



**TECHNOLOGIES AND EQUIPMENT
FOR GRAIN PROCESSING**



OLIS Ltd.

**DESIGNS AND INTRODUCES INTO PRODUCTION,
DEVELOPS AS WELL AS MANUFACTURES
EQUIPMENT FOR GRAIN CLEANING,
PROCESSING AND QUALITY CONTROL**

COMPANY PROFILE

Manufacturing of ready-to-operate equipment for grain cleaning and processing into flour and groats:

- ∅ Manufacturing of "Niva" ZAV, 25 and 50 t/ hour.
- ∅ Mills for grade wheat flour milling.
- ∅ Multi-purpose groats mills for wheat, barley, peas, maize, and millet processing.
- ∅ Groats mills for buckwheat processing.
- ∅ Groats mills for oat processing.
- ∅ Groats mills for maize processing with germ separation.
- ∅ Lines for cereal flakes production.

Equipment manufactured by OLIS Ltd.:

- ∅ Equipment for grain storage and drying.
- ∅ Grain cleaning equipment.
- ∅ Equipment for flour and groats production.
- ∅ Conveyance equipment.
- ∅ Aspiration equipment.
- ∅ Gravity equipment.
- ∅ Laboratory equipment.

Services:

- ∅ Design.
- ∅ Installation and adjustment.
- ∅ Reconstructions of grain cleaning and grain processing facilities.
- ∅ Complex laboratory equipment.



Our company specializes in developing, manufacturing as well as introducing technologies and grain processing equipment into production industry. Today we possess original up-to-date technologies and equipment in all main directions of grain cleaning, flour and groats production, which is proved by over 30 patents in the above mentioned sphere. OLIS Ltd. produces about 200 item names of equipment and is well-placed to produce a variety of grain cleaning complexes, mills and grinding machines from the development phase to putting them into the operation. Among the directions being developed by us, special attention is devoted to the quality control of the grains as well as to their derivative products. The exerted efforts resulted in more than 20 item names of series-produced laboratory appliances. I'm proud to inform you that in Ukraine, which is one of the biggest world's grain producing country, each grain quality evaluation laboratory uses our equipment!



General Director,
Doctor of Engineering Science,
Oleksandr Vereshchynskyi

State-of-the-art technologies of design, construction and metalworking operations, as well as management of quality and the enterprise on the whole are implemented and used at our factory. Technological level and organization of our production make it possible to secure high quality of products at reasonable prices and supply them to over 15 neighboring as well as far-abroad countries.

The core of our enterprise's engineering and technical personnel is formed by the best graduates of Odessa National Academy of Food Technologies who gained immense practical experience at the factories of bread and flour products branches.

The core of the construction team and production personnel are the former employees of machine-tool factories in the city of Odessa, whose high level of professionalism is well-known far beyond the borders of our city.

We invent, as well as experiment, design, construct, manufacture, implement, teach and constantly learn by ourselves. Our distinctive principle is searching for simple methods for solving complex technology based problems, which allows providing a significant economic effect during the implementation. Therefore, our projects and certain products have an obvious advantage over those created on the basis of traditional approaches.

Our knowledge and opportunities are open and accessible for You. We will be glad to accept you in our Company and in our city.

With best wishes for success and prosperity to You and Your Enterprises!

Yours sincerely, Oleksandr Vereshchynskyi

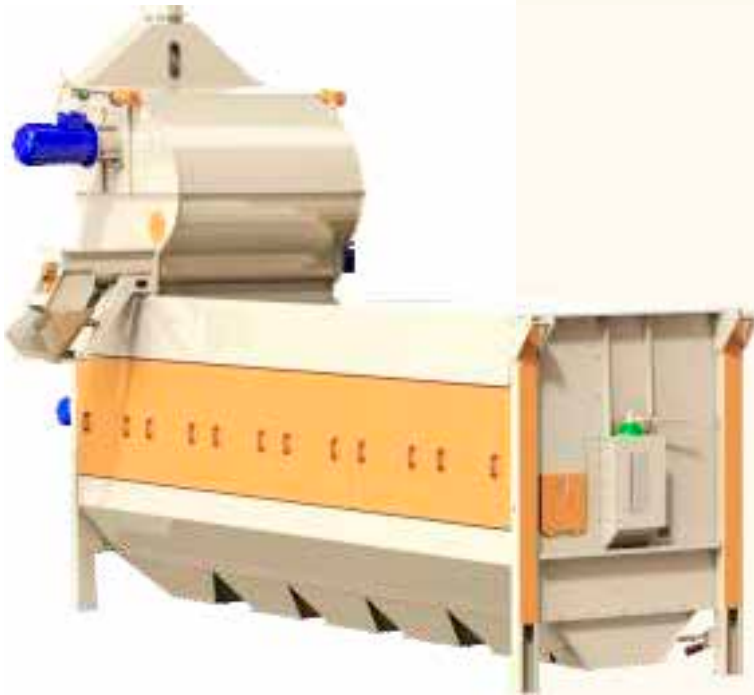


Fig. 1. General view of “LUCH” ZSO



Fig. 2. Sieve separator



Fig. 3.
Air separator
VSZ

Grain separators “LUCH” ZSO (fig. 1) are designed for grain crops cleaning from coarse, fine and light impurities on the mechanized threshing floors, elevators and other grain processing facilities.

The machines consist of a sieve (fig. 2) and air (fig. 3, 4) separators. The air separator can be designed in two versions: with a closed air circuit VSZ and open air circuit VSN.

Grain cleaning on sieves (in the sieve separator) proceeds by sieving through the rotary sieve drum in accordance with one of the chosen schemes (fig. 5). Cleaning of the sieves is performed by of brush and roller units.

The cleaned grains (their fractions), as well as withdrawn impurities, are removed separately from the machine through the outlet pipes.

Between the air and sieve separators, there is a possibility of installing a diverter valve KP.



Fig. 4.
Air separator
VSN



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.

