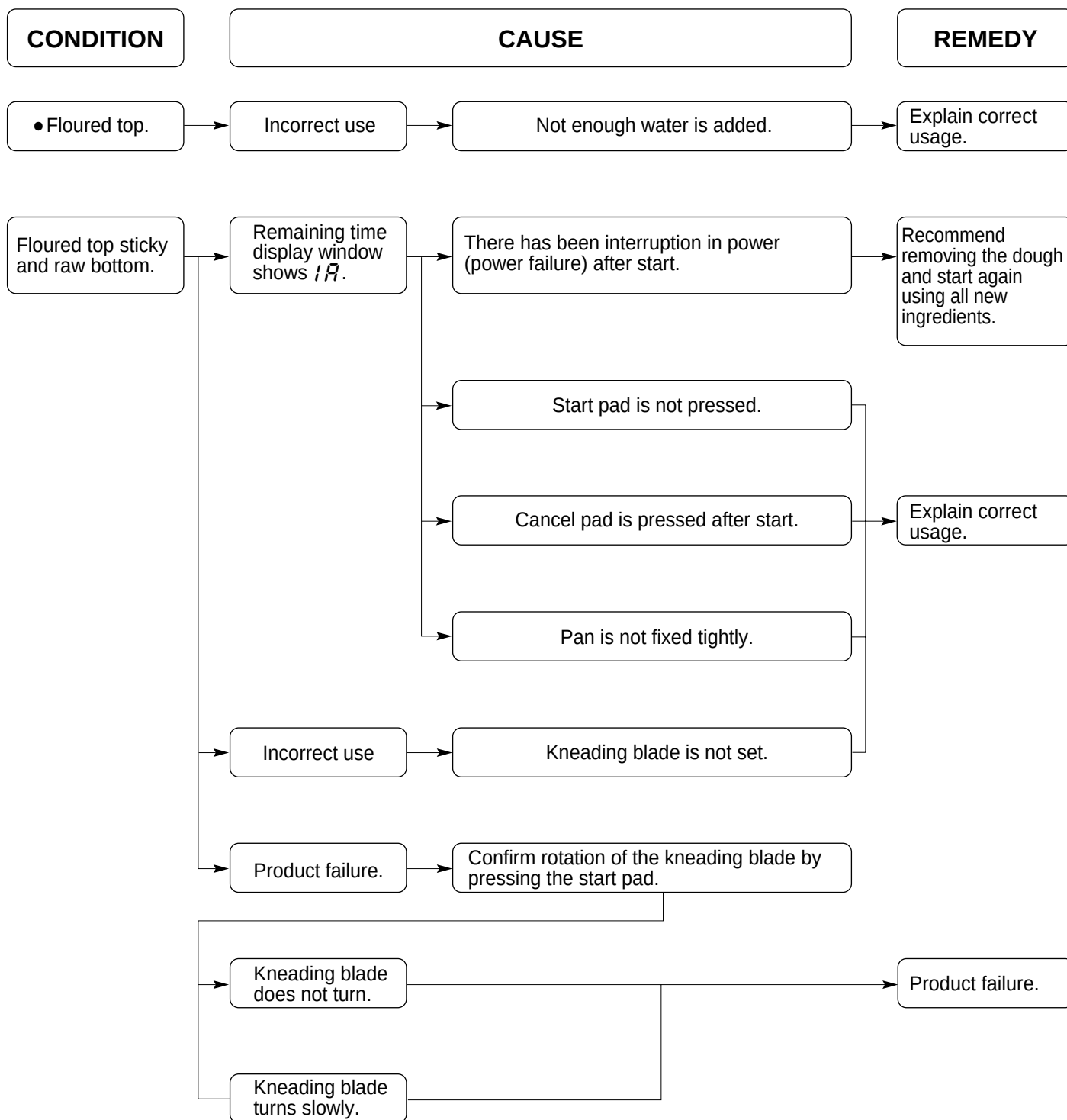
(TROUBLE 1) Breadmaker does not operate.

