

# **RoboLabs**

Incredible machines for funfood & fastfood

## **OPERATION MANUAL**

**CARAMELIZER**

**SUGARLIPS CP-10**

**2017**

# 1. DESCRIPTION AND OPERATION

## 1.1. DESCRIPTION

SugarLips CP-10 is intended for making caramel coated popcorn.

## 1.2. TECHNICAL SPECIFICATIONS

Productivity	up to 14 kg/h
Kettle capacity	37,5 l
Rated voltage	380 VAC 50Hz
Rated power	5 kW
Overall dimensions	760x500x900 mm
Weight	50 kg

In accordance to the standard IEC 60204-1 the machine must be connected to the mains equipped with ground contact.

The popcorn machine must be operated at the environment temperature from +5° to +40°C (41°F to 104°F) and relative humidity not more than 50% (at 40°C). Temperature decreasing correlates with possible increasing of humidity (e.g. the temperature 20°C is possible with maximum relative humidity up to 90%). Altitude above sea level should not exceed 1000 m.

Ingress protection rating IP22 (IEC 60529). The machine must be operated indoors; production room must be equipped with purge ventilation.

## 1.3. DELIVERY SET



*The machine is supplied assembled and does not require additional assembling. The machine is ready for use after unpacking.*

The machine delivery set includes the following:

SugarLips CP-10	1 pc.
Kettle lid	1 pc.
Plastic bucket	1 pc.
Plastic box	1 pc.
Documentation set	1 copy

## 1.4. PRINCIPLE OF OPERATION

SugarLips CP-10 general appearance is shown in Fig.1. The machine has a kettle (1), where caramel is being cooked and popcorn is being coated with caramel. A mixer (2) installed in the kettle allows proper cooking of caramel and popcorn coating with caramel. The machine is controlled via control panel (3).

