

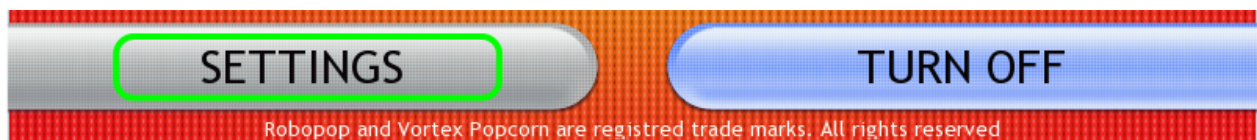
# VORTEX POPCORN™ ΑΠΠΑΡΑΤΑ ROBOPOP® MARK IV TESTING.

1. Check an autonomous operation of OIL WARMER by switching it on. The switch indicator lights up.

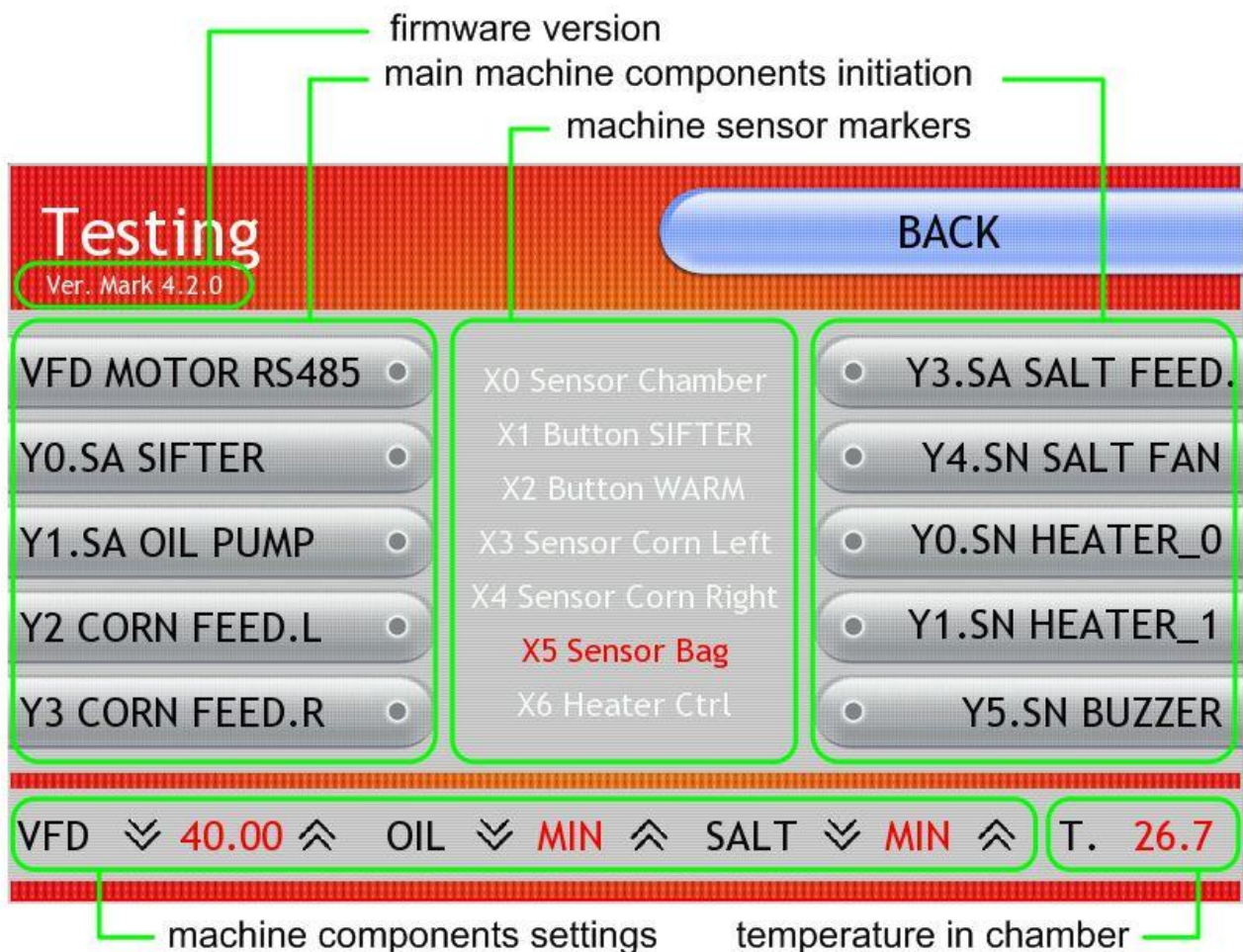


Check an operation of heat elements of an oil heat chamber by touching the bottom side of the chamber. The temperature on the bottom side should be no more than 90 °C. Check the uniformity of the temperature over the entire surface.