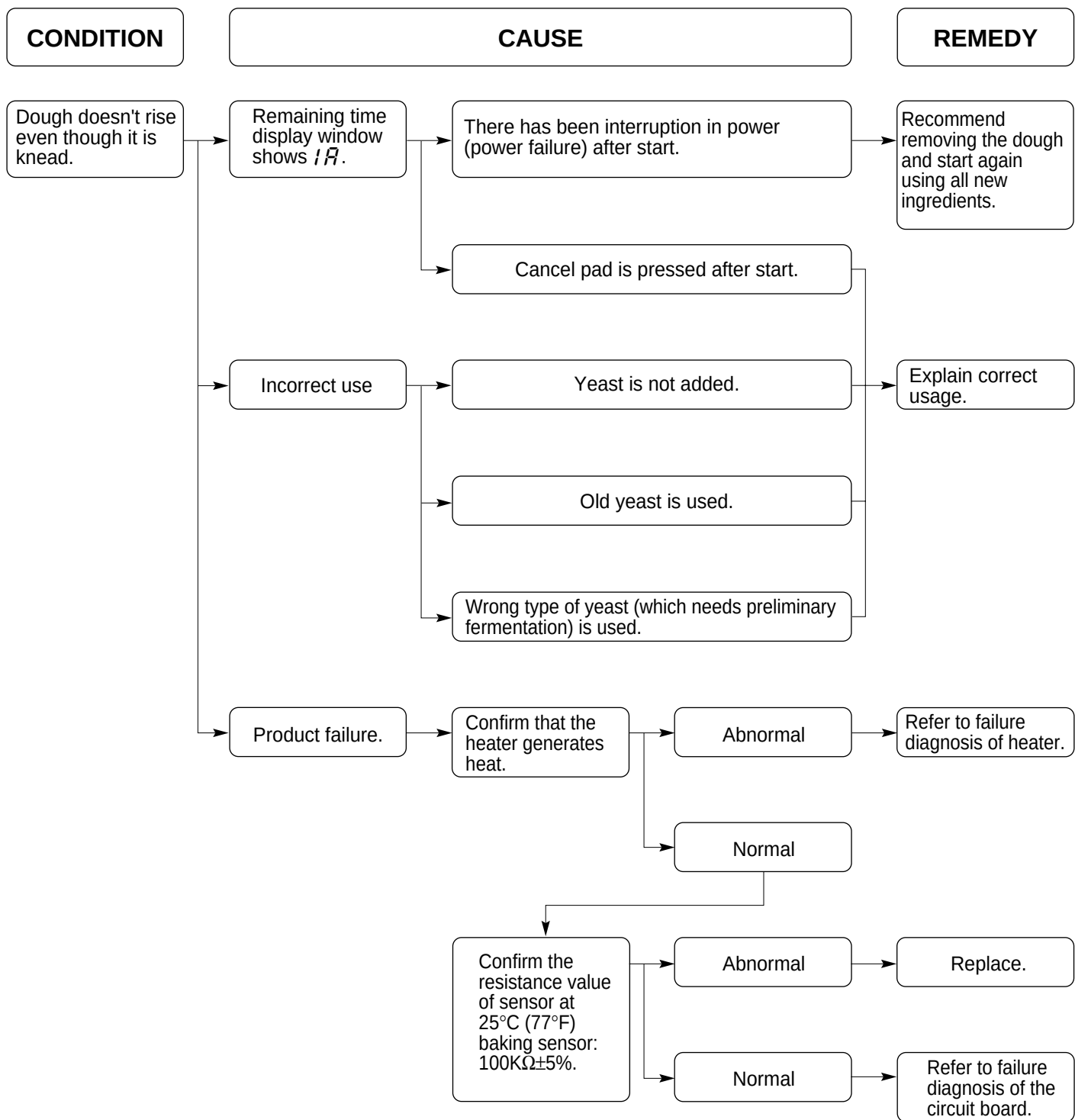


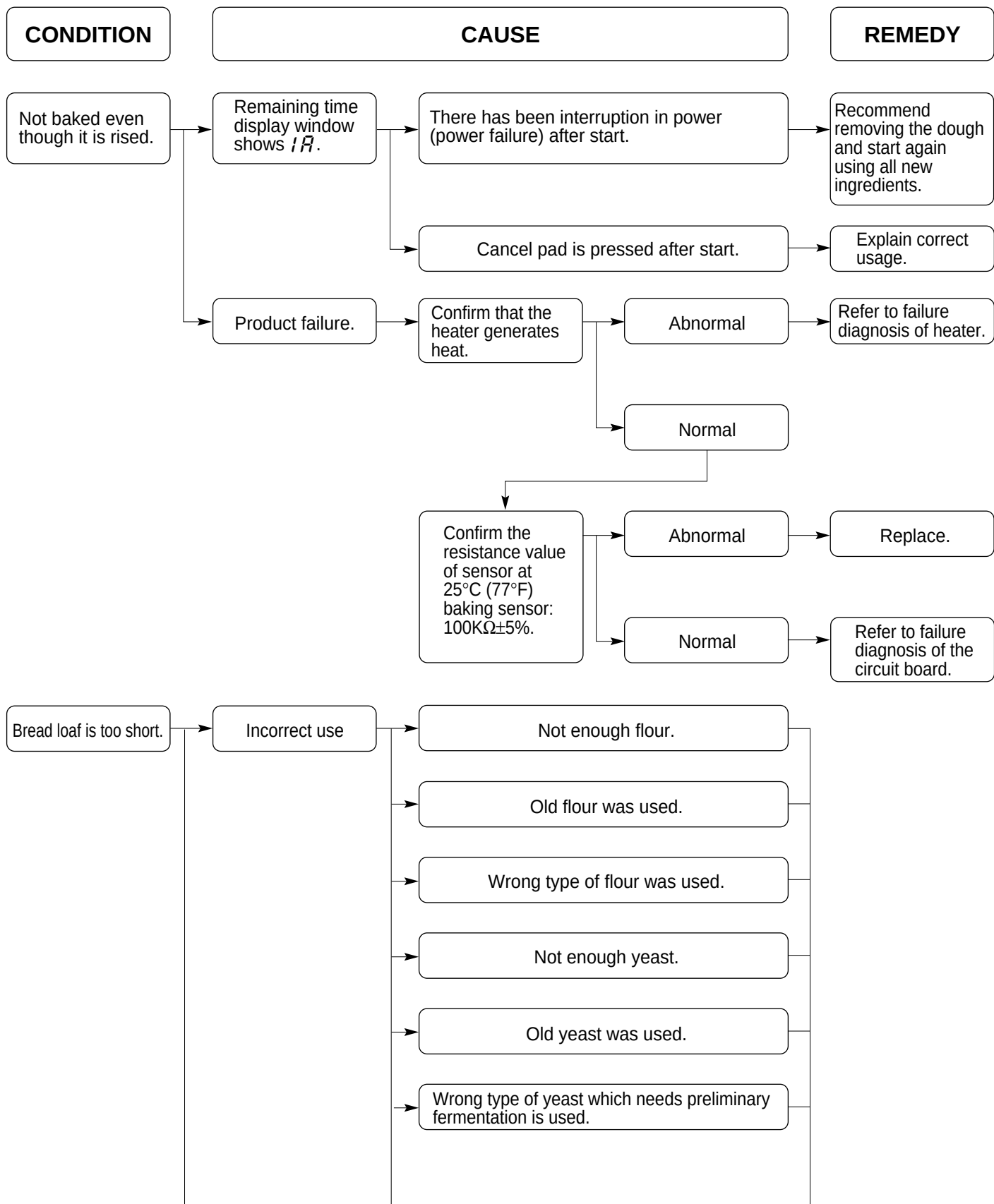


