






VELES AGRO®

PRODUCT CATALOG

III quarter 2023

To view the equipment in action, scan the video's QR-code

ABOUT THE COMPANY

VELES AGRO Company is a manufacturer of multifunctional agricultural tillage machinery with high standards of quality, taking into account modern and cost-effective technologies.

VELES AGRO Company was founded in 1996 and over the past twenty years of continuous development and improvement Company took a deserved place among the leading manufacturers of agricultural machinery and spare parts, and quality products were recognized not only in Ukraine but also abroad. The geographic map of exports covers countries in Asia, Eastern and Western Europe, Africa, Australia. The range of spare parts manufactured at the plant, to tillage and sowing machinery of domestic and foreign production exceeds 5000 items.

The technical equipment of production, skilled personnel, team of talented engineers, business contacts with foreign suppliers allow the plant to respond in a timely manner to the trends and current needs of the agro-industrial market, to perform orders for creation of new samples of tillage and seeding machinery.

The technology of casting allows to make parts with the minimum machining tolerances and to use joint-cast structures for complete set of finished machinery. Thanks to the introduction of technology for processing of high-resistance steels, the resource of working bodies of tillage machinery, which are made of boron steel, has considerably increased.

In production, equipment is used for accurate plasma cutting of high-resistance steel, as well as machines with artificial intelligence, which manufacture precision parts in 3D measurements. It is important that in comparison with prices of spare parts of imported production, the price for similar VELES AGRO's products from high-resistance steel is times lower than the original, providing a stable competitive advantage.

Weighted price policy, reliability and a wide range of constantly updated products, high quality and stable service support are part of the foundation on which VELES AGRO builds long-term relationships with its customers and partners.

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MAGIA UNIVERSAL SOWING COMPLEX

STS MAGIA – is multifunctional soil processing and sowing unit used for row processing method. Ready for the specified technological operations such as grinding plant residues, various depths cultivation of soil, complex injection of fertilizers, sowing of both cultivated and grain crops, finishing, rolling and mulching field surface.

Advantages of the STS MAGIA unit:

- all working bodies are placed on an individual working sections, which ensures a clear implementation of preset settings such as depth of processing of each working body. This reached by taking into account the execution of previous technological operations and terrain features
- possibility of individual adjustment for each working section and zones, use of different seed types and
  adjustment of fertilizer injection
- work section design allows to apply to each technological operation working elements with different parameters.

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This machine combines three methods of tillage:
- vertical processing **VERTI-TILL**
- deep loosening **DEPTH-TILL**
- row processing **STRIP-TILL**

STS MAGIA unit allows combining of different processing operation such as: surface treatment and soil preparation, fertilization, sowing and finishing.

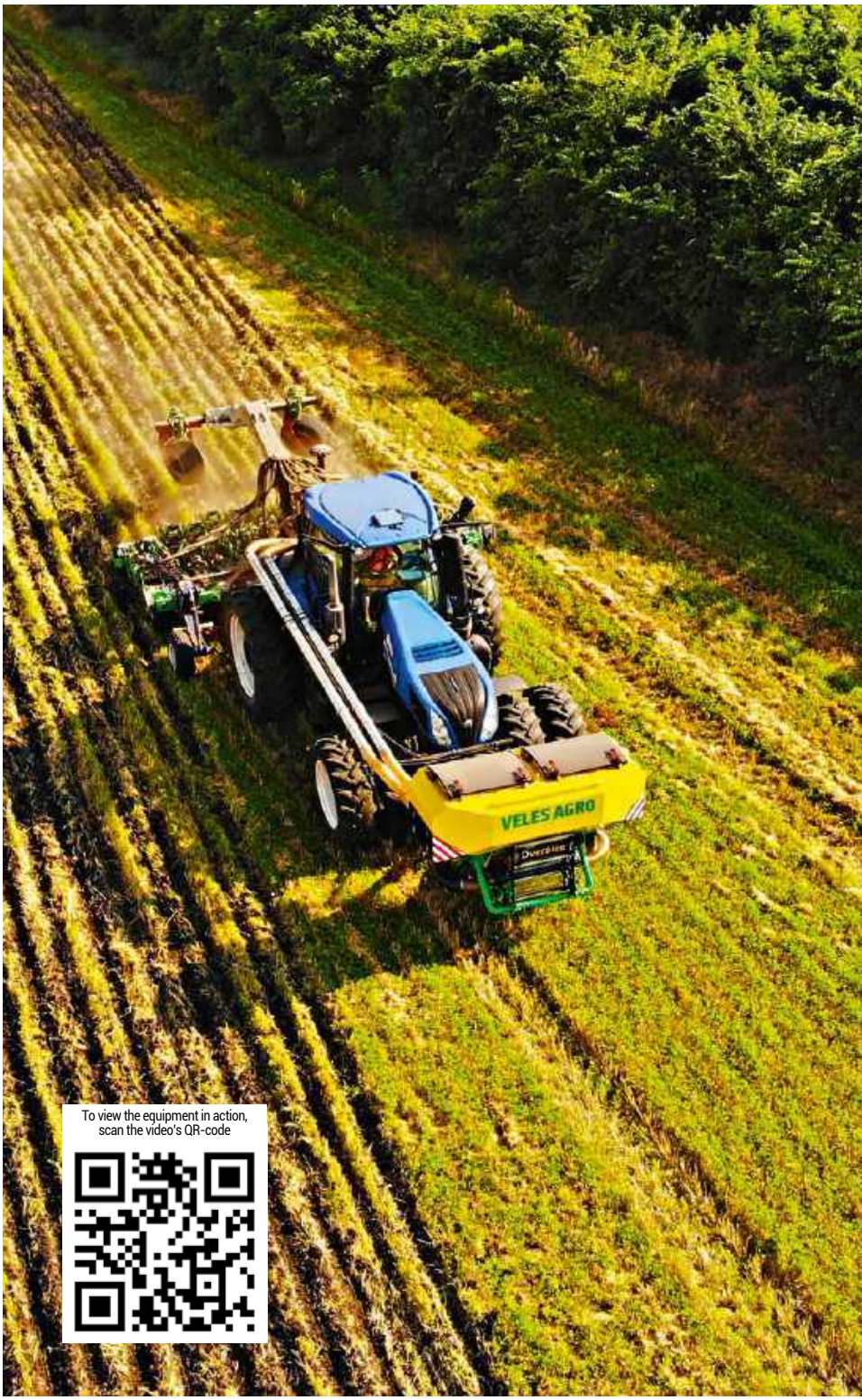
Characteristics	UM.	Cereal				Row-crop			
Working width	m	3,2	4	4,8	5,6	5,6	4	4,8	5,6
Number of sections	pcs	400				700	400	400	400
Sections weight	kg	8	10	12	14	8	10	12	14
Working depth	cm	610				680			
Fertilizers usage norm	kg	up to 15				up to 15			
Cereal sowing norm	kg	10 - 350				10 - 350			
Sowing depth	cm	10 - 350				-			
Row working width	cm	1 - 10				1 - 10			
Fertilizers injection depth	cm	20				20			
Interrow space	mm	0 - 15				0 - 15			
Seed bunker volume	L	2 200 - 6 600				50x8 or 2 200	50x10 or 2 200	50x12 or 2 200	50x14 or 2 200
Fertilizer bunker volume	L	2 200 - 4 400				4 400 - 6 600			
Transporting length	m	11,5				11,5			
Transporting width	m	3,3				3,3			
Transporting height	m	4				4			
Overall mass	kg	15 000	16 000	17 100	18 200	15 900	17 200	18 500	19 700
Required power	hp	260 - 320	320 - 380	350 - 420	500	260 - 320	320 - 380	350 - 420	500

Depending on the technical task of the customer, the characteristics, layout and configuration of the unit may change within the limits of the available configurations. In other cases, the manufacturer reserves the right to make changes to the structure, design and configuration of the product without prior notice. For more detailed information, contact the managers of the sales department of VELES AGRO.

MAGIA UNIVERSAL SOWING COMPLEX

STS MAGIA system is unique because machine has a completely different principle of working bodies location, which allows achieving the most stable results in seeds sowing and fertilizer laying.

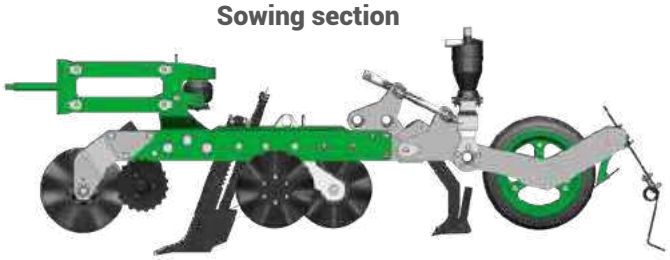
The machine can operate on all types of soil with any moisture content.



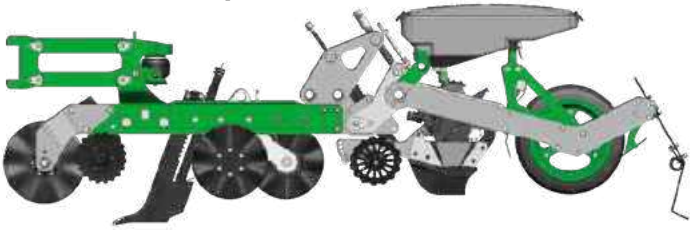
STS MAGIA unit in one pass performs:

- loosening the soil to a predetermined depth of 5-10 cm
- injection of different types of fertilizers to a given depth of up to 25 cm
- sowing of cereals with a row spacing of 12/28/12 cm
- sowing of row crops with a row spacing of 40 or 70 cm
- provides constant sowing depth
- correct sealing of seeds in the sowing area
- copying of the terrain of the field with each coulter

Sowing section



Row-crop section



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The sowing section is universal for all types of sowing crops. Due to the special chisel unit with simultaneous application of fertilizers in different horizons, which also loosens and mixes lower, wetter layers of soil, sowing provided in the wetter soil layers, which promotes better yield. Two turbodiscs make loosening of soil with preservation of crop residues in the upper layer, which helps to protect soil against crust formation and wind erosion. Rubber V-shaped roller, which creates a seal, promotes uniform contact of the seeds with the soil.

