



**ALVA B  
SERVICE MANUAL**

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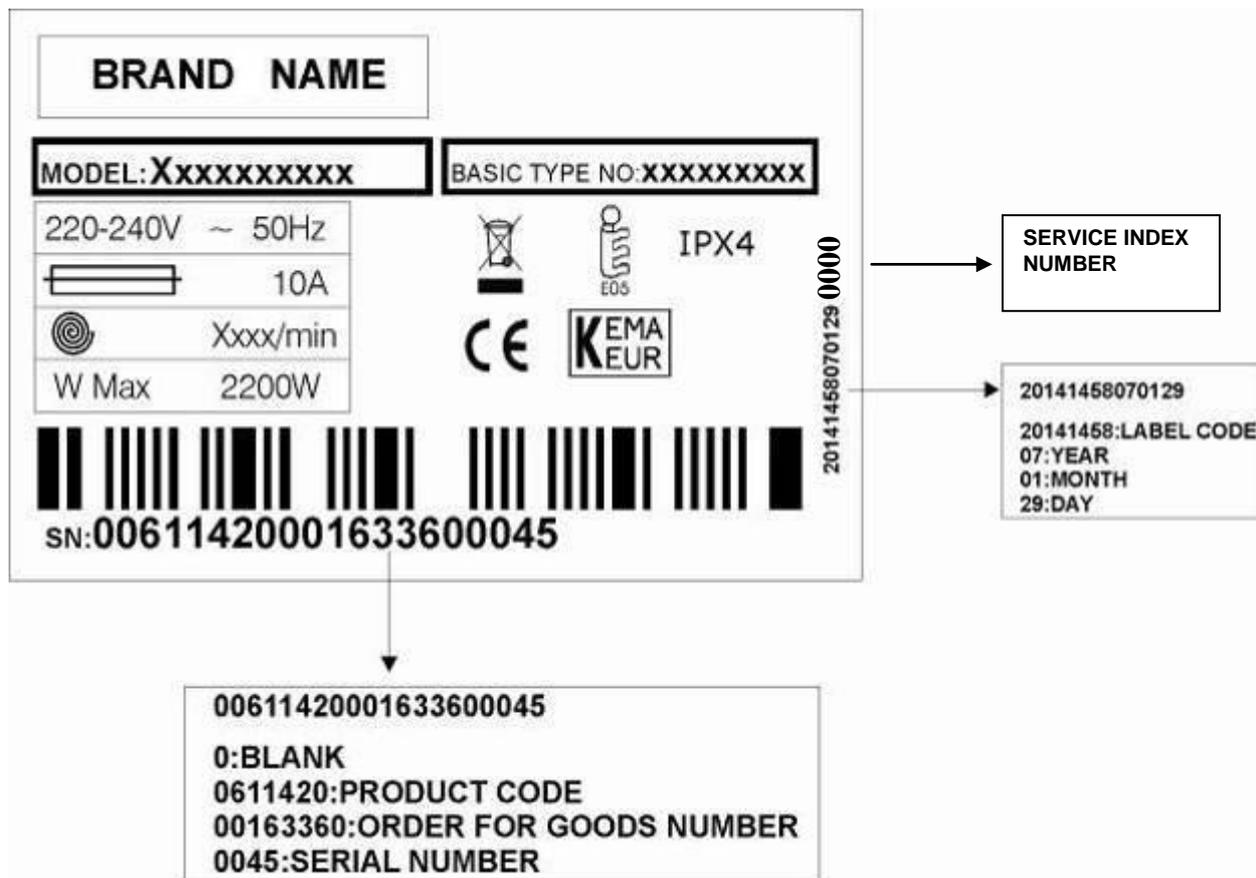
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# 1. Specifications

## 1.1. Product Specifications

		42 lt
Product Type		Front Loader
Capacity		5 kg
Max Spin Speed (r/min)		400 – 500 – 600 – 800 – 1000
Energy Consumption		A
Water Consumption		43 L/cycle
Wash Programs		15 settings
Dimensions	Height	84,5 cm
	Width	59,7 cm
	Depth	49,7 cm
Other Features		Child Lock
		Delay Time

## 1.2. Name Plate

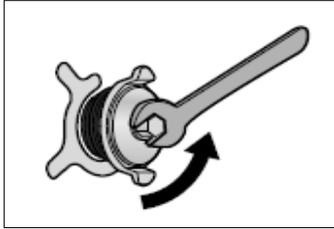


## 2. Installation Instructions

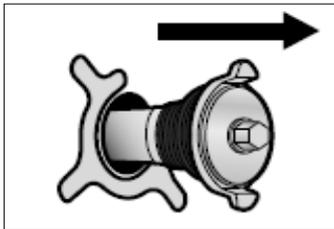
### 2.1. Moving and Installing

#### 2.1.1. Removal of Transportation Screw

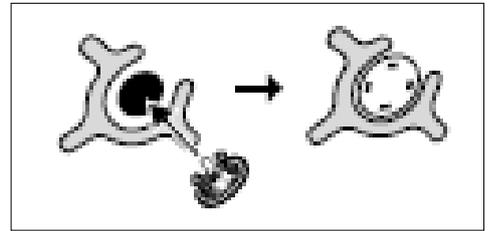
1. Transportation screws, which are located at the back side of the machine, must be removed before running the machine.
2. Loosen the screws by turning them anticlockwise with a suitable spanner.



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.

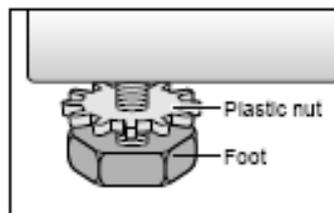


5. The transportation screws that have been removed from the machine must be re-used in any future transporting of the machine.

#### 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)

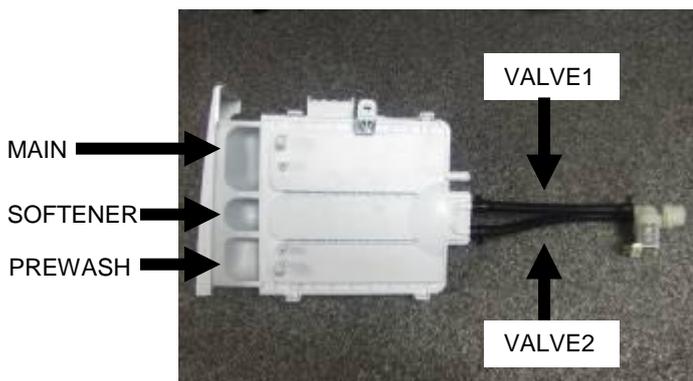
### 2.1.5. Drain Connection

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.