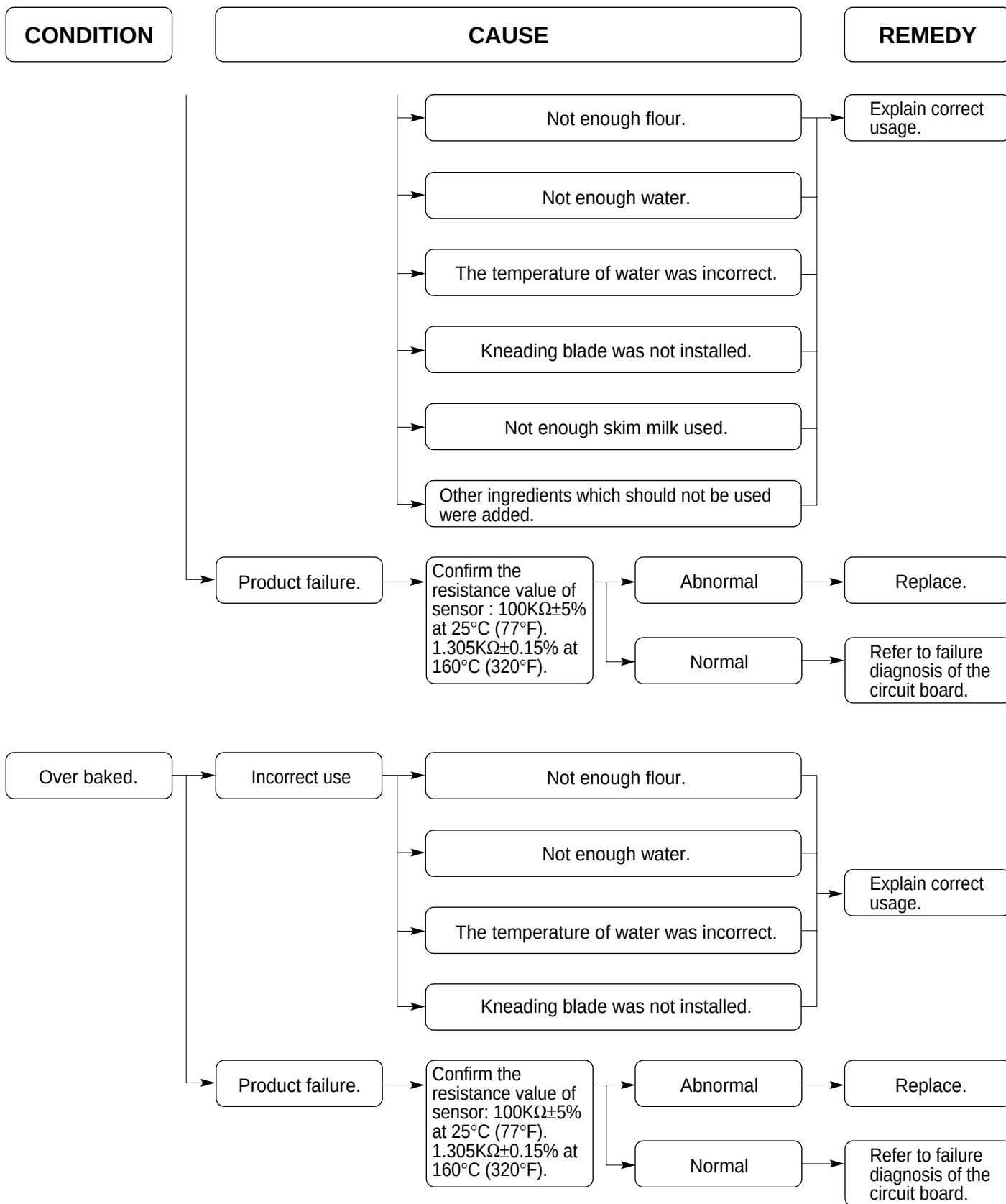


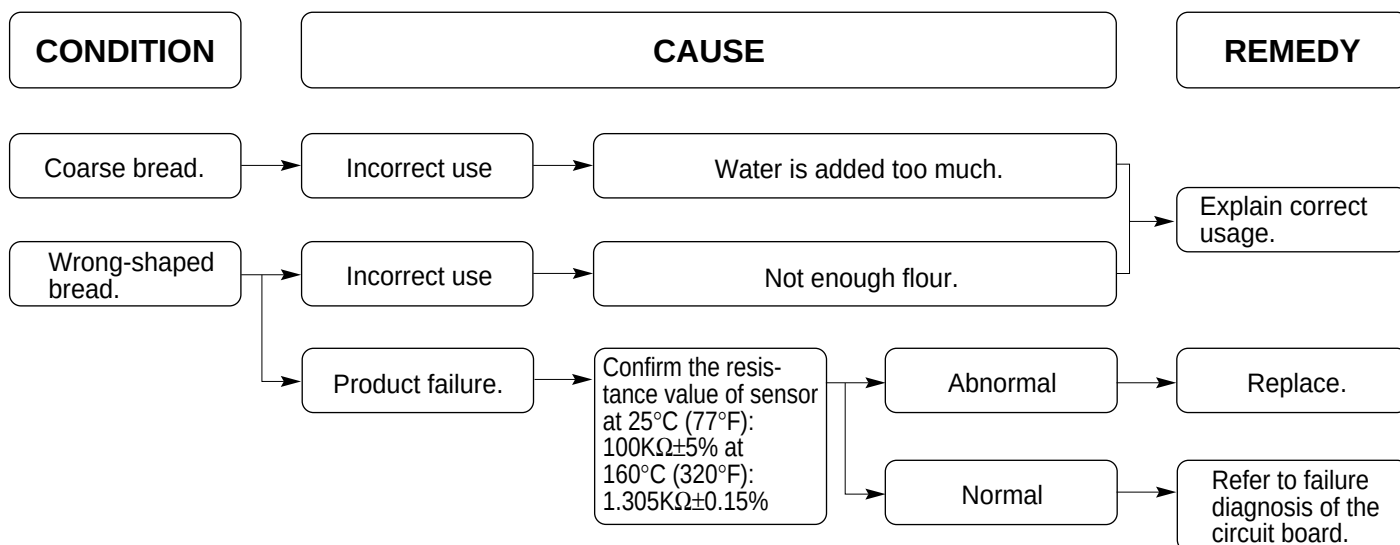
(TROUBLE 2) Poor bread is made.