Thanks to locating all the bodies in one section, each of which independently mounted to parallelogram on the air cushion, a constant depth of cultivation and sowing is achieved, which promotes even sprouting and equal conditions for plants at all stages of development.

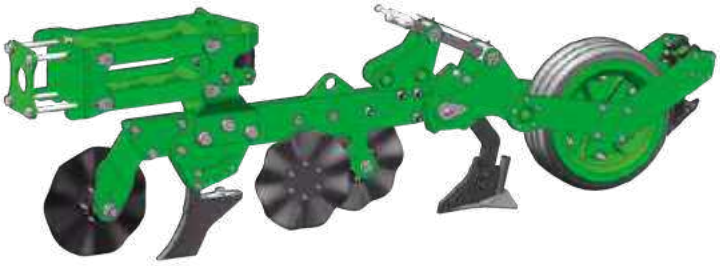
Adjustable row spacing and different types of coulters make it possible to sow different crops. The large volume of bunkers approximately 6600 litres, minimizing the number of refueling and work pauses.

* Bunkers are universal. They can be used for liquid or dry fertilizers, depending on the configuration.
* Transport carriage can be equipped with three or four separate containers for dry or liquid fertilizers and/or seeds.
* The bunker able to mix fertilizers, which excludes one mixing operation and it can be used with other units.
* Sowing devices of bunkers with electric drives are adjusted individually to seeding rates from 0.5 to 500 kg/hectares.

MAGIA UNIVERSAL SOWING COMPLEX

Examples of the STS MAGIA usage:

1. Grain sowing with row spacing 280 mm in two rows with a distance of 120 mm. It is obtained 200 mm in total. In this case the effect of «edge line» is reached.
2. Sowing in one row with a row spacing of 400 mm or 700 mm.
3. Accurate sowing of row crops (rapeseed, soybean, corn, etc.). One of the main advantages is the possibility of sowing in a longer but optimal time range and even under insufficient conditions of humidity, as unit takes out lower horizons of the soil and sowing occurs in moist soil. This is especially useful for sowing of rapeseed.
4. Injection of fertilizer and/or sowing to the desired depth increases yield up to 40%.



First tests of sowing units performed in the summer, during the drought, when there was no rain during 30 days after harvesting, despite this fact, equal and uniform of sprouts were obtained on corn and sunflower.

Seedlings appeared on the fifth day after sowing. Also, seed wrapping depth analysis confirmed the very exact location of the seeds in depth (deviation was up to 0.5 cm)

ARTEMIDA SOWING COMPLEX

The dosing system is the basis of any unit. A high-quality dosing system is the key to the success of the mechanism. Such systems are installed on various tools for dosing and transporting bulk products to the working bodies of the unit. A complex computerized dosing system increases the cost of the unit on which it is installed. The main function performed by this system is the dosing of seeds or fertilizers depending on the path traveled. In order to reduce the costs of purchasing similar dosing systems for different units, VELES AGRO offers a line of ARTEMIDA machines that have a single dosing and transportation system for any sowing and tillage tools.

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The basis of the unit is a universal platform on which:

- coupling device with a tractor;
- volume bunkers for bulk materials;
- electronic dosing system;
- injection system of transportation;
- universal attachment;
- adjustable transport axis;
- tractor track softeners;
- service platform;
- bunker loading mechanism (option).

Characteristics	UM.	ARTEMIDA 6	ARTEMIDA 12
Width of capture	m	6	12
Spacing	mm	175 / 190	175 / 190
Number of coulters	pcs	34 / 32	68 / 64
Coulter pressure on the soil	kg	5 - 150	5 - 150
Working speed	km/h	10 - 20	10 - 20
The capacity of the two-section hopper	L	4 700	6 000
The loading height of the two-section hopper	m	2,9	2,7
Transport length	m	9,5	8,5
Transport width	m	3	3
Transport height	m	4	4
Mass of the unit	kg	8 600	11 000 - 13 000
Required power	hp	≥ 160	≥ 220
The number of hydraulic outlets of double action	pcs	4	4
A constant flow of oil is required for the hydraulic motor of the fan	L/min	≥ 160	≥ 160

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ARTEMIDA SOWING COMPLEX

Capacious, voluminous, completely hermetic hoppers with a wide opening for loading loose substances ensure minimization of refueling costs, quick reloading of the unit, and effective use of the «window» of the best periods for sowing agricultural crops. Bunkers are equipped with a platform for the convenience of the operator during loading or maintenance.

The dosing system is driven by two independent electric drives with numerical software control and can be adjusted to the required independent seeding rates. The universal coil of the seeding device has a modular set-up scheme and can be quickly assembled according to the needs of sowing. The body of the device is made of 4 mm stainless steel and supplemented with plastic and plastic components, which ensures the durability of its work in an aggressive and abrasive environment. The electric drive of the seeding device has the function of test adjustment of the required rate, thanks to which the adjustment process takes only a few minutes.

The powerful CRARU (USA) turbine transports the molded material to the distribution head of the unit, where it is evenly distributed between the working bodies. Depending on the type of unit, the distribution head can divide the material into from 4 to 60 seed ducts.

To prevent uneven operation of units, the universal platform is equipped with tractor track looseners with an adjustable width of loosening depending on the tractor track. The working body of the loosener is equipped with wavy turbo discs that loosen the soil compacted by the tractor wheels and level the field surface before sowing.

Due to the fact that the platform can be aggregated with various implements, the transport axle of the platform has a hydraulic wheel width adjustment. Thanks to this function, the operator adjusts the width of the wheel track of the platform to the required aggregates or for transportation.

The rear part of the unit has a universal attachment, quite similar to the attachment of the tractor system, thanks to which various modules are connected to the platform. Hydraulic couplings for connecting the necessary tools to the tractor's hydraulic system are located in the same place.

UNIVERSAL SOIL PROTECTION, WET AND ENERGY-SAVING TECHNOLOGY

Universal soil protection, moisture and energy saving technology is a completely new approach to the cultivation of agricultural products for our agricultural production.

This is the use of several tillage technologies, combined into a common complex, which in difficult weather conditions enables farmers not only to work, but also to show trends in the development of this industry, which plays a key role in the development and stability of our economy.

In order to reach some understanding, the leading specialists of the plant, together with agrarians from all regions of Ukraine, worked and came to a common opinion regarding the technology, which is currently being implemented in practical application and includes:

- Verti-till — vertical tillage

- Strip-till — strip tillage

- Vulkan — injection liquid fertilization

- Mortar unit for improving the UAN based on the results of soil analysis

STRIP-TILL

At first glance, this is not such a complicated technology — I purchased equipment and units, equipped it with a satellite driving system and the result was achieved, but as practice shows, this is far from perfect. Taking into account the real state of the soil, weather climatic conditions and the consequences of previous processing, in order to introduce this technology into life, you need to perform a number of measures and involve a whole range of units.

And the most important thing is to get advice and technical support from practitioners and specialists of the plant on the application of this complex in practice.

There will be mistakes in the transition to something new, but such «mistakes» in agriculture can exceed all the predicted savings and benefits that technology will bring!

VULKAN

VULKAN LIQUID FERTILIZER INJECTION UNIT

VULKAN units are designed for injecting liquid fertilizers into the plant's root system at a given depth and in a given amount.

Plants are supplied with nitrogen fertilizers at the expense of ammonia nitrogen fertilizer reserves. We are talking mainly about liquid fertilizers applied to the soil using the **VULKAN** fertilizer application machine with injector wheels, which allows the plant to additionally consume ammonium. Ammonium, unlike nitrate, is a sorbent, it is deposited in the soil and is not washed away. Ammonium reserves inside have an inhibitory effect on plant roots and microorganisms. Therefore, it is relatively stable, so that the tips of the roots assimilate the reserves of fertilizer from the outside slowly or as needed.

The effect, unlike nitrate fertilizers, is long-lasting, the plant's need for nitrogen fertilizer can usually be satisfied thanks to ammonium reserves throughout the assimilation period.