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 3/4" threaded water tap.

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.

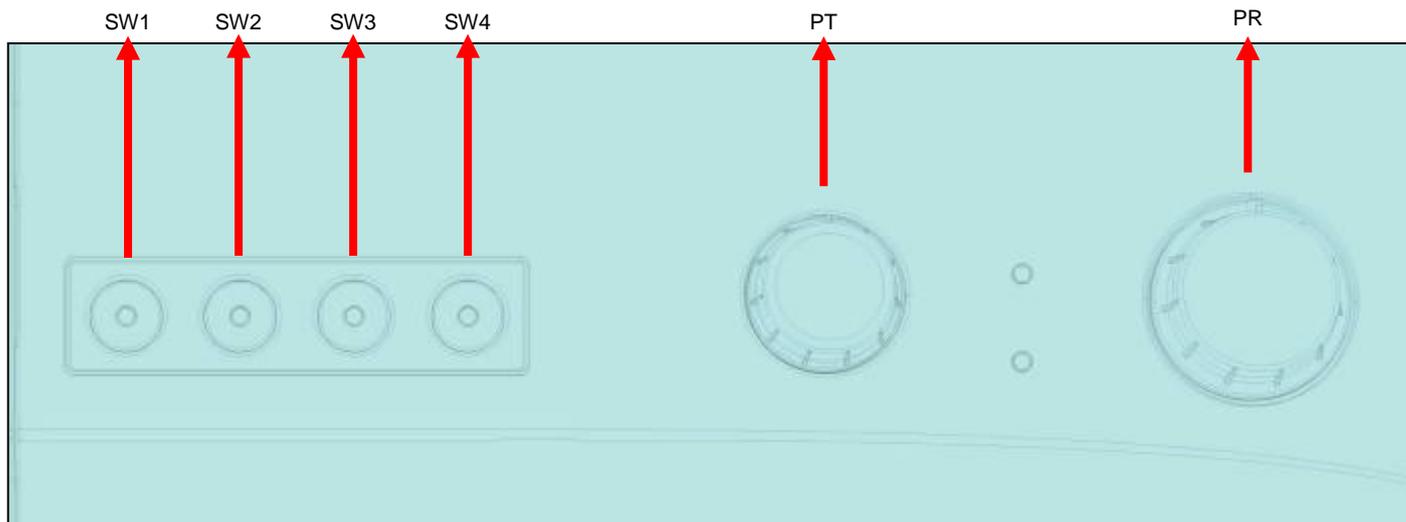
### 2.2. Detergent Box Group



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	Program selector 16 programs with ON/OFF.
SW1	Switch 1, Start / Pause
SW2	Switch 2, Function 1 Selection
SW3	Switch 3, Function 2 Selection
SW4	Switch 4, Function 3 Selection
PT	PT speed potentiometer

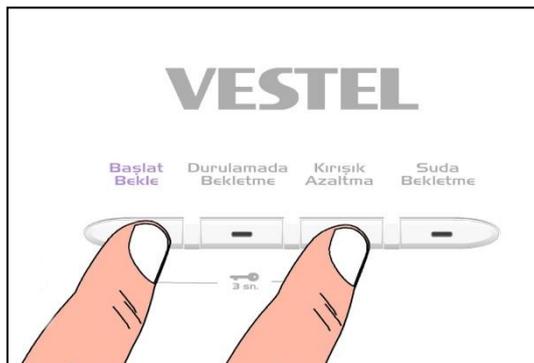
### 3.2. Program List

Knob Position	Program
Pos1	COTTON90°C
Pos2	COTTON 60°C PR W
Pos3	COTTON 60°C
Pos4	COTTON 40°C
Pos5	ECO WASH
Pos6	COTTON 30°C
Pos7	QUICK WASH
Pos8	COTTON COLD
Pos9	MIX WASH
Pos10	SYNTHETICS 60°C
Pos11	BABY WASH
Pos12	SYNTHETICS 40°C
Pos13	SPORT WEAR
Pos14	SYNTHETICS COLD
Pos15	CURTAIN WASH
Pos16	DELICATE 30°C
Pos17	DELICATE COLD
Pos18	HAND WASH
Pos19	WOOL 30°C
Pos20	WOOL COLD

## 3.5. Child Lock

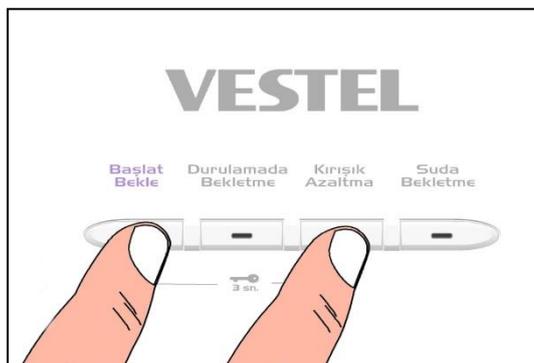
### Activation

1. Press the 1. and 3. function button for 4-5 seconds.
2. The Child Lock Symbol is appear on the lcd display.



### Deactivation

1. Press the 1. and 3. function button for 4-5 seconds.
2. The Child Lock Symbol is deleted on the lcd display.



### Activation Indication

1. The symbol (I6) makes fast blink for indication and is then fix on.

### Child lock during the programme

1. Machine does not respond to any pressing of buttons or changing position of program knob but option icon makes fast blink to evoke the user.

### In end condition

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

### Deactivation Indication

1. Option icon makes fast blink and is then off.

### In Error Mode

1. Child lock will be automatically deactivated when error is detected except NTC (E05) and Voltage (E09) errors.

When E05 and E09 is detected, the child lock will be deactivated at the end of the program or the user will be able to deactivate it. On other hand, if the user brings the programme knob to zero and then any position during these two error modes, firstly it will show child lock active indication and then the error indication and it will continue the cycle.

