

# ENGLISH MANUAL

## CENTRIFUGAL CREAM SEPARATOR

100 L electric

Voltage: 120±20 or 220±20 see markings on the box

**PLEASE READ THE INSTRUCTIONS CAREFULLY BEFORE  
THE FIRST USE!**

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**TO WATCH THE VIDEOS ABOUT THE SEPARATOR USE**

**PLEASE NOTE THAT MILK HAS TO BE 100F (37C) FOR  
PROPER SEPARATION!**

The centrifugal cream separator (hereinafter called the separator), has an electric drive with a productive rate of-100 liters per hour. It is designed to separate whole milk into cream and skimmed milk while simultaneously removing contaminants. Due to ongoing design developments and quality and maintenance improvements at the manufacturing facility, some parts and assembly units may vary from those listed in this data sheet.

### 1. TECHNICAL SPECIFICATIONS

1. Milk output, l/h, not less than	100
2. Drum rotational speed, min <sup>-1</sup>	10500±1000
3. Number of disks in the drum, pcs.	10...12
4. Milk bowl capacity, l	12
5. Butter-fat content in skimmed milk, % , not more than	0.05
6. Butter-fat/skimmed milk volume proportion adjustment range	1:4 to 1:10
7. Power consumption, W, not more than	60
8. Supply voltage, V(depending on the model)	220±10%
9. Supply frequency, Hz	50 or 60 (depending on the model)
10. Separated milk temperature, °C	35...40
11. Overall dimensions, mm, not more than:	
– bowl diameter	365
– height	520
12. Weight, kg, no greater than	6

### 2. COMPONENTS

The separator consists of the following parts:

2.1. Milk bowl assembly, pcs	1
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2.2. Drum assembly, pcs.	1
2.3. Casing assembly with electric drive, pcs.	1
2.4. Float chamber, pcs.	1
2.5. Float, pcs.	1
2.6. Cream receiver, pcs.	1
2.6. Skimmed milk receiver, pcs.	1
2.8. Plug, pcs.	1
2.9. Datasheet, pcs.	1
2.10. Packing case, pcs.	1
2.11. Spare parts and accessories:	
a) Rubber ring (for drum sealing), pcs.	1
b) Special wrench, pcs.	1
c) Polyethylene covering, pcs.	1

### 3. DESIGN AND OPERATING PRINCIPLES

3.1. The separator (see Fig. 1) consists of the casing (3) with an electric drive (6), drum (2), skimmed milk receiver (21), cream receiver (11), float (5), float chamber (4), milk bowl (1), and plug (10).

3.2. The switch (16) and electrical cord are mounted on the casing (3).

3.3. The electric motor (6) is attached to the casing (3) with three stud assemblies (18). Shock absorbers and bushings (15) in the electric engine flange are used to reduce vibrations upon starting the motor and to prevent the drum (2) and conical end extension of the drive shaft from shifting,