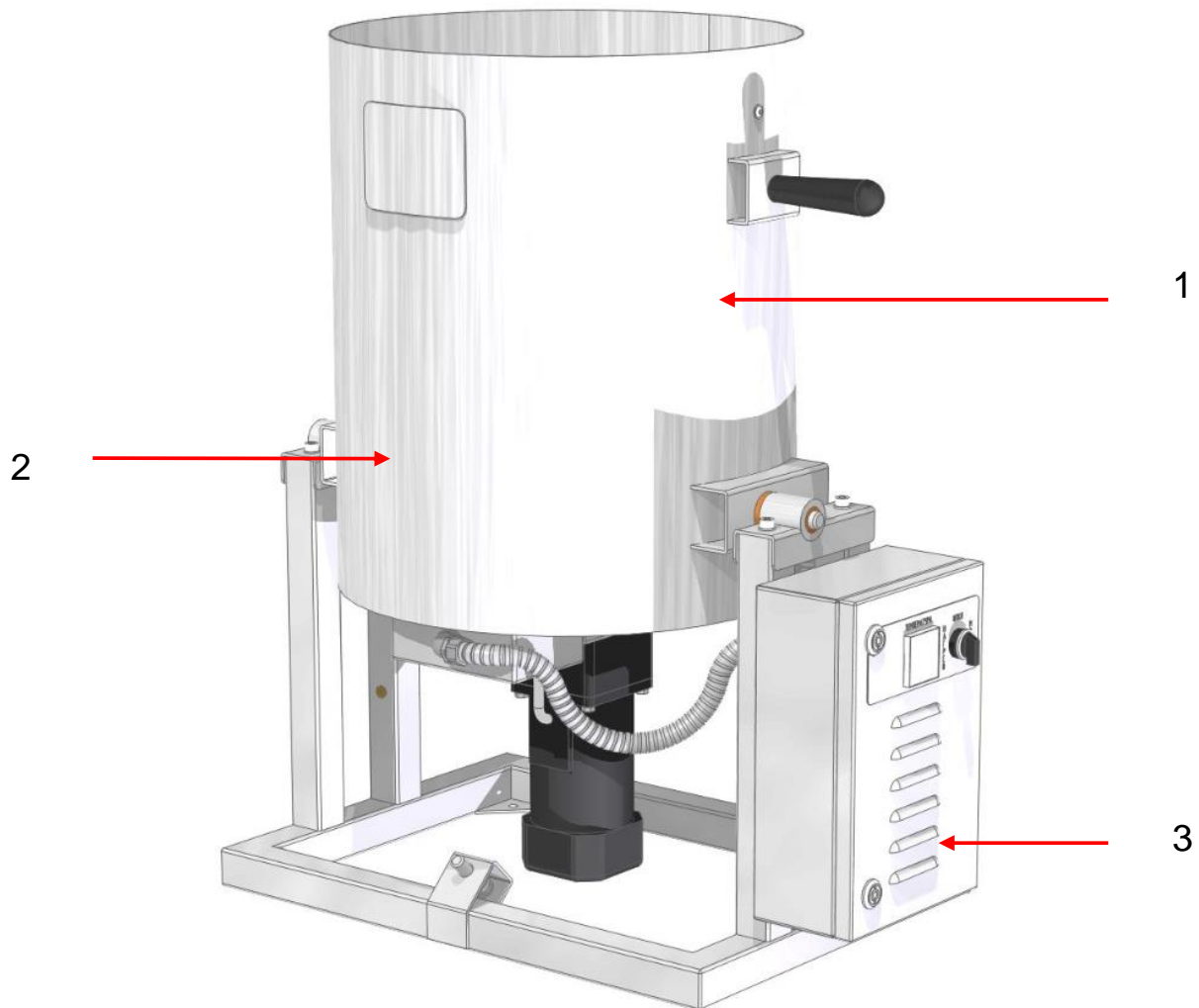


Fig.1 SugarLips CP-10 (mixer not shown)

The principle of operation of the machine is the following:

Operator adds all ingredients of caramel, in accordance to the recipe used, in the kettle (1); then turn on the machine and set the temperature on the control panel (3). The mixer (2) turns periodically to provide uniform heating and mixing of caramel.

Once the set temperature is reached, operator dumps previously popped popcorn into the kettle. The mixer (2) rotates continuously, thus providing even covering of popcorn with caramel.

Once popcorn is covered with caramel, operator dumps the popcorn onto receiving equipment (not included in the delivery set).

## 2. INTENDED USE

### 2.1. SAFETY REQUIREMENTS

CAREFULLY READ THE OPERATION MANUAL BEFORE START!

ONLY INSTRUCTED PERSONNEL ARE ALLOWED TO OPERATE THE MACHINE!

During machine operation a lot of warm, moisture and specific smells are emitted, so it is recommended to provide a ventilation hood over the machine, 800x800 mm or bigger, and not less 500 cu.m per hour.



**ATTENTION! MANY PARTS OF THE MACHINE ARE VERY HOT! BURN HAZARD!**

### **ATTENTION!**

- IT IS NOT ALLOWED to wash electric parts of the machine with water; only damp cloth is allowed!
- IT IS NOT ALLOWED to clean the machine while it is connected to the mains! Ignoring this rule may cause injury or death!
- IT IS NOT ALLOWED to clean the machine while it's hot! Ignoring this rule may lead to serious burns!
- IT IS NOT ALLOWED to disassemble the machine while it's connected to the mains!
- IT IS NOT ALLOWED to change the design of the machine!
- IT IS NOT ALLOWED to use heavy and abrasive ingredients in the machine!

### **PROTECTORS AND SYSTEM LOCKUPS**

A contactor, which runs the heating elements, is powered through emergency thermostat, sensor of which is located inside the kettle's bottom. In case of temperature regulator failure and heating elements overheating the emergency thermostat break the contactor, thus avoiding kettle overheating.

There is an automatically operated electrical switch (circuit breaker) installed at the mains input inside the machine. There is also a voltage relay included in the beginning of the circuit, which won't let to turn on the machine in case if the mains voltage is too low or too high (the range is set on the relay), excluding any risk of machine failure due to improper hook-up or surges.

### 2.2. AMBIENT REQUIREMENTS

Popcorn is a very hygroscopic product. Popcorn imbibes moisture very fast if production and storage conditions are not complied. Upon moisture imbibing it becomes tasteless and chewy.