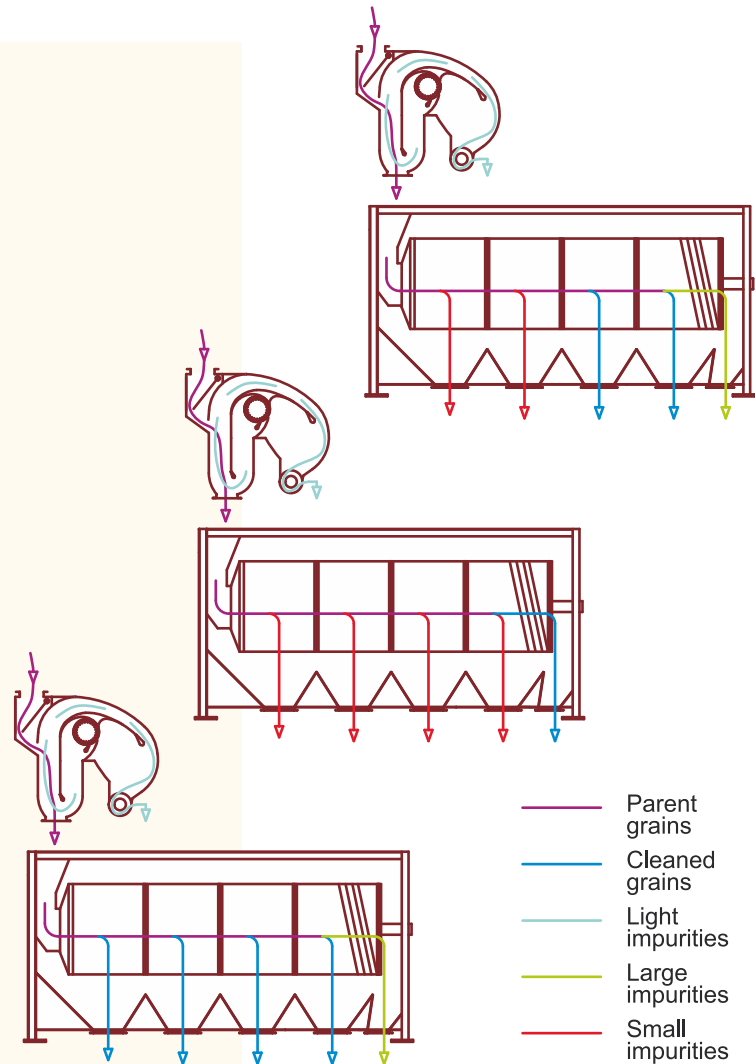


Fig. 5. Schemes of grain cleaning in the sieve separator

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	1.1**	1.5**	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	7.5	10	15	20	25	30
Weight, kg	1675	2500	3040	3740	4350	5760	6700
Overall dimensions, mm**:							
length	3300	4000	4150	4505	5565	6600	8340
width	1860	1860	2355	2685	2685	2780	2670
height	3370	3370	3640	4015	4045	4060	5833

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

** – electric motor power capacity is presented with regard to installation of the separator with an open air circuit VSN



Fig. 1. Grain separator “HORISONT-K” with the air separator VSZ and the aspiration column KAO



Fig. 2. Grain separator “HORISONT-K” with the air separator VSZ and the aspiration column KAO

Grain separators “HORISONT-K” are designed for grain crops cleaning from coarse, fine and light impurities on the mechanized thrashing floors, elevators, grain cleaning complexes and other grain processing facilities. The separators allow performing the following operations: primary purification (sorting, calibration).

“HORISONT-K” machines consist of a flat-sieve separator and aspiration column KAO.

Operating principle: upon getting into the machine through the suction pipe adaptor, parent grains flow onto the sieves where they are cleaned from impurities which differ in size. The obtained fractions of purified grains and impurities are separately removed from the machine through the outlet pipes. After that the grains flow into the aspiration column KAO, where they are blown by the opposing airflow. In such a manner grain purification from fine impurities is implemented.

Separators “HORISONT-K” can be completed with an air separator with a closed air circuit VSZ and open air circuit VSN. Thereby parent grains flow first into the air separator VSZ or VSN, then – onto the flat-sieve separator, after that into the aspiration column KAO.

Advantages:

1. High efficiency in combination with small space occupied by the separator;
2. Effective grain cleaning due to the big useful area of the sieves;
3. Structure reliability and ease of use;
4. Use of simple, reliable and very effective cleaning agents for sieves;
5. Possibility of organization of double air separation of grains (on their entering the shoe and as they leave from it) under the condition of extra installation of the air separator VSZ or VSN.
6. Low power consumption.

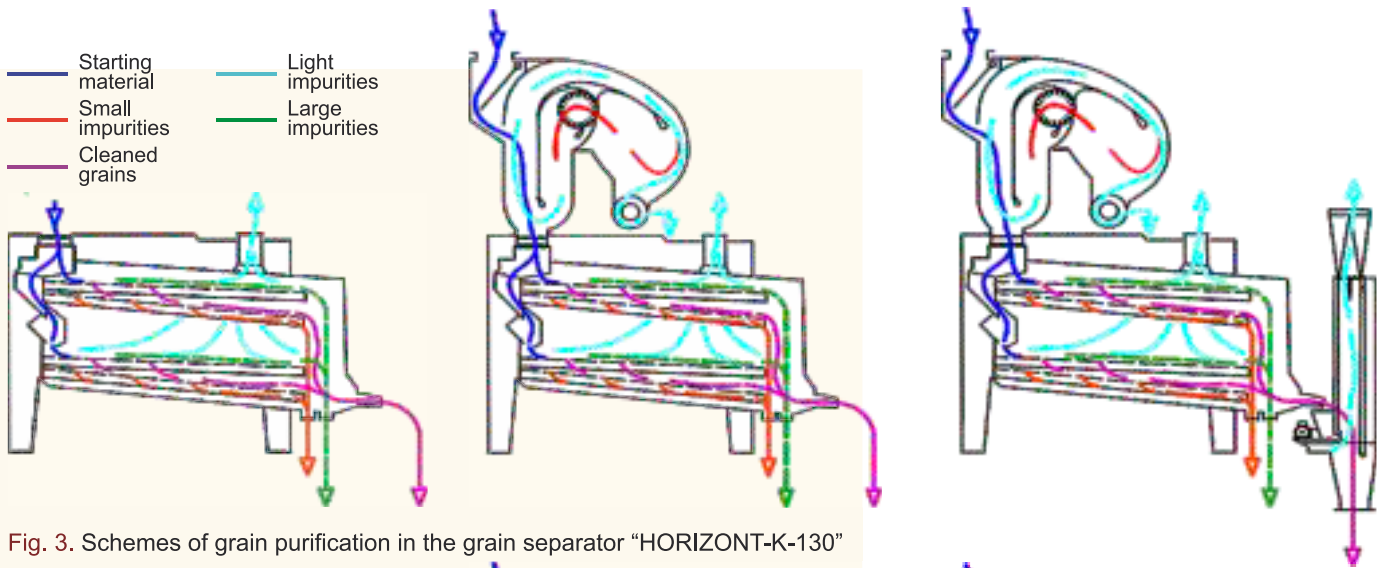


Fig. 3. Schemes of grain purification in the grain separator "HORISONT-K-130"