Advantages of VULKAN liquid fertilizer injection technology:

- high efficiency of application in any climatic zones, in particular arid ones
- more uniform introduction and accurate dosage distribution over the area
- quick penetration into the soil
- duration of action and quality of nutrition at the start
- absence of plant burns caused by application rate, phase, feature of vegetation, as well as weather conditions
- revealing the full potential of soil and plants
- cost optimization and a high level of profitability

Characteristics	UM.	VULKAN 6 (mounted)		VULKAN 8 (trailed)	
Width of capture	m	6	5,75	8	7,75
Number of working bodies	pcs	16	26	24	35
Number of applicators on the working body	pcs	12	12	12	12
Depth of application	cm	5 - 7	5 - 7	5 - 7	5 - 7
Hopper volume	L	500 / 600 / 800 / 1 100		1 100 / 1 900	
Application control system		+	+	+	+
Application rate	L/ha	50 - 300	50 - 300	50 - 450	50 - 450
Working speed	km/h	≤ 8	≤ 8	≤ 8	≤ 8
The diameter of the working body	mm	515	515	515	515
Spacing	mm	700	230	700	230
Transport width	m	3	3	3	3
Transport height	m	3,3	3,3	4	4
Transport length with lighting	m	1,5	1,5	1,5	1,5
Required power	hp	80 - 120	80 - 120	120 - 200	120 - 200
Unit weight	kg	1 200	1 300	1 500	1 660
Weight of the front bunker	kg	180	180	300	300
Number of double-acting hydraulic outputs	pcs	2	2	2	2

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VULKAN LIQUID FERTILIZER INJECTION UNIT

Characteristics	UM.	VULKAN 10 (mounted)		VULKAN 12 (mounted)	
Width of capture	m	10	9,75	12	11,75
Number of working bodies	pcs	28	44	32	53
Number of applicators on the working body	pcs	12	12	12	12
Depth of application	cm	5 - 7	5 - 7	5 - 7	5 - 7
Hopper volume	L	1 100		1 100 / 1 900	
Application control system		+	+	+	+
Application rate	L/ha	50 - 360	50 - 360	50 - 300	50 - 300
Working speed	km/h	≤10	≤ 10	≤ 10	≤ 10
The diameter of the working body	mm	515	515	515	515
Spacing	mm	700	230	700	230
Transport width	m	3	3	3	3
Transport height	m	4	4	4	4
Transport length with lighting	m	3,5	3,5	4,2	4,2
Required power	hp	150 - 250	150 - 250	180 - 250	180 - 250
Unit weight	kg	2 800	3 100	2 900	3 250
Weight of the bunker	kg	300	300	300	300
Number of double-acting hydraulic outputs	pcs	3	3	3	3

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Details of the working body of the **VULKAN** liquid fertilizer injection unit are made of high-quality stainless steel, which allows it to work freely in conditions of contact with an aggressive environment.

It is equipped with 12 applicators (needles) made of hard alloy, which inject fertilizers every 13 cm. Thanks to rubber shock absorbers, the injection wheels follow the topography of the field, so fertilizers penetrate evenly in every part of the field. Three bearings in the hub of the working body guarantee long-term operation of the unit.

Unlike analogues, the injection working body manufactured by **VELES AGRO** has a protective plastic casing to prevent damage to pressure lines when working on such predecessors as sunflower, corn, rapeseed, etc.

Fertilizer injections made by the **VULKAN** method and device require less than 5% of the volume of moisture in the upper soil layer. Relatively small plant roots absorb fertilizers, regardless of the water content in the soil. As a result, drought resistance is improved and the root system is more developed. Liquid fertilizers do not need additional moisture to dissolve, so they are immediately available to the plant after application

This technology of applying liquid fertilizers does not require additional processing in the field, since the dose of fertilizer is immediately laid at a depth. Plant residues do not prevent the penetration of fertilizers into the soil and do not take part of nitrogen.

The technology of injection application of liquid fertilizers is highly adaptable to **MINI-TILL, NO-TILL, STRIP-TILL, VERTI-TILL** technologies.

VULKAN LIQUID FERTILIZER INJECTION UNIT

Innovative multifunctional unit **VULKAN**, which simultaneously carries out feeding and provides herbicidal protection of the working strip using the **STRIP-TILL** cultivation system.

Due to the fact that the strip tillage system differs from the classical one, the protection system also needs to carry out herbicide treatment in a slightly different way. By implementing the **STRIP-TILL** technology, we have 2 conditions for weed germination in the field: a black and warm working strip and a light and cold interrow.

The question arises: «Process the black band or wait for the light band?»

Based on the results of a practical study, the specialists of the **VELES AGRO** plant together with the farmers came to the conclusion that such a unit is one of the elements of the improvement of the Universal soil protection, moisture and energy saving technology, which brings the system of nutrition and protection to the ideal and at the same time carries out the cultivation of soil herbicide by the rotary section and does not allow soil cracking in the working lane.

During re-fertilization of vegetative plants, it is also possible to re-treat with herbicide the light and cold inter-row, in which weeds have already sprouted at that time.

Having moved the bar with nozzles to the interrows, we can calmly apply the insurance herbicide, without paying attention to the phase of plant development, since they are protected by **VULKAN** working bodies.

At the moment, this technology is being tested in practice and will be constantly improved at the demand of time and the advice of farmers who cooperate with us.

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Characteristics	UM.	VULKAN 8 (trailed)		VULKAN 10 (trailed)		VULKAN 12 (trailed)	
Width of capture	m	8	7,75	10	9,75	12	11,75
Number of working bodies	pcs	24	35	28	44	32	53
Number of applicators on the working body	pcs	12	12	12	12	12	12
Depth of application	cm	5 - 7	5 - 7	5 - 7	5 - 7	5 - 7	5 - 7
Hopper volume	L	3 000		3 000		4 200 / 7 000	
Application control system		+	+	+	+	+	+
Application rate	L/ha	20 - 350	50 - 450	50 - 360	50 - 360	50 - 300	50 - 300
Working speed	km/h	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8	≤ 8
The diameter of the working body	mm	515	515	515	515	515	515
Spacing	mm	700	230	700	233	700	230
Transport width	m	3	3	3	3	3	3
Transport height	m	4	4	4	4	4	4
Transport length with lighting	m	7	7	6	6	7,7	7,7
Required power	hp	120 - 200	120 - 200	150 - 250	150 - 250	180 - 250	180 - 250
Unit weight	kg	1 500	1 660	4 200	4 500	6 500	6 800
Number of double-acting hydraulic outputs	pcs	2	2	4	4	4	4

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HERCULES STRIP-TILL CULTIVATION AGGREGATE

HERCULES is designed for strip cultivation of soil for sowing technical crops with simultaneous application of fertilizers. The unit processes strips with a width of 150 to 200 mm and a depth of up to 220 mm.

Thanks to the processing of only 30% of the area of the future sowing, we get cost savings for the main and pre-sowing processing. Treated strips accumulate moisture well, warm up quickly in the spring, providing comfortable conditions for the development of row crops.

Harvest residues, which are placed in the interrows by the aggregate, prevent the germination of wheat debris and weeds. Moisture accumulates between the soil and crop residue due to the temperature difference between the soil and the residue (dew point). Accurate pressure regulation occurs with the help of three independent pneumatic circuits: sections depending on soil resistance; row cleaners depending on the amount of crop residues; rolling wheels for crushing lumps and compacting the soil. Adjustment takes place using a specialized remote control in the tractor cabin.

Features of the operation of the HERCULES unit in one pass:

- supporting wheels in tandem with a split disk help to grind small and large-stalked crop residues
- the row cleaners carry the harvest residues on the interrows, which further contributes to the accumulation and retention of moisture. thanks to the parallelogram design of the attachment of the row cleaners, it is possible to evenly distribute the pressure on them with a pneumatic cushion
- the loosening rack goes into the soil from 10 to 22 cm and applies one or two types of fertilizers. the working part of the rack has a surfacing of plates made of hard alloy metals, which makes it possible to increase the service life by an order of magnitude. each rack is protected from impacts and damage by a safety system of hydraulic cylinders
- discs of the loosening rack on both sides cut through the contours of the processed strip and prevent the soil from being carried on the interrows. depending on the rack settings and operating conditions, the side discs have a number of adjustments: horizontally, vertically, with the possibility of changing the angle of attack of the discs. racks of disks are fixed on the frame of the section with rubber shock absorbers with a given pressure
- rolling wheels with an adjustable angle of attack level and compact the soil in the processed strip

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To view the equipment in action, scan the video's QR-code

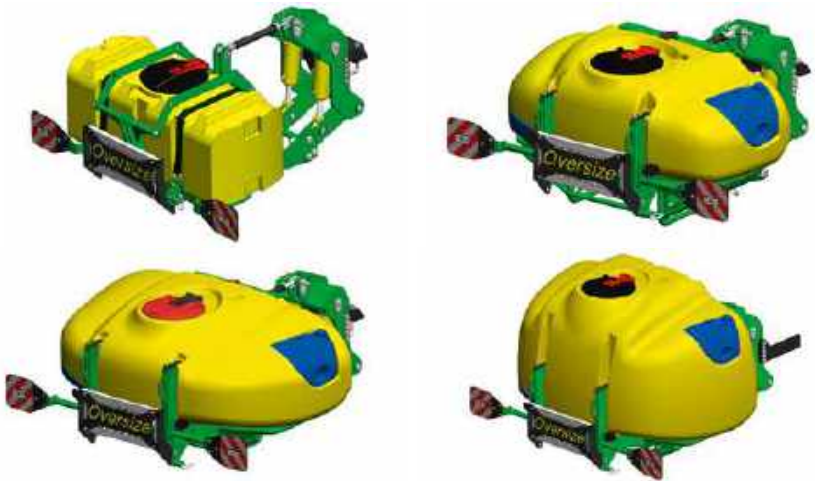
HERCULES units are equipped with front containers for fertilizers with a volume of 1.6 to 2.2 cub.m . The containers are equipped with sowing devices, a pumping turbine and a control panel. These tools provide the possibility of simultaneous application of two types of dry mineral fertilizers.

