

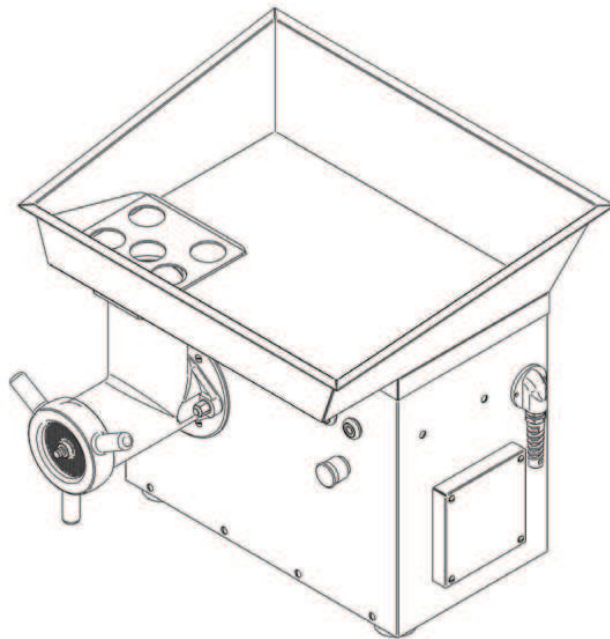
# metos

Meat mincer  
Metos LM-32/P, LM-98/P  
2021555, 4221328

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## User manual

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## MEAT GRINDER USER MANUAL

### ***Warning!***

KT-meat grinders are especially designed to grind meat, although they may be used for grinding various other products as well. These machines are capable of inflicting damage to the user, unless the right safety precautions are observed. Therefore, it is important that utmost care is taken when using this machine.

- \* DO NOT** use this machine unless you have read and completely understood this manual. Your attention is drawn in particular to the part which concerns safety.
- \* DO NOT** push your fingers into the holes of the hole plate.
- \* DO NOT** use the machine unless all the guards are fixed firmly into place.
- \* DISCONNECT** the power source before changing or cleaning the blades, before adjusting anything or before you leave the machine unsupervised.
- \* REPORT** all faults immediately.

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## **1. Introduction**

KT-meat grinders are designed especially for the grinding of fresh meat. Read this instruction manual **BEFORE** using the machine and ensure also that all other users, service mechanics and cleaners have also read and thoroughly understood this manual, and also that they have familiarized themselves with the following:

- Dismantling, cleaning and re-assembly of the machine.
- The parts of this manual, which deal with the safety.

All users must be given the correct training in the safe use of meat grinders, and they must be thoroughly knowledgeable in the correct safety procedures.

### **1.1 Technical specifications**

	<b>LM-32/P</b>	<b>LM-98/P</b>
<b>Voltage</b>	400/50/3	400/50/3
<b>Grinding motor</b>	3,0 kW	3,0 kW
<b>Depth</b>	620 mm	700 mm
<b>Height</b>	620 mm	620 mm
<b>Width</b>	690 mm	690 mm
<b>Grinding power</b>	600–800 kg/h	600–800 kg/h
<b>Hole plate diameter</b>	100 mm	98 mm
<b>Capacity of meat tray</b>	35 l	35 l
<b>Weight</b>	101 kg	103 kg

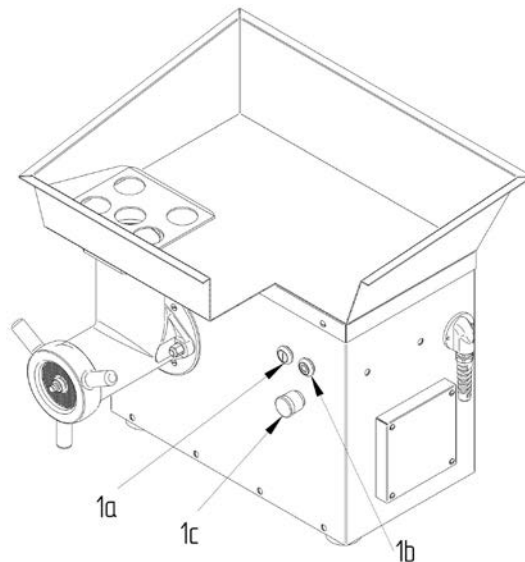
## **2. General description**

This manual refers to the following models:

**LM-32/P, LM-98/P**

Meat grinders are designed to grind fresh meat quickly, producing a good quality grinding result and they have been constructed following the KT product development methods. The operation of the grinders is quiet. They are easy to dismantle for cleaning purposes.