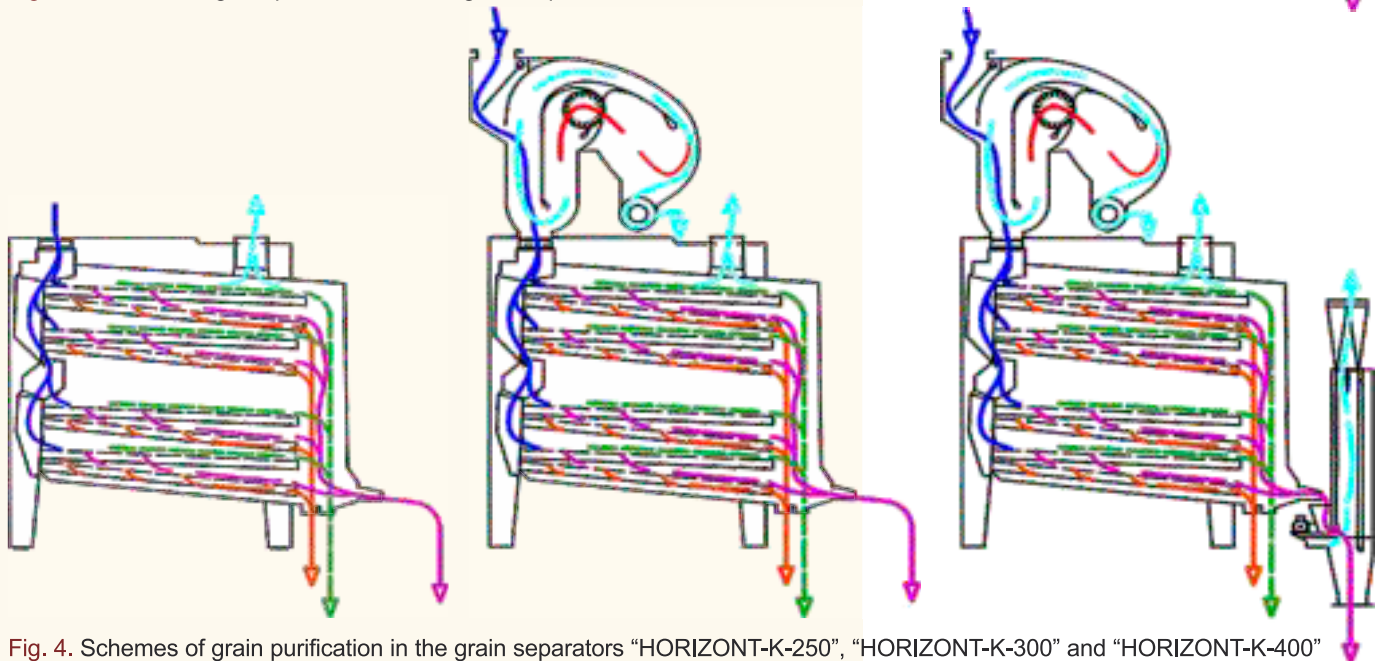


Fig. 4. Schemes of grain purification in the grain separators "HORISONT-K-250", "HORISONT-K-300" and "HORISONT-K-400"

Specifications:

Model	"HORISONT-K-130"	"HORISONT-K-250"	"HORISONT-K-300"	"HORISONT-K-400"
Preliminary purification, t/hour	130	250	300	400
Productivity, primary (mill) purification (of wheat), up to t/hour	40	80	120	180
Useful area of the sieves, m ²	8	16	24	32
Aerodynamic resistance, Pa	400	400	400	800
Airflow rate for aspiration, m ³ /hour	6000	3000	6000	8000
Airflow rate for KAO performance, m ³ /hour	6900	9000	18000	28000
Pre-installed electric power capacity of the separator, kW	1.5	2.2	3.0	3.0
Pre-installed electric power capacity of VSZ, kW	5.1	6.6	8.6	12.1
Weight of the separator, kg	2789	5231	6301	7651
Overall dimensions of the separator, mm:				
length × width × height	3170×1804×2085	4440×1850×2920	4400×2350×2950	4550×2846×2956
Weight of the separator with VSZ, kg	3384	6131	8259	8607
Overall dimensions of the separator with VSZ, mm:				
length × width × height	3410×2230×3785	4440×2520×4762	4400×2920×5044	4550×3516×5050
Weight of the separator with VSZ and KAO, kg	3614	6664	8719	
Overall dimensions of the separator with VSZ, mm:				
length × width × height	3890×2230×3785	5180×2520×4762	5000×2920×5044	5150×3516×5050



AIR SEPARATORS 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.

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

AIR SEPARATORS VSN



Air separators VSN 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 VSN are produced with an open air circuit. Air flows into the operating area from outside and, after purification, is discharged into the environment.

Model	VSN-60	VSN-80	VSN-130	VSN-160
Productivity, up to t/hour	40	75	150	200
Pre-installed electric power capacity, kW	1.1	1.1	1.1	1.1
Airflow rate, m ³ /hour	4500	6500	10500	12500
Length of the operating channel, mm	600	800	1300	1600
Overall dimensions, mm:				
length	1870	1870	1870	1870
width	1970	2240	2675	2775
height	1590	1590	1590	1590
Weight, kg	590	670	850	950

AIR SEPARATOR SWO-1



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

It is used on thrashing floors and elevators.

Model	SWO-1
Productivity, up to t/hour	150
Pre-installed electric power capacity, kW	0.55
Airflow rate for aspiration, m ³ /hour	7200
Overall dimensions, mm:	
width	1160
height	2360



Scalperators are 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 scalperator by the principle of separator 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. 3. General view of SKO with the air separator and a diverter valve

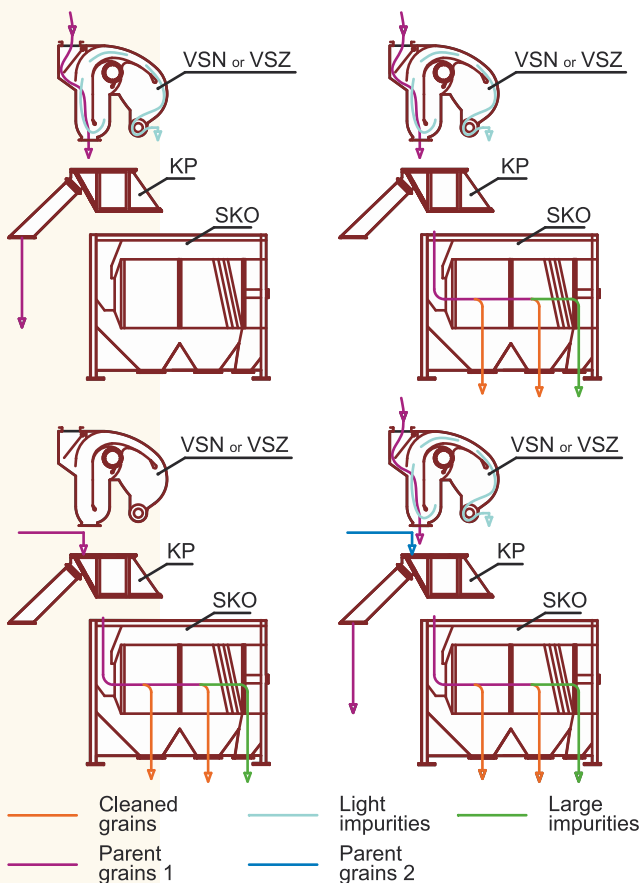


Fig. 2. Scheme of grain purification

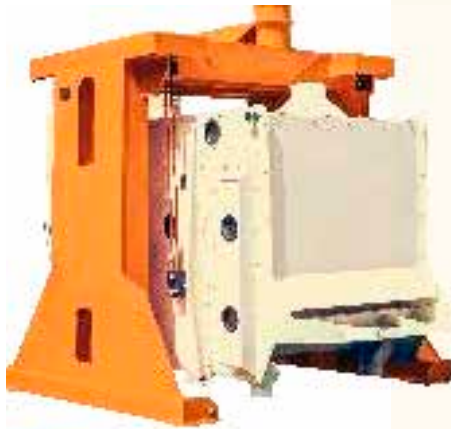
Specifications:

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	7.6
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



SIEVE SEPARATORS PSO



The sieve separators PSO are designed for sorting and cleaning of grain crops from the impurities which differ from grain crops in dimensions as well as in their aerodynamic qualities.

Advantages:

1. Sturdy, long-life construction.
2. Symmetric adjustment of connection pipes allows flexible mounting of the separator in the existing and new technological lines.
3. No contaminations.
4. High efficiency of grain cleaning.
5. Small size.
6. Convenient replacement of sieves and their secure cleaning.
7. Pneumatic separation zone overview.

Specifications:

Model	PSO-3	PSO-50	PSO-100
Preliminary purification, t/hour	12	50	100
Primary purification, t/hour	3	15	30
Cleaning efficiency:			
due to heavy impurities	60	60	60
due to large impurities	98	98	98
due to light impurities	70	70	70
due to separation of fine grains	60	60	60
Airflow rate, m ³ /hour	300	600	1200
Pre-installed electric power capacity, kW	0.55	1.1	1.32
Weight, kg	425	1473	2098
Overall dimensions, mm:			
Length × Width × Height	1580×820×1220	2102×1820×1472	2284×1820×1906

ASPIRATION COLUMNS KAO



Aspiration column KAO is designed for grain cleaning from the impurities which differ in their aerodynamic qualities.

Advantages:

1. High manufacturing efficiency;
2. High quality of grain cleaning from light impurities due to the vibration flow which ensures equal distribution of grains through the full length of the pneumatic separating channel;
3. Possibility of adjustment of the pneumatic separating channel's cross-section and shape;
4. Usage of component parts made by the leading European producers.

Specifications:

Model	KAO-1	KAO-1.3
Productivity, up to t/hour	60	80
Pre-installed electric power capacity, kW	0.036	0.045
Airflow rate for aspiration, m ³ /hour	6000	10400
Weight, kg	294	310
Overall dimensions, mm:		
Length × Width × Height	680×990×2610	860×1300×2815



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
	width	900
	height	1745



TRIEURS: WILD-OAT SEPARATORS TCO AND COCKLE SEPARATORS TCK

Trieurs wild-oat separators TCO are designed for cleaning the grains of the main crops from long impurities – wild oats, and cockle separators – from short impurities named cockle.

Specifications:

Model	TSO-500 / TSO-700	TCK-500 / TCK-700
Productivity, up to t/hour	1900 / 4000	2500 / 5300
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
	width	1100 / 1200
	height	1400 / 1650
Weight, no more than, kg	600 / 900	600 / 900



PNEUMATIC SORTING TABLES SPS

Pneumatic sorting tables 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
	transverse	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
	width	1720
	height	2000





GRAIN CLEANING UNITS ZAV “NIVA” with production capacity of 25 t/h and 50 t/h

ZAV “NIVA”-25

INSTALLATION STEPS

ZAV “NIVA”-50



OLIS Ltd. is a producer of new-generation grain cleaning units. ZAV “NIVA”-25 and ZAV “NIVA”-50 are designed and built on the basis of “LUCH” ZSO as per a new technological scheme in accordance with up-to-date requirements and regulatory standards for design and construction.

Advantages:

1. Construction of ZAV “NIVA” is efficient for exploitation and meets all up-to-date norms for design and construction;
2. High-reliability equipment manufactured by OLIS Ltd. is applied as completing units;
3. The technological scheme provides with a large-scale performance capabilities of grain processing (different degrees of purification, calibration);
4. Availability of the aspiration system improves safety of operation activity and provides high sanitary-hygienic conditions for the operating personnel;
5. Control, safety and alarm systems make it possible to minimize the amount of maintenance and operating personnel, improve safety and eliminate possible emergency situations;
6. There is a possibility of modification and addition of various technological equipment for improving the capabilities of the complex;
7. The project involves staged installation of the following to ZAV “NIVA”: driers, a seed chamber with trieurs and vibration pneumatic sorting tables, chambers for long-term storage and weighing of grains, as well as laboratories for quality control.

GRAIN CLEANING UNIT ZAV “NIVA”-25:

1. Grain receiving 25 t/h – bucket elevator NZ-25
2. Grain cleaning 25 t/h – separator “LUCH” ZSO-40
3. Grain dispatching 25 t/h

GRAIN CLEANING UNIT ZAV “NIVA”-50:

1. Grain receiving 50 t/h – bucket elevator NZ-50
2. Grain cleaning 50 t/h – separator “LUCH” ZSO-75
3. Grain dispatching 50 t/h



GROATS MILLS OF "OPTIMATIK-K" SERIES

Multi-purpose groats mills of "Optimatik-K" series are used for grain processing of wheat, barley, peas, maize and millet into groats.

Groats mills "Optimatik-K-07" and "Optimatik-K-15" with production capacity of 7 and 15 t/day (24 hours) respectively, are designed for producing pearl-barley, peeled-barley, peas groats and millet.