2. Turn the popper by pressing START button. Enter a test mode by pressing settings button and entering **3333**.



The setting mode is represented below.



3. Switch on the main motor by pressing VFD\_MOTOR RS485 button. A turbine of the main motor starts to accelerate to the minimal operating frequency. It is 40 Hz. Set 60 Hz by UP

and DOWN arrows.



The motor begins to accelerate to the set frequency. During 3 minutes supervise the motor operation. The motor must not produce any knocking or grinding sounds. Reduce to 40 Hz the frequency of the main motor.

4. Turn on the chamber heating by pressing Q.5 HEATER\_0 и Q.6 HEATER\_1 buttons (the main motor must operate during the heating process). The temperature in the chamber starts to increase. Supervise the heating time. The heating from 30°C to 190°C should take no more than 10 minutes. The temperature should constantly increase without sharp fluctuation during the whole heating process. Turn off the heating process by pressing on Q.5 HEATER\_0 и Q.6 HEATER\_1 buttons.

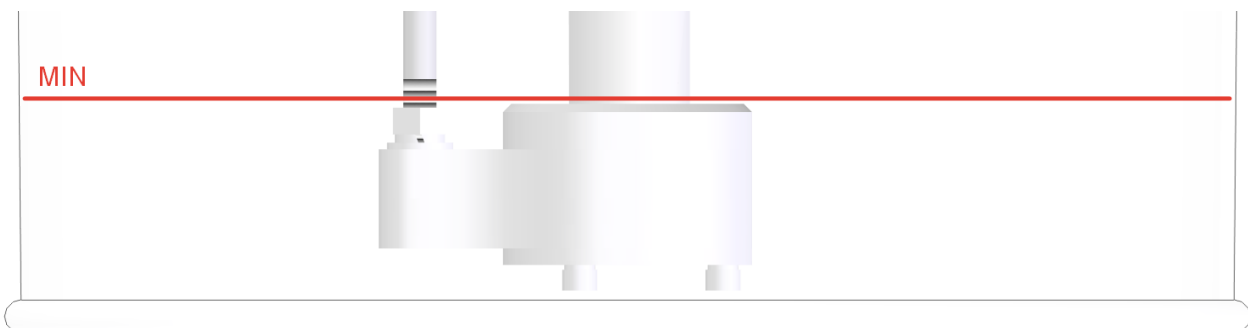
5. Turn on the sifter by pressing Q.0 K504 SIFTER button. The sifter starts to rotate clockwise

**The motor and sifter must operate during the next test stages.**

6. Check an operation of the left corn feeder. An auger of the left corn feeder should rotate when .2 CORN FEED.L button is pressed. Supervise the direction of the auger rotation. The auger should move the corn to the feed hopper. Turn off the left corn feeder.

7. Check an operation of the right corn feeder. An auger of the right corn feeder should rotate when .2 CORN FEED.L button is pressed. Supervise the direction of the auger rotation. The auger should move the corn to the feed hopper. Turn off the right corn feeder.

8. Check an operation of the oil pump. The pump housing should be plunged in liquid oil.



**Turn off the sifter by pressing the corresponding button. For oil collecting put a tray in the sifter.**

Check a connection of the oil pump plug to the popper socket and the oil hose to the oil supply system. Turn on the oil pump by pressing Q.1 K504 OIL PUMP button. Supervise oil advancement in the hose. In 30 minutes the oil begins to drop from the oil sprayer. Supervise the uniformity of oil dropping from the sprayer. Set the maximum oil supply by the corresponding arrows.



Supervise the increase of oil supply and uniformity of oil dropping. Turn off the oil pump. Remove the tray from the sifter.

9. Check an operation of the salt feeder. Turn on the salt fan by pressing Q.4 FAN SALT button. Supervise the salt fan operation. Turn on the salt motor by pressing Q.1 SALT FEEDER button.

10. Check an operation of the buzzer by pressing Q1.0 BUZZER button. The buzzer gives sound. Turn off the buzzer.

11. Check an operation of SIFTER button which is located on the main panel. Press that button, while pressing .6 Button SIFTER indicator should light up.