Models LM-32/P and LM-98/P start/stop buttons, as well as emergency stop switch are located in the front of the grinder (Picture 1: No. 1a, 1b, 1c). The starting switch also incorporates an undervoltage circuit breaker to prevent unintentional restarting after the power to the machine has been cut off.



Picture 1

### **3. Unpacking**

The meat grinder may be stored in the cold store. All models must be thoroughly cleaned before usage. See chapter 6.1 for the recommended cleaning agents.

The meat grinder is delivered with feeding equipment dismantled. The installation of the feeding equipment is dealt in chapter 6.3. If the saw or its package has been damaged during the transportation, contact your retailer or the manufacturer.

The meat grinder can be lifted from the pallet or from its packaging by hand. The weight of the grinders are mentioned in chapter 1.1. **Utmost care must be taken when lifting the grinder.**

### **4. Installation**

#### **4.1 Location**

The meat grinder must be installed on a steady table, which must be large enough so the grinder fits completely on the table.

A base for the table is provided as an optional equipment. The base is equipped with wheels. The front two wheels may be locked, while the two back wheels are fixed. The wheels make the moving of the machine easier. When using the optional base, the grinder must be attached to the base with a bolt which is included in the base.

The location of the grinder must be away from corridors and doors. The location must have adequate light. For the safety of the user, the surface of the floor must be non-slippery.

