

Service Manual

Automatic Rice Cooker SR-GA421/SR-GA281/SR-GA721 EXPORT



SR-GA421/SR-GA281



SR-GA721

Specification

Model		SR-GA421				SR-GA281	SR-GA721			
Detail		HK	SIN-DBD	SIN-RBD	MALAYSIA	HK	MALAYSIA	SIN-DBD	SIN-RBD	USA
Country										
Power Source		220 V / 50 Hz	230 V / 50 Hz	220 V / 50 Hz	240 V / 50 Hz	220 V / 50 Hz	240 V / 50 Hz	230 V / 50 Hz	220 V / 50 Hz	208 V / 50 Hz
Power consumption	Cooking	1400 W				950 W	2500 W			
	Warming					47.5 W				
Cooking capacity		5 ~ 23 L				5 ~ 15 L	3 ~ 7 L			
Center thermostat working temperature		140 °C								
Keep warm temperature		More than equal to 80 °C (After 1 Hr. keep warm)								
Thermal fuse specification		113					169 °C			
Dimension (mm) Width x Depth x Height		429 x 369 x 300				367 x 295 x 305	248 x 247 x 255			
Weight		5.5 kg				3.6 kg	10.1 kg			
Power Cord (approx.)		1.0 m								
Accessories		Measuring cup, Steaming basket					Rice scoop			

Specification subject to change without notice.

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WARNING

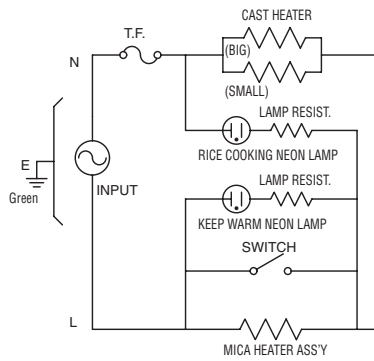
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

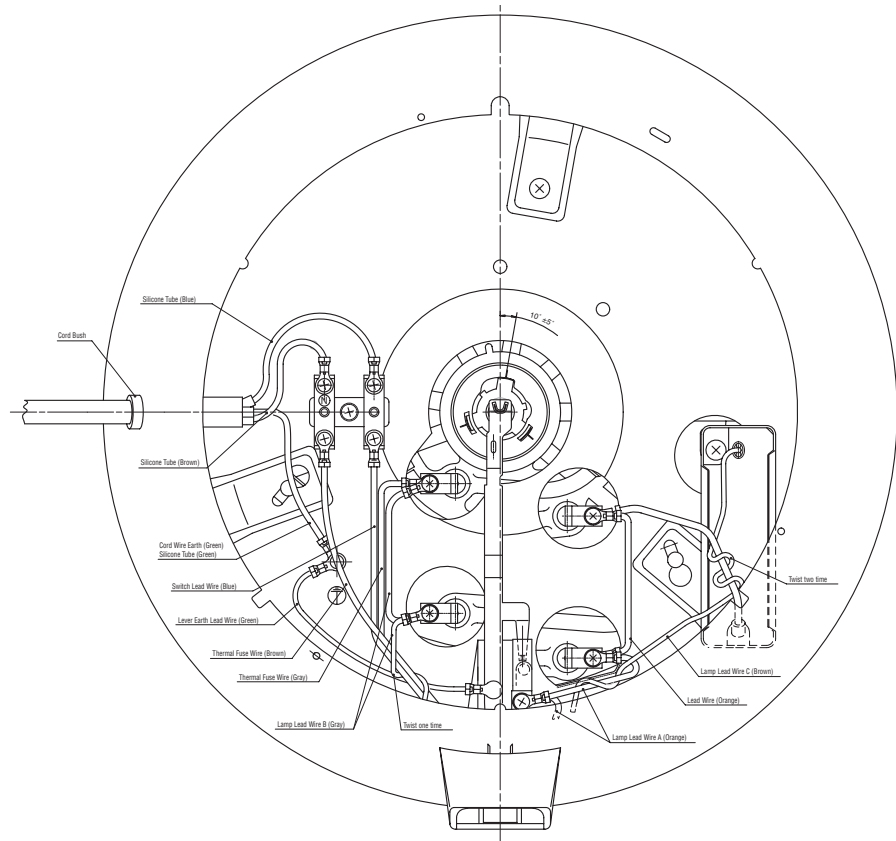
There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

1. SCHEMATIC DIAGRAM & WIRING DIAGRAM

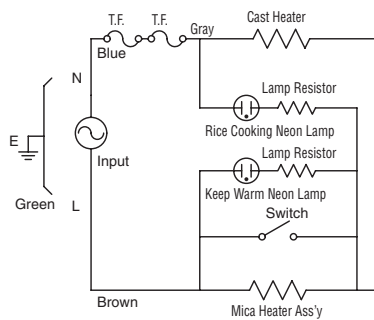
SCHEMATIC DIAGRAM (SR-GA421)



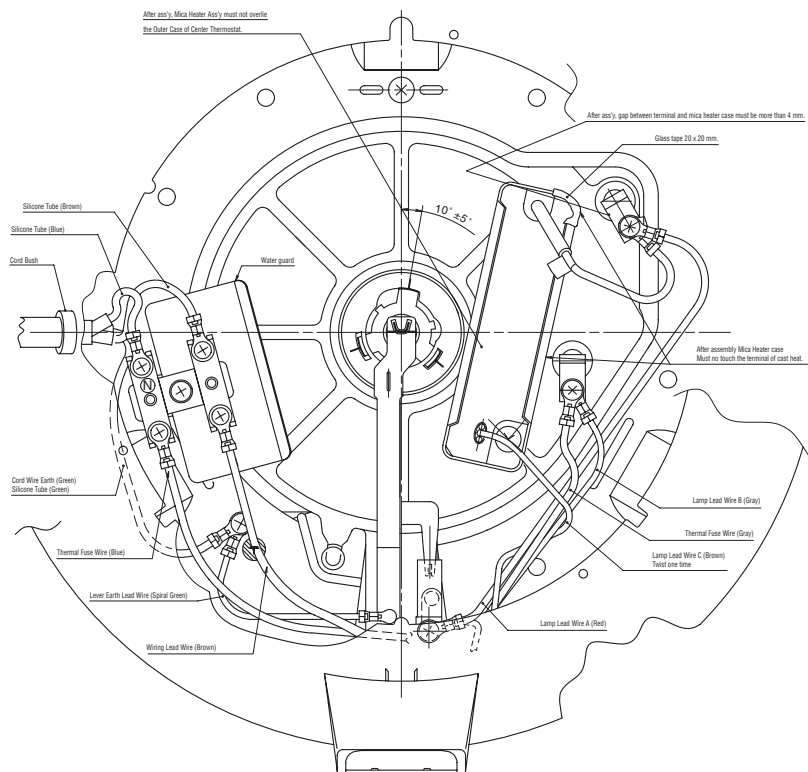
WIRING DIAGRAM (SR-GA421)