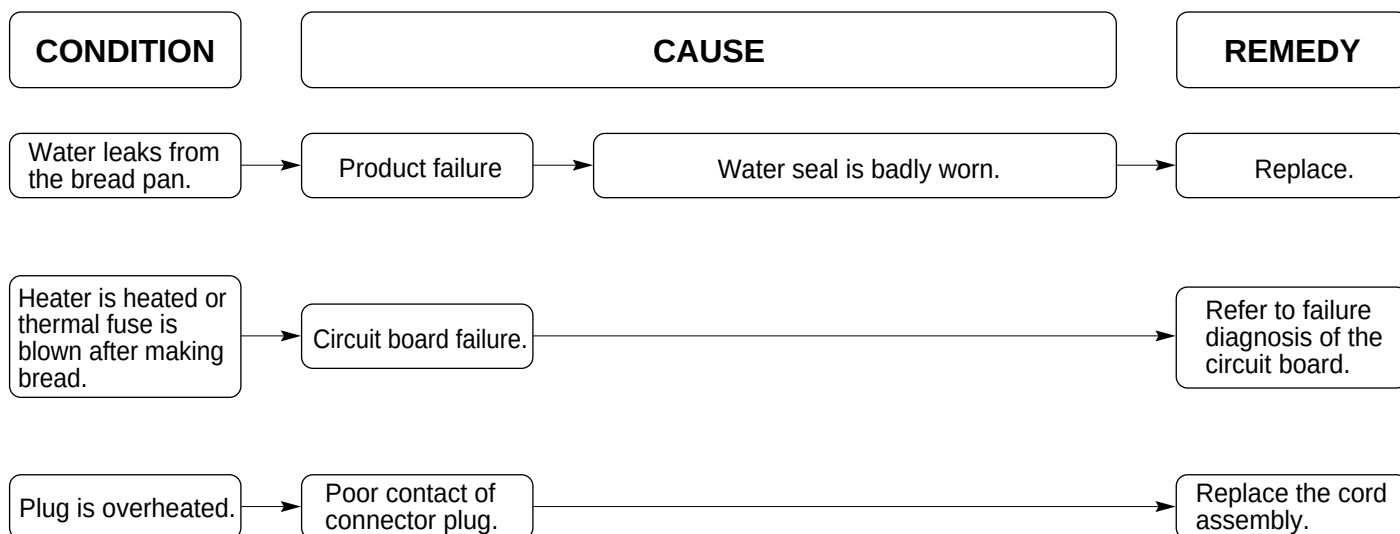


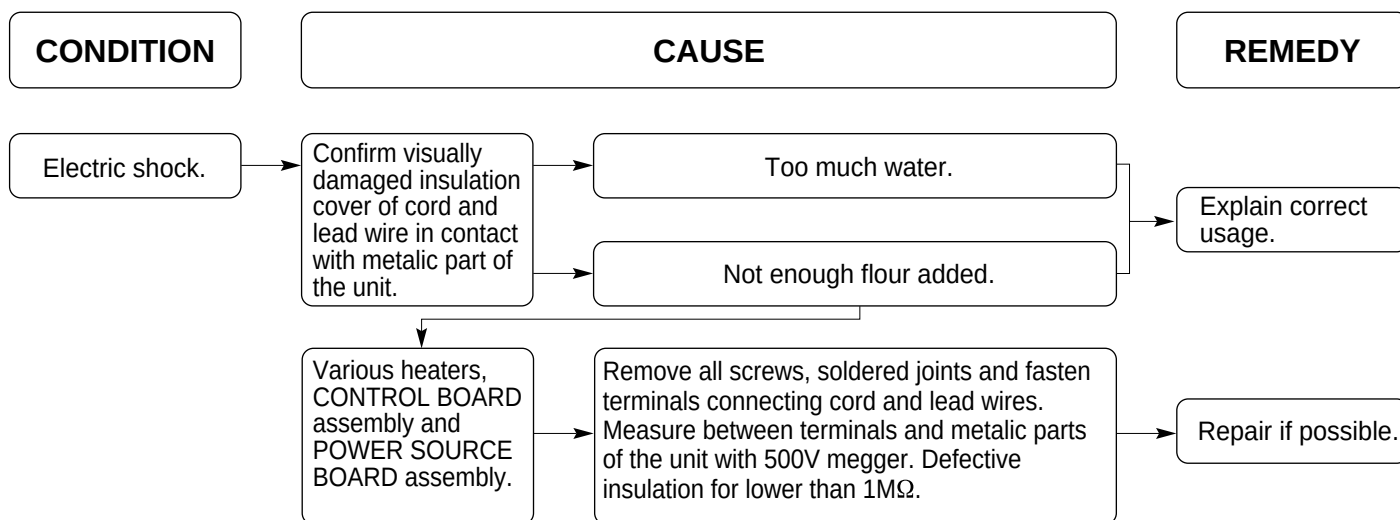






(TROUBLE 3) Other problems.

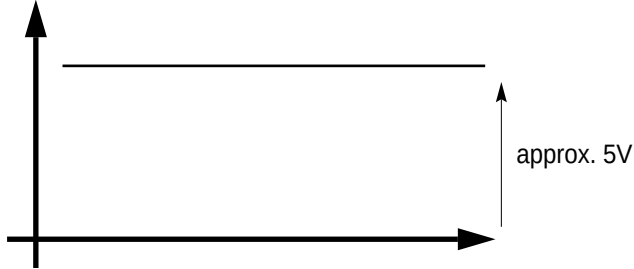
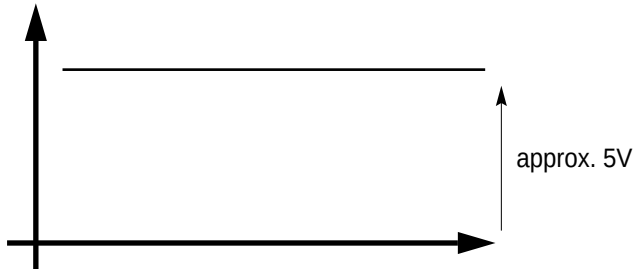


