SERVICE MANUAL

WHASING MACHINE

DWD-FV62D1B

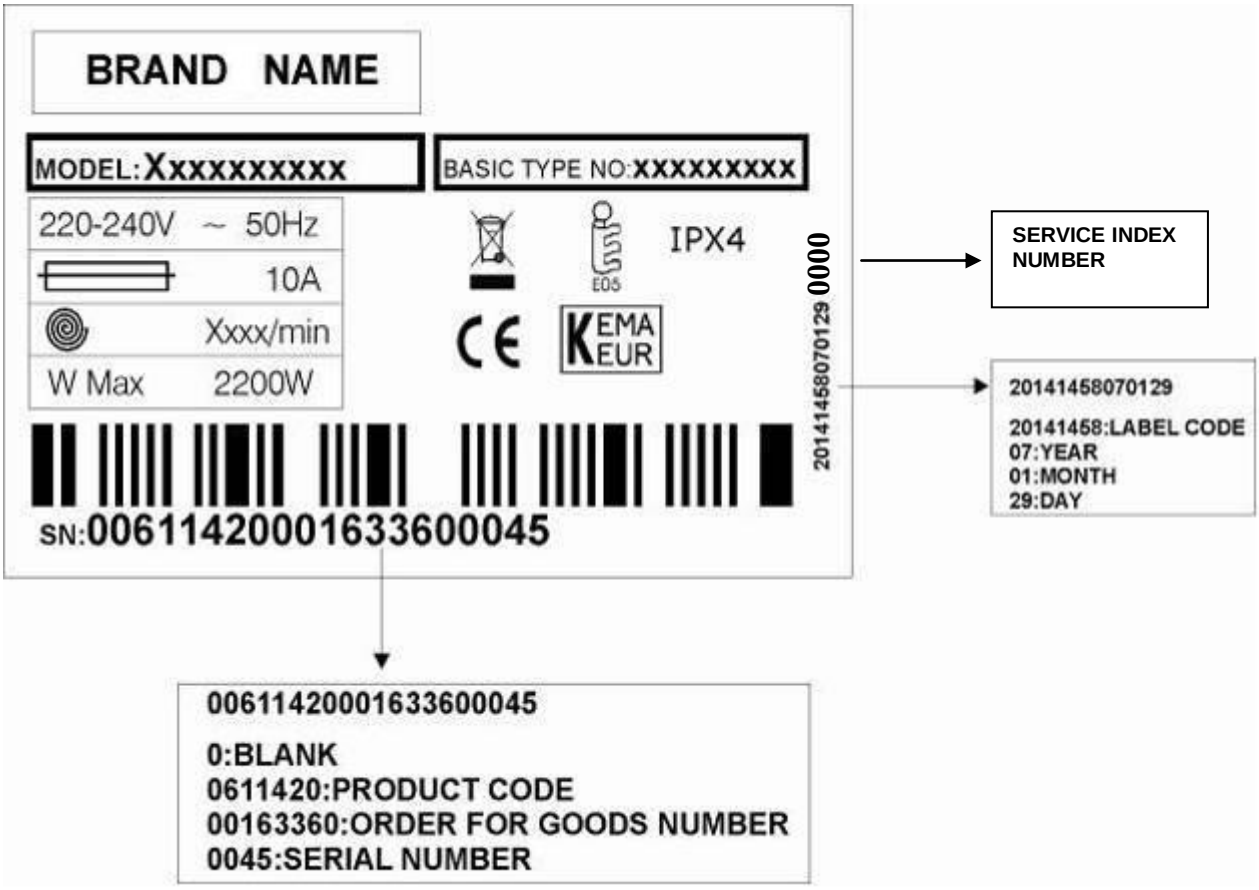
Dongbu Daewoo Electronics

1. Specifications

1.1. Product Specifications

		50 lt	55 lt	61 lt
Product Type		Front Loader		
Capacity		7 kg	8 kg	9 kg
Max Spin Speed (r/min)		800 - 1000 - 1200 - 1400 - 1600		
Energy Efficiency		A++		
Washing Efficiency		A		
Spinning Efficiency		600 rpm → E 800 rpm → D 1000 rpm → C 1200 rpm → B		
Control Panel		LED display		
Wash Programs		15 settings		
Dimensions	Height	84,5 cm	84,5 cm	84,5 cm
	Width	59,7 cm	59,7 cm	59,7 cm
	Depth	52,7 cm	55,7 cm	58,2 cm
Other Features		Child Lock		
		Delay Time		

1.2. Name Plate

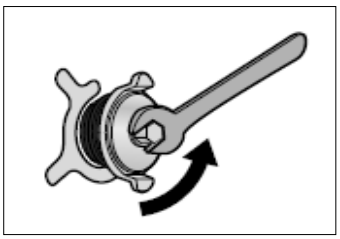


2. Installation Instructions

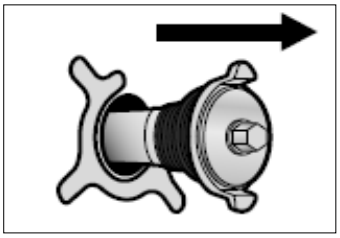
2.1. Moving and Installing

2.1.1. Removal of Transportation Screw

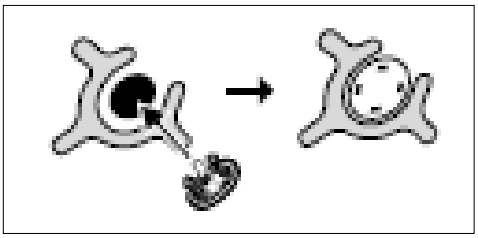
1. Transportation screws, which are located at the back side of the machine, must be removed before running the machine.
2. Loosen the screws by turning them anticlockwise with a suitable spanner.



3. Pull out the screws and rubber washers.



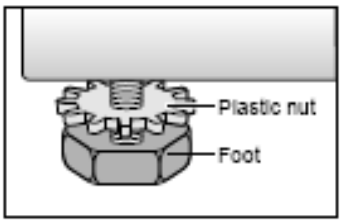
4. The holes where the transport screws have been removed should be covered with the plastic transport caps found in the accessories bag.



5. The transportation screws that have been removed from the machine must be re-used in any future transporting of the machine.

2.1.2. Foot Adjustment

1. Do not install machine on rugs or similar surfaces.
2. For machine to work silently and without any vibration, it should be installed on a flat, non-slippery firm surface. Any suspended floor must be suitably strengthened.
3. You can adjust the level of machine using its feet.
4. First, loosen the plastic adjustment nut away from the cabinet base.
5. Change the level by adjusting the feet upwards or downwards.
6. After level has been reached, tighten the plastic adjustment nut again by rotating it upwards against the base of the cabinet.
7. Never put cartons, wooden blocks or similar materials under the machine to balance irregularities of the floor.



2.1.3. Electrical Connection

1. Washing machine requires a 50Hz supply of 220-240Volts.
2. A special earthed plug has been attached to the supply cord of washing machine. This plug must be fitted to an earthed socket. The fuse value fitted to this plug should be 13 amps. If you have any doubts about electrical supply, consult a qualified electrician.

THIS APPLIANCE MUST BE EARTHED.
Insert the machine's plug to a grounded socket which you can easily reach.

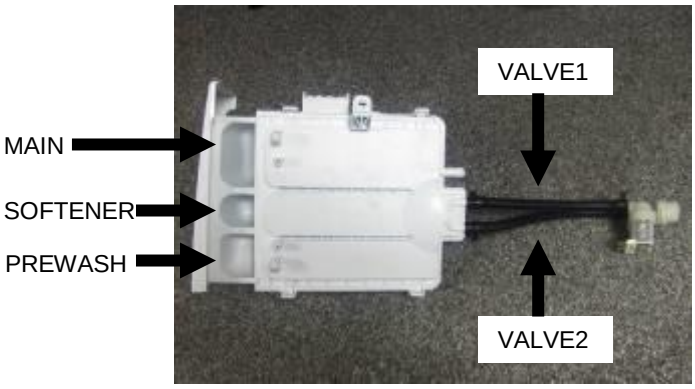
2.1.4. Water Supply Connection

1. Washing machine is supplied with a single (cold) water inlet.
2. To prevent leakage from the connection joints, a rubber washer is included in the hose packing. Fit this washer at the end of water inlet hose on the tap side.
3. Connect the hose to the water inlet valve. Tighten the plastic connector by hand. Please call a qualified plumber if you are unsure about this.
4. Water pressure of 0,1-1 MPa from tap will enable machine to work more efficiently.(0,1 MPa pressure means water flow of more than 8 litres in 1 minute from a fully opened tap)
5. After connection is complete, check for leakage by turning on tap completely.
6. Make sure that water inlet hoses can not become folded, damaged, stretched or crushed when the washing machine is in its final position.
7. Mount the water inlet hose to a ¾" threaded water tap.

2.1.5. Drain Connection

1. Make sure that water inlet hoses are not folded, twisted, crushed or stretched.
2. The drain hose should be mounted at a minimum height of 60 cm, and a maximum height of 100 cm from the floor.
3. The end of the drain hose can be connected directly to a drainage stand-pipe or alternatively to a specific connection point designed for that purpose on the waste outlet of a sink unit.
4. Do not extend the drain hose or guarantee will be invalidated.

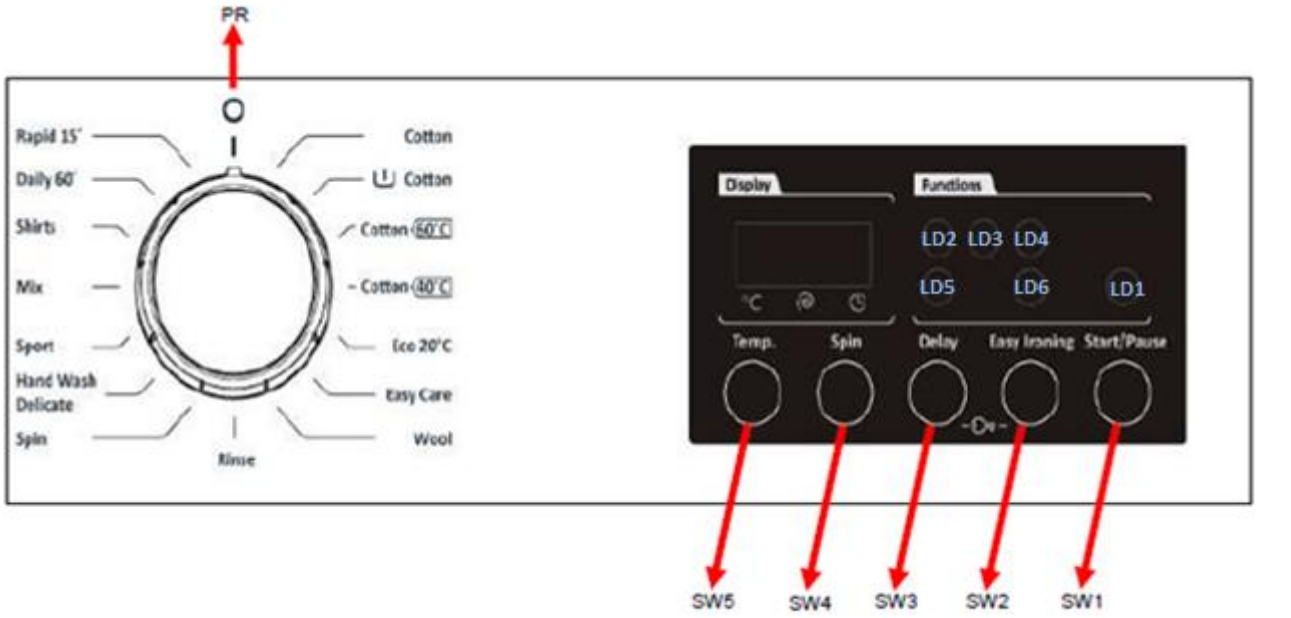
2.2. Detergent Box Group



PREWASH = WATER ENTRY VALVE 1
MAIN = WATER ENTRY VALVE 2
SOFTENER = WATER ENTRY VALVE 1 + VALVE 2

3. Operating Instructions

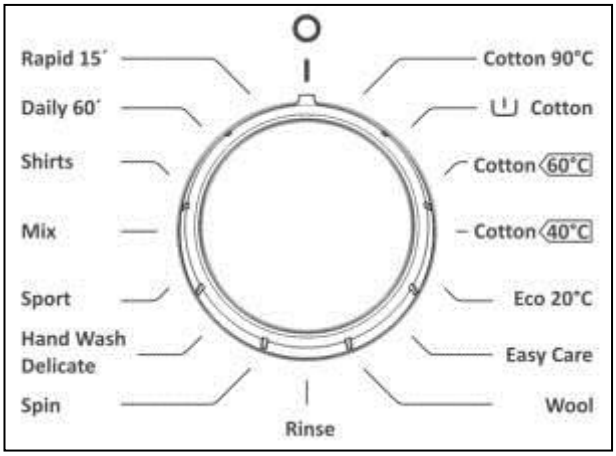
3.1. LCD Screen, Function Buttons & Knobs



PR	ON/OFF
SW1	Start / Pause
SW2	Option Buton
SW3	Delay Mode
SW4	Spin
SW5	Temperature
LD1	Start / Pause
LD2	Rinse
LD3	Spin
LD4	End
LD5	Delay Mode
LD6	Function 1 Led

3.2. Program List

KNOB POSITION	PROGRAM
1	Cotton 90°C
2	Cotton Prewash
3	Cotton Eco
4	Cotton 40°C
5	Eco 20°C
6	Easy Care
7	Wool
8	Rinse
9	Spin
10	Delicate / Hand Wash
11	Sports Wear
12	Mix 30
13	Blouses/ Shirts
14	Daily 60'
15	Rapid 15'
16	STOP



3.5. Child Lock

Activation

1. Press the SW2 and SW3 buttons simultaneously for 3 sec.

2. L4 and L5 will make fast blink for 2 sec to indicate child lock is activated.

Deactivation

1. Press the SW2 and SW3 buttons simulaneously for 3 sec.

2. L4 and L5 wil make fast blink for 2 sec to indicate child lock is activated.

Child lock during the programme

1. Machine does not respond to any pressing of buttons or changing position of program knob.When the user try to change programme knob during child lock, for F2A, F2B and F2C panels , Led 4 and L5 will make fast blink for 2 sec .

