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# WASHING MACHINE SERVICE MANUAL

#### **CAUTION**

READ THIS MANUAL CAREFULLY TO DIAGNOSE TROUBLE CORRECTLY BEFORE OFFERING SERVICE.

MODEL: WD(M)-10160(5)F

WD(M)-80160F

WD(M)-65160F

**WD-8016F** 



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# **CONTENTS**

1. SPECIFICATION	3
2. FEATURES & TECHNICAL EXPLANATION	4
3. PARTS IDENTIFICATION	6
4. INSTALLATION	7
5. OPERATION	10
6. WIRING DIAGRAM/PROGRAM CHART	12
7. TROUBLESHOOTING	13
7-1.BEFORE PERFORMING SERVICE	13
7-2.TEST MODE	13
7-3.HOW TO KNOW THE WATER LEVEL FREQUENCY	13
7-4.ERROR DISPLAY	14
8. ERROR DIAGNOSIS AND CHECK LIST	16
8-1. DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION	16
8-2. FAULT DIAGNOSIS AND TROUBLESHOOTING	19
9. DISASSEMBLY INSTRUCTIONS	25
10. EXPLODED VIEW	32
10-1. THE EXPLODED VIEW OF CABINET ASSEMBLY	32
10-2. THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY	33
10-3. THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY	34
*APPENDIX (Replacement parts list)	35

# 1. SPECIFICATION

ITE	EM	WD(M)-10160(5)F / WD(M)-80160F / WD-8016F / WD(M)-65160F						
POWER	SUPPLY	220-240V~, 5	50Hz					
PRODUC	CT WEIGHT	67kg						
EL ECTRICITY	WASHING	190W						
ELECTRICITY CONSUMPTION	SPIN (800rpm)	450W						
	DRAIN MOTOR	32W						
	WASH HEATER	2000W						
REVOLUTION	WASH	45rpm						
SPEED	SPIN	WD(M)-65160F	400/500/650 rpm					
		WD(M)-80160F / WD-8016F	400/600/800 rpm					
		WD(M)-10160F	400/800/1000 rpm					
OPERATION WA	TER PRESSURE	0.3-10kgf/cm² (30-1000kPa)						
CONTI	ROL TYPE	Electronic	3					
		Rating						
WASH C	CAPACITY	Synthetic (3.5kg), Delicate (3.0kg) Wool (2.0kg), Hand Wash(2.0kg), Quick 30(2.0kg)						
DIMEN	NSION	600mm(W) ×600mm(D) ×850mm(H)						
WASH PI	ROGRAM	Cotton, Synthetic, Delicate, Wool, Hand Wash						
OPT	FION	Rinse+Spin, Drain						
OP	ΓΙΟΝ	Pre Wash, Time Save, Rinse+, Crease Care						
DOOR SW	/ITCH TYPE	Bi-Metal type						
WATER	LEVEL	9 steps (by sensor)						
SENSING OF THE L	AUNDRY AMOUNT	Adopted						
FUZZY	LOGIC	Adopted						
ERROR D	IAGNOSIS	7 items						
POWER A	AUTO OFF	Adopted						
CHILD	LOCK	Adopted						

## 2. FEATURES & TECHNICAL EXPLANATION

## 2-1.FEATURES



#### **■** Jumbo drum

LG's jumbo drum can wash about 40% more per load than conventional washing machine. A bigger drum improves the wash performance.



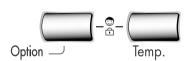
## **■** Protection against wrinkles

With the alternate rotation of the drum, wrinkling in the laundry is minimized.



## **■** More economical by Fuzzy Logic System

FUZZY Logic System detects the amount of load and water temperature, and then determines the optimum water level and washing time to minimize energy and water consumption.



#### **■ Child-Lock**

The Child-Lock system has been developed to prevent children from pressing any button (except Power button) to change the program during operation.

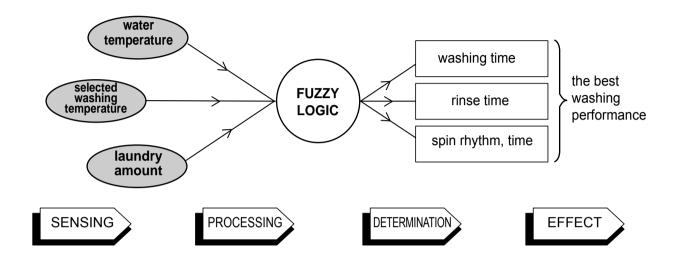


## ■ Low noise speed control system

By sensing the amount of load and balance, automatical distributes load evenly to minimize the spinning noise level.

## 2-2.DETERMINE WASHING TIME BY FUZZY LOGIC

To get the best washing performance optimal time is determined by sensing of water temperature, selected washing temperature and laundry amount.



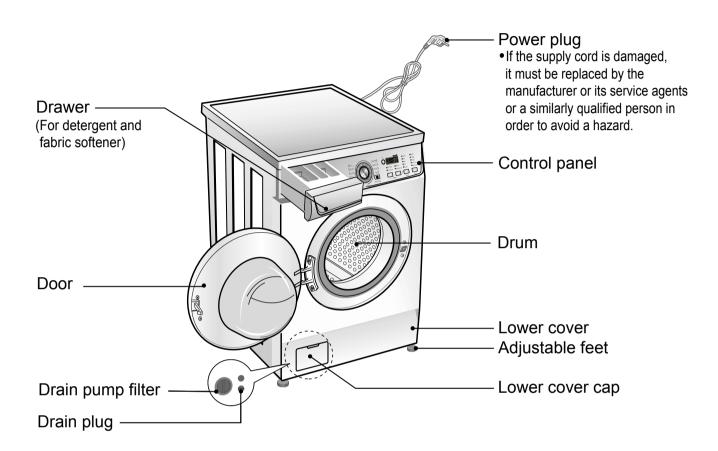
## 2-3.WATER LEVEL CONTROL

- This model adopts a pressure sensor which can sense the water level in the tub.
- When the water level reaches to the preset level the water supply is stopped, then the washing program proceeds.
- Spinning does not proceed until the water in the tub reduces a certain level.

## 2-4.THE DOOR CAN NOT BE OPENED

· While program is operating.

