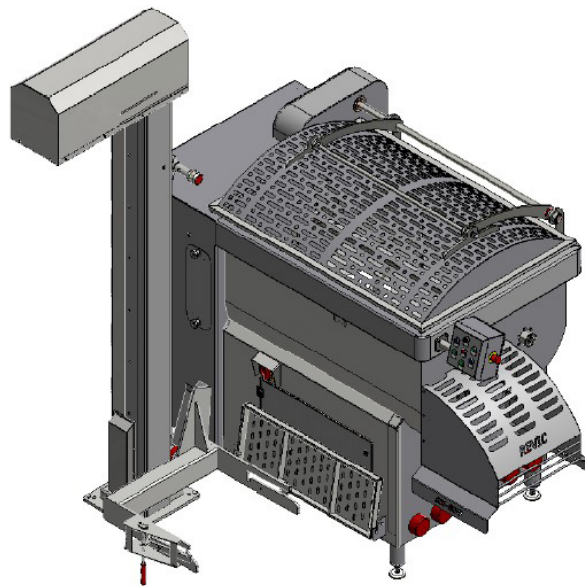


# USER MANUAL

# PADDLE MIXER RX-600

with loading pillar (option)



## WARNING!

The user manual is integral part of machine. All the information that contains are important for the user and the information **VERY IMPORTANT** are designated **in bold**.

## 1. Delivery

The complete set of delivery includes:

- packed paddle mixer RX-600 with loading pillar (optional)
- paddle mixer user manual

### 1.1.Transport.

Recommended method of loading and unloading or moving on short distances is to use a forklift truck or low-lift truck.

Machines are delivered in two ways:

- producer's transport
- shipping by forwarder – palette required

Warning: transport activities allowed only to eligible persons.

**Manual transportation is prohibited.** Crane assisted transportation only in designated box.

### 1.2. Forklift truck transportation.

**Shift in center of gravity should be considered** while loading and unloading the machine.

## 2. Specifications.

Installed power [kW] 7,5

Engine Bonfiglioli E7,5 KW 4P B5 P132 IP55 IE2

Gearmotor Bonfiglioli 303L2- 30,8 PC P132 E

Total capacity [L] 600

Max. input [kg] 480

Inverter: LENZE ESV302N04TFC

Rotations [r/min] 5-48

Supply pressure of pneumatics [bar] 6

Voltage [V/Hz] 3x220/60

Loading pillar power [kW] 0,75

Net weight of mixer [kg] : 900

Net weight of loading pillar [kg] : 250

Made of stainless steel

Due to continual machine improvements, this user manual only applies to the mixer, which is included in accordance with the serial number. We guarantee a ten-year period of spare parts supply, from the date of machine manufacturing.

Electrical installation ensures proper operation of all modules with voltage fluctuations in the electric supply system  $3 \times 220 \text{ V} \pm 10\%$  and frequency of  $60 \text{ Hz} \pm 2\%$ .

### 3. Technical description

#### 3.1. Purpose

1.1. Paddle mixer RX-600 is designed for mixing batters in the production of meat or canned meats, vegetables, fruits, sauces. Stirring stuffing is implemented by two intersecting bladed stirrers placed at different heights and have a variable direction of rotation. The mixing process may take place at different shaft speeds in the range of 5 to 48 r/min controlled manually. It is designed to cooperate with loading pillar (as option).

#### 3.2. Construction

Mixer RX-600 has a compact formed as a self-supporting welded construction. Parts in contact with stuffing and all exterior surfaces are made of acid-resistant materials. All functional units like drive and electrical installation are located in machine housing and can be accessed after opening the door.