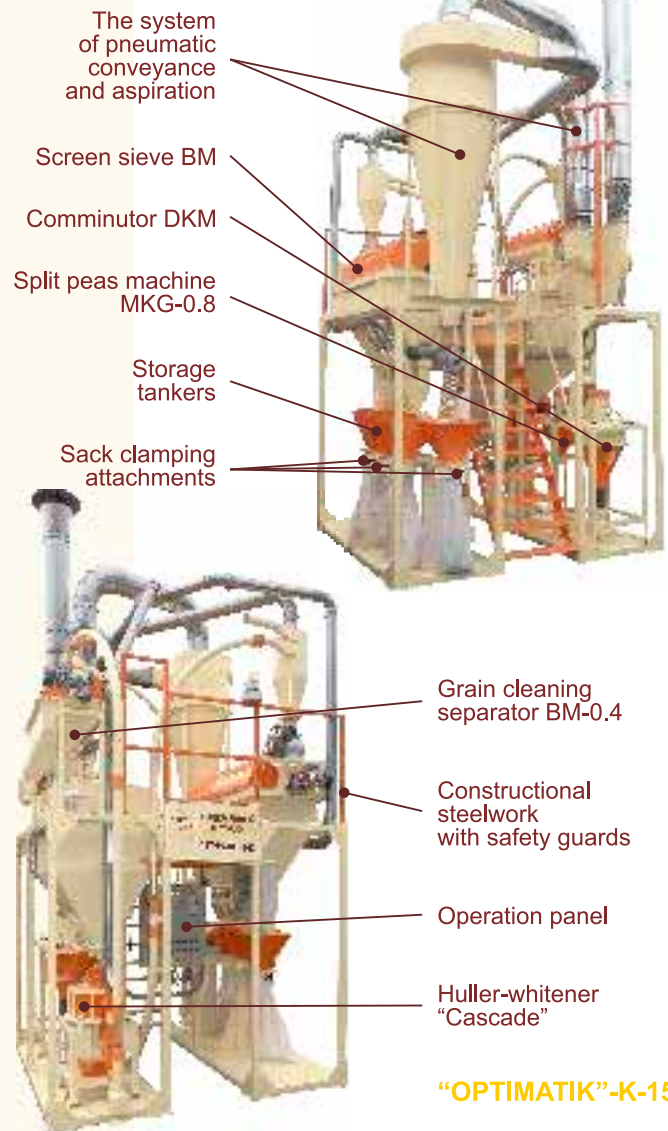
All the equipment of "Optimatik-K" groats mills is aggregated on a base frame with a ladder and a service platform.

Operation of the groats mills is handled due to the central panel.

Advantages:

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

"OPTIMATIK"-K-07



The system of pneumatic conveyance and aspiration

Screen sieve BM

Comminutor DKM

Split peas machine MKG-0.8

Storage tankers

Sack clamping attachments

Grain cleaning separator BM-0.4

Constructional steelwork with safety guards

Operation panel

Huller-whitener "Cascade"

"OPTIMATIK"-K-15

Yield of groats in groats mills, "Optimatik-K" series

Name of groats	Actual yield, %	Yield due to GOST, %	"Optimatik-K-07" grain productivity, kg/hour	"Optimatik-K-15" grain productivity, kg/hour
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
Power consumption per ton of processed grains, kW			26	26
Pre-installed electric power capacity of the motor drive, kW			16	25
Overall dimensions, mm: width × length × height			2500×2800×4850	2500×3000×5300

* – no germ separation;

** – grade of millet is determined by the statutory grade of processed millet.



Groats enrichers UOK-1 and UOK-2 are designed for separating hard-separable impurities from groats as well as for seed grain preparation. The groats enrichers consist of a vibro-pneumatic table SPS with its own metal framework, aspiration, electric parts and auto-tune system.

UOK can be used:

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

Advantages:

1. The construction ensures comfort and accuracy of adjustment when product manufacturing and guarantees high quality;
2. Ergonomic disposition of the equipment allows optimizing operation and maintenance;
3. For the product conveyance, pneumatic conveyance is used;
4. New operating solutions are applied, which make it possible to significantly improve the life duration and repair interval of the equipment;
5. Use of the drive component as well as electrical equipment manufactured by the world's leaders;
6. Availability of the aspiration system improves safety of operation activity and provides high sanitary-hygienic conditions for the operating personnel.

Structure of groats enrichers:

Name title	UOK-1		UOK-2	
	Model	Number, pcs	Model	Number, pcs
Storage tank	E=5 m ³	1	E=3 m ³	1
Vibro-pneumatic table	SPS-3.5	1	SPS-1.0	1
Air-moving device	VC-14-46-5	1	VC-14-46-4	1
Discharge cyclone with a drive motor and rotary valve	BCR-290	1	BCR-290	1
Discharge cyclone with a drive motor and rotary valve	BCR-340	1	BCR-340	1
Air-moving device	VVT-5	1	VVT-5	1
Discharge cyclone with a drive motor and rotary valve	UC-38-550	1	UC-38-550	1
Constructional steelwork	—	1	—	1
Control board	—	1	—	1
Series of pneumatic conveyance	—	1	—	1
Set of air pipes	—	1	—	1
Productivity	up to 3 t/hour	—	up to 1 t/hour	—



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 (24 hours) 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;

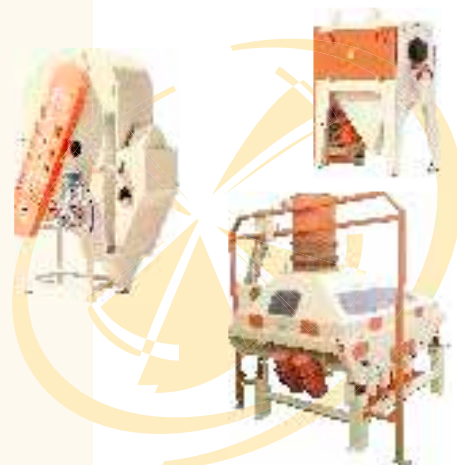
** - grade of millet is determined by the statutory grade of processed millet.

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 germ separation with production capacity of at least 30 t/day (24 hours).

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 and № 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

Peeled-buckwheat groats – 70%
Broken buckwheat – up to 2%

Basic yield of groats due to the current standards

Peeled-buckwheat groats – 62%
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

Peeled-buckwheat groats – 72%
Broken buckwheat – up to 1.5%

Basic yield of groats due to the current standards

Peeled-buckwheat groats – 62%
Broken buckwheat – 5%



GROATS MILLS FOR OAT PROCESSING

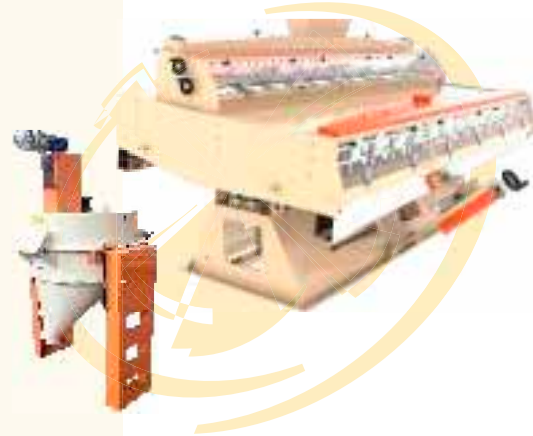
Effective oat processing requires solely specialized technologies which can properly be implemented through industrial plant equipment. Use of industrial plant equipment determines advantageous productivity of at least 30 t/day (24 hours).