SCHEMATIC DIAGRAM (SR-GA281)

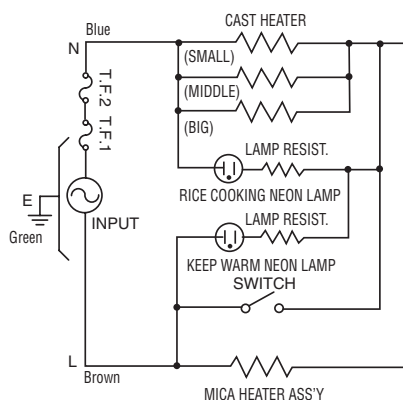


WIRING DIAGRAM (SR-GA281)

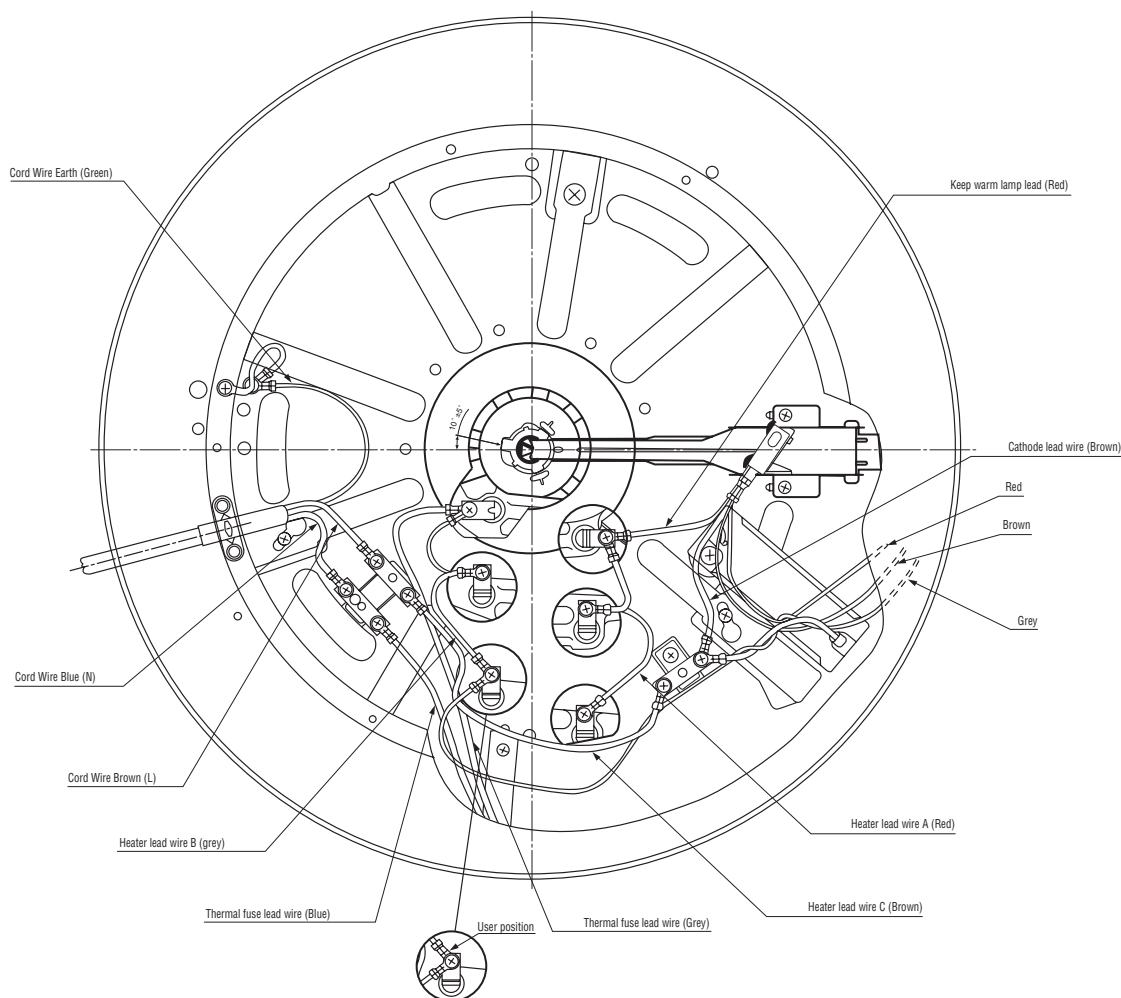


1. SCHEMATIC DIAGRAM & WIRING DIAGRAM

SCHEMATIC DIAGRAM (SR-GA721)



WIRING DIAGRAM (SR-GA721)

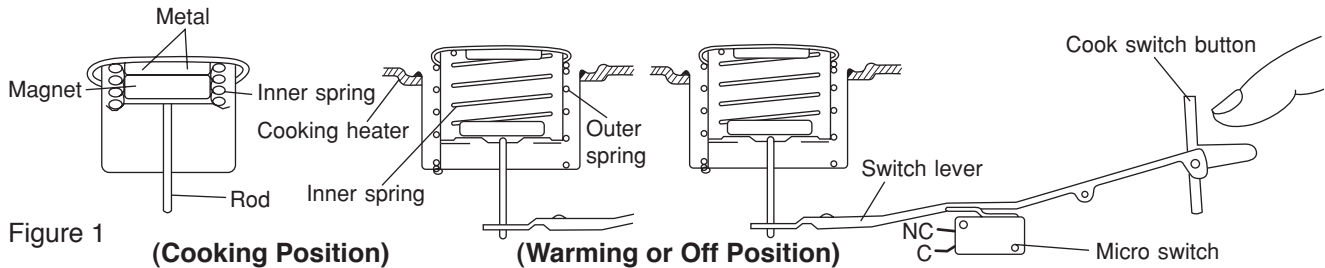


2. FUNCTION OF CENTER THERMOSTAT AND THERMALFUSE

A. Center Thermostat

The center thermostat senses when the bottom of the rice cooker pan reach $134^{\circ}\text{C} \pm 6^{\circ}\text{C}$. And it's action turns off the cooking cycle, and starts the warming cycle.