RoboSugar CPA-10A cooking accompanies with heat and specific odors emission, so 500 cu.m/h purge ventilation with 800x800 mm hood is recommended to install over the machine.

The maximum moisture should not be more than 45% at 24°C. Popcorn will imbue moisture quickly If the moisture is higher than 45%.

Corn should be kept in dry place in closed bags at a temperature not higher than 18°C. Popcorn has good crunchiness when it has 1-2% of moisture.

## 2.3. GETTING STARTED

Carefully unpack the machine, check the delivery set completeness and remove the protective film.

Install the machine on the smooth surface

The machine is to be connected to power source by skilled electricians. Three-phase 5-cable circuit with ground wire shall be used for the machine connection.



ATTENTION! Don't connect to the mains with different voltage/current, otherwise it will lead to the machine malfunction. In that case the manufacturer doesn't take any responsibility for damage. Stable power supply and voltage with the accordance to the technical specifications required for proper operation of the machine.

Check the agitator rotation. Turn the switch in MIX position, the agitator should rotate clockwise. If the agitator rotates counter-clockwise, the equipment should be disconnected from the mains and 2 phases should be shifted in the plug.

## 2.4. POWER REQUIREMENTS

The caramelizer is to be connected to power source by skilled electricians. Single-phase circuit with ground wire shall be used for the machine connection.



ATTENTION! DO NOT CONNECT TO VOLTAGE HIGHER CAMELIZER OR OTHER CURRENT TYPE; OTHERWISE IT WILL LEAD TO MACHINE BREAKAGE. MACHINE BREAKAGE CAUSED BY HIGHER VOLTAGE OR OTHER CURRENT TYPE IS NOT THE WARRANTY CASE!

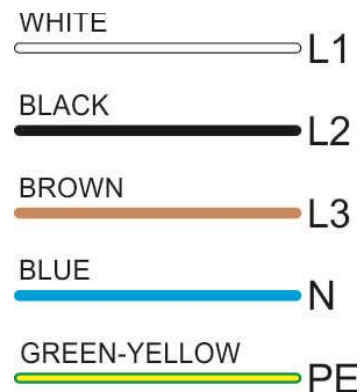


ATTENTION! STABLE ENERGY SUPPLY IS NECESSARY FOR MACHINE OPERATION!



ATTENTION! THE MACHINE SHOULD BE CONNECTED TO THE MAINS BY A QUALIFIED ELECTRICAL STAFF ONLY!

The machine is connected to 380V AC power supply mains, in accordance to the diagram shown.



ATTENTION! IT IS PROHIBITED to connect the machine to the mains without ground connection!

The machine is delivered without a cable plug. It is recommended to use 3P+N+E, 32A cable plug to connect the machine.

It is necessary to periodically check electric wires and ground connection of the machine. In case of faults found, an electrician must be called. It is allowed to turn on the machine only after all the issues resolved.

## 2.5. OPERATION MODE

The machine is controlled via control panel. There are temperature regulator and 3-position switch are located on the control panel (Fig.2).

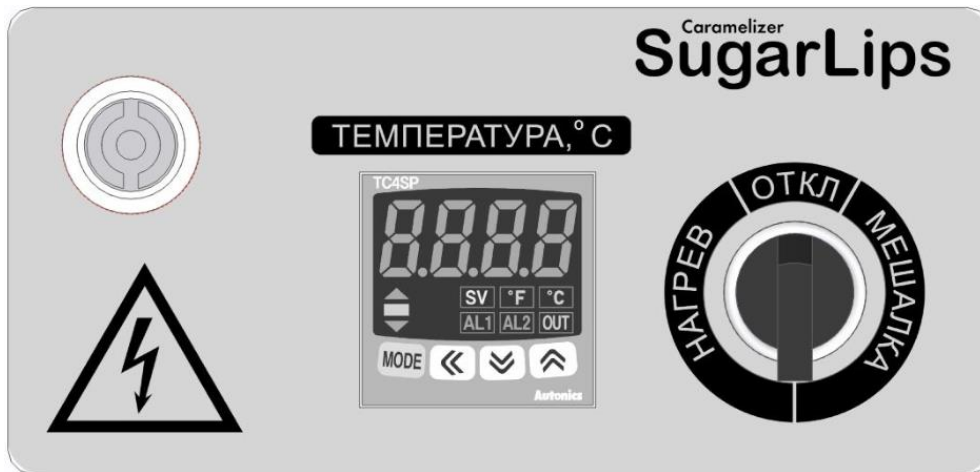


Fig.2 Control panel

The switch has the following positions:

**OFF** — on this position all components of the equipment are disengaged.

**HEATING** — it is the starting position. In this position, temperature regulator turns on and starts heating process; the mixer starts to rotate. During cooking stage, the mixer rotates periodically.

**MIXING** — in this position only mixer is engaged, rotating continuously.

In order to make caramel coated popcorn, do the following:

1. Add all ingredients, in accordance with certain recipe, into the kettle, and then set the switch to HEATING position.
2. Once temperature reaches the set point, sound alarm indicates that caramel is ready. Turn the switch in the MIXING position, mixer starts to rotate. Put previously popped popcorn into the kettle. Use a plastic bucket included in the delivery set for loading popcorn in the kettle. Wait until popcorn is evenly covered with caramel. It will take about 1.5 minute.
3. In 1.5 minute dump popcorn from the kettle onto receiving equipment. **ATTENTION!** Receiving equipment isn't included in the delivery set!
4. If you're going to proceed with another batch of caramel, then return the kettle in the start position, set the switch in HEATING position, and immediately put all ingredients of caramel into the kettle.
5. If this was the last batch, return the kettle in the start position, set the switch in OFF position. After this pour not more than 4 litres of water into the kettle and perform kettle cleaning in accordance with section 3.3.

*Caramel recipe #1:*

- *Corin Super Glaze «Premix» mix or similar – 1300 g*
- *Beet or cane sugar – 1200 g*
- *Coconut oil or butter – 200 g*
- *Water – 500 g*

- *Lecithin Free-N-Easy*

*Caramel recipe #2:*

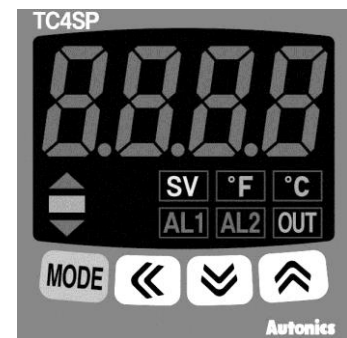
- *Corin Super Glaze «Premix» mix – 1050 g*
- *Beet or cane sugar – 750 g*
- *Coconut oi or butterl – 150 g*
- *Water – 375 g*

## 2.6. TEMPERATURE SETTING

To adjust the temperature do the following:

- 1 – turn on the machine, by shifting the switch in ON position.
- 2 – set the temperature on the thermoregulator using up and down arrow keys.

The temperature range can be set within the range 90-180°C.



Due to constructive features of RoboSugar and SugarLips, temperature value that set on the thermoregulator may be different, depending on recipes used, ambient conditions and other factors. One should consider the taste of final product, but not certain temperature value. The following recommendations will help you to find out the right temperature that should be set on the thermoregulator.

1. Make a batch of caramelized popcorn with default temperature setting (165°C). Taste it.
2. If caramel is sticky to the tooth, it means that caramel is **undercooked**; therefore, the temperature value must be **increased**.
3. If caramel has bitter taste with hint of burnt, it means that caramel is **overcooked**; therefore, the temperature value must be **reduced**.
4. Caramel that cooked with normal temperature and properly cooled is crunchy and doesn't stick to the tooth.

Sometimes one can see temperature overrun on the display. Usually it happens after dumping caramelized popcorn onto the cooling belt, in the end of mixing stage. It is not considered as malfunction of the machine.

It is highly recommended to manage the whole workflow in a way that next batch of caramel ingredients (or water for technical maintenance) is loaded into the kettle immediately after ending of mixing stage.