Significant mechanisms, devices and machine parts are shown in figures 1, 2,3 (illustrative drawings)

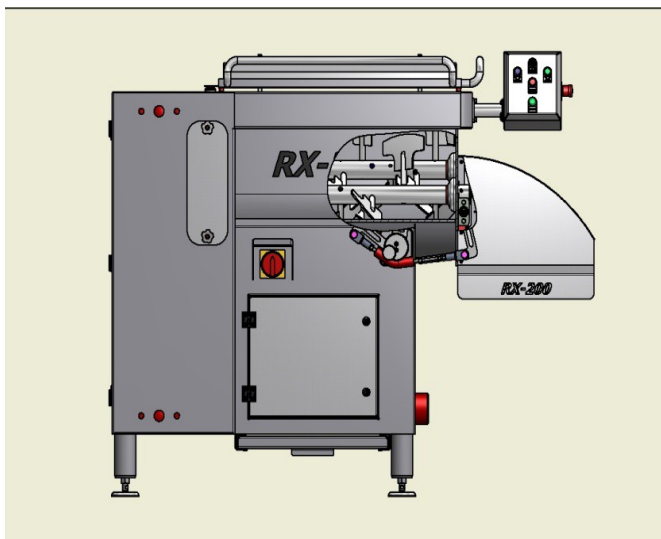


Figure no .1.

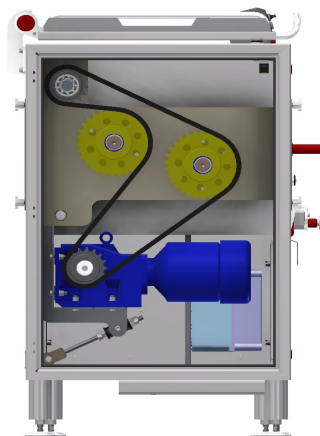
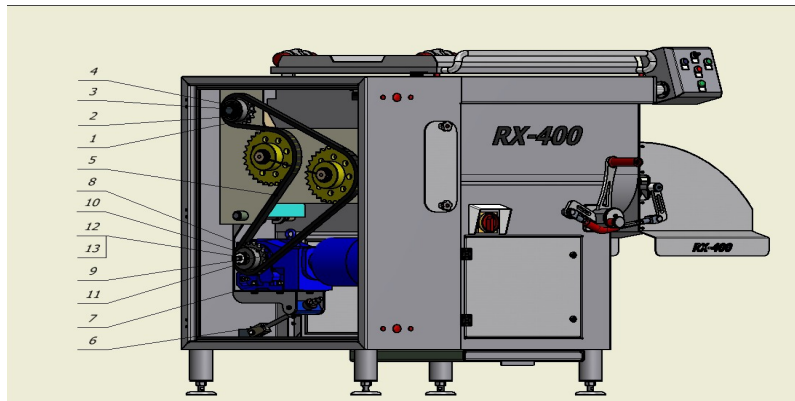


Figure no. 2.



**Figure no .3**

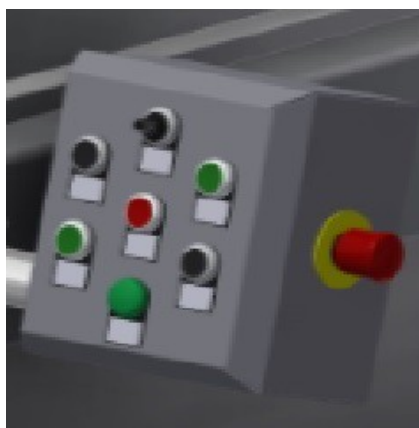
### **3.3. Improper use of the machine.**

**Paddle mixer is not used for mixing frozen meat at temperature below + 2 ° C, boned meats, hard products, flammable liquids.**

### **3.4. Control panel**

Machine control is available when voltage is applied to the switch cabinet by turning the main switch lever from position "0" to "I".

The machine is equipped with a control panel (Fig.no. 4). There are following items on the control panel: inward rotation button, outward rotation button, mixing shafts variable speed potentiometer, lifting up/lowering down (in option with intergrated loading pillar), STOP button, the green light indicator signalize operation of the machine, emergency STOP button, on the right side.



**Fig. 4. Control panel.**

## 4. Occupational Health and Safety.

### 4.1 Threats, their location and security measures.

Threat types, dangerous zones and security measures application in machine are summarized in table 1, according to standard:

PN – EN 1050 – Machines. Security. The principles of risk assessment with reference to standards:

PN – EN 60204 : 2000 – Safety of machinery. Electrical equipment of machines.

General requirements

PN – EN 953 : 1999 Machines. Security. Covers.