# 3. PARTS IDENTIFICATION



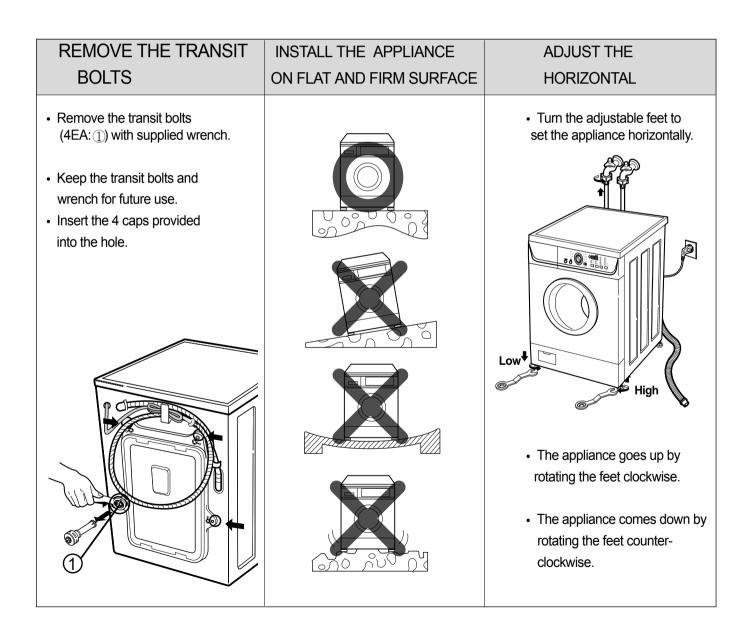
## **ACCESSORIES**



## 4. INSTALLATION

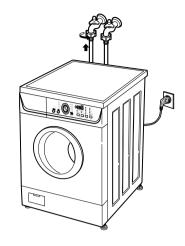
- 1 Before servicing ask the customer what the trouble is.
- 2 Check the adjustment (power supply is 220-240V, remove the transit bolts....)
- (3) Check the troubles referring to the troubleshooting.
- 4 Decide service steps referring to disassembly instructions.
- [5] Then, service and repair.
- 6 After servicing, operate the appliance to see whether it works O K or NOT.
- STANDARD INSTALLATION

The appliance should be installed as follows.

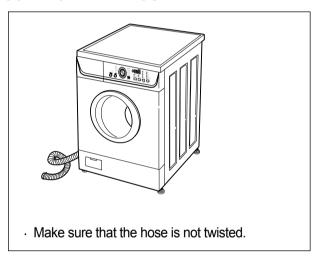


#### ■ HOW TO CONNECT INLET HOSE

- Check that the rubber washer is inside of the valve connector.
- Connect the inlet hose firmly to prevent leak.



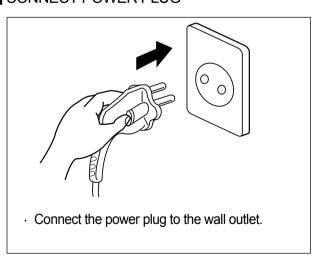
#### **■ CONNECT DRAIN HOSE**

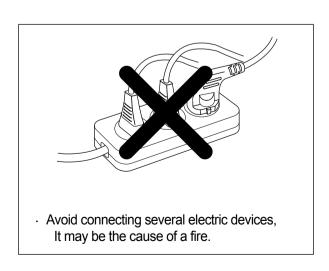




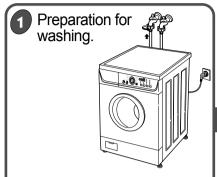
\* The drain hose should be placed under 100cm from the floor.

#### **■ CONNECT POWER PLUG**





## **7 TEST OPERATION**



- Connect the power plug to the outlet.
- Connect the inlet hose.

Press the power button.



• In case of cotton program.

Press the START/PAUSE button.



Check the water heating.

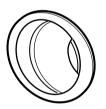


Check automatic reverse



· Check if the drum rotates clockwise and counterclockwise.

Check the water supply.



· Check if water is supplied through the detergent dispenser.

- Check drain and spin
- Press the Start/Pause button after selecting Pump button by pressing Program button.

Power off and open the door



- · Power off and then power on.
- · Check if the door can be opened after 2 minutes.

Water removal



 If SVC is needed during check, remove the remaining water by pulling out the hose cap.

## Wash program selector

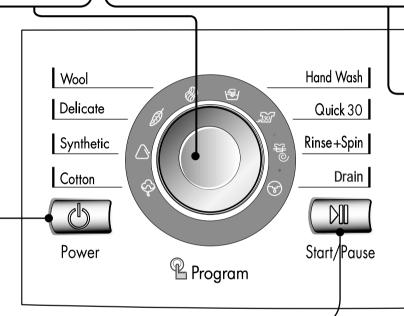
- 8 programs can be set depending on the type of the laundry.
- By pressing the button [Cotton → Synthetic → Delicate → Wool → Hand Wash → Quick 30 → Rinse+Spin → Drain1 can be selected.

## **Time Delay**

- Press the button when delayed washing is needed.
- When the button is pressed, [ ∃:@@ ] is displayed,
  - maximum delay of [ 19:00 ] hours can be set.
- Each press advances time delay by the hour.
- Use [Power] button to cancel [Time Delay]
- [Time Delay] means the time required from the present to the completion of washing.

#### **Power button**

• Press the button to turn on and off.



#### **Start/Pause button**

- Use the button to start or pause wash cycle.
- The power turn off automatically 4 minutes after the pause button is pressed.

## **Option**

- Pre Wash: If the laundry is heavily soiled, "Pre Wash" course is effective.
  - Pre Wash is available in Cotton and Synthetic Program.

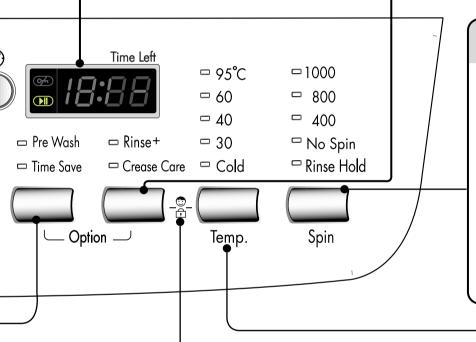
**Time Save**: • By selecting the Time Save option, the wash time may be reduced, depending on the program selected.