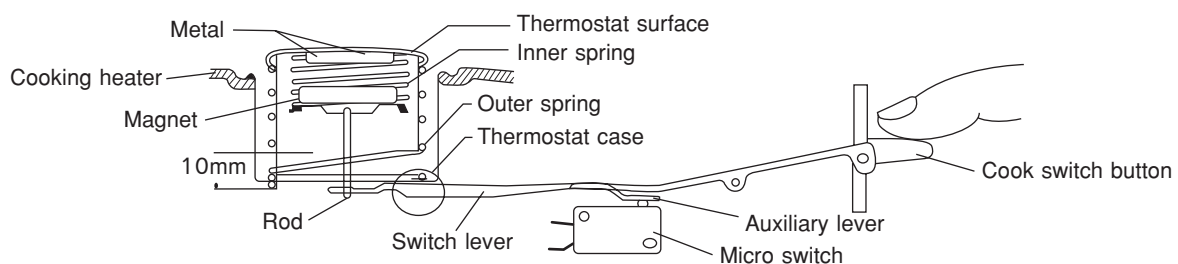
Center thermostat construction



Refer to these figures showing the center thermostat construction and cooking position. As the metal is heated, its ability to be attracted by the magnet decreases.

Finally, the inner spring pressure becomes stronger than the magnetic pull and the metal and magnet will pop apart. The rod activates the switch lever which causes the auxiliary lever to press the micro-switch button into the warming cycle.

B. Switch-On Preventive System



This is design to prevent the rice cooker from being turned on without the pan placed into position.

- 1) Normally when the pan is inserted properly into the rice cooker, the pan will depress the center thermostat. The center thermostat outer spring will be compressed. In this case when the switch button is depressed, the following will happen:
 - a. The auxiliary lever will release the micro-switch button. This puts the micro-switch in the cook position.
 - b. The switch lever will push the rod which will allow the magnet to meet with the metal.
 - c. When the rice is cooked and the proper temperature has been reached $134^{\circ}\text{C} \pm 6^{\circ}\text{C}$, the metal and magnet will pop apart as described in the center thermostat operation above.
 - d. The rod will push the switch lever and cause the auxiliary lever to depress the micro-switch button. This puts the micro-switch in the warming position.
- 2) When the pan is not in place within the rice cooker, the center thermostat is not depressed.
 - a. In this condition, the outer spring is not compressed within the center thermostat preventing the metal from reaching its normal operating position.
 - b. When the switch button is depressed, the switch lever and auxiliary lever work as above but the magnet cannot come in contact with the metal to hold the switch lever in the cook position. This happens because the switch lever hits the thermostat case and cannot push the rod, with the magnet attached, all they way up to meet with the metal.
 - c. When the pressure is taken off the switch button, the switch lever releases immediately to the open or warm positions.

2. FUNCTION OF CENTER THERMOSTAT AND THERMALFUSE

C. Thermal Fuse

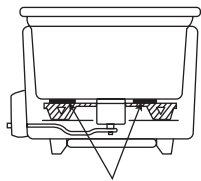
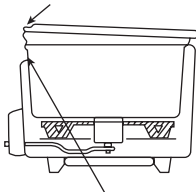
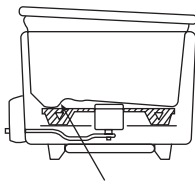
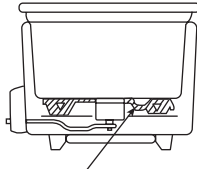
The thermal fuse is used to open the circuit to the cooking heater when the temperature has gone unusually high. This happens in cases such as incomplete contact between the heater and pan or if the switch buttons is forced to stay on keeping the heater energized abnormally.

This fuse is not a resetting device and must be replaced after opening.

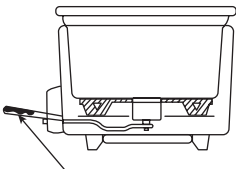
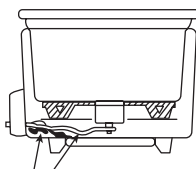
Whenever replacing the fuse make sure the protective cover is placed over all exposed wiring.

Cause of Fusion

[A] Improper contract between heater and pan

Cause				
	Foreign matter adhering	Pan collar or deformed	Body dented or deformed	Pan bottom dented or deformed
Remedy	Remove foreign matter by of (-) screw-driver, etc., and then polish with = 320 water paper while wetting it with water.	Repair or replace body.	Replace pan.	Replace cooking heater.

[B] Forced application of current

Cause		
	Chopstick, wooden piece, etc. inserted onto cooking button. (continuous application of current)	Switch lever deformed or maladjusted, causing continuous application of current.
Remedy	Inserted to prevent ear-lier turning off? Refer to cause in (a) above.	Repair or replace parts.

When fusion takes place, check the cause, set right the faulty section, and be sure to use replacement parts.

3. TROUBLESHOOTING GUIDE

When receiving the cooker to be repaired, be sure to always take charge of not only the cooker body but also the pan and the lid, and ask for details as to the symptom of the trouble. Furthermore, when making troubleshooting of each part, be sure to remove the power plug from the socket.

Symptom	Diagnosis	Remedy
Cooking function ● Cooking fails (Cooking lamp is not shown)	<div> <div>No continuity of cord?</div> <div>Yes</div> <div>No</div> <div>No continuity of thermal fuse?</div> <div>Yes</div> <div>No</div> <div>No continuity of micro switch?</div> <div>Yes</div> <div>No</div> <div>Center thermostat is broken? (Checked evaporation test)</div> <div>Yes</div> <div>No</div> <div>Switch lever properly adjust?</div> <div>No</div> </div>	● Replace AC cord. ● Locate cause for fusing and replace fuse. ● Replace Frame ass'y. ● Replace center thermostat. ● Adjust Switch lever.
● Cooking fails (Cooking lamp is not shown)	<div> <div>No continuity of sheathed heater?</div> <div>Yes</div> </div>	● Replace sheathed heater.
● Thermal fuse blown	<div> <div>Forced application of current?</div> <div>Yes</div> </div>	● Explain correct usage.
● Rice burns (Brown color)	<div> <div>Center thermostat defective? (Check with evaporation test)</div> <div>Yes</div> <div>No</div> <div>Switch lever has been properly adjusted?</div> <div>No</div> <div>Yes</div> <div>Usage correct?</div> <div>Yes</div> <div> ● Rice is not rinsed well enough? ● Using with low rated voltage? ● Too much water input for cooking? </div> </div>	● Replace center thermostat. ● Adjust Lever. ● Explain correct usage.