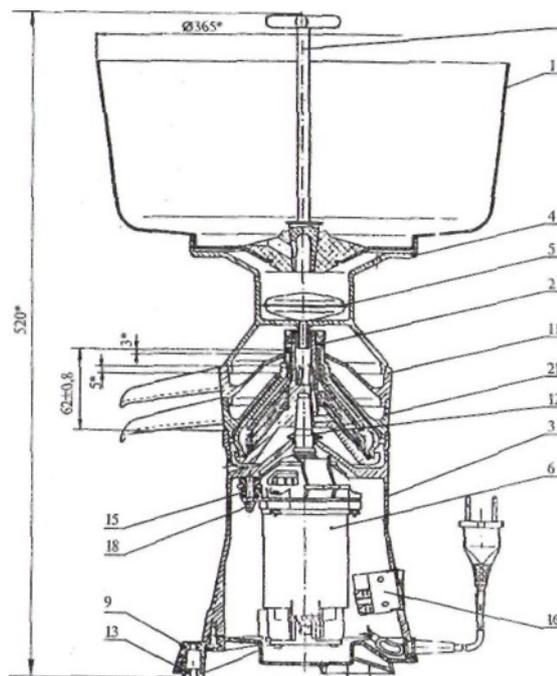
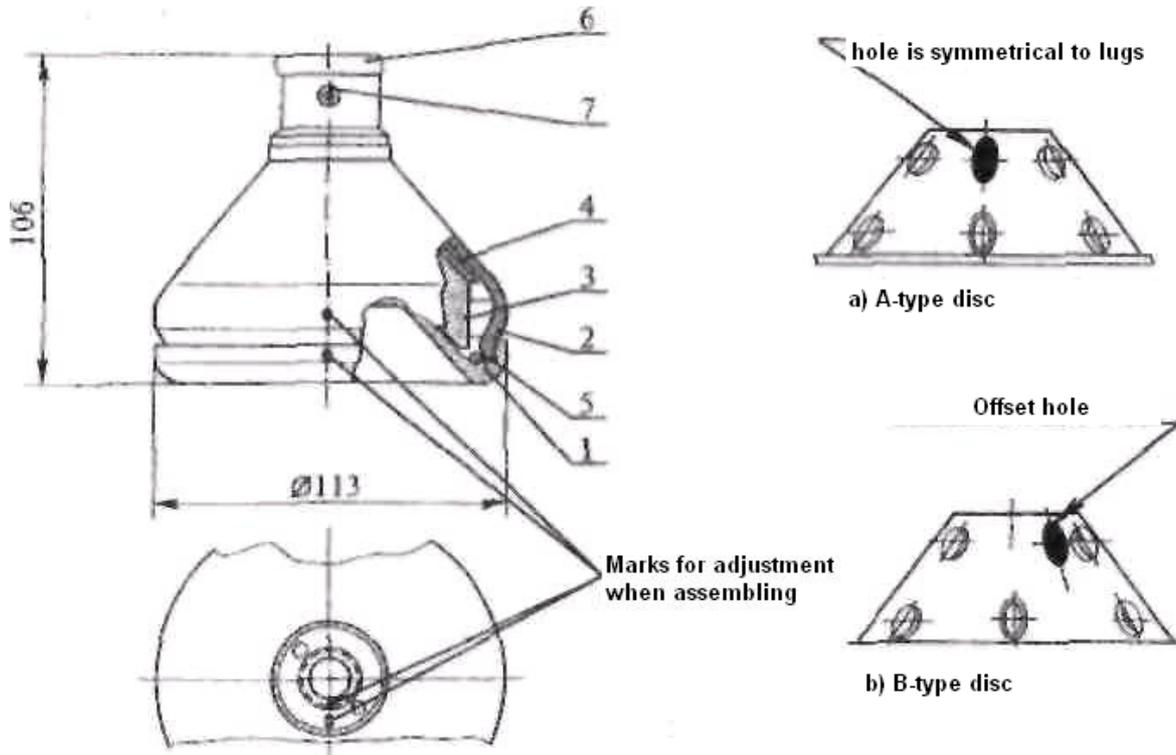


Figure 1. Centrifugal Cream Separator

1 – milk bowl, 2 – drum, 3 – casing, 4 – float chamber, 5 – float, 6 – electric motor, 9 – support, 10 – plug, 11 – cream receiver, 12 – reflector, 13 – bushing, 15 – bushing, 16 – switch, 18 – nut, 21 – skimmed milk receiver

3.4. The major operating element is a drum (see Figure 2). The process of separating whole milk into cream and skimmed milk occurs in the drum using centrifugal action. The drum consists of a disk holder (1) with a set of aluminum discs (3), a separating plate (4) with an adjusting screw (7), a cover plate (2), a sealing ring (5), and a nut (6).



1 – disc holder, 2 – cover plate, 3 – discs, 5 – ring, 6—screw nut, 7 – screw

Figure 2. Drum

3.5. The delivery mechanism (hereinafter called the vessel) delivers preheated milk to the drum, and is used to extract cream and skimmed milk from the drum.

The vessel (Figure 1) consists of the milk bowl with a plug, float chamber, float, cream receiver, and skimmed milk receiver.