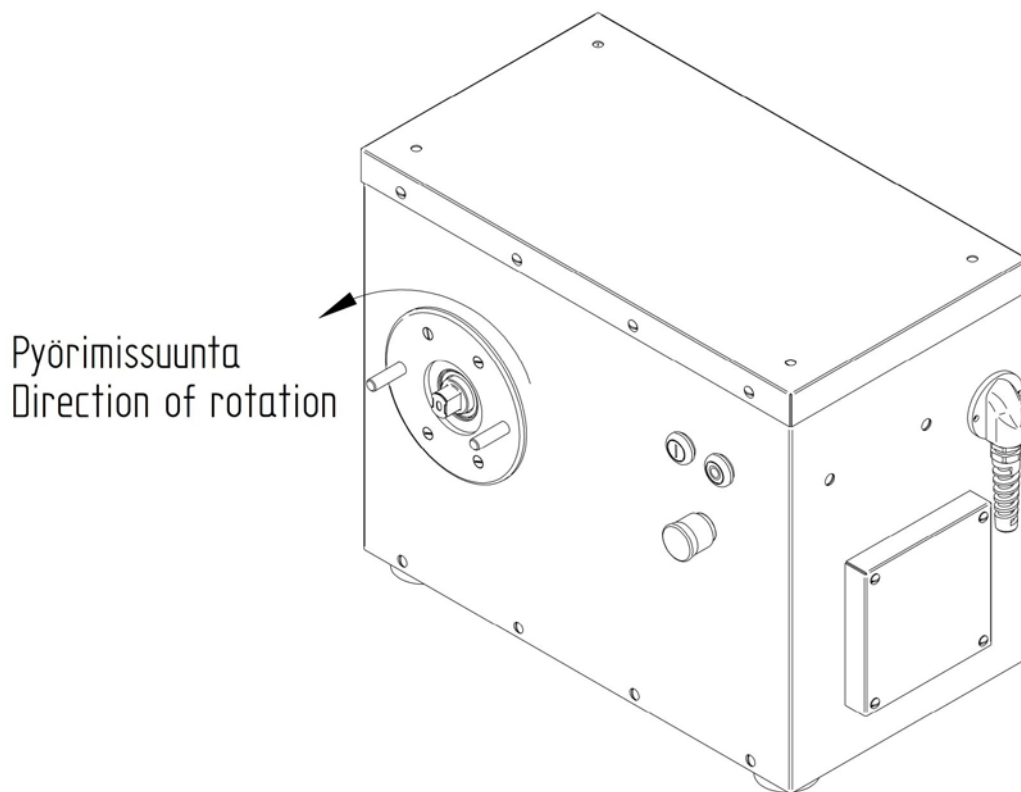
## **4.2 Electrical connection**

### **Please note**

1. Ensure that the voltage corresponds with the voltage marked on the rating label.
2. The machine must be **CORRECTLY EARTHED**.
3. Only an authorized electrician may connect the electrical supply to the machine and carry out the servicing work.
4. Ensure that the electrical supply has been disconnected before any electrical connections are made, or maintenance or adjusting work is carried out.

### **4.2.1 Direction of rotation**

Before using the machine, **check the direction of rotation with the feeding equipment dismantled**. After start-up, the machine's blade should rotate counter-clockwise when observing it from the front (Picture 2). If the direction of rotation is incorrect, ask an authorized electrician to change the direction of rotation.



**Picture 2**

### **4.2.2 Switch diagram**

The switch diagram for the grinder is to be found in the appendices to this manual.

## **5. Operation**

### **5.1 Safety**

#### **5.1.1 Safety measures**

The importance of following safety procedures in the operation of industrial meat grinders cannot be over-stressed. Meat grinders are capable of inflicting bodily damage to operators. However by using common sense and being careful, as well as following all safety measures in the operation of meat grinders, the operator will get the best possible performance out of this versatile machine, and minimize the of accidents.

**Your personal safety is more important than the quick operation of the machine.**

It is recommended that only authorized persons who have received the correct training in the operation of industrial band saws may operate them. They must also be aware of the danger factors and safety measures.

#### **PLEASE NOTE**

All safety instructions in this manual are the manufacturer's recommended practices. Local safety regulations and measures must always be observed.

Do not use this machine to anything else, than the purposes mentioned in this manual. **The diameter of the holes in the last plate towards the outlet shall be less than 8 mm. It is forbidden to use hole plates with larger holes. The last plate towards the outlet is not allowed to be ground thinner than 5 mm thickness.**

#### **5.1.2 Before use**

Before starting up the meat grinder, the operator must:

1. **DISMANTLE** the blades and feeding screw (Instructions for cleaning: chapter 6)
2. **CHECK** the direction of rotation of feed screw (counter-clockwise).
3. **CHECK** that the meat tray is empty.
4. **CHECK** that the blade and hole plate to be mounted in the machine are used in pairs.
5. **CHECK** that the blade and hole plate are correctly mounted in the grinder housing.
6. **CHECK** that the edge of the hole plate remains 2-4 mm outside the housing (LM-32/P), or the edge of the distance ring remains 2-4 mm outside the housing (LM-98/P).
7. **CHECK** that the blades in the assembly are always mounted in the same order (LM-98/P)
8. **CHECK** that the entry nut is not too tight, in order to prolong the lifespan of the blade assembly.
9. **ENSURE** that the diameter of the holes in the last plate towards the outlet shall be less than 8 mm.

### **5.1.3 During use**

Keep a check on the quality of the product. If the product does not flow out properly or if it has a porridge-like consistency, check the blade and the hole plate. Worn components should be replaced. See chapters 6.2 and 6.3, dismantling and reassembly of the blade assembly.

### **5.1.4 After use**

1. **STOP** the machine by pressing the black stop button (Picture 1, No. 1b).
2. **DISCONNECT** the power supply.

## **5.2 Starting up**

Provided that all the conditions in chapters 5.1.2 are fulfilled, the grinder may be started by pressing the white start button (Picture 1, No. 1a).

## **5.3 Stopping**

The meat grinder may be stopped by pressing the black stop button (Picture 1, No. 1b) or **IN AN EMERGENCY by pressing the EMERGENCY STOP BUTTON** (Picture 1, No. 1c). The machine is equipped with an undervoltage circuit breaker, so that it will not start up unintentionally when the power supply is restored following a power cut or disconnection of the machine from the power supply.