3. TROUBLESHOOTING GUIDE

Symptom	Diagnosis	Remedy
<ul style="list-style-type: none"> ● Earlier Switching-off ● Poor cooking finish <div>Too hard Too soft Half-boiled</div>	<div> <div>Poor contact between pan and sheathed heater? (Check with bubbling test)</div> <div>Yes</div> <div>→</div> </div> <div> <div>Center thermostat defective? (Check with evaporation test)</div> <div>Yes</div> <div>→</div> </div> <div> <div>Switch lever has been properly adjusted?</div> <div>No</div> <div>→</div> </div> <div> <div>Usage correct?</div> <ul style="list-style-type: none"> ● Too small or large in rice quantity. ● Too small or large in water quantity. ● Switched off once by hand in cooking process. ● Switched off by shocks given in cooking process. ● Rice not untied. <div>→</div> </div>	<ul style="list-style-type: none"> ● Replace pan or sheathed heater. ● Replace Center thermostat. ● Adjust switch lever. ● Explain correct usage.
Keep warm function <ul style="list-style-type: none"> ● Warming fails (Warm lamp not shown) 	<div>Micro switch change contact to NO (Warm mode) after cooking is done?</div> <div>No</div> <div>→</div>	<ul style="list-style-type: none"> ● Adjust switch lever.
<ul style="list-style-type: none"> ● Warming fails (Warm lamp shown) 	<div>No continuity of warming heater?</div> <div>Yes</div> <div>→</div>	<ul style="list-style-type: none"> ● Replace warming heater.

4. TESTING PROCEDURE

1. Bubbling test

Input the pan in the main body, and lightly rotate the pan clockwise and counter clockwise to set the pan on the heating plate properly.

1. Fill water until the center area of the pan bottom is dipped, and close the lid. Then turn on the boiling switch.
2. When it begins boiling to produce steam, remove the lid and immediately check the bubbling condition on the pan bottom.
3. Bubbling condition is shown in figure 3.
 - A. Bubbles generate through out the circumference of the pan bottom Proper
 - B. Bubbles does not generate on more than one quarter part of the pan bottom circumference Improper

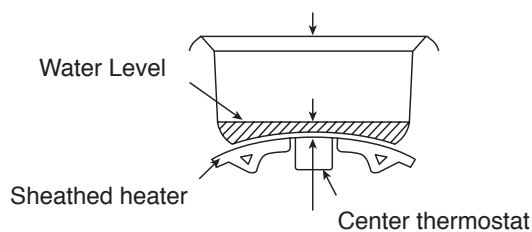


Figure 2

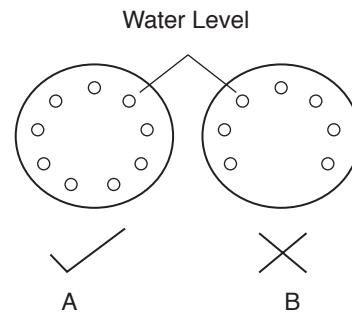
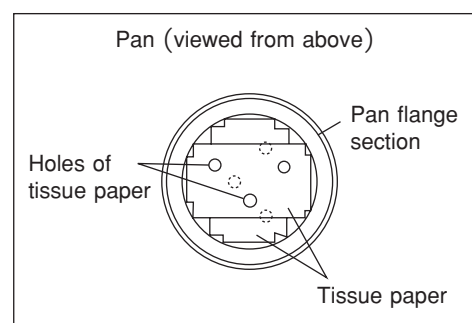
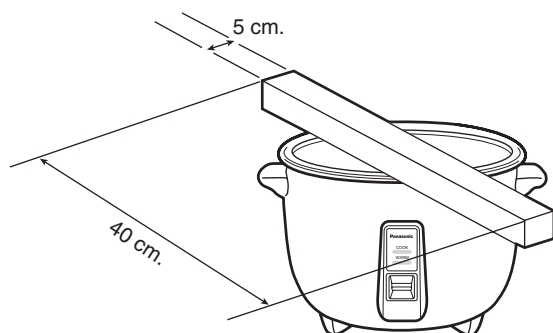


Figure 3

If it is improper, it may result from the insufficient contact between the pan bottom and the sheathed heater. Check the pan bottom and the sheathed heater for foreign material remained. Clean up the foreign materials or replace the parts.

2. Evaporation test

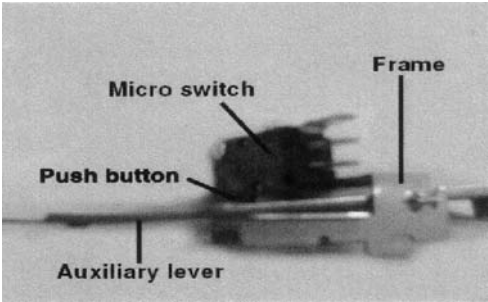
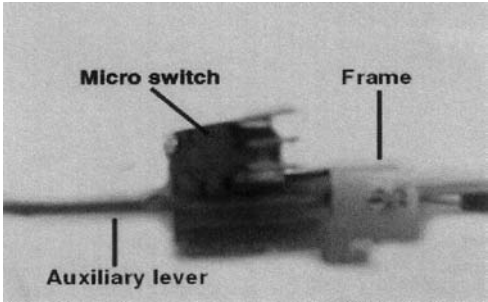
1. After satisfactory bubbling is confirmed, remove the lid and put a weight on the cooker.
2. Cover the entire pan bottom with 2 or 3 pieces of tissue paper (or gauze), and turn on the switch subsequently.
3. The cooker is considered acceptable if the timing when steam generation comes to a stop after water of the pan bottom has evaporated, is within 1 minute before and after the cooking switch is turned off. If these requirements are not satisfied, check the center thermostat as well as the contacted condition between the pan bottom and the cooking heater, and then repair or replace the parts.