## **LED display**

- Display the estimated remaining time (Hour : Minute) to finish.
- In case of abnormal operation, error indications are displayed. (IE, IIE, IIE, IIE, IE, FE, FE)
- · See troubleshooting guide.

## **Option**

- Rinse+: If you wish to rinse more, the Rinse+ option will remove any trace of detergents.
- Crease Care: If you want to prevent crease, select this function after selecting spin speed.



## **Spin**

- WD(M)-10160(5)F No Spin → Rinse Hold → 400 → 800 → 1000
- WD(M)-80160F/WD-8016F No Spin → Rinse Hold → 400 → 600 → 800
- WD(M)-65160F No Spin → Rinse Hold → 400 → 500 → 650

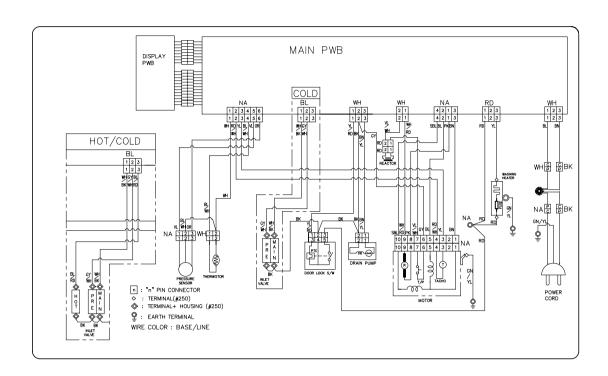
#### Child - lock

- Child Lock system can be set and canceled by pressing both [Temp.] and [Option] button simultaneously for 3 seconds.
- Once Child Lock is set, all button are inoperable except power button.
- Child Lock system can be set anytime even during Power-off and operation.
- It is automatically cancelled when an operational error occurs.

# Water temperature selector

- Press the button to select water temperature.
- The water temperature [40°C → 60°C→ 95°C→ Cold
  - → 30°C] can be selected in Cotton.
- 95°C is selected for Cotton only.

## 6. WIRING DIAGRAM / PROGRAM CHART



				* Water Supply : W·S * Intermittent S										t Sp	oin	n:I·S * Diser				entangle:	: D·T														
€C						Washing					Rinse										Spin				Α										
	Υ	_		Pı	re				Ma	ain		Normal										F	Rins	se +	-	Орш			Е						
//		C		<				Was	shing	Sta	ycool	ling			1			2	2			3	3			4	ı					N	ò	Norma	a
C/	\s \	T E	W S	Washing	Drain	S	W · S	Heating	Washing	W · S	Rinsing	Drain	Drain	I S	W · S	Rinsing	Drain	-   S	W · S	Rinsing	Drain	  -   S	<b>∀</b> · <b>S</b>	Rinsing	Drain	l S	W . S	Rinsing	Drain	Spin	D·T	D	O F F	Normal Working Time (Hour:Minute)	
	\	\_P	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	20	20	(11041.11111	
U R S E	/	Time (SEC)	120	MIN	60	240	120		MIN	120	60	60	60	240	120	360	60	240	120	360	60	240	120	360	60	240	120	360	60	480	120	20	20		
c	ott	ton		8			_		58 95																						┝			About 2	:41
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	ins Sp	e pin										*****						About	19																
	Ora	ain		About 1																															

- Basic Cycle

- Data Cycle
   Pre-Setting Time : Water Supply 120 sec.
   Drain 60 sec.
   \* ~ Time for varies as the temperature or the amount of laundry
- \* Basic time is minute in washing chart
- \* The actual program time can be varied with the load amount, water temperature or ambient temperature
- \* Pre Wash: •If the laundry is heavily soiled, "Pre Wash" course is effective.
  - •Pre Wash is available in Cotton and Synthetic.
- \* Time Save : This option can be used to reduce the time of a wash program.
  - To use this option press the Time Save button once before the wash program is started.
  - This option is not available with Quick 30 program.
- \* Rinse+: Used to additional rinse, which may assist in removing traces of detergent residue.
  - By selecting Rinse<sup>+</sup> function, the rinse time and the rinse water are increased.
- \* Crease Care: If you want to prevent crease, select this button with spin speed.

## 7. TROUBLESHOOTING

## 7-1. BEFORE PERFORMING SERVICE

- Be careful of electric shock or disconnecting the parts while troubleshooting.
- Voltage of each terminal in 220-240V~ and DC while applying an electric current.

## 7-2. QC TEST MODE.

- (1) Pressing Temp, and Option button simultaneously.
- 2 Power supply ON with pressing upper two button.
- ③ Press the START/PAUSE button as follows.
  [Press the START/PAUSE button more 4 times until stop spinning]



Pressing number of [START/PAUSE]button	Checking P	oint					
None	All lamps turn on	(8:88)					
1 time	Clockwise spin (right)	Motor rpm (About 45)					
2 times	Low speed spin	Motor rpm (About 63~67)					
3 times	High speed spin	Motor rpm (About 79~85):					
		WD-80160F / WD-8016F					
		Motor rpm (About 100~106):					
		WD-10160(5)F					
4 times	Inlet valve for pre-wash operation	Water Level frequency (25~65)					
5 times	Inlet valve for main-wash operation	Water Level frequency (25, 65)					
	Hot inlet valve in case of hot water fill	Water Level frequency (25~65)					
6 times	Inlet valve for main-wash operation	Water Level frequency (25~65)					
7 times	Counterclockwise spin (left)	Motor rpm (About 45)					
8 times	A Heater is in operation for 3 sec.	Water temperature					
9 times	Draining pump operation	Water Level frequency					
10 times	Auto off operation						

## 7-3. HOW TO KNOW THE WATER LEVEL FREQUENCY

\* Press the Option and Spin button simultaneously.