Characteristics	UM.	H 4	H 6	H 8
Unit type		mounted	mounted	mounted
Number of sections	pcs	4	6	8
Section weight	kg	330	330	330
Row spacing	mm	500 - 760	500 - 760	500 - 760
Depth of work	cm	≤ 22	≤ 22	≤ 22
Hydraulics connection (number of pairs)	pcs	1	1	2
Transport length	m	2,6	2,6	3,2
Transport width	m	2,75	3,9	3
Transport height	m	3	3	3,8
Unit weight	kg	1 900	2 600	4 300
Required power	hp	150 - 220	180 - 240	260 - 380

TANKS FOR APPLYING LIQUID OR GRANULAR FERTILIZERS

VELES AGRO

Characteristics	UM.	FT 500	FT 600	FT 1 100	FT 1 900
Volume	L	500	600	1 100	1 900
Washing capacity		-	+	+	+
Transport length	m	1	1,1	1,45	1,45
Transport width	m	2	2,3	2,3	2,3
Transport height	m	1	1,35	1,45	1,85
Loading height	m	0,85	1,1	1,2	1,6
The diameter of the loading hatch	mm	400	400	400	400
Weight of the container	kg	160	300	350	380
Pouring system		optional	optional	optional	optional



Hinged tanks for applying liquid fertilizers are intended for the complete set of agricultural tools. Made of high-strength polyethylene. The tanks are equipped with a washing tank, a hand washer, as well as a filter for coarse cleaning, and can additionally be equipped with a three-point front attachment of class 2.0.

Hinged tanks for adding dry mineral fertilizers are intended for the complete set of agricultural tools. The tanks are equipped with sowing devices, a pumping turbine and a control panel. In these tools, it is possible to apply two types of dry mineral fertilizers simultaneously.

Characteristics	UM.	FT-DF 1 600	FT-DF 2 000	FT-DF 2 200
Volume	L	1 600	2 000	2 200
The number of sowing machines	pcs	1	1	1
Contribution rate	kg	300	≤ 500	300
The drive of the seeder		electric	electric	electric
Transport length	m	1,5	1,5	1,5
Transport width	m	2,3	2,75	2,3
Transport height	m	2	2	2,2
Loading height	m	1,8	1,8	2
The size of the loading hatch	mm	1 800 x 700	990 x 700	1 800 x 700
Weight of the container	kg	780	1 250	835
Connecting hydraulics	port	1	1	1
Hydraulic drain line (max. 5 bar)	pcs	1	1	1
Oil flow for the fan hydraulic moto	L/min	35 - 45	35 - 45	35 - 45

ZEUS UNIVERSAL DISK HARROW

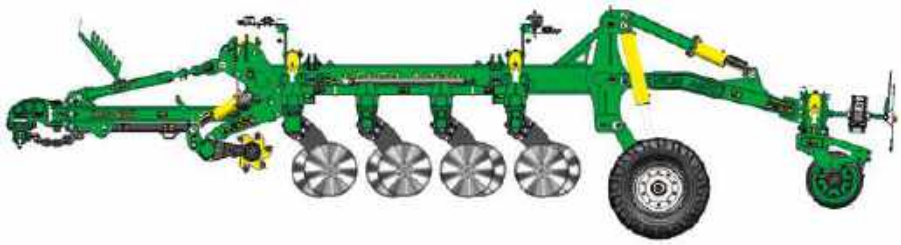
To view the equipment in action, scan the video's QR-code

VELES AGRO

The ZEUS disk harrow from VELES AGRO is a versatile, multifunctional, analogless unit that forms a fundamentally new tillage principle.

Uncompromising arguments in favor of ZEUS:

- the possibility of equipping the unit to work with VERTI-TILL technology
- unique PATENTED arrangement of discs on the working body
- high productivity due to work speed up to 20 km/h
- bearing assemblies that DO NOT require maintenance
- the technology of optimal «calming» of the soil
- high-quality grinding of corn, sunflower stalks and harvest residues of intermediate crops
- ideal pre-sowing preparation, even on heavy soils
- a wide selection of rolling rollers, and the possibility of installing a knife roller



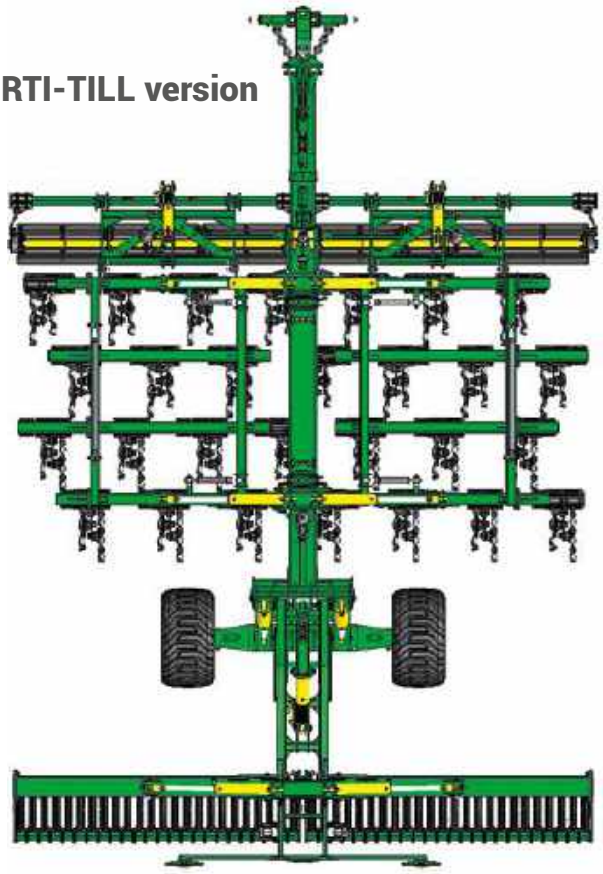
Characteristics	UM.	ZEUS 4 VT	ZEUS 4 HD	ZEUS 5 VT	ZEUS 5 HD	ZEUS 6 VT	ZEUS 6 HD
Working width	m	4,2	4	4,9	5	5,8	6
Depth of cultivation	cm	5 -10	5 - 22	5 - 10	5 - 22	5 - 10	5 - 22
Pressure on 1 disk	kg	208	265	208	240	208	215
Distance between disks	mm	103	125	103	125	103	125
Working speed	km/h	8 - 15	8 - 15	8 - 15	8 - 15	8 - 15	8 - 15
Transport speed	km/h	20	20	20	20	20	20
Number of disks	pcs	40	32	48	40	56	48
Diameter of the disk of the working body	mm	550	620	550	620	550	620
Thickness of the disk of the working body	mm	6	6	6	6	6	6
Angle of attacks of disks	degr.	0	17	0	17	0	17
Transportation length with lighting	m	9	9	9	9	9	9
Transport width	m	3	3	3	3	3	3
Transport height	m	4	3	4	3,5	4	4
Required power	hp	200 - 320	250 - 350	260 - 350	300 - 400	320 - 400	320 - 500
Weight of the unit with a rubber angular roller	kg	8 900	9 000	9 800	10 000	10 200	10 700
Possibility of installing a knife roller		+	+	+	+	+	+
Possibility of installing a bunker for fertilizing		+	+	+	+	+	+
Ability to equip the system of seeding BIO-DRILL		+	+	+	+	+	+

This parameter depends on the unit complete set, operating speed, climatic zone, tillage depth, soil type, its density and humidity. For more information please contact the manager of Sales Department of VELES AGRO Company.

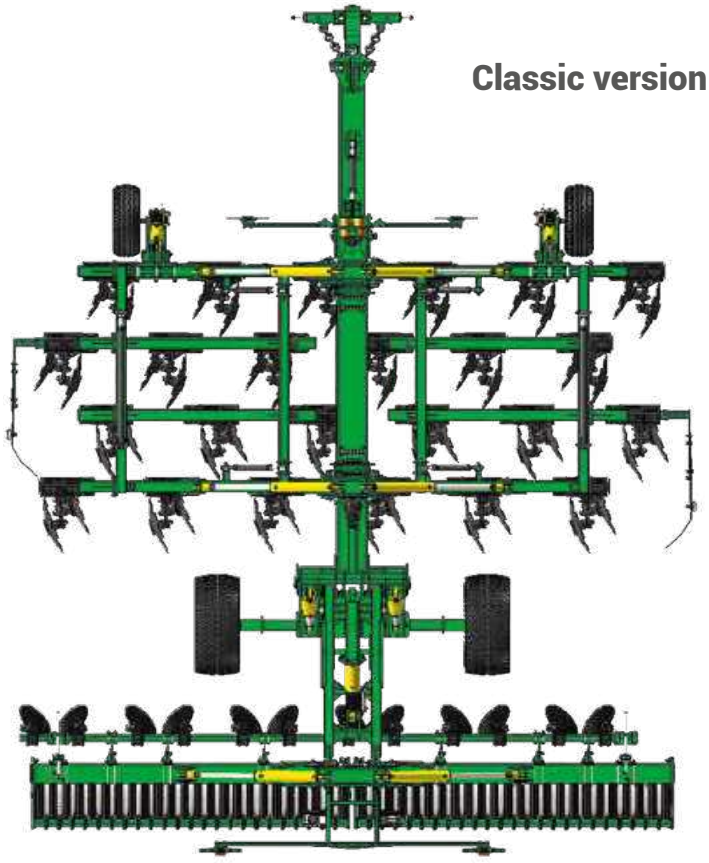
ZEUS UNIVERSAL DISK HARROW

This disk harrow has a wide range of applications, covering cultivation of stubble, grain and sprout grooved crops, medium-deep and deep cultivation of soil, as well as processing of perennial grasses and deposits. Thus, ZEUS can be deservedly considered a powerful, versatile machine that has no analogues to date.

