

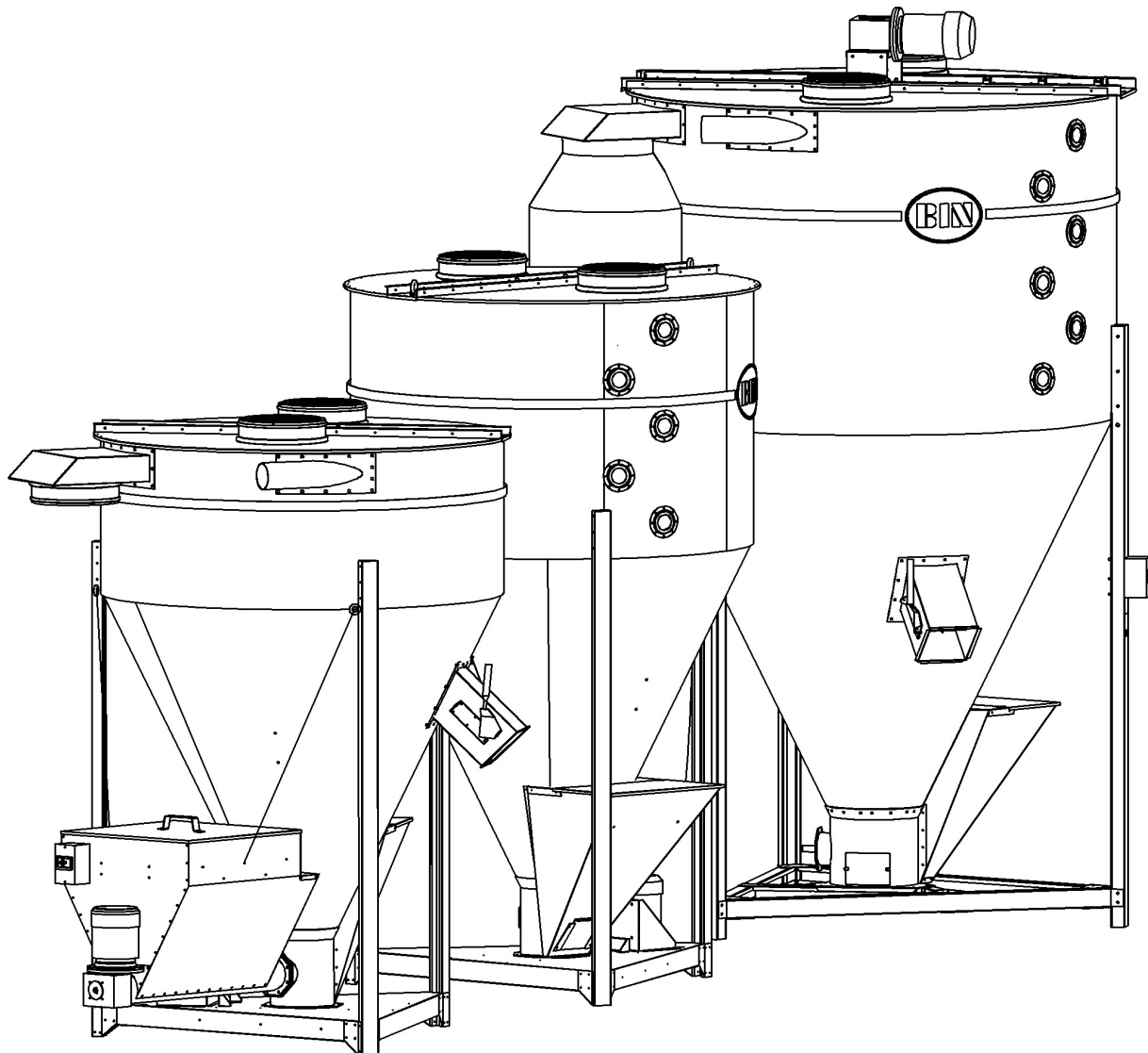


BIN Spółka z o.o.  
87-700 Aleksandrów Kujawski, ul. Narutowicza 12  
Phone (54) 282 22 55; (54) 282 88 00  
Fax (54) 282 88 63  
[www.bin.agro.pl](http://www.bin.agro.pl) e-mail: [bin@bin.net.pl](mailto:bin@bin.net.pl)

## LOOSE FEED MIXER

**Model:** *MS-2000*  
*MS-1000*  
*MS-650*  
*MS-KOSZ*

### OPERATING MANUAL



Drawings and descriptions included in this manual may contain optional and special components, not provided in the standard version. Before placing an order, the Customer may obtain comprehensive and up-to-date information on the products to be ordered. We reserve the right to make changes in our products. All rights reserved. Any reproduction, even partial, solely with our consent.



Aleksandrów Kujawski  
A4 format



## Table of contents

<b>CHAPTER I. INTRODUCTION</b> .....	<b>3</b>
<b>CHAPTER II. PRINCIPLES OF SAFE WORK</b> .....	<b>4</b>
1. BASIC SAFETY RULES .....	4
2. INFORMATION AND WARNING SIGNS .....	5
<b>CHAPTER III GENERAL AND COMMERCIAL INFORMATION</b> .....	<b>6</b>
1. INTENDED USE OF THE PRODUCT .....	6
2. INFORMATION CONCERNING PLACING ORDERS AND TRANSPORT .....	6
3. INFORMATION ABOUT PLACE AND CONDITIONS OF WORK .....	6
<b>CHAPTER IV. FEED MIXERS</b> .....	<b>7</b>
1. GENERAL PRODUCT DESCRIPTION .....	7
2. POWER SUPPLY SYSTEM.....	10
3. OPERATION .....	11
3.1. <i>Operation of the mixers</i> .....	11
3.1.1. Preparing for start-up.....	11
3.1.2. Periodic technical maintenance .....	11
3.1.3. Storage .....	11
3.1.4. Disassembling and disposal .....	12
3.2. <i>Mixer operation</i> .....	12
3.2.1. Loading of feed components into the mixer .....	12
3.2.2. Starting and stopping the mixer .....	14
3.2.3. Feed mixing .....	14
3.2.4. Mixer unloading .....	14
3.2.5. Adjustments .....	15
3.2.6. Mixer cleaning .....	15
<b>CHAPTER V. INTAKE HOPPER</b> .....	<b>17</b>
1. GENERAL DESCRIPTION AND INTENDED USE OF THE PRODUCT .....	17
2. POWER SUPPLY SYSTEM.....	18
3. OPERATION .....	19
3.1. <i>Hopper operation</i> .....	19
3.1.1 Installation and start-up .....	19
3.1.2. Periodic technical maintenance .....	19
3.1.3. Storage .....	20
3.1.4. Disassembling and disposal .....	20
3.2. <i>Running of the hopper</i> .....	20
3.2.1. Loading of feed components into the hopper.....	20
3.2.2. Starting and stopping the hopper.....	20
<b>CHAPTER VI. WARRANTY AND GUARANTEE CARD</b> .....	<b>21</b>

## CHAPTER I. INTRODUCTION

The Operating Manual aims at acquainting the user with a correct operation of the purchased product. This Operating Manual contains practical guidelines that must be known to the mixer operator.

**If any content of this OPERATING MANUAL is not understood by or is unclear for the user, please, contact the producer or its representative.**



**This operating manual forms an integral part of the product.**



**“Keep for future reference”.**



**Before starting to operate the mixer, read this operating manual, and, in particular, the chapters concerning safety at work.**



**Each use of the device for purposes other than those specified in the operating manual will be treated as the misuse.**

**The manufacturer of the product shall not be held responsible for any resultant damages. The user bears the sole risk related to the misuse. All and any unauthorised changes to the product design exclude the manufacturer’s responsibility regarding any resultant damages.**



**The warning sign in the operating manual indicates that the special caution must be exercised because of the danger to people and possibility of product damage.**



**The mixer is a high power electromechanical device. Incorrect operation may cause fire, fatal electric shock, burning, or other severe injury.**

## CHAPTER II. PRINCIPLES OF SAFE WORK

### 1. Basic safety rules

1. People employed to operate, maintain and conduct overhauls of the device, as well as people within the area of its operation are obliged to adhere to general occupational health and safety regulations.
2. The user is obliged to read and understand operating manuals for the mixer and for all other auxiliary equipment, and to strictly adhere to them.
3. The mixer can only be operated by able-bodied adults. These persons need to be fully aware of undertaken activities.
4. In particular, the following is forbidden:
  - operation by any “third” persons, who are not familiar with the Operating Manual;
  - operation by any persons that are ill or intoxicated (with alcohol or narcotic drugs, etc.) or by minors.
5. The location of the mixer operation and its controllers should be secured against any access of children and unauthorised people.
6. An owner is obliged to provide the mixer with detailed occupational health and safety instructions.
7. The mixer must be supervised at all times during its operation.
8. All covers and security devices provided in the mixer by the manufacturer must be installed.
9. It is forbidden to switch on the mixer without guards or to remove them during work.
10. A location where the mixer is operated must be used and maintained in a way preventing fire, and it should be provided with hand-held fire extinguishing equipment, including a dry powder or carbon-dioxide extinguisher.
11. A room in which the mixer operates should be provided with a general lighting system.
12. The mixer should be placed on a levelled concrete floor.
13. It is forbidden to use naked flame, to smoke, and/or to conduct welding or similar works within 10 m radius of the mixer.
14. The room in which the mixer operates should be intensely ventilated to avoid high concentration of flammable dusts.
15. An electric motor cannot be covered by any items. Before each starting up, remove accumulated dust from the motor. Ignoring of any of the above recommendations may result in motor overheating or fire.
16. The owner is responsible for correct connection of power delivery points and their correct operation.
17. The power supply system to which the mixer is connected should conform to the current legislation.
18. During first starting, check if the direction of motor rotations is correct.
19. All components of the power supply system must be secured against any damage.
20. A power supply cable should not be twisted or at risk of being cut. Any damages pose a risk of electrical shock
21. The power supply cable must be routed in such way that it does not pose any other hazards.
22. At least once a year, the user should order a qualified electrician holding relevant licences to inspect all electric equipment components of the mixer.
23. It is forbidden to stop the device by pulling its plug out of the power supply socket.
24. In the event of the fire:
  - evacuate people from the danger zone;
  - call the fire brigade;
  - disconnect devices from the power supply;
  - start extinguishing the fire.
25. It is forbidden to extinguishing fires of power supply systems with water or a foam extinguisher.
26. It is forbidden to fill the mixer above the level of the top sight glass.
27. When the machine is running, it is forbidden to put hands or items into:
  - a grate of the intake socket;
  - an opening for removal of feed residues;
  - an unloading sleeve;
  - connecting points for fabric filters;
  - an intake hopper.
28. Feed components fed into the mixer through the intake socket cannot contain contaminations or items that can block the mixer screw.
29. When any situation posing a threat to human life or health occurs, loading must be stopped immediately, the device must be switched off immediately and disconnected from the power supply system.
30. Technical servicing, maintenance inspections, and repairs need to be performed only with the motor switched off and the plug removed from the power supply socket.
31. During repairs requiring access to the mixer interior, use additional safe voltage light source.
32. A hose for pneumatic loading and fabric filters should be reliably fixed to ports with steel clamps.
33. To maximise efficiency of pneumatic loading, and to secure filters against tearing, periodic cleaning of filter fabric from particles of accumulated dust is recommended. Damaged filters (torn, cut, worn) must be replaced with new ones.
34. It is forbidden to operate the mixer without fabric filters installed, regardless of the loading method.
35. It is strictly forbidden to:
  - operate a damaged device;
  - operate a device that is not correctly fixed.
36. During loading, unloading and transfer, use lifting measures of load bearing capacity resulting from data provided in the nominal plate.