4. TESTING PROCEDURE

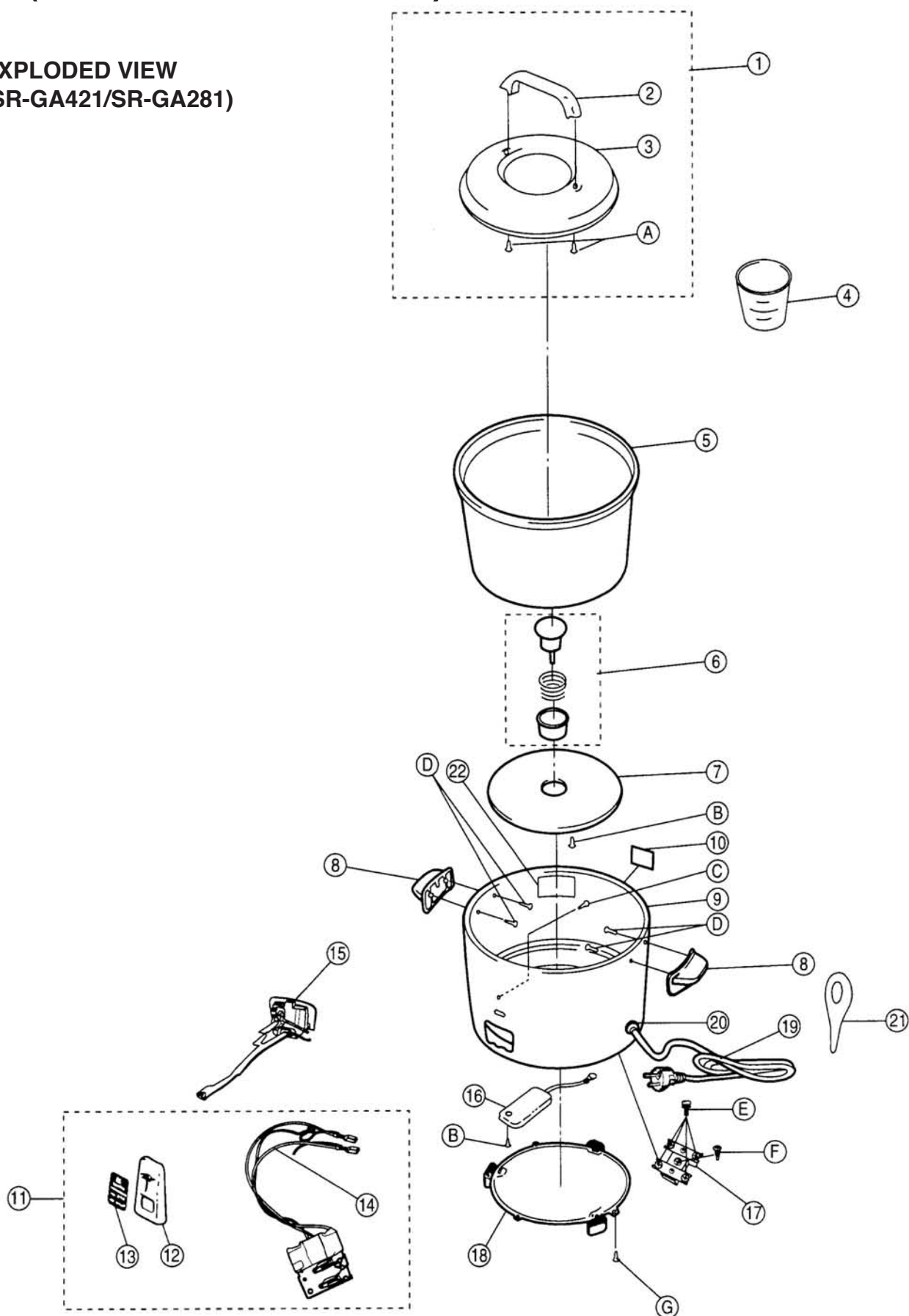
3. Boiling control lever adjustment

Such a mechanical operation as center thermostat goes up and down is used to turn on and off the micro-switch. Check and adjust this relationship as shown below.

	When the boiling switch is turned on.	When the boiling switch is turned off.
		
Checking	The auxiliary lever presses the push-button (The "WARM" lamp comes on.)	The auxiliary lever does not press the push-button (The "COOK" lamp comes on.)
Adjusting	To gain the above relationship, adjust the auxiliary lever by bending it with long nose pliers.	

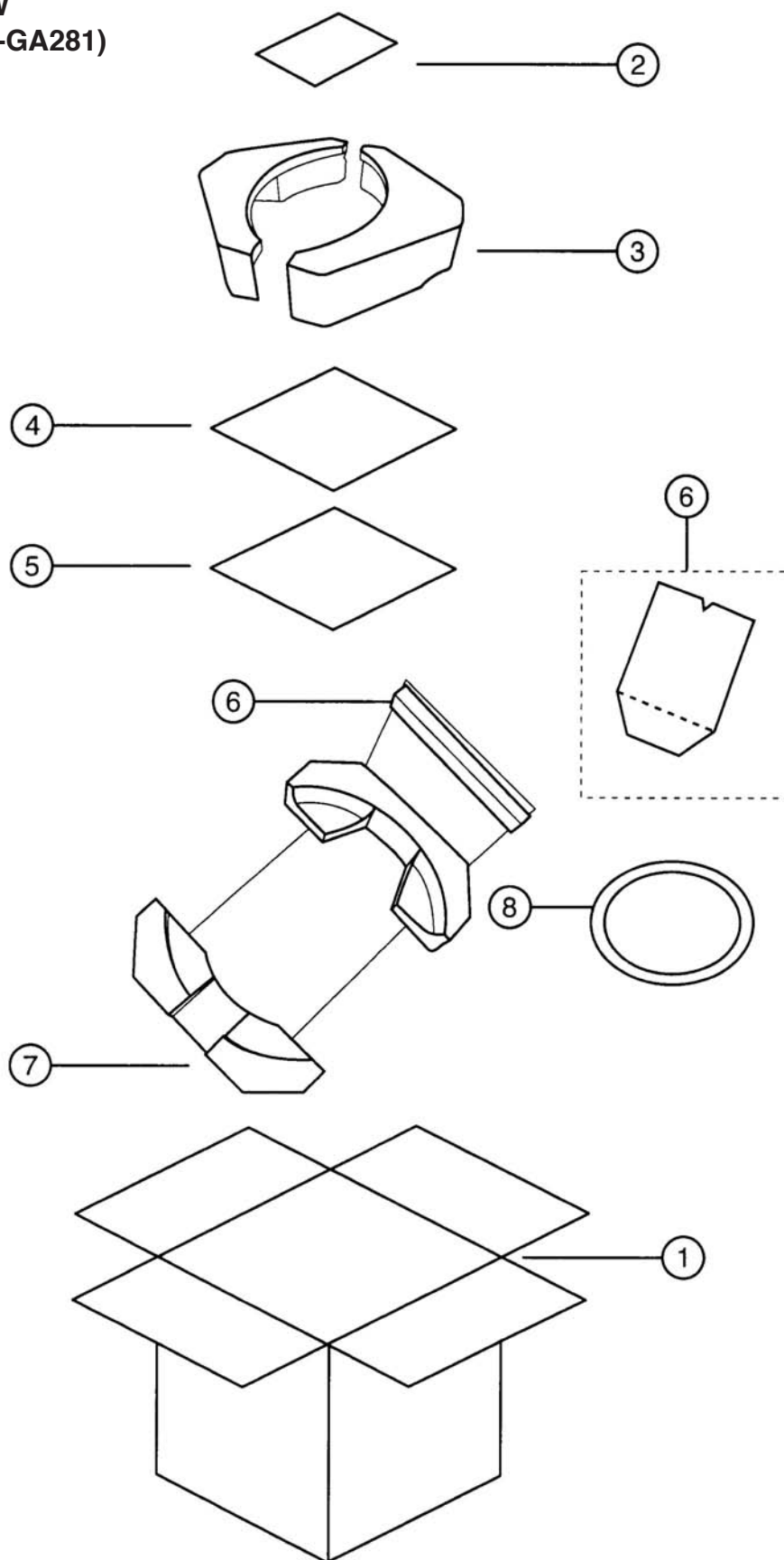
5. EXPLODED VIEW & PACKING VIEW (SR-GA421/SR-GA281)