The digits means water level frequency (10<sup>-1</sup>kHz)

ex) 241 : Water level frequency = 241 X 10<sup>-1</sup>kHz =24.1kHz

## 7-4.ERROR DISPLAY.

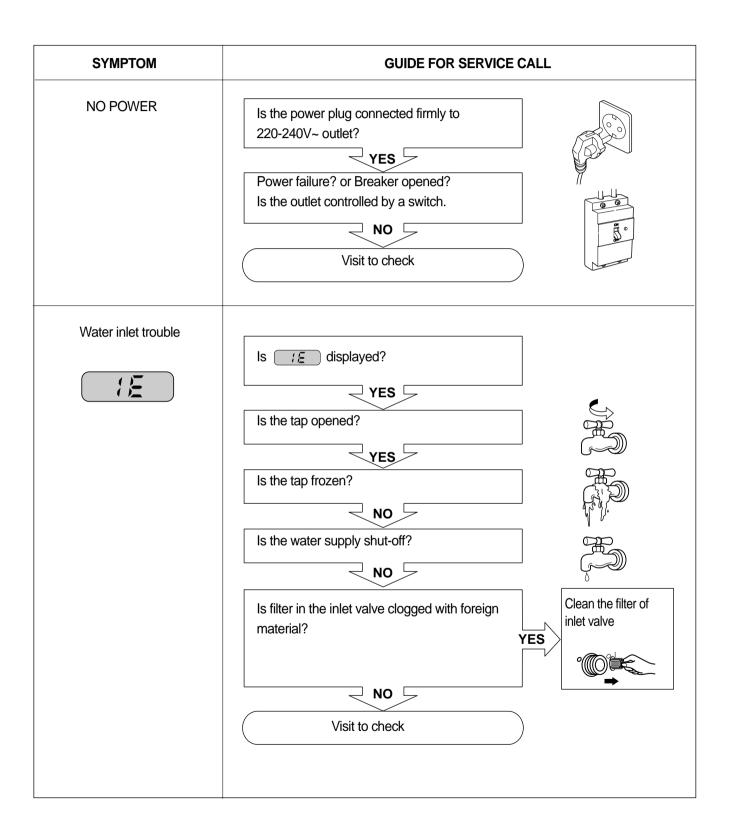
- If you press the [Start/Pause] button when an error in displayed, any error except **S/W ERROR** will disappear and the machine will change into pause status.
- In case of <code>FE</code> <code>\_, <code>EE</code> <code>\_, <code>EE</code> <code>\_, if the error</code> is not resolved within 20 sec. In the case of other errors, if the error is not resolved within 4 min. power will be turned off automatically and the error code will be blinked. But in case of <code>FE</code> <code>\_, power will not be turned off.</code></code></code>

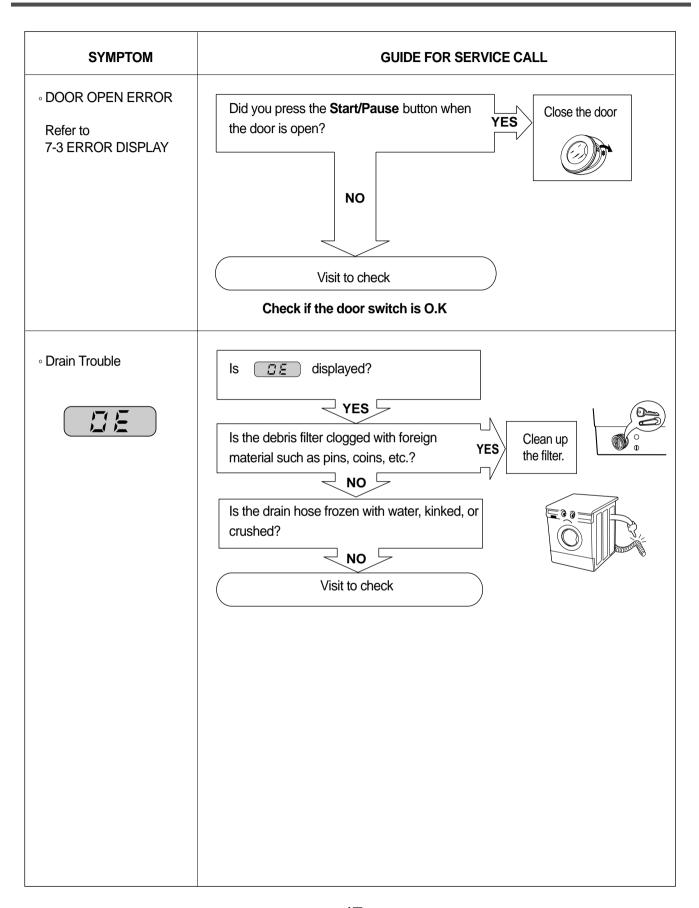
	ERROR	SYMPTOM	CAUSE
1	WATER INLET ERROR	( ; E	<ul> <li>Water has not reached to the pre-set level within 4 min. since inlet valve operated, or water has not reached to the normal level within 25 min.</li> </ul>
2	IMBALANCE ERROR	<u>ue</u>	<ul> <li>The appliance is tilted.</li> <li>Laundry is gathered to one side.</li> <li>Non distributable things are put into the drum.</li> </ul>
3	DRAIN ERROR		O Water has not drained enough within 5 min.
4	OVERFLOW ERROR	FE	Water is automatically being pumped out because too much water is in the tub.
5	SENSOR PRESSURE S/W ERROR	FE	O The sensor pressure switch is out of order.
6	DOOR OPEN ERROR		<ul><li> The [Start/Pause] button is pressed with the door open.</li><li> The door switch is out of order.</li></ul>
7	HEATING ERROR	<b>E E</b>	○ The thermistor is out of order.
8	SENSOR ERROR	55	

	ERROR	SYMPTOM	CAUSE
8	SENSOR ERROR	5.5	<ul> <li>The electric contact between the connectors (5-pin, male in the wire harness and 5-pin female in the hall sensor) is bad or unstable.</li> <li>f_ Reconnect or repair the contact in the connector.</li> <li>The connector (6-pin, male, natural) in the wire harness is not connected to the connector (6-pin, female, natural) of PWB assembly (Main) or the electric contact of connectors is bad/unstable.</li> <li>f_ Reconnect or repair the contact in the connector.</li> <li>The electric contact between the connectors after pin, male in the wire harness and 6-pin female in the controller (Main) is bad or unstable.</li> <li>f_ Reconnect or repair the contact in the connector.</li> <li>The wire harness between hall sensor in the MOTOR and PWB assembly (Main) is cut (open circuited).</li> <li>f_ Repair/replace the damaged WIRE HARNESS.</li> <li>The hall sensor is out of order/defective.</li> <li>f_ Replace the motor.</li> <li>The controller (Main) is out of order/defective.</li> <li>f_ Replace the PWB assembly (Main).</li> </ul>