37. Before the mixer is transferred, it needs to be emptied. It is forbidden to transfer the mixer that is operating or fully or partly filled with feed.
38. It is forbidden to carry the machine above people or animals.
39. It is forbidden to transfer the machine directly using a forklift truck. To transport the mixer with the truck, first place it on an appropriate pallet (base) and secure with belts against collapsing or excessive tilt.
40. In transport the mixer must be secured with belts.
41. The mixer and the hopper need to be stored in a room, in a vertical position. If the mixer is temporarily stored outside, it must be secured against being overturned by the strong wind.
42. Warning signs, nominal plates and other information provided on the equipment must be kept legible and clean. When they are damaged or destroyed, or a part containing them is replaced, new plates should be purchased from BIN Company and installed on the product to replace damaged ones.
43. When the device is delivered without a nominal plate or the nominal plate is destroyed, the user should notify this to the producer to receive its copy.
44. Start the mixer screw before starting the intake hopper.

## 2. Information and warning signs

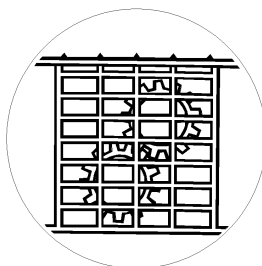
Information and warning signs are installed on the cylindrical part of the mixer body, and on the intake hopper housing.



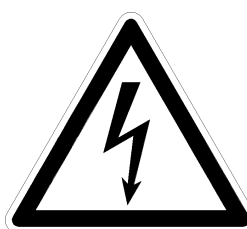
**READ OPERATING  
MANUAL**



**ATTENTION!  
DANGER**



**OBLIGATORY USE  
OF GUARDS**



**ELECTRIC SHOCK  
HAZARD**



**NO USE OF NAKED  
FLAME OR SMOKING**

### Nominal plate

**Model: MS-XXXX**  
**Year of production: 20XX**  
**Serial number: XXXX**  
**Weight: XXX kg**  
**Usable capacity.: X m<sup>3</sup>**  
**Maximum density of stored material: 800 g.m<sup>3</sup>**  
**Power: XX kW**  
**Voltage: - 3 x 400 V**  
**Frequency: 50 Hz**  
**Protection rating: IP 54**  
**Further information is provided in the Operating Manual**

	BIN Sp. z o.o. 87-700 Aleksandrów Kujawski ul. Narutowicza 12 www.bin.agro.pl
	Model: MS-XXXX
	Rok produkcji: 20XX
	Numer seryjny: XXXX
	Masa: XXXkg
	Objętość użytkowa: X m <sup>3</sup>
	Maksymalna gęstość składowanego materiału: 800kg/m <sup>3</sup>
	Moc: XX kW
	Napięcie: ~ 3 x 400V
	Częstotliwość: 50Hz
	Stopień ochrony: IP 54
	Dalsze informacje zostały podane w instrukcji obsługi.
<b>CE</b>	



**Note! Warning signs, nominal plates and other information provided on the equipment must be kept legible and clean. When they are damaged or destroyed, or a part containing them is replaced, new plates should be purchased from BIN Company and installed on the product to replace damaged ones.**

## **CHAPTER III GENERAL AND COMMERCIAL INFORMATION**

### **1. Intended use of the product**

The MS-2000, MS-1000 and MS-650 mixers are designed to prepare loose (dry) feed mixes at farms for all livestock.

Mixers are prepared for working with a suction and force hammer mill of the H965/1 type and with a system of feed containers manufactured by BIN.

The MS-KOSZ intake hopper is designated for feeding components of low flowability by feeding them with a screw from the intake hopper to the mixer base. The mixer can be used with the MS-2000, MS-1000 and MS-650 mixers.

### **2. Information concerning placing orders and transport**

1. Orders for the mixer and spare parts can be placed with BIN Sp. z o.o. or with authorised BIN sales representatives.
2. The mixer is sold in the assembled form.
3. Transport of the components is arranged by a seller or the customer, under additional arrangements.
4. The components require a transport vehicle of dimensions and capacity resulting from data provided in Table 1 and in drawings. In transport the mixer must be secured against sudden movements. It is recommended to transport MS-650 and MS-1000 in a vertical position. MS-2000 is an exception, as it is transported in a horizontal position. The MS-2000 mixer is placed on a transport support and two legs. Components of the power supply system must be secured against precipitation.
5. Loading and unloading should be performed with lifting equipment of capacity resulting from the machine nominal data. The mixer is equipped with lifting eyes, suitable for standard lifting equipment. Mixers should also be lifted using two eyes. Lifting eyes are marked with the following sign:



*LIFTING EYE*

### **3. Information about place and conditions of work**

The mixer is intended for operation in dry, closed rooms, with strong ventilation. It must be installed on a levelled concrete floor. The minimum ceiling height required for installation of the mixer (from the horizontal to vertical position) is 3.6 m for MS-2000, 2.95 m for MS-1000 and 2.6 m for MS-650.

## CHAPTER IV. FEED MIXERS

### 1. General product description

The main part of the mixers is a cylindrical-conical body supported on a triangular base and three legs. Inside the body, the conveyor screw is installed in a vertical metal pipe, which evenly mixes feed components by transporting the loaded material from the bottom to the top multiple times. The conveyor screw is driven by a three-phase induction motor through a belt (MS-650 and MS-1000) or a worm (MS-2000) drive. The motor and the drive are installed on the mixer base (MS-650, MS-1000), or top cover (MS-2000). A  $\phi 100$  port for pneumatic loading and a  $\phi 310$  port for connection of a bag filter are installed in the upper part of the cylindrical shell. Two  $\phi 310$  ports are installed on the cover. A bag filter, being a part of the mixer accessories, is installed on the  $\phi 310$  port. This bag enables outflow from the mixer of the air brought in together with meal from the suction and force hammer mill. The mixer is emptied through a diagonal unloading sleeve. The sleeve is connected to the vertical pipe of the screw conveyor. The mixer is unloaded by pulling the sleeve lever, with the motor operating. An intake socket is installed on one of the segments of the cone, used for gravitational loading of the mixer, including loading of feed additives. On the top, the socket is covered with a cover, to minimise dust formation at the initial stage of loading the mixer using the suction and force hammer mill. A small inspection point is provided in the socket bottom or in the cone base, for thorough cleaning of feed residues that were not removed through the unloading sleeve from the mixer. A connecting port is provided in the cone base, for installation of auxiliary equipment, i.e. the intake hopper (MS-KOSZ).

Components of mixer equipment (Fig. 1, Fig. 2, Fig. 3)

1. - sling attachment point
2. -  $\phi 310$  port
3. - loading port
4. - connecting port for MS-KOSZ
5. - sight glass
6. - unloading sleeve
7. - lever
8. - intake socket
9. - electric motor
10. - cable OPd5x1.5 and power plug 16 A
11. - inspection point,
12. - screw reducer
13. - drive switch
14. - transport support