12. Check an operation of the corn sensors. The corn sensors triggers when the amount of corn in the dispensers is lower than 5 kg. Load 5 kg of corn in the left dispenser. It corresponds to the lower mark. *11.0 Sensor Corn Left* should be colored in red, it means that the corn level is low. Load additionally 200-300 gr. of corn. The Corn indicator turns in white. It means that the corn level is sufficient. The same actions should be done with other sensor. *11.1 Sensor Corn Right* indicator is in charge for the right dispenser.

13. Check an operation of the popcorn sensor which controls the amount of popcorn in the bag. Put A4 page on the cart. The sensor must trigger and *11.2 Sensor Bag* indicator turns red. Put in down on 10 cm and indicator should turn white.

**Turn off the main motor, by pressing the corresponding button.**

14. Check an operation of the popcorn sensor which locates in the chamber. Remove the chamber lid. *1.4 Sensor Chamber* indicator is white, it means that the chamber is clean. Put an A4 page in the middle of the chamber (as shown on the picture below)



The indicator should turn red. It means that the chamber is overfilled with popcorn.

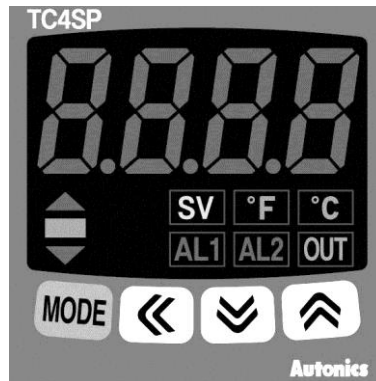
15. Check the emergency stop button. It locates on the back side of the control unit. The popper switches off, the oil warmer switches off as well. The emergency stop button will be fixed in the on position. Turn the button clockwise to unlock it.

16. Reserved termoregulator testing.



ATTENTION! That operation should be performed by qualified personnel who has permission to work with 400 voltage.

Remove the lid from the power control elements. Turn on the popper pressing START button. Enter the testing mode (see 2 point) and turn on the main motor. Find Autonics TC4SP termoregulator.



An temperature sensor of that termoregulator locates close to the heat elements, so the temperature on that termoregulator is upper. Supervise an insignificant fluctuation of the temperature (the main motor should be turned on).

Come out from the testing mode, turn off the popper and close the lid.

17 Press BACK button to go out from the testing mode.



To turn off the popper press and hold for 3 sec TURN OFF button.



18. Equipment operation with popcorn

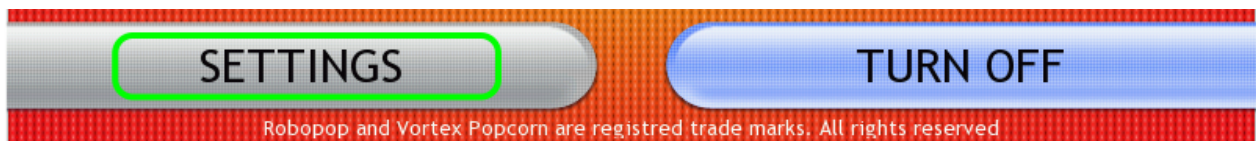
18.1. Load 15 kg of corn to the left dispenser (full dispenser).



ATTENTION! Butterfly corn must be used for that test. Mushroom corn cannot be used for that test.

18.2. Disconnect the oil pump if the testing is carried out on the plant prior to shipment. It is necessary to keep the sifter clean. It is expedient to use oil and salt if the testing is carried out in a cinema. No less than 5 kg of oil and 0,8 kg of salt is necessary for the testing.

18.3 Launch the popper by pressing START button. Press settings button and enter **6666** for opening SETTINGS mode.



The testing mode is representing below

Setting	Value
firmware version	Ver. Mark 4.2.0
password for recipes modification	2325
machine settings	sifter speed: 60, corn auger speed: 36, MIN oil pump rate (1): 100, oil pump suction interval (x4): 25, salt feed interval (x5): 5, oil turn on delay: 120.0, oil turn off delay: 60.0, corn sensor delay: 600.0, chamber cleaning every: 15, password change: 2325, operation time: 162.2, number of starts: 32
chamber cleaning mode	PURGE ON
emergency stop marker	EMERGENCY
chamber overload marker	OVERLOAD
default settings returning	DEFAULT
language change	EN
machine statistics data	operation time: 162.2, number of starts: 32

Come out from the testing mode by pressing BACK button.