VERTI-TILL version



Classic version



VELES AGRO

To view the equipment in action, scan the video's QR-code

Due to the chess location of the tandem working bodies, the passability crop residue and the stability of aggregate to clog up have increased, even on heavy soils with a large amount of vegetation. On ZEUS aggregate soil does not linger between adjacent disks as in the classical disk harrow, which significantly reduces the energy consumption of and the traction offorts.

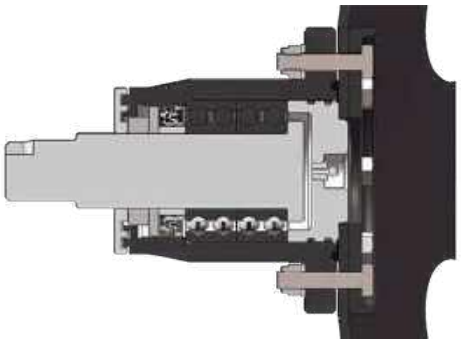
The working body is mounted on a powerful frame with the help of special damper rubber shock-absorbers that allow optimally copying relief and extinguishing shock loads on the frame structure, which move the reliability of unit to a qualitatively new level.

The technology of soil processing by ZEUS units introduces a new soil movement principle. A specially developed and patented tandem arrangement of disks on a damper suspension prevents ground falling between disks and sticking of disks, which increases the penetrating ability and quality of cultivation.

ZEUS UNIVERSAL DISK HARROW

To view the equipment in action, scan the video's QR-code

Disks of the working body are mounted on a rack of specialized steel, which passes the multi-stage complex thermomechanical treatment. The cage of the working body consists of two ball-point, two-row radial-thrust bearings ACCOR 3209, and high-quality cassette seal CORTECO prevents contamination of bearings. The refusal of classical lubricant Litol-24 in favor of the new, consistent multi-component lubricant allows you to extend the service life of each unit, even under the most difficult conditions.



One of the modifications of the ZEUS tillage unit is its **VERTI-TILL** version. With the change of the racks of the working bodies with the discs «Colter» the unit works in the format of vertical tillage. The wavy turbo disk on the vibrating shock-absorber loosens a field surface without mixing soil horizons. Due to the vibration of the working body, the unit makes microcracks under the treated surface, which promote high-quality oxygen-water exchange in the soil. Tillage with this unit allows you to leave on the surface of the field all the crop residues, which serve as
a quality «blanket» for the preservation and accumulation of moisture in the soil.

The unit does not create the so-called «plough sole» but on the contrary loosens the soil treated with disk units of the classic type. Finishing rolling is performed by a rubber-wedge roller. Density of arrangement of working bodies with a step of 10 cm allows to do high-quality processing on all width of capture in one pass.

ZEUS UNIVERSAL DISK HARROW

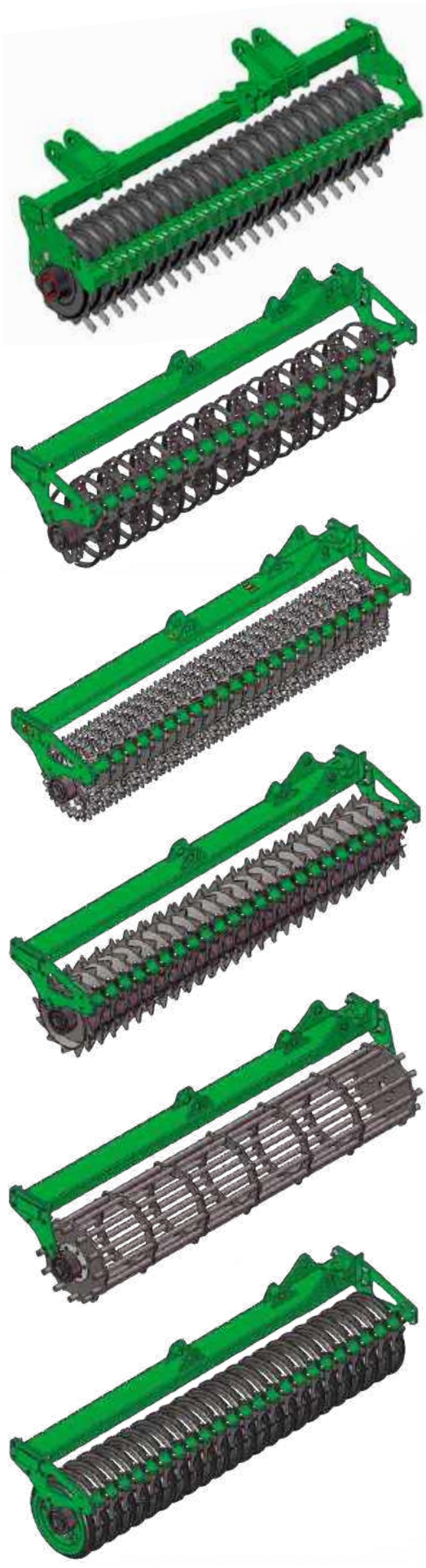
To view the equipment in action, scan the video's QR-code

Adjustment of depth of cultivation is carried out hydraulically with two support wheels in front and a support roller behind. Roller washers allow the unit to be fixed in depth in selected position. There is a possibility of installing a knife roller.

VELES AGRO

VELES AGRO Company has expanded the range of offered rollers so that each customer may choose the necessary equipment for high-quality and efficient operation.

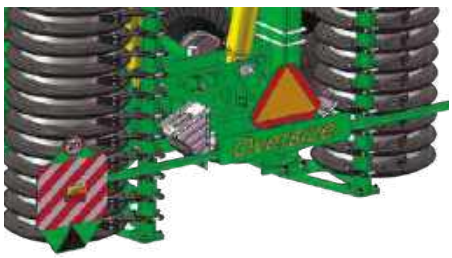
Roller housings have a unique mounting system – each housing is equipped with a special damping device to protect the bearings from vibration and shock loads that the roll has during operation, which can significantly extend the life of the housings.



ZEUS UNIVERSAL DISK HARROW

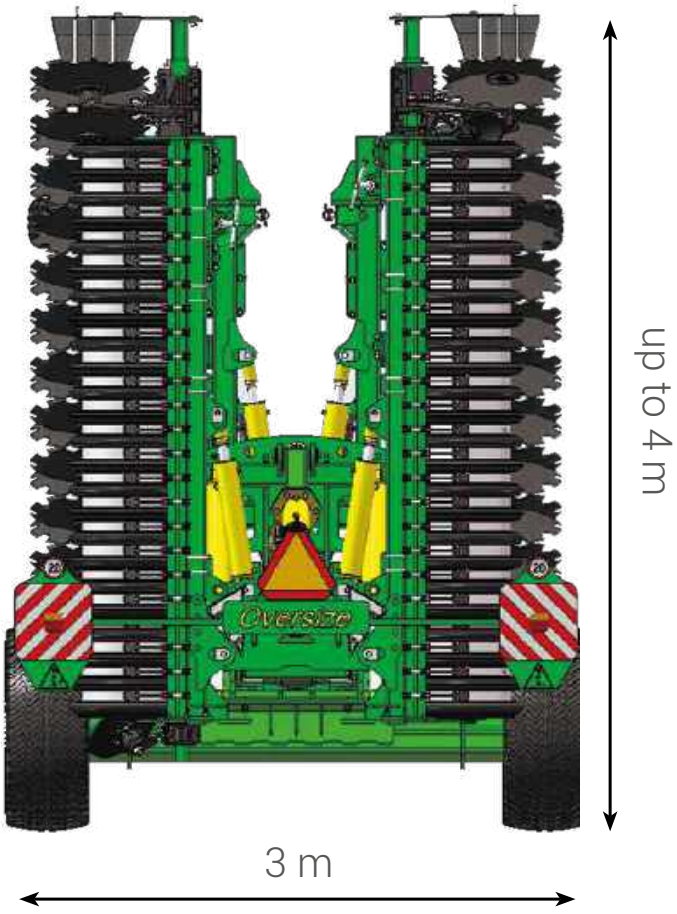
To ensure the reliability of the frame structure, ZEUS disk harrows are equipped with a hydraulic accumulator onto transport hydraulic cylinders, which helps to extinguish shock and vibration loads that arise during transportation of the unit by public roads and field roads.

ZEUS disk harrows are equipped with flow dividers for uniform folding of wings and uniform operation of the hydraulic system, which eliminates possibility of operator's error and malfunctioning of the unit. Also, ZEUS disk harrows are equipped with spill prevention plates that prevent soil from being thrown onto rough surface and prevent formation of ridges between passages. The plates have a wide range of adjustments both in height and in the longitudinal direction.



The ZEUS wheel drive drawbar has also been equipped with reinforced damper shock absorbers to prevent vibration and shock loads. ZEUS disk harrows are equipped with front and rear signal plates, signal lanterns for comfortable and safe transportation.

VELES AGRO



For convenient and safe transportation, the ZEUS disk harrow system allows you to transport the unit of three meters in width and less than four meters in height, which meets all European standards.

ZEUS UNIVERSAL DISK HARROW

ZEUS disk harrow workir body with spherical disc

To view the equipment in action, scan the video's QR-code

VERTI-TILL wo body of vertical shellow cultivat View 2.

of tillage is 5-23 cm.

Transport carriage of the
ZEUS universal tillage unit

The mounted section of the ZEUS unit with working bodies such as turbo disc for VERTI-TILL vertical ultra-shellow cultivation of upper layers of soil. The step of soil cultivation is 10 cm. The depth of tillage is 3-12 cm.