## 4. Test Mode

### 4.1. Autotest

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

1. After selecting spin speed to max, select the program 3



2. Press 1. function button



3. While pressing 1. function button, change position of the knob from third to second



4. Release 1. function button



5. Press 1. Function button again.



6. While pressing 1. function button, change position of the knob from second to first.



AUTOTEST													
Time in seconds (to be adjusted)	5	10	15	20	25	30	35	40	45	50	55	60	65
Entering autotest	█	█	█	█	█	█	█	█	█	█	█	█	█
Changing power to 220 50Hz		█											
Main Voltage 50 Hz			█	█	█	█	█	█	█	█	█	█	█
Door Lock Powered (Depends on door lock)			█	█	█	█	█	█	█	█	█	█	█
Motor Ramp to max spin				█	█	█	█	█	█	█	█	█	█
Time until motor is stopped (Depends on the motor stop time)							█	█	█	█			
Motor Preferred Run (Direction to Right)									█	█	█	█	█
Motor Inverse Run (Direction to Left)										█	█	█	█
EV1 0.16 l/s(flowrate dependent of washer)				█	█	█	█	█	█	█	█	█	█
EV2 0.16 l/s(flowrate dependent of washer)						█	█	█	█	█	█	█	█
Test stopped until option 1 is pressed (led blinking)											█		
PW+W valves up to pressure switch level (Depends on the water level)											█	█	█
NTC check												█	█
Heather resistance													█
Pump			█	█									
Ready Led (Activated with motor ramp to max spin)				█	█	█	█	█	█	█	█	█	█
End Led (Activated with motor ramp to max spin)						█	█	█	█	█	█	█	█
Option 1 Led (Depends on the motor stop time)							█	█	█	█			
Option 2 Led (Activated with motor preferred run)								█	█	█	█	█	█

**Ntc detection** : Software will detect NTC's resistance value and will check if the temperature is between  $5^{\circ}\text{C} < T_{\text{detected}} < 40^{\circ}\text{C}$ . 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.

**EPS measurement**: It checks the EPS and if it OK, it continues the autotest; if it is Not OK then cancel the Autotest and go 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 & goes to the selection mode.

## 5. Service Mode

### 5.1. Service Autotest

#### Activation

Press function 1 and function 2 buttons at the same time and while pressing the buttons bring program selector to position 1. All LEDs (Func1&2) will be OFF and machine will get into service autotest mode.

While getting into service autotest, door will be locked.

Service autotest will be done step by step. It has to be done consecutively starting from Autotest 1.

In cases of:

1. Bringing program knob to zero position
2. Bringing program to a backwards position

Service autotest will be cancelled.

#### Changes

##### **1. Selector position 1 will be "Motor CW low speed"**

Speed will be 53 rpm for all models.

Machine will turn with 53 rpm for 1 minute and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 1 is 1 minute.

Note: If user changes the selector position without waiting for 1 min., machine will do what is defined for the new selected position.

##### **2. Selector position 2 will be "Motor CCW low speed"**

Speed will be 53 rpm for all models.

Machine will turn with 53 rpm for 1 minute and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 2 is 1 minute.

Note: If user changes the selector position without waiting for 1 min., machine will do what is defined for the new selected position.

##### **3. Selector position 3 will be "Motor CCW sense high speed"**

Machine will check if there is water inside the drum (level is higher than Empty) and if there is, machine will drain water before ramping up to maximum.

Machine will ramp up to maximum speed, will stay there for 5 seconds and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 3 is about 1 minute.

Note: There should be no load inside the drum in this position cos ramp will be done without unbalance control.

##### **4. Selector position 4 will be "Door Unlocked"**

When door is unlocked:

END LED (LED 5) will be ON

After 5 seconds than door is unlocked, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 4 is about 2 minutes.

Note: To see the effect of this step we should wait for about 1 min. till door gets unlocked.

##### **5. Selector position 5 will be "Door Locked"**

When door is locked:

START/PAUSE LED (LED 1) will be ON

After 30 seconds than door is locked, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 5 is about 1 minute.

**6. Selector position 6 will be “Valve 1 ON”**

Valve 1 will be open for 30 seconds and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 6 is about 30 seconds.

Note: If user changes the selector position without waiting for 30 seconds, machine will do what is defined for the new selected position.

**7. Selector position 7 will be “Valve 2 ON”**

Valve 2 will be open for 30 seconds and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 7 is about 30 seconds.

Note: If user changes the selector position without waiting for 30 seconds, machine will do what is defined for the new selected position.

**8. Selector position 8 will be “HEATER ON”**

Important points:

1. Water level will be checked before heating and if level is below P0 machine will fill water with main wash valve till P1
2. Connection of NTC will be checked. If there is no connection (open or short circuit), machine will give heating failure
3. If temperature doesn't increase 2°C in 8 minutes, machine will again give heating failure.

Heating failure is: START (L1) and END (L5) LEDs will flash,

After 8 min if there is a failure machine will give failure and if there is not, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 8 is about 8 minute.

Note: If user changes the selector position without waiting for 15 min., machine will do what is defined for the new selected position.

9. Selector position 9 will be “PUMP ON”

NTC will be checked firstly. If the measured temperature is higher than 50°C, then it takes 80 sec cooling water. It will drain until "Pzero plus Empty" Pump will be open for “till Empty level reached + 15 sec.” and then will stop.

As soon as it stops, all function LEDs will flash. This will mean machine is ready to go to next position.

So, time for selector position 9 is about 1, 5 - 2 minutes.

Note: User should wait till pump activation completely finishes in order not to affect behavior of other selector positions.

After position 9; user interface, LED and button check will begin and for these positions, behavior can be followed from the chart.

Notes:

1. For these positions there will be no time restriction (these responses of machine carry no risk of safety), user will manage this.
2. Machine will not warn or indicate that it is ready to go to next position (like “all function LEDs flash” which we will use for first 9 positions) because there is no certain and restricted time for these responses.