Zone and/or dangerous place- reason of threat	Threat		Safety measure used in machine or recommended
	Type	Occurrence	
1. Electrical Installation - Conductive parts - Components powered by electricity 1.1. Direct contact 1.2. Indirect touch	electrical	electrocution	Basic protection (electrical box) according to PN – EN 60204  Continuity of the protection system according to PN – EN 60204
2. Mixing shafts	mechanical	catch impact crush	Loading top flap - magnetic sensor Ejecting flaps Ejecting flap cover
3. Loading and ejecting flap	mechanical	impact	recomendations: machine – only 1 person operation - magnetic sensor
4. Doors of drive chamber	mechanical	catch impact crush	mechanical switch
5. Machine operation	noise	Hearing loss and other physiological effects, limiting the ability to communicate, receiving acoustic signals	The declaration of noise emission. Noise emission value of unloaded machine, measured in a production condition: the equivalent sound pressure level not exceed 70 dB, peak sound pressure does not exceed 130dB, sound power level does not exceed 85dB
6. Loading pillar	mechanical	impact crash	electromechanical brake of gear motor, mechanical brake in case of breaking the chain
6. Transportation	mechanical	catch , impact , crush	Training of employees, right way of transportation, pictograms/marks

**Table no. 1.**

Locking/security devices arrangement and their use are presented in Table no. 2.

Location	Locking device	Application
Tank cover	Magnetic switch	Top cover open - machine power disconnection
Ejection flap	Magnetic switch	Stuffing trolley absence- machine power disconnection
Drive chamber door	Magnetic switch	Door open - machine power disconnection

**Table no. 2.**

## **4.2. Safety in use.**

Paddle mixer RX-600 operators should be aware of the threats and aftermath the machine can pose, also should know the purpose and operation of protective devices installed on the machine.

- While using the RX-600 machine, operator should be guided by the informations and recommendations contained in this user manual,
- Troubleshooting, carry out repairs and any other activities associated with the machine maintenance in standby mode may perform only authorized persons.
- Any work i.e. troubleshooting, repairs, maintenance, lubrication and cleaning, always perform while power supply is off.
- Any modifications and manipulations of the bypass protective devices, in particular with regard to blockades and covers are prohibited because the machine is no longer safe.
- It is forbidden to walk on the machine, top flap and any other components (e.g. covers), to grab actuators, etc.
- It is forbidden to put hands under ejection flap,

## **4.3. Ensuring hygiene**

Used materials and the paddle mixer RX-600 construction meet the following requirements:

- The machine is made entirely of stainless steel in such a way as to prevent retention of product remains which decomposition could create a bacteriological risk
- The device is standing on four legs and the bottom is sufficiently spaced from the ground, on which stands the stuffing mixer. It allows to keep clean under and around it.
- Proper legs adjustment and mixer positionig allows thorough washing, drying tank and mixing paddles.
- Paddle mixer RX-600 used as intended does not pose a risk to human health.

## **5. Preparing to work**

### **5.1. Machine placement.**

After setting the machine to the desired location, adjust the legs so that the bottom of the tank was slightly (about 2%) inclined towards the stuffing outlet.

## 5.2. Machine connection to power supply.

Machine connection to power supply need to be carry out by flexible hose 5x2,5mm<sup>2</sup>. In electrical switchboard appoint a separate box with protection 25 A.

Check if mixing shaft rotation is in conformity with markings on control panel. In case of disagreement, switch two phases connected to the power supply box.

### ATTENTION!

**Check the effectiveness of zeroing by measurement of resistance in connections in reset circuit. It can not be higher than 0,1Ω in any section and should be documented. Work in the electrical system may perform only electrician with the appropriate qualifications and licenses.**

## 6. Daily maintenance.

At the first startup of the day, must check the effectiveness of safety and protective devices.

The checking refers to:

- Control of action of tank top cover switch, mixing paddles can not work while cover is open.
- Control of action of stuffing ejection cover switch, mixing paddles can not work while stuffing trolley is absent
- Control of action of chamber drive shaft door switch, with the door open can not start the machine (works as emergency button)
- Control of action of the emergency button ( red „mushroom” button with a yellow ring on the side of the control panel). After pressing the emergency button, all drives are switched off. Emergency button when pressed, meshes and can be unlocked by pulling the „mushroom”. Emergency button works only in terms of the control voltage, it doesn't turn off the main circuit.
- Control of action of the main switch. After turning the knob from "I" in "0" position, the machine power supply will be cut off.