18.4. Chose BUTTRFLY button by pressing the corresponding button,

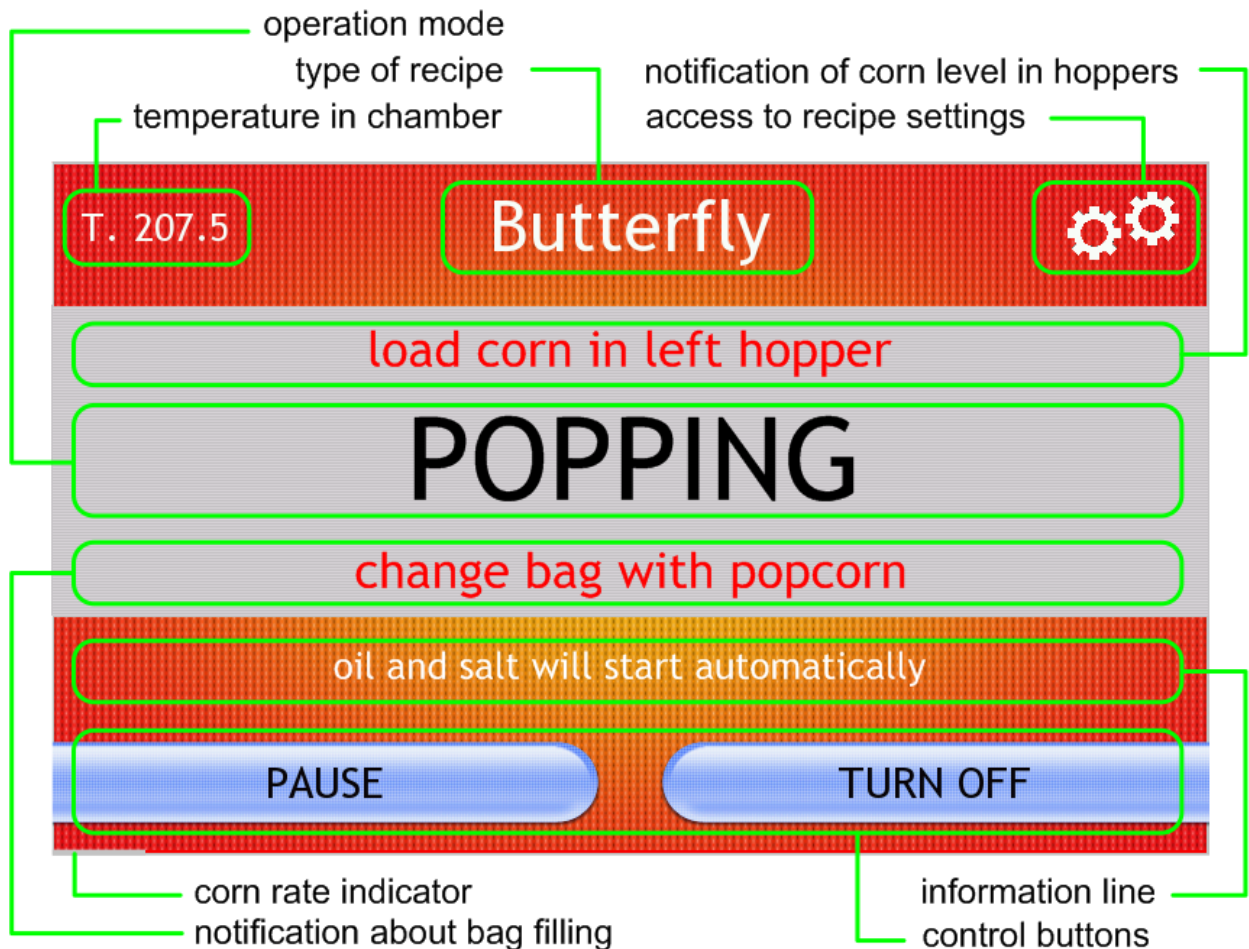


Cooking process starts automatically

turbine speed	45.00
temperature in chamber	210.0
oil feed rate	3
salt feed rate	3

18.5. Make ready carts and bags for popcorn (3 standard bags for popcorn are necessary for 15 kg of corn)

18.6. The Sifter starts to move automatically during heating stage. Wait while the popper reach the set temperature. Heating process takes from 10 to 12 minutes. The screen of the popping process is represented below.