In end condition

1. When cycle is finished child lock is automatically deactivated.

In Error Mode

1. Child lock will be automatically deactivated when error is detected.

4. Test Mode

4.1. Autotest

** This test is for quick checking of the product. You can not see the failure codes.*

1. Press SW5 button and simultaneously position program knob to 1

2. After 3 sec, door will be locked and the auto test starts.

The test steps are as below;

Step1: The pump is activated for 3 seconds and there is EPS check , the frequency value should be between the **46.04 Hz** and **43.40 Hz**. It checks the EPS and if it is OK it continues the autotest; if it is NOK then it should give E10 ERROR & cancels the autotest (goes to the selection mode). Also if any frequency can not be detected, then it means there is problem with connection or EPS, so it gives E10 which is EPS error and cancels the autotest.

Step2: The motor ramps to max spin for 15 seconds. While its speed rising up to the maximum speed the EV1 (prewash valve) is activated for 5 seconds and then the EV2 (wash valve) is activated for 5 seconds.

Step3: The motor reduces speed to stop (depends on the motor stop time) for 5 seconds. While it is slowing down it activates EV1 and EV2 valve, concurrently.

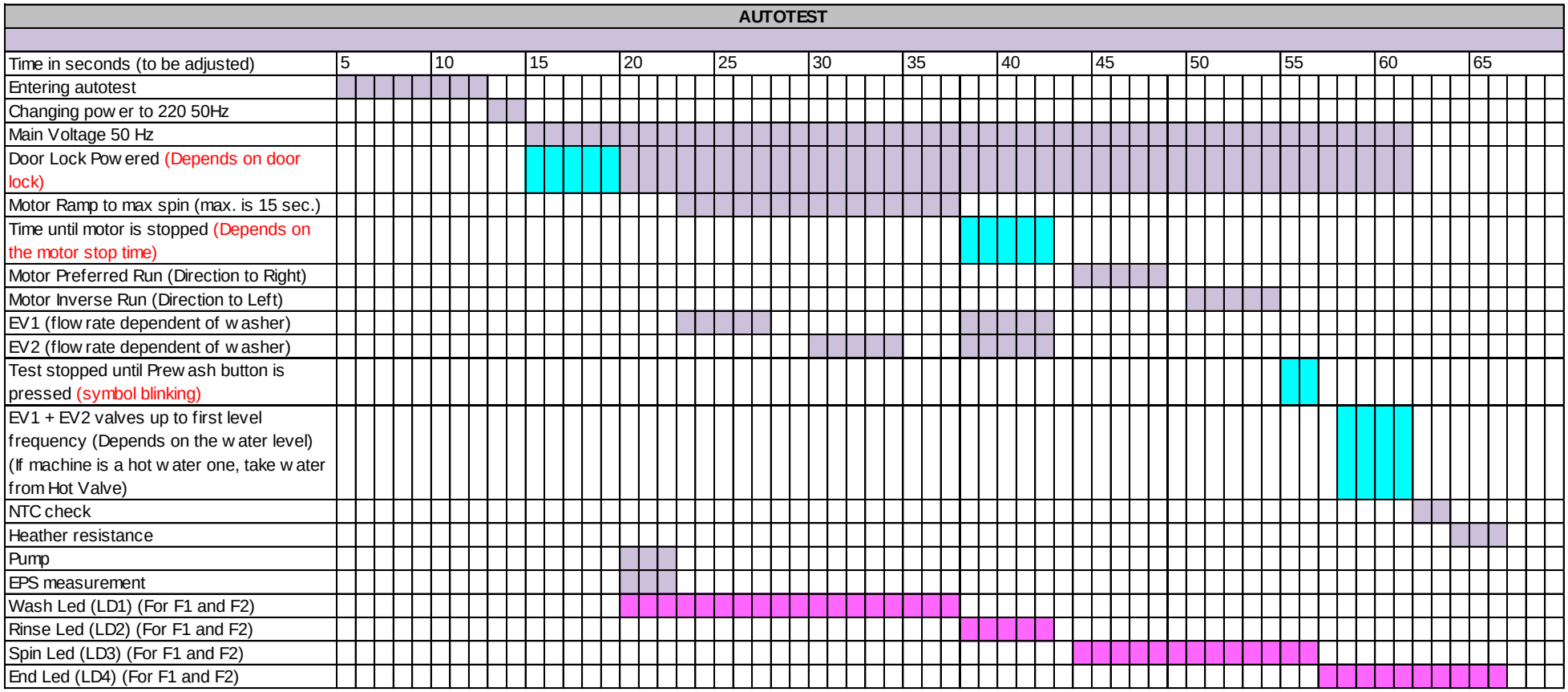
Step4: The motor turns to right.

Step5: The motor turns to left for 5 seconds. Test is stopped. In that period, the **option 1 led** makes fast blink.

Step6: The option 1 button is pushed

Step7: The EV1 and EV2 are activated concurrently until it reaches pressure sensor's first level frequency (Hz) for 5 seconds.

Step8: Software will detect NTC's resistance value and will check if the temperature is between 5°C < Tdetected < 40°C . If it is inside the range, heating step will be done. If temperature value is outside the range, then it means NTC is detecting the temperature in a wrong way and heating step will be skipped.
For F1A, F1B, F2A,F2B and F2C "End" led will be fix on.


AUTOTEST
Time in seconds (to be adjusted)
5
10
15
20
25
30
35
40
45
50
55
60
65
Entering autotest
Changing pow er to 220 50Hz
Main Voltage 50 Hz
Door Lock Pow ered (Depends on door lock)
Motor Ramp to max spin (max. is 15 sec.)
Time until motor is stopped (Depends on the motor stop time)
Motor Preferred Run (Direction to Right)
Motor Inverse Run (Direction to Left)
EV1 (flow rate dependent of w asher)
EV2 (flow rate dependent of w asher)
Test stopped until Prew ash button is pressed (symbol blinking)
EV1 + EV2 valves up to first level frequency (Depends on the w ater level) (If machine is a hot w ater one, take w ater from Hot Valve)
NTC check
Heather resistance
Pump
EPS measurement
Wash Led (LD1) (For F1 and F2)
Rinse Led (LD2) (For F1 and F2)
Spin Led (LD3) (For F1 and F2)
End Led (LD4) (For F1 and F2)

5. Service Mode

5.1. Service Autotest

End users can only see E1-E2-E3-E4. During service autotest, other failures can be seen.

1. To activate service autotest, Press SW4 button and simultaneously position program knob to 1.
2. After 3 sec, door will be locked , after door is locked, all leds will be fix OFF and machine will get into service autotest mode.

	Selector Position 1	Selector Position 2	Selector Position 3
	Result	Result	Result
	HEATER ON	PUMP ON	TEST PROGRAM ON
Comments :	When entering in service test, door will be locked.		Test is over Door will be unlocked, machine will go to ENS state.

The test steps are as below ;

Step 1 :

Selector Position 1 will be “HEATER ON”

Before heating it should take water till first level frequency then start heating.

Heater will be on max. 8 minutes. If temperature doesn’t increase 2 ◦ C in 8 minutes, machine will give NTC failure. (E05).

Or if the NTC connection is broken then it should give again E05 NTC failure.

At the end of heating, “SAU” visualization should make slow blink to indicate that the step is over.

Note : If user changes the selector position, machine will do what is defined for the new selected position.

Step 2 :

Selector Position 2 will be “PUMP ON”

Temperature will be measured, if it is higher than 50 ° C, it should take 60 sec. cooling water, and then make “Drain + 5 sec.”

At the end of pump activation, “SAU” visualization should make slow blink to indicate that the step is over.

Step 3 :

Selector Position 3 will be 15 minutes test program.

So machine will make exactly the same algorithm of 15 minutes test program.

At the end of 15 minutes test program “END” is visualized and door is unlocked. During test pressing other buttons makes no change.

LD1 Start / Pause button Led → ON
LD6 Wash Phase Led → Off
LD7 Rinse Phase Led → Off
LD8 Spin Phase Led → Off
LD9 Door Lock Led → When the door is unlocked it will be off
LD2, LD3, LD4 → Off
Display → “END”

5.2. Failure Codes

Error Indication	Error Number	Indication For User	Indication For Service
		Yes/No	Yes/No
Door is not locked	E01	Yes	Yes
Door is unlocked during programme	E01	Yes	Yes
Lack of water	E02	Yes	Yes
Pump failure	E03	Yes	Yes
Overflow	E04	Yes	Yes
NTC or Heater Failure	E05	No	Yes
Motor Failure - 1 (Tachometer open-short circuit or motor connector is disconnected)	E06	No	Yes
Electronic Pressure Sensor	E10	No	Yes

6. Troubleshooting Guide

All repairs which must be done on the machine should be done by authorized agents only. When a repair is required for machine or you are unable to eliminate the failure with the help of the information given below:

- Unplug the machine.
- Close the water tap.

FAILURE	PROBABLE CAUSE	METHODS OF ELIMINATION
Machine does not operate.	It is unplugged.	Insert the plug into the socket.
	Fuse is defective.	Change fuse.
	Start / Pause button has not been pressed.	Press the start / pause button.
	The program knob is in 0 (off) status.	Bring the program knob on the desired status.
	The door is not shut properly.	Shut the door properly. You should hear the click.
	Child lock is active.	See page 9.
Machine does not receive water.	Water tap is closed.	Open water tap.
	The water inlet hose may be bent.	Check the water inlet hose.
	The water inlet hose is obstructed.	Clean the filters of water inlet hose.
	The water inlet filter is obstructed.	Clean the valve inlet filters.
	The door is not shut properly.	Shut the door properly. You should hear the click.
Machine is not draining water.	The drain hose is obstructed or bent.	Check the drain hose.
	The pump filter is obstructed.	Clean the pump filter.
	The clothes are not placed inside the machine in a well-balanced manner.	Spread the clothes inside the machine in an orderly and well-balanced manner.
Machine is vibrating.	The feet of machine are not adjusted.	Adjust the feet.
	Transportation screws are not removed.	Remove transportation screws.
	There is a small amount of clothes in the device.	It does not prevent operation of the machine.
	Excessive amount of clothes are filled in the machine or the clothes are not placed in a well-balanced manner.	Do not exceed the recommended quantity of clothes and spared clothes in the machine in a well-balanced manner.

FAILURE	PROBABLE CAUSE	METHODS OF ELIMINATION
Excessive foam in the detergent drawer	Too much detergent has been used.	Press the start/pause button. In order to stop the foam, dilute one table-spoon of softener in half liter of water and pour it in the detergent drawer. Press the start/pause button after 5-10 minutes. Arrange the amount of the detergent properly in the next washing process.
	Wrong detergent has been used.	Use only the detergents produced for full automatic machines.
The washing result is bad.	Laundry too dirty for the program you have selected.	Select a suitable program.
	The amount of detergent used is not sufficient.	Use more detergent according to the detergent.
The washing result is not good.	Clothes exceeding the maximum capacity has been filled in machine.	Put the clothes in machine in a manner not to exceed its maximum capacity.
	Water may be hard.	Use the amount of detergent according to the declaration of the detergent producer.
	Distribution of the clothes in machine is not well-balanced.	Spread the clothes inside the machine in an orderly and well-balanced manner.
The water is seen in the drum during washing.	No failure. The water is at the lower part of the drum.	
There are residues of detergent on the clothes.	The pieces of some detergents which do not dissolve in water may stick to clothes as white stains.	By calibrating machine for “Rinsing” program, make an additional rinsing or eliminate the stains After drying with the help of a brush.
There are grey stains on the clothes.	These stains may be caused by oil, cream or ointment.	In the next washing operation, use the maximum detergent amount declared by the detergent producer.
The spinning process is not done or starts with delay.	No failure. The unbalanced load control works in that way.	The unbalanced load control system will try to distribute clothes in a homogenous manner. After clothes are distributed, passage to spinning process will be realized. In the next washing process, place clothes into the machine in a well-balanced manner.