Mounted section of ZEUS unit with spherical discs with diameter of 620 mm and chisels for mineral fertilizers. Intersections of fertilizer application is 250 mm. The depth of application is 10-25 cm.

ZEUS UNIVERSAL DISK HARROW

Center for Testing Engineering
UkrNDIPVT named after L. Pohorilyi
Certificate No.2H344 dated September 29, 2014
Doslidnytske town settlement,
Vasylkiv district, Kyiv oblast.
Phone: +38 050 229 39 12, e-mail: tenzo-test@ua.fm

ZEUS 6 HD universal disk harrow
Focus test No. 01-14-2016

«Productivity and fuel consumption»

Test conditions

The unit was tested with two tractors with a capacity of 300-350 hp in spring (April 7, 2016 in Odesa region) for cultivating of abandoned field with hardness of soil of 2.4 mPa and moisture content of 28.5% in the aggregate with New Holland T8.390 tractor with twin wheels on the front and rear axles and in summer (July 20, 2016 in Dnipropetrovsk region) for cultivation of wheat stubble with hardness of soil of 3.8 mPa and moisture content of 12.5% with John Deere 8335 R tractor with universal tires.

Test results

Working modes	Depth of cultivation, cm	Towing, %	Speed, km/h	Productivity, ha/h	Fuel consumption, L/ha
Transportation by field	-	0,0	12,5	-	3,9
Surface cultivation	6,0	3,5	12,0	7,2	6,3
	10,0	4,0	11,5	6,9	8,7
Middle cultivation	15,0	5,2	9,2	5,5	10,5
	17,0	7,5	8,1	4,9	12,1
Deep cultivation	20,0	12,0	7,6	4,6	13,5
	23,0	14,0	7,5	4,5	15,0

Comments on test results

ZEUS 6 HD tillage unit confirmed its versatility and ensured the high-quality multi-depth tillage (surface, middle and deep) according to the settings.

In all operating modes, different working conditions (spring and high soil moisture, dry period and excessive hardness of the soil, seals and stubble), the settings of ZEUS 6 HD unit optimally loaded the tractor engine at 90-97% of the nominal operating power and performed the technological operations of multi-depth tillage at high working speeds. From 4.5 km/h at tillage depth of 20-23 cm up to 7.2 km/h at a depth of 6-10 cm. At the same time, limiting factors of working speed and, respectively, productivity in small-scale cultivation were engine loading (97%), and deep – towing engines (15%). The working hours of the unit for a 8-hour shift in small-scale tillage is 46 hectares, on average 32 hectares, and on deep – 28 hectares per shift.

The parameters of fuel consumption for tillage of 1 hectare of area in the aggregate with tractors with the capacity of more than 300 hp established showed a high profitability of ZEUS 6 HD unit: 6.3 l/ha -10.5 l/ha - 13.5 l/ha according to working depth of 6 cm - 15 cm - 20 cm.

It should be noted that the integral indicator of energy efficiency and productivity (the amount of fuel (grams) and time (seconds) is spent per unit volume of soil (depth × area = cubic meters)) for the ZEUS 6 HD unit is only 2-3 g×sec/cub.m.. For comparison, this indicator in a plow is 9-14 g×sec/cub.m.. and significantly depends on number of bodies, and in a classical disk harrow – 4-6 g×sec/cub.m.. and depends on chosen depth of cultivation.

Thanks to the original tandem design of disc storage batteries and their multi-row placing on the frame, ZEUS 6 HD tillage unit can successfully compete with the best specialized ground-handling units in the Ukrainian market, which are intended for use only either for small (stabble breaker) or medium (disk headers), or deep (disk harrows) cultivating.

The tests were carried out by the eaddamployees of the Center for Testing Engineering of UkrNDIPVT named after L. Pohorilyi: V. Pohorilyi, O. Haponenko

ZEUS UNIVERSAL DISK HARROW

To view the equipment in action, scan the video's QR-code

Center for Testing Engineering
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Certificate No.2H344 dated September 29, 2014
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ZEUS 6 HD universal disk harrow
Focus test No. 01-15-2016

«Quality of execution of the technological process»

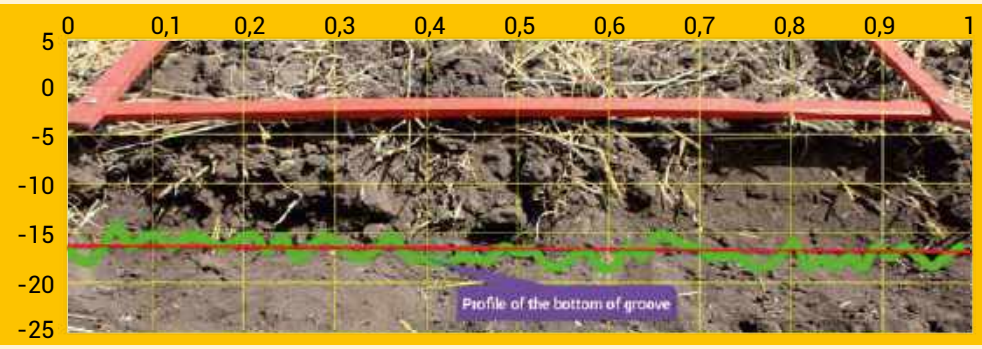
Test conditions

The ZEUS 6 HD unit was tested with two tractors with a capacity of 300-350 hp in spring (April 7, 2016 in Odesa region) for cultivating of abandoned field with hardness of soil 2.4 mPa and moisture content of 28.5%, the unit was equipped with a spring roller and in the aggregate with New Holland T8.390 tractor with twin wheels on the front and rear axles.

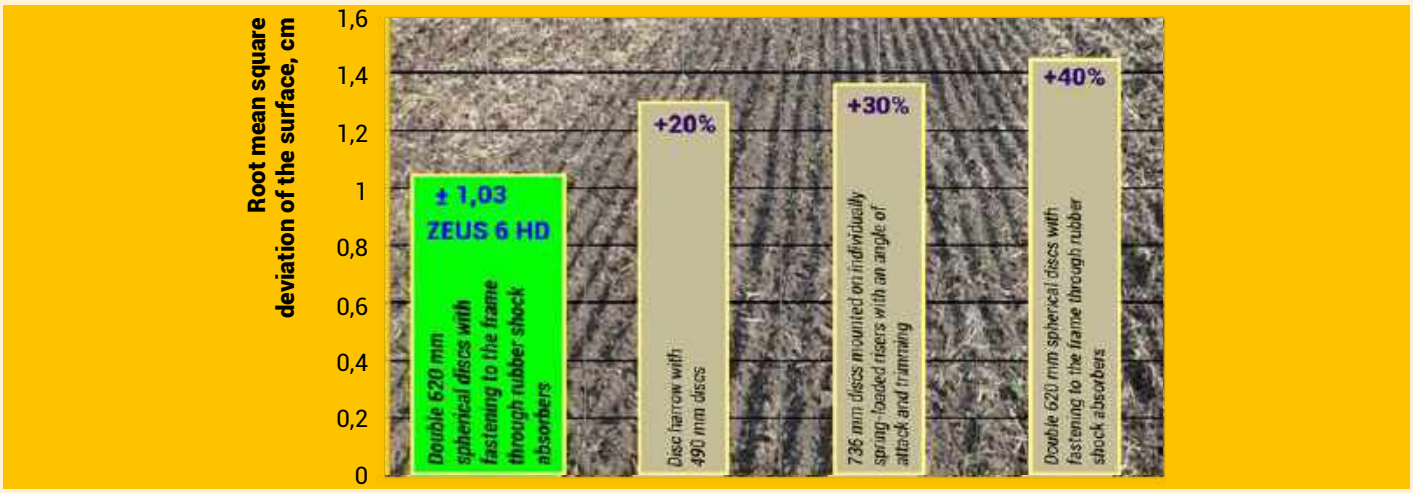
In summer (July 20, 2016 in Dnipropetrovsk region) for cultivation of wheat stubble with hardness of soil of 3.8 mPa and moisture content of 12.5% the unit was fitted with solid gear and rubber wedge rollers and aggregated with John Deere 8335 R tractor with universal tires.

Test results

The uniformity of the bottom of groove is within the width of capture



Uniform surface after harrow passage



Comments on the test results

The ZEUS 6 HD tillage unit for all operating modes, under different working conditions (spring and high soil moisture, dry period and excessive hardness of soil, abandoned fields and stubble) ensured the complete cutting of the lower layers of soil and plant remains to the set depth. At the same time, high indices of copying field relief and depth of cultivation stability were obtained, both in the course and along the width of capture by the unit.

The plant residues were crushed and placed on the upper mulched layer of the ground, and the field surface in all variants was leveled and sealed. Such a condition of the upper layers of soil and its richness in plant remains is the most favorable for preservation and accumulation of moisture and provides high activity of soil biota.

The tests were carried out by the employees of the Center for Testing Engineering of UkrNDIPVT named after L. Pohorilyi: V. Pohorilyi, O. Haponenko

KRONOS COMPACT DISK HARROW

To view the equipment in action, scan the video's QR-code

KRONOS series compact disc harrows are designed for high-quality surface and pre-sowing soil cultivation. Now disc harrows are available not only in trailed version, but also in mounted version.