Corn supply begins from the minimum corn speed and gradually increases to the set corn speed. The screen has a white ribbon on the bottom part which indicates the increase of the corn supply. When the ribbon reach the right side it means that the set corn rate is reached. The first popcorn flies out from the chamber in 2 minutes.

It means that the popper reach the set corn rate in 6-7 minutes upon the popping starting.

That process should be supervised through the observation port.

The corn should move uniformly closer to the edges of the bowl. The corn should constantly flies out from the chamber without preconditions to the chamber clogging.

Upon reaching the set corn rate the monitoring of the popcorn should be continued. The sifter should have the constant supply of popcorn, it means that the process in the chamber are stable.

Uniform oil and salt supply should be supervised If the testing is carried out with these ingredients.

Bags with popcorn should be replaced upon filling. To stop temporarily the sifter and replace a bag with popcorn the SIFTER button should be pressed and hold for 1 sec.



The sifter stops on 10 sec. That time is enough to replace a bag with popcorn.



ATTENTION! PAUSE button must not be pressed during testing. If it happens testing should be started again.

Wait until the corn dispenser is empty. The buzzer gives sound when the dispenser will be empty.



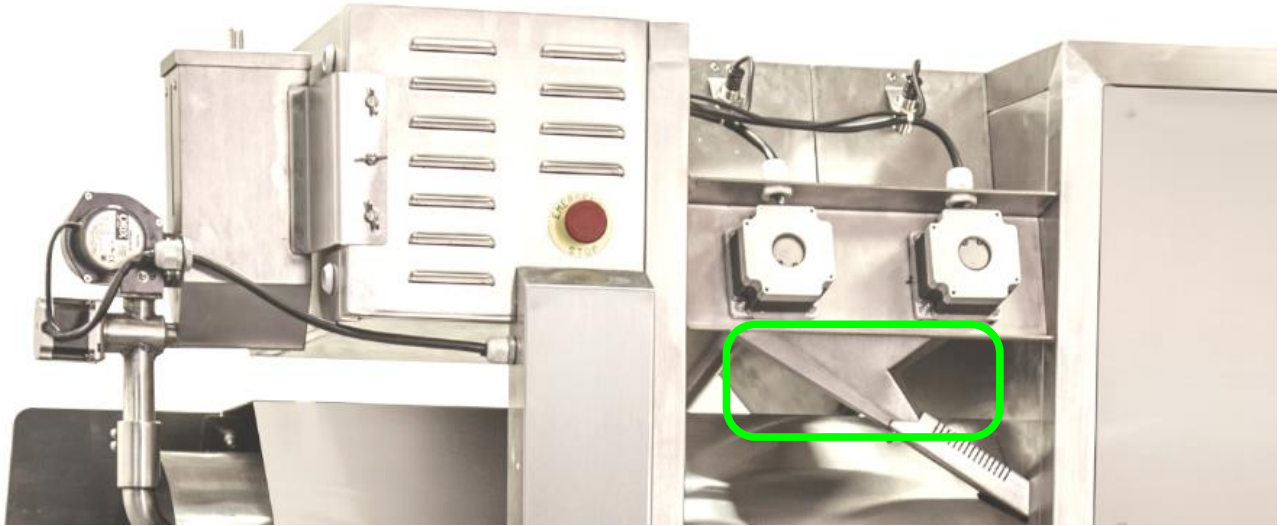
ATTENTION! When corn dispenser has less than 5 kg of corn message with request of corn loading appears on the screen. 5 kg of corn is enough for 10 minutes of operation.

18.7. Upon buzzer triggering turn off the popper by pressing TURN OFF button.



The popper turns to cooling process. The sifter stops when popcorn flies out from the chamber. That stage require the monitoring of the chamber processes. The chamber must not contain burnt corn or unpopped corn.

18.8 Check the temperature on the surface of the feed hopper by hand. It is convenient to do that from the back side of the popper (see the screen).



Feed hopper should always be cold because the hopper takes cold air from the outside.



**ATTENTION!** In case of popper malfunction air flow go out from chamber and makes feed hopper hot. As result temperature on surface of hopper rises over 100°C. Be careful burns are likely!

18.9. Measure the amount of waste product in the tray. That amount should not be more than 5%.

18.10. Upon the chamber cooling turn off the popper and clean the sifter and tray. If necessary the chamber should be cleaned as well, to do it the lid should be removed beforehand.

18.11 Clean the hose of the oil pump by a compressor. It eliminate the possibility of oil freezing.