7. Disassembly and Assembly Instructions

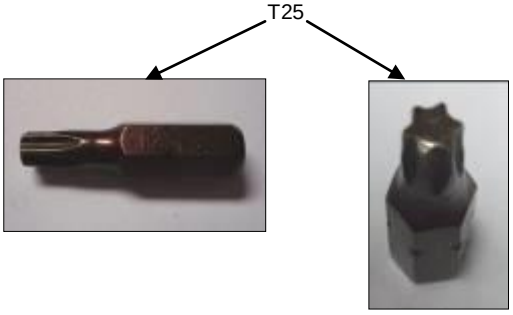
7.1. Top Plate

1. Remove two screws that fix the top-plate at the back.

2. Push the top-plate back and pull it up.

7.2. Door

1. Remove two screws that fix the door. (by using the T25)



2. Pull the door up.

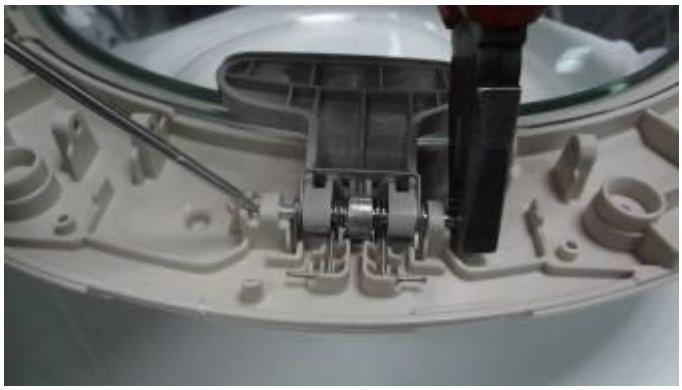
3. Remove screws that fix the door group.

4. Put the door outside plastic with helping screwdriver as it is shown in the picture.

5. Remove the door inside plastic as it is shown in the picture.

6. Remove six screws that fix the door hinge as it is shown in the picture.

7. Remove the door handle as it is shown in the picture.



8. Remove the door handle pim as it is shown in the picture.

7.3. Tub Bellows Seal

1. First remove the spring wire fixing the tub bellows seal by using the small size screw driver.
   Pull the tub bellows seal as it is shown in the picture.

2. Remove the tub bellows seal-body fixing spring.

7.4. Detergent Drawer

1. Remove the detergent drawer and pull it up carefully

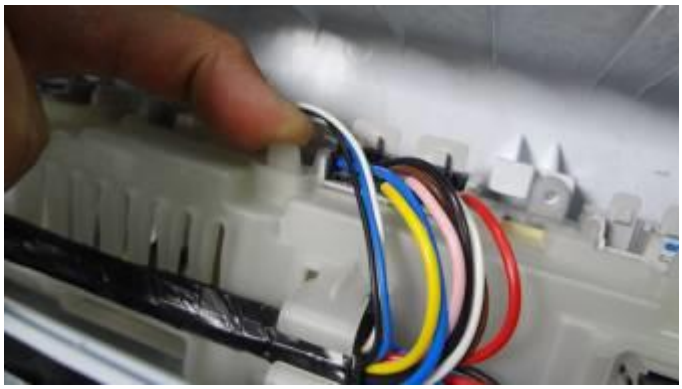
7.5. Control Panel

1. Remove the screw which fix the control panel to the front panel.

2. Remove three screws fixing the control panel.

3. Pull the control panel up.

4. Press the button as shown in the picture.



5. Remove the cable group as it is shown in the picture.

6. Remove electronic card cover as it is shown in the picture by using small screw driver.

7. Remove electronic card as it is shown in the picture.

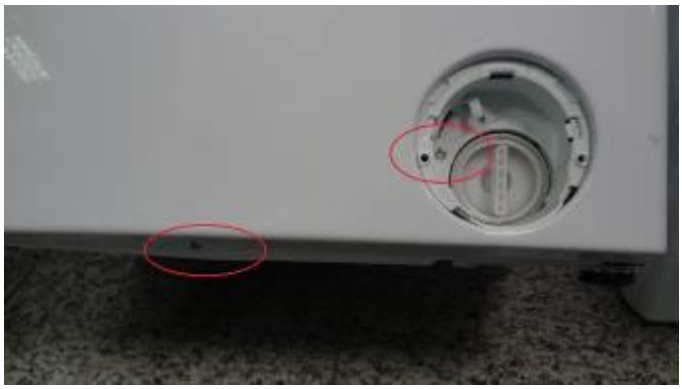
8. Push clips to remove to selection button as it is shown in the Picture.

9. Remove selection button as it is shown in the Picture.

7.6. Front Panel

1. Remove the pomp cover as it is shown in the picture.

2. Remove two screws fixing bottom the front panel.



3. Remove two screws fixing upper the front panel.

4. Remove two screws fixing door lock it is shown in the picture.

5. Remove two screws fixing the body group at the front as it is shown in the picture.

6. Lift upper support braket up slightly it ishown in the picture.

7. Remove the pump cover housing as it is shown in the picture.

8. Remove the front panel as it is shown in the picture.

7.7. Detergent Drawer Housing

1. Remove detergent drawer group two clips fixing the upper support bracket as it is shown in the picture.

1. Remove the tub seal clamp by using the pliers, which is attached to the detergent drawer housing.

2. Remove the four connectors that is connected to the feed valve as it is shown in the picture.

3. Turn the feed valve counter clockwise slightly to remove.

4. Remove the detergent drawer screw.

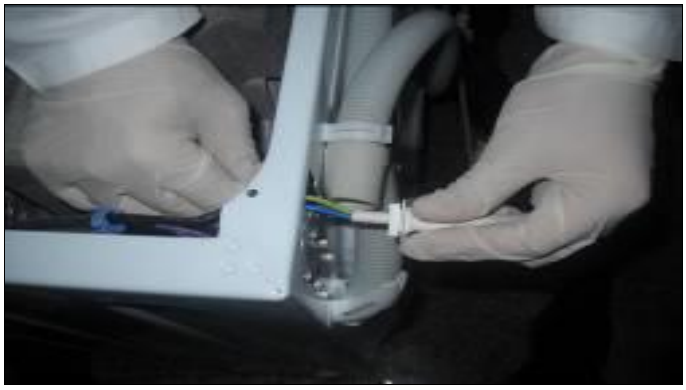
5. Remove the detergent drawer housing assembly.

7.8. Power Cable Group and Parazit Filter

1. Remove the five conectors that is connected to the parasite filter.

2. Remove two screws fixing the parasite filter.

3. Pull the power cable group up as it is shown in the picture.



4. Remove parasite fitler fixing body group as it is shown in the picture.

7.9. Electronic Pressure Switch (EPS)

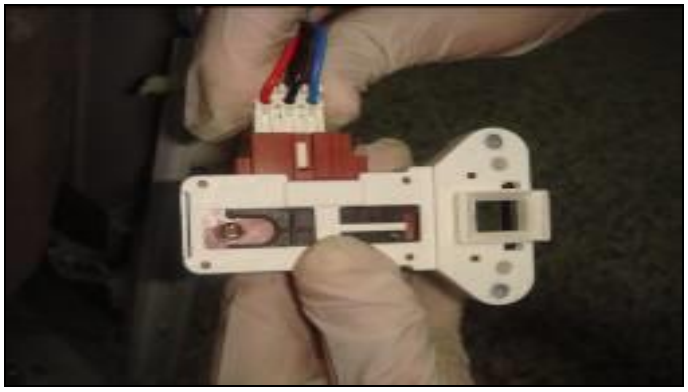
1. Remove the connector that is connected to the EPS.

2. Pull the EPS upward to remove as it is shown in the picture.

3. Remove the eps hose handcuffs and eps hose as it is shown in the picture.

7.10. Door Lock

1. Remove the connector that is connected to the door lock.



7.11. Pump Motor

1. Remove pipe clip that fixes the drain hose.

2. Remove pipe clip fixing the tub outlet hose.

3. Remove the connector that is connected to the pump motor.

4. Remove four screws fixing the pump motor.

7.12. Front Counterweight

1. Remove four screws fixing the front counterweight on the front. (Box wrench size 13 mm)

2. Pull the counterweight back

7.13. Heater

1. Remove the four connectors that is connected to the heater.

2. Remove one nut fixing the heater slightly (box wrench size 8 mm)

3. Hold the heater and pull it out.

7.14. Tub Bellows Seal

1. Remove the tub gasket clip by using small screwdriver.

2. Hold the tub bellows seal and gasket-body fixing spring together, and pull them up.

7.15. Transport Screw

1. Remove four transport screws (box wrench size 10 mm)

2. Hold the transport screw and pull it out.

7.16. Upper Counterweight

1. Remove two screws fixing the upper counterweight by using box wrench size 13 mm.

2. Remove the upper counterweight

2. Cut the five lead wire holders as shown the pictures.

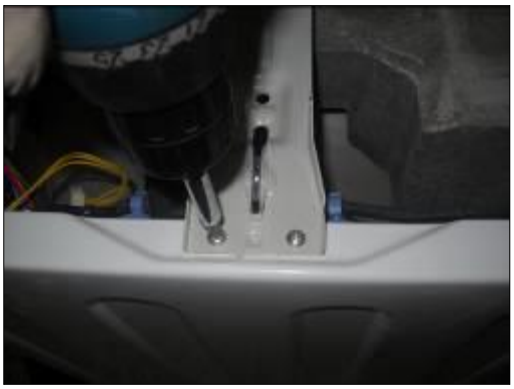
a)

b)

c)

d)

3. Remove the four screws fixing the spring hanger sheet iron.



7.17. Washing Group

1. Remove the connector that is connected to the motor.

4. Remove the washing group as it is shown in the picture.

7.18. Shock Absorber PIN

1. Remove two pins fixing the shock absorber as shown in the picture.

7.19. Belt

1. Remove the belt as it is shown the picture.

7.20. Driven Pulley

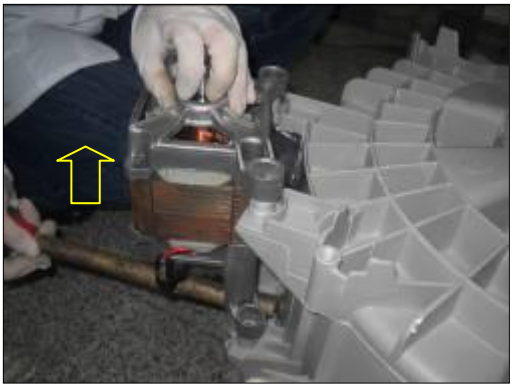
1. Remove the screw fixing driven pulley it is shown the picture (By using T40).

2. Remove the driven pulley it is shown the picture.

7.21. Motor

1. Remove the four screws fastening the motor under the tub by using T40

2. Pull the motor up for disassembly.



7.22. Tub Entrance with Bellow Hose

1. Remove the tub entrerance with bellow hose.

7.23. Pressure Switch Hose Group

1. Remove screw fixing the pressure switch water reservoir.

2. Remove the tub exit with bellow hose with ball by using box wrench size 10 mm.

7.24. Tub

1. Remove twenty four screws fixing tub using box wrench size 8 mm.

7.25. Drum

1. Remove the drum.

8. Component Specifications

8.1. Drain Pump

Drain pump is both a mechanical and elektrical component which is used to drain water inside the washing machine. It has an synchronous motor inside. For better performance maintanance, pump filter should be cleaned regularly.

8.1.1. Technical Features

Nominal voltage	220 - 240 V
Nominal current	0.28 A (±10 %)
Nominal power	37 W
Frequency	50 Hz
Resistor (coil)	130 Ω (±5%)
Water flow:	17 L/min(to 1 m height)
Thermal protector	YES

8.1.2. Checking of Component

Check the resistance value on the component with multimeter as shown in belows figures.

Resistance value should be between 125- 140 Ω

Checking the component

8.2. Resistance

Heating element (Resistance) is a component which is desingned to regulate temperature of water inside the drum. It has three connections: Phase, notral and ground connections.

8.2.1. Technical Features

Kind of heating	Tubular heating element with NTC – sensor
Nominal voltage	230 V
Nominal power	2000 W (±5%)
Resistance	24,8 ±5% Ω
Thermal fuse	2 – sided

8.2.2. Checking of Component

Check the resistance value on the component with multimeter as shown in below pictures.

Checking the component

8.3. NTC

Component which sends signals to PCB about the water temperature inside the tub.

The Resistance (Ohm) value of the NTC decreases as the temperature increases.

8.3.1. Technical Features

Tem (°C)	R min (kΩ)	R max (kΩ)
-10	54,9	62,6
-5	43,0	48,6
0	33,9	38,1
5	27,0	30,1
10	21,6	23,9
15	17,4	19,1
20	14,1	15,4
25	11,5	12,5
30	9,4	10,2
35	7,8	8,3
40	6,4	6,9
45	5,4	5,7
50	4,5	4,7
55	3,8	3,9
60	3,2	3,3
65	2,7	2,8
70	2,3	2,4
75	1,9	2,0
80	1,7	1,8
85	1,4	1,5
90	1,2	1,3
95	1,1	1,1
100	0,9	1,0

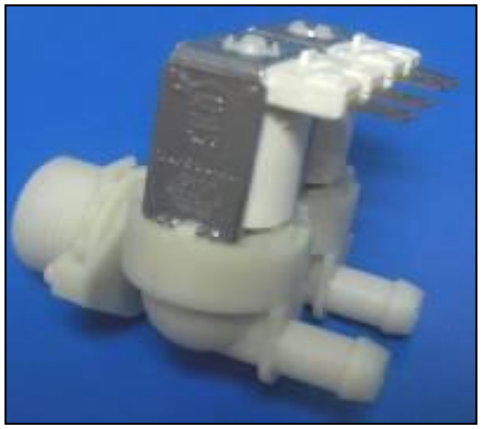
NTC Tempure – Resistance Values

8.3.2. Checking of Component

Check the resistance value on the component with multimeter as shown in below pictures.

Checking the component

8.4. Valve



Valve is an electrical and mechanical component which is designed to take water from the network system into the washine machine. It is operated by PCB card.