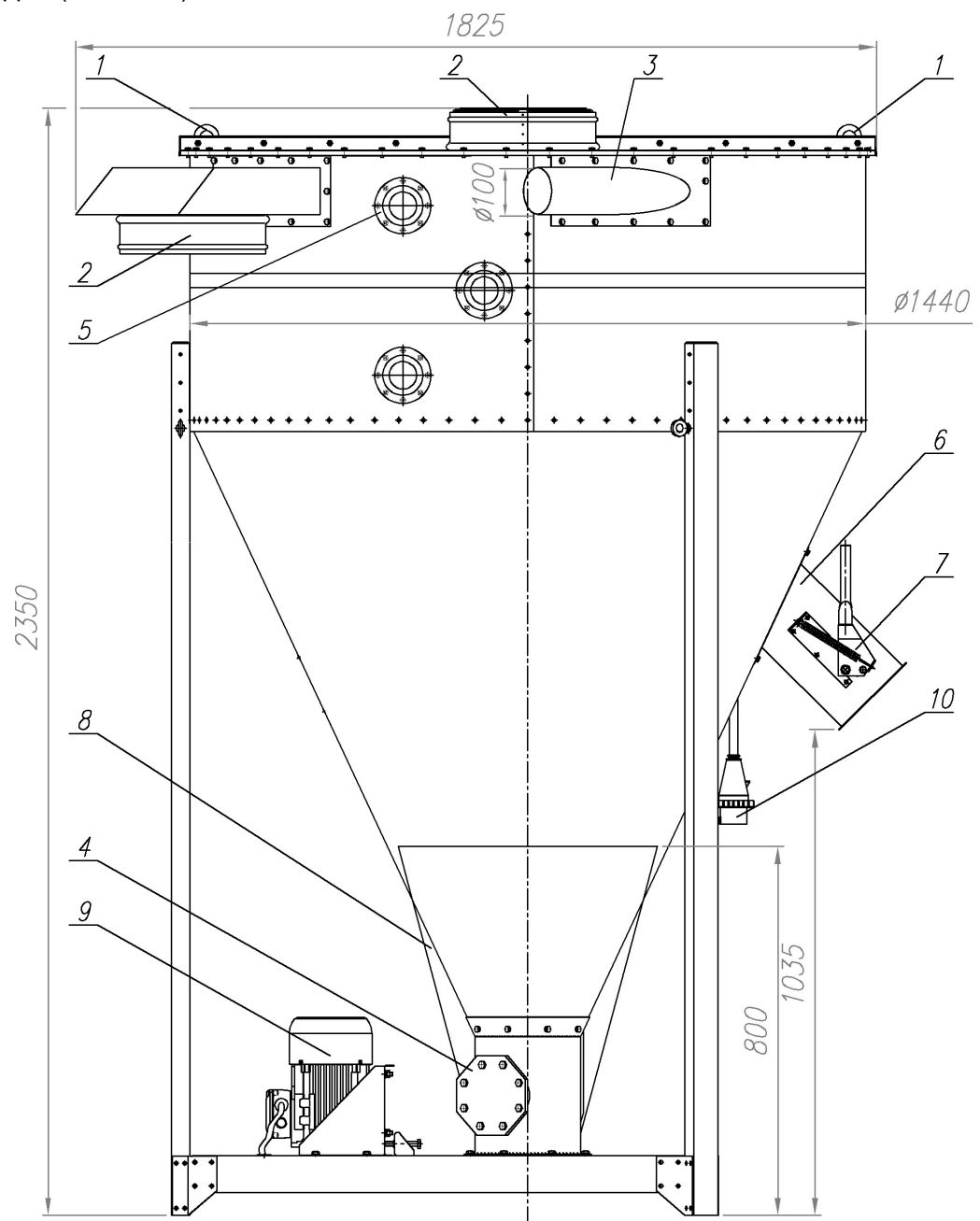


Figure 1. Loose feed mixer MS-650 - overview diagram.

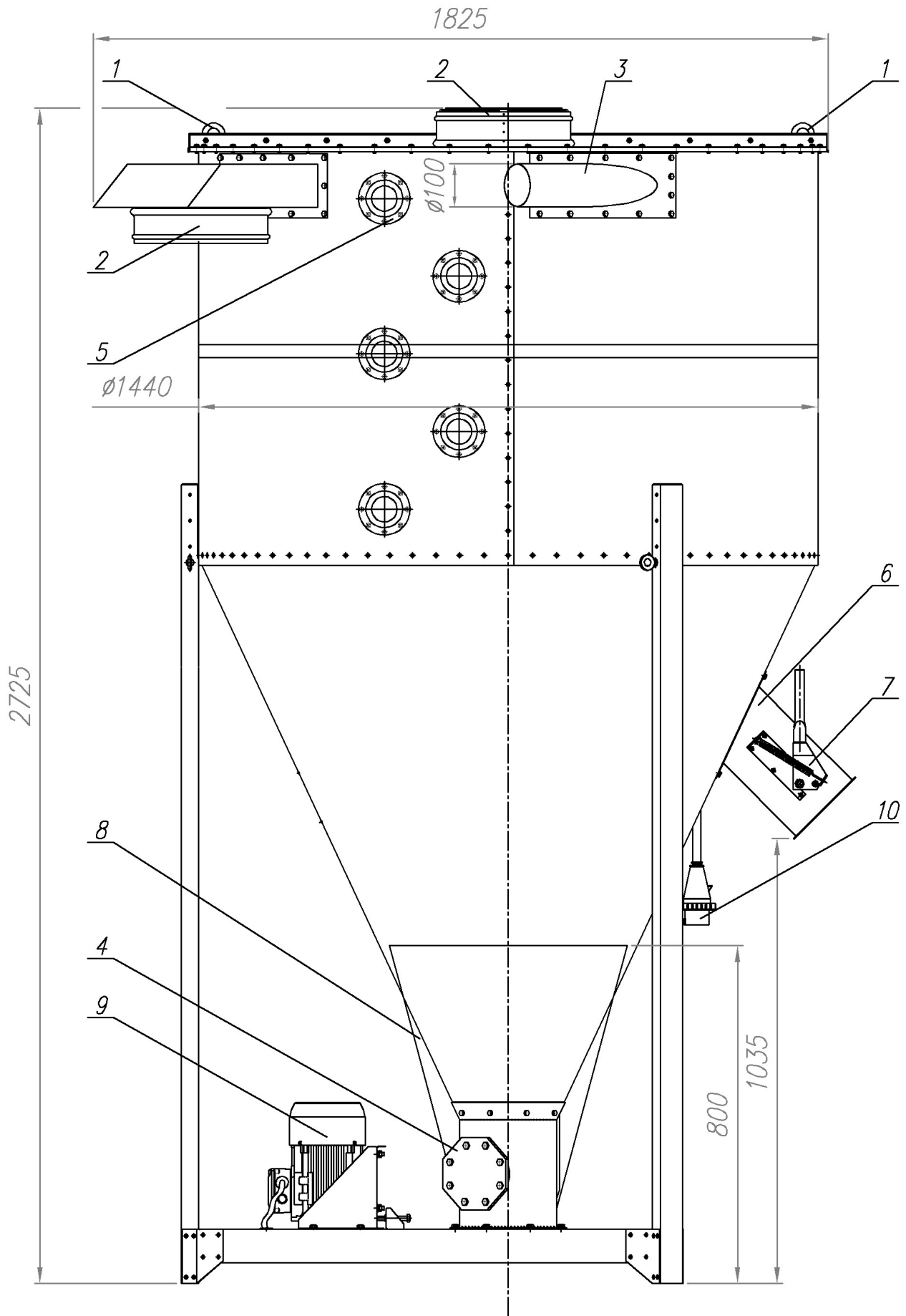


Figure 2. Loose feed mixer MS-1000 - overview diagram.



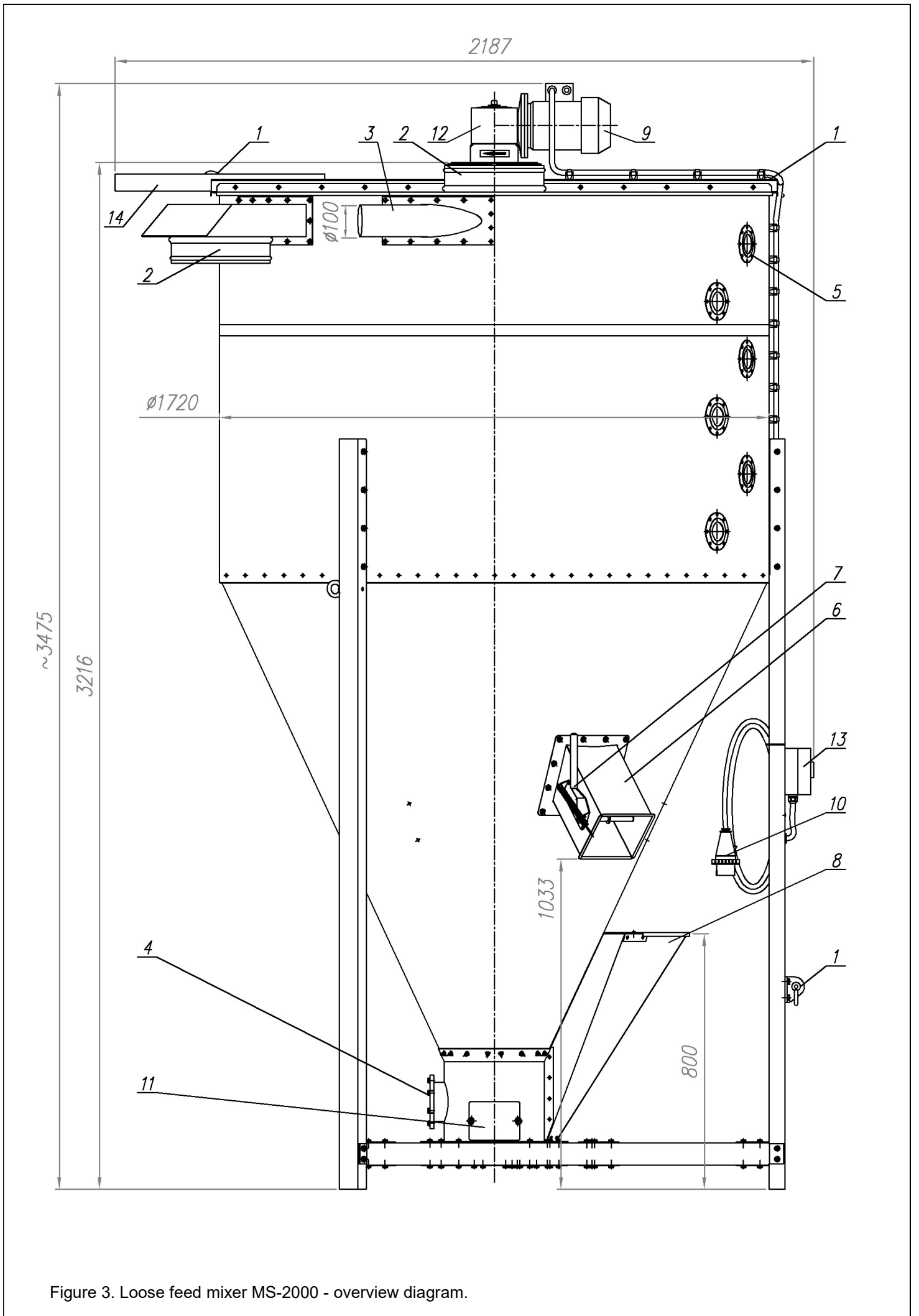


Figure 3. Loose feed mixer MS-2000 - overview diagram.