### ATTENTION!

**When safety or protective devices fault occurs, do not use the machine. The defect should be removed by a specialized service. Any changes in safety devices are not allowed. Possible changes relieve the manufacturer of responsibility and guarantee obligation.**

## 7. Operation

Paddle mixer RX-600 is equipped with a control panel, described in section 3.4. It controls the mixing process. It allows you to select the direction of convergent and divergent rotations, setting speed of paddle mixers, stop the mixer.

The mixing cycle consists of the following steps:

- Closing of stuffing ejecting flap
- Placing an empty stuffing trolley below the ejection flap,
- Opening of tank cover,
- Loading stuffing into the tank manually or with loading device,
- Closing of tank cover,
- Launching the mixing process.
- Unloading of stuffing - after mixing, select convergent direction of paddles. Open the flap of ejector with the lever (lock that is intended to prevent the accidental release of the cover and opening flap should be released)

Next cycles are repeated as above.

## ATTENTION!

**Maximum level of mixed stuffing can not reach 100mm below the top edge of tank border.**

## 8. Cleaning and maintenance.

### 8.1. Lubrication

No.	Place of oiling	Frequency	Lubricant
2.	Gear motor	Replacement according to manufacturer's instructions	Transmission oil recommended by gear motor producer
3.	Chain	Once every two weeks - about 100 hours of action	graphite grease
4.	Drive shaft bearings of mixing paddles	Covered, do not require lubrication, replace them when clearances appear	

Table no. 3.

### 8.2. Cleaning

## ATTENTION!

**Cleaning and washing the machine should be carried out by using cleaners for stainless steel and in the way recommended by reputable manufacturers.**

Recommended products and methods for cleaning, disinfecting and rinsing machines are presented in Table 4 and 5.

Hygienic zone	Cleaning		Remarks
	Frequency	Method	
Mixing shafts	Everyday, after work	Cleaning the agitators from the remnants of meat and fat embedded	Cleaning the agitators with the tank cover open, only with proper operation of the proximity switch and when the power is turned off



Mixing tank	Everyday, after work	Washing with warm water with detergent, washing and drying (sponge rubber)	Cleaning and washing only with the power off
External surfaces	Everyday, after work	Washing with warm water, strong stream of hot water	Avoid direct contact of water with electrical components (control panel)

**Table no. 4.**

Washing type	Alkaline and disinfection	Acidic	Additional disinfection	Surface care
Purpose	Washing and cleaning	Change of environmental pH and removal of mineral deposits	Additional disinfection after performing the acidic foam washing	Polishing and surface care
Frequency	Everyday, after work	Once per week	Periodically, after performing the acidic foam washing	Periodically
Method	Washed surfaces coat evenly with the foam, leave the foam for 15-20min (according recommendation of preparation producer) on surfaces. Hardly contaminated places clean with brush, rinse all surfaces with water flush (vertical surfaces rinse from up to down) Visually inspect the effectiveness of cleaning	Proceed as for washing with alkaline agent	Washed surfaces coat evenly with disinfectant solution, leave the solution for 15-20min (according recommendation of preparation producer) on surfaces, rinse all surfaces with water flush	Spray surfaces evenly with preparation and then spread it with a soft cloth