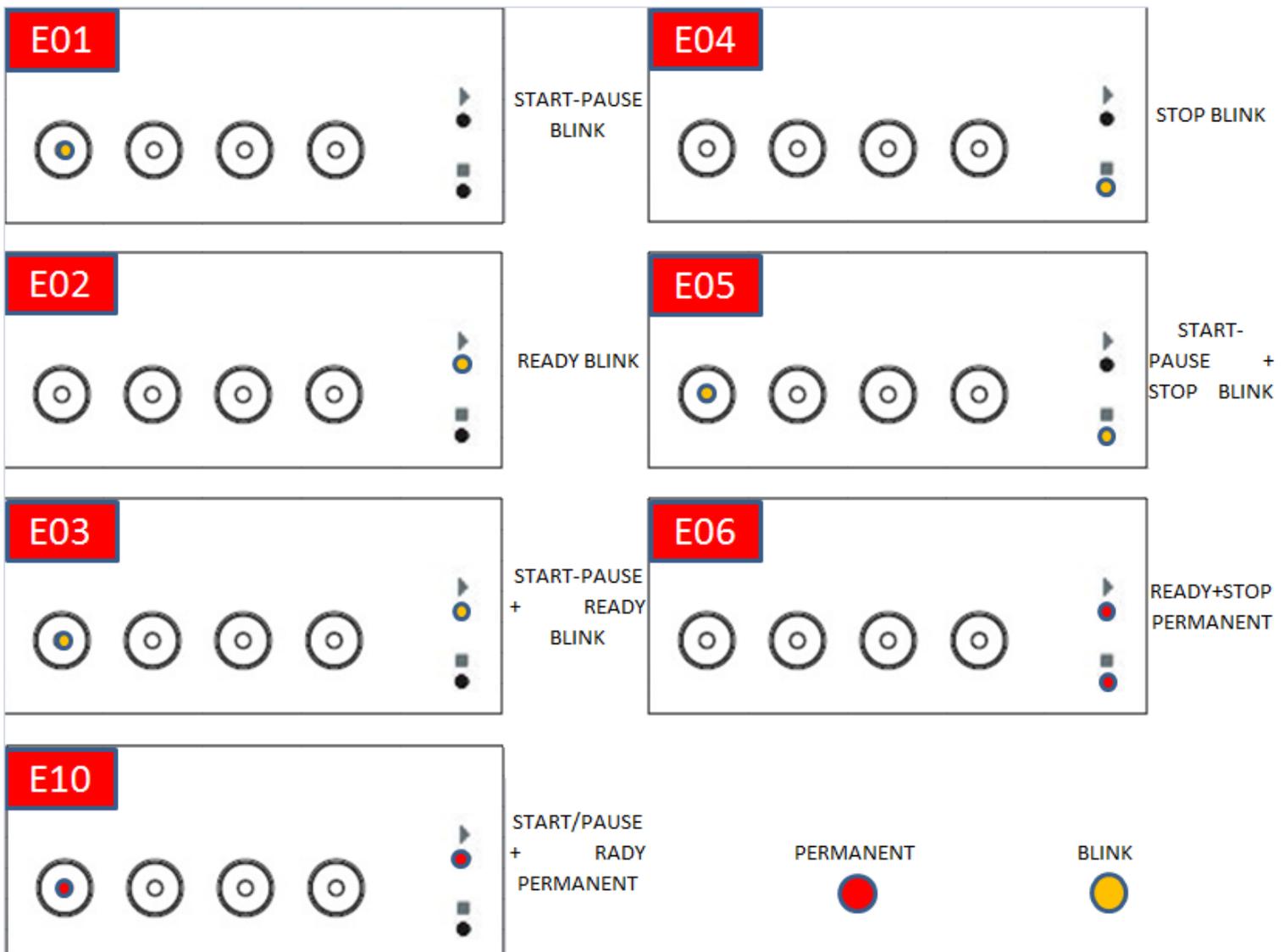
User can pass to next position as soon as completing check of current position

MODEL	SELECTOR POSITION 10	SELECTOR POSITION 11	SELECTOR POSITION 12		SELECTOR POSITION 13		SELECTOR POSITION 14		SELECTOR POSITION 15	
	Result	Result	Action	Result	Action	Result	Action	Result	Action	Result
B1	L1, L2, L3 ON	L4 & L5 ON	PUSH BUTTON START/PAUSE	LED START/PAUSE ON	NO ACTION	L4 ON	NO ACTION	ALL LEDS FLASH	NO ACTION	END LED ( L5 ) ON
			PUSH BUTTON FUNC 1	LED FUNC 1 ON						
			PUSH BUTTON FUNC 2	LED FUNC 2 ON						
B2	L1, L2, L3 ON	L4 & L5 ON	PUSH BUTTON START/PAUSE	LED START/PAUSE ON	TEMPERATURE SELECTOR MIN	L5 ON	NO ACTION	ALL LEDS FLASH	NO ACTION	END LED ( L5 ) ON
			PUSH BUTTON FUNC 1	LED FUNC 1 ON	TEMPERATURE SELECTOR MAX	L4 ON				
			PUSH BUTTON FUNC 2	LED FUNC 2 ON	TEMPERATURE SELECTOR MID	L4 & L5 ON				

## 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

<b>E01</b>	Door Lock Error	Start/Pause LED blinks
<b>E02</b>	Lack of Water	Ready LED blinks
<b>E03</b>	Pump Error	Start/Pause & Ready LEDs blink
<b>E04</b>	Overflow Error	End LED blinks
<b>E05</b>	NTC/Heater Error	Start/Pause & End LEDs blinks
<b>E06</b>	Motor Failure	Ready & End LEDs blink



## 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
<b>Machine does not operate.</b>	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.
<b>Machine does not receive water.</b>	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.
<b>Machine is not draining water.</b>	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.
<b>Machine is vibrating.</b>	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
<b>Excessive foam in the detergent drawer</b>	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.
<b>The washing result is bad.</b>	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.
<b>The washing result is not good.</b>	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.
<b>The water is seen in the drum during</b>	No failure. The water is at the lower part of the drum.	

<b>washing.</b>		
<b>There are residues of detergent on the clothes.</b>	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.
<b>There are grey stains on the clothes.</b>	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.
<b>The spinning process is not done or starts with delay.</b>	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.



Push the top-plate back and pull it up.



7.2.

2. Push



Door

1. Rem

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



T25



2. Pull the door up.



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



3. Remove screws that fix the door group.

4. Put the door outside plastic with helping screwdriver 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 pin 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.



## 7.5. Control Panel

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



p  
a  
n  
e  
l  
.