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**
Whole oat groats – 60%

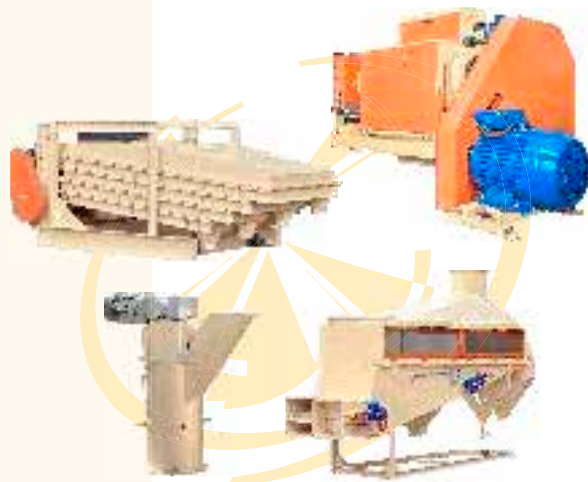
**Basic yield of groats
from basic grains
due to the current standards**
Whole oat groats – 45.5%

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**
Flakes – 95.5%

**Basic yield of groats
due to the current standards**
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 production capacity of 30 t/day (24 hours) up to 240 t/day (24 hours)



Complete mills for grade wheat milling with a productivity rate of 30 t/day (24 hours) 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 flour from 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	



MACHINE FOR DEPTH PROCESSING OF GRAINS "KASKAD"

are designed for deep processing of grain surface prior to its milling. They are applied in grain cleaning rooms of milling plants.



BRAN FINISHERS MVM

are designed for scraping grains during flour production.



GRAIN HEATING DEVICES PZ

are designed for grain heating in cold seasons in order to increase the yields and quality of flour. They are applied in mills for high-grade milling of wheat.



AIR SEPARATOR VS-500

manufactured by OLIS LLC, is designed for separation of light admixtures from grain. It is used in grain mills and flour milling facilities. It is used in milling factories and grain processing facilities.



HULLING MACHINES MBO and MAO

are designed for cleaning of grain surface from mineral impurities, partial removal of grain hairs, the germ and cracked hulls of grains.



MACHINE FOR INTENSIVE MOISTENING MIU-3

is designed for (wheat) grain moistening at flour milling plants prior to loading grains for softening.





GRINDING MILLS VSM

are designed for comminuting of grains and by-products of crops at flour-milling and groat-milling plants.



DISMEMBRATOR ESM-1.5

is designed for comminuting of groat-middlings for additional flour release.



HULLER-WHITENERS "KASKAD"

are designed for hulling and whitening of wheat, barley, peas, corn and millet



COMMINUTERS DKM

are designed for comminuting of grains and grain products.



MACHINE FOR SPLITTING PEAS MKG-1.5

is designed for peas processing into groats when production of split peas, halves.



PEAS SPLIT MACHINE MRG-0.8

is designed for peas processing into groats when production of split peas, halves. It is applied at groats mills, mounted in groats milling plants for peas processing.



AWNER MVO-1.5

is designed for removing of outer-coat fibers from barley and oats. It is applied in preparation rooms of breweries and groats mills for oat processing.



DELINTER MVP-1.5

is designed for removing grain hairs from oat hulling products. It is applied in hulling rooms of milling plants for oat processing.



EQUIPMENT FOR PRODUCTION OF FLOUR AND GROATS

FLOUR SHAKING MACHINE RMO-4

is designed for sorting mixed feed of wheat grains into fractions due to their size at milling plants in order to secure high grade of milling.

GROATS SHAKING MACHINE RKO-4

is designed for selection of hulled and whitened by-products, as well as sorting and control of products at groat-milling plants.



FLATTENING MILL PPM 0.5

is designed for flattening of properly prepared groats of grains (cores) of buckwheat, rice, millet, oats, barley, peas and other crops. It is used during production of cereals and groats of fast preparation from grain, grain-legumes and groats crops.



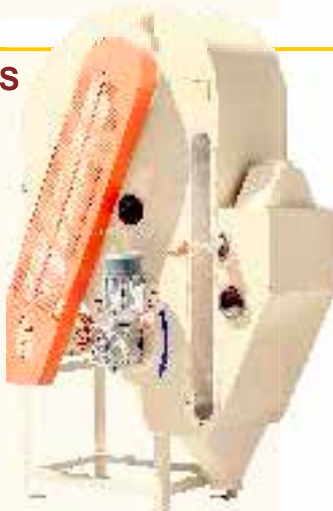
PADDY MACHINES "VEKTOR" MSO

are designed for separation of hulled grains from mixtures due to difference in physical and mechanical properties as well as controlling operations at groat-milling plants. The machines have become widely used in technological processes of groat-milling plants, especially for buckwheat, rice and oat processing.



AIR SEPARATORS (AIR CLEANERS) ASO

are designed for extraction of impurities from grains, separation of hulled products from groats which differ in aerodynamic qualities.



SIEVING MACHINES BM

are designed for sorting of hulled and mixed-feed products as well as for heel control and final goods inspection in milling rooms of flour and groat-milling plants.





STEAMING MACHINE A9-BPB



is designed for grain hydrothermal processing of cereal crops in order to improve processing characteristics of grains as well as to increase the customer appeal of the finished products.

STEAMING MACHINE PPSH-O



is designed for grain hydrothermal processing of cereal crops in order to change processing characteristics of grains.

HEAD-ROLLING MASHINES VDM, VDSO



are designed for hulling of buckwheat and millet at great-milling plants.

VERTICAL DRYERS VPS-O



are designed for drying of cereal crops during the hydrothermal processing when producing groats.

CENTRIFUGAL HULLERS SHCO-1, SHCO-3, SHO-0.5



are designed for hulling of oats when processing them into groats.

DRYING MACHINES FOR FLAKES SKHO



are designed for thermal processing (drying and cooling) of cereal flakes.



AUGER CONVEYOR with production capacity of 5-25 t/hour

is designed for conveying of bulk products in horizontal and inclined planes.



GRAIN DRAG CONVEYOR TSO with production capacity of 20-100 t/hour

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



GRAIN ELEVATOR with production capacity of 5-100 t/hour

is designed for vertical conveyance of 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.



CYCLONE BATTERY SYSTEMS-4 BCSH

are designed for purification of air from dust.



CYCLONES UC-38

are designed for purification of air from dust.



HIGH-PRESSURE FANS

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



CYCLONE DISCHARGERS U2-BCR

are designed for separation of the conveyed grains from air.



FLOW PIPES, SEGMENTS, INLET PIPES



VALVES



DIVERTER VALVES





SAMPLE COLLECTING DEVICES RPO



Ручные многоуровневые пробоотборники РПО служат для отбора проб. Позволяют отбирать пробы одновременно на нескольких уровнях при глубине насыпи до: 1.5 м; 2 м; 3 м.

Применяются на хлебоприемных и зерноперерабатывающих, комбикормовых предприятиях, в Государственной хлебной инспекции.

Advantages:

1. Application of handles that are easily replaced on the collecting devices of the same diameter, however of different length. Handles aren't included in the set with RPO sample collecting devices, they are delivered optionally;
2. Diagonal disposition of the external intake opening makes it possible to collect samples on an even basis all the way down and prevents the grain from damaging and jamming when collecting samples.

