OLIS™

TECHNOLOGIES AND EQUIPMENT
FOR GRAIN CLEANING, PROCESSING
AND QUALITY CONTROL

CONTENTS

Our company specializes in development, production and introduction of technologies and equipment for grain processing into the industry. Today, we have original modern technologies and equipment for all the main areas of grain cleaning, flour and groats production, which is confirmed by more than 30 patents in the specified area. "OLIS" Ltd produces about 200 types of equipment and has at its disposal the ability to manufacture various grain cleaning complexes, flour mills and groats mills from the stage of development to commissioning.

Among developing directions, we pay special attention to quality control of grain and its processing products. The results of efforts are embodied in more than 20 laboratory devices that are serially produced. I am proud to announce that in Ukraine, which is the world's largest producer of grain, every laboratory for assessing its quality works on the equipment of our production!

Oleksandr Vereshchynskyi,
company founder,
Doctor of Engineering

Our company implements and uses the most modern technologies of design, construction and metal processing, as well as quality management and the company in general. Technological level and organization of our production allows us to ensure high quality of products at reasonable prices and supply them to more than 30 countries near and far abroad.

Research basis and engineering-technological staff of our enterprise is made up of the best graduates of Odesa National Technological University, who have gained a lot of practical experience at enterprises in the bakery industry. The basis of design team and production staff are former workers of machine-building enterprises of Odesa, whose high professionalism is known far beyond the borders of our city.

We invent, experiment, design, construct, manufacture, implement, teach and constantly learn ourselves. Our distinguishing principle is the search for rational methods for solving complex technological problems, which allows us to ensure a significant economic effect during implementation. Therefore, our projects and individual products are advantageously different in efficiency from those created according to traditional approaches.

Our knowledge and opportunities are open and accessible to you. We will be glad to receive you in our company and in our city.

Good luck to you and prosperity to your enterprises!

Sincerely, Oleksandr Vereshchynskyi

GRAIN DRUM CLEANERS LUCH ZSO

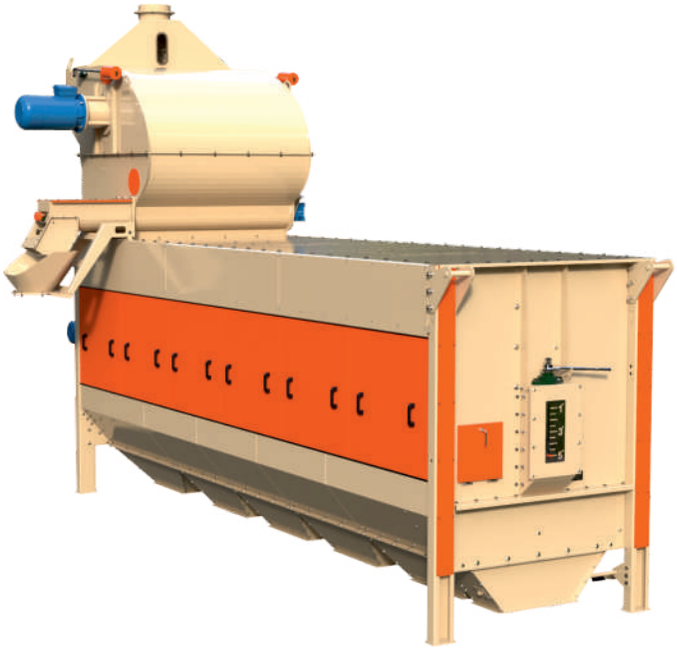


Fig. 1. General view of LUCH ZSO

Grain drum cleaner LUCH ZSO (fig. 1) are designed for cleaning grain of agricultural crops from coarse, fine and light impurities in grain elevators, mills and other grain processing facilities.

Machines consist of sieve (fig. 2) and air (fig. 3, 4) separators. Air separator can be manufactured in two directions: with opened air cycle AKL (equipped with cleaner LUCH ZSO-35, ZSO-50) and closed air cycle VSZ (equipped with cleaner LUCH ZSO-75, ZSO-100, ZSO-150, ZSO-200, ZSO-300).

Grain cleaning on sieves (in sieve cleaner) occurs by sieving through a rotating sieve drum according to one of selected cleaning schemes (fig. 5). Sieves are cleaned by blocks of moving brushes and rollers.

Cleaned grain (its fractions), and separated impurities are separately removed from the machine through outlet nozzles.

Between the air separator and the sieve cleaner, it is possible to install a diverter valve KP.

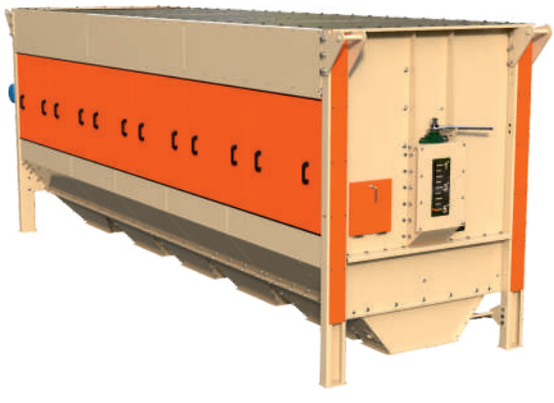


Fig. 2. Screen Drum cleaner

Fig. 4.
Aspirator AKL

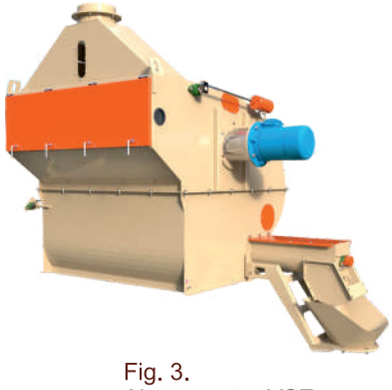


Fig. 3.
Air separator VSZ

GRAIN DRUM CLEANER LUCH ZSO

Advantages:

1. No vibration or dynamic loads on building structures;
2. Reliability secured by simplicity and material intensity of design;
3. Bearing units, drive mechanisms and electrical component parts are made by the leading European producers only;
4. The air separator with a closed air circuit does not require additional installing of an air moving device, a cyclone collector, an air outlet port for cleaning technological air volumes.
5. No grain damage, which insures effective use of the separator for cleaning of seed grains;
6. Common perforated screens are used in the function of sieves, which are installed and fixed on the drum without tightening them on the frames or any other prior preparation;
7. Efficient cleaning of moisture-laden as well as very impure grains;
8. Adjustment of the drum's slope angle by 1° up to 5 °.
9. Use of simple, reliable and very effective cleaning agents for sieves;
10. An extended classification of separators due to their efficiency allows choosing the best option for a grain cleaning complex.

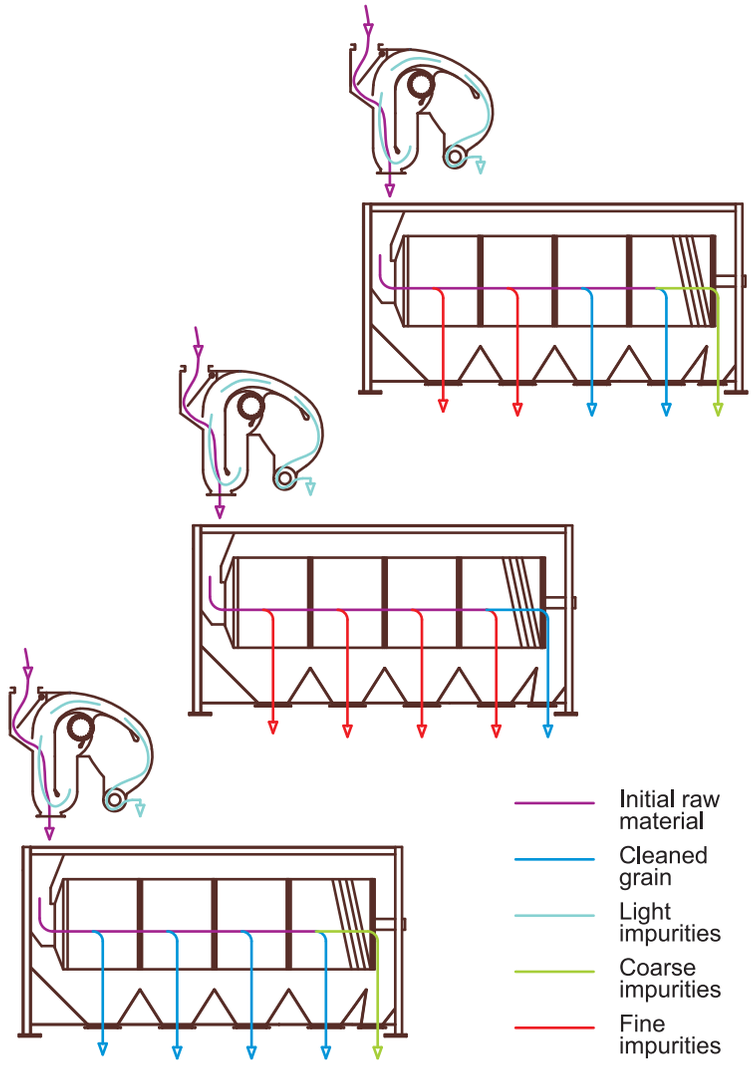


Fig. 5. Schemes of grain cleaning in the screen cleaner

Specifications:

Model	LUCH ZSO-35	LUCH ZSO-50	LUCH ZSO-75	LUCH ZSO-100	LUCH ZSO-150	LUCH ZSO-200	LUCH ZSO-300
Number of sieve drum sections, pcs	3	4	4	3	4	5	6
Diameter of the sieve drum, mm	600	600	900	1260	1260	1260	1900
Electric motor power capacity, kW	5.85*	5.85*	8.1*	12.6*	12.6*	6.6**	23.1*
Preliminary purification, t/hour	35	50	75	100	150	200	300
Primary purification, t/hour	15	30	50	50	100	150	200
Secondary purification (sorting, calibration), t/hour	5	6.5	10	15	20	25	30
Weight, kg	1675	1925	3040	3740	4350	5760	6700
Overall dimensions, mm:							
length	3662	4402	5121	5618	6651	7693	8340
width	1056	1056	2594	3177	3177	3330	2670
height	2655	2655	4444	5237	5237	5332	5833

*** – electric motor power capacity is presented with regard to installation of the cleaner with a closed air circuit VSZ**

SCREEN CLEANERS “HORIZONT-K”

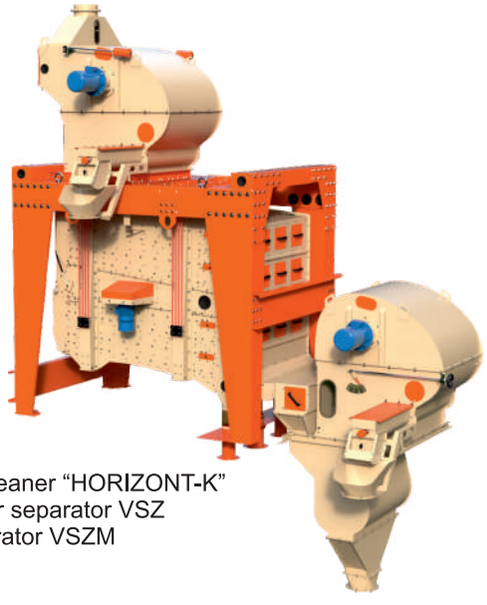


Fig. 1.
Screen cleaner “HORIZONT-K” with an air separator VSZ and separator VSZM

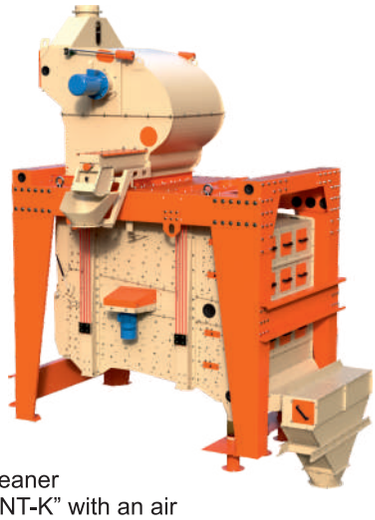


Fig. 2.
Screen cleaner “HORIZONT-K” with an air separator VSZ

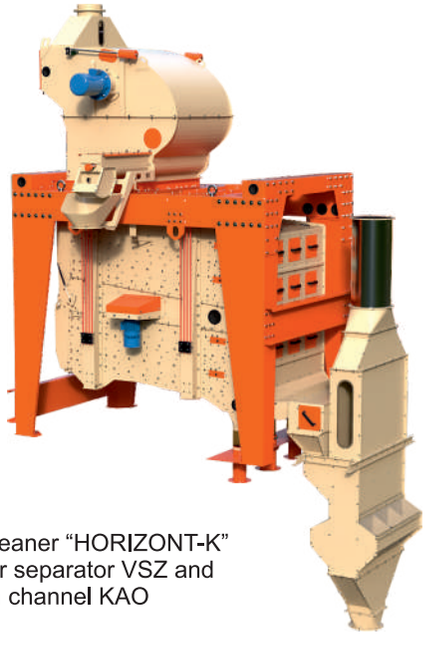


Fig. 3.
Screen cleaner “HORIZONT-K” with an air separator VSZ and aspiration channel KAO

The “HORIZONT-K” is designed for grain cleaning from coarse, fine and light impurities in grain elevators, mills and other grain processing facilities. The separator ensures the following operations: preliminary cleaning, primary cleaning, secondary cleaning (sorting, calibration).