## **5.4 Grinding**

- Feed the meat to the grinding house by using the feeding hammer provided with the machine.
- **Do not push your fingers to the feed intake.**
- Let the grinded product fall freely to the tray.
- **Don not try to push your fingers into the holes of the hole plate.**
- **Do not drop foreign objects into the grinding house.**

## **6. Cleaning and maintenance**

Clean the grinder thoroughly after usage. At first, remove the plug from the wall socket. Remove the hole plate, blade and feeding screw from the grinding house (see chapter 6.2. Dismantling the blade assembly).

The parts removed from the grinder should be washed using warm water, a suitable cleaning agent and a cleaning brush provided with the machine. The parts should also be disinfected. The feed housing is dried after washing and wiped over using a suitable alimentary oil. The outside of the grinder should be wiped using a suitable cleaning agent and then dried. **DO NOT USE PRESSURIZED WATER.**



## **6.1 Recommended detergents**

For example the following detergent may be used when washing the machine:

**Kärcher RM 81**

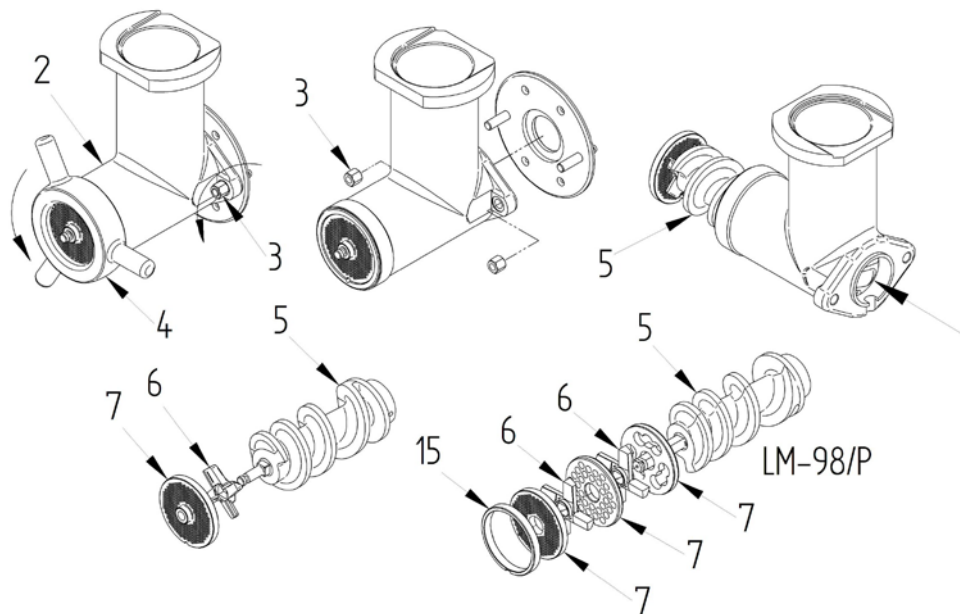
Recommended disinfectants:

**Kärcher RM 32, RM 35**

Regardless of detergent or method used, ensure that you observe the manufacturer's instructions. Observe the recommended concentrations and soaking times to avoid damaging your meat grinder. If detergent, rinsing water or disinfectant remains in the grinder, it must be dried in an appropriate manner.

## **6.2 Dismantling the blade assembly**

Loosen the nuts (Picture 3, No. 3) of the grinding house (No. 2) with a wrench (counter-clockwise). Remove the entry nut (No. 4) by hand, by turning it counter-clockwise (see picture). Remove the nuts (No. 3) of the grinding house, and then remove the grinding house. Push the feed screw (No. 5) by hand from the backside of the grinding house, so that the feed screw and blade assembly comes out from the grinding house. Remove the distance ring (LM-98/P, No. 15). Remove the blade (No. 6) and the hole plate (No. 7) from the stud.