Specifications:

Model	RPO-1.6×35	RPO-2.1×35	RPO-3.0×35	RPO-1.6×50	RPO-2.1×50	RPO-3.0×50
Length, mm	1600	2100	3100	1600	2100	3100
Sampling depth, mm	1400	1900	2900	1400	1900	2900
Number of sampling ports, pcs	8	11	17	6	9	13
Weight of the sample, g	600	900	1300	950	1400	2000
Weight, kg	1.4	1.8	2.5	2.2	2.8	3.9
Diameter, mm	35	35	35	50	50	50
Diameter of the chamber, mm	26	26	26	41	41	41

DIGITAL THERMOPROBES TC



Digital thermoprobes TC are designed for measuring temperature of bulk materials (grains, mixed-feed, etc.) prone to self-warming during storage in warehouses and grain elevators. The thermoprobes are applied in laboratories, food industry enterprises.

Advantages:

1. Strong design (the body is made from duralumin pipe);
2. Comfortable visual temperature control;
3. Wide temperature measuring range;
4. Possibility of periodic temperature control without pulling out the thermoprobe;
5. Temperature measurement at the depth of up to 2-3 m without applying an extension unit;
6. Light weight;
7. Easy maintenance.

Specifications:

Model	TC-2.00	TC-3.00
Temperature measurement range, °C	-55...+125	-55...+125
Accuracy readability, °C	0.1	0.1
Average time of measurement, min	3	3
Power (4 elements AA-R6-1.5V), V	6	6
Utilized current, mA, no more than	40	40
Depth of temperature measurement, mm, no more than	2000	3000
Weight, no more than, kg	1.0	1.5
Overall dimensions, no more than, mm	65×65×2150	65×65×3150



MULTI-PURPOSE GRAIN SPLITTER UDZ-1M

Multi-purpose grain splitters UDZ-1M are designed for selection of sample-weights of required mass from initial sample of grains, oil crops and legume crops of up to 8L. in volume by method of surface equality in the open area of the device due to passage and returns of the sampling material. There is a possibility of 10g-sample-weight extraction, which is very important when working with oil-seed rape and other small-seeded crops.

Advantages:

1. They don't require special training;
2. Easy mounting of the grain splitter in vertical position by adjusting the foot screws;
3. Fast collecting of sample-weights of exact mass;
4. More mixing and other additional sections in comparison with analogues;
5. Fast and convenient access to the reparatory and mixing section for checking and cleaning the work surfaces.



Specifications:

Model	UDZ-1M
Extracted sample weight, g	10; 50; 100
Weight of the average sample, kg	1; 2; 2
Range of the index dial, points	0-5; 10-15; 20-25
Intake funnel capacity, L	7.8
Internal diameter of the body, mm	150
Internal diameter of the section, mm	85
Weight, kg	15
Overall dimensions (Ø x H), mm	310×1225

GRAIN SPLITTERS DPZ

Grain splitters DPZ ensure homogenous and representative separations of grain samples.

The devices consist of a bulk-cargo bin which is adjusted to the body on the hinged line, an intake funnel, separating pipe connections, and an intake box.

The working principle consists in equal filling of grains flowing through which the grain is separated into two equal parts and flow into intake boxes.

Advantages:

1. Rapid indexing with high resolution;
2. Easy and reliable operation;
3. It is designed for using both in the library and in industries.



Specifications:

Model	DPZ-3	DPZ-5	DPZ-10	DPZ-R
Number of cuts	10	10	10	16
Width of the cut, mm	20	25	28	7
Maximum amount of sample (wheat)	3	5	10	0.4
Weight, kg	5	7	9	2.3
Overall dimensions, mm	340×250×210	275×525×320	250×330×300	178×155×160



DIAPHANOSCOPE DSZ-3



Diaphanoscope DSZ-3 is designed for determination of grain hardness due to its optical characteristics.

It is applied in laboratories of grain-collecting, flour milling, and baking plants, as well as in the State grain inspection and scientific and research organization.

Advantages:

1. Steady lighting of grains;
2. No device heating;
3. Durability;
4. Low power consumption.

Specifications:

Model	DSZ-3
Electric power, V	220
Energy input, W	5
Capacity of the cassette, grains pcs	100
Weight, kg	4
Overall dimensions, mm:	
Length × Width × Height	260×120×260

DEVICE FOR MOISTURE DETERMINATION OF DOUGH PCHMC (by Chizhov)



Modernized digital device for moisture determination of dough (by Chizhov) is designed for determination of moisture in food samples with automatic temperature control of the device plates. It is aimed at operative moisture control of food raw material, semi-finished and finished products.

Advantages:

1. Fast switch to operation mode;
2. Blocking the device's operation when overheating;
3. High level of temperature maintenance stability with the help of an electronic temperature controller;
4. The body of the drying box is thermally-insulated.

Specifications:

Model	PCHMC
Range of set-point temperatures of drying, °C	from +50 to +199
Accuracy readability of set-point temperatures, °C	0.1
Temperature deviation of block plates for sample drying up to the set-point temperature of no more than, °C	±2
Heating-up time of the sample drying block up to the set-point temperature of no more than, min	20
Clearance between the contacting work surfaces of the sample drying block, mm	no more than 0.1
Power-supply source, single-phase network of alternating current	
Electric power, V	220
Frequency, Hz	50
Energy input, W	700
Range of set-point values of dry-out time, min	1 - 99
Accuracy readability of set-point values of dry-out time, min	1
Weight, kg,	
Drying block	6.0
Control block	0.8
Overall dimensions of: no more than, mm:	
Drying block	210×120
Control block	175×120×65



LABORATORY PLANSIFTER MULTIPURPOSE (three-celled) RLU-1

Laboratory plansifter multipurpose (three-celled) RLU-1 is recommended for application in laboratories of grain manufacturing, grain-collecting and processing enterprises.

Advantages:

1. Versatility – possibility of adjustment of 1 set of sieve package with 300mm Ø of the hoop or 3 sets of sieve packages with 200mm Ø of the hoop with no changes in structure design;
2. Usage of the plansifter in two modes: oscillation frequency of the sieve package
 - 120 (1/min) – for grains,
 - 200 (1/min) – for flour;
3. Usage of standard sieve packages applied in laboratories;
4. Possibility of fast changing of the sieve package (by pressing on the rod, without unscrewing the nut, disengage the fly rail from the rod).



Specifications:

Model	RLU-1
Oscillation frequency of the sieve block, 1/min	120/200±10%
Oscillation amplitude, mm	25
Pre-installed electric power capacity, kW	0.015
Weight (no sieves), kg, no more than	25
Overall dimensions, no more than, mm:	
Length × Width × Height	450×400×400

OPERATING LITER-GRAIN-UNIT SCALE PKH-2

Operating liter-grain-unit scale PKH-2 is designed for grain-unit determination (grain weight in one liter). It is applied in laboratories of grain-collecting and processing enterprises, scientific and research organizations, etc.