KRONOS (AGKSD) - designed specifically for aggregation with low-power tractors, due to the lightweight frame structure and semi-mounted design. The harrow consists of a supporting central frame on which a transport cart is fixed, which is controlled by means of hydraulic elements controlled from the operator's seat in the tractor. The working bodies of the unit, the front and rear rows of discs are placed on the central frame. In the rear part of the harrow there is a roller that compacts the loosened soil. The processing depth is adjusted hydraulically with the help of hydraulic cylinders of the roller. Slip-on washers allow the precise fixation in the selected position.

Uncompromising arguments in favor of KRONOS:

- a universal unit for high-quality processing of the soil in its surface layer
- the possibility of completing with discs: camomile, small tooth, spherical turbo disc
- elastic fastening of the rack of working bodies ensures the vibration of the disk
- the density of the arrangement of disks every 220 mm in a row creates the maximum possible grinding of soil
- convenient adjustment of the depth of processing with cap plate of hydraulic cylinders
- the selection of different types of rollers qualitatively crushes the soil and compacts the field surface
- disk load 130 kg
- compact assembly of the unit with the possibility of moving on public roads
- cut-out disks and a deflector shield ensure field leveling between adjacent passages of the unit
- the housing of the bearing of the working body is closed with a cassette seal, which prevents foreign objects from getting into it, does not require periodic maintenance
- two double-row radial thrust bearings per disk are installed in the housings

VELES AGRO

Characteristics	UM.	KRONOS 3	KRONOS 3 (AGKSD)	KRONOS 4 (AGKSD)
Working width	m	3	3	4
Depth of cultivation	cm	3 - 12	3 - 12	3 - 12
Unit type		mounted	semi-mounted	semi-mounted
Distance between disks	mm	220	220	220
Working speed	km/h	8 - 20	8 - 20	8 - 20
Transport speed	km/h	20	20	20
Number of disks	pcs	28 + 2	14 + 1	18 + 1
Diameter of the disk of the working body	mm	520	520	520
Thickness of the disk of the working body	mm	6	6	6
Angle of attacks of disks	degr.	17	17	17
Elevation angle of disks	degr.	7	7	7
Transport length with lighting	m	2,5	7	7
Transport width	m	3,1	4,1	5,1
Transport height	m	2	2,5	2,5
Required power	hp	120 - 200	130 - 200	140 - 220
Weight of the unit with a rubber angular roller	kg	2 320	3 650	3830
Weight of the unit with a tube roller	kg	1 985	3 250	3430
Weight of the unit with a toothed roller	kg	2 200	3 450	3670
Weight of the unit with a segmented roller	kg	2 115	3 320	3540
Weight of the unit with a star-wheel rake	kg	2 500	3 700	3920
Number of dual-action hydro-exits	pcs	-	2	2
Ability to equip the system of seeding BIO-DRILL		+	+	+

KRONOS COMPACT DISK HARROW

The **VELES AGRO** company is expanding its range of products, now the KRONOS line of compact disc harrows is represented by machines with a working width of: 3 m / 4 m / 5 m / 6 m / 8 m.

The disc harrow has a wide range of applications, covering the cultivation of stubble, grain and row coarse-stem crops, medium-depth cultivation of the soil, as well as the cultivation of perennial grasses. Thus, KRONOS can be deservedly considered a powerful universal machine.

Characteristics	UM.	KRONOS 3+	KRONOS 4+	KRONOS 5+	KRONOS 6+	KRONOS 8+
Working width	m	3	4	5,3	6	7,7
Depth of cultivation	cm	3 - 12	3 - 12	3 - 12	3 - 12	3 - 12
Pressure on 1 disk	kg	122 - 180	180	170	150	170
Distance between disks	мм	220	220	220	220	220
Working speed	km/h	8 - 20	8 - 20	8 - 20	8 - 20	8 - 20
Transport speed	km/h	20	20	20	20	20
Number of disks	pcs	28 + 2	36 + 2	48 + 2	56 + 2	68 + 2
Diameter of the disk of the working body	mm	520	520	520	520	520
Thickness of the disk of the working body	mm	6	6	6	6	6
Angle of attacks of disks	degr.	17	17	17	17	17
Elevation angle of disks	degr.	7	7	7	7	7
Transport length with lighting	m	7	7	7	7	8
Transport width	m	3,1	3	3	3	4
Transport height	m	2,5	3	3,5	4	4
Required power	hp	120 - 200	130 - 220	170 - 250	200 - 270	300 - 400
Possibility of installing a knife roller		+	+	+	+	+
Weight of the unit with a rubber angular roller	kg	4 380	6 700	8 100	8 550	12 000
Weight of the unit with a tube roller	kg	4 040	6 400	7 750	8 150	11 550
Weight of the unit with a toothed roller	kg	4 250	6 500	7 900	8 300	11 650
Weight of the unit with a segmented roller	kg	4 170	6 400	7 700	8 150	11 550
Weight of the unit with a star-wheel rake	kg	4 560	6 900	8 400	8 900	12 350
Ability to equip the system of seeding BIO-DRILL		+	+	+	+	+

KRONOS COMPACT DISK HARROW

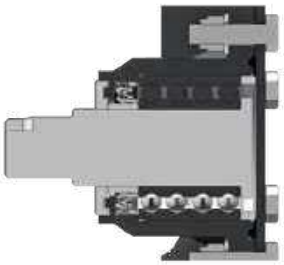
To view the equipment in action, scan the video's QR-code

Thanks to the specially designed mounting of two disks on one rack, it was possible to reduce the distance between the disks to 220 mm in a row. A wide bracket for special damping shock absorbers of the working body eliminates arbitrary deviation of the disc during operation, which guarantees constant angles of inclination and angles of attack of the discs, and, as a result, uniformity of surface treatment.

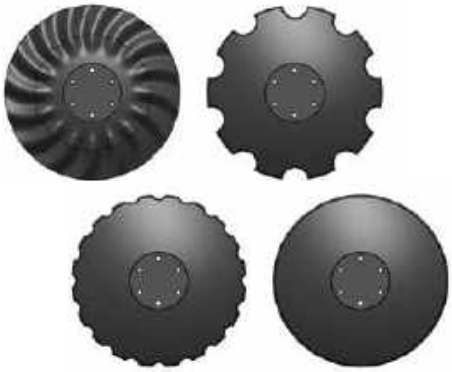
The working body is fixed on a powerful frame with the help of four special damping shock absorbers, which dampen shock loads on the frame structure, thanks to which the reliability of the unit reaches a qualitatively new level.

VELES AGRO

The individual suspension of the working bodies ensures ideal adaptation to the terrain of the field and optimal passage of the cultivated soil together with plant residues. The working body of KRONOS disk harrows has four damping segments that have the possibility of floating deflection, this attachment of the working body allows you to adapt to various field geometries and contributes to perfect copying of the relief and uniform high-quality processing.



The disks of the working body are mounted on a rack made of specialized steel, which undergoes multi-stage complex thermomechanical treatment. The body of the working body consists of two ball, double-row radial thrust bearings 3209, which have two levels of protection: the built-in labyrinth seal protects against environmental influences, and the Italian CORTECO cassette seal reliably prevents dust and dirt from entering into the bearings. Rejection of the classic Litol-24 lubricant in favor of a new consistent multi-component lubricant that is used to fill the housings allows you to extend the service life of each unit even in the most difficult conditions.



The disc harrows of the KRONOS series have four types of equipment for working bodies. Discs with 10 large cuts penetrate well into the soil even under difficult conditions, and discs with small cuts contribute to high-quality work even with a minimum depth of cultivation, smooth discs are a classic solution for a disc husker, a spherical turbo disc (coulter) perfectly destroys the rhizomes of cultivated crops and mulches the surface of the field with their remains.
The axle shaft of the working body are fastened with a special nut, which excludes the possibility of arbitrarily untwisting, and has a system of forced fixation.

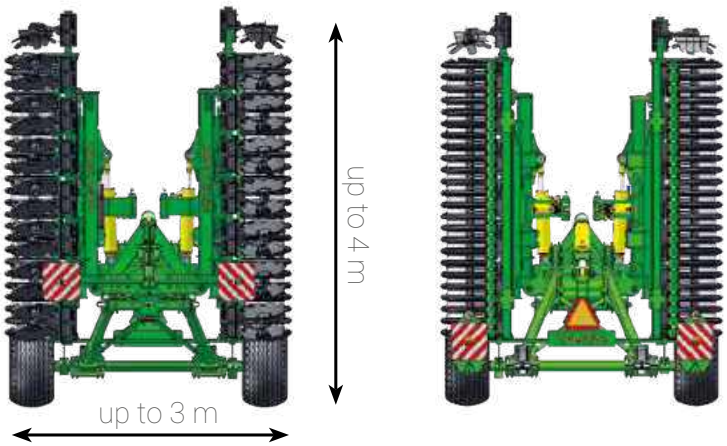
KRONOS COMPACT DISK HARROW

To ensure the reliability of the frame structure, KRONOS disc harrows are equipped with a hydraulic accumulator for the transport hydraulic cylinder, which helps to dampen shock and vibration loads that occur when the unit is transported on public roads and field roads.

KRONOS disc peelers are equipped with flow dividers for uniform folding of the wings and uniform operation of the hydraulic system, which eliminates the possibility of operator error and unit blockage. Also, KRONOS disc peelers are equipped with side shields that prevent soil from being thrown onto the untreated surface and prevent the formation of ridges between passes. Shields have a system of adjustments both in height and in the longitudinal direction. As an option, side disks «fans» can be installed, which smooth the joints between adjacent passages.

For smooth adjustment of the traction line and precise adjustment of the unit for specific conditions, the upper bracket of the trailer has a screwble adjustment.