**Table no. 5.**

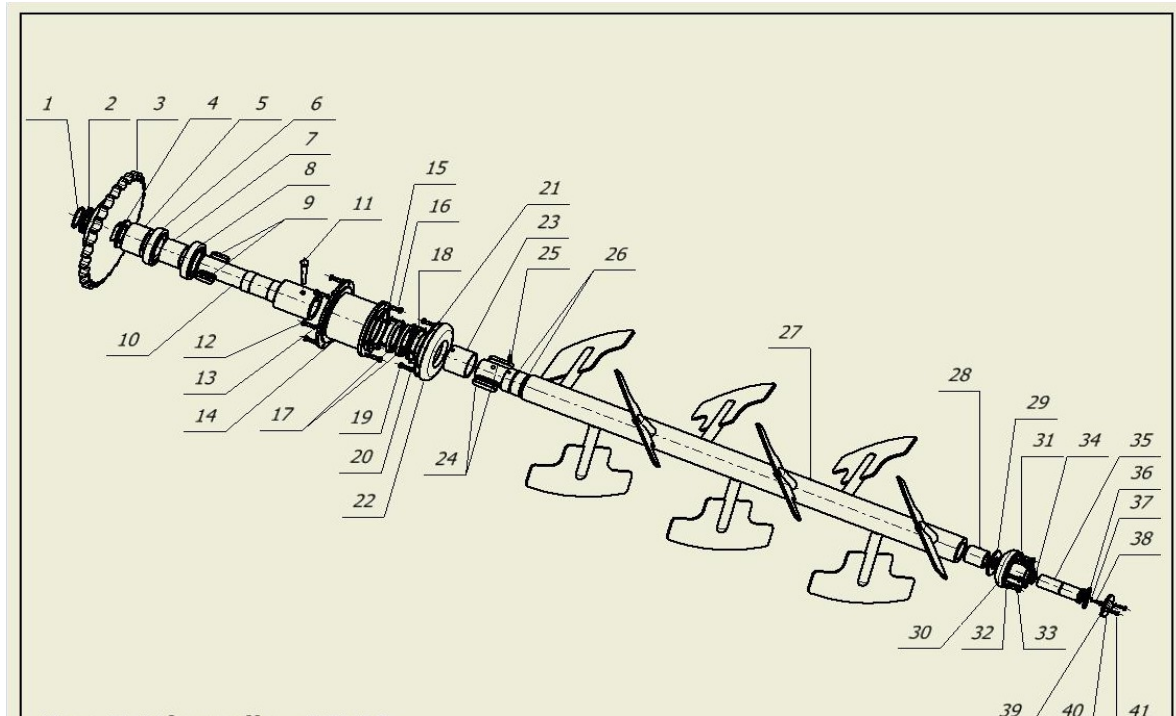
### 8.3. Periodic inspection, adjustment, repair.

Action	Frequency	Procedure
Checking for leaks in the chamber between the tank and the drive shafts chamber	Everyday, after work	Unscrew the knob integrated with the lid, check - visual inspection. When replacing O-rings space between them should be filled with grease approved for contact with food
Tightness of gear motor	Once per month	Visual control through the window in gear motor body- if needed add oil
Chain tension	Once per month	Clearance measured in midway between the two sprocket wheels must be approximately 5 mm. Adjust by turning the nut on the bolt

		tensioner connecting the machine body with a gear motor
Replacement of reversing wheel bearing and chain	If needed	Disassembly and assembly of shafts make according to fig no. 5

**Table no. 6**

### 9.1 Spare consumable parts.



**Fig. no. 5**

Parts/units related to the agitator shaft presented on Fig. no.5, in table below:

No	Qty	Part /unit name	Drawing/standard no.	Designation according standard
1	1	Snap ring	PN-81/M-85111	Z 50
2	1	Locking ring	RX-600-01.20.005	
3	1	Drive wheel of the agitator shaft	RX-600-01.20.006	
4	1	Pressure ring	RX-600-01.20.003	
5	1	Positioning sleeve:1	RX-600-01.20.004	
6	1	Ball bearing	PN-85/M-86100	55 x 90 x 18 2Z
7	1	Spacer	RX-600-01.20.002	
8	1	Bearing ball	PN-85/M-86100	55 x 90 x 18 2Z
9	2	Parallel key	PN-91/M-85001	A A 14 x 12 x 50