#### 4. SAFETY PRECAUTIONS

**ATTENTION! READ THIS DATA SHEET CAREFULLY BEFORE OPERATING THE SEPARATOR.**

4.1. Do not operate the separator continuously for more than one hour. After one hour, allow the unit to cool for 20 to 30 minutes.

4.2. If the separator emits unusual sounds or excessive vibrations, turn it off and investigate the cause.

*Note: Slight "chattering" from the separator vessel are normal when the unit is operating without milk in the milk bowl, such as at the end of separation.*

4.3. Do not operate the separator with a loose drum nut (6), Figure 2.

4.4. Do not disassemble the separator until the drum fully stops.

4.5. Do not operate the separator with faulty electrical wiring.

4.6. Switch off the separator and unplug it before cleaning it. Do not unplug by pulling on the cord.

4.7. Do not remove the milk feed plug until the drum reaches its full rotational speed (about 30 to 40 seconds after turning it on).

4.8. Do not turn off the separator's electric drive when the plug is not in place and milk is entering the rotating drum.

4.9. Do not operate the separator at voltage levels below 190V. In cases where voltage falls below the allowable margin, use a domestic voltage regulator before turning the separator on.

## 5. SETUP PROCEDURES

5.1. The separator must be installed in a dry, dust-free environment with a humidity level of 65(±15) percent.

5.2. The installation area must be flat and even. The separator should be secured using the three screw and washer assemblies through the hole in the support (9) (see Figure 1).

5.3. If the separator has been in long-term storage at sub-zero temperatures, it must be placed in a warm, dry location for at least six hours before switching it on.

## 6. INSTALLATION

6.1. Before turning on the separator, it must be properly assembled. Start by placing the drum assembly on the tapered part of the shaft and slightly pressing it with your hand (see Figure 1).

6.2. Install the skimmed milk receiver (21) and the cream receiver (11). Check for proper positioning on the casing and in relation to each other.

*Note: For separators with a plastic casing, the skimmed milk receiver's (21) notch must be aligned with the lug inside the casing.*

6.3. Use your hand to turn over the drum nut, making sure it does not come into contact with the casing or skimmed milk and cream receivers.

6.4. Place the nozzles on the skimmed milk and cream receivers, and set up the bowls. The larger one is for the skimmed milk and the smaller one is for the cream.

6.5. Attach the float chamber and put the float into the chamber. Install the milk bowl, and insert the plastic plug into the hole of the casing at the bottom of the milk bowl.

*Note: The plastic float chamber's notch must align with the slot on the cream receiver.*

**ATTENTION! THE PLUG INSIDE THE MILK BOWL MUST BE IN THE CLOSED POSITION, I.E. THE SHARP-POINTED PLUG HANDLE MUST BE TURNED SIDEWAYS FROM THE NOTCH ON THE MILK BOWL'S EDGE. SWITCH ON THE SEPARATOR ONLY WITH THE KEY SWITCH.**

6.6. Before plugging in the separator, set the key switch to the "OFF" position ("0"). Once you confirm that the key switch is in the OFF position, you may plug in the separator.

**ATTENTION! DO NOT OPERATE THE SEPARATOR IN FACILITIES THAT ARE NOT PROTECTED BY AN OVERLOAD AND SHORT-CIRCUIT PROTECTION DEVICE.**

## 7. MILK SEPARATION

7.1. Pour strained whole milk into the milk bowl. It is best to separate milk immediately after milking or preheating the milk to a temperature of 35-40°C.



a)



b)

Figure 3. Drum disassembly.

7.2. Switch on the electric drive. After the drum reaches its full rotational speed (about 30 to 40 seconds), turn on the tap by turning the plug handle (by its sharp end) toward the notch on the milk bowl's edge.

7.3. After separating the milk, pour three liters of warm water into the milk bowl and allow the water to pass through the operating separator. This will remove the residues of the skimmed milk and cream.

7.4. The separator may operate continuously for one hour only. After one hour of continuous operation, you must switch off the separator and allow it to cool for 20 to 30 minutes.