The machine “HORIZONT-K” can be equipped with an air separator with a closed air cycle VSZ, an air separator with a closed air cycle VSZM, as well as an aspiration KAO.

Principle of operation:

Initial grain enters the air separator with a closed air cycle VSZ for light impurities separation, after which it enters the flat-sieve separator, where the grain is cleaned of impurities which differ in geometric dimensions.

The obtained fractions of purified grain and impurities are separately removed from the machine through outlet nozzles.

The cleaned grain can go to the aspiration column KAO or the air separator with a closed air cycle VSZM for additional cleaning from light impurities.

When equipping the “HORIZONT-K” with the air separator with a closed air cycle VSZ for separation of light impurities, the initial product first enters the air separator VSZ, then - to the flat-screen separator.

When the “HORIZONT-K” is equipped with the aspiration KAO, the initial product first enters the flat-screen separator for cleaning from coarse and fine impurities, and then the product enters the aspiration KAO for blowing with a countercurrent air flow, during which the grain is cleaned of light impurities.

Advantages:

1. High productivity with a small area occupied by the separator;
2. Effective grain cleaning due to large area of operating surface of sieves;
3. Design reliability and ease of use;
4. Use of simple, reliable and highly effective means of cleaning sieves;
5. Possibility of organizing a double air separation of grain (at the entrance to the sieve body and at the exit from it) with the additional installation of an air separator VSN or an air separator VSZ;
6. Low power consumption.

SCREEN CLEANERS “HORIZONT-K”

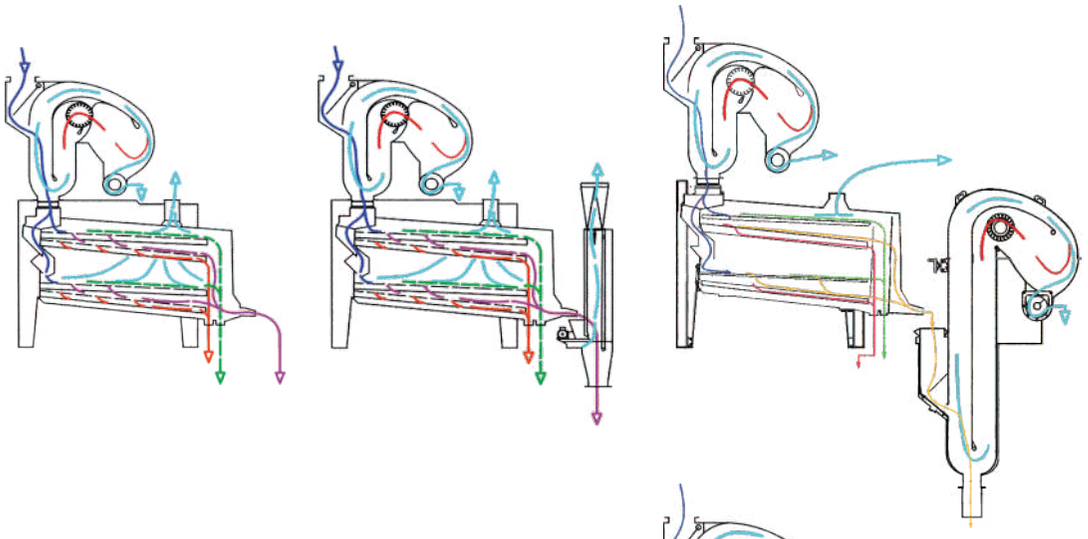


Fig. 3. Schemes of grain cleaning in “HORIZONT-K-130”

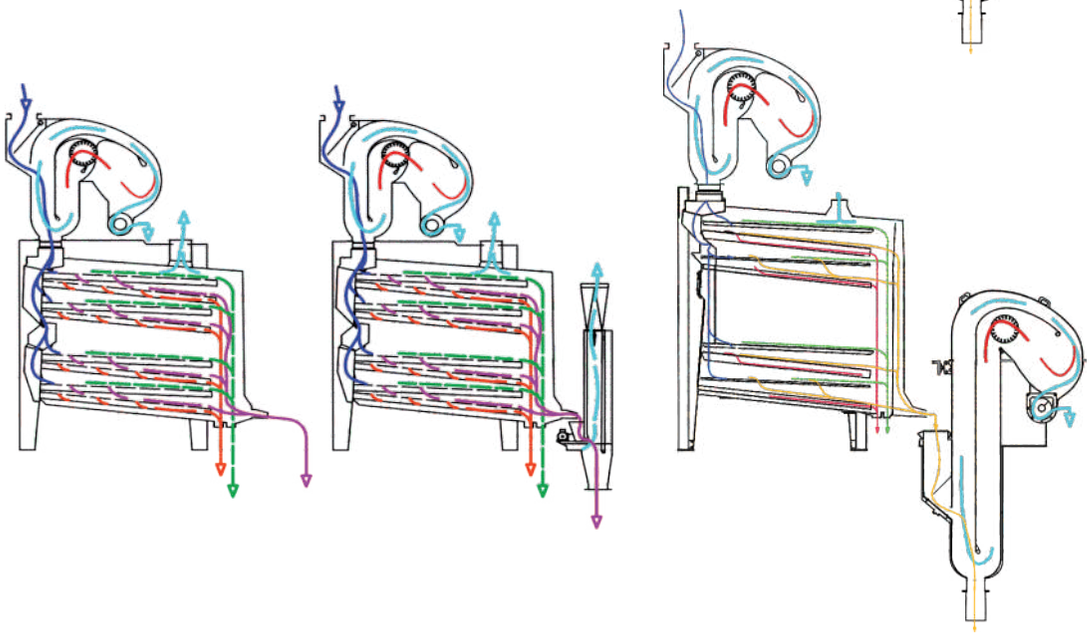


Fig. 4. Schemes of grain cleaning in “HORIZONT-K-250”, “HORIZONT-K-300” and “HORIZONT-K-400”

Specifications:

Model “HORIZONT-K”		K-130	K-200	K-250	K-300	K-400	K-500
Productivity of primary cleaning (of wheat), up to t/h		40	60	80	120	160	240
Working surface of sieves, m²		8	12	16	24	32	48
Air consumption for aspiration with VSZ or VSZM, m^3/h		300	750	1000	1500	2000	3000
Air consumption for KAO operation, m^3/h		4800	---	6240	10600	12480	15600
Pre-installed electric power capacity of the separaot, kW		1.5	2.2	2.2	3.0	3.0	3.0
Weight of the cleaner, kg		2789	3859	5231	6301	7657	8700
Overall dimensions of the cleaner, mm:	length	3170	3945	3440	3500	3550	3850
	width	1804	2381	1850	2350	2880	2870
	height	2085	2350	2920	2950	2956	3870
Pre-installed electric power capacity of VSZ, kW		5.1	6.6	6.6	8.6	12.1	12.5
Weight of the cleaner with VSZ, kg		3384	4626	6131	8259	8607	10550
Overall dimensions of the cleaner with VSZ, mm:	length	3410	4139	3440	3500	3550	3900
	width	2230	2381	2520	3130	3630	3720
	height	3785	4067	4762	5050	5050	6550
Weight of the cleaner with VSZ and KAO, kg		3614	---	6664	8719	9200	11450
Overall dimensions of the cleaner with VSZ and KAO, mm:	length	3890	---	4040	4100	4150	4700
	width	2230	---	2520	3130	3630	3720
	height	3785	---	4762	5050	5050	6550
Pre-installed electric power capacity of VSZM, kW		5.1	6.6	6.6	8.6	12.1	12.5
Weight of the cleaner with VSZ and VSZM, kg		4113	5424	6982	9397	9958	12850
Overall dimensions of the cleaner with VSZ and VSZM, mm:	length	4310	6055	5340	5300	5450	6310
	width	2230	3110	2520	3130	3630	3720
	height	3785	5622	4762	5050	5050	6550

AIR SEPARATOR VSZ

Air separators VSZ are designed for grain cleaning from the impurities which differ in their aerodynamic qualities. They can be used on thrashing floors, elevators, as well as mills, groats mills and feed-processing plants.

Air separators VSZ are produced with a closed air circuit.

Specifications:

Model	VSZ-60	VSZ-80	VSZ-130	VSZ-160	VSZ-200
Productivity, up to t/hour	40	75	150	200	300
Pre-installed electric power capacity, kW	5.1	6.6	8.6	12.1	16.5
Length of the operating channel, mm	600	800	1300	1600	2000
Weight, kg	824	900	1050	1170	1800
Overall dimensions, mm:					
length	1870	1870	1870	1870	2546
width	1970	2240	2675	2775	3351
height	1590	1590	1590	1590	2805

AIR SEPARATOR VSZM

Air separators VSZM are designed for grain cleaning from impurities which differ in aerodynamic properties. They can be used in grain storages, flour mills, feed mills and groats mills.

Air separators are made VSZM with a closed air cycle.

Specifications:

Model	VSZM-60	VSZM-80	VSZM-130	VSZM-160	VSZM-200
Productivity, t/h	15	80	150	200	300
Pre-installed electric power capacity, kW	5.1	6.6	8.6	12.1	12.,5
Length of the operating channel, mm	600	800	1300	1600	2000
Weight, kg	729	851	1138	1352	2245
Overall dimensions, mm:					
length	1932	1932	1932	1932	2710
width	2235	2335	2863	3263	3562
height	3297	3347	3647	3797	4818

AIR SEPARATOR SWO-1

Air separator SWO-1 is designed for separating light impurities from grains.

It is used on thrashing floors and elevators.

Specifications:

Model	SWO-1
Productivity, up to t/hour	150
Pre-installed electric power capacity, kW	0.55
Airflow rate for aspiration, mVhour	7200
Overall dimensions, mm:	
width	1160
height	2360

ROTARY DRUM SKALPER SKO

Rotary drum skalper SKO designed for preliminary purification – removal of large impurities and waste from grains. They are used on elevators and thrashing floors. They can also be equipped with VSZ closed circuit separator or VSN open circuit separator which is installed on the scalper by the principle of drum cleaner LUCH ZSO.

Advantages:

1. High efficiency due to the large sieving area;
2. Common perforated screens are used in the function of sieves, which are installed and fixed on the drum without tightening them on the frames or any other prior preparation;
3. Metal-intensive abrasion resistant framework;
4. Adjustment of the drum's slope angle, which adds functionality to the scalperator.
5. Operation safety;
6. Use of component parts made by the leading European producers.