## 3. MAINTENANCE

### 3.1. GENERAL INSTRUCTIONS

The maintenance purposes are to keep the machine operable during the entire service life.

The maintenance should be done as necessary.

The recommended maintenance schedule with types of actions is presented below.

№ п/п	Actions	Period
1	Kettle cleaning	once a day
2	Outer surface cleaning	once a day

### 3.2. SAFETY MEASURES

Prior to maintenance, disconnect the machine from the electrical mains.

Do not wash electrical parts and control unit with water. You may wipe them with a soft cloth moistened in a soap solution.

Cleaning machine hot surface without waiting for them to cool is prohibit. That rule ignoring may lead to serious burns.

### 3.3. MAINTENANCE PROCEDURE

At the end of a shift the kettle must be thoroughly cleaned with warm water. It is necessary to pour into the kettle not more than 4 litres of water, then set the switch in HEATING position. Close kettle with the lid and wait until water starts to boil. In a few minutes turn off the machine and leave it for some time with lid closed. This will allow to clean inner surface of the kettle, including sidewalls. Once the kettle and water are cooled down, one may proceed to kettle cleaning.

There might be some scale formation on the kettle bottom. Small amount of scale doesn't affect operation of the equipment. Use specialized agents to remove scale as necessary.



*ATTENTION! Do not let all the water boil out of the kettle! It will make cleaning procedure way more complicated!*



*ATTENTION! It is not allowed to clean the kettle with abrasive agents or using sharp objects! The kettle made of aluminium and ignoring this rule may result to damage of inner surface of the kettle!*

### 3.4. PRESERVATION

If the equipment is not used for a long time, perform all maintenance routine.

## 4. TRANSPORTATION AND STORAGE

The equipment may be transported by any kind of covered vehicle, in accordance with transportation rules for this kind of vehicle.

Ambient temperature during the transportation and storage must be between minus 25°C to +55°C.

## 5. ACCEPTANCE CERTIFICATE

Caramelizer meets all necessary requirements and is approved for operation.

### TEST CERTIFICATE

SugarLips-CP10  
Product name

\_\_\_\_\_  
Serial no.

The equipment is made with accordance to the mandatory requirements of the state standards, actual technical documentation, and approved for use.

QC Engineer

\_\_\_\_\_  
Personal signature  
\_\_\_\_\_  
DD. MM. YYYY

\_\_\_\_\_  
Full name

## 6. WARRANTY OBLIGATIONS

The manufacturer guarantees trouble-free operation of the equipment during 12 months from the date of receiving the equipment by dealer (in accordance with the transport documentation); or, in case of purchase directly through Business Russia LLC, from the purchase date, given that the terms of using, transportation, and storage are met.

The warranty repair is performed upon presentation of this manual and warranty card filled with the seller's seal and the date of sale.

Technical specifications of the equipment can be changed by the manufacturer at any time due to the date and/or other reasons. Technical specifications stated in this document are intended to act as a reference point, which is necessary to evaluate suitability of the equipment for the customer's needs, and are not the subject of warranty policy.

The information stated in this document has been checked thoroughly and considered as accurate one; nevertheless, the manufacturer is not responsible for any typographical errors or misprints.

Due to constant improvement of the equipment, technical specifications are subject to change without prior notice.

## 7. MANUFACTURER'S DETAILS

NPO Tvertorgmash LLC  
11 Industrial Street, Tver, 170000 Russia

Technical support is available:

Email: [support@roboabs.pro](mailto:support@roboabs.pro)  
Phone: +7 495 956 4000 ext.2627

**APPENDIX A. SPECIFICATION OF THE WIRING DIAGRAM**

<b>Signs</b>	<b>Name</b>
AT	Thermostat
BT	Temperature sensor
BZ	Buzzer
DC1	Temperature controller
DC2	Controller
EK1, EK2, EK3	Heater
KM1, KM2	Contactor
K1, K2, K3	Electromagnetic relay
M1	Electric motor for mixer
Q1	Emergency switch
S1	3-way switch
VS1, VS2, VS3	Solid State Relay