Advantages:

1. Reduced sampling time due to usage of 3-4-class electronic scales. The scales aren't included in the set with the scale PKH-2, they are delivered optionally; The recommended marks of scales are TVE-3-0.05;
2. Compact storage box made from laminated plywood which is convenient for storage and transportation;
3. Developed "Program and methods of the State metrological certification № 866-36-09" and "Methods of calibration № 867-36-09".



Specifications:

Model	PKH-2
Uncertainty of wheat grain-unit measurement, g	+4
Range of readings on dry wheat grains separated from impurities and sieved on sieve plates with 2.6x20, 2.8x20 screen holes, g, in 6 measurements	2.10
Weight, kg	11
Overall dimensions, mm:	
in operating condition	450×300×860
in traveling condition	450×300×200



GLUTEN STRAIN METER IDK-ZMU



This device is designed for evaluation of gluten quality of wheat, baking-wheat and durum-wheat flour of due to the size of its deformation under the influence of load of a particular value within a specified time span.

Specifications:

Model	IDK-ZMU
Range of gluten deformation measurement, mm	0...10.55
Standard units (s.u.)	(0...150.7)
Limits of allowable absolute uncertainty in the full range of deformation measurement, mm (s.u.)	±0.035 (±0.5)
Time of flexible calibration load on the sample, sec	30
Electric power:	
Voltage, V	220±20
Frequency, Hz	50
Pre-installed electric power capacity, no more than, kW	20
Overall dimensions (no more than), mm	
Length × Width × Height	198×190×248
Weight, kg	3.28

LABORATORY MILL LMT-2



Laboratory mill LMT-2 is designed for milling of laboratory samples of crop grains as well as their derivative products in order to prepare the samples for further analysis on the infrared analyzer when determination of quantity and quality of gluten, falling numbers, protein content, and other product quality indexes that need milling of designated size when determination.

Specifications:

Model	LMT-2
Capacity of the feeding box, mL	280
Capacity of the receiver, mL	250
Pre-installed electric power capacity, kW	550
Weight, kg	17.5
Overall dimensions, mm:	
Length × Width × Height (with no intake funnel)	342×178×408

DOUGH MIXING MACHINE TL-2



Dough mixing machine TL-2 is designed for mixing dough made from whole-milled wheat grains (extracted meal), durum flour and baking flour during evaluation of quantity and quality of gluten. It is applied in laboratories of grain-collecting, flour milling and bread-making enterprises, the State grain inspection, as well as scientific and research organizations.

Specifications:

Model	TL-2
Productivity of mixings per hour, no less than	40
Duration of one mixing, s	18
Rotating speed of the working body at no load, rot/min	600±60
Electric capacity, W	250
Electric power, V	220
Weight, kg	20
Overall dimensions, mm	
Length × Width × Height	300×180×330



CABINET DRYER SESH ZMU

Cabinet dryer SESH ZMU is designed for drying of grains, legume crops, and oil crops, as well as other moisture containing crops when moisture determination.

Specifications:

Model	SESH ZMU
Wattage of the cabinet dryer, W	2000
Electric power, V	220
Rotating speed of the table, rot/min	5±2
Nominal value of temperature in the operating space for drying-out, °C	105+2
Maximum allowable temperature of the drying chamber, °C	130+2
Weight, kg	160-170
Overall dimensions, mm:	23
Height × Width × Height	520×360×360



LABORATORY MILL LZM-1

Laboratory mill LZM-1 is designed for grinding of grain samples of crops as well as other hard food substances with no more than 18% of moisture content in order to prepare them for further evaluation of grain quality parameters.

Specifications:

Model	LZM-1
Electric power, V	220
Energy input, W	220
Glass capacity, cm ³	130
Grain sample weight, max, g	50
Speed of engine at no load, no less than, rot/min	10000
Weight, kg	1.5



LABORATORY COOLING DEVICE FOR WEIGHING BOTTLES OBL-1

Laboratory collecting device for weighing bottles OBL-1 is designed for cooling of weighing bottles with products after drying in the cabinet SESH ZMU and other devices when determining the moisture content of grains as well as grain products in conditions of elevator, milling and plant laboratories.

Specifications:

Model	OBL-1
Pre-installed electric power capacity, kW	14
Electric power, V	220
Rotating speed of the fan, rot/min	2450
Air flow, m ³ /hour	30
Weight, kg	2.8
Overall dimensions, mm:	
Height × Width × Length	102×286×286





LABORATORY HULLER USHZ-1



Laboratory huller USHZ-1 is used in scientific-research laboratories of grain manufacturing, grain-collecting and processing enterprises for researching the grain hulling process.

Specifications:

Model	USHZ-1
Electric power, V	220
Rotating speed of the working body, rot/min	3000
Pre-installed electric power capacity, kW	0.55
Weight, kg, no less than	30
Overall dimensions, no less than, mm:	
Length × Width × Height	485×300×390

LABORATORY RICE AND MILLET HULLER PR-1



Laboratory rice and millet huller PR-1 is designed for mechanization of labor-intensive processes of hulling and separating the products obtained from hulled millet and rice when determination of:

- hull content of millet and rice;
- content of spoilt grains of millet;
- content of spoilt, red, glutinous, yellowish grains of rice;
- fracturing of rice grains.

Specifications:

Model	PR-1
Sample weight, g	100
Supply voltage, V	380
Drive power, kW	2.2
Dimensions of rollers, mm	d 120 × 60
Rotation frequency of, rpm:	
high-speed rollers	960
low-speed rollers	510
Weight, kg	130
Overall dimensions, mm	
Length × Width × Height	560×670×750

HAND-POWERED PRESS PROM-1



Hand-powered press PROM-1 is designed for obtaining sunflower and rapeseed oils as well as oils of other oil-bearing crops for performing further acidity tests. The press is applied in production laboratories, as well as scientific laboratories of product system and the agricultural industrial complex.

Specifications:

Model	PROM-1U (semiautomatic)
Maximum force, t	12
Glass capacity, cm ³	200
Time of exposure under pressure for obtaining a sample of at least 3 cm ³ , min	5
Zero-point return operation of the lifting jack	automatically
Weight, kg	21



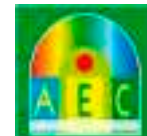
OUR CUSTOMERS AND DEALERS



KERNEL



Agrokultura



and many others

OLIS Ltd.

CONTACT INFORMATION



OLIS Ltd.:
65098, Ukraine, Odessa, Stolbovaya St., 28/3
e-mail: info@olis.com.ua
mob. phone: **+38 (096) 022 87 53**
tel./fax number: **+38 (048) 752 85 58**
website: www.olis.com.ua

OUR DEALERS