Fig. 1.
General view of SKO

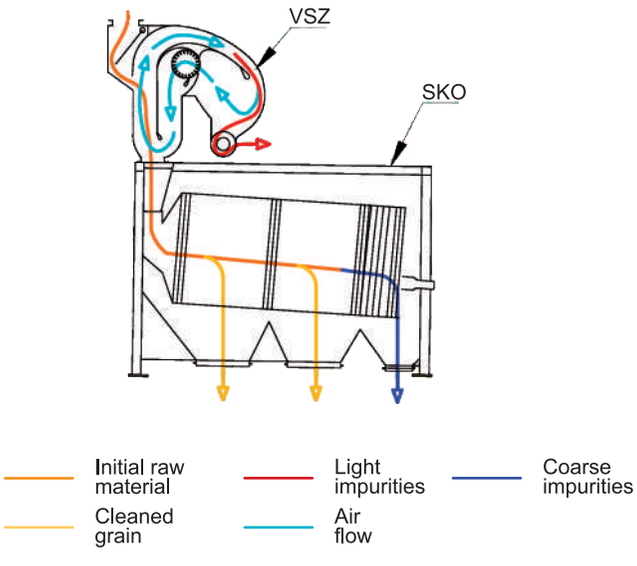


Fig. 2. Scheme of grain cleaning

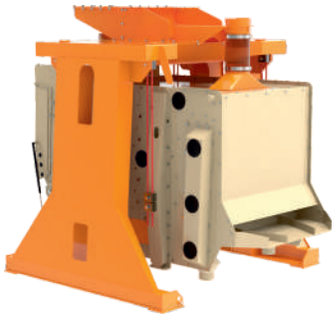
Fig. 3. General view of SKO with the air separator VSZ

Specifications:

Model	SKO-100	SKO-200	SKO-300
Productivity, up to t/hour	100	200	300
Pre-installed electric power capacity, kW	1.5	4.0	7.5
Diameter of the sieve drum, mm	900	1260	1900
Number of sections, pcs	2	2	3
Airflow rate for aspiration, m^3/hour	4000	5500	13500
Weight, kg	2050	2400	7000
Overall dimensions*, mm:			
length × width × height	2500×2355×3640	3355×2685×4095	4900×2920×5044

*** – overall dimensions are specified together with the air separator**

SCREEN CLEANER PSO



These PSO are designed for sorting and cleaning grain crops from impurities which differ from grain in geometric dimensions and aerodynamic properties.

Advantages:

1. Strong, durable construction.
2. Installation symmetry of nozzles allows flexible installation of the separator in existing and new technological lines.
3. Absence of contaminations.

Specifications:

Model	PSO-3	PSO-50	PSO-100
Preliminary cleaning, up to t/h	12	50	100
Primary cleaning, up to t/h	3	15	30

ASPIRATION CHANNEL KAO

Aspiration channel KAO is intended for grain cleaning from impurities which differ in aerodynamic properties.

Advantages:

1. High technological efficiency.
2. High-quality cleaning of grain from light impurities thanks to the vibrating tray, which ensures uniform distribution of grain along the entire length of the pneumatic separating channel.
3. Possibility to adjust the cross-section and shape of the air-separating channel.

Specifications:

Model	KAO-0.6	KAO-1	KAO-1.3
Productivity, up to t/h	30	50	80

ASPIRATOR AKL

Aspirator AKL is designed for cleaning grain from light impurities that differ in aerodynamic properties.

The column is used in mills and grain factories.

Specifications:

Model	AKL-40	AKL-60
Productivity, t/h		
on grain	15	25
Air consumption for aspiration, m^3/h	1500	3000
Aerodynamic resistance, Pa	300	300
Weight, kg	83	98
Overall dimensions, mm:		
length × width × height	1109×634×947	1269×834×947

CONFIGURATION OPTIONS OF SCREEN CLEANER PSO

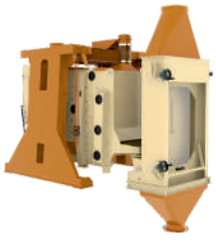


Fig. 1. Screen cleaner PSO with a spiration channel KAO

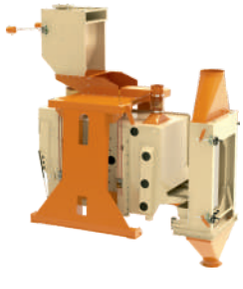


Fig. 2. Screen cleaner PSO with aspirator AKL and KAO

Fig. 3. Screen cleaner PSO with aspirator AKL

GRAIN DESTONERS OMP

Grain destoners OMP manufactured by OLIS Ltd. are used for effective separation of mineral impurities from flows of grains at grain processing enterprises.

Specifications:

Model		OMP-3.0	OMP-6.0
Productivity (of wheat), t/hour		6.0	12.0
Effectiveness of grain cleaning from mineral impurities, %		99	99
Pre-installed electric power capacity (with no air-moving device), kW		0.9	0.9
Airflow rate, m^3/hour		2500	4500
Aerodynamic resistance, Pa		750	750
Weight, kg		255	340
Overall dimensions, mm	length	1900	1950
	width	900	1750
	height	1745	1580

INDENTED CYLINDERS: WILD-OAT SEPARATORS TCO AND COCKLE SEPARATORS TSK

Indented cylinder TCO are designed for cleaning the grains of the main crops from long impurities — wild oats, and cockle separators TCK — from short impurities named cockle.

Specifications:

Model		TCO-500 / TCO-700	TCK-500 / TCK-700
Productivity, up to t/hour		1.9 / 4.0	2.5 / 5.3
Effectiveness of cleaning, no less than, %		80 / 80	80 / 80
Pre-installed electric power capacity, kW		0.75 / 1.1	0.75 / 1.1
Airflow rate for aspiration, m^3/hour		300 / 600	300 / 600
Aerodynamic resistance, Pa		400 / 400	400 / 400
Overall dimensions, mm	length	2800 / 4000	2800 / 4000
	width	1100 / 1200	1100 / 1200
	height	1400 / 1650	1400 / 1650
Weight, no more than, kg		600 / 900	600 / 900

GRAVITY SEPARATORS SPS

Gravity separators SPS manufactured by OLIS Ltd. are used for cleaning the seeds of grain legume crops, grain crops as well as oil-bearing and cereal crops from hard-separable impurities which differ from the main grains in shape, surface properties, volume weight. The pneumatic sorting tables can also be used for selecting of mineral impurities.

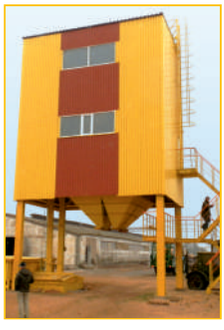
Specifications:

Model		SPS-1.0	SPS-3.5
Productivity (of wheat), t/hour		1.0	3.5
Pre-installed electric power capacity, kW		0.7	1.1
Oscillation frequency of the table, c^{-1}, (vibrations/min)		15.6 (940)	15.6 (940)
Oscillation amplitude of the table, mm		5-6	5-6
Slope angle of the head (of the table), °	lateral	0-8	0-8
	transverse	0-8	0-8
Degree of impurity separation, %		75-90	75-90
Main grain content in the impurities, %		5-15	5-15
Desired airflow, m^3/min (m^3/hour) no more than		110 (6600)	140 (8400)
Weight, kg		400	540
Overall dimensions, mm	length	1840	2149
	width	1720	1937
	height	2000	2341

GRAIN CLEANING AGGREGATES ZAV-“NIVA” with productivity of 25 t/h and 50 t/h

OLIS Ltd is a manufacturer of ZAV new generation. ZAV-“NIVA”-25 and ZAV-“NIVA”-50 are designed and built on the basis of the separator LUCH ZSO according to a new technological scheme in accordance with modern requirements and standards for design and construction.

Stages of installation and launch ZAV-“NIVA”-25


Stages of installation and launch ZAV-“NIVA”-50



Advantages:

1. The design of ZAV-“Niva” is rational for operation and meets all modern requirements and standards for design and construction;
2. Highly reliable equipment manufactured by “OLIS” Ltd is used for assembly;
3. The technological scheme provides ample opportunities for grain processing (various degrees of cleaning, calibration);
4. The presence of an aspiration system increases the safety of operation and provides high sanitary and hygienic conditions for the staff;
5. Control, protection and alarm systems allow minimizing the number of operating and maintenance personnel, increase safety, and eliminate possible emergency situations;
6. It is possible to complete with various technological equipment to increase the capabilities of the complex;
7. The project provides for the phased installation of dryers for ZAV-“Niva”, a seed department with the installation of indented cylinder separators and vibrating pneumatic tables, a department for long-term storage and weighing of grain, and a laboratory for grain quality control.

Grain cleaning aggregate ZAV-“Niva”-25:
1. Grain receiving 25 t/h – grain elevator NZ-50
2. Grain cleaning 25 t/h – separator LUCH ZSO-40
3. Grain shipment 25 t/h

Grain cleaning aggregate ZAV-“Niva”-50:
1. Grain receiving 50 t/h – grain elevator NZ-50
2. Grain cleaning 50 t/h – separator LUCH ZSO-75
3. Grain shipment 50 t/h

MOBILE GRAIN CLEANING COMPLEX ZAV-“NIVA”

Mobile grain cleaning complex ZAV-“Niva” is designed for preliminary and primary cleaning of grain, as well as for sorting and calibration of grain and seeds.

ZAV is an aggregate complex consisting of:

- metal structures (supporting frame) with stairs and platform for equipment maintenance,
- feed mechanism – grain elevator,
- grain cleaning separator – LUCH ZSO,
- as well as control panel with automation elements.

In addition, ZAV can be equipped with a receiving hopper and a grain elevator for transporting cleaned grain.

Name	Based on the separator	Productivity
ZAV-“Niva”-15-M	LUCH ZSO-35	15 t/h
ZAV-“Niva”-25-M	LUCH ZSO-50	25 t/h
ZAV-“Niva”-50-M	LUCH ZSO-75	50 t/h

GROATS MILL “OPTIMATIK-K”

Universal groats mill “OPTIMATIK-K” is designed for wheat, barley, peas, corn and millet grains processing into groats.

Groats mills “Optimatik-K-07” and “Optimatik-K-15” with a productivity of 7 and 15 t/day, respectively, are designed for production of pearl, barley, wheat, corn, pea and millet groats.

All equipment of groats mill series “OPTIMATIK-K” is supplied with a supporting metal structure, a ladder and a service platform. Control of groats mills operation is carried out using a central control panel.

Advantages:

1. High output of finished product;
2. Low power consumption per ton of grain processing;
3. Compact design;
4. Product conveyance on a manufacturing line is implemented with the help of pneumatic conveyance, which secures convenience, small size of a groats mill and improves equipment reliability;
5. Partial automation makes it possible for one person to operate a groats mill;
6. Grain purification from large, small, light and metal foreign matters;
7. Finished products are cut, with sharp edges. No rolled or broken groats;
8. Component parts made by the leading European producers are used;
9. Complementary options are easily installed to a basic construction, which significantly increases productivity of processing.

Yield of groats in groats mills of series “Optimatik-K”:

Name of groats	Actual yield, %	Yield due to GOST, %	“OPTIMATIK-K-07" grain productivity of wheat, kg/h	“OPTIMATIK-K-15" grain productivity of wheat, kg/h
Perl-barley, numbered	65-70	45	200	400
Peeled-barley, three-numbered	70-74	65	350	700
Polished wheat, numbered	80-85	63	400	700
Cracked wheat, three-numbered	69-73	60	450	800
Polished, whole and broken peas	78-85	77	400	700
Polished split peas	78-85	not applicable	350	700
Maize groats*	50-55	40	350	600
Maize flour	12-15	12		
Polished millet, graded**	60-65	60	300	400
Electricity consumption per 1 ton of processed grain, kW			26	26
Pre-installed electric power capacity of drives			16	25
Overall dimensions, mm: width × length × height			2500×2800×4850	2500×3000×5300

* – without embryo separation;
** – the grade of millet groats is determined by the grade of processed millet grain.