## 8. ERROR DIAGNOSIS AND CHECK LIST

## 8-1.DIAGNOSIS AND ANSWER FOR ABNORMAL OPERATION



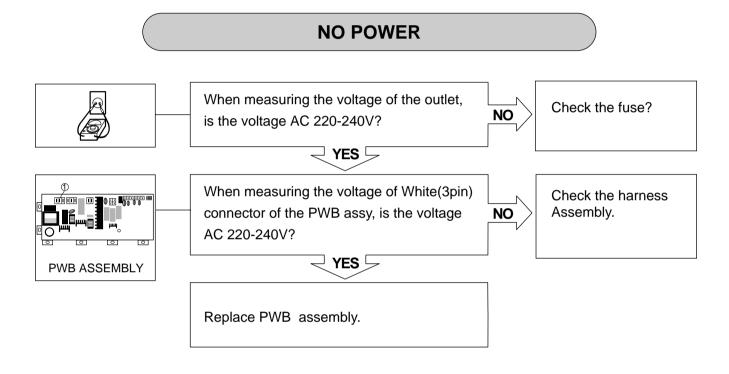


SYMPTOM	GUIDE FOR SERVICE CA	<b>LL</b>
<ul> <li>Suds overflow from the appliance.</li> <li>(In this condition, wash and spin do not operate normally)</li> </ul>	Is low-sudsing detergent for the durm washing machine used?  YES  Is the proper amount of detergent used as recommended?  YES  Recommend to reduce the amount of detergent.  * This appliance has the automatic suds sensi operates under much suds condition for good preventing overflow.  * When much suds are sensed, the suds remederain, water input, and pause will operate with drum.	d rinse and oving fuction such as
No effect of softener	Is softener put in the correct compartment of drawer?  YES  Is the drawer closed during wash?  YES  Is the softener cap clogged?  YES  Explain how to use softener  Clean the compartment for softener	Compartment for softener
FE SE FE EE	Visit to check	

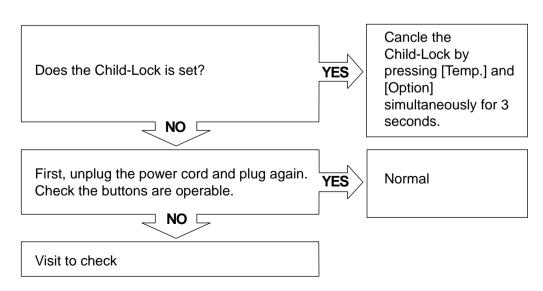
## 8-2. FAULT DIAGNOSIS AND TROUBLESHOOTING

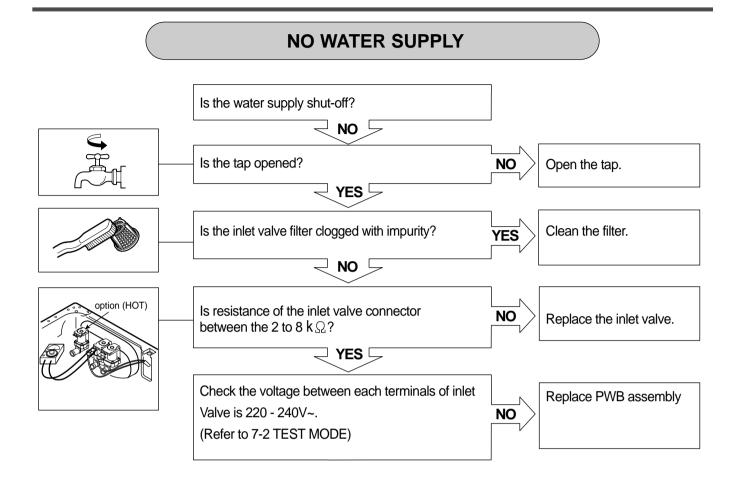
## CAUTION

- 1. Be careful of electric shock or disconnecting the parts while troubleshooting.
- 2. First of all, check the connection of each part terminal with wiring diagram.
- 3. If you replace the PWB assembly (Main), put in the connectors correctly.