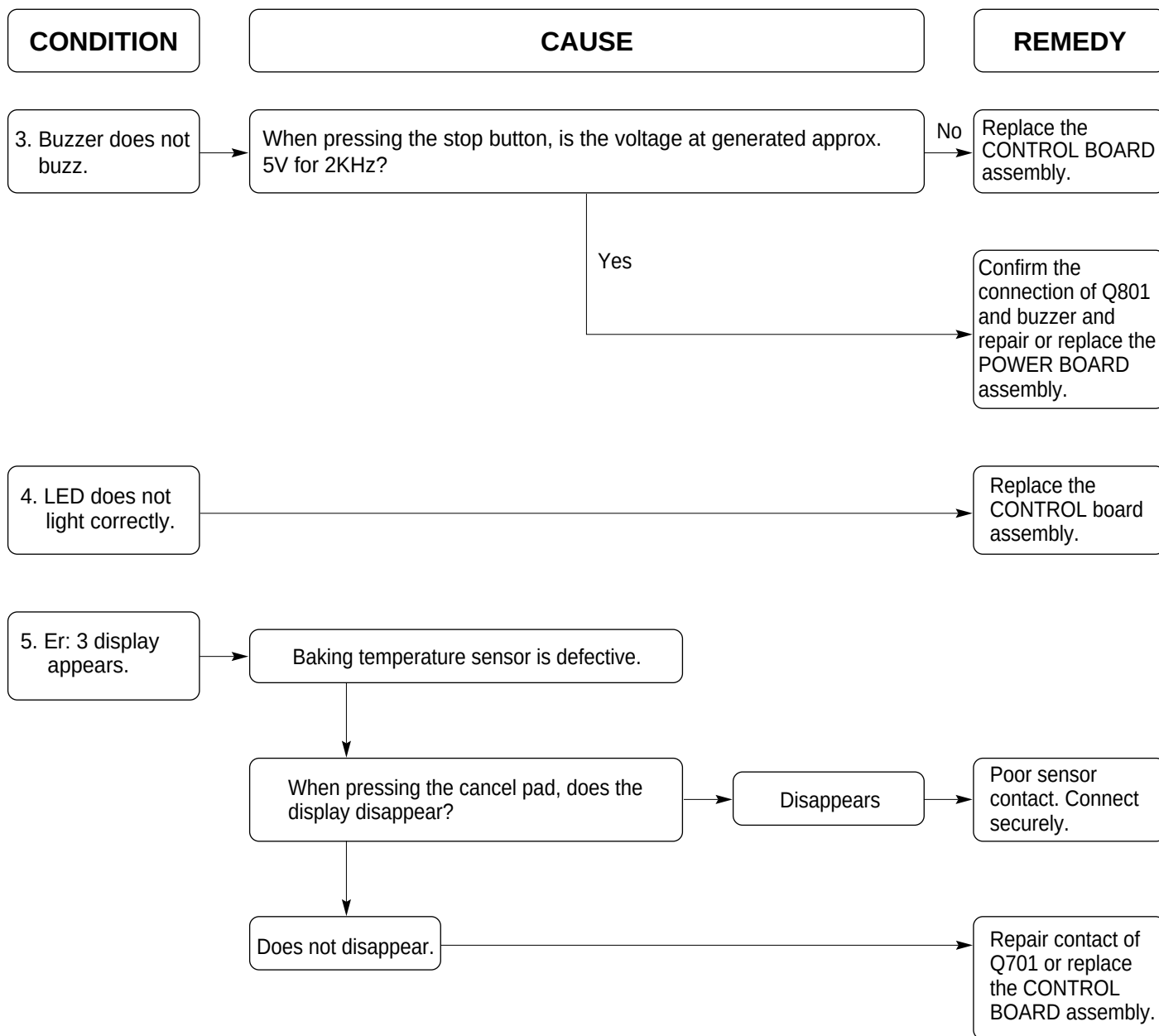


(TROUBLE 4) Some letter is displayed on remaining time display window.

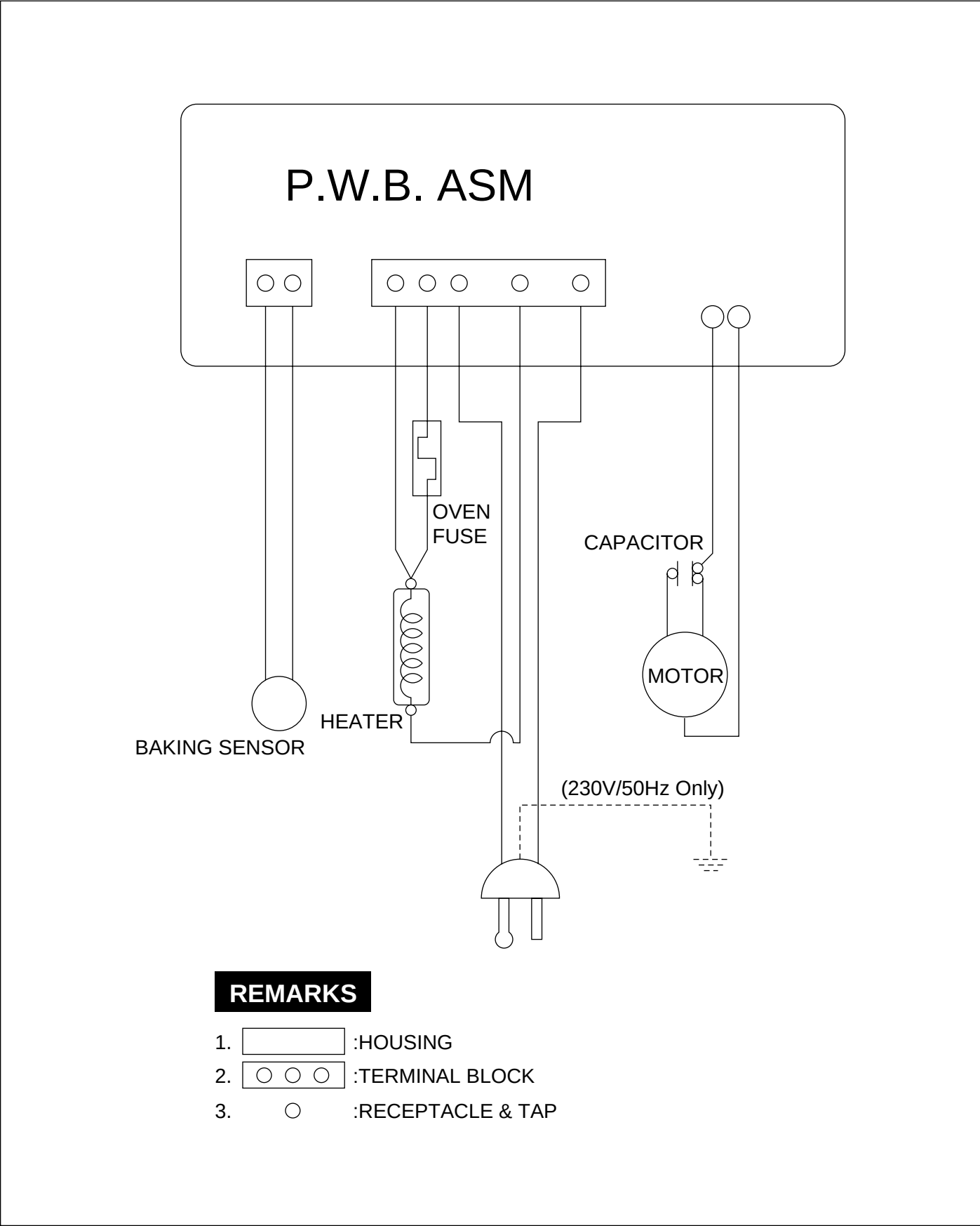
Letter	Cause	Remedy
<i>H 1</i>	The temperature of oven area is too hot. (higher than 40°C/104°F)	Press CANCEL pad for cooling and start again.
<i>E r 3</i>	Baking sensor is defective (Resistance value is not 100KΩ±5% at 25°C (77°F): and 1.305KΩ±0.15% at 160°C (320°F)):	Repair or replace.