**Picture 3**

	<b>LM-32/P</b>	<b>LM-98/P</b>
<b>Weight of the entry nut</b>	2,8 kg	2,8 kg
<b>Weight of the feed screw and blade assembly</b>	2,2 kg	3,1 kg

### **6.3 Reassembling of the blade assembly**

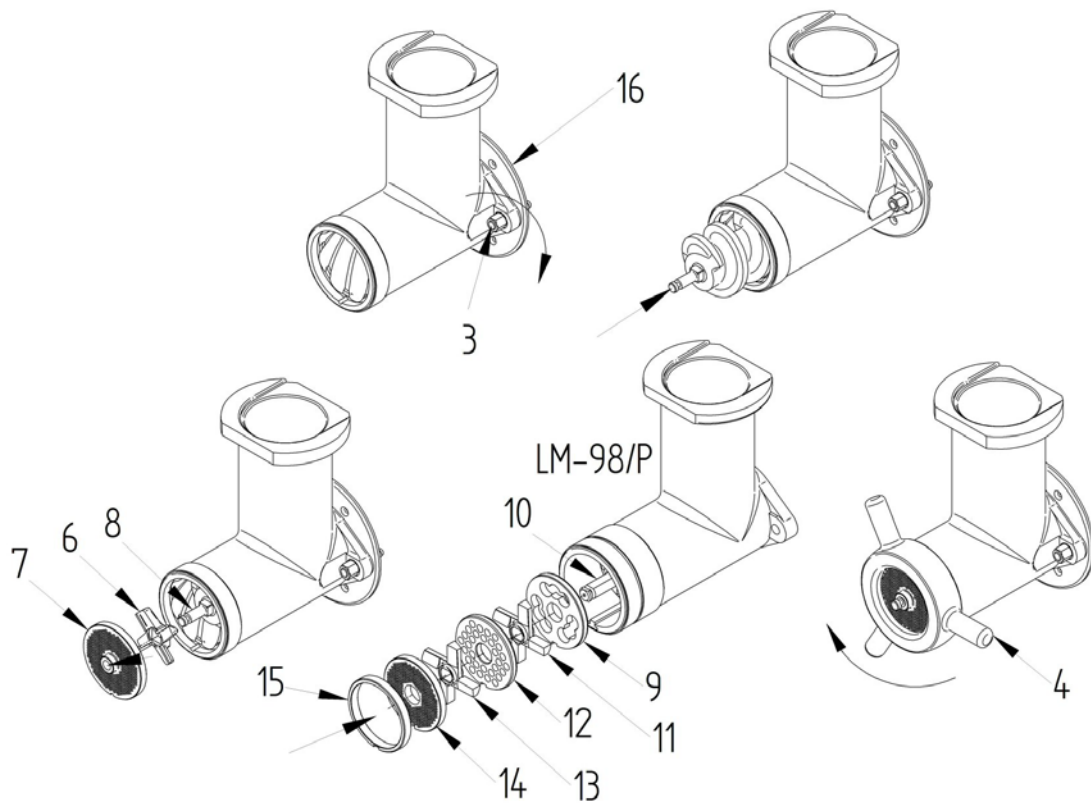
1. Mount the grinding house onto the grinder. When installing the grinding house, ensure that the housing is properly inserted into the flange (Picture 4, No. 16) of the grinder.
2. Tighten the nuts (No. 3) with a wrench (clockwise).
3. Insert the feed screw into the grinding house.

#### **LM-32/P:**

4. Insert the blade (No. 6) onto the stud (No. 8).
5. Insert the hole plate (No. 7) onto the stud.
6. Insert the entry nut (No. 4) to its place (clockwise). Do not overtighten the entry nut.

#### **LM-98/P:**

4. Insert the first holeplate (precutter, No. 9) onto the stud (No. 10).
5. Insert the blade (No. 11), second hole plate (No. 12), blade (No. 13), third hole plate (No. 14) and distance ring (No. 15).
6. Insert the entry nut (No. 4) to its place (clockwise). Do not overtighten the entry nut.



**Kuva 4**

## **7. Maintenance**

In addition to daily cleaning the meat grinder does not require much maintenance. Worn components must be replaced when needed (stud, blades, hole plates, protective rubbers of the push buttons).