10	1	Drive shaft of the agitator	RX-600-01.20.001	
11	2	Hexagon screw	PN-85/M-82105	M 10 x 30
12	6	Hexagon screw	PN-85/M-82105	M 8 x 20
13	6	Round washer	PN-77/M-82008	8,2
14	1	Bearing housing of agitator shaft	RX-600-01.02.02.00	
15	6	Hexagon screw	PN-85/M-82105	M 8 x 20
16	6	Round washer	PN-77/M-82008	8,2
17	2	Sealing ring	PN-88/M-73067	70 x 90 x 10
18	1	Bushing :1	RX-600-01.19.002	
19	6	Hexagon screw	PN-85/M-82105	M 6 x 20
20	6	Round washer	PN-77/M-82008	6,1
21	1	Sealing ring	PN-90/M-73060	G 136 x 3,55:1
22	1	Sealing lid: 1	RX-600-01.19.001	
23	1	Shaft sleeve	RX-600-01.15.012	
24	2	Parallel key	PN-91/M-85001	A A 14 x 12 x 63
25	1	Locking screw	PN-87/M-82317	M 8 x 20
26	2	Sealing ring	PN-90/M-73060	G 48,7 x 3,55:1
27	1	Agitator	RX-600-01.15.00.02	
28	1	Bushing	RX-600-01.15.011	
29	1	Slip ring	RX-600-01.14.005	
30	1	Agitator supporting sleeve	RX-600-01.14.003	
31	1	Sealing ring	PN-90/M-73060	G 97,5 x 3,55:1
32	6	Round washer	PN-77/M-82008	8,2
33	6	Hexagon screw	PN-85/M-82105	M 8 x 20
34	1	Sealing ring	PN-90/M-73060	G 21,2 x 2,65:1
35	1	Agitator exis	RX-600-01.14.002	
36	1	Securing groove	RX-600-01.14.001	
37	1	Round washer	PN-77/M-82008	6,1
38	1	Hexagon screw	PN-85/M-82105	M 6 x 20
39	1	Frontal lid of housing	RX-600-01.14.004	
40	1	Round washer	PN-77/M-82008	6,1
41	1	Hexagon screw	PN-85/M-82105	M 6 x 20

**Table no. 7**

Spare consumable parts like sealings of ejecting flap, o-rings, bearings, sliding bearings, and their replacement is not covered under warranty.

Paddle mixer operated in accordance with the manufacturer's instructions is trouble-free, however, it doesn't exclude some shortcomings caused by external factors. Possible deficiencies in the operation of the machine and how to remove them presented in Table no. 8.

No.	Symptoms	Reason	Removal
1	Machine doesn't work	No voltage in control circuit	Replace fuse
2		No power supply	Check electrical and control system in accordance with the wiring diagram starting from power supply of machine
3		Faulty of locking/security devices	Check operation of locking/security devices - table no.1 - replace faulty device
4	Mixing shafts don't move	Transmission	Check the operation of the connecting components and transmission

**Table no. 8**

## **Attention!**

**In case of failure, machine must be secured against access of the outsiders and noted faults reported to the supervisor. Work with technical malfunctioning machine is prohibited!**

## **10. Spare parts list**

Ball bearing 6208 2Z – 2pc.  
 Ball bearing 6011 2Z – 4pc.  
 Simmering 60\*80\*8 – 4pc.  
 Simmering 70\*90\*10 – 4pc.  
 Oring 21,2\*3,2 – 2pc.  
 Oring 48,7\*4 – 4pc.  
 Oring 90\*3,55 – 2pc.  
 Oring 136\*3,2 – 2pc.  
 Snap ring Z-12 – 2pc.  
 Snap ring Z22 – 1pc.  
 Snap ring Z-20 – 2pc.  
 Snap ring Z-35 – 4pc.  
 Snap ring Z-30 – 2pc.  
 Snap ring Z-40 – 1pc.  
 Engine Bonfiglioli E7,5 KW 4P B5 P132 IP55 IE2  
 Gearmotor Bonfiglioli 303L2- 30,8 PC P132 E  
 Drive sprocket – Fig. No. RX-200-01,13,,009B –1pc.  
 Drive sprocket (big one) – Fig. No. RX-200-01,20,006 - 2pcs.  
 Return sprocket- Fig. No.RX-200-01,21,003 – 1pc.  
 Chain 16B1 – 5 lm + 2 fasteners  
 Hinge CFM 425611 – 7pc.  
 Silicone seal 16\*12 + seal 1011-20

## **11. Warranty settlements.**

The manufacturer provides a warranty for trouble-free operation for the machine for a period of 12 months from the date of delivery to the final user.

The manufacturer does not warrant the damages:

- mechanical,
- resulted from improper use,
- resulting from interfering with the construction of the machine by processing own modifications ,
- caused by bypass security

The manufacturer does not warrant the consumable replacements parts such as seals of ejection flaps, o-rings, bearings, sliding bearings and their replacement.

### **WARNING!**

**The guarantee is valid under the conditions operating in accordance with the Operating Instructions and rules of conduct warranty.**