Table 1. Basic technical data of the mixers

	Mixer type	MS-650	MS-1000	MS-2000
1.	Usable volume	1300 litres	2000 litres	4000 litres
2.	Loading capacity (for mix density of 0.5 kg/litre)	650 kg	1000 kg	2000 kg
3.	Total height	2.35 m	2.71 m	3.48 m
4.	Diameter of the cylindrical part	1.44 m	1.44 m	1.72 m
5.	Minimum ceiling height	2.6 m	2.95 m	3.6 m
6.	Loading port diameter	Ø100 mm	Ø100 mm	Ø100 mm
7.	Fabric filters surface area	3.6 m <sup>2</sup>	3.6 m <sup>2</sup>	3.6 m <sup>2</sup>
8.	Motor type	Sg90L-4	Sg90L-4	Sg90L-2PC
9.	Nominal motor power	1.5 kW	1.5 kW	3.0 kW
10.	Nominal current	3.6 A	3.6 A	6.5 A
11.	Power supply voltage	3x400V/50Hz	3x400V/50Hz	3x400V/50Hz
12.	Engine rotational speed	1420 rpm	1420 rpm	2845 rpm
13.	Screw diameter	Ø 200 mm	Ø 200 mm	Ø 280 mm
14.	Indicative batch mixing time	~15 minutes	~20 minutes	~20 minutes
15.	Power supply cable	OPd5x1.5	OPd5x1.5	OPd5x1.5
16.	Weight	230 kg	245 kg	377 kg

The mixer noise level does not exceed 70 dB (A).

## 2. Power supply system

The electrical equipment of the mixer consists of a three-phase motor, a thermal overcurrent circuit breaker with undervoltage release, and a power supply cable with a plug 3P+N+PE 16A.

The investor is responsible for construction of a relevant power supply system for connecting the mixer. The system should be constructed by a person holding relevant licences, in accordance with current legislation. The power supply system to which the mixer is connected should be equipped with sufficient differential current and short-circuit protective devices, a PE protective cable, and voltage failure and phase sequence relays.

An electrician holding relevant licences should perform the first test start of the mixer, check correctness of the motor rotations and consistence of current values on nominal plates of the motor and the thermal switch.

**The manufacturer requires a written confirmation that set-up and test activities, and the first test start of the equipment were performed by an electrician holding relevant licences. The confirmation should be made in the attached guarantee card.**

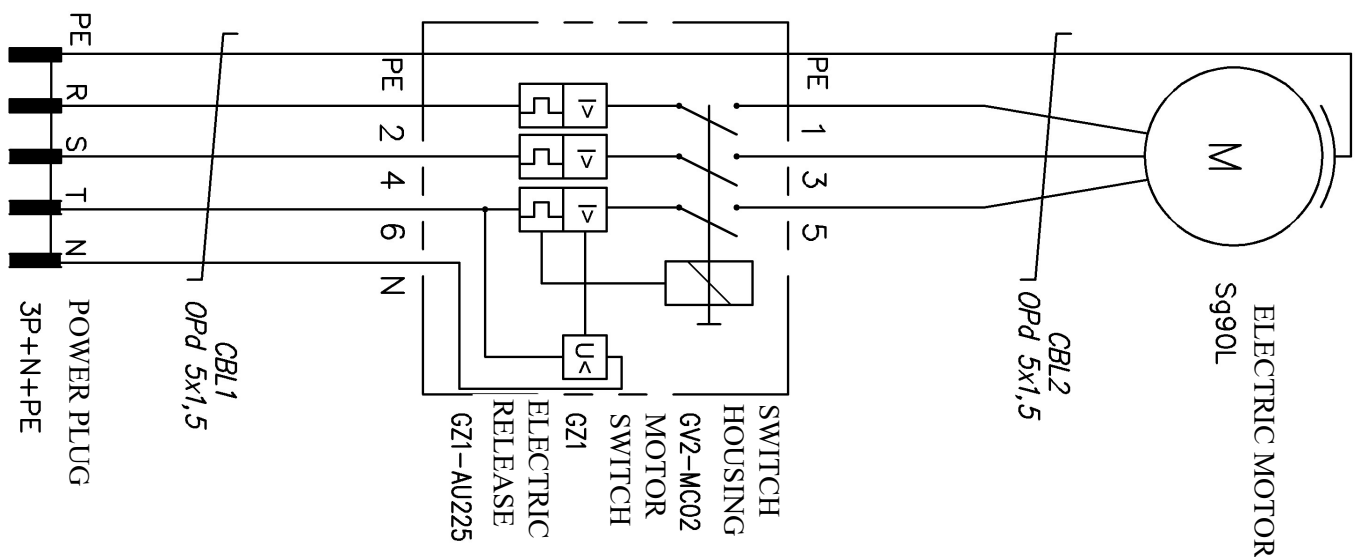


Figure 4. A wiring diagram for MS-650, MS-1000, and MS-2000 mixers.

### 3. Operation

#### 3.1. Operation of the mixers

##### 3.1.1. Preparing for start-up

Before starting operation of the mixer:

1. Check the operational condition of the mixer and its accessories;
2. Install fabric filters in the mixer using metal clamps.

One of two filter variants can be installed:

**Variant 1:** Install small bags on ports on the mixer cover, and a long bag on a side port, vertically downwards.

This variant is to be used when the mixer was installed in a low room. In this case, the filter needs to be cleaned periodically.

**Variant 2:** Install one of small bags on the side port, and the long bag and the second small bag on ports in the top cover. The end of the long filter bag should be attached, e.g. to the roof structure. The second long bag can also be purchased to be fixed on the mixer cover in a high room. This solution is possible only when the mixer was installed

in a room of the height exceeding: 5.3 m for MS-2000, 4.5 m for MS-1000 and 4.15 m for MS-650. To a large extent, the accumulated dust is removed automatically from the filter bag.

3. Connect the suction and force hammer mill to the loading port through a  $\phi 100$  mm flexible hose. Secure the hose on the port with a metal clamp (all components required for connection can be purchased from BIN).
4. Perform a short test start of the mixer.

If the conveyor screw is jammed, try to unblock it. For this purpose, empty the intake socket and try to rotate the screw manually in the direction opposite to its normal operating direction. If the attempt to unblock the screw fails, order its unblocking at the manufacturer.

##### 3.1.2. Periodic technical maintenance



**Before any repair is started, the mixer motor must be switched off and the plug must be removed from the power supply socket.**



**It is forbidden to perform any inspections, maintenance, or repairs when the machine is running.**

Technical maintenance aim at keeping the device in a perfect operating condition.

People performing periodic inspections should be appropriately qualified.

Periodic maintenance cover inspection of all fixed and moving parts, and in particular:

at least once a month:

1. guards;
2. fabric filters;
3. screw connections;
4. tensioning and wear of V-belts;

at least once a year:

1. screw surface of the screw;
2. the pneumatic loading port;
3. roller bearings and sealant;
4. keyed connections of driving wheels;
5. components of the wiring system;
6. protective anti-corrosion coatings;
7. grease the upper screw bearing - concerns MS-2000.

The periodic maintenance frequency should be adapted to the intensity of operation. When the mixer is operated very intensively, the maintenance should be performed more frequently.

All damages need to be removed immediately, and worn parts should be replaced with new ones.

The general overhaul is performed according to the wear level. Those overhauls also include replacement of ball bearings, V-belts, keys, and sealants, and application of new anti-corrosion coatings. It is recommended for all repairs to be performed by the manufacturer.

If the machine operator notices any noises, plays, wear, seizing, irregular machine running, or other manifestations of abnormal work, the machine must be stopped immediately to identify and remedy the defect.

##### 3.1.3. Storage

When the device is not used for a longer time, empty the mixer completely, unplug it from the power supply, clean it and perform all necessary repairs and maintenance. The device should be stored in a dry room. If the mixer is temporarily stored outside, it must be secured against being overturned by the strong wind.

When starting the equipment after a longer break in use, follow the guidelines for the start-up.

### 3.1.4. Disassembling and disposal

When it is found that the device cannot be no longer operated:

- dismantle all mixer parts and units;
- sort the parts according to a location and a method for their disposal;
- all metal, plastic and other parts and units should be transferred to specialist entities processing and disposing of such materials;
- secure other parts against possible adverse effects on humans, animals, and the natural environment.



**When performing disassembling and disposal operations, observe safety and security precautions specified for transport and handling activities (specified in this Operating Manual).**

## 3.2. Mixer operation

### 3.2.1. Loading of feed components into the mixer

Two basic means for loading feed components are provided:

a) **Meal loading directly from the suction and force hammer mill.** Meal transport from the mill to the mixer starts at the moment kibbling starts. During loading of individual components, the mixer can be started to shorten the mixing time and obtain more homogeneous mix.

**Note:** During simultaneous pneumatic loading and mixing, excessive amounts of meal can get into dust removing bags. If this happens, then mixing should be stopped during loading, and restarted after loading is completed. To ensure high efficiency of the mill, the filter bags need to be cleaned regularly, that is, accumulated meal and dust need to be removed, and fine dust needs to be beaten away, as it settles in pores of filtering fabric and reduces its permeability to air.



**NOTE: Before any cleaning of filter bags is started, loading of the mixer must be stopped, its motor must be switched off and the plug must be removed from the power supply socket.**

b) **Loading of meal from a crusher or a conventional hammer mill.** In this case, all meal is loaded into the mixer through the intake socket. During such loading, the mixer screw must run all the time. It is recommended to arrange the hammer mill and the mixer in such a way that meal is transferred into the mixer gravitationally, i.e. under its own weight.

Feed components that are not kibbled first, including concentrates, premixes, and ready-to-use meal are fed into the mixer directly through the intake socket installed on the mixer cone.



**When the mixer is running, it is forbidden to put hands or items into the grate of the intake socket.**



**Feed components can be fed until the top sight glass is completely covered.**

c) **Additional equipment; Loading of meal from a crusher or a conventional hammer mill through the Intake Hopper.**

See chapter V.