GROATS ENRICHMENT UNITS UOK

Groats enrichment units UOK-1 and UOK-2 are designed for separating hard-separable impurities from groats as well as for seed grain preparation.

It consists of a pneumatic sorting table SPS with its own metal framework, aspiration, electric parts and automatics.

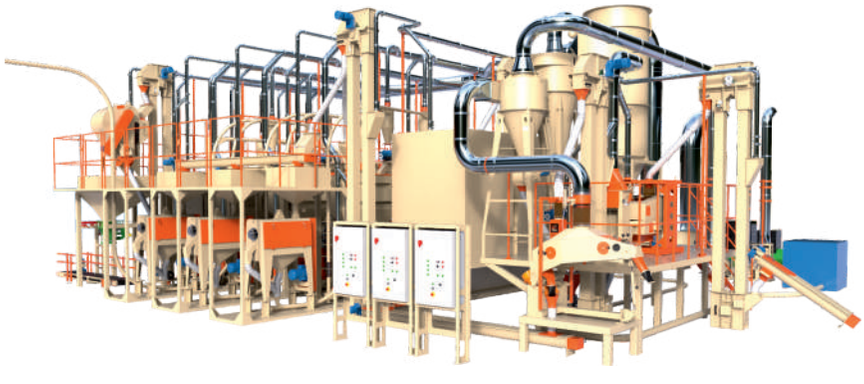
UOK can be used:

- as a separate line of groats enrichment;
- for preparation of seed grain;
- as an additional impurities line for separating hard-separable impurities in assembly with a groats mill “OPTIMATIK-K”.

Structure of unit of groats enrichment:

Name	UOK-1		UOK-2	
	Model	Number, pcs	Model	Number, pcs
Storage bunker	E = 5 m^3	1	E = 3 m^3	1
Pneumatic sorting table	SPS-3.5	1	SPS-1.0	1
Fan	VC-14-46-5	1	VC-14-46-4	1
Cyclone discharger with drive motor and rotatory valve	BCR-290	1	BCR-290	1
Cyclone discharger with drive motor and rotatory valve	BCR-340	1	BCR-340	1
Fun	VVT-5	1	VVT-5	1
Cyclone discharger with drive motor and rotatory valve	UC-38-550	1	UC-38-550	1
Constructional steelwork	---	1	---	1
Control panel	---	1	---	1
Set of pneumatic conveyance	---	1	---	1
Set of air ducts	---	1	---	1
Productivity	up to 3 t/h	---	up to 1 t/h	---

AGGREGATE UNIVERSAL GROATS MILL "OPTIMATIK-K-30" AND "OPTIMATIK-K-45"



Aggregate universal groats mill “Optimatik-K-30” and “Optimatik-K-45” is designed for processing barley, wheat, peas. They are supplied with a supporting metal structure, ladders and service platforms, bunkers, aspiration system, pneumatic transport system, electrical part and automation. Since groats mills go through the stage of control assembly during manufacture, their complete assembly and commissioning at the place of operation takes no more than three weeks.

Assortment and yield of groats:

Model	K-30	K-45
Pre-installed electric power capacity, kW	146	188
Area for placement and maintenance of equipment, m2	250	280
Required height of the premise, m	up to 6.9	up to 7.4
Power supply	3-phase AC, 380 V, 50 Hz	3-phase AC, 380 V, 50 Hz
Weight, t	24	28
Overall dimensions, m:		
length × width × height	14.4×15.4×6.4	14.7×17.4×6.9
Main intra-workshop transport	pneumatic transport	pneumatic transport

GROATS MILLS FOR WHEAT, BARLEY, PEAS AND MILLET PROCESSING

Wheat, barley, peas and millet processing practices include a number of common operations performed by the same machines. Such practices are usually united in a single manufacturing plant named multi-purpose mills.

Multi-purpose mills with production capacity of at least 30 t/day are designed for grain processing of pearl-barley, peeled barley, wheat, maize, peas, as well as millet into groats.

All the equipment of “Optimatik-K” groats mills allows obtaining a higher quality than GOST requirements and meeting the needs of the modern market.

Change of production yield in the given ranges depends on the amount of processed grains.

Assortment and yield of groats:

Name of groats	Actual yield, %	Yield due to GOST, %
Perl-barley numbered	65-70	45
Peeled-barley, three-numbered	70-72	65
Polished wheat, numbered	80-85	63
Cracked wheat, three-numbered	69-70	60
Polished, whole and broken peas	77-82	77
Polished split peas	77-82	not applicable
Maize groats*	50-55	40
Maize flour	12-15	12
Polished millet, graded**	60-65	60

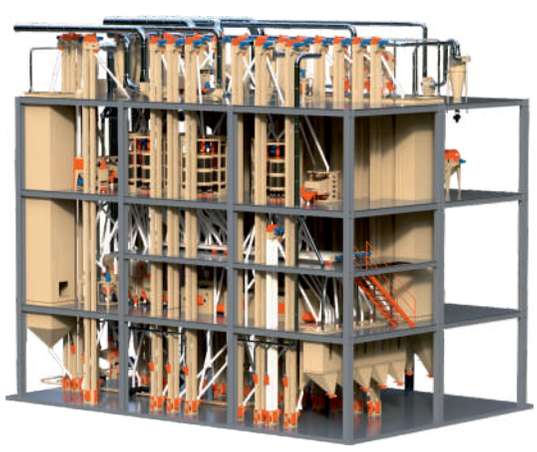
*** – no germ separation;**
**** – grade of millet is determined by the statutory grade of processed millet.**

GROATS MILLS FOR MAIZE PROCESSING WITH GERM SEPARATION

As it is known, maize groats produced with germ separation possess high consumptive qualities as well as marketability, i.e. groats with low fat content. Such groats are used for production of corn curls, snacks, beer, etc.

Our Company manufactures groats mills for maize processing with herm separation with production capacity of at least 30 t/day.

The groats mill equipment ensures the yield and quality of groats which are no lower than the requirements of current standards, which makes it possible to steadily meet today's market requirements.

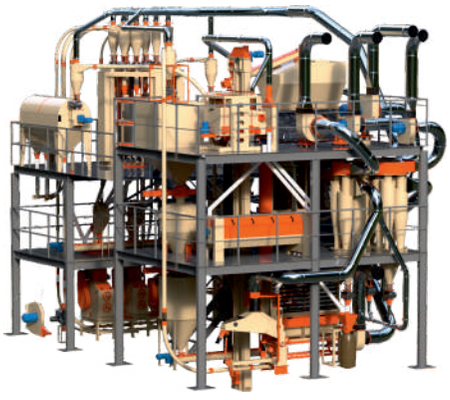


Yield of finished products from grains of basic grade:

	Flint maize	Half-tooth-shaped maize
Groats № 4 и № 5,%	50-55*	43-48*
Coarse-ground floor, %	10-12**	12-15**
Germ, %	7	9

*** – 0.6-1.2% fat content;**
**** – 1.2-1.5% fat content.**

AGGREGATE GROATS MILL “OPTIMATIK-G-24”



Aggregate groats mill “OPTIMATIK-G-24” is designed for buckwheat processing into peeled-buckwheat groats. Design and equipment of the groats mill ensure the quality of groats, which is no lower than GOST requirements, the yield of groats is above the accepted standards and makes it possible to steadily meet today's market requirements. The groats mill is designed on the basis of the traditional technology which includes hydrothermal processing through steaming. The offered technology is significantly improved and added with a whole range of innovations by OLIS Company.

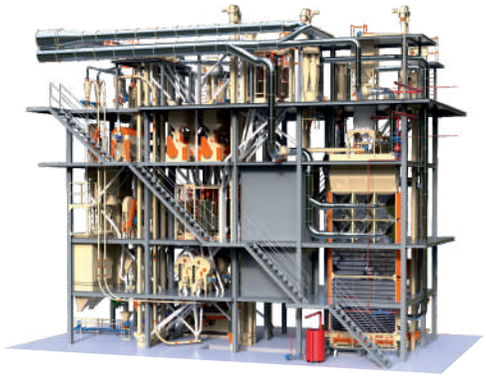
Assortment and yield of groats:

Basic yield of groats due to the offered technology	Basic yield of groats due to the current standards
Peeled-buckwheat groats – 70 %	Peeled-buckwheat groats – 62 %
Broken buckwheat – up to 2 %	Broken buckwheat – 5 %

Specifications:

Model		“OPTIMATIK-G-24”
Pre-installed electric power capacity, kW		72.6
Average electric power consumption per ton of processed grains, kW		50
Steam consumption, kg/h		600
Steam pressure, mPa		0.5
Area for the equipment mounting and maintenance, m^2		96
Required ceiling height, m		9
Electric power supply:		
Three-phase alternating current	voltage, V	380
	frequency, Hz	50
Main interplant conveyance		pneumatic conveyance
Operating personnel, persons		1
Overall dimensions, mm:		
length × width × height		10200×6920×8200

COMPLETE GROATS MILLS FOR BUCKWHEAT PROCESSING with production capacity of at least 30 t/day (24 hours)



The groats mills are designed for buckwheat processing into peeled-buckwheat groats. The equipment of the groats mill ensures the quality of groats, which is no lower than GOST requirements, the yield of groats is above the accepted standards, and makes it possible to steadily meet today's market requirements. The groats mills are designed on the basis of the traditional technology which includes hydrothermal processing through steaming. The offered technology is significantly improved and added with a whole range of innovations by OLIS Company.

Assortment and yield of groats:

Actual yield of groats due to the offered technology	Basic yield of groats due to the current standards
Peeled-buckwheat groats – 72 %	Peeled-buckwheat groats – 62 %
Broken buckwheat – up to 1.5 %	Broken buckwheat – 5 %

GROATS MILLS FOR OAT PROCESSING

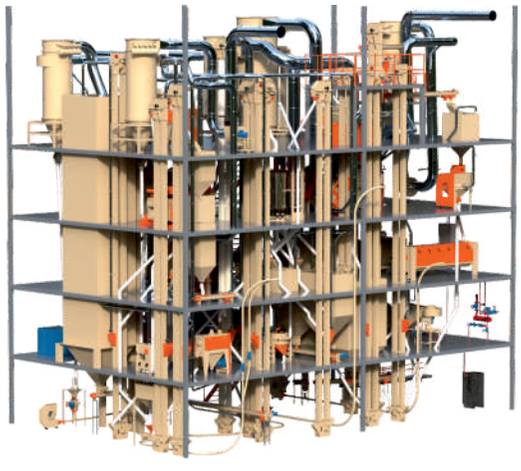
Effective oat processing requires solely specialized technologies which can properly be implemented through industrial plant equipment. Use of industrial plant equipment determines advantageous productivity of at least 30 t/day (24 hours).

COMPLETE GROATS MILLS FOR OAT PROCESSING with production capacity of at least 30 t/day (24 hours)

Complete groats mills for oat processing are designed for production of whole oat groats. The equipment of the groats mill ensures the quality of groats, which is no lower than GOST requirements, the yield of groats is above the accepted standards, and makes it possible to steadily meet today's market requirements.

The groats mills are designed on the basis of the up-to-date European technology with a possibility of additional hydrothermal processing through steaming.

The offered technology is significantly improved and added with a whole range of innovations by OLIS Company.



