

## ***The flow sheet for Robopop popcorn machines.***

Popcorn machine Robopop has the following work algorithm:

1. We need to get popcorn which would satisfy us by flavor and quality. For corn, salt and oil supply, we can use either the factory settings or our own setting.

The following parameters will be applied to the popping during that test: the level of corn supply – 5, the level of salt supply – 5, the oil supply - “ON”, the supply frequency – 80%, the machine – Robopop Mark 3.

2. After the parameters are set (corn, salt and oil supply) the actual flow rate metering for corn, salt and oil should be done.

2.1. 10 kg corn, 1 kg salt and 5 kg oil should be filled in the feeders.

2.2 Switch on the machine. Select one of the preset recipes by pressing the button <<BUTTERLY>> or <<MUSHROOM>>. Currently it’s “BUTTERFLY”. After pressing the corresponding button you will see the recipe screen where you can get familiar with pre-settings.

To start popping, press the button <<START>>. As soon as popping process starts, the corn feeder will be activated, and the corn will be fed into the chamber. If the recipe requires the use of salt and oil, they will be automatically supplied only after popcorn comes into the sifter.

Wait until the corn feeder will be empty, the machine will notify you about that by the sound signal and the corresponded message. Now you can deactivate the machine.

2.3 After the popping is over, the residual oil and salt should be weighed. For the salt weigh you should remove it by the help of the plastic spoon. The bucket with oil should be weighed on the scale.

2.4 According to the selected settings, there should be left: oil – 3,5 kg, salt – 700 g. Using these settings the popping time for 10 kg kernels will be 20-25 minutes.

3. Using these figures the dependence from the row materials consumption to the kernels can be composed. Accordingly under the selected settings the row materials consumption for 1 kg kernels will be: oil – 150g, salt - 30 g.

| Designation | the row materials consumption for 10 kg | the row materials consumption for 1 kg |
|-------------|---|--|
| OIL         | 1,5 kg                                  | 150 g                                  |
| SALT        | 400 g                                   | 30 g                                   |

4. On the next stage we should determine how many corn, oil and salt contain in 1 kg of popcorn.

4.1 For that we have to weigh the popcorn. In the present case the popcorn weight is 10 kg, the weight of oil and salt are the same. It allowed us to say that the popped corn weight is 8,2 kg.

4.2 After the division of popped corn, oil and salt, we are able to calculate the percentage proportion of every component. These figures we can accumulate in a table.

| Popcorn | Oil | Salt |
|---------|-----|------|
| 82%     | 15% | 3%   |

### **Reference materials:**

Robopop Mark 3 and Mark 3DF have six corn feed gears, each gear correspond to next corn feed quantity (+/- 1 kg).

| The machine speed           | Min | 2  | 3  | 4  | 5  | 6  | Max |
|-----------------------------|-----|----|----|----|----|----|-----|
| Corn feed quantity per/hour | 10  | 14 | 18 | 22 | 26 | 30 | 34  |

For Mark1 and Mark2 the sequence is next (+/- 1 kg):

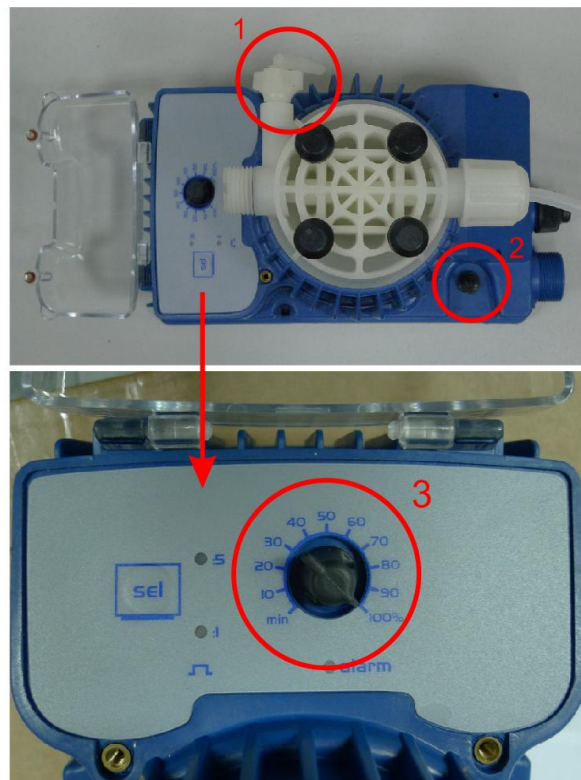
|                             |     |    |    |    |    |     |
|-----------------------------|-----|----|----|----|----|-----|
| The machine speed           | Min | 2  | 3  | 4  | 5  | Max |
| Corn feed quantity per/hour | 14  | 18 | 22 | 26 | 30 | 34  |

The maximum level of salt supply in factory settings for all machine types (Robopop Mark 1, Mark 2, Mark 3, Mark 3DF) is 1,5 kg per hour.

The oil supply regulator is located on the pump surface item 3 (see the figure below) which allow to regulate the oil value from 0% till 100%. 100% regulator value corresponds to 5-5,5 oil supply per hour.

The oil supply on the recipe settings has only two position “ON” and “OFF”.

Also there is a switch on the pump surface item 2. To ensure that the pump operate correctly and get on/off signal from the main controller, the switch should be in “ON” position.



Recommended settings for Robopop Mark 3 and Mark 3DF are next:

| BUTTERFLY       |    | MUSHROOM        |     |
|-----------------|----|-----------------|-----|
| CORN INPUT RATE | 5  | CORN INPUT RATE | 5   |
| SALT INPUT RATE | 5  | SALT INPUT RATE | OFF |
| OIL INPUT RATE  | ON | OIL INPUT RATE  | OFF |