C. FAILURE DIAGNOSIS OF THE CIRCUIT BOARD

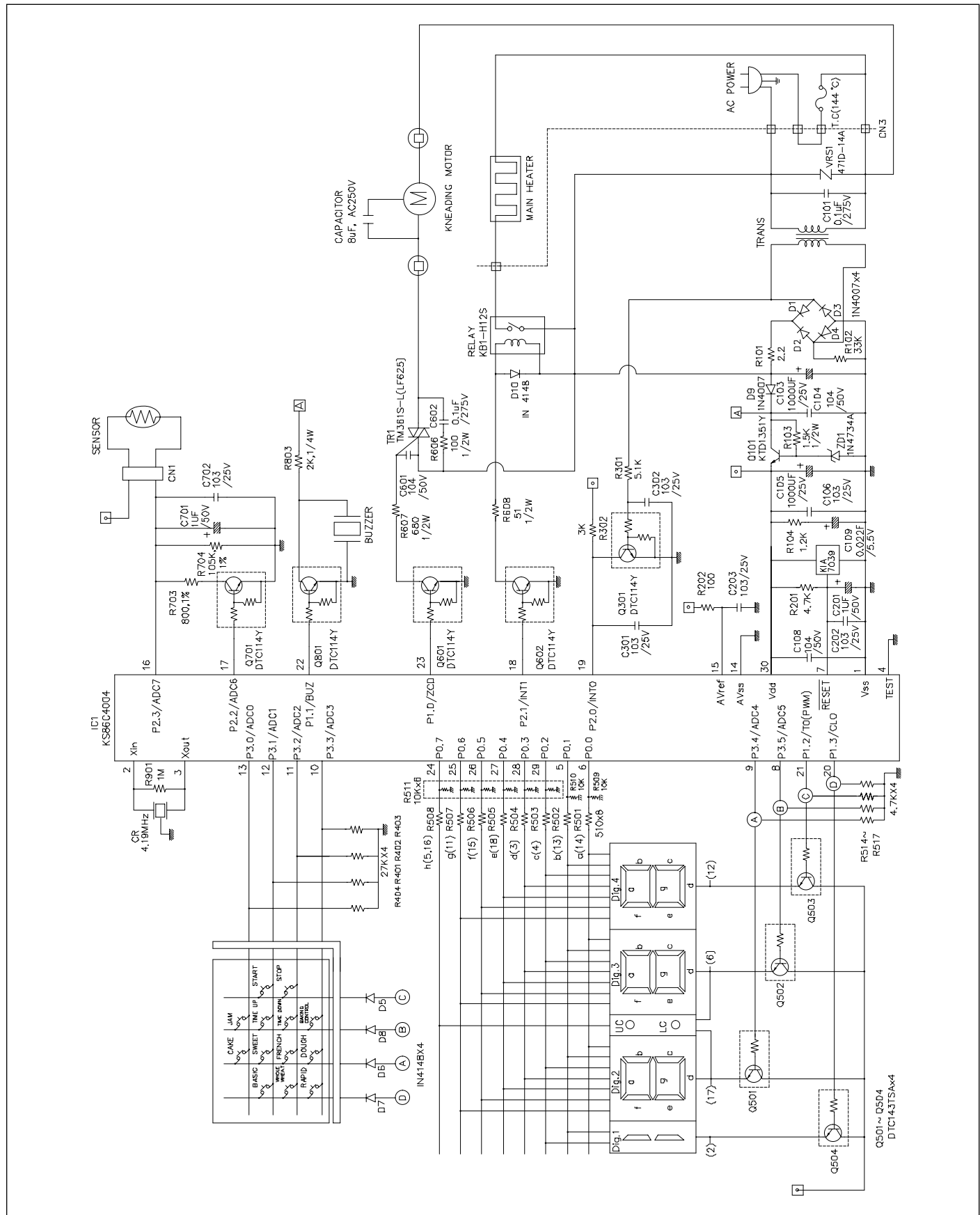
CONDITION	CAUSE	REMEDY
1. Kneading motor does not turn.	See page 9 (OPERATION CHECK)	
Is the signal generated at pin No. 23 of IC1 as follows?  approx. 5V		
		Yes → Confirm the connection of Q601 and repair or replace the POWER SOURCE BOARD assembly. No → Replace the CONTROL board assembly.
2. Main heater does not generate.	See page 9 (OPERATION CHECK)	
Is the signal generated at pin No. 18 of IC1 as follows?  approx. 5V		
		Yes → Confirm connection of Q602 repair or replace the POWER SOURCE BOARD assembly. No → Replace the CONTROL board assembly.



BLOCK DIAGRAM



SCHEMATIC DIAGRAM



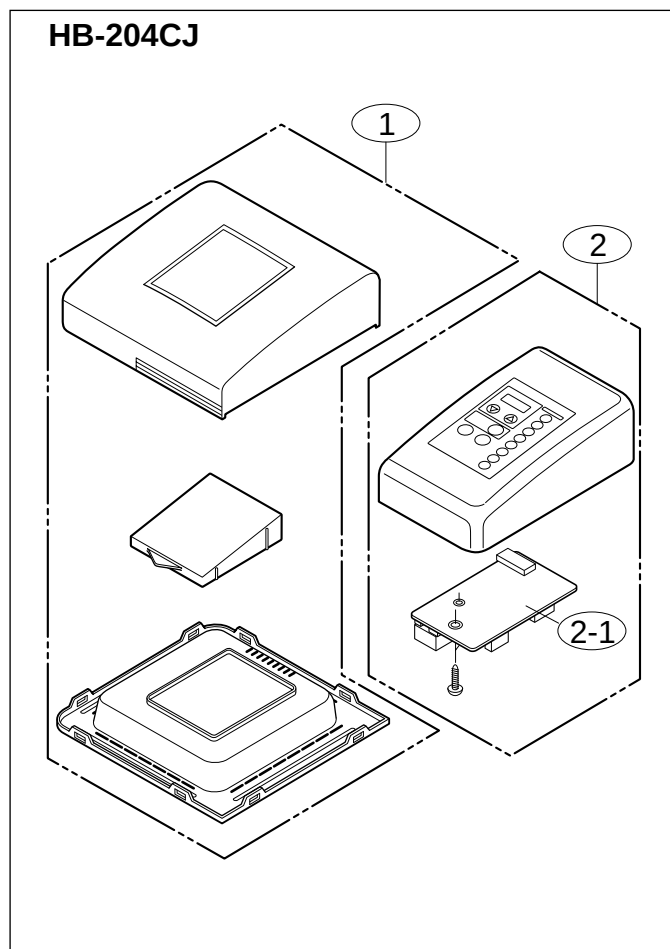
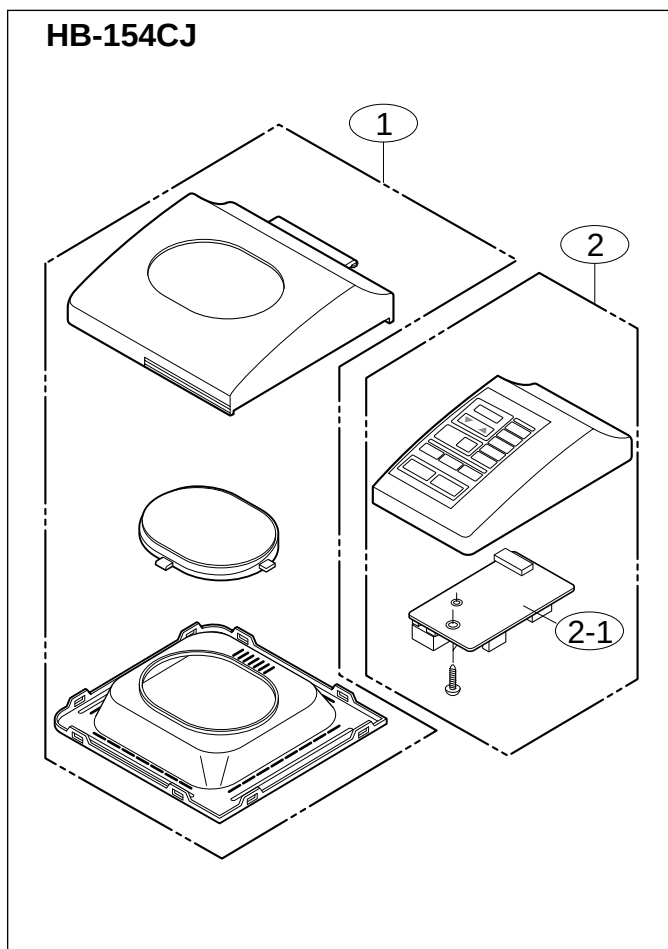
CONTROLLER PARTS LIST