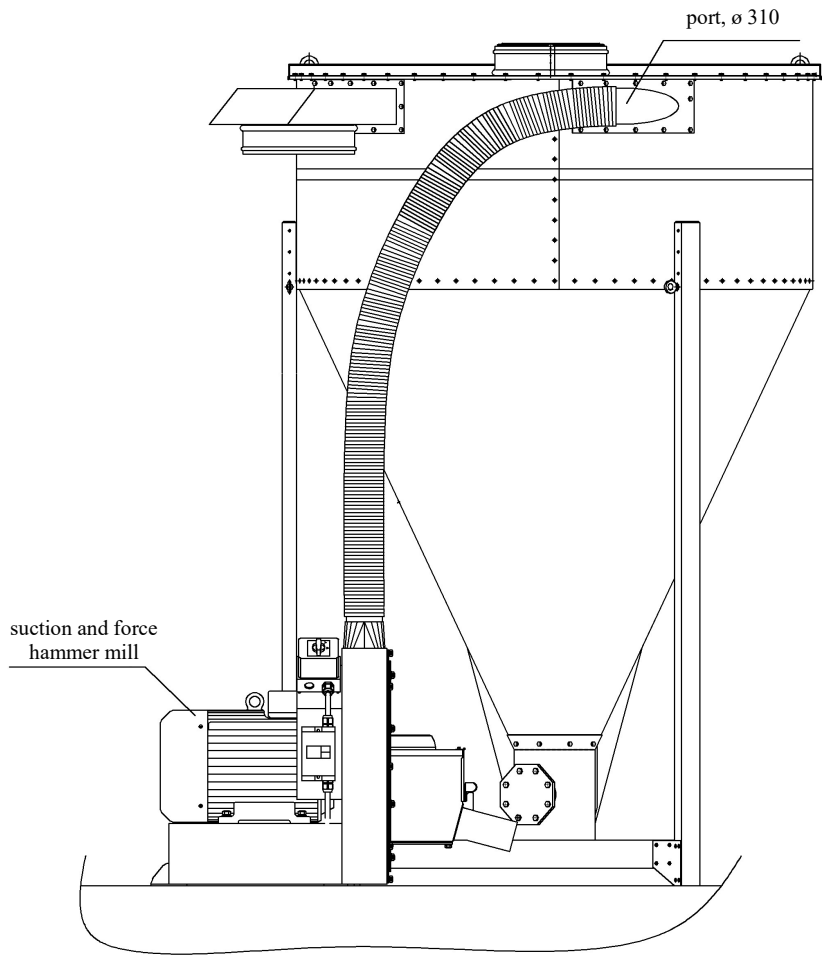


Figure 5. Mixer loading directly from the suction and force hammer mill.

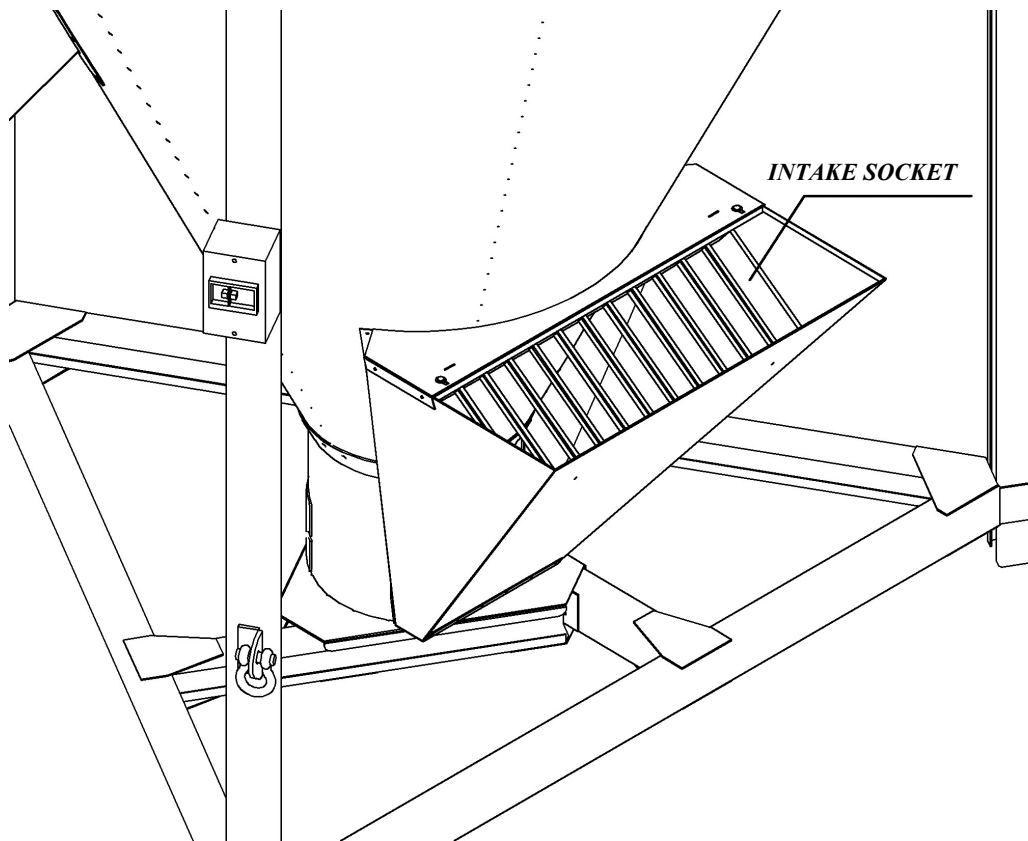


Figure 6. Mixer loading through the intake socket.

### 3.2.2. Starting and stopping the mixer

The mixer is started and stopped using buttons installed on the motor switch. The switch is installed on the mixer leg, between the unloading sleeve and the intake socket. The motor is started by pressing the black button. The mixer screw is stopped by pressing the red button. The appearance of the switch and description of buttons are provided in Figure 7.

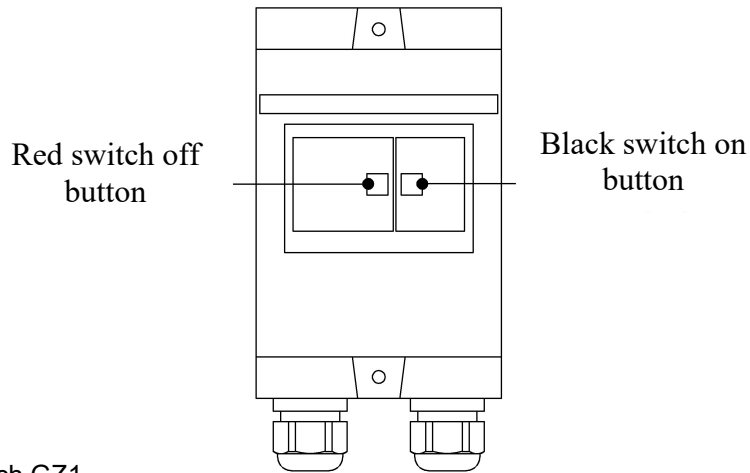


Figure 7. Motor switch GZ1

### 3.2.3. Feed mixing

If the mixer screw is not running during loading of meal and other components, it needs to be started by pressing the black button of the switch. The screw run time ranges between 15 and 25 minutes for MS-2000 and MS-1000 and between 10 and 15 minutes for MS-650, depending on the weight, quantity and type of loaded components. After mixing, start to empty the mixer, i.e. transport the mix from the mixer to feed containers.

### 3.2.4. Mixer unloading

Unloading of prepared feed is performed through a diagonal unloading sleeve. It is recommended to perform unloading directly into an intake hopper of a screw conveyor that transports feed into the containers. The prepared feed can be unloaded directly into bags or feed carts.

To start unloading, start the motor and open the sleeve with the lever installed on the sleeve.

**NOTE:** After opening, the lever remains in the 'OPEN' position until it is moved into the 'CLOSED' position. Prevent overfilling of receiving devices. When feed unloading is completed, close the sleeve lever and switch the mixer motor off with the red button.

**NOTE:** It is recommended to empty the mixer immediately after completing mixing. When feed is stored in the mixer for longer, problems with feed 'bridging' or with starting the mixer may occur.

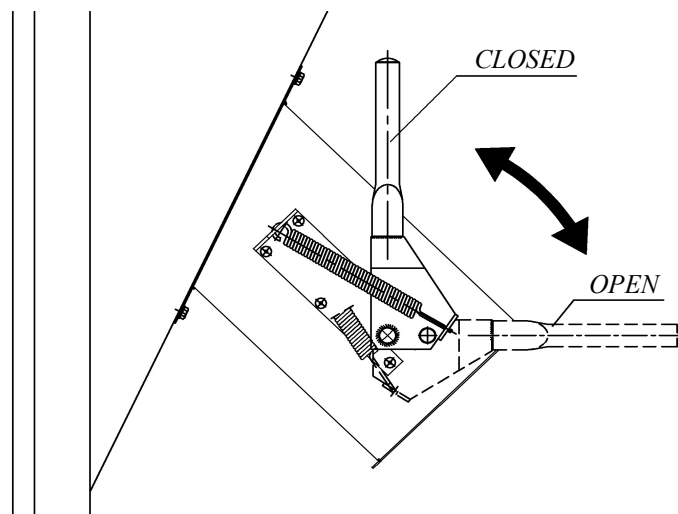


Figure 8. The unloading sleeve with the lever location.

### 3.2.5. Adjustments

a) Adjustment of V-belts tensioning For the MS-650 and MS-1000 mixers. Loosen four screws on the motor base, tighten belts by moving the motor away from the tensioner with two M10 control screws (Fig. 9). The belt tensioning needs to be determined experimentally, by switching the mixer on several times. When the belts do not slide during normal running of the loaded mixer, then the tension is correct; a temporary sliding of belts is acceptable during starting of the mixer.

**NOTE:** When belts are tightened too much, the mixer drive can be damaged. After adjustment, tighten the screws on the motor base and check the tensioner.