Assortment and yield of groats:

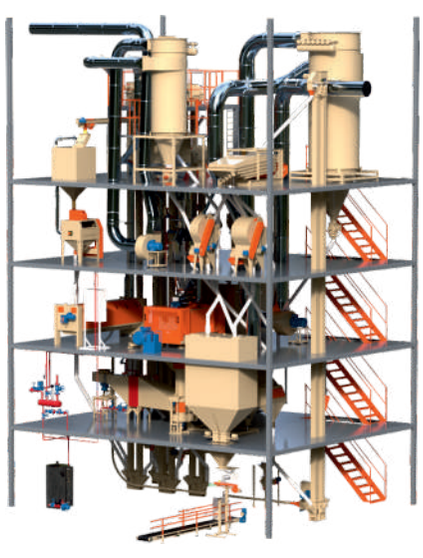
Actual yield of groats from grains (520 g/L) due to the offered technology	Basic yield of groats from basic grains due to the current standards
Whole oat groats – 60 %	Whole oat groats – 45.5 %

LINES FOR CEREAL FLAKES PRODUCTION

Technological lines for production of cereal flakes include the groats plants offered by our Company as the final stage of production. Such lines allow obtaining flakes from different types of groats using the same assemblage; however, experience has proven that production of oat flakes prevails in the structure of manufacturing.

The equipment of the line ensures the high quality and yield of flakes, which makes it possible to steadily meet today's market requirements.

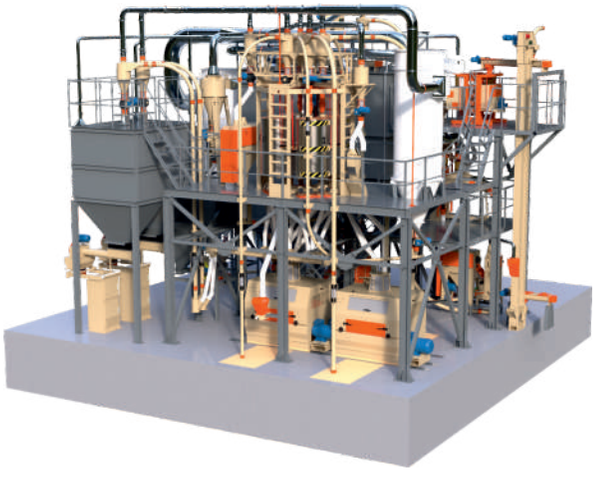
The line is designed on the basis of the up-to-date European technology which is approved in European countries, and improved as well as completed with innovations by OLIS Company.



Assortment and yield of groats:

Actual yield of groats due to the offered technology	Basic yield of groats due to the current standards
Flakes – 95.5 %	Flakes – 95.5 %

AGGREGATE MILL “OPTIMATIK-M-30”



Aggregate mill "Optimatik-M-30" is designed for wheat grain processing into graded flour.

It is delivered with its own metal framework, ladders, service platforms, aspiration system, pneumatic conveyance, electric parts and auto-tune system. As the mill is completely mounted prior to shipping, its complete field assembly takes no more than 3 weeks. In this case no metal cutting, welding or boring are necessary.

Advantages:

- Intensive preparation methods make it possible to carry out effective processing of grains of low milling conditions with no loss in the quality of products;
- There is a possibility of rapid change of milling type and flour extraction according to grades;
- There is a possibility of separation of middlings, hulling bran, mill offal, which are included in a number of bread recipes.

Basic yield of flour depending on the type of milling:

	One-grade milling, %	Two-grade milling, %	Three-grade milling, %	Brightness, in equivalent units, no fewer than
High-grade flour	65-70	55-60	55-60	59
First-grade flour	—	13-18	10-15	43
Second-grade flour	—	—	2-4	21
Total yield	65-70	73	75	

MILLS FOR GRADE WHEAT MILLING with productivity of from 30 t/day up to 240 t/day

Complete mills for grade wheat milling with a productivity rate of 30 t/day and more.

Advantages:

- Quality and quantity of gluten flour, as well as its stability are ensured by the presence of communications for forming milling blends of grains;
- In cold seasons, stable quality is provided by the grain heating device;
- Intensive preparation methods make it possible to carry out effective processing of grains of any milling conditions with no loss in the quality of products;
- There is a possibility of separation of middlings, hulling bran, mill offal, which are included in a number of bread recipes;
- There is a possibility of rapid change of milling type and flour extraction according to grades;
- The mill can be readjusted for rye milling, as well as producing flourfrom any type of whole grains.

Basic yield of flour depending on the type of milling:

	One-grade milling, %	Two-grade milling, %	Three-grade milling, %	Brightness, in equivalent units, no fewer than
High-grade flour	70	55-60	55-60	59
First-grade flour	—	13-18	10-15	43
Second-grade flour	—	—	2-4	21
Total yield	70	73	75	

SCOURERS MBO and MAO

Scourers MBO and MAO are designed for grain surface cleaning from mineral impurities, partial removal of grain hairs, germ and cracked hulls of grain. They are used in grain cleaning units of mills for grain preparation for grinding.

Advantages:

1. The machine can be installed: the rotor with whips and the sieve frame (MBO-3/6) or the rotor with abrasive discs and the sieve frame (MAO-3/6).
2. Low specific power consumption.

Specifications:

Model	MBO-3	MBO-6	MAO-3	MAO-6
Productivity, kg/h	3000	6000	3000	6000
Decreased ash content of grain, %	0.02-0.03	0.02-0.03	0.03-0.05	0.03-0.05
Air consumption for aspiration, m^3/h	100	300	100	300
Pre-installed electric power capacity, kW	3.00	11.00	5.50	11.00
Weight, kg	275	630	315	670
Overall dimensions, mm: length ×width × height	1100×400×1300	1400×510×1620	1100×400×1300	1400×510×1620

DEBRANDERS DESIGN “KASKAD” (machine for deep processing of grain surface)

Debranders design “KASKAD” (machine for deep processing of grain surface) are designed for deep processing of grain surface before grinding. It is used in grain-cleaning areas of mills.

Advantages:

1. High quality grain surface treatment (ash content reduction by 0.2-0.3%).
2. Increase total flour yield by 2-3%.

Specifications:

Model	KASKAD-0.4	KASKAD-0.6	KASKAD-1.6	KASKAD-3.0P
Productivity, kg/h	400-450	650-750	1200-1600	2000-2500
Pre-installed electric power capacity, kW	7.5	11.0	22.0	37.0
Air consumption, m^3/h	500	650	800	1200
Weight, kg	270	320	480	855
Overall dimensions, mm: length ×width × height	880×590×1070	880×590×1115	1020×720×1270	1850×740×1280

INTENSE MOISTENING MACHINES MIU-3

Intense moistening machines MIU-3 are designed to moisten grain (wheat) on mills before loading it on softening.

The intense moistening machine MIU-3 is a box inside which trapezium-shaped blades are installed on a shaft. Initial grain enters the machine through the receiving discharge outlet, is sprayed by water, then captured by the blades and intensively mixed. The blades are set at a certain angle, which helps to the movement of the product along the box. The angle of the blades can be adjusted by changing product feed rate and the degree of moistening.

Specifications:

Model	MIU-3
Productivity, kg/h	9
Pre-installed electric power capacity, kW	7.5
Moisture increase per pass, %	2-5
Consumption, l/h	250
Tilt angle, °	23
Weight, kg	394
Box diameter, mm	32
Length, mm	3

ROLLER MILLS VSM

Roller mills VSM are designed for grinding grain and intermediate products of cereal crops at flour and groats enterprises.

Advantages:

1. Feed roller speed is automatically adjusted according to the level of the feeder products, which greatly reduces the number of stall/dump cycles, and increases the service life of the mechanism.
2. Digital indication of current consumption, overload protection.
3. Convenient and fast replacement of grinding rolls, assemblies and mechanisms.

Specifications:

Model	VSM-800	VSM-1000
Roller diameter, mm	250	250
Roller length, mm	800	1000
Maximum power of one pair of rollers, kW	18.5	18.5
Number of rollers	2 pairs	2 pairs
Frequency of rotation of high-speed rollers, rpm	436	436
Reduction factor for low-speed rollers:		
for grinding pair	1.25	1.25
for breaking pair	2.33	2.33
Overall dimensions, mm		
length × width × height	1489×756×1925	2865×1515×1925

IMPACT DETACHER ESM-1.5

Impact detacher ESM is designed to produce high-quality end products. It is used in grinding areas of mills.

The impact detacher consists of the body with stationary set pins and a pinned rotor. The product is proceeded into the machine and crushed by impact effect of movable and immovable pins.

Advantages:

1. High flour extraction rates;
2. Controllability of exposure intensity;
3. Minimum regrinding of the product.

Specifications:

Model	ESM-1.5
Productivity, kg/h	1000-1500
Pre-installed electric power capacity, kW	5.5
Weight, kg	175
Overall dimensions, mm	
length × width × height	620×660×635

BRAN FINISHER MVM

Bran finishers MVM are designed for remove bran during flour production. It is used in grinding areas of mills.

Advantages:

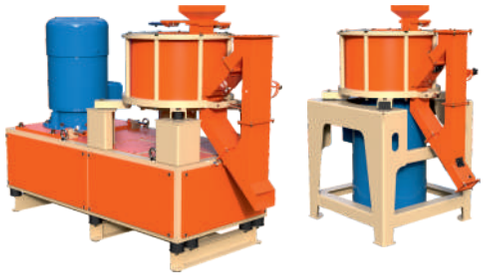
1. Possibility of installation of working bodies of various types and their quick replacement;
2. Automatic maintenance of the degree of grain processing, allowing to achieve a high technological effect.

Specifications:

Model	MVM-0.5	MVM-1.5
Productivity, kg/h	500	1500
Pre-installed electric power capacity, kW	3.0	5.5
Weight, kg	315	400
Overall dimensions, mm		
length × width × height	1144×403×1329	1600×510×1600

ABRASIVE DEHULLERS “KASKAD”

Abrasive dehullers “KASKAD” are designed for hulling and grinding grain of wheat, barley, peas, corn and millet.



Advantages:

1. Ensuring any required quality of processing in one pass;
2. High uniformity of processing;
3. Increase whole groats yield by 7-10%.

Specifications:

Model	KASKAD-0.4	KASKAD-0.6	KASKAD-1.6	KASKAD-3.0-P
Productivity, kg/h				
barley in pearl barley	250-350	350-500	600-700	700-800
barley in barley grits	450-500	600-1000	1200-1400	1600-1800
wheat, corn	400-550	650-1050	1300-1500	1800-2000
peas, millet	450-600	700-1100	1400-1600	1900-2100
Pre-installed electric power capacity, kW	7.5	11.0	22.0	37.0
Air consumption, m^3/h	500	650	800	1200
Weight, kg	270	320	480	855
Overall dimensions, mm				
length × width × height	880×590×1070	880×590×1115	1020×720×1270	1850×740×1280

GRINDERS DKM

Grinders DKM are designed for grinding grain and grain products. It is used in the schemes of groats production, as well as in grinding departments of flour mills and groats mills for additional grinding and grinding of intermediate products.

Advantages:

1. Energy saving up to 30%;
2. Minimum product regrinding;
3. Simplification of the grinding scheme.

Specifications:

Model	DKM-0.4	DKM-0.8
Productivity up to, kg/h	600	1200
Pre-installed electric power capacity, kW	3.0	5.5
Weight, kg	90	110
Overall dimensions, mm		
length × width × height	500×500×1450	650×650×1450

SIEVING MACHINES BM

Sieving machines BM are designed for sorting hulling and grinding products, as well as for monitoring waste and finished products in the grinding departments of flour mills and groats mills.

Advantages:

1. Separation of the product into four fractions;
2. No contaminations;
3. Convenience and ease of replacement of sieves.

Specifications:

Model	BM-0.8	BM-1.2	BM-2.0
Productivity, kg/h			
of sorting	700-800	1000-1200	1300-1800
of waste control	300-500	400-700	500-900
Pre-installed electric power capacity, kW	0.55	0.70	0.75
Weight, kg	200	250	450
Overall dimensions, mm			
length × width × height	1520×840×1200	2000×840×1270	1817×2922×938

GROATS PLANSIFTER RKO and FLOUR PLANSFIFTER RMO

Self-balancing plansifters are designed for:

Plansifter RKO-4 – selection of intermediate products of hulling and grinding, sorting and control of products at enterprises of groats industry;

Plansifter RMO-4 – sorting into fractions depending on size of milling products of wheat grain in mill enterprises for high-grade grinding. The plansifter can be used for sorting into fractions of grinding grain products of other cultures.