**ATTENTION! CAREFULLY REMOVE THE DRUM FROM THE ELECTRIC DRIVE SHAFT BY APPLYING AN UPWARD FORCE. DO NOT SWING THE DRUM ON THE SHAFT UNNECESSARILY BECAUSE THIS DAMAGE THE SHAFT OR SHAFT CONE.**

*Note: When inspecting the electric drive in the store (without milk in the separator), a slight chattering of the casing-mounted vessel is allowed.*

7.5. In order to stop the separator, turn the plug to the left or to the right from the notch on the milk bowl edge, wait for the cream and skimmed milk output to stop, and only then switch off the electric drive.

## **8. DRUM DISASSEMBLY PROCEDURE FOR WASHING**

8.1. Unscrew the nut (6) (see Figure 2) using the special wrench found in the accessory kit (see Figure 3a).

**DO NOT DISASSEMBLE THE DRUM WITH THE PROJECTING ADJUSTING SCREW (7) (see Figure 2). SCREW IT IN, IF NECESSARY. THE ADJUSTING SCREW SHOULD NOT BE FULLY UNSCREWED.**

8.2. To remove the cover plate (2) (see Figure 2), you must turn over the drum and firmly but gently strike the end of the threaded part as shown in Figure 3b.

**DO NOT STRIKE HARD**

8.3. Remove the separating plate (4) (see Figure 2).

8.4. Remove the A and B discs (3) one by one (see Figure 2a and 2b). There should be 10 to 12 discs in total.

8.5. Remove the sealing ring (5) from the disc holder (1) (see Figure 2).

**ATTENTION! DISASSEMBLE THE SEPARATOR AND WASH ALL DRUM PARTS AFTER EVERY SECOND FEEDING AND SEPARATING PROCESS – THIS IS ABOUT EVERY 20 TO 50 LITERS OF MILK SEPARATING.**

## 9. DRUM ASSEMBLY PROCEDURE

The procedure for drum assembly is the reverse of the procedure for disassembly.

9.1. Place the sealing ring (5) in the disc holder (1) slot (see Figure 1).

9.2. Install the two types of the discs, A and B (3), one by one on the disc holder (1) and turn the discs slightly. You can start assembling with any disc type, A or B, making sure to interchange them. Install the entire set of discs (10-12 pieces in total).

9.3. Place the separating plate (4) on the stack of discs (see Figure 2).

9.4. Place the cover (2) on the separating plate (4) so that lug in the separating plate fits into the cover notch.

9.5. Match the "0" mark (see Figure 2) with the mark on the top of the disc holder.

9.6. Insert the screw (6) on the projected part of the disc holder (1). Draw up the nut with the special wrench by inserting two ends of the wrench into the corresponding two holes of the nut. Tighten the nut until the "0" mark on the nut matches with a mark (notch) on the threaded part of the disc holder.

*Recommendation: During assembly, the nut may be greased with any edible fat.*

**ATTENTION! DO NOT TIGHTEN THE NUT TOO TIGHTLY BUT MAKE SURE TO TIGHTEN COMPLETELY. OTHERWISE, THE DRUM WILL DEPRESSURIZE DURING OPERATION.**

## 10. REGULATING CREAM FAT CONTENT

10.1. Regulate the thickness of the cream at your discretion using the screw with a square hole, which is screwed in on the top of the separating plate. To do this, use the square pin of the special wrench (see Figure 4).

10.2. For thick cream, turn the screw clockwise; for thin cream, turn the screw counterclockwise. Proper regulation usually requires just one turn.

**ATTENTION! TURN THE SCREW CAREFULLY TO PREVENT DAMAGE TO THE THREAD OF THE SEPARATING PLATE. DO NOT TIGHTEN THE SCREW TOO CLOSE TO THE THREADED SURFACE OF THE DRUM DISC HOLDER**



Figure 4. Regulation of cream fat content

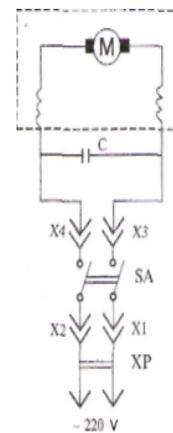


Figure 5. Wiring diagram

SA – Switch

XP – Armored cord

C – Condenser

M – Electric motor

X1, X2 – Cord inlet slots

X3, X4 – Electric motor outlet slots

## 11. CARING FOR THE DRUM PARTS

11.1. Wash the drum parts with warm water. Use a brush to remove milk and residual dirt and a rifle brush to clean the channels. Pay special attention to the square hole of the adjusting screw and the three skewed holes of the disc holder.