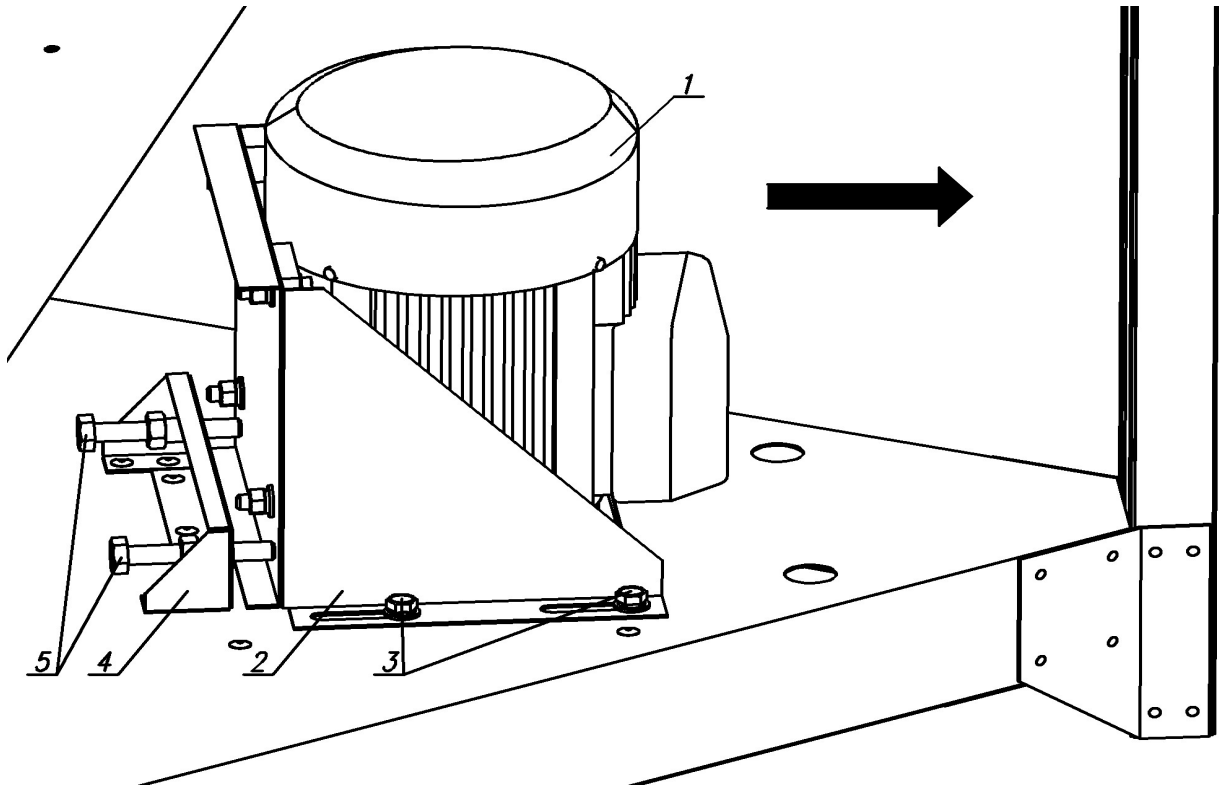


Figure 9. A method for adjusting the belt drive: 1- motor, 2- motor base, 3 – motor base screws, 4 – tensioner, 5 – tensioner M10 screws.

b) Depending on the type of feed components (their content of dust fractions, contaminations, husks etc.) and to obtain the maximum efficiency of the mixer, the adjustment cover of the screw housing (Fig. 10) needs to be installed accordingly (if applicable). In a standard version, the manufacturer installs the said cover on the second or the third (MS-2000) adjustment opening (detail 'a'). If the mixed material tends to adhere to the mixer walls, then the adjustment cover should be installed higher. This way, a larger part of the screw will be exposed. When the material gets into the screw easily and does not stuck, then the adjustment cover can be installed at a lower level.

To perform adjustment, the mixer needs to be emptied and then disconnected from the power supply source. The dismantling and then re-installation (in the chosen position) of the adjustment cover is possible after removing the mixer cover.

**NOTE:** The cover adjustment, and installation and dismantling of the mixer cover can only be performed when the machine is lying down, with the power supply disconnected (and secured against accidental start).

### 3.2.6. Mixer cleaning

When unloading is completed, about 20 to 40 litres of feed may remain in the mixer, depending on its properties and the device model. The feed remains can be removed through an opening installed at the bottom of the intake socket, secured with a shutter (Fig. 11), or (in MS -2000) through an inspection point, after unscrewing the cap (Fig. 3).



**Before starting to remove feed residues, the mixer motor must be switched off and the plug must be removed from the power supply socket.**

**After feed residues are removed, the shutter needs to be fixed in its correct position on the socket with a screw.**

**After feed residues are removed, the cone base cap needs to be fixed in its correct position with screws.**

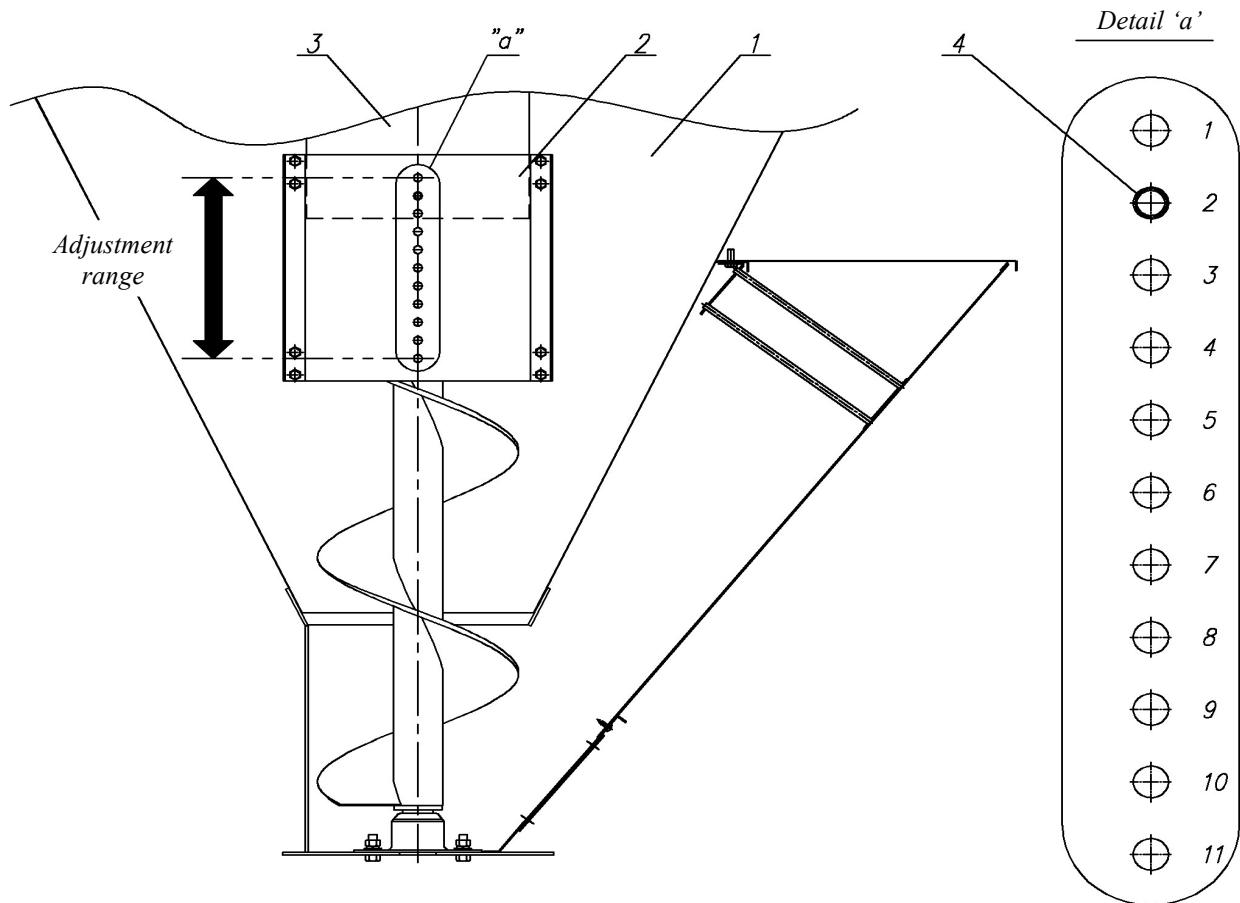


Figure 10. Adjustment of the screw housing: 1 – mixer MS, 2 – adjustment cover, 3 - screw housing, 4 – location pin.

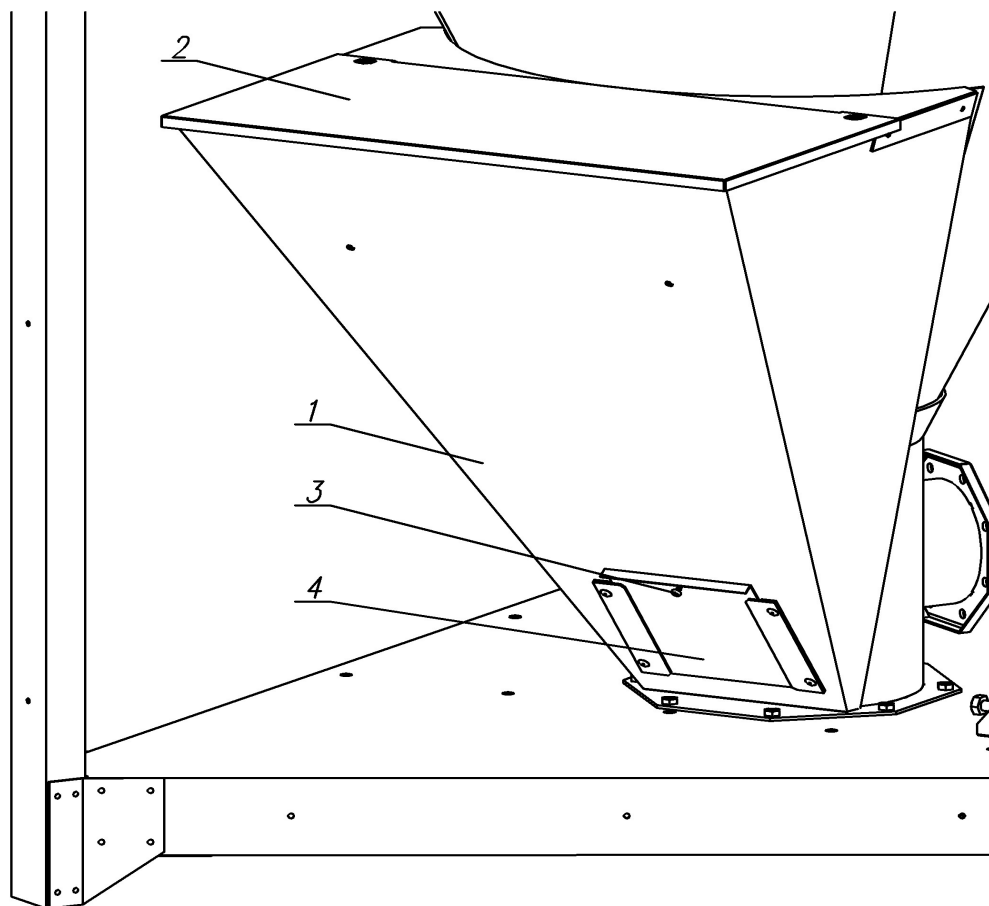


Figure 11. Intake socket: 1 – intake socket, 2 – socket cover, 3 – shutter screw, 4 – shutter



## CHAPTER V. INTAKE HOPPER

### 1. General description and intended use of the product

The intake hopper (MS-KOSZ) is an optional device used to load feed mixers manufactured by BIN. MS-KOSZ can work together only with the mixer provided with the connecting port (Figs. 1, 2 and 3). The MS-KOSZ device is to facilitate and accelerate loading of feed components directly into the mixer (the cone base) using the screw conveyor.