EXPLODED VIEW (SR-GA421/SR-GA281)



5. EXPLODED VIEW & PACKING VIEW (SR-GA421/SR-GA281)

PACKING VIEW (SR-GA421/SR-GA281)



6. REPLACEMENT OF PARTS LIST & PACKING LIST (SR-GA421/SR-GA281)

PARTS LIST

Ref. No.	Part Name	Part No.	SR-GA421				SR-GA281	
			Silver	White	White	White	White	Silver
			HK	SIN-DBD	SIN-RBD	MAL	HK	HK
1	LID ASS'Y	AQB01T29310U	1	1	1	1		
		AQB01T29410U					1	1
2	LID HANDLE	AQB10T2941K0	1	1	1	1	1	1
3	LID	AQB01T293	1	1	1	1		
		AQB01T294					1	1
4	MEASURING CUP	ASR792-454BK	1	1	1	1	1	1
5	ALUMINIUM PAN	AQE50T293	1	1	1	1		
		AQE50T294					1	1
6	THERMOSTAT ASS'Y	AQS00T293-0U	1	1	1	1	1	1
7	CAST HEATER ASS'Y	AQL20H17800U	1		1			
		ASR417-658-K		1				
		ASR416-658-K				1		
		ASR405-507					1	1
8	HANDLE FOR BOBY	AQE30T2941K0	1	1	1	1		
		AQE10T294					1	1
9	BODY COMPLETE	AQE13T2931WU		1	1	1		
		AQE13T2931UG	1					
		AQE13T2941WU					1	
		AQE13T2941UG						1
10	NAME PLATE	AQY50H299-UG	1					
		AQY50S299-WU		1				
		AQY50V299-WU			1			
		AQY50M299-WU				1		
		AQY50H300-WU					1	
		AQY50H300-UG						1
11	SWITCH ASS'Y	AQN00H299WU	1	1	1	1		
		AQN00H300W9U					1	1
12	SWITCH PANEL	AQN10T294-W9	1	1	1	1	1	1
13	DECORATIVE PANEL	AQN21T294-W9	1	1	1	1	1	1
14	LAMP BOARD ASS'Y	AQN85T29310U	1	1	1	1		
		AQN85T29410U					1	1
15	SWITCH LEVER COMP.	AQN30H299-0U	1	1	1	1		
		AQN30H300-0U					1	1
16	MICA HEATER ASS'Y	AQL70T29300U	1	1	1	1		
		AQL70T29410U					1	1
17	WIRING TERMINAL ASS'Y	AQL92T294	1	1	1	1	1	1
18	BOTTOM PLATE ASS'Y	AQH20T2941WU					1	1
19	POWER CORD ASS'Y	AQQ00T29320U			1			
		AQQ00H299-0U	1	1		1		
		AQQ00H300-0U					1	1

6. REPLACEMENT OF PARTS LIST & PACKING LIST (SR-GA421/SR-GA281)

PARTS LIST

Ref. No.	Part Name	Part No.	SR-GA421				SR-GA281	
			Silver	White	White	White	White	Silver
			HK	SIN-DBD	SIN-RBD	MAL	HK	HK
20	CORD BUSHING	ASR577Z658-K	1	1	1	1	1	1
21	SCOOP	ASR796-454AK	1	1	1	1	1	1
22	CAUTION LABEL (BODY)	ASR665T539-X	1	1	1	1	1	1