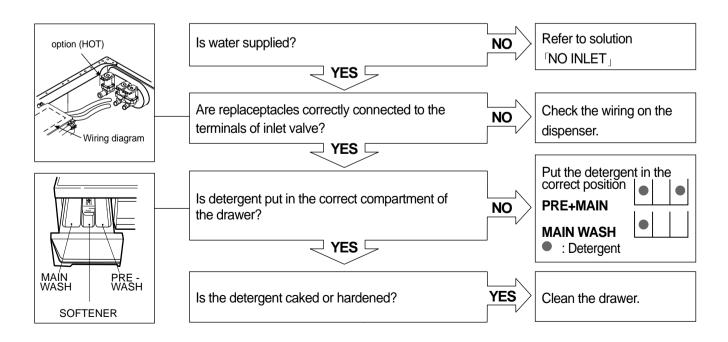


#### ALL BUTTONS ARE INOPERABLE EXCEPT POWER BUTTON

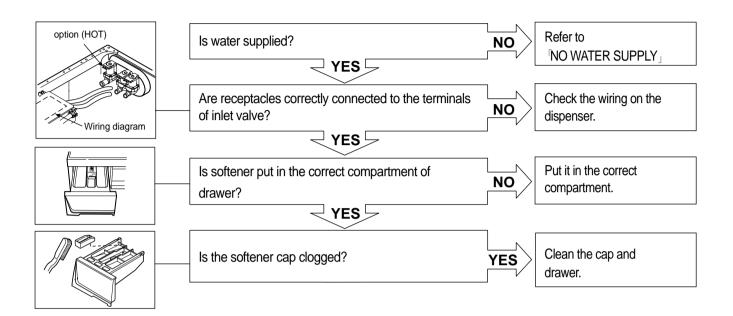




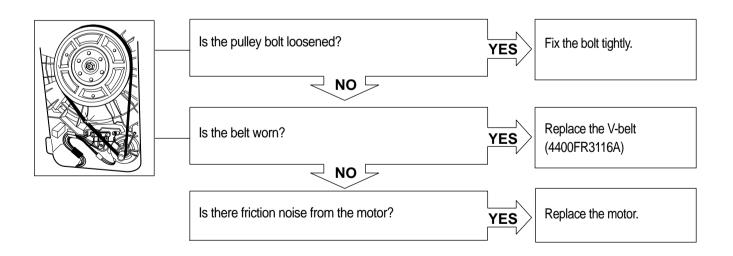
#### **DETERGENT DOES NOT FLOW IN**



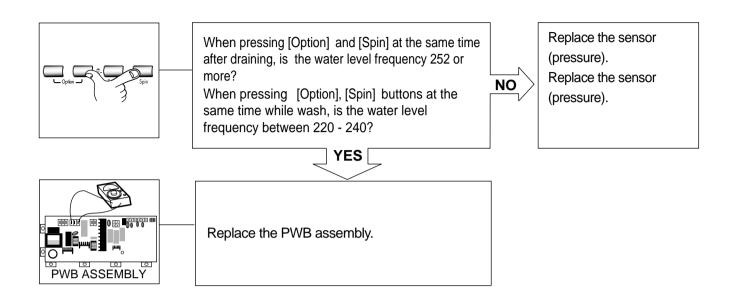
## **SOFTENER DOES NOT FLOW IN**



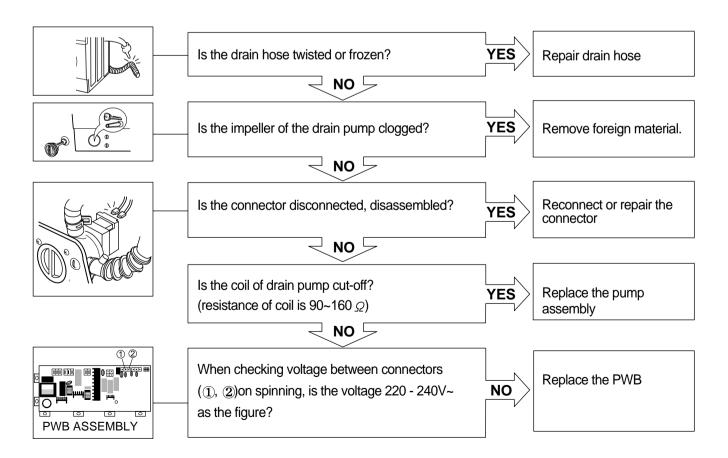
## **ABNORMAL SOUND**



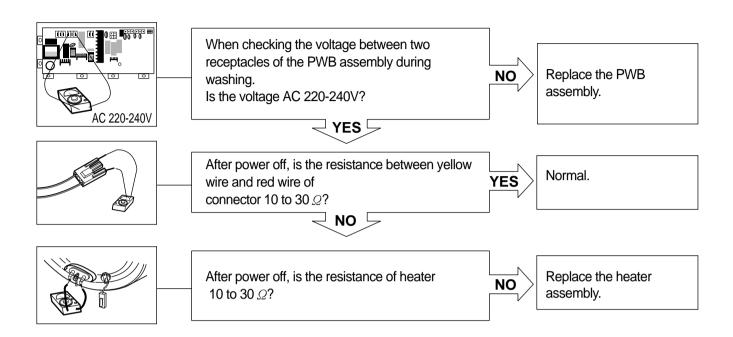
#### **HEATING WITHOUT WATER**



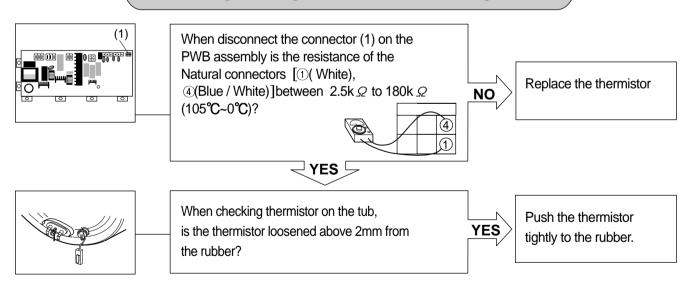
#### **DRAIN MALFUNCTIONING**

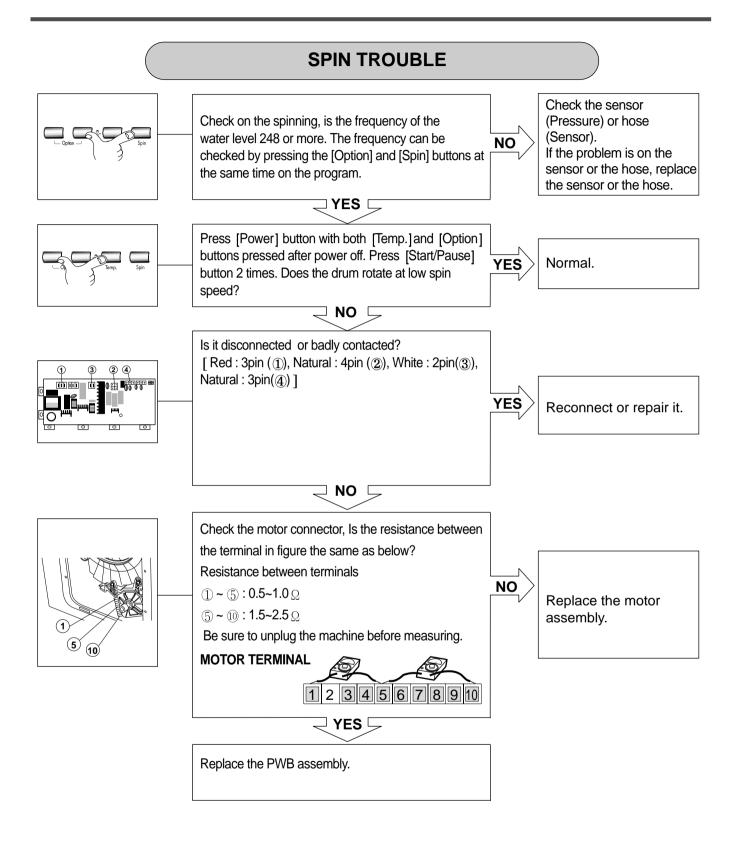


#### **WASH HEATER TROUBLE**



# HEATING CONTINUOUSLY ABOVE THE SETTING WATER TEMPERATURE

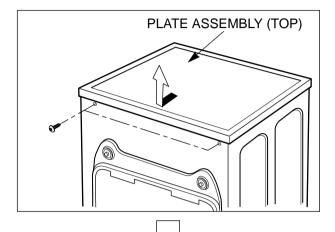




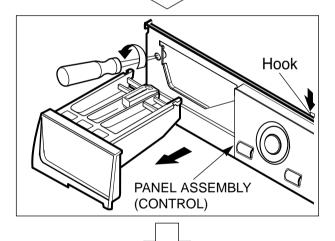
# 9. DISASSEMBLY INSTRUCTIONS

\* Be sure to unplug the machine out of the outlet before disassembling and repairing the parts.