## 7.4. Detergent Drawer

1. Remove the detergent drawer and pull it up carefully

2. Remove three screws fixing the control panel.



3. Pull the control panel up.



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



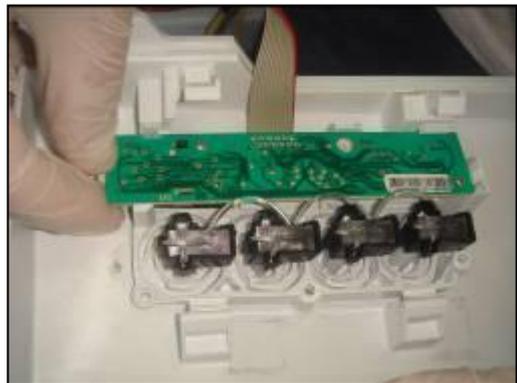
4. Remove connectors as it is shown in the picture.



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



5. Remove the lcd communication cable as it is shown in the picture.



## 7.6. Kick Plate

1. Remove the right part of the kickplate as it is shown in the picture.



2. Remove two screws fixing the kickplate.



2. Remove two screws fixing the door lock as it is shown in the pictures.



3. Pull the kickplate left and push it down.



## 7.7. Front Panel

1. Remove two screws fixing the front panel at the bottom as it is shown in the picture by using T25

3. Remove the tub bellows seal as it is shown in the pictures.



4. Remove two screws fixing front panel at the upper as it is shown in the picture.



5. Remove two screws fixing front panel at the below as it is shown in the picture.



6. Remove the front panel as it is shown in the pictures.

## 7.8. Upper Support Bracket

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



2. Remove two screws fixing the body group at the upper as it is shown in the picture.



3. 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.

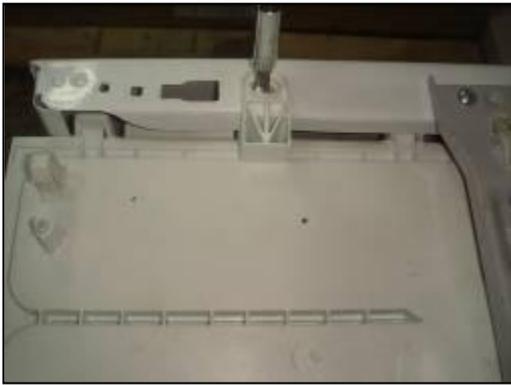


3. Turn the feed valve counter clockwise slightly to remove.



## 7.9. Detergent Drawer Housing

4. Remove the detergent drawer screw.



5. Remove the detergent drawer housing assembly.



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



## 7.10. Power Cable Group and Parazit Filter

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



2. Remove two screws fixing the parasite filter.

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

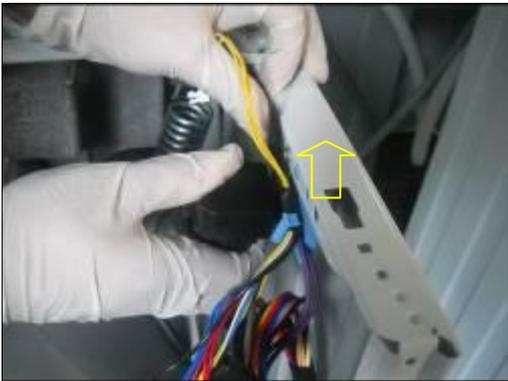


## 7.11. Electronic Pressure Switch (EPS)

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



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

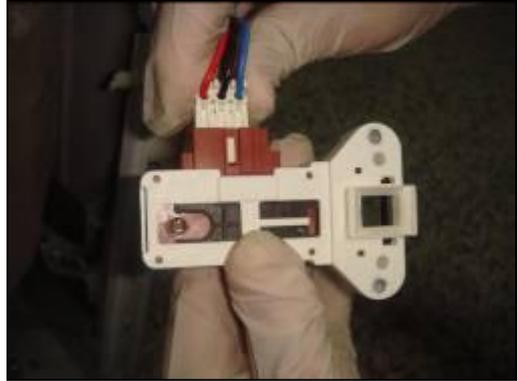


3. Remove the eps hose handcuffs and eps hose as it is shown in the picture.



## 7.12. Door Lock

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



## 7.13. 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.



### 7.14. Front Counterweight

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



2. Pull the counterweight back



### 7.15. 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.



### 7.16. Tub Bellows Seal

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

2. Hold the transport screw and pull it out.



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



### 7.17. Transport Screw

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

### 7.18. Upper Counterweight

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



a)



b)



c)



d)



2. Remove the upper counterweight



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



## 7.19. Washing Group

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



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



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

## 7.20. Shock Absorber PIN

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



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



### 7.21. Belt

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



### 7.23. Motor

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



### 7.22. Driven Pulley

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



2. Pull the motor up for disassembly.



### 7.24. Tub Entrance with Bellow Hose

1. Remove the tub entrance with bellow hose.



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



## 7.25. 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.



## 7.26. Tub

## 7.27. Drum

1. Remove the drum.



## 8. Component Specifications

### 8.1. Drain Pump

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



#### 8.1.1. Technical Features

Nominal voltage	220 - 240 V
Nominal current	0.28 A ( $\pm 10\%$ )
Nominal power	37 W
Frequency	50 Hz
Resistor (coil)	130 $\Omega$ ( $\pm 5\%$ )
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.