The principle of sifting consists in parallel and sequential sieving of the product through a set of flat horizontal sieves that performs a circular translational movement. The initial product from the receiving boxes enters the feeders, from where, being distributed into three streams, it is directed to the sieve frames of the body, with the help of which the sorting process occurs.

Specifications:

Model	RKO-4	RMO-4
Rated pre-installed power, kW	3.0	3.0
Frequency of circular vibrations of the body, s^{-1} (rpm)	160	240
Radius of circular vibrations of the body, mm	35	35
Sifting surface area, m^2	up to 20	up to 20
Number of frames in a section, pcs	up to 20	up to 20
Number of sections, pcs	4	4
Weight, kg	1000	1000
Overall dimensions, mm		
length	1750	1750
width	1750	1750
height	2300	2300

PEALS SPLITTING MASHINE MRG-1.5

Peals splitting mashine MRG-1.5 is designed for processing peas into groats during halves production. The resulting number of halves of the total mass of groats is up to 85%.

The machine is used at groats mills, installed in groats processing plants for peas.

Specifications:

Model	MRG-1.5
Productivity up to, kg/h	1500
Pre-installed electric power capacity, kW	7.5
Weight, kg	315
Overall dimensions, mm	
length × width × height	1144×403×1329

PEAS SPLITTING MACHINE MKG-0.8

Pea splitting machine MKG-0.8 is designed for processing peas into groats during halves production.

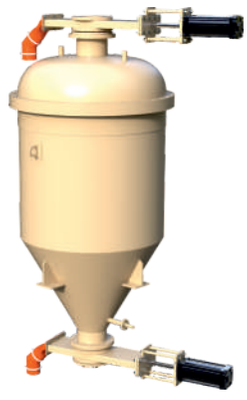
The machine is used at groats mills, installed in groats processing plants for peas.

Specifications:

Model	MKG-0.8
Productivity up to, kg/h	800-1000
Pre-installed electric power capacity, kW	2.2
Weight, kg	90
Overall dimensions, mm	
length × width × height	620×620×1439

STEAMER A9-BPB

Steamer A9-BPB is designed for hydrothermal processing of groats crops in order to change grain technological properties and improve consumer properties of finished product.



Specifications:

Model	A9-BPB
Volume, m^3	
full	1.0
downloads	0.9
Productivity (of buckwheat with a cycle of 12 minutes), t/h	2.8
Working pressure, MPa	0.35
Design pressure, MPa	0.4
Steam consumption per ton of grain, kg/h	150-200
Pre-installed electric power capacity, kW	2.2
Weight, kg	990
Overall dimensions, mm	
length × width × height	1620×1184×2810

VERTICAL DRYERS VPS-O

Vertical dryers VPS-O are designed for drying grain of groats crops in the process of hydrothermal treatment during groats production.

Advantages:

1. Drying sections are equipped with the device for connecting to forced ventilation, which contributes to intensification of drying process;
2. The cooling section is equipped with the cooling air distribution and adjustment device, which helps to evenly cool the product.

Specifications:

Model	VPS-O-3	VPS-O-4	VPS-O-5	VPS-O-6	VPS-O-7	VPS-O-8
Number of heating sections, pcs.	3	4	5	6	7	8
Heating area, m^2	40.5	54	67.5	81	94.5	108
Productivity, t/h	1.0-1.3	1.5-1.7	2.0-2.2	2.4-2.6	2.9-3.1	3.3-3.4
Steam pressure, kPa	400	400	400	400	400	400
Steam consumption per ton of grain, kg/h	280-360	280-360	280-360	280-360	280-360	280-360
Air consumption per ton of grain, m^3/h	6000	6000	6000	6000	6000	6000
Power of electric drives, kW	1.5	1.5	1.5	1.5	1.5	1.5
Weight, kg	3040	3750	4460	5170	5960	6690

BUCKWHEAT/MILLET DEHULLERS VDM and VDSO

Buckwheat/millet dehullers VDM and VDSO are designed for hulling buckwheat and millet at groats mills.

Advantages:

1. A high degree of grain hulling on any fraction, which is ensured by the improved design of the machine feeder and the working gap adjustment system;
2. Increased reliability of the machine and efficient aspiration system;
3. Ease of installation of the machine and its maintenance in production conditions.

Specifications:

Model	VDM-200		VDSO-400/600	
Processed crop	buckwheat	millet	buckwheat	millet
Productivity up to, kg/h	1.0	0.7	2.2/3.6	1.3/2
Pre-installed electric power capacity, kW	2.2	5.5	5.68/7.68	5.75/11.25
Roll length, mm	200	200	400/600	400/600
Roll diameter, mm	400	400	600	600
Roll rotation frequency, rpm	400	400	400	400
Air consumption for aspiration, m^3/h	250	250	500/750	500/750
Aerodynamic resistance, Pa	150	150	150	150
Weight, kg	510	510	930/1270	930/1270
Overall dimensions, mm				
length x width x height	934×417×1030	934×417×1030	1200×685/885×1470	1200×685/885×1470

DEAWNER MVO-1.5

Deawner MVO-1.5, manufactured by OLIS Ltd, is designed to remove awns of barley, oats. It is used in the preparatory departments of breweries and oat factories.

Advantages:

1.High reliability and efficiency;
2. Increasing efficiency of grain preparation and hulling;
3. Small dimensions and power consumption.

Specifications:

Model	MVO-1.5
Productivity up to, t/h	2.0
Air consumption for aspiration, m3/h	300
Pre-installed electric power capacity, kW	5.6
Weight, kg	430
Overall dimensions, mm:	
length × width × height	1480×520×1590

IPMACT DEHULLER SHCO

Ipmact dehuller ShCO is designed for hulling oat grain. It is used in groats and feed mills.

Advantages:

1. The shell has its own drive, due to which it moves in the direction opposite to the movement of the disk. Thus, the efficiency of the hulling process is increased, and the service life of the shell is also increased.
2. Convenient, easy and precise adjustment of the product supply to the hulling chamber.

Specifications:

Model	ShCO-1.5	ShCO-3
Productivity, up to t/h	2000	4000
Rotor drive power, kW	3.0	4.0
Shell drive power, kW	-	0.09
Weight, kg	400	500
Overall dimensions, mm		
length × width × height	937×917×1319	1175×1087×1916

DELINTER MVP-1.5

Delinter MVP-1.5 is designed to remove hairs from oat hulling products. It is used in hulling departments of oat plants.

Advantages:

1. High reliability and efficiency;
2. Increasing the efficiency of plansifters, paddy machines, crimpers;
3. Prevention of clogging of product pipelines with pubescence hairs.

Specifications:

Model	MVP-1.5
Productivity up to, t/h	2.0
Air consumption for aspiration, m^3/h	300
Pre-installed electric power capacity, kW	5.6
Weight, kg	430
Overall dimensions, mm	
length × width × height	1480×520×1590

AIR SEPARATORS ASO

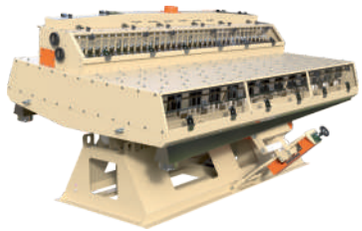
Air separators ASO are designed to separate particles which differ in their terminal velocity. As a rule, separators of this design are used when it is necessary to ensure high efficiency and clarity of separation, for example, for separating the products of hulling groats, controlling finished products, husks, etc.

Specifications:

Technical specifications	ASO-0.5	ASO-3.0	ASO-6.0
Productivity, up to t/h	0.5	3.0	6.0
Pre-installed electric power capacity, kW	-	1.12	1.87
Power supply		3-phase alternating current	
Voltage, V		380 ± 20	
Frequency, Hz		50	
Length of the working channel, mm		300	600
Rotations of the diametrical fan, rpm		2000	
Cleaning efficiency, %	80-90	60-85	
Weight, kg	150	220	304
Overall dimensions, mm			
length × width × height	1100×305×2070	1100×305×2070	1100×305×2070

TABLE SEPARATORS “VECTOR” MSO

Table separators “VECTOR” MSO are designed to separate the collapsed grain from the mixture by the difference in physical and mechanical properties, as well as for control operations at groats mills.



Advantages:

1. High technological efficiency.
2. Stability of work on the separation of grain hulling products and on the control of finished groats.
3. Specially designed feeder that ensures accurate and even distribution of the product in all channels.

Specifications:

Model	MSO-1×12	MSO-2×12	MSO-3×12
Productivity, t/h:			
buckwheat, rice	1.0-2.5	2.0-3.5	3.0-4.5
oat	0.8-1.5	1.0-1.5	1.5-2.0
Number of distribution channels, pcs	12	24	36
Pre-installed electric power capacity, kW	3.0	3.0	3.0
Air consumption for aspiration, m^3/h	200	400	640
Weight, kg	1800	2000	2500
Overall dimensions, mm			
length × width × height	2955×2110×1510	2955×2110×1580	2955×2110×1615

STEAMER PPSH-O

Steamer PPSh-O is designed for hydrothermal processing of groats crops in order to change grain technological properties.

The initial product through the receiving pipe by gravity enters the working area of the steamer, where it is mixed and interacts with steam. After that, the product is taken out of the machine by gravity. The steamer PPSH-O (fig. 1) must be additionally equipped with an operational hopper (reception) and a tempering hopper (fig. 2).

Fig. 1. General view of PPSh-O

Fig. 2. With operational (reception) hopper and tempering hopper

Specifications:

Model	PPSh-O
Productivity, up to t/h	3.0
Steam consumption per ton of grain, kg/h	150-200
Pre-installed electric power capacity, kW	2.2
Weight, kg	170
Overall dimensions, mm	
length × width × height	730×700×1200

FLAKING ROLLER MILL PPM-0.5

Flaking roller mill PPM-0.5 is designed for the production of oatmeal, buckwheat, wheat, pea, millet flakes.

With the help of the feeder, the initial grain enters the working area of the machine, that is, the working gap between the rotating rollers, where the product is crimped to a size corresponding to a roller gap.

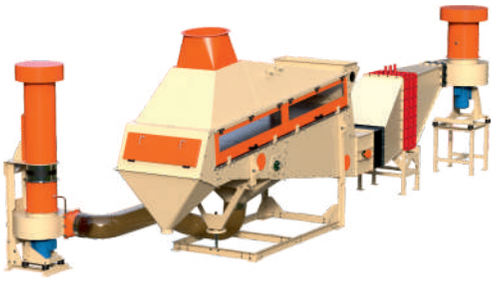
Advantages:

1. High-quality rolls from one of the world's leading manufacturers, made by the method of two-layer centrifugal casting;
2. The upper layer of the rolls, with a thickness of at least 12 mm, alloyed with chromium and nickel;
3. The machine provides the possibility of cooling the rolls.

Specifications:

Model	PPM-0.5
Productivity up to, t/h	1.5
Pre-installed electric power capacity, kW	45.37
Air consumption for aspiration, m^3/h	500
Weight, kg	5549
Overall dimensions, mm:	
length × width × height	1660×3323×1729

FLUIDISED BED DRIER FOR FLAKES CKHO



Fluidised bed drier for flakes SKHO is designed for heat treatment (drying and cooling) of air-blown flakes.

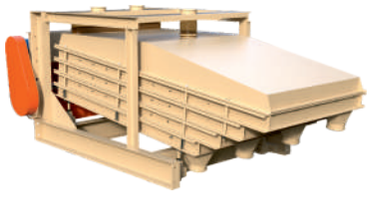
Advantages:

1. The product layer regulator on the sieve ensures efficient drying of the product;
2. Indication of supplied air temperature.