8.4.1. Technical Features

Nominal voltage	220 – 240 V
Nominal power	8 VA
Frequency	50-60 Hz
Rated flow:	7 lt/min (±15 %)
Operating water pressure	0.0,3 – 1 Mpa

8.4.2. Checking of Component

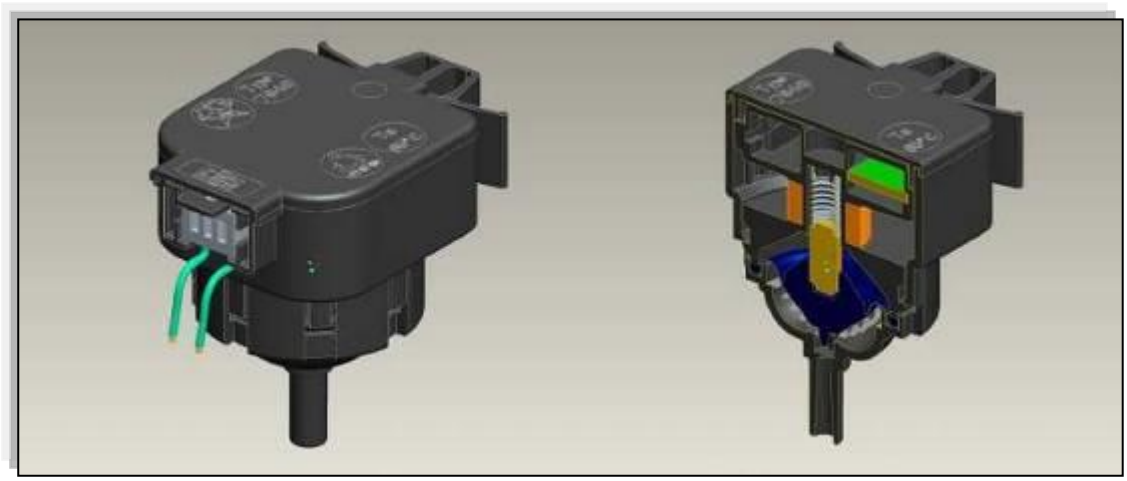
Check the resistance value on the component with multimeter as shown in below pictures.

Valve water flow rate should be between 6 lt/min - 8 lt/min.

Each valve bobbin resistance values should be between 3,3 - 4.2 kohm .

Checking the component

8.5. Electronic Pressure Switch (EPS)



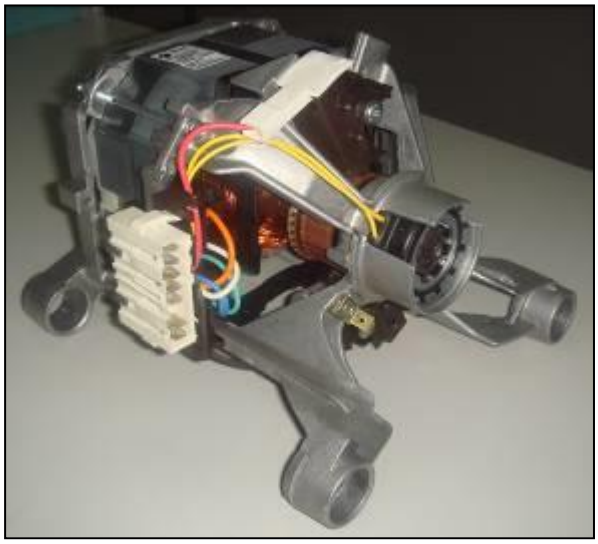
8.5.1. Technical Features

Electromagnetic field occurs as a result of the vibration of the membrane which is under pressure in the coil. The nucleus part is moved up and down by the electromagnetic field. The water level is regulated by the frequency which is controlled by the PCB and changes according to the movement of the nucleus part.

8.5.2. Checking of Component

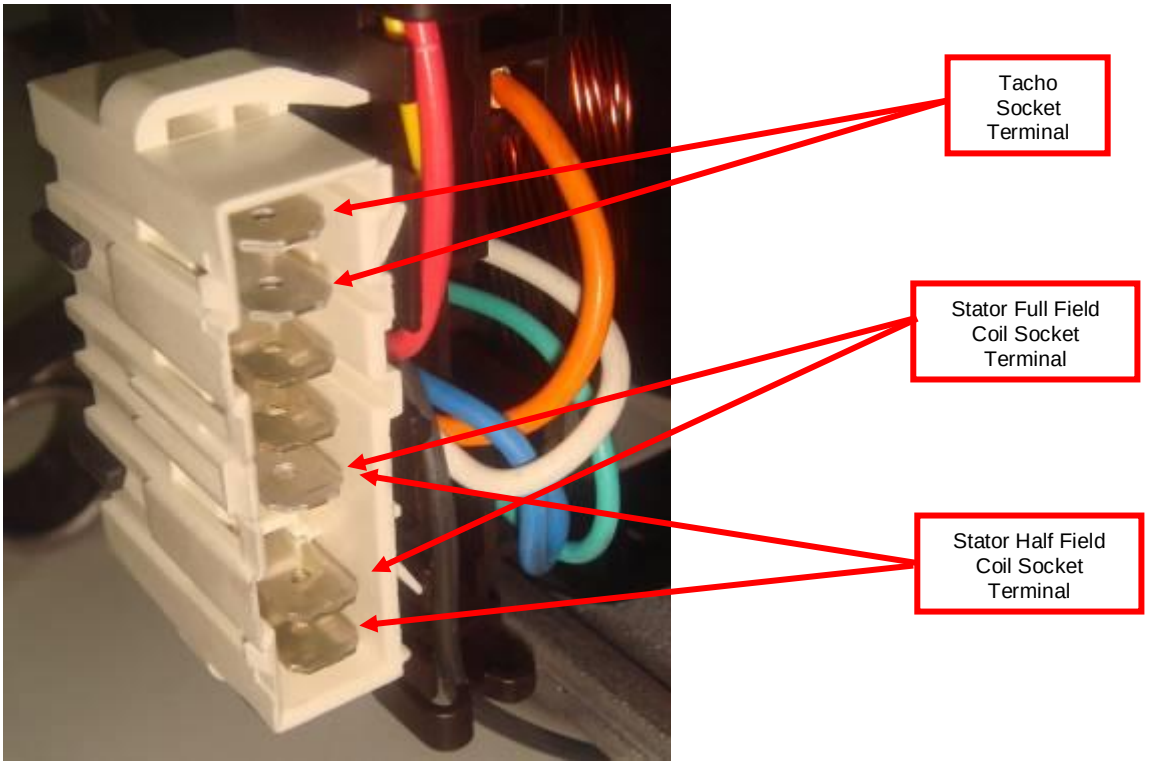
1. Make sure there are no laundry in washing machine, tap is connected and opened, power cord is plugged. Put no detergent in drawer.
2. Bring porgram knob to position 1 (Cotton 90°C program)
3. Press start button.
4. Wait for water intake step to finish. You can recognise it by listening the water sound or slightly opening and observing detergent drawer.
5. As soon as water intake is over turn program knoc to position 0 (Off position)
6. Check water level from door glass. The water level should be just below door glass as seen in the picture below: (There is a %10 tolerance with this level)

8.6. Motor



The washing machine has an asynchronous motor. It is controlled by the PCB.

It is essential to check the motor for correct diagnosis and quick servicing. In the below picture, socket points on the motor is shown to measure with multimeter.

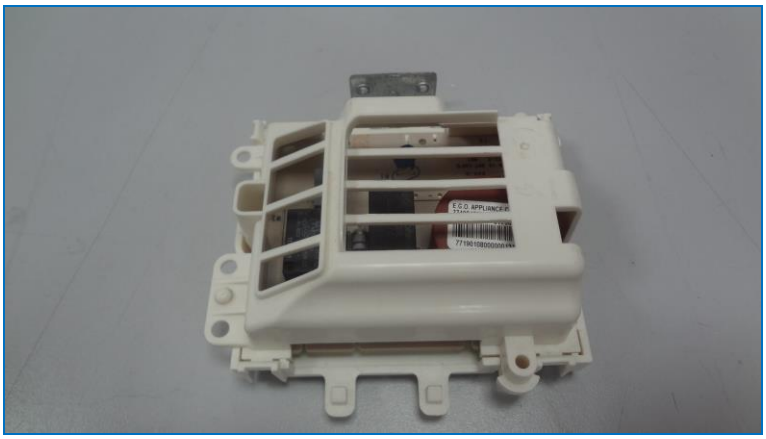


Motor Socket Terminals

Tacho and stator (full field-half field) ohm resistance values for the motor types are listed in the below table.

MOTOR CODE	SUPPLIER	STATOR (FULL FIELD) (ohm)	TACHO (ohm)	STATOR (HALF FIELD) (ohm)	TEMP
32003986	ACC	3.30-/+ 7%	184-/+7%	1.20-/+7%	20 °C
32004905	ACC	2.70-/+ 7%	184-/+7%	1.04-/+7%	20 °C
32006966	ACC	3.00-/+ 7%	184-/+7%	1.50-/+7%	20 °C
32007450	ACC	2.70-/+ 7%	184-/+7%	1.08-/+7%	20 °C
32004572	ACC	1.20-/+ 7%	184-/+7%	0.60-/+7%	20 °C
32008809	ACC	0.96-/+ 7%	184-/+7%	-	20 °C
30027193	ANAIMEP	1.87-/+7%	180-/+10%	-	20 °C
30023397	ANAIMEP	1.75-/+7%	180-/+10%	-	20 °C
32002064	ANAIMEP	2.01-/+7%	180-/+7%	-	20 °C
32003425	ANAIMEP	2.01-/+7%	180-/+7%	-	20 °C
32000536	ASKOLL (CESET)	1.01-/+7%	68.7-/+7%	-	20 °C
32000271	ASKOLL (CESET)	1.40-/+7%	68.7-/+7%	0.56-/+7%	20 °C
32000535	ASKOLL (CESET)	1.24-/+7%	68.7-/+7%	-	20 °C
30027193	ASKOLL (CESET)	2.26-/+7%	68.7-/+7%	-	20 °C
32008661	ASKOLL (CESET)	1.90-/+7%	68.7-/+7%	0.74-/+7%	20 °C
30023397	ASKOLL (CESET)	1.83-/+7%	68.7-/+7%	-	20 °C
32004970	ATB	1.62-/+ 7%	87-/+12%	-	20 °C
32004969	ATB	1.62-/+ 7%	87-/+12%	0.81-/+7%	20 °C
32009041	ATB	1.62-/+ 7%	87-/+12%	0.81-/+7%	20 °C
32004968	ATB	1.20-/+ 7%	87-/+12%	-	20 °C
32009040	ATB	1.20-/+ 7%	87-/+12%	-	20 °C
32008659	BROAD OCEAN	2.15-/+7%	66.7-/+7%	-	20 °C
32008660	BROAD OCEAN	2.15-/+7%	66.7-/+7%	-	20 °C
32005496	IDEA	4.60-/+7%	227-/+7%	-	20 °C
32007954	WELLING	2.08-/+7%	66.6-/+7%	-	20 °C
32007955	WELLING	1.59-/+7%	66.6-/+7%	-	20 °C
32008852	WELLING	2.00-/+7%	66.6-/+7%	-	20 °C
32008853	WELLING	2.15-/+7%	66.6-/+7%	-	20 °C
32013707	NIDEC	2,70 ± %7	184 ± %7	1,08 ± %7	20 ºC

Resistance values for the motor types



DC Card Group for Models with DC Motor

8.7. Door Lock

Door lock is activated at the beginning of the program in order to prevent the door from opening. It can be unlocked approximately after 2 minutes of the program end. This time delay is caused by the PTC which is assambled in the door lock.