LIST OF SCREW

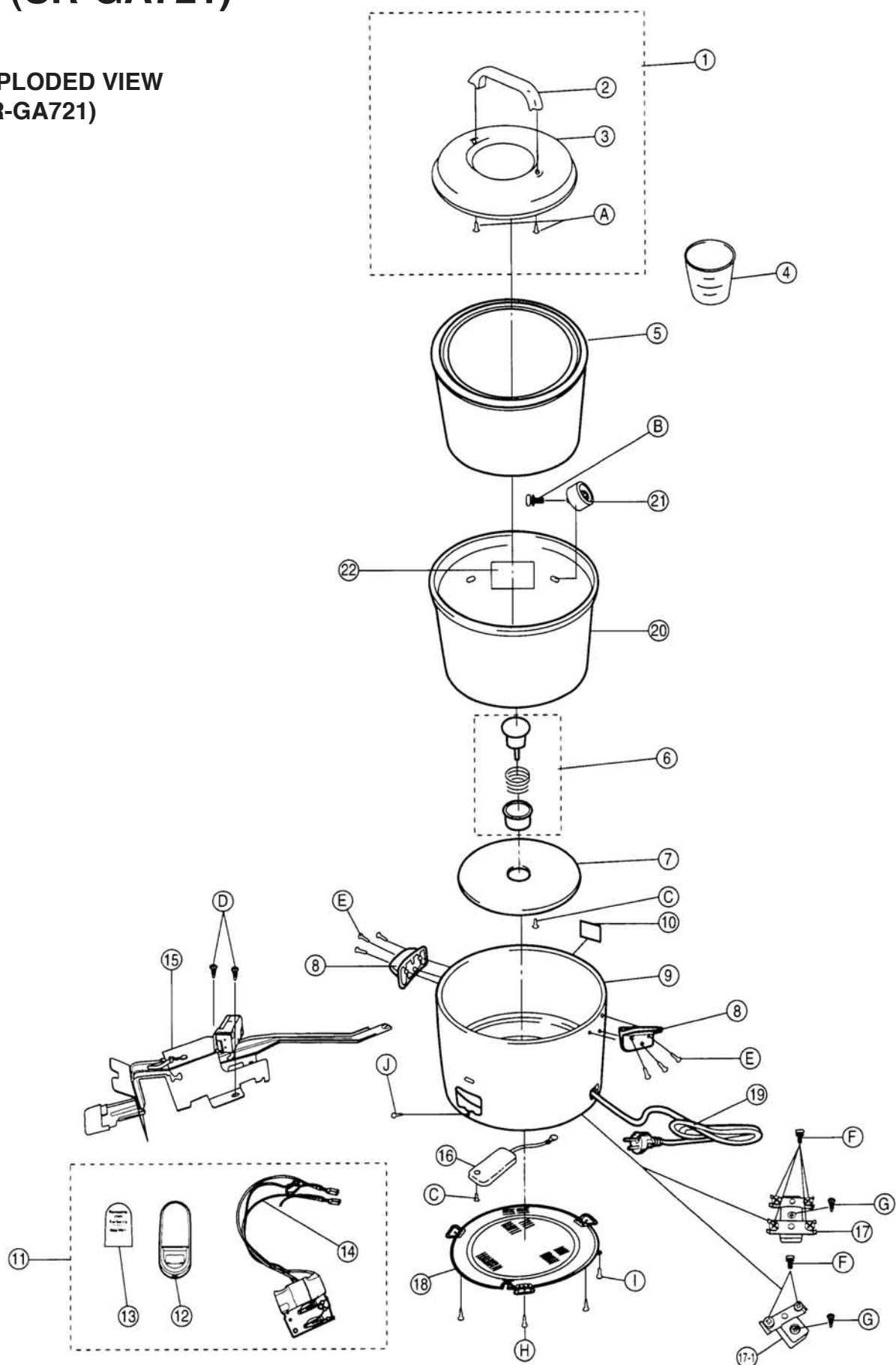
Ref. No.	Part Name	Part No.	SR-GA421				SR-GA281	
			Silver	White	White	White	White	Silver
			HK	SIN-DBD	SIN-RBD	MAL	HK	HK
A	TAPPING SCREW	XTN4+10BVW	2	2	2	2	2	2
B	SEMS SCREW	XYN5+C10FNS	1	1	1	1	1	1
C	TAPPING SCREW	XTN4+10BFJ	1	1	1	1	1	1
D	TAPPING SCREW	XTN4+10BFJ	4	4	4	4	4	4
E	SEMS SCREW	XTN4+C7FNS	8	8	8	8	6	6
F	TAPPING SCREW	XTN4+20BFJ	1	1	1	1	1	1
G	TAPPING SCREW	PK52-4871	1	1	1	1	1	1

PACKING LIST

Ref. No.	Part Name	Part No.	SR-GA421				SR-GA281	
			Silver	White	White	White	White	Silver
			HK	SIN-DBD	SIN-RBD	MAL	HK	HK
1	PACKING CASE	AQZ01H299-\$\$	1					
		AQZ01S299-\$\$		1	1	1		
		AQZ01H300-WU					1	1
2	OPERATING INSTRUCTIONS	AQY00H299	1					
		AQY00S299		1	1	1		
		AQY00H299					1	1
3	UPPER PAD	ASR756-631-K	1	1	1	1		
		ASR756T607-K					2	2
4	PLASTIC SHEET	ASR758-631-K	1	1	1	1		
		ASR758T503AK					1	1
5	RUST PROOF PAPER	ASR758T613B	1	1	1	1		
		ASR758T607B					1	1
6	LOWER PLATE	AQZ16T2931	1	1	1	1		
	CORD PROTECTOR	AQZ15T2941					1	1
7	LOWER PAD	ASR752T607-K	1	1	1	1	1	1
8	PACKING PAPER	AQZ17T2931	1	1	1	1	1	1