The hole plate must be over 5 mm thick. If needed, the hole plate must be replaced.

## **8. Noise emission values**

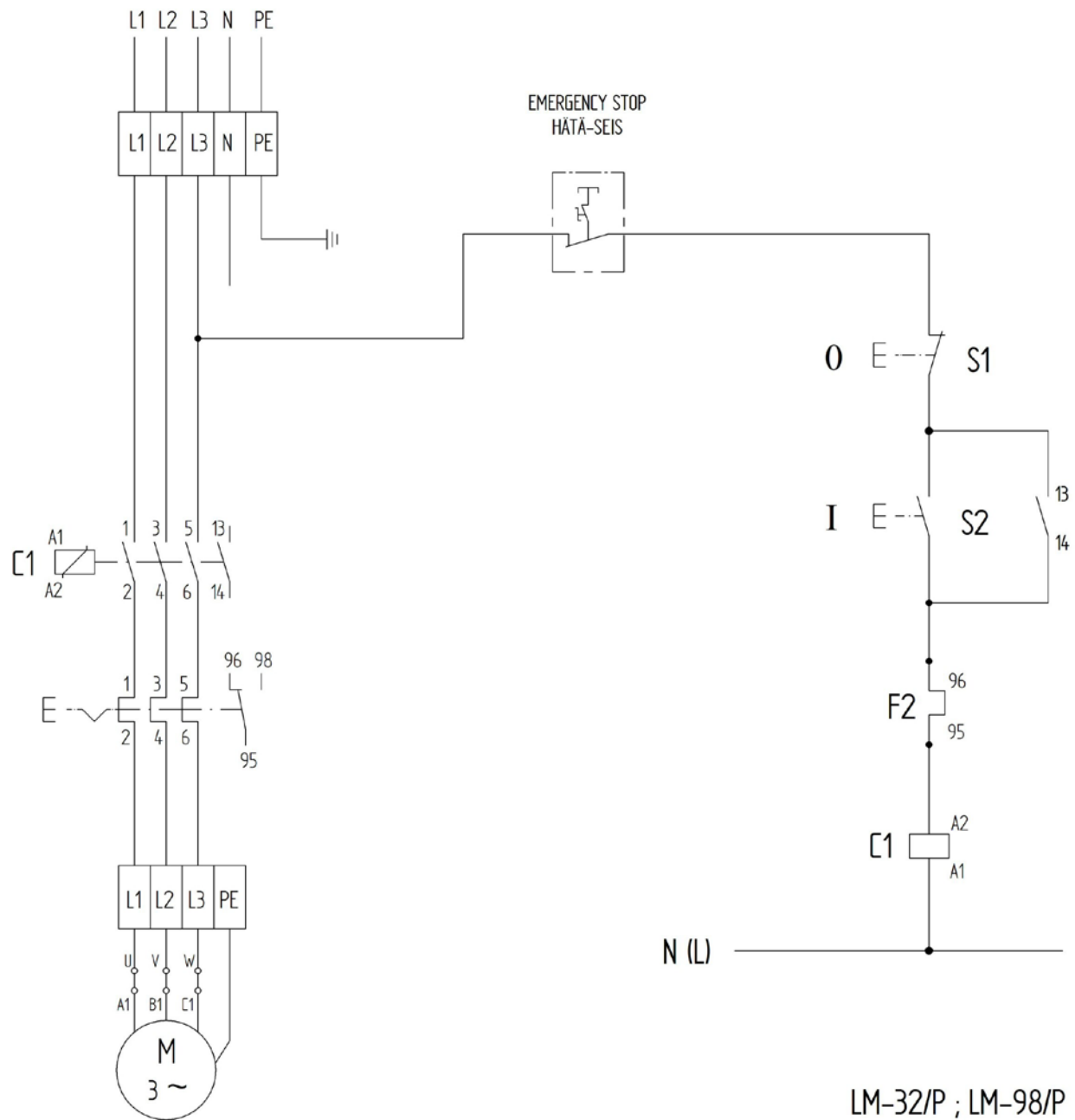
Declaration of noise emission values for grinders LM-32/P and LM-98/P are presented in the table below. The measurement has been done in a distance of 0,5 m behind the discharge in the axis of discharge opening in a height of 1,60 m above the ground.