The entire MS-KOSZ housing is made of galvanised steel. The device consists of a hopper with a cover, and with a protective grate installed inside. A screw conveyor driven by a three-phase motor via a worm drive runs at the hopper bottom.

The horizontally located hopper of a capacity of ca. 140 litres ensures free unloading, e.g. of a bag with feed additives. Walls inclined at a large angle facilitate sliding of materials that are not easily fed into conveyors, e.g. bran. With the hopper, poured feed components are transported fast to the mixer.

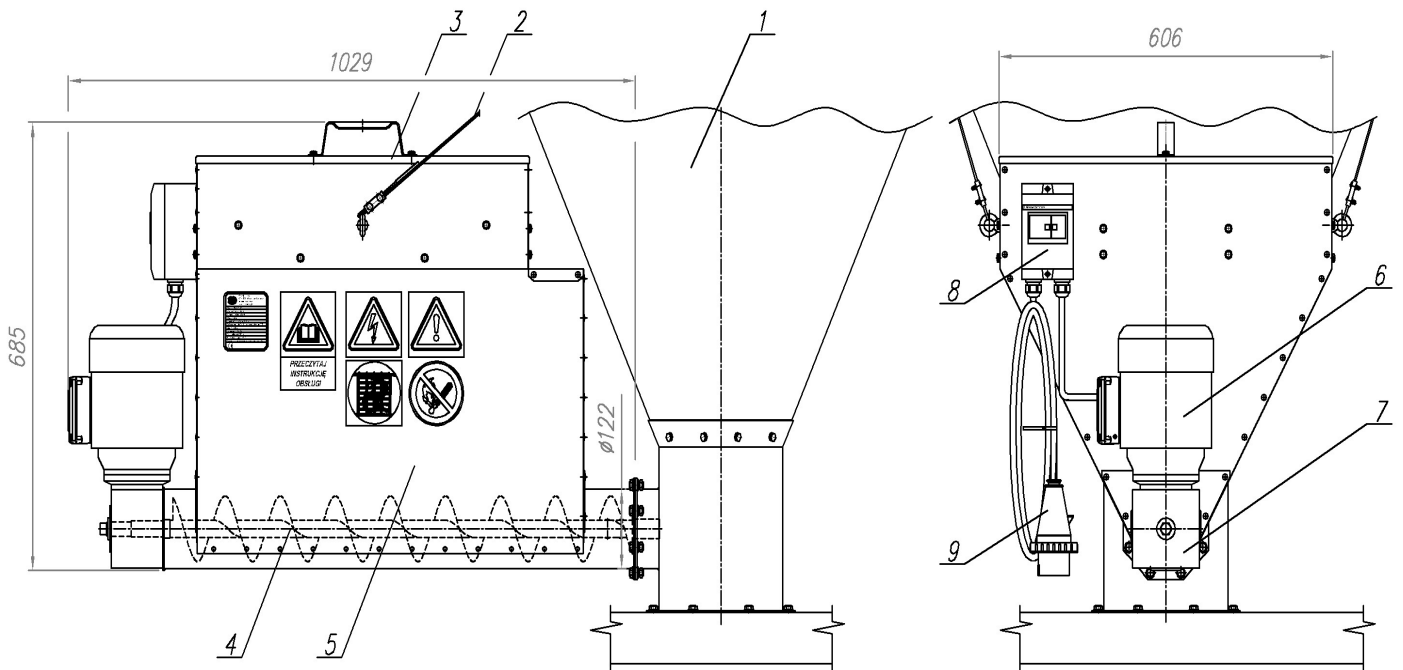


Figure 12. MS-KOSZ - overview diagram: 1.- mixer with the port for MS-KOSZ, 2 – line, 3. - cover, 4 – screw conveyor, 5 – intake hopper, 6 – motor, 7.- screw reducer, 8 – drive switch, 9 – cable and the power plug

Table 2. Basic technical data of the hopper

	Type	MS-KOSZ
1.	Usable volume	140 litres
2.	Loading capacity (for mix density of 0.5 kg/litre)	70 kg
3.	Total height	0.685 m
4.	Connecting port diameter	Ø120 mm
5.	Motor type	Sg80-4A
6.	Nominal motor power	0.55 kW
7.	Nominal current	1.6 A
8.	Power supply voltage	3x400V/50Hz
9.	Engine rotational speed	1420 rpm
10.	Screw reducer	RT50 1:28
11.	Screw diameter	Ø 100 mm
12.	Indicative batch feeding time	~2 minutes
13.	Power supply cable	OP5x1.5
14.	Weight	75 kg

The intake hopper noise level does not exceed 70 dB (A).

## 2. Power supply system

The electrical equipment of MS-KOSZ consists of a three-phase motor, a thermal overcurrent circuit breaker with undervoltage release, and a power supply cable with a plug 3P+N+PE 16A.

The investor is responsible for construction of a relevant power supply system for connecting MS-KOSZ. The system should be constructed by a person holding relevant licences, in accordance with current legislation. The power supply system to which the hopper is connected should be equipped with sufficient differential current and short-circuit protective devices, a PE protective cable, and voltage failure and phase sequence relays.

An electrician holding relevant licences should perform the first test start of the intake hopper, check correctness of the motor rotations and consistence of current values on nominal plates of the motor and the thermal switch.

**The manufacturer requires a written confirmation that set-up and test activities, and the first test start of the equipment were performed by an electrician holding relevant licences. The confirmation should be made in the attached guarantee card.**

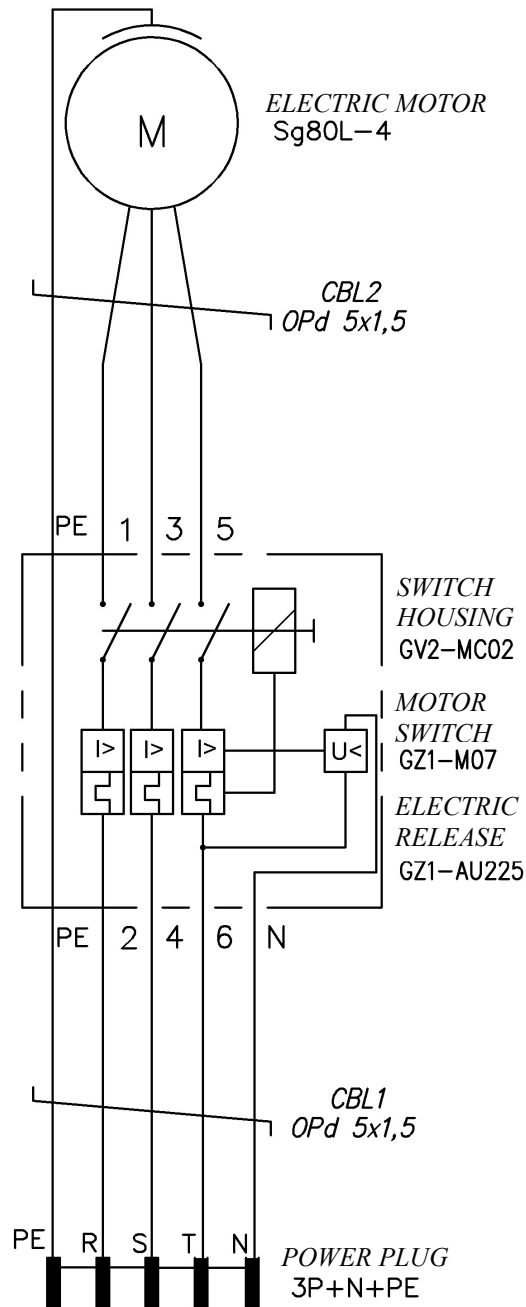


Figure 13. A wiring diagram for the intake hopper MS-KOSZ.

### 3. Operation

#### 3.1. Hopper operation

##### 3.1.1 Installation and start-up

The intake hopper needs to be installed on the mixer base by screwing two flanges together (detail 'a'). Then steel guy lines need to be fixed to 2 mixer legs. The lines need to be tensioned initially with a rope clamp (detail 'b'). The final tensioning should be done with a bow screw. At later stages (also during operation), the tensioning of the lines should be adjusted with tensioning bow screws. The hopper will run correctly when it is well levelled and its guy lines are adjusted.