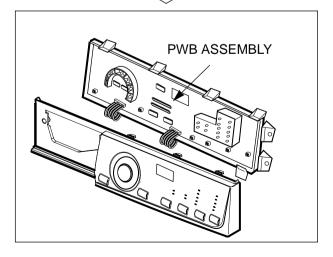
## **CONTROL PANEL**



- ① Unscrew 2 screws on the back of the top plate.
- 2 Pull the top plate backward and upward as shown.

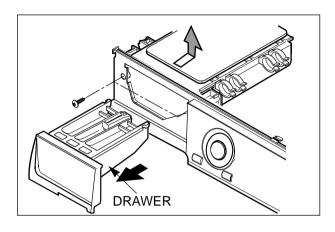


- ① Disconnect the PWB Assembly connector from Main lead wire Assembly.
- ② Pull out the drawer and unscrew 2 screws.
- ③ Push upper hooks down on the top and pull the control panel.

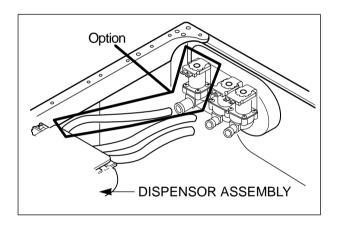


① Disconnect the PWB assembly from the control panel by pushing 4 hooks down.

## **DISPENSER ASSEMBLY**

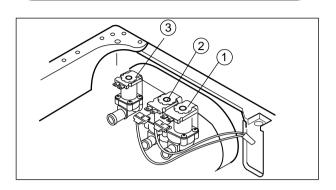


- ① Disassemble the top plate assembly.
- ② Pull out the drawer to arrow direction.
- ③ Unscrew 2 screws.



- ① The hose clamps and the hose are disassembled.
- ② The ventilation bellows and the water inlet bellows are disassembled on the tub.

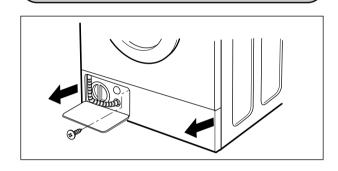
## **INLET VALVE**



- ① Disconnect the wiring receptacle.
- ② Unscrew 2 screws from the back.

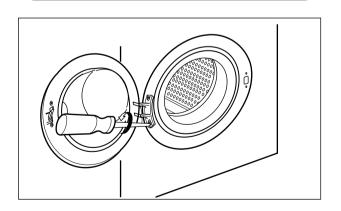
VALVE #1 (MAIN)	Whited/Black-Black
VALVE #2 (PRE)	Black - Gray
VALVE #3 (HOT)	Blue/White - Black

## **LOWER COVER**



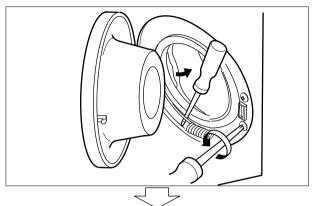
■ Open the lower cover plate by using a finger and pull out the lower cover in the arrow direction after a screw is unscrewed.

## **DOOR**

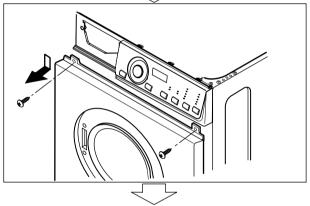


- ① Open the door completely.
- ② Remove the two screws from the hinge.
- \*When removing the door assembly, it is necessary to hold the bracket that is inner of the cabinet cover.

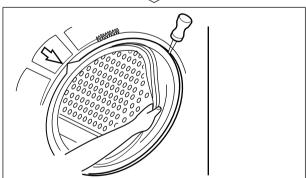
## **GASKET ASSEMBLY**



- ① Take apart the cabinet gasket clamp.
- ② Unscrew 2 screws from the cabinet cover.
- ③ Open the lower cover cap and unscrew 1 screw inside.
- ④ Take apart the lower cover.

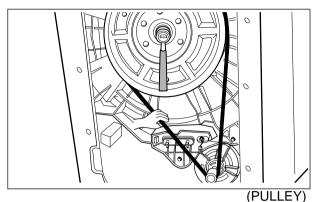


① Unscrew all the screws on the upper and lower sides of the cabinet cover.

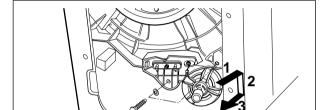


- ① Take apart the tub gasket clamp.
- ② Make sure that the drain hole of the gasket is put beneath when reassembling the gasket.
- \*Refer to the arrow mark on the tub cover.

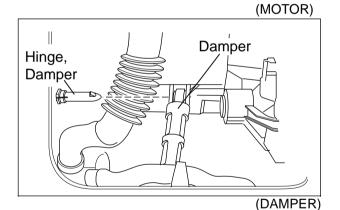
## PULLEY, MOTOR, DAMPER



- ① Remove the back cover.
- ② Take off the belt turning the pulley.
- ③ Unscrew the bolt to pull out the pulley.

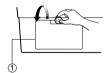


- ① Unscrew 2 screws from the bracket.
  - ② Push the motor in the arrow direction for disassembling.
  - ③ When reassembling the motor, make sure that motor mounting bushings are not taken off from the bracket.



- ① Pull out the hinge, pressing its snap.
- ② Do not use the pulled out hinge again. It may be taken off during operation.

## **■**Clean the drain pump filter



Open the lower cover cap (1) by using a coin. Turn the drain plug (2) to pull out the hose.



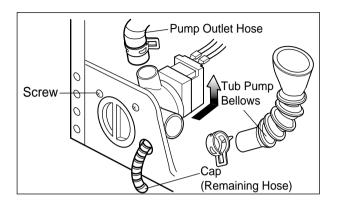
Unplug the drain plug (②), then the water flows out, At this time use a vessel to prevent water flowing on the

floor. If the water flowing on the more, turn the pump filter (③) open to the left.