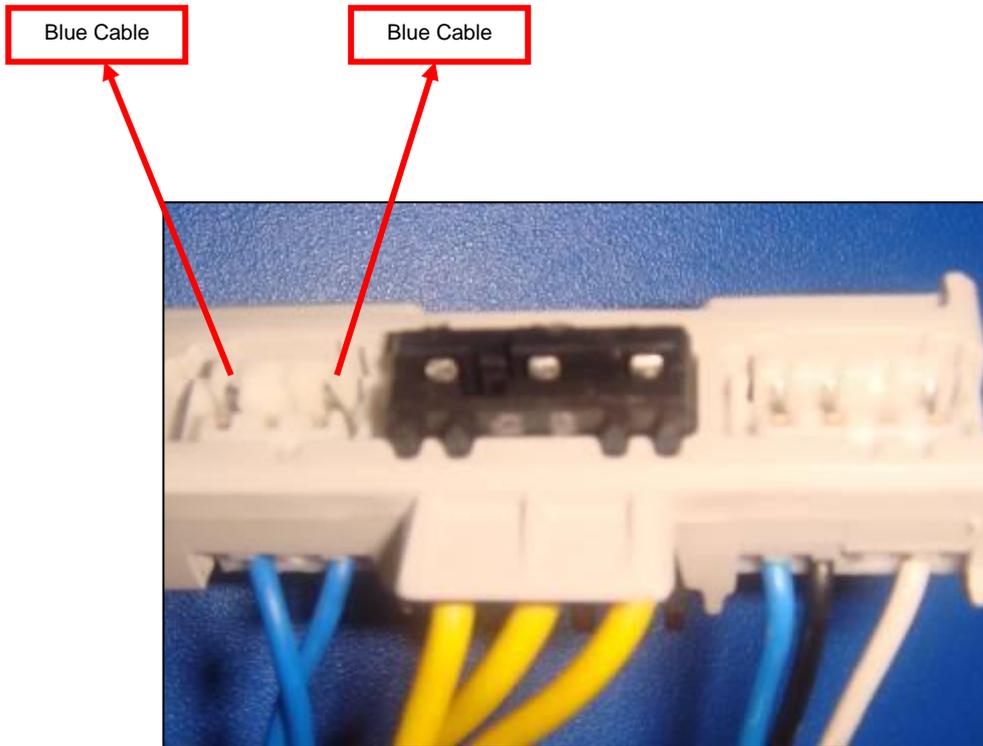
Resistance value should be between 125- 140  $\Omega$



Checking the component

### 8.1.3. Component Controlling By Connection Measurement

You can determine the ohm value by measuring from the blue cable and blue cable (refer wiring diagram at page 43) as shown in belows figure. Resistance value should be between 125- 140  $\Omega$



## 8.2. Resistance

Heating element (Resistance) is a component which is designed 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 ( $\pm 5\%$ )
Resistance	24,8 $\pm 5\%$ $\Omega$ (for NA-127VB3 and NA-147VB3)
Thermal fuse	2 – sided

### 8.2.2. Checking of Component

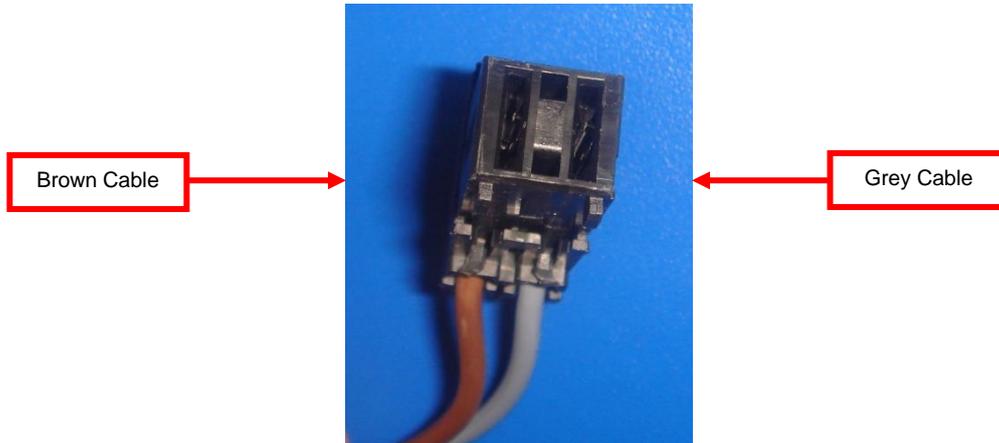
Check the resistance value on the component with multimeter as shown in below pictures.



Checking the component

### 8.2.3. Component Controlling By Connection Measurement

You can determine the ohm value by measuring from the grey cable and brown cable (refer wiring diagram at page 43) as shown in belows figures. Resistance value should be between 23- 27 Ohm.



### 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

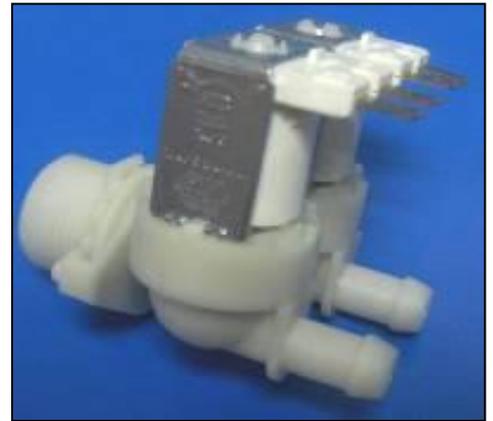
Check the resistance value on the component with multimeter as shown in below pictures.



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 ( $\pm 15\%$ )
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

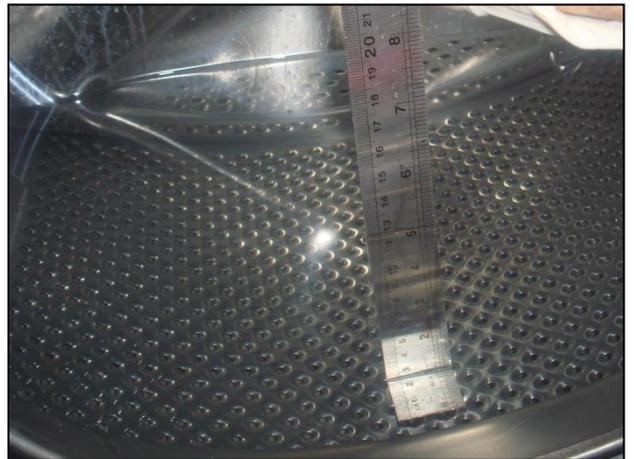
Electromagnetic field occurs as a result of the vibration of the membrane which is under pressure in the coil. The nucleus part is moved up and down by the electromagnetic field. The water level is regulated by the frequency which is controlled by the PCB and changes according to the movement of the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

### 8.5.2. Checking of Component

1. Push the door lock slider with screwdriver.



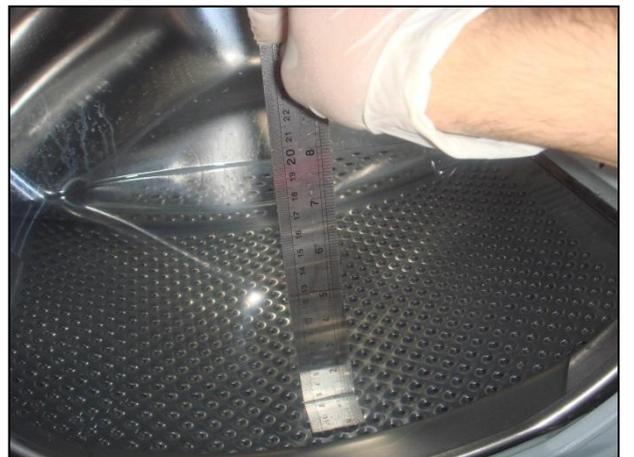
6. Cut off the energy input when the water intake finishes and drum begins to rotate.