8.7.1. Technical Features

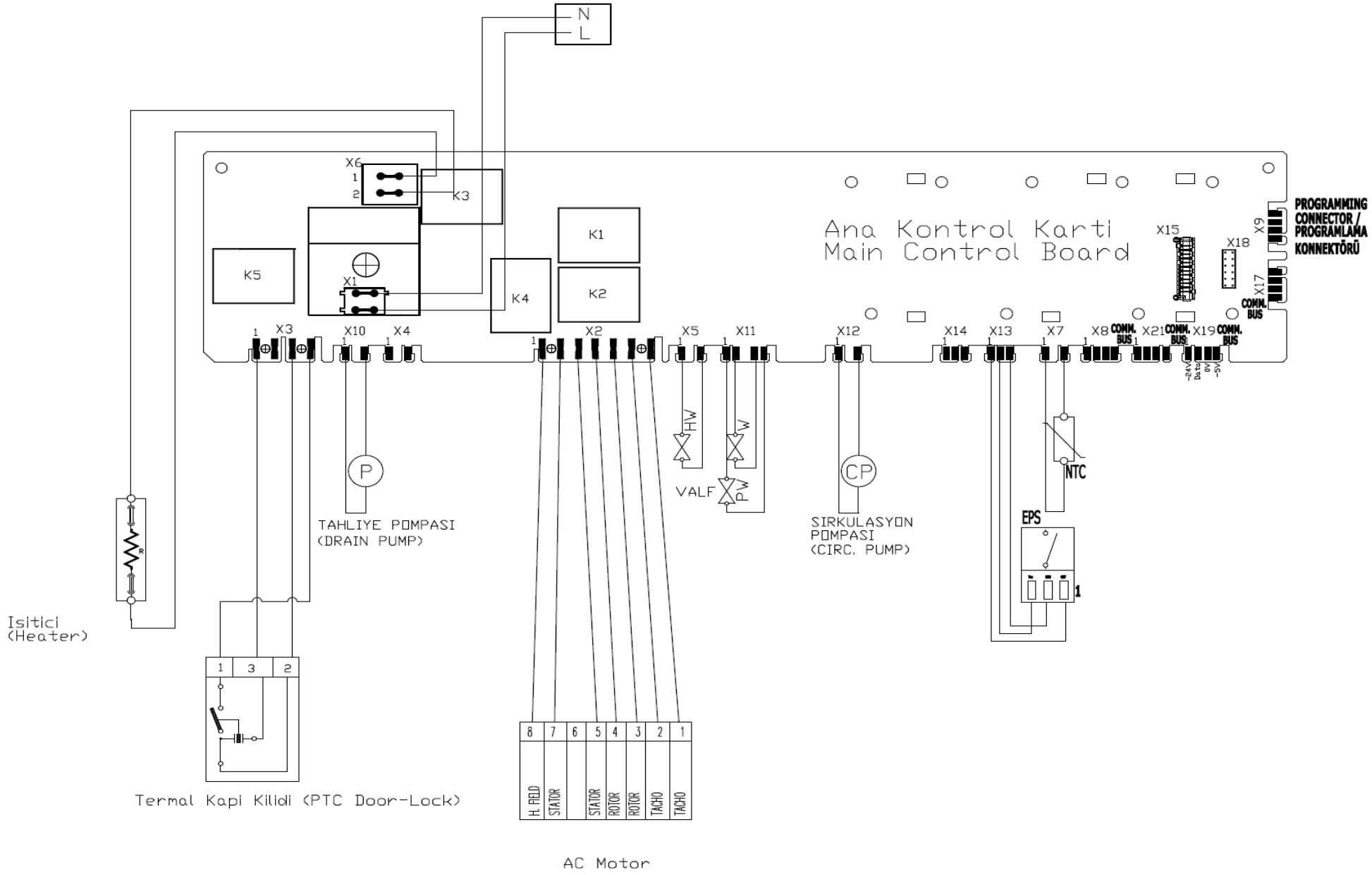
Lock Time (20 °C)	2” – 6”
Unlock Time (20 °C)	35” – 75”
Nominal voltage	220 V
Nominal current	16 (4) A

8.7.2. Checking of Component

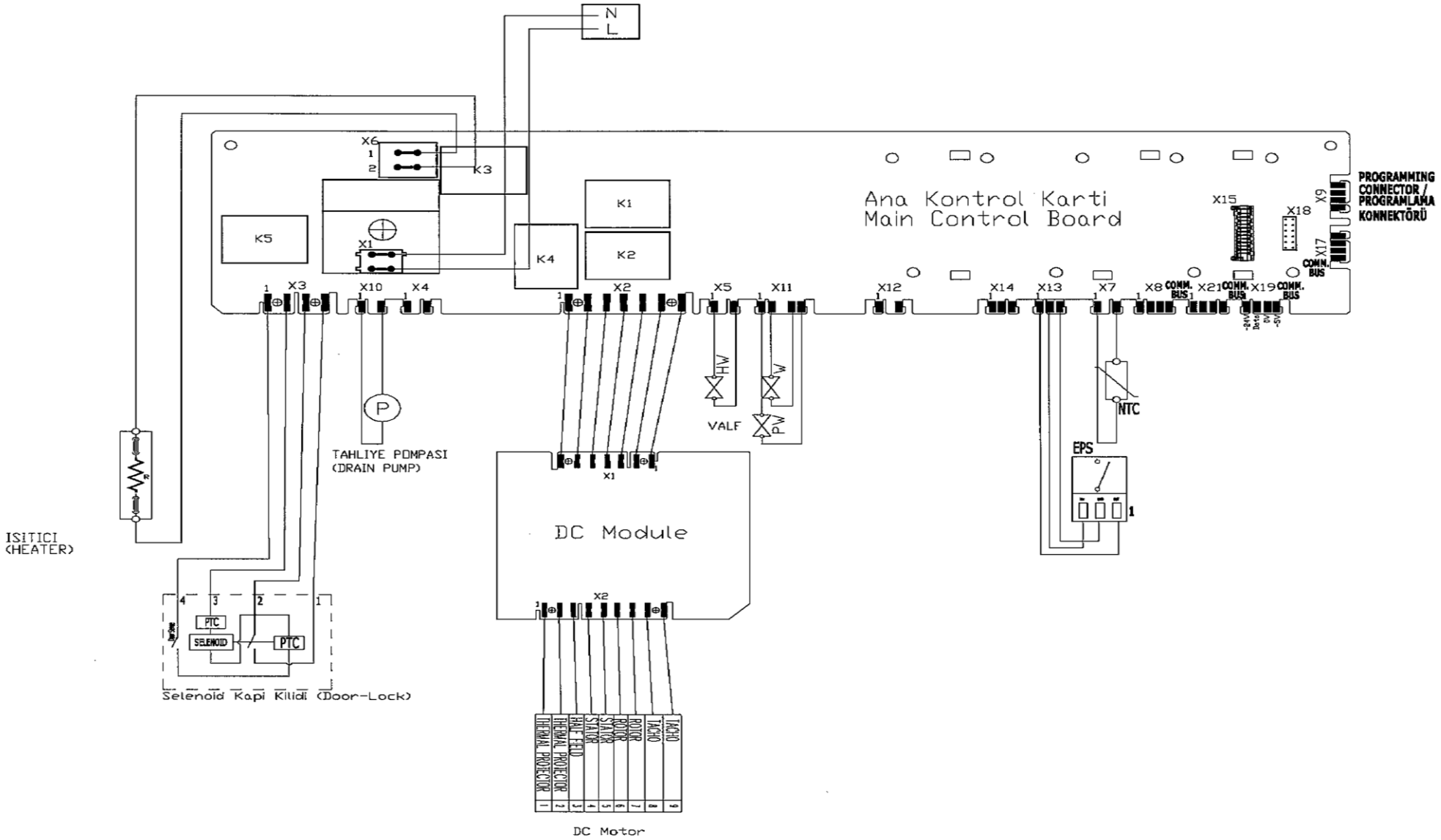
Check the resistance value on the component with multi-meter as shown in below figures.
Resistance value on the PTC should be 1000 Ω ±50% at 25 °C. That resistance value can be measured from terminal 3-4 (See wiring diagram page 51 below).

9. Wiring Diagram

9.1. Wiring Diagram (AC Motor Models)


N
L
X6
1
2
K3
K1
K2
K4
K5
X1
Ana Kontrol Karti
Main Control Board
X15
X18
X9
X17
PROGRAMMING
CONNECTOR /
PROGRAMLAMA
KONNEKTÖRÜ
COMM.
BUS
X3
X10
X4
X2
X5
X11
X12
X14
X13
X7
X8
X21
X19
HW
W
PW
VALF
P
TAHLIYE POMPASI
(DRAIN PUMP)
CP
SIRKULASYON
POMPASI
(CIRC. PUMP)
NTC
EPS
Isitici
(Heater)
1 3 2
Termal Kapi Kilidi (PTC Door-Lock)
8 7 6 5 4 3 2 1
H. FIELD
STATOR
STATOR
ROTOR
ROTOR
TACHO
TACHO
AC Motor

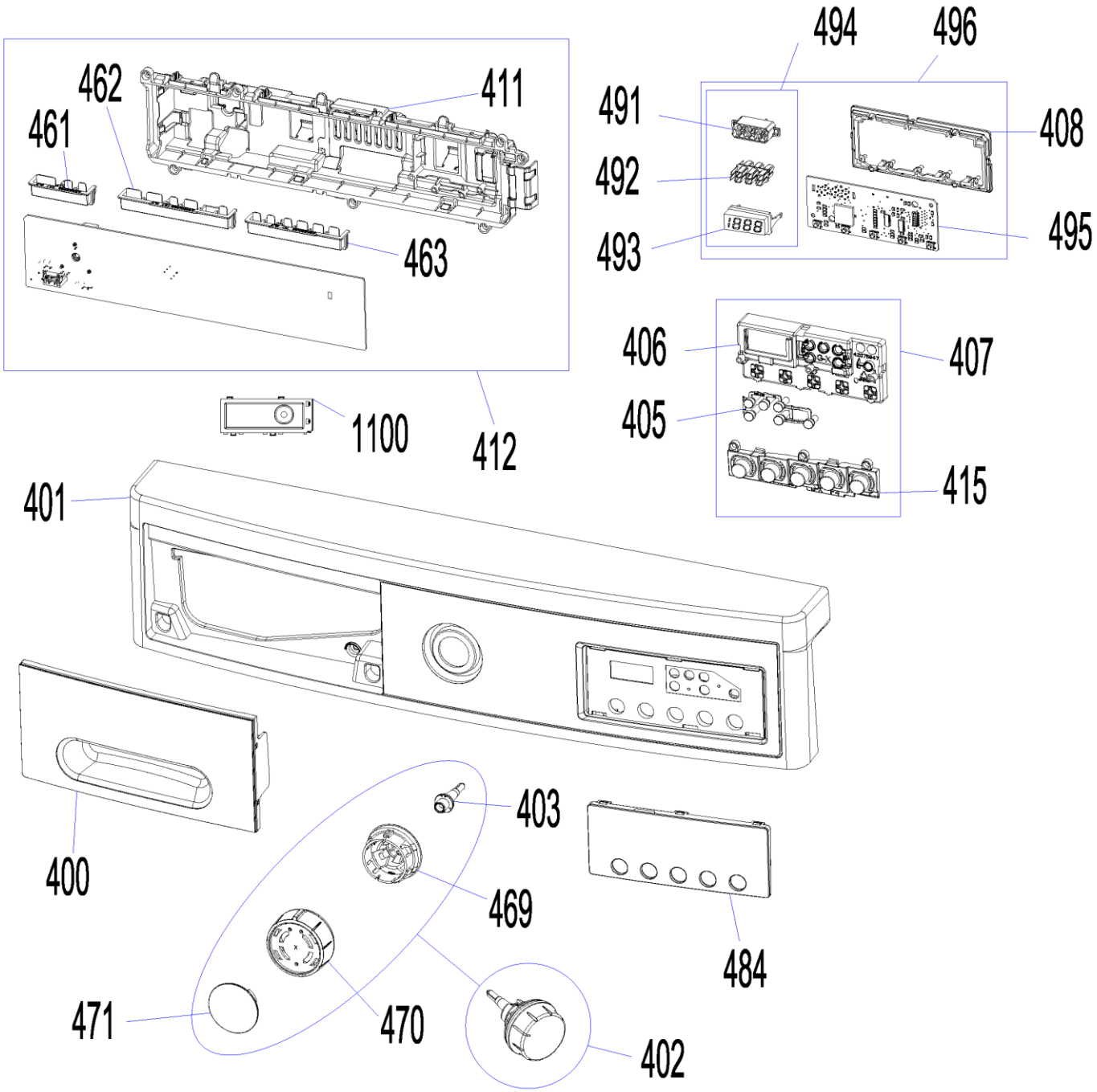
9.2. Wiring Diagram (DC Motor Models)



10. Error İndications

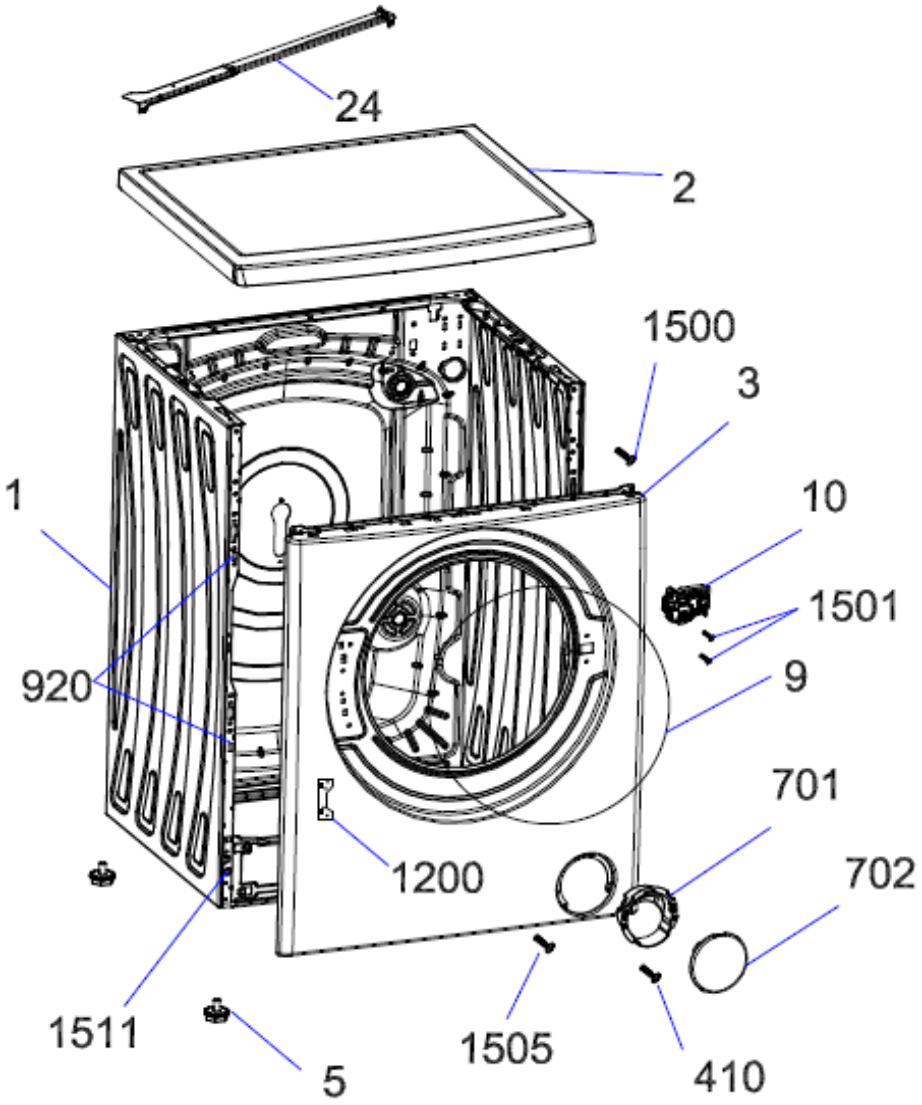
Error Code	Indication	Pictures	Error Code	Indication	Pictures
E01	L1 + L2 Led Blink		**E05**	L2 + L4 Led Blink	
E02	L1 + L3 Led Blink		**E06**	L3 + L4 Led Blink	
E03	L1 + L4 Led Blink		**E10**	L1 + L3 + L4 Led Blink	
E04	L2 + L3 Led Blink				