VELES AGRO



KRONOS disc harrows are equipped with front and rear signal shields and signal lights for safe transportation.

For comfortable and safe transportation, the folding system of KRONOS disc peelers allows folding up to three meters in width and less than 4 meters in height, which meets all European standards.

To adjust the horizon line of the wings in a fixed position, screw stops of the side sections of the unit are provided.

KRONOS COMPACT DISK HARROW

Equipment testing center
UkrNDIPVT named after L. Pogorily
Certificate No. 2H344 dated
September 29, 2014
Doslidnytske town settlement, Vasylkivsky district, Kyiv region.
phone: 050-229-39-12, e-mail: tenzo-test@ua.fm

KRONOS 6 compact disk harrow
Focus test No. 01-25-2016

«Productivity and fuel consumption»

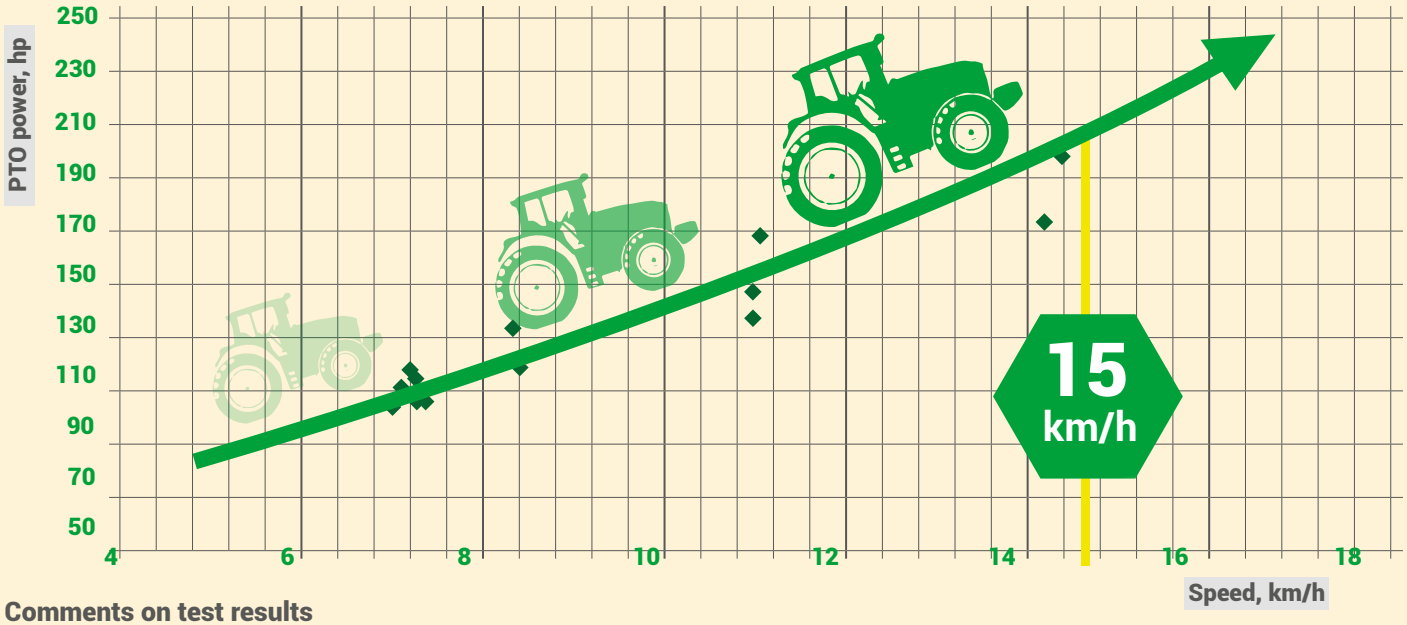
Test conditions

The unit was tested with tractors with a power of 200-350 hp, on field cultivation after growing Trifolium (June 25, 2016 in Vinnytsia region) in a unit with tractors Case Puma 210 with paired wheels on the rear axle and John Deere 8430 with universal tires, and also on the cultivation of wheat stubble (August 20, 2016 in the Poltava region) in a unit with Case Magnum 335 and New Holland T8.380 tractors with universal tires.

Test results

Modes of operation		Required engine power, hp	Productivity, ha/h	Fuel consumption, L/ha
Speed, km/h	Depth, cm			
15,0	Transportation across the field	80	-	1,5
7,4	6,2	110	4,3	6,4
8,6	6,2	120	5,0	6,3
11,2	6,1	145	6,5	6,0
13,1	6,0	185	7,6	5,8
14,5	6,0	192	8,4	5,6

The processing depth is 6 cm (each subsequent cm requires an additional 10-15 hp)



Comments on test results

The KRONOS compact disc harrow can be aggregated with tractors from 100-120 hp depending on the need for traction power for surface treatment - peeling the stubble to a depth of 4-6 cm, which will optimally load the tractor engine at the level of 90-97% of the nominal operating power. The use of the full speed potential of the harrow for effective medium-depth tillage (10 cm depth) requires the use of a tractor with a power of at least 200 hp. The high productivity of the unit is achieved due to the design possibility to turn around at the end of the furrow on the roller, for digging/deepening, a hitch and one hydro line. The unit's working capacity per shift reaches 40-50 ha/shift, while the fuel consumption is 5-6 l/ha.

The tests were carried out by the employees of the CVT of UkrNDIPVT named after L. Pogorily: V. Pohorily, O. Gaponenko

KRONOS COMPACT DISK HARROW

Equipment testing center
UkrNDIPVT named after L. Pogorily
Certificate No. 2H344 dated
September 29, 2014
Doslidnytske town settlement, Vasylkivsky district, Kyiv region.
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KRONOS 6 Compact disk harrow
Focus test no. 01-29-2016

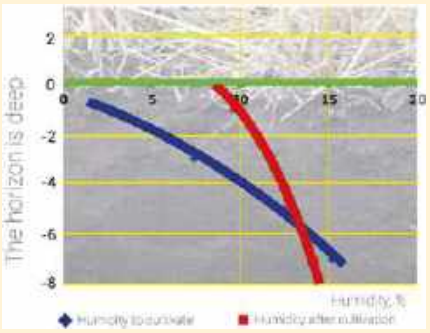
«Quality of execution of the technological process»

Test conditions

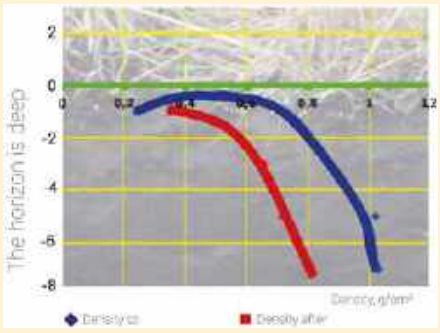
The tests were carried out in a unit with tractors with universal tires with a capacity of 330-350 hp, for the processing of wheat stubble after combine harvesting with straw grinding (August 20, 2016 in the Poltava region). The total mass of plant remains on the surface of the field is 4.5 tons, the height of the stubble is 25 cm.

Test results

Humidity of soil

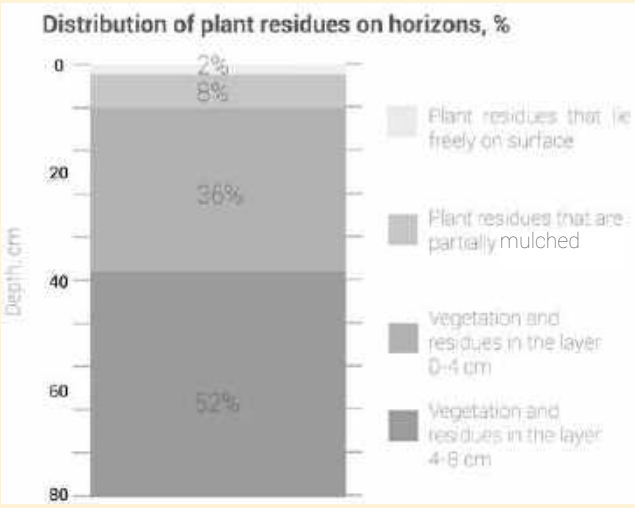


Soil density



KRONOS ensures the formation of a surface layer of the soil that is optimal in terms of moisture and density. A slight increase in surface humidity is fully compensated by the redistribution of moisture in the middle layers of the treatment and its 100% preservation in the lower ones. At the same time, the soil is qualitatively compacted (0.75 - 0.8 g/cm3), and the surface is mulched (0.2-0.4 g/cm3).

As a result of processing, plant remains are wrapped with redistribution along the horizons. A small part of them remains on the surface and in the near-surface horizon (about 10%), and 50% is located in the lower horizons, the rest in the middle horizons. At the same time, plant remains are fixed in the compacted structure of the soil with small lumps.



Comments on test results

Surface cultivation of the soil with a KRONOS 6 compact disc harrow ensures preservation of moisture in the upper layers, protects the soil from unproductive losses; creates a favorable soil environment for the germination of weed seeds and the development of microflora; accelerates the processes of rotting plant remains and preserving soil fertility.

When peeling cereal stubble in one pass, the condition of the soil is ensured, which meets the requirements for this operation in the most modern agricultural technologies.

The stability and uniformity of the bottom of the tillage makes it possible to recommend KRONOS for pre-sowing cultivation.

The tests were carried out by the employees of the CVT of UkrNDIPVT named after L. Pogorily: V. Pohorily, O. Gaponenko.

ROLLERS FOR ZEUS AND KRONOS HARROWS