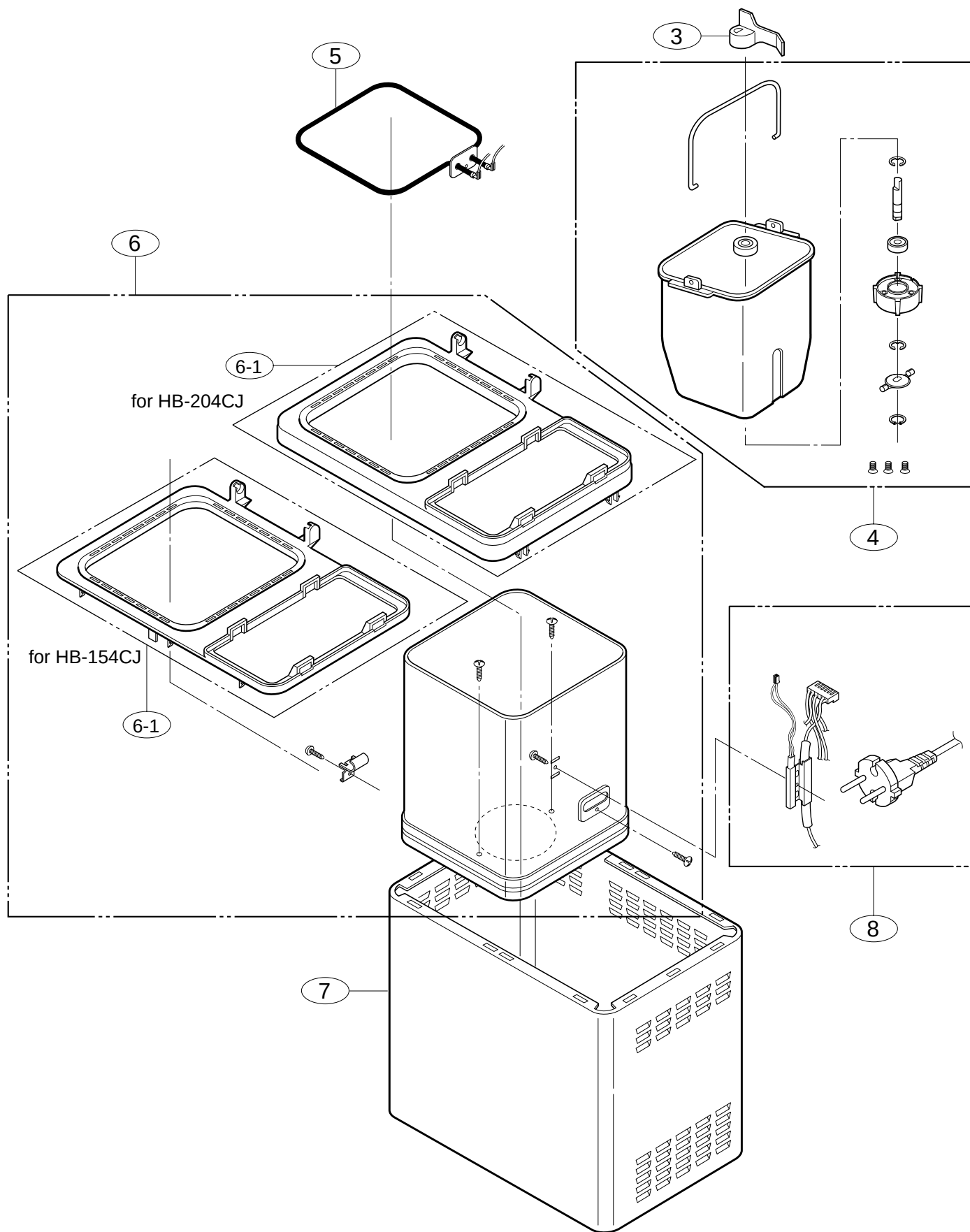
No.	DESCRIPTION	PART No.		Q'TY	REMARKS
		HB-154CJ	HB-204CJ		
1	P.W.B	6046FB3002B		1	
2	MAIN I.C	OISS864004C		1	IC1
3	RELAY	CS12144A		1	RELAY
4	TRIAC	CS12177A		1	TR1
5	7-SEGMENT	6327FX3001A		1	7-SEGMENT
6	BUZZER	6908FX4003A		1	BUZZER
7	C', RESONATOR	CS12171A		1	CR
8	RESET IC	OIKE703900A		1	IC2
9	TRANSISTOR	OTR135100AA		1	Q101
10	TRANSISTOR	OTR143009AA		4	Q501-Q504
11	TRANSISTOR	CS11007A		5	Q301, 601, 602, 701, 801
12	D', RECTIFIER	ODD400700AA		5	D1-D4, D9
13	D', SWITCHING	CQ32805A		5	D5-8, D10
14	D', ZENER	CS12109B		1	ZD1
15	VARISTOR	CQ39071A		1	VRS1
16	R', FIXED	ORD0221F608		1	R101
17	R', FIXED	ORD1000F608		1	R202
18	R', FIXED	ORD2702F608		4	R401-404
19	R', FIXED	ORD1004F608		1	R901
20	R', FIXED	ORD1201F608		1	R104
21	R', FIXED	ORD4701F608		5	R514-517, R201
22	R', FIXED	ORD5101F608		1	R301
23	R', FIXED	ORD3302F608		1	R102
24	R', FIXED	ORD5100F608		8	R501-508
25	R', FIXED	ORD3001F608		1	R302
26	R', FIXED	ORD2001G608		1	R803
27	R', METAL OXIDE	ORS0512H609		1	R608
28	R', METAL OXIDE	ORS1000H609		1	R606
29	R', METAL OXIDE	ORS6800H609		1	R607
30	R', METAL OXKDE	ORS1501H609		1	R103
31	R', METAL	ORN1053F408		1	R704
32	R', METAL	ORN8000F408		1	R703
33	C', CERAMIC	OCK1040K948		4	C104, 106, 108, 601
34	C', CERAMIC	OCK1030H948		5	C202, 203, 301, 302, 702
35	C', ELECTROLYTIC	CE1ROF1M		2	C201, 701
36	C', ELECTROLYTIC	CE102D1M		2	C103, C105
37	STAR CAPACITOR	CS13002A		1	C109
38	C', P.P FILM	OCY1040R530		2	C101, 602
39	CONNECTOR 8KEY	6630FX4002A		1	CN2
40	CONNECTOR 7PWR	6630FX4001A		1	CN3