1. CONTROL PANEL PARTS



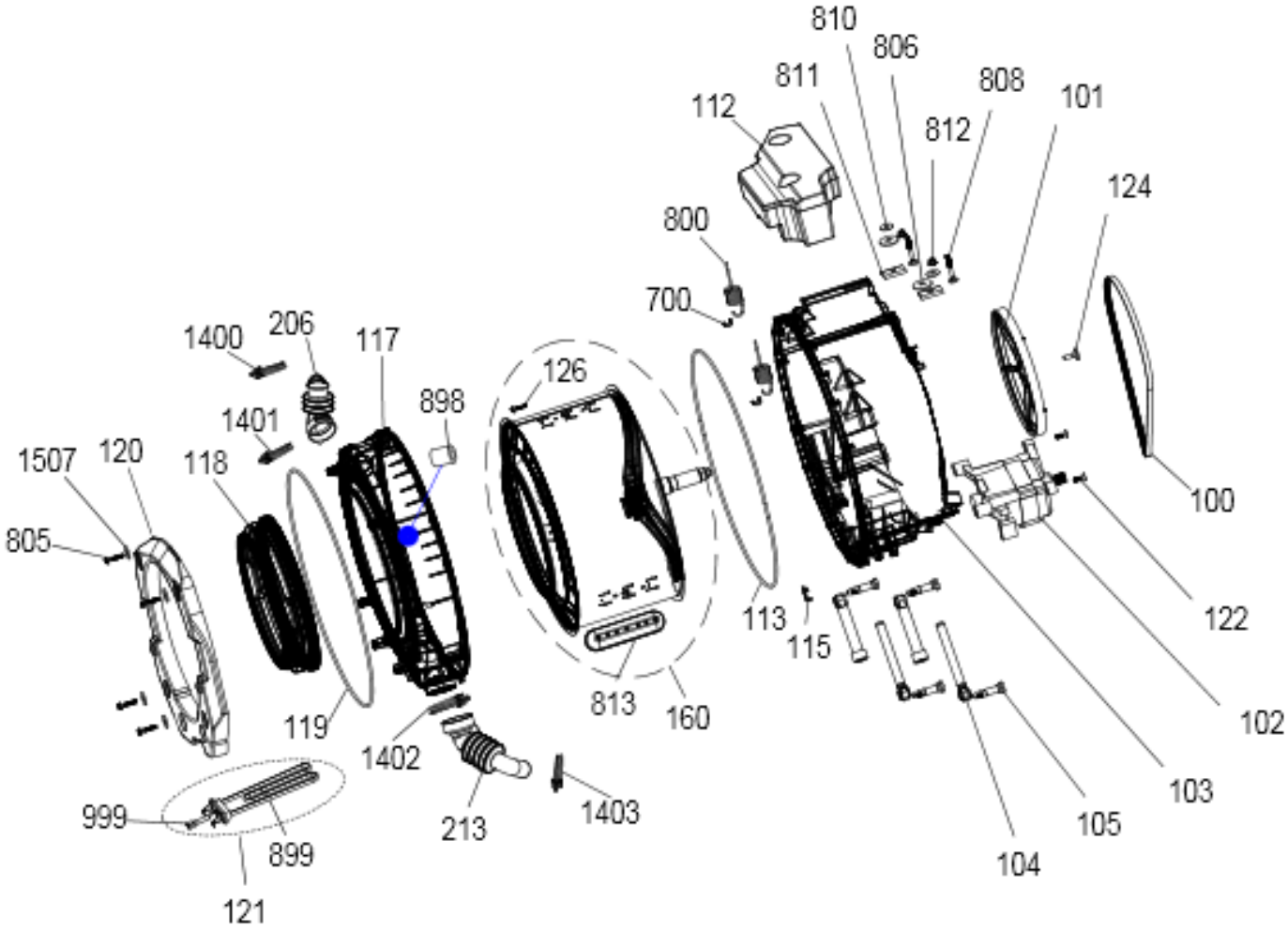
NO	PART NAME	QUANTITY
400	DETERGENT DRAWER COVER	1
401	CONTROL PANEL	1
402	PR. ADJUSTMENT KNOB GR (470+471)	1
403	PROGRAMME ADJUSTMENT SHAFT	1
405	LIGHT GUIDE DUO	1
406	CARD BOX	1
407	F4 BUTTON-LIGHT GUIDE GROUP	1
408	CARD FRAME	1
411	PCB BOX	1
412	ELECTRONIC CARD	1
415	TRIPLE SELECTION BUTTON	1
461	SOCKET HOLDER-F1	1
462	SOCKET HOLDER-F2	1
463	SOCKET HOLDER-F3	1
469	PROGRAM ADJ. INSERT	1
470	PROGRAM ADJ. KNOB	1
471	PROGRAM ADJ. KNOB COVER	1
484	DISPLAY	1
491	DISPLAY 1888 BASE	1
492	DISPLAY 1888 LIGHT GUIDE	1
493	DISPLAY 888 COVER/PARDUS	1
494	DISPLAY 1888 GROUP	1
495	E.KART F4 UI 7S + Buzzer DISPLAY	1
496	F4.CARD GR.	1
500	CONTROL PANEL GROUP (indicated for the website)	1
1100	PCB BOX REAR COVER	1

2. FRONT PANEL PARTS



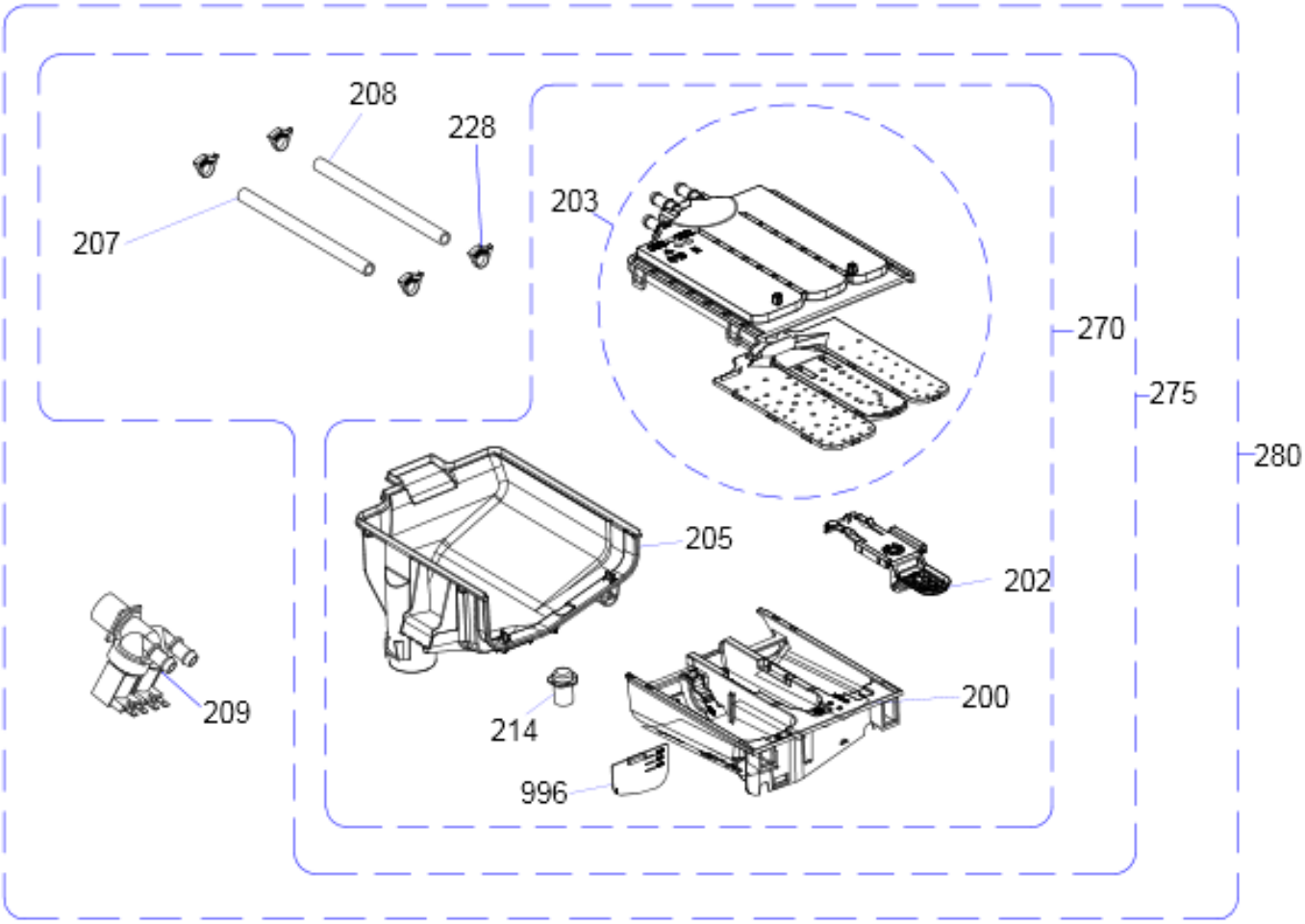
REF. NO	PART NAME	QTY
1	BODY GROUP PAINTED	1
2	UPPER TRAY GROUP	1
3	FRONT PANEL GROUP	1
5	ADJUSTABLE FEET GR.	4
9	HOUSING FRAME BELLOW CLIP-PHYTON	1
10	DOOR LOCK	1
24	UPPER SUPPORT BRAKET	1
701	PUMP COVER HOUSING	1
702	PUMP COVER	1
920	FRONT PANEL DROP FIXING PLASTIC-II	4
1200	HINGE SUPPORT SHEET	1
1500	ST 4,2X9,5 TRTSB	2
1501	ISO 7049 ST 4,2X16 TORX	2
1504	ISO 7049 ST 4,2X13 TORX	4
1505	ST 4,8X9,5 PAN HE.WITH COL.TORX UN.SER.E	2
1511	FRONT PANEL DROP FIXING PLASTIC-I-B	2
410	SCREW 4X12 TORX PAN HE.W.COL.UND.HE.SER.	1