5. Select the 1st program and start the machine.



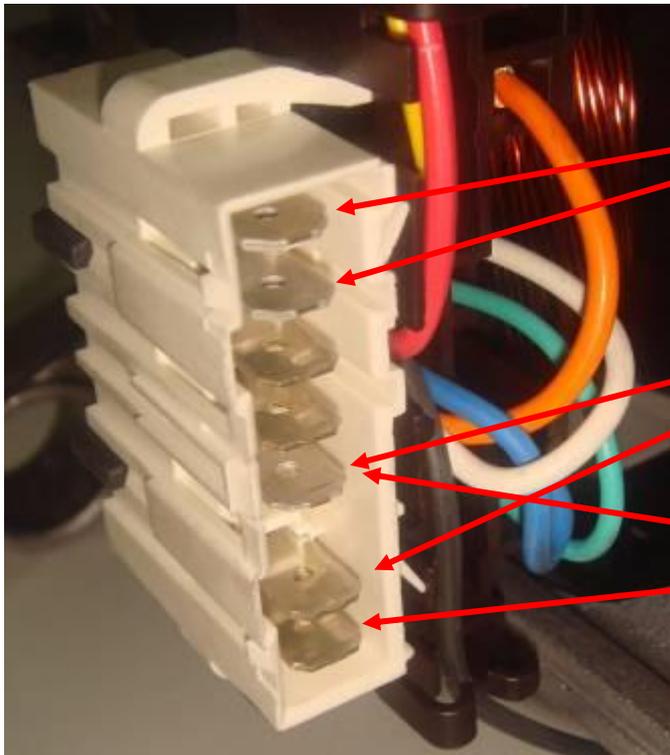
7. Check the water level inside the drum with ruler. It should be 10 cm  $\pm$  1.



## 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.



Tacho  
Socket  
Terminal

Stator Full Field  
Coil Socket  
Terminal

Stator Half Field  
Coil Socket  
Terminal

Motor Socket Terminals

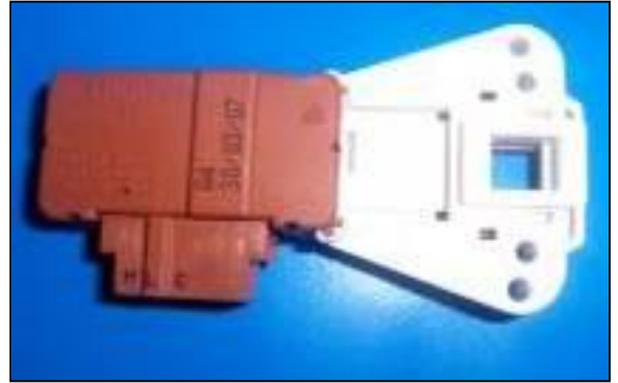
Tacho and stator (full field-half field) ohm resistance values for the motor types are listed in the below table.

MOTOR KODU	FİRMA	STATOR (TAM SARGI) (ohm)	TAKO (ohm)	STATOR (YARIM SARGI) (ohm)	SICAKLIK
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	ANAİMEP	1.87-/+7%	180-/+10%	-	20 °C
30023397	ANAİMEP	1.75-/+7%	180-/+10%	-	20 °C
32002064	ANAİMEP	2.01-/+7%	180-/+7%	-	20 °C
32003425	ANAİMEP	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	İDEA	4.60-/+7%	227-/+7%	-	20 °C
32007954	WELLİNG	2.08-/+7%	66.6-/+7%	-	20 °C
32007955	WELLİNG	1.59-/+7%	66.6-/+7%	-	20 °C
32008852	WELLİNG	2.00-/+7%	66.6-/+7%	-	20 °C
32008853	WELLİNG	2.15-/+7%	66.6-/+7%	-	20 °C