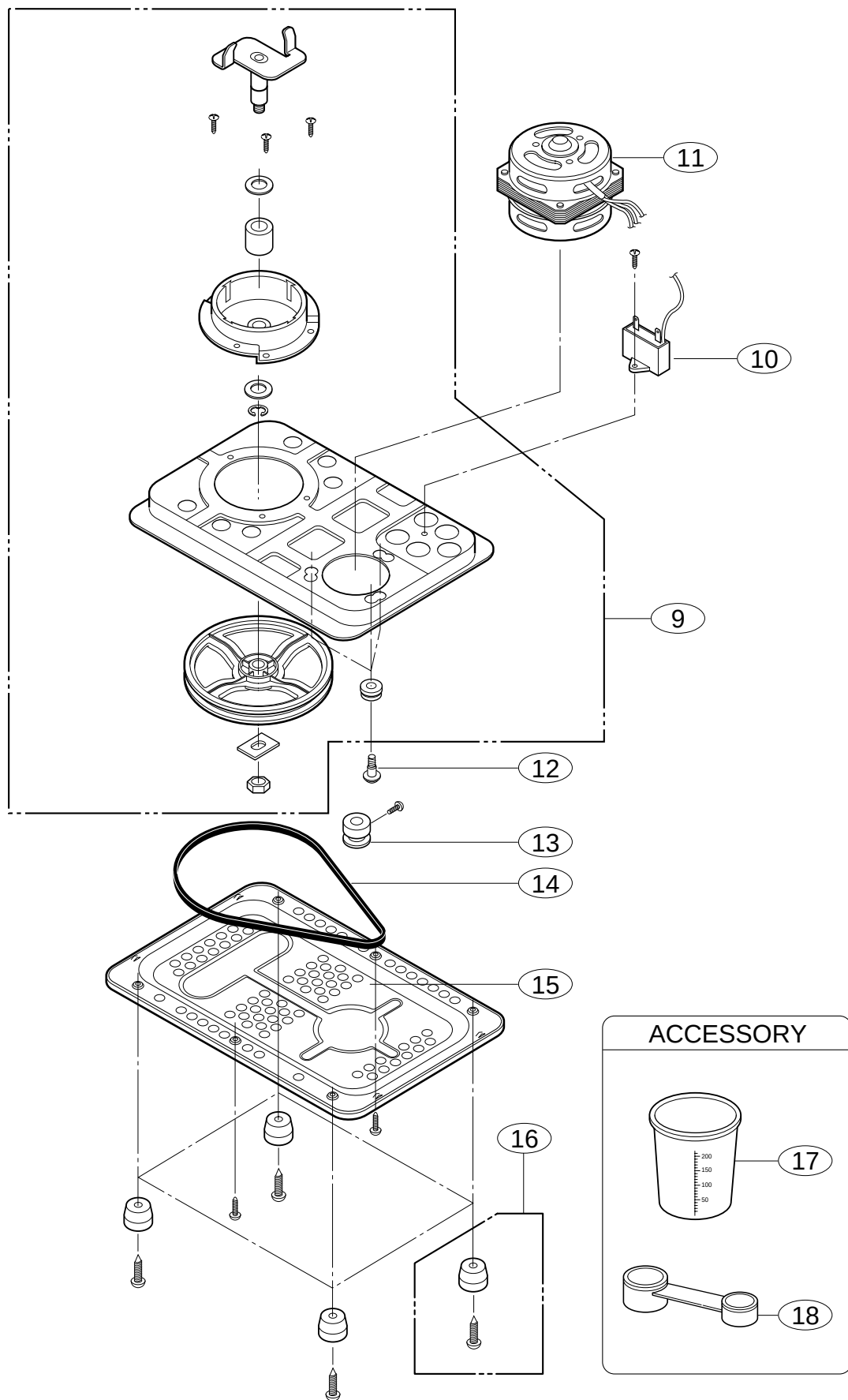
LOCA. No.	DESCRIPTION	PART No.		Q'TY	REMARKS
		HB-154CJ	HB-204CJ		
41	WAFER	4H90045A		1	CN1
42	JUMP WIRE	43607015		14	
43	TAB	4172022A		2	MOTOR
44	TRANS 230V/50Hz	6170FX2002H		1	TRANS
45	R', FIXED	ORD1002F608		2	R509, 510
46	R', ARRAY	ORA1002E607		1	R511

EXPLODED VIEW & PARTS LIST

A. EXPLODED VIEW







B. PARTS LIST

LOCA. No.	DESCRIPTION	PART No.		Q'TY	REMARKS
		HB-154CJ	HB-204CJ		
1	TOP COVER ASSY	3551FB2220A	3551FB2222A	1	
2	CONTROLLER ASSY	4781FB2221A	4781FB2223A	1	
2-1	P.W.B ASM	6871FB2002B		1	230V/50,60Hz, CJ
3	BLADE, KNEADING	5832FB3300B		1	PLASTIC
4	OVEN ASSY	5306FB2074A		1	1.5LB
			5306FB2074B		2.0LB
5	HEATER ASSY, SHEATH	5301FB2059F		1	230V
6	CASE ASSY, OVEN	3111FB2057C	3111FB2105F	1	
7	OUT CASE	3112FB1038E		1	SILVER
8	LEAD WIRE ASSY	6877FB2108A		1	240, 230V/50Hz
9	CHASSIS ASSY	3141FB2058A		1	
10	CAPACITOR	6120FB3087B		1	8 F(230V)
11	MOTOR ASSY	4681FB2012H		1	230V/50Hz
12	SCREW	4000FB4022B		3	
13	MOTOR PULLEY	4080018A		1	
14	V-BELT	3080020B		1	BANDO
15	COVER, BASE	3550FB2061A		1	
16	LEG ASSY	4080144B		4	
17	CUP, MEASURE	4080031A		1	OPTIONAL
18	SPOON, MEASURE	4080080A		1	OPTIONAL



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