3.WASHING GROUP PARTS



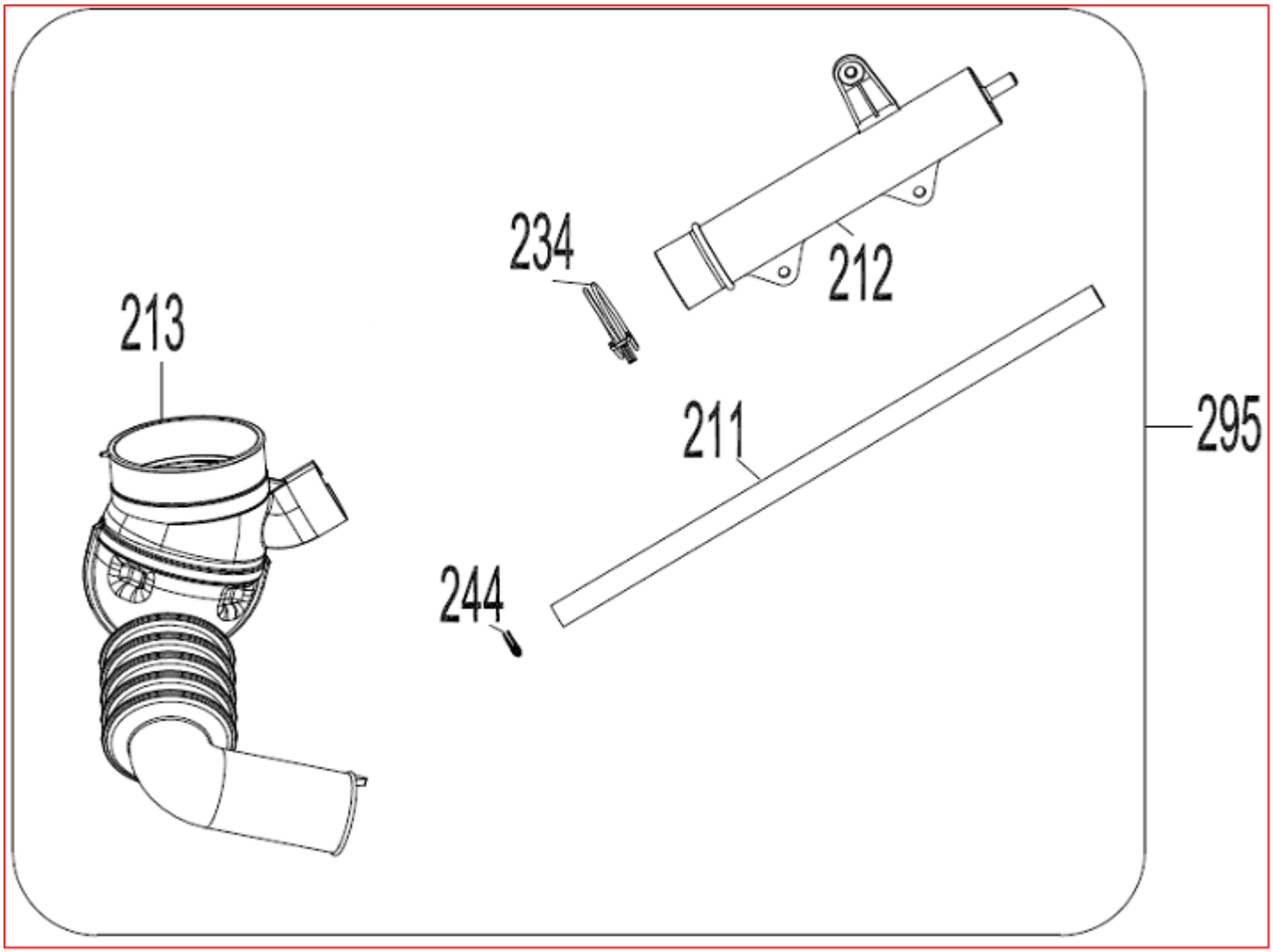
NO	PART NAME	QUANTITY
100	BELT	1
101	DRIVEN PULLEY	1
102	MOTOR	1
103	REAR TUB GROUP	1
104	SHOCK ABSORBER	2
105	SHOCK ABSORBER PIM	2
112	UPPER COUNTERWEIGHT	1
113	TUB SEAL	1
115	RESISTANCE FIXING WIRE	1
117	FRONT TUB	1
118	TUB BELLOWS SEAL	1
119	TUB BELLOW CLIP	1
120	FRONT COUNTERWEIGHT	1
121	RESISTANCE GROUP	1
122	COUNTERSUNK HEAD BOLT 8X25 TORK	2
124	COUNTERSUNK HEAD BOLD M 8X29	1
126	HEXAGON HEAD BOLT 6 X 30	12
160	DRUM GROUP	1
206	TUB ENTERANCE WITH BELLOW HOSE	1
213	TUB EXIT WITH BELLOW HOSE	1
700	TUB HANGER SPRING PART	2
800	HANGER SPRING	2
806	DUZ RONDELA 8.4X28X3	2
807	HEXAGON HEAD BOLT	4
808	WASHER 8,4X28X3	4
809	WASHER 8,5X35X3	2
811	UPPER CONCRETE SUPPORT SHEET IRON PART	2
812	NUT M8	2
813	PLASTIC LIFTER	1
810	UPPER COUNTERWEIGHT WASHER 9X30X3	3
898	PSW HOSE MOUNTING RUBBER	2
899	RESISTANCE WITHOUT NTC	1
999	NTC	1
1400	SCREWED HOSE CLAMP Ø65	1
1401	SPRING TYPE BANT CLAMP	1
1402	HOSE CLAMP SCREW TYPE Ø72	1
1403	HOSE CLAMP Ø38,8	1
1507	DÜZ RONDELA 10.5X30X2.5	4

4.DETERGENT DRAWER GROUP



NO	PART NAME	QUANTITY
200	DETERGENT DRAWER	1
202	SIPHON COVER	1
203	WATER DISTRIBUTION PLATE GROUP	1
205	DETERGENT DRAWER HOUSING	1
207	VALVE-DETERGENT BOX HOSE	1
209	VALVE(TWO EXIT)	1
214	DETERGENT DRAWER LOCKING PART	1
228	PLASTIC HOSE CLAMP	6
996	LIQUID DETERGENT LEVEL PLATE	1
270	DETERGENT BOX GROUP	1
275	DETERGENT BOX GROUP/HOSE	1
280	DETERGENT BOX GROUP/FULL	1

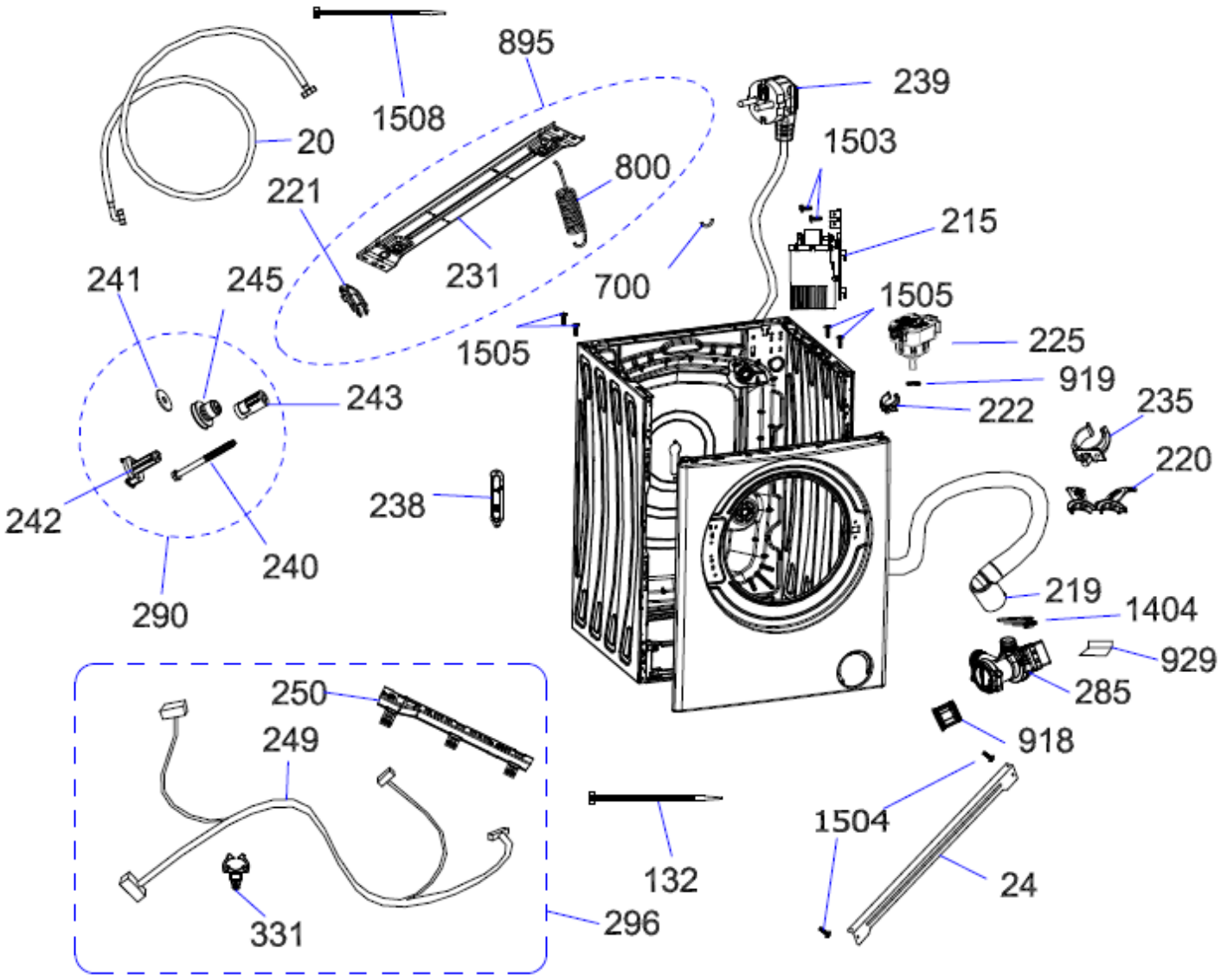
5. PRESSURE SWITCH HOSE GROUP



NO	PART NAME	QUANTITY
213	TUB EXIT WITH BELLOW HOSE	1
212	PRESSURE SWITCH WATER RESERVOIR	1
211	PRESSURE SWITCH HOSE	1
234	HOSE CLAMP Ø32,7	1
244	HOSE CLAMP Ø9,6	1
295	PRESSURE SWITCH HOSE GROUP	1

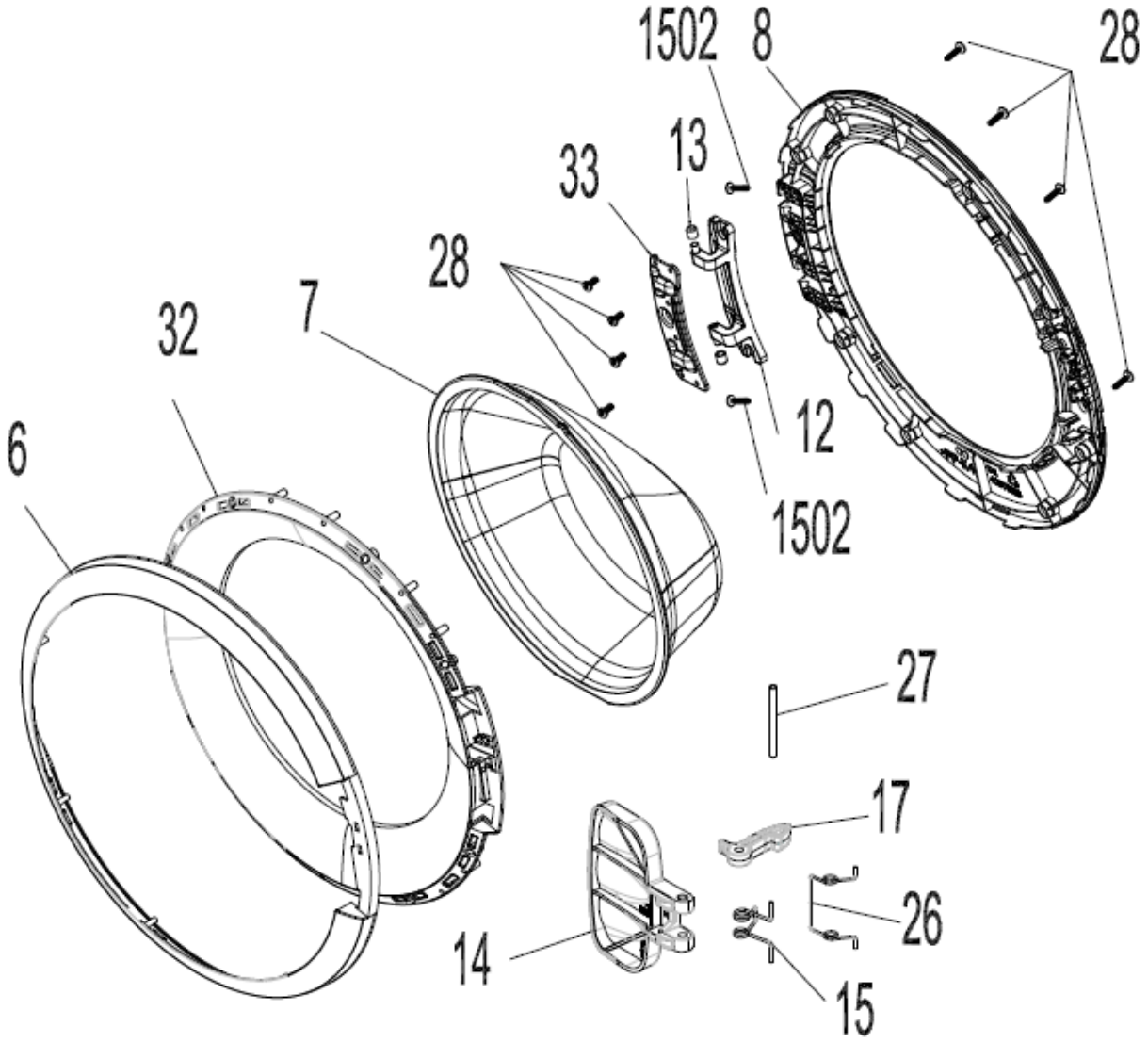
213-212-211-234-244---------- PRESSURE SWITCH HOSE GROUP