Specifications:

Model	SKhO-300
Sieve area, m^2	3.0
Productivity, t/h	1.5
Weight, kg	1300
Overall dimensions, mm	
length × width × height	7980×2150×2480

FLAKE SCREEN PKHO



Flake screen PKHO is designed for sifting oat flakes after flattening and drying, separating lumps and waste. It is used in groats shops, at oat processing plants.

By means of gravity transport, the product enters the upper sieves, where it goes through three stages: at the first stage, lumps are separated by sieves, at the second stage, the flakes are divided into large and small ones, and at the third stage, flour is separated.

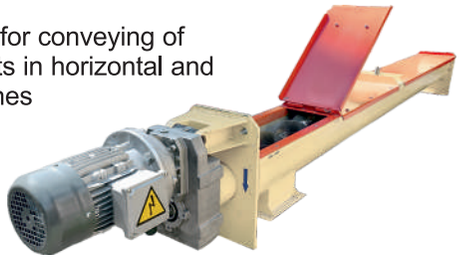
Specifications:

Model	PKhO
Productivity up to, t/h	2
Motor power supply voltage, V	380±20
Power supply frequency, Hz	50
Pre-installed electric power capacity, kW	1.1
Air consumption for aspiration, m^3/hour	300
Aerodynamic resistance, Pa	300
Weight, kg	586
Overall dimensions, mm	
length × width × height	2690×1360×1145

CONVEYANCE AND ASPIRATION EQUIPMENT

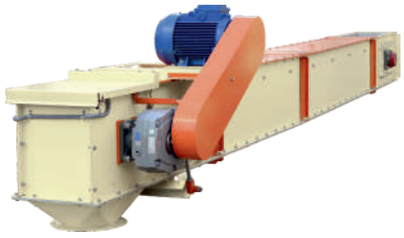
SCREW CONVEYOR with productivity of 5-25 t/h

is designed for conveying of bulk products in horizontal and inclined planes (up to 35°).



GRAIN CONVEYOR NSO with productivity of 20-100 t/h

is designed for conveyance of grains and their derivative products as well as mixed feed and other bulk loads.



BUCKET ELEVATOR with productivity of 5-100 t/h

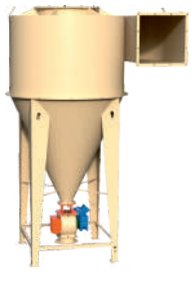
is designed for vertical conveyance grains and their derivative products.
They are equipped with a Europeanmade motorized speed reducer, speed monitoring, joint of band and support, systems of protection and operative parts control.

CYCLONES SYSTEMS-4 BCSH

are designed for purification of air from dust.

CYCLONES UCO

are designed for purification of airfrom dust.

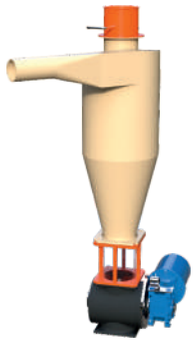


HIGH-PRESSURE FANS

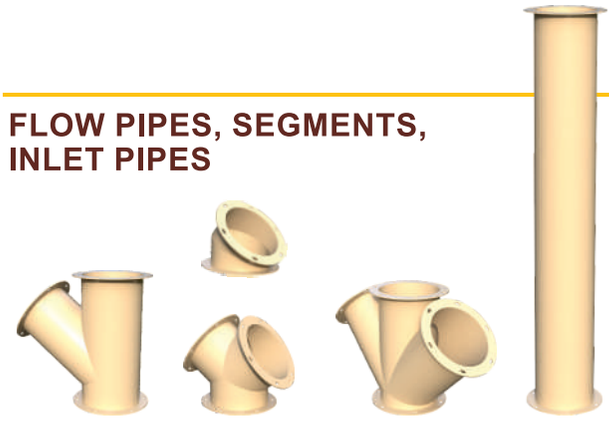
Fans of WT-type are applied in pneumatic conveying systems.

CYCLONES U2-BCR

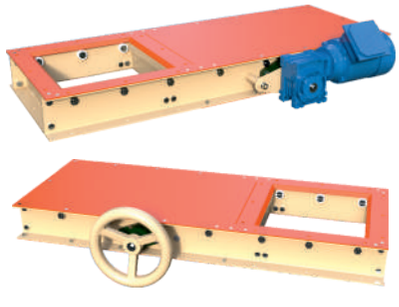
are designed for separation of the conveyed grains from air.



FLOW PIPES, SEGMENTS, INLET PIPES



VALVES



GRAIN SAMPLER RPO

Manual multilevel grain samplers RPO are intended for grain sampling in grain storages and warehouses, in road transport and railway cars etc.

They are used in grain receiving and grain processing enterprises, feed mills, oil extraction enterprises and inspection companies.

Specifications:

Model	Units	RPO-1.6×35	RPO-2.1×35	RPO-3.1×35	RPO-1.6×50	RPO-2.1×50	RPO-3.1×50
Type				manual			
Length,	mm	1600	2100	3100	1600	2100	3100
Diameter,	mm	35	35	35	50	50	50
Sampling depth,	mm	1400	1900	2900	1400	1900	2900
Inner diameter,	mm	26	26	26	41	41	41
Number of sampling openings,	pcs	8	11	17	6	9	13
Sample weight,	g	600	900	1300	950	1400	2000
Net weight,	kg	1.4	1.8	2.5	2.2	2.8	3.9

DIGITAL THERMOBAR TC

Digital thermobar TC (TC-2; TC-3) is designed to measure the temperature of bulk materials (grain, feed, etc.) prone to self-heating during storage in warehouses and granaries.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction enterprises and inspection companies.

Specifications:

Model	Units	TC-2	TC-3
Type		manual	
Material		anodized aluminum / stainless steel / carbon fiber	
Depth of temperature measurement,	mm, not more	2000	3000
Measuring temperature range,	ºC	– 9.9…+ 50	– 9.9…+ 50
Counting resolution,	ºC	0.1	0.1
Temperature measurement error,	ºC	± 0.5	± 0.5
Average measurement time,	min	3	3
Supply (4 elements AA-R6-1.5V),	V	6	6
Current consumption,	mA, not more	40	40
Overall dimensions D × ⌀,	mm, not more	2150 × 65	3150 × 65
Net weight,	kg	0.7 / 1.3 / 1.2	0.9 / 1.4 / 1.5

LABORATORY GRAIN DIVIDER OLISLAB 100 (UDZ-1M)

Grain divider OlisLab 100 (universal), a modernized version of the divider UDZ-1M, is designed to select a sample of the required mass from the initial sample of grain, oilseeds, legumes. It is possible to select a sample weighing 10 g, which is especially important when working with rapeseed and other small-seed crops.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 100
Type		manual
Receiving hopper volume,	l	7.8
The mass of the released average sample	kg	1; 2; 2
Released sample weight	g	10; 50; 100
Limbo range,	divisions	
Body diameter (inner),	mm	150
Section diameter (inner),	mm	85
Dimensions L × W × H:		
- in working condition,	mm, not more	397×384×1217
- in transport condition,	mm, not more	1210×320×370
Net weight / gross weight,	kg	15.7 / 18.3

GRAIN DIVIDERS DPZO

Grain divider OlisLab 200 (riffle type), upgraded version of the divider DPZO-0.4, designed for homogeneous and representative separation of samples of cereals, legumes and oilseeds into two equal parts.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 200 *	DPZO-3	DPZO-5	DPZO-10
Type		manual, riffle	manual, riffle	manual, riffle	manual, riffle
Maximum sample volume,	l	0.4	3	5	10
Number of openings,	pcs.	16	10	10	10
Opening width,	mm	7	20	25	28
Dimensions L × W × H:					
- in working condition,	mm, not more	180×155×160	340×250×210	275×575×320	250×330×300

*** – for rapeseed**

LABORATORY SIFTER OLISLAB 1100 (RLU-1)

Laboratory sifter OLISLAB 1100 (universal, three-section), a modernized version of the sifter RLU-1, rotary type, designed for sorting (sifting) grain and products of its processing when determining contamination and infestation of grain; determining the fractional (granulometric) composition; controlling the fineness of flour, cereals, and animal feed; as well as controlling the size of the grinding of the sample in the process of sample preparation to analyze its quality.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction, bakery enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 1100
Type		rotary
Sifting duration range,	min	0…99
Number of sections	pcs.	1 / 3
Number of sieves in a section	pcs.	4
Sieve diameter,	mm	300 / 200
Number of kinematic modes		2
Sieve pack oscillation frequency,	rpm	120 / 200
Network type		1N~
Power supply,	V / Hz	230±23 / 50
Pre-installed capacity,	W	15
Overall dimensions L × D × H,		
in working condition,	mm, not more	485×470×485
in transport condition,	mm, not more	540×530×200
Weight without sieves net/gross,	kg	24.0 / 27.0

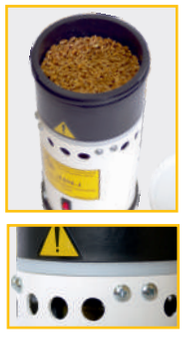
LABORATORY MILL OLISLAB 2100 (LZM-1)

Laboratory mill OlisLab 2100, a modernized version of the LZM-1 mill, knife type, is designed for grinding laboratory samples of cereals, legumes and oilseeds and other solid food products in order to prepare samples for further determination of moisture content and other quality indicators.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OlisLab 2100
Type		knife
Receiving container volume,	cm^3	130
Sample weight (for wheat),	g, not more	50
Working body spindle speed,	rpm	13000
Network type		1N~
Power supply: voltage / frequency,	V / Hz	230±23 / 50
Power consumption,	W	220
Overall dimensions L × W × H:		
- in working condition	mm, not more	100×100×210
- in transport condition	mm, not more	110×110×270
Net weight / gross weight,	kg	1.3 / 1.4



LABORATORY MILL OLISLAB 2200 (LMT-2)

Laboratory mill OlisLab 2200, a modernized version of the LMT-2 mill, hammer type, cyclone principle of operation, designed for grinding grains, legumes and oilseeds and their products in order to prepare samples for further analysis, which require grinding to a given fineness. namely: when determining the quantity and quality of gluten, Falling Number, protein content, as well as other indicators of product quality, including on the NIR analyzer.

It is used in grain receiving and grain processing enterprises, feed mills, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Advantages:

- Speed and convenience of loading and unloading products.
- It can be used for grinding grain of any grain and leguminous crop with high moisture content (up to 20%)
- Adjustment of fineness of a grinding due to quick change of a calibration sieve.
- The use of the air filter allows you to get rid of fine dust in the air that occurs when grinding grain.

Specifications:

Model	Units	OLISLAB 2200
Type		hammer
Sample weight (for wheat),	g	10…100
Moisture content of grinding product,	%, not more	20
Maximum size of crushed grains,	mm, not more	14
Working body spindle speed,	rpm	10200
Operating mode: number of grindings per hour,	pcs, no more	30
Sieve opening diameter,	mm	0.8; 1.0
Network type		1N~
Power supply: voltage / frequency,	V / Hz	230±23 / 50
Power consumption,	W	550
Overall dimensions L × W × H:		
in working condition,	mm, not more	345×180×410
in transport condition,	mm, not more	370×190×450
Net weight / gross weight,	kg	15.8 / 17.0

LABORATORY HULLER & POLISHER OLISLAB 3100 (USHZ-1)

Laboratory huller & polisher OlisLab 3100 (universal), a modernized version of the USHZ-1 huller, abrasive type, designed to study the processes of hulling, grinding, evaluating groats properties and grain hardness.

It is used in grain processing enterprises, feed mills, variety testing breeding stations and research laboratories.

Advantages:

- Low yield of broken grains.
- Fast removal of particles from the working zone.
- Convenient adjustment of hulling duration.
- Sound alarm.
- Fast and convenient replacement of grinding wheels if necessary.
- It can be used to assess the groats properties of such grains and legumes as: barley, wheat, corn, peas, chickpeas, lentils, sorghum, sorghum oryzoidum.