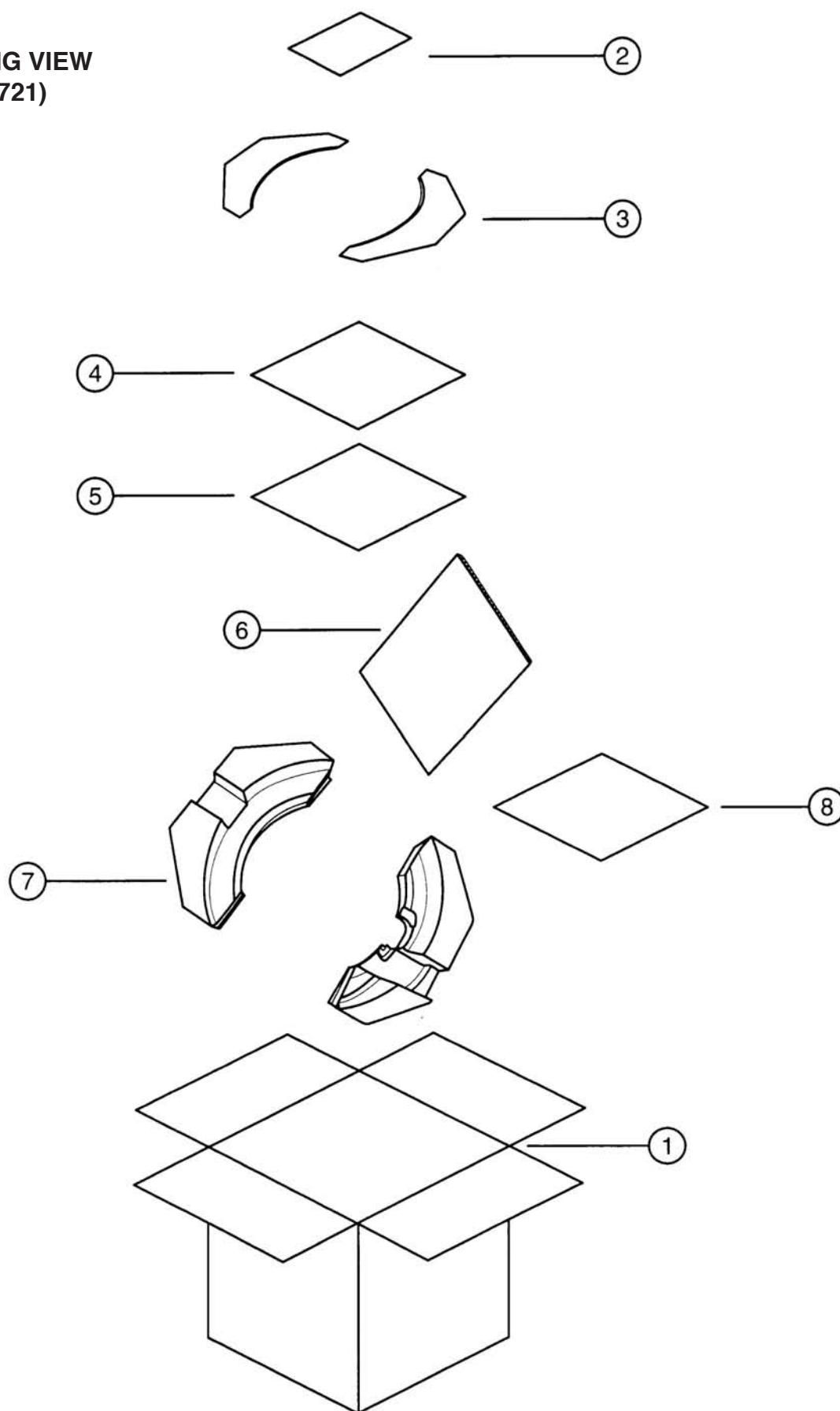
7. EXPLODED VIEW & PACKING VIEW (SR-GA721)

EXPLODED VIEW (SR-GA721)



7. EXPLODED VIEW & PACKING VIEW (SR-GA721)

PACKING VIEW (SR-GA721)



8. REPLACEMENT OF PARTS LIST & PACKING LIST (SR-GA721)

PART LIST

Ref. No.	Part Name	Part No.	SR-GA721			
			White	White	White	White
			MAL	SIN-DBD	SIN-RBD	USA
1	LID ASS'Y	AQB01T29510U	1	1	1	
		1QB01A298-0U				1
2	LID HANDLE	AQB10T2941K0	1	1	1	1
3	LID	AQB01T2951	1	1	1	
		AQB01A298				1
4	MEASURING CUP	AQK00T295	1	1	1	1
5	PAN	AQE50T295	1	1	1	1
6	THERMOSTAT ASS'Y	AQS00T295-0U	1	1	1	1
7	CAST HEATER ASS'Y	AQL20T29510U		1		1
		AQL20M298-0U	1			
		AQL20S298-0U			1	
8	BODY HANDLE	AQE30T2951	2	2	2	2
9	BODY COMPLETE	AQE13T2951WU	1	1	1	1
10	NAME PLATE	AQY50M298-WU	1			
		AQY50V298-WU		1		
		AQY50S298-WU			1	
		AQY50A298-WU				1
11	SWITCH ASS'Y	AQN00M298W9U	1	1	1	
		AQN00A298W9U				1
12	SWITCH PANEL	AQN10T295-W9	1	1	1	
		ASR22W-590-K				1
13	DECORATIVE PANEL	AQN21M298-\$\$	1	1	1	1
14	LAMP BOARD ASS'Y	AQN85T29510U	1	1	1	
		AQN85A29800U				1
15	RICE COOKING LAMP LEAD WIRE	AQN86T295	1	1	1	
		AQN86A298				1
16	MICA HEATER ASS'Y	AQL70T295-0U	1	1	1	1
17	WIRING TERMINAL ASS'Y	ASR175T120A	1	1	1	1
		AQL92T294	1	1	1	1
18	BOTTOM PLATE ASS'Y	AQH20T2951WU	1	1	1	1
19	POWER CORD ASS'Y	AQQ00T295-0U		1		
		AQQ00M298-0U	1		1	
		AQQ00A298-0U				1
20	PROTECTING FRAME HOLDER	AQE20T2951	4	4	4	4
21	PAN GUIDE	AQS22T2951\$\$	4	4	4	4
22	CAUTION LABEL	ARB32A298				1

8. REPLACEMENT OF PARTS LIST & PACKING LIST (SR-GA721)

LIST OF SCREW

Ref. No.	Part Name	Part No.	SR-GA721			
			White	White	White	White
			MAL	SIN-DBD	SIN-RBD	USA
A	TAPPING SCREW	XTN4+10BVW	2	2	2	2
B	P.F. HOLD SCREW	XYN4+C10FNS	4	4	4	4
C	SEMS SCREW	XYN5+C10FNS	1	1	1	1
		XYN5+C10FNS	1	1	1	1
D	TAPPING SCREW	XTN4+8BFJ	2	2	2	2
E	TAPPING SCREW	XTN5+16BFJ	6	6	6	6
F	SEMS SCREW	XYN4+C7FNS	12	12	12	12
G	TAPPING SCREW	XTN4+20BFJ	2	2	2	2
H	TAPPING SCREW	XTN4+12AFJ	3	3	3	3
I	TAPPING SCREW	PK52-4871	1	1	1	1
J	TAPPING SCREW	XTN4+10AVW	1	1	1	1

PACKING LIST

Ref. No.	Part Name	Part No.	SR-GA721			
			White	White	White	White
			MAL	SIN-DBD	SIN-RBD	USA
1	PACKING CASE	AQZ01M298-WU	1	1	1	
		AQZ01A298-WU				1
2	OPERATING INSTRUCTIONS	AQY00M298	1	1	1	
		AQY00A298				1
3	UPPER PAD ASS'Y	ASR754A708	1	1	1	1
4	POLYETHYLENE SHEET	ASR762T590-K	1	1	1	1
5	RUST PROOF PAPER	AQZ48T295	1	1	1	1
6	CORD PROTECTOR	AQZ15T2951	1	1	1	1
7	LOWER PAD ASS'Y	ASR750A708	1	1	1	1
8	ROLL PAPER	AQZ17T295	1	1	1	1