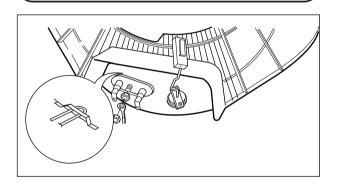
Take out any foreign material from the pump filter (③). After cleaning, turn the pump filter(③) clockwise and insert the drain plug (②) to the original place. close the lower cover cap.

## **PUMP**



- ① Remove pump outlet hose.
- ② Remove tub pump bellows.
- ③ Remove cap (Remaining Hose.)
- 4 Disconnect the wiring.
- ⑤ Unscrew 2 screws.
- ⑥ Remove the pump.

## **HEATER**

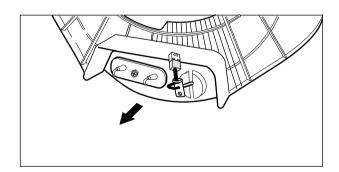


① Loosen the M6 heater nut to pull out the heater.

## CAUTION

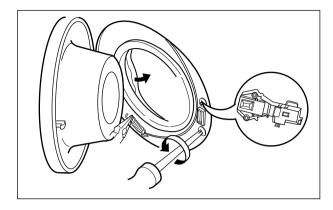
When mounting the heater, be sure to insert the heater into the heater clip on the bottom of the tub.

## **THERMISTOR**



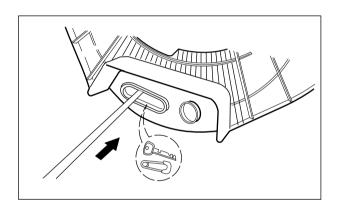
- ① Pull it out by holding the thermistor bracket.
- \* If it is pulled by the wire, it may be broken.
- ② When mounting the thermistor again, make sure that it is got back tight to the bushing.

## SWITCH ASSEMBLY, DOOR LOCK



- ① Take apart the cabinet cover clamp and release the gasket.
- ② Unscrew 2 screws holding the door lock.
- ③ Disconnect the door lock from the wiring connector.

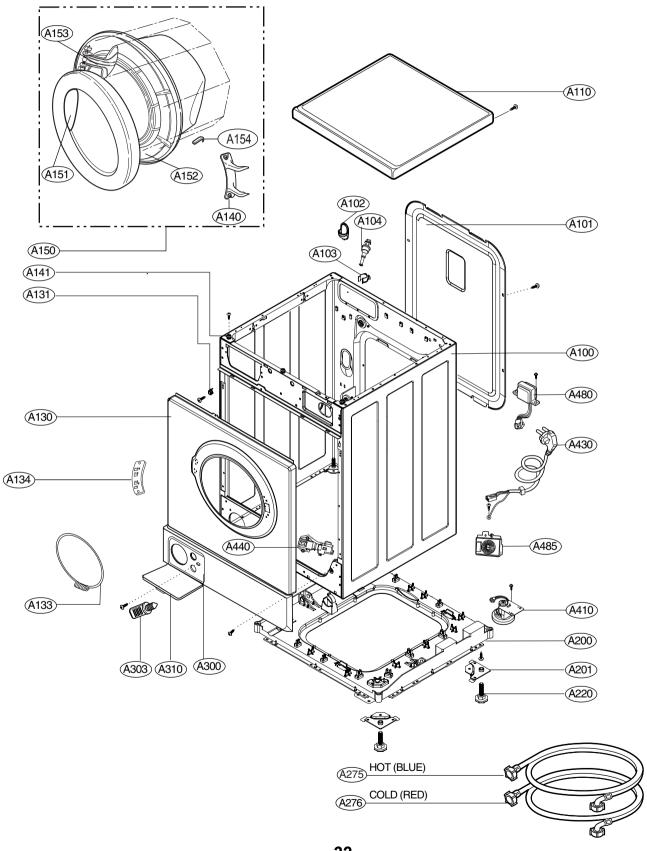
## WHEN FOREIGN MATERIAL IS STUCK BETWEEN DRUM AND TUB



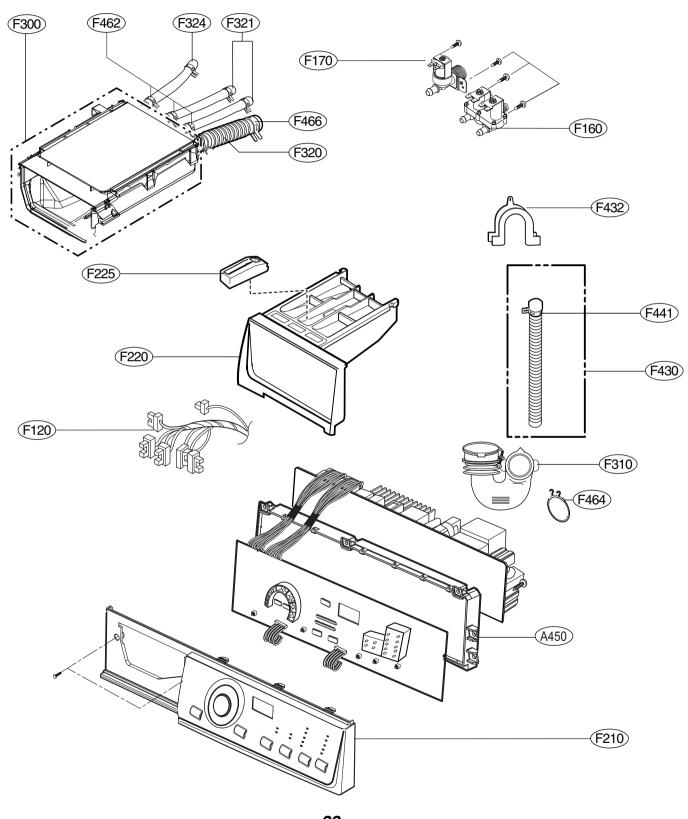
- ① Remove the heater.
- ② Remove the foreign material (wire, coin and others) by inserting a long bar through the hole.

# 10. EXPLODED VIEW

## 10-1.THE EXPLODED VIEW OF CABINET ASSEMBLY



## 10-2 THE EXPLODED VIEW OF CONTROL PANEL & DISPENSER ASSEMBLY



## 10-3 THE EXPLODED VIEW OF DRUM & TUB ASSEMBLY