Specifications:

Model	Units	OLISLAB 3100
Type		abrasive
Receiving hopper volume,	cm^3	200
Humidity of hulling products,	%, not more	20
Sieve opening diameter,	mm	2.0
Working body spindle speed,	rpm	1500 / 2500
Circumferential speed of the grinding wheel,	m/sec	9.6 / 16
Noise level,	dB, no more	70
Network type		1N~
Power supply,	V / Hz	230±23 / 50
Power consumption,	W	550
Overall dimensions L × W × H,		
in working condition,	mm, not more	525×375×485

LABORATORY HULLER OLISLAB 3200 (PR-1)

Laboratory huller Olislab 3200 (for rice and millet), a modernized version of the PR-1 huller, roll type, designed for mechanization of labor-intensive processes of grain hulling and separation of hulling products, when determining hull content; fractures of rice-grain; the content of spoiled, red, glutinous and yellowed grains in raw rice; content of spoiled grains in millet.

It is used in grain processing enterprises, feed mills, variety testing breeding stations and research laboratories.

Advantages:

- Convenient adjustment of the inter-roll gap due to the presence of a halt / dump system for the rolls.
- Adjustment of the feed rate of the product into the working area using a screw pair.
- Infinitely adjustable air flow.
- Possibility of visual observation of the hulling process.

Specifications:

Model	Units	OLISLAB 3200
Type		roll
Loading hopper volume,	cm^3	680
Roll size:		
diameter,	mm	120
length,	mm	60
Network type		3N~
Power supply: voltage / frequency,	V / Hz	380±38 / 50
Power consumption,	W	2650
Overall dimensions L × W × H,		
- in working condition,	mm, not more	700×520×750
Net weight,	kg	130

LABORATORY OVEN OLISLAB 4100 (SESH-3MU)

Drying oven OlisLab 4100 (electric), a modernized version of the oven SESH-3MU, with forced ventilation, is designed for drying products when determining moisture content of grain, grain products, legumes and oilseeds, as well as other moisture-containing substances, in accordance with domestic and international standards.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Advantages:

- Quick access to the drying mode both after turning on the device and after it is fully loaded with samples occurs due to the high power of the electric heater.
- Temperature stability due to high-precision thermostats.
- Uniformity of heating due to the rotating table during the operation of the cabinet.
- Accompanied by a metrological calibration certificate.
- Allows you to measure the moisture content in almost any product or material for which the air-thermal method is used.

Specifications:

Model	Units	OLISLAB 4100
Type		electric, forced ventilation
Nominal values of automatically controlled temperature in the working area,	°C	105; 130
Temperature stability in steady state thermal conditions in the working area,	°C	± 2
Temperature setting resolution,	°C	0.1
Heating time up to +130 °C under specified operating conditions,	min, not more	15
Temperature recovery time up to +130 °C after full sample loading,	min, not more	10
Number of working chambers,	pcs	1
Maximum number of bottles Ø 50 mm,	pcs	8
Network type		1N~
Power supply: voltage / frequency,	V / Hz	230±23 / 50
Power consumption,	W	2000
Dimensions L × W × H:		
- in working condition,	mm, not more	360×360×520
- in transport condition,	mm, not more	450×450×600
Net/gross weight,	kg	23.0 / 25.0

LABORATORY OVEN OLISLAB 4200 (OL-36)

Drying oven OlisLab 4200 (electric), a modernized version of the oven OL-36, convective type, is designed for drying products when determining moisture content of grain, grain products, legumes and oilseeds, as well as other moisture-containing substances, in accordance with domestic and international standards.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

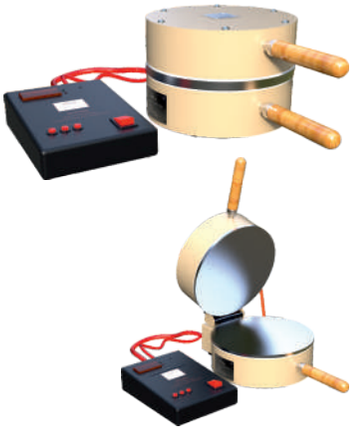
Advantages:

- 2 independent working chambers with their own thermostats provide the possibility of independent measurements in two chambers at different temperatures with a maximum load of 24 bottles.
- 4 independent sections with their own timers allow 4 analyzes to be carried out simultaneously.

Specifications:

Model	Units	OLISLAB 4200
Type		electric, convective
Automatic temperature adjustment range,	°C	0…160
Temperature stability in the steady state thermal regime in the working area,	°C	± 2
Temperature setting resolution,	°C	0.1
Heating time up to +130 °C under specified operating conditions,	min, not more	40
Maximum number of bottles Ø 50 mm,	pcs	24
Network type		1N~
Power supply: voltage/frequency,	V / Hz	230±23 / 50
Power consumption,	W	1200
Dimensions L × W × H,		
- in working order,	mm, not more	255×275×610
- in transport condition,	mm, not more	720×430×445
Net/gross weight,	kg	32.7 / 46.2

LABORATORY OVEN & GLUTEN DRYER OLISLAB 4300 (PCHMC)



Laboratory Oven & Gluten Dryer OlisLab 4300 (by Chizhova); a modernized version of the oven PChMC, designed for accelerated (express) determination and control of moisture content of food raw materials, semi-finished products and finished products; as well as the determination of dry gluten content.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Advantages:

- Fast determination of the result due to high temperature heating between contact heating plates.
- Audible alarm at the end of the drying time.
- Temperature stability due to high-precision thermostats.
- Uniform heating of the product due to the massive design of contact heating plates.
- Allows you to control the moisture content of virtually any moisture-containing food product.

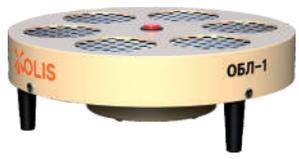
Specifications:

Model	Units	OLISLAB 4300
Type		with metal surface / with non-stick surface
Automatic temperature adjustment range,	°C	50…199
Temperature stability in steady state thermal conditions in the working area,	°C	± 2
Temperature setting resolution,	°C	0.1
Heating time up to +160 °C under specified operating conditions,	min, not more	30
Network type		1N~
Power supply: voltage / frequency,	V / Hz	230±23 / 50
Power consumption,	W	700
Dimensions L × D × H:		
- drying block,	mm, not more	345×220×170
- control unit,	mm, not more	185×160×65
Net/gross weight,	kg	8.5 / 10.0

LABORATORY BOTTLES COOLER 4400 (OBL-1)

Laboratory bottles cooler OlisLab 4400, a modernized version of the cooler OlisLab-1, designed for accelerated cooling of bottles with the product after drying in drying ovens OlisLab 4100 (SESh-3MU), OlisLab 4200 (OL-36) and others when determining moisture content by air-thermal method.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.



Specifications:

Model	Units	OLISLAB 4400
Type		air
Number of cells,	pcs	6
Fan speed,	rpm	2450
Network type		1N~
Power supply: voltage / frequency,	V / Hz	230±23 / 50
Power consumption,	W	14
Overall dimensions L × D × H:		
- in working condition,	mm, not more	290×290×105
- in transport condition,	mm, not more	290×290×110
Net/gross weight,	kg	2.7 / 2.8

LABORATORY GRAINSCOPE OLISLAB 5100 (DCZ-3)

Laboratory grainscope OLISLAB 5100 (for grain), an upgraded version of the device DSZ-3, is designed to determine vitreousness of wheat grain, vitreousness and fracturing of husked rice by their optical properties.

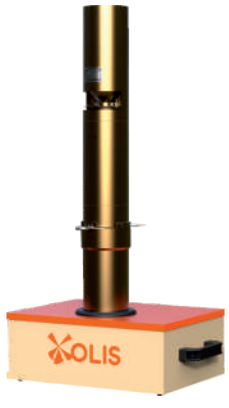
The vitreousness determination method is used to classify grain and determine its further intended use and is based on the unequal ability of vitreous and mealy grains to transmit light due to the different consistency of the endosperm.

Specifications:

Model	Units	OLISLAB 5100
Cassette capacity,	grains	100
Cassette type:		mobile
- number of rows,	pcs	10
- number of cells in a row,	pcs	10
- cassette cell size (L × W × D),	mm	8×4×3
Cassette movement type		manual
Magnification		×2
Network type		1N~
Power supply: voltage/frequency,	V / Hz	230±23 / 50
Current consumption,	mA	100
Overall dimensions (L × W × H):		
- in working order,	mm, not more	265×175×260
- in transport condition,	mm, not more	295×200×285
Net/gross weight,	kg	4.15 / 4.85

LABORATORY HECTOLITER METER OLISLAB 5200 (PCH-2)

Laboratory hectoliter meter OlisLab 5200 (with a falling weight), a modernized version of the hectoliter meter PKh-2, is designed to determine the bulk density (weight in one liter) of grain.



Specifications:

Model	Units	OLISLAB 5200
Type		working, drop weight
Measure internal volume,	cm^3	1000.0 ± 3.0
Measurement error (for wheat*),	g, not more	± 4.0
Repeatability of results (wheat*),	g, not more	± 2.1
Overall dimensions L × W × H:		
- in working condition,	mm, not more	450×300×200
- in transport condition,	mm, not more	370×190×450
Net/gross weight,	kg	9.4 / 10.6

*** – It is determined in 6 consecutive measurements on dry grain, cleaned on sieves with holes of 2.6×20 and 2.8×20 mm.**

LABORATORY DOUGH MIXER OLISLAB 6100 (TL-2)

Laboratory dough mixer OlisLab 6100, a modernized version of the dough mixer TL-2, pin type, is designed for mechanized kneading of dough from crushed wheat (meal) and flour when determining the quantity and quality of gluten by manual washing.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 6100
Type		pin
Bowl capacity,	cm^3	260
Productivity (number of mixing),	h-1, not less	40
Mixing time,	sec	18
Rotation frequency of the working body (at idle),	rpm	506±5
Network type		1N~
Power supply: voltage/frequency,	V / Hz	230±23 / 50
Power consumption,	W	250
Overall dimensions L × W × H:		
- in working condition,	mm, not more	300×180×330
- in transport condition,	mm, not more	370×190×350
Net/gross weight,	kg	17.1 / 17.6

LABORATORY GLUTEN STRAIN METER OLISLAB 6200 (IDK-3MU)

OlisLab 6200 gluten deformation meter, a modernized version of the IDK-3MU device, is designed to determine the quality of gluten (GDI) in wheat grain and wheat flour by the amount of compression deformation under the influence of a certain load during a specified period.

It is used at grain-receiving, grain processing, feed, oil extraction, bakery and other food enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 6200
GDI measurement limit,	mm / unit	0…10.55 / 0…150.7
Measurement error,	mm / unit	± 0.035 / ± 0.5
Mass of movable calibrated cargo,	g	120
The duration of the impact of a movable calibrated load like,	sec	30
The amount of movement of the cargo,	mm	20
Network type		1N~
Power supply: voltage/frequency,	V / Hz	230±23 / 50
Power consumption,	W	20
Overall dimensions L × W × H:		
- in working condition,	mm, not more	200×190×250
- in transport condition,	mm, not more	310×310×310
Net/gross weight,	kg	3.5 / 6.0

LABORATORY OIL PRESS OLISLAB 7100 (PROM-1U)

Manual laboratory press OlisLab 7100 (for oil), a modernized version of the device PROM-1U, designed to obtain oil samples from sunflower seeds, rapeseed and other oilseeds for further analysis of acid number or other analyses.

It is used at grain-receiving, grain processing, mixed fodder, oil extraction enterprises, variety testing breeding stations, research laboratories and inspection companies.

Specifications:

Model	Units	OLISLAB 7100
Type		manual
The volume of the working cylinder,	cm^3	200
The duration of holding under pressure to obtain a sample with a volume of at least 3 cm^3,	min	5
Max effort	t / kN	12 / 120
Returning the jack to its original position		automatically
Overall dimensions L × W × H:		
- in working condition,	mm, not more	465×195×560
- in transport condition,	mm, not more	350×200×620
Net/gross weight,	kg	28.0 / 30.4

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