<b>LM-32/P</b>	71 dB(A)
<b>LM-98/P</b>	75 dB(A)

## **9. Fault finding**

<b>FAULT</b>	<b>REASON</b>	<b>REMEDY</b>
Poor quality grinding	<ul style="list-style-type: none"> <li>• Worn blade couple (LM-32/P)</li> <li>• Worn blade assembly (LM-98/P)</li> </ul>	Sharpen the blade(s) and hole plate(s).
	<ul style="list-style-type: none"> <li>• Hole plate inserts too deep in the grinding house.</li> </ul>	<p><b>LM-32/P:</b> Change the position of the feed screw. Fit shim plate behind the feed screw.</p> <p><b>LM-98/P:</b> Change the thickness of the distance ring.</p>
	<ul style="list-style-type: none"> <li>• Entry nut will not screw in fully.</li> </ul>	Clean the thread.
	<ul style="list-style-type: none"> <li>• The thread of the entry nut is damaged.</li> </ul>	Replace the entry nut.
The machine will not start.	<ul style="list-style-type: none"> <li>• The power cord is not plugged in.</li> <li>• The cord is cut.</li> <li>• The contactor is broken.</li> </ul>	Contact an authorized electrician or the manufacturer.

## APPENDIX 1. Switch diagram





**KONETEOLLISUUS OY**

## **EC DECLARATION OF CONFORMITY**

We hereby declare that the following machinery complies with the essential health and safety requirements of the Machinery Directive 2006/42/EC.

**Manufactured by KONETEOLLISUUS OY**  
**Address below**

**Technical File Held At KT**  
**Address below**

**Machine Description and type:**

**Serial No 139000-150000**

**MEAT MINCERS: LM-5/P, LM-10/P, LM-22/P, LM-82/P, LM-32/P, LM-98/P, LM-42, LM-130**  
**MIXER GRINDERS: LM-22A, LM-82A, LM-32A, LM-98A, LM-42A, LM-130A, LM-130/280A**  
**KT-MS1, KT-MS2, KT-MS3 CLIPPER MACHINE**  
**KT-PK MEAT TENDERIZER**  
**KT-S FISH SCALER**  
**KT-ALP MEAT PRESSER**  
**F19S MEAT SLICER**  
**HB-4, HB-3 SEALER**  
**HB-10 BAG SEALER**  
**KT-KB2 KEBAB GRILL**  
**KT-KB3 KEBAB GRILL**

This machinery has been designed and manufactured in accordance with the following harmonised European Standards:

*EN 12100-1:2003+A1:2009, 12100-1:2003+A1:2009 Safety of machinery - Basic concepts, general principles for design*  
*EN 60204- 1:2006+A1:2009 Safety of Machinery – Electrical equipment of machines – Specification for general requirements*  
*EN 1088:1995+A2:2008 Safety of Machinery – Interlocking devices associated with guards. Principles for design and selection*  
*EN ISO 13857:2008 Safety of Machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs*  
*EN 953:1997+A1:2009 Safety of machinery – Guards. General requirements for the design and construction of fixed and movable guards.*  
*EN ISO 14121-1:2007 Safety of machinery – Risk assessment. Part 1: Principles.*

Furthermore, this machinery has been designed and manufactured in accordance with the following standards and directives:  
*SFS 5107, Slaughterhouse and meat dressing machines. Machines and equipment for cutting. Occupational safety.*  
*E.M.C. Electro-magnetic compatibility directive 2004/108/EC*

Furthermore meat & mixer grinders have been designed and manufactured in accordance with the following transposed harmonised European Standard:  
*EN 12331:2003+A2:2010 Food processing machinery. Mincing machines. Safety and hygiene requirements.*

**Signed**

**Date 2011-01-01**

**Name**

**Jari Akrenius**

**Position: Management**

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