Resistance values for the motor types

## 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 assembled 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

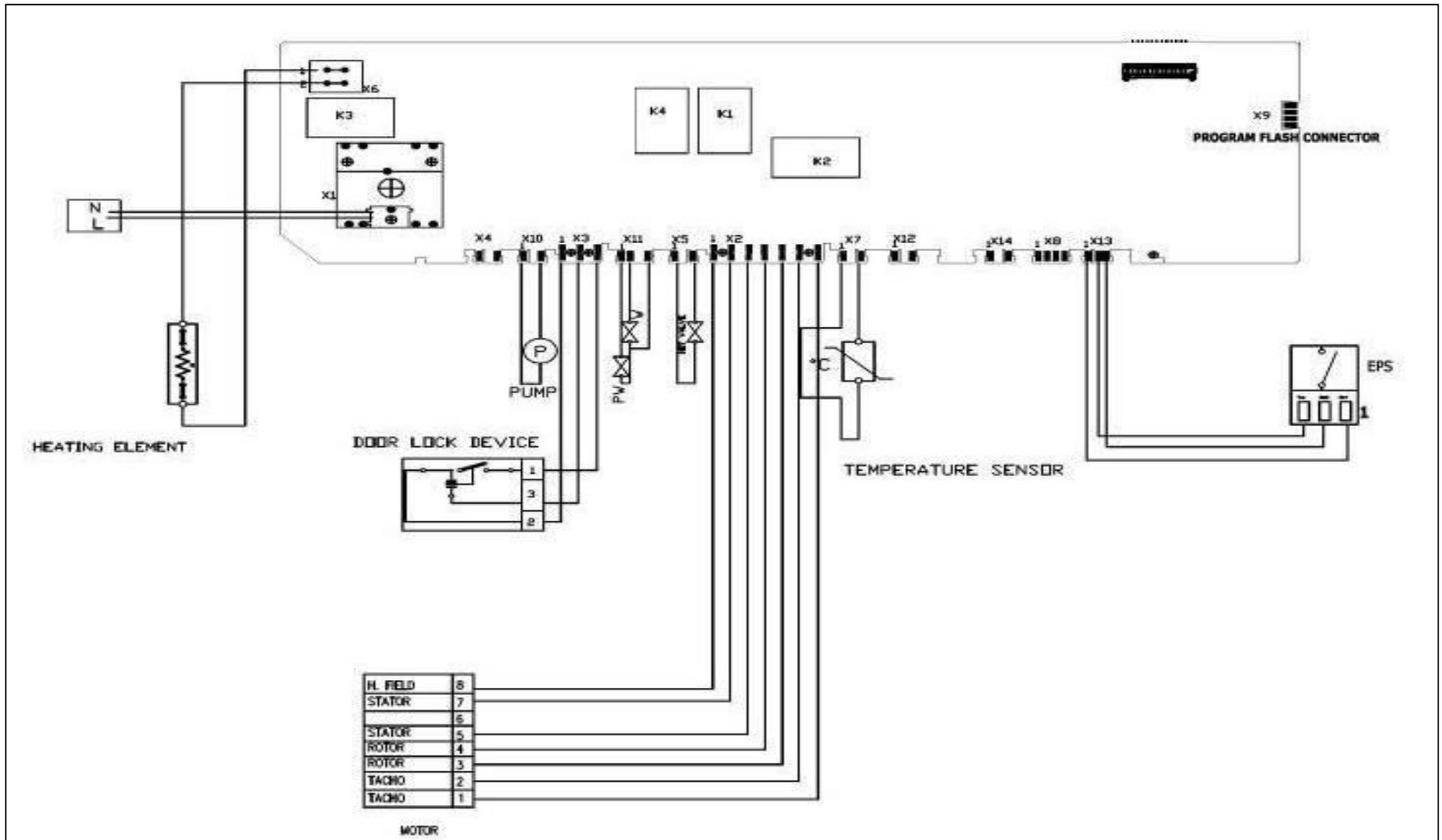
Check the resistance value on the component with multi-meter as shown in below figures.

Resistance value on the PTC should be  $1000 \Omega \pm 50\%$  at 25 °C. That resistance value can be measured from terminal 3-4 (See wiring diagram page 51 below).

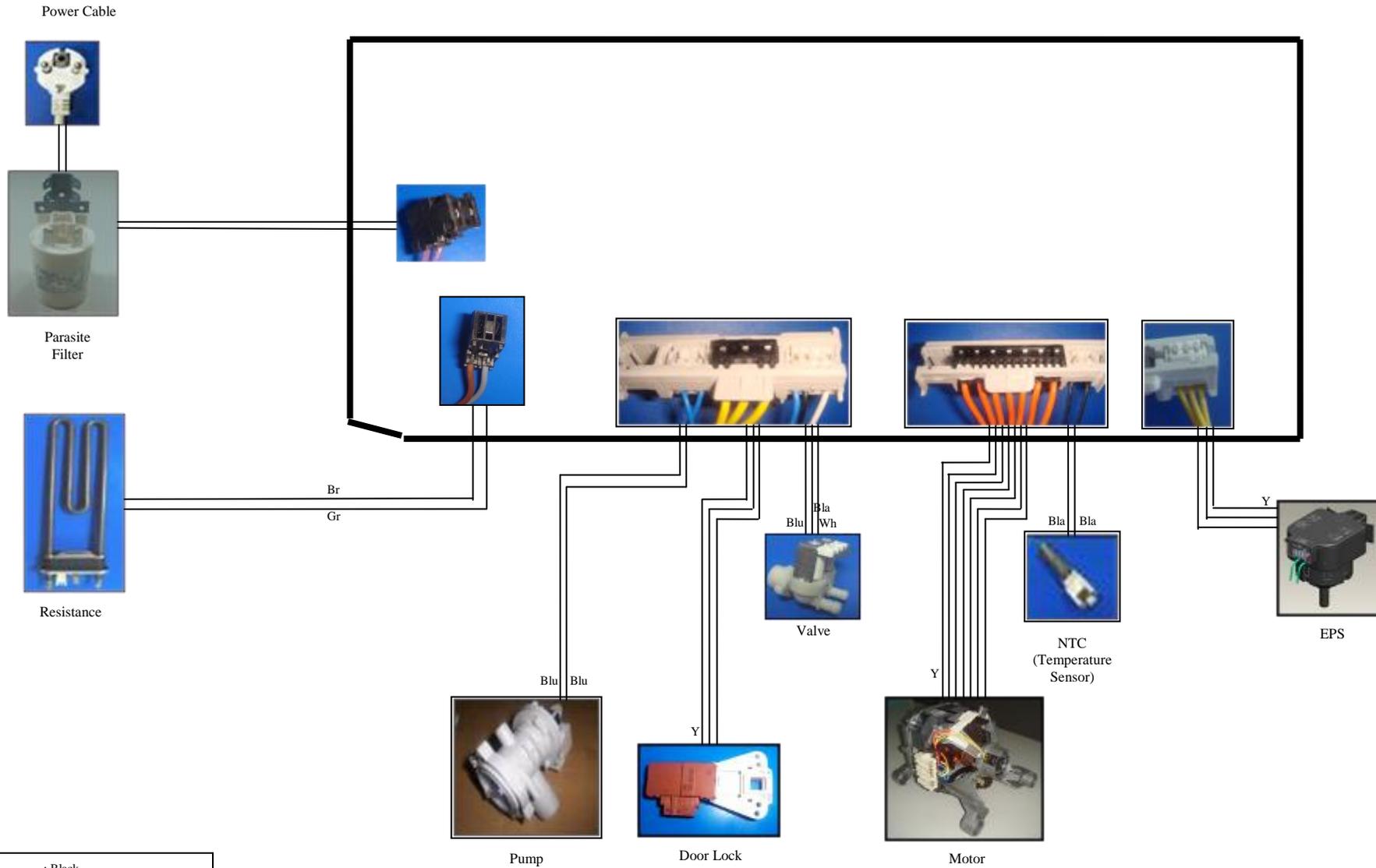


## 9. Wiring Diagram

### 9.1. Wiring Diagram



## 9.1. Wiring Diagram



Bla	: Black
Blu	: Blue
Br	: Brown
Gr	: Grey
P	: Pink
R	: Red
Wh	: White
Y	: Yellow