6. BODY GROUP PARTS



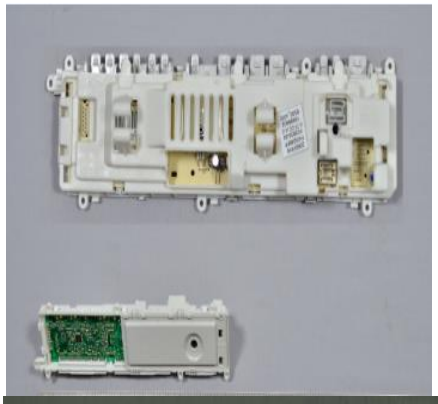
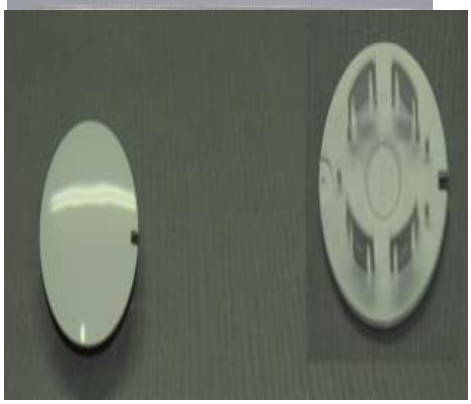
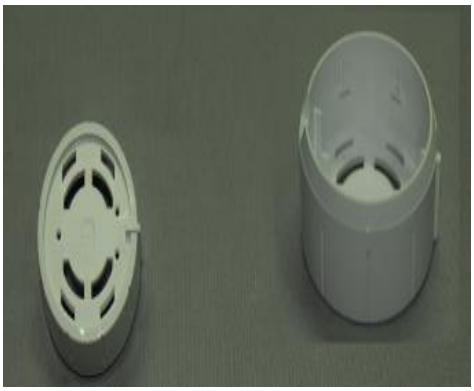
REF. NO	PART NAME	QTY
20	WATER ENTRY HOSE GROUP	1
24	UPPER SUPPORT BRACKET	1
285	PUMP GROUP	1
220	DRAIN HOSE ROUTER PLASTIC	1
219	DRAIN HOSE	1
225	ELECTRONIC PRESSURE SENSOR	1
215	EMI FILTER	1
296	CABLE GR	1
249	CABLE HARNESS	1
250	CABLE HARNESS HOLDER PLS	1
331	LOCKING WIRE SADDLE (BLUE)	1
895	SPRONG HANGER BRACKET GROUP	1
800	TUB SPRING	2
231	SPRING HANGER BRACKET	1
221	HANGER SPRING BRACKET PLS.	2
700	TUB HANGER SPRING PART (PLASTIC HOUSING PART BETWEEN TUB AND SPRING HOOK)	2
235	DRAIN HOSE HOLDING PLS	4
239	POWER CORD GROUP	1
222	PRESSURE SWITCH MOUNTING CLIP	1
238	SPEED CONTROL HOLE STOPPER	1
290	TRANSPORT SCREW GROUP-II	4
242	TRANSPORT SCREW PLASTIC-A-II	4
243	TRANSPORT SCREW PLASTIC-B-II	4
240	TRANSPORT SCREW	4
245	TRANSPORT SCREW EPDM	4
241	PLAIN WASHER 8,30X29X2	4
132	CABLE TIE(YKB150)	7
918	PUMP FILTER	1
919	HOSE CLAMP Ø8,6	1
1404	HOSE CLAMP.Ø35,0	1
1503	ST 4,2X9,5 PAN HEAD W.COL.T.UNDER.SER.EA	2
1504	ISO 7049 ST 4,2X13 TORX	4
1505	ST 4,2X9,5 TRTSB	4

7. DOOR GROUP

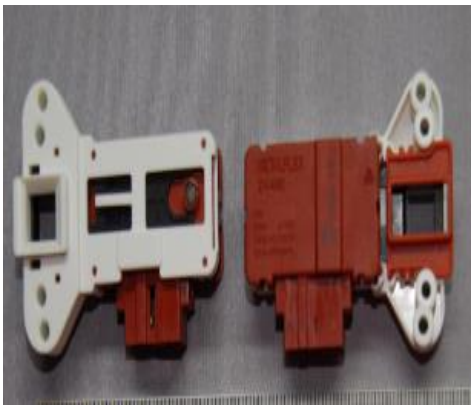


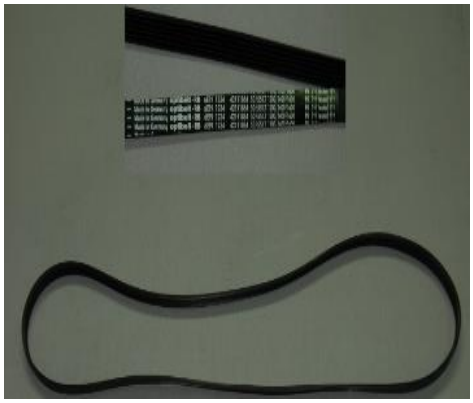
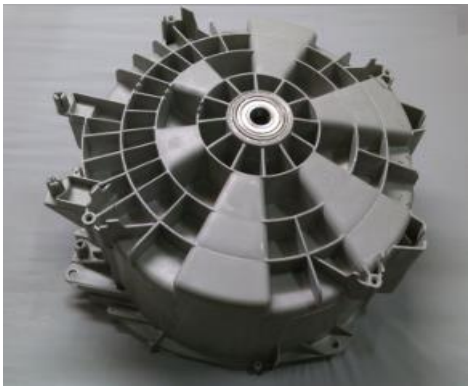
NO	PART NAME	QUANTITY
6	PORTHOLE OUTER PLASTIC	1
7	DOOR GLASS	1
8	PORTHOLE INNEER PLASTIC	1
12	SHEET METAL HINGE GROUP	1
13	HINGE PLASTIC	2
14	DOOR HANDLE	1
15	HOOK SPRING	1
16	HANDLE SPRING	1
17	HOOK	1
26	HANDLE SPRING	1
27	DOOR HANDLE PIM	2
28	SCREW 3.5X16PAN.HE.WITH COL.CR.RE.UN.HE	8
*32	PORTHOLE INNER FRAME	1
50	PORTHOLE GROUP (1502 excluded)	1
1502	SCREW M5X8 TSB (this part is not include in porthole group)	2

*** 32 "This spare part is optional and depends on agreed specifications. Therefore you may not find this position number in product's spare part list."**

POSICION	CODIGO	DESCRIPCION	FOTO1
401+412+407	42174994	CONTROL PANEL AS (COMPLETO)	
402	42103118	DIAL COMPLETO	
412	20902993	ELECTRONIC CARD	
471	42082604	TAPA DIAL	
470	42082603	SOPORTE SELECTOR	

POSICION	CODIGO	DESCRIPCION	FOTO1
496	20826457	F4.CARD GR.	

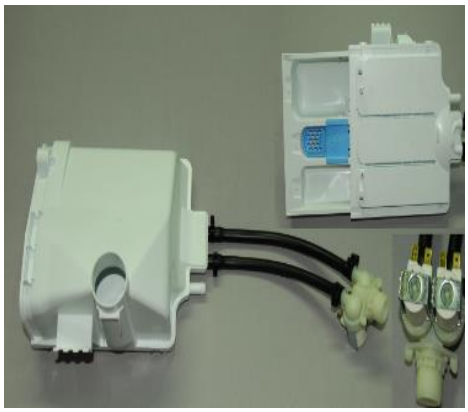
POSICION	CODIGO	DESCRIPCION	FOTO1
2	42026020	UPPER TRAY GROUP	
10	32024465	DOOR LOCK	
702	42067962	PUMP COVER	

POSICION	CODIGO	DESCRIPCION	FOTO1
100	42006396	BELT	
101	☐37000499	DRIVEN PULLEY	
102	☐32028925	MOTOR	
103	20737596	CUBA TRASERA COMPLETA (COJINETES INC)	

POSICION	CODIGO	DESCRIPCION	FOTO1
104	47011587	SHOCK ABSORBER	
105	42025094	SHOCK ABSORBER PIM-2	
117	42059372	FRONT TUB	
118	☐42024953	TUB BELLOWS	

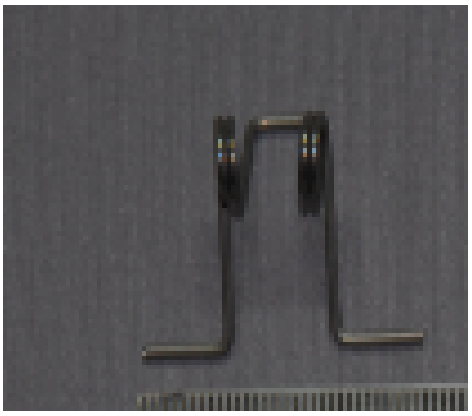
POSICION	CODIGO	DESCRIPCION	FOTO1
120	47012715	BALANCER FRONT	
121	20846087	RESISTANCE GROUP	
160	20813477	DRUM GRUP (DRUM +SPIDER)	
206	42087110	TUB ENTERANCE WITH BELLOW	

POSICION	CODIGO	DESCRIPCION	FOTO1
213	42079698	PRESSURE SWITCH HOSE	
800	37014888	TUB SPRING	
813	42150295	LIFTER	
999	32025771	NTC	

POSICION	CODIGO	DESCRIPCION	FOTO1
209	30023393	VALVE	
280	42065334	DETERGENT BOX GR/FUL	

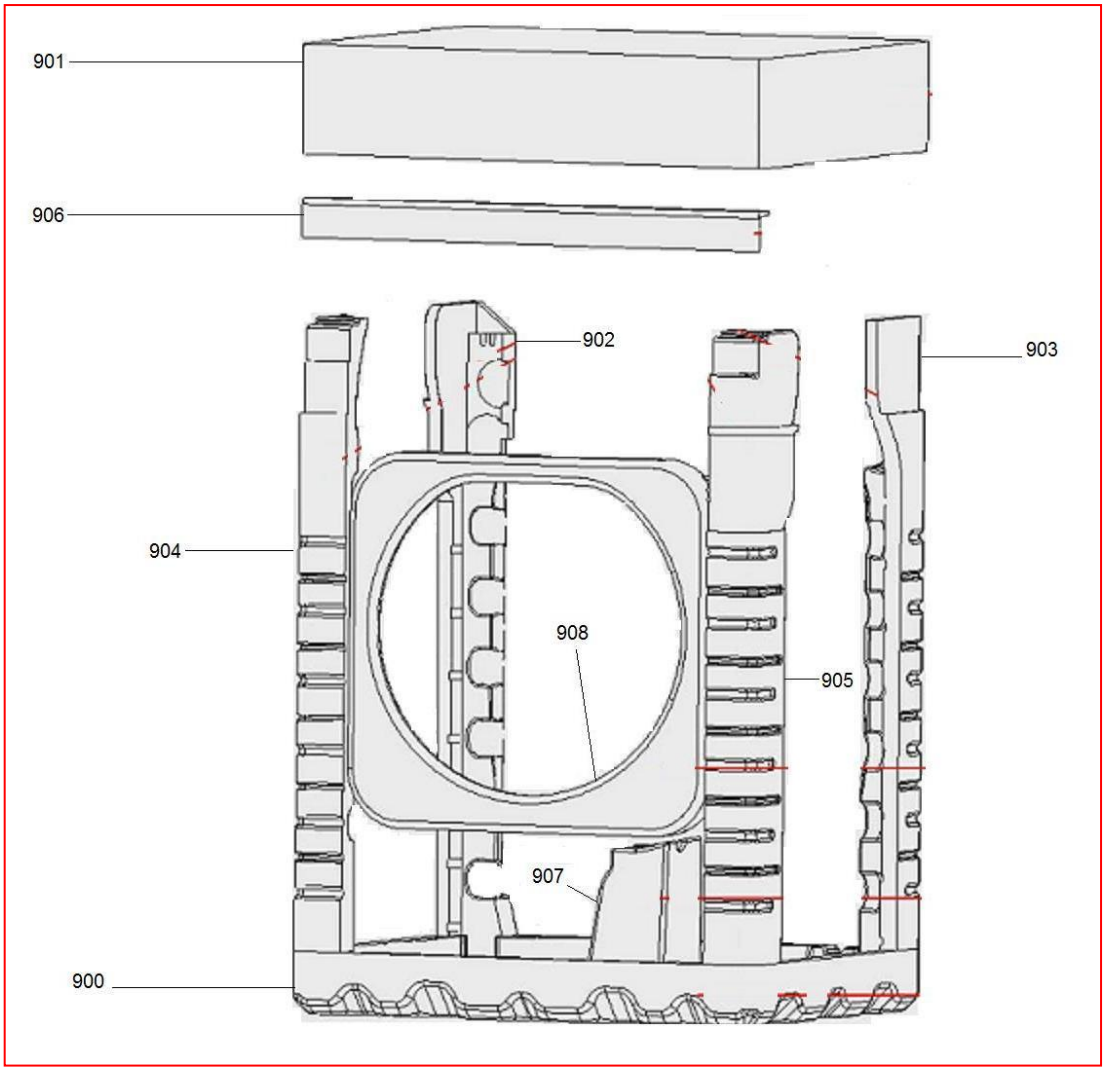
POSICION	CODIGO	DESCRIPCION	FOTO1
295	42079698	PRESSURE SWITCH HOSE	

POSICION	CODIGO	DESCRIPCION	FOTO1
219	42074837	DRAIN HOSE	
225	32025730	ELECTRONIC PRESSURE SENSOR	
285	32023775	PUMP GROUP	
800	37014888	TUB SPRING	

POSICION	CODIGO	DESCRIPCION	FOTO1
50	42087291	DOOR AS	
27	35007434	PIN HANDLE	
15	35007443	HOOK SPRING	
17	37008931	HOOK	

POSICION	CODIGO	DESCRIPCION	FOTO1
14	42082671	HANDLE DOOR	
7	47003771	DOOR GLASS	

8. PACKAGING GROUP



NO	PART NAME	QUANTITY
900	BOTTOM STYROFOAM	2
901	TOP CARTON	1
902	REAR STYROFOAM(LEFT)	1
903	REAR STYROFOAM(RIGHT)	1
904	FRONT STYROFOAM LEFT	1
905	FRONT STYROFOAM RIGHT	1
906	CORNER CARDBOARD	1
907	TUB SUPPORT STYROFOAM	1
908	PORTHOLE PRO. STYROFOAM	1