11.2. The drum must be cleaned after every separation process. Do not use acids and alkalis for cleaning as they can cause damage and spots to appear on the aluminum parts.

11.3. Wash the other separator parts in a similar fashion. Wipe the parts dry with a clean dishcloth after washing.

11.4. Make sure that there is no oily film on the drive cone and the cone hole of the disc holder. Failure to comply with this requirement can cause wear and tear of the disc holder and drive cone.

## 12. TROUBLESHOOTING GUIDE

Problem	Possible Cause	Remedy
1. The separator drum doesn't spin-up	<ol style="list-style-type: none"> <li>1. Supply voltage interruption</li> <li>2. Electric wiring problem</li> <li>3. Electric motor failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the supply voltage. If the voltage has dropped, turn on the separator through a domestic voltage regulator.</li> <li>2. Unplug the unit and check for signs of worn or frayed wiring. Replace wiring in the warranty service center.</li> <li>3. Repair the motor or replace it with a new one in the warranty service center.</li> </ol>
2. The separator operates with excessive noise, vibration, or shaking	<ol style="list-style-type: none"> <li>1. Casein or dirt accumulation at the bottom of the cover plate.</li> <li>2. Improper drum assembly. The marks on the cover and the disc holder must match. "0" marks (see Figure 2) don't match.</li> <li>3. When tightening the drum nut (6) (see Figure 2), you didn't match its mark with the mark on the cover plate.</li> <li>4. The drum nut (6) (see Figure 2) is tightened incompletely.</li> <li>5. The electric motor shaft cone has become deformed during service.</li> <li>6. The separator is set up slantwise.</li> </ol>	<ol style="list-style-type: none"> <li>1. Disassemble the drum and wash all the parts carefully.</li> <li>2. Disassemble the drum and then reassemble it, matching "0" marks of the cover plate (2) and the disc holder (1) (see Figure 2).</li> <li>3. Turn the nut (6) by one revolution (see Figure 2), and give adjust until all marks match.</li> <li>4. Tighten the nut (6) (see Figure 2) and match the marks.</li> <li>5. Replace the electric motor in the warranty service center.</li> <li>6. Check the installation area of the separator and place it in a horizontal position.</li> </ol>
3. The separator vessel chatters while operating	<ol style="list-style-type: none"> <li>1. The vessel has not been correctly placed onto the separator.</li> <li>2. No milk is in the milk bowl.</li> </ol>	<ol style="list-style-type: none"> <li>1. When assembling the separator, the vessel parts (float chamber, skimmed milk and cream receivers, and milk bowl) should be fixed against the stop.</li> <li>2. After the milk is fed into the milk bowl and the separator is turned on, the vessel will stop chattering.</li> </ol>
4. Thin or thick cream	<ol style="list-style-type: none"> <li>1. Incorrectly adjusted drum screw (7) (see Figure 2).</li> <li>2. The outlet hole for the adjusting screw (7) in the separating plate is plugged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the screw (7) (see Figure 2) as indicated in Section 10.</li> <li>2. Clean the outlet hole in the separating plate with a rifle brush.</li> </ol>
5. The drum doesn't rotate when the separator is on.	<ol style="list-style-type: none"> <li>1. Switch (16) failure (see Figure 1).</li> <li>2. Power cord damage (Figure 1).</li> <li>3. Electric motor (6) failure (see Figure 1).</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the switch and wiring state.</li> <li>2. Replace the power cord in the warranty service center.</li> <li>3. Replace the electric motor in the warranty service center.</li> </ol>