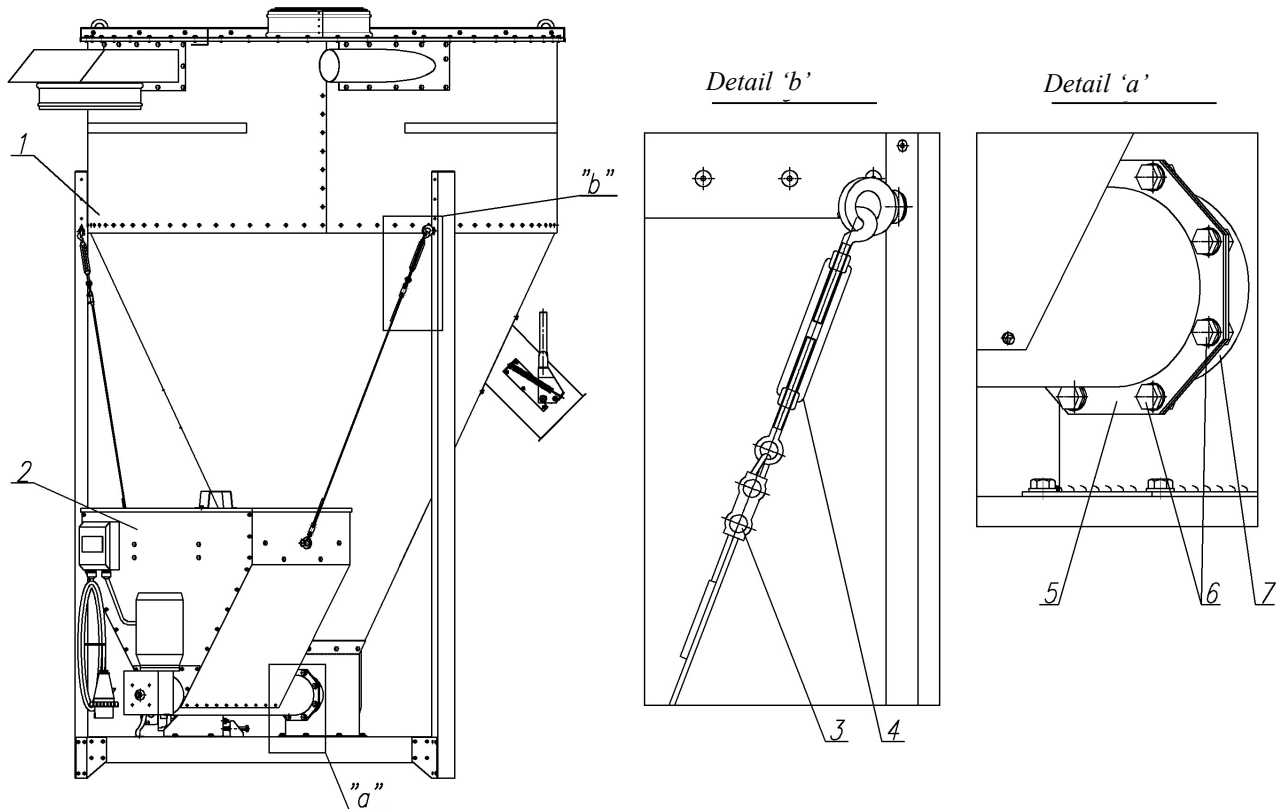


Figure 14. Intake hopper - connection to the mixer: 1 – mixer, 2 – MS-KOSZ, 3 – rope clamp, 4 – bow screw, 5 – hopper flange, 6 – M8 screws, 7 – mixer connecting port.

If the conveyor screw is jammed, try to unblock it. For this purpose, empty the intake hopper and try to rotate the screw manually in the direction opposite to its normal operating direction. If the attempt to unblock the screw fails, order its unblocking at the manufacturer.

##### 3.1.2. Periodic technical maintenance



**Before any repair is started, the mixer and the hopper motors must be switched off and their plugs must be removed from the power supply sockets.**



**Before periodic maintenance is started, the mixer and the hopper motors must be switched off and their plugs must be removed from the power supply sockets. It is forbidden to perform any inspections, maintenance, or repairs when the machine is running.**

Technical maintenance aim at keeping the device in a perfect operating condition. People performing periodic inspections should be appropriately qualified. Periodic maintenance cover inspection of all fixed and moving parts, and in particular:

1. guards;
2. screw connections;
3. components of the wiring system;
4. protective anti-corrosion coatings;

The periodic maintenance frequency should be adapted to the intensity of operation. When the hopper is operated very intensively, the maintenance should be performed more frequently. All damages need to be removed immediately, and worn parts should be replaced with new ones.

The general overhaul is performed according to the wear level. It is recommended for all repairs to be performed by the manufacturer.

If the machine operator notices any noises, plays, wear, seizing, irregular machine running, or other manifestations of abnormal work, the machine must be stopped immediately to identify and remedy the defect.

### 3.1.3. Storage

When the device is not used for a longer time, empty the intake hopper completely, unplug it from the power supply, clean it and perform all necessary repairs and maintenance. The device should be stored in a dry room. If MS-KOSZ is temporarily stored outside, it must be secured against being overturned by the strong wind.

When starting the equipment after a longer break in use, follow the guidelines for the start-up.

### 3.1.4. Disassembling and disposal

When it is found that the device cannot be no longer operated:

- dismantle all hopper parts and units;
- sort the parts according to a location and a method for their disposal;
- all metal, plastic and other parts and units should be transferred to specialist entities processing and disposing of such materials;
- secure other parts against possible adverse effects on humans, animals, and the natural environment.



**When performing disassembling and disposal operations, observe safety and security precautions specified for transport and handling activities (specified in this Operating Manual).**

## 3.2. Running of the hopper

### 3.2.1. Loading of feed components into the hopper

MS-KOSZ is intended to be used for loading feed additives and components into the mixer. Before starting the hopper, start the receiving device, MS-650, MS-1000, or MS-2000. After starting the device and removing its cover, the feed components can be poured onto the grate. The hopper should run until it is completely empty. When the mixer is loaded using the suction and force hammer mill, meal can be blown out at initial stages, so it is recommended for the hopper to be always closed with its cover.



**It is forbidden to insert hands or any other items into the hopper grate while it is running.**

### 3.2.2. Starting and stopping the hopper

The hopper is started and stopped by pressing a relevant button on the motor switch. Pressing of the red button stops the screw, while the hopper is started with the black button. The appearance of the switch and buttons is shown in Figure 7.

The device is secured with the undervoltage release. In the situation of the temporary power outage the release prevents the unintended starting of the motor.

As of 16/10/2018 I approve for use the Operating Manual:

title - "Loose feed mixer",

review - XII

issued on - 16/10/2018

Chief Constructor  
Mieczysław Łaskowski

.....  
(signature)

## CHAPTER VI. WARRANTY AND GUARANTEE CARD

**BIN Spółka z o. o. guarantees correct operation of the purchased product from our company. The warranty covers 12 months from the date of sales and is valid only together with a proof of sales issued to a user by us or by our representative. The guarantee covers free of charge removal of defects significantly compromising functions of the product. Therefore, application of warranty provisions under Article 558.1 of the Civil Code is explicitly excluded.**

### **General Guarantee Terms And Conditions**

1. The territory of the Guarantee Application  
This guarantee is valid within the territory of Poland. The warrantor shall cover costs of transport related to an accepted warranty complaint for a distance of up to 250 kilometres covered, according to standard rates.
2. The warranty does not apply to defects resulting from incorrect or excessive operation, natural wear of parts, or other reasons outside the manufacturer's control.
3. The guarantee shall not cover any other costs not listed above, and in particular, costs resulting from starting the device.
4. The guarantee shall become void in the following cases:
  - use of the product contrary to its intended use;
  - when installation was incorrect or any unapproved changes were made;
  - works requiring specialist licences were performed by unauthorised persons;

### **Specific Guarantee Terms And Conditions**

1. In the case of products:
  - with electric motors, warranty for motors is granted by their manufacturer.
  - delivered as components - a customer will verify condition of these components on delivery, and then will store them on its own responsibility until they are assembled. Flat components of galvanised sheets require special attention. They should be stored in a way ensuring a free flow of air around each component. When wet galvanised metal sheets are in contact with each other, permanent spots form, even during a short-term storage.
2. When arrangements made during placement of an order or included in the Operating Manual include obligations for a buyer, then the warranty does not cover consequences of failure to perform or incorrect performance of these obligations.
3. Outdated financial liabilities of a buyer towards the warrantor or the seller result in a loss of the warranty rights until the outstanding liabilities are covered.

### **Mode for exercising guarantee rights**

Any defects found a customer notifies to the seller in writing, in the attached Guarantee Card.

The seller shall notify the customer about a way of handling their complaint, and a place and a time of warranty repair no later than within 14 days.

**Manufacturer**

**BIN Sp. z o.o.  
87-700 Aleksandrów Kujawski  
Narutowicza 12**

.....  
**Seller**

*(seller's signature is not required when an invoice includes a note of granting the warranty)*

**Page intentionally left blank.**

**Page intentionally left blank.**



BIN Sp. z o.o.  
87-700 Aleksandrów Kujawski  
ul. Narutowicza 12  
tel. 0-54 282 22 55

## GUARANTEE CARD

<b>Model</b>	<b>Year of production</b>	<b>Serial number</b>	<b>Purchasing document number</b>

If possible give a detailed description of damage or revealed defect

<b>Forename and surname (Company name)</b>	<b>Place</b>	<b>Street and house number</b>	<b>Postal code and post office</b>

<b>Date</b>	<b>Signature</b>	<b>Telephone Number</b>	<b>Date, signature and stamp of electrician starting the device</b>



BIN Sp. z o.o.  
87-700 Aleksandrów Kujawski  
ul. Narutowicza 12  
tel. 0-54 282 22 55

## GUARANTEE CARD

<b>Model</b>	<b>Year of production</b>	<b>Serial number</b>	<b>Purchasing document number</b>

If possible give a detailed description of damage or revealed defect

<b>Forename and surname (Company name)</b>	<b>Place</b>	<b>Street and house number</b>	<b>Postal code and post office</b>

<b>Date</b>	<b>Signature</b>	<b>Telephone Number</b>	<b>Date, signature and stamp of electrician starting the device</b>



BIN Sp. z o.o.  
87-700 Aleksandrów Kujawski  
ul. Narutowicza 12  
tel. 0-54 282 22 55

## GUARANTEE CARD

<b>Model</b>	<b>Year of production</b>	<b>Serial number</b>	<b>Purchasing document number</b>

If possible give a detailed description of damage or revealed defect

<b>Forename and surname (Company name)</b>	<b>Place</b>	<b>Street and house number</b>	<b>Postal code and post office</b>

<b>Date</b>	<b>Signature</b>	<b>Telephone Number</b>	<b>Date, signature and stamp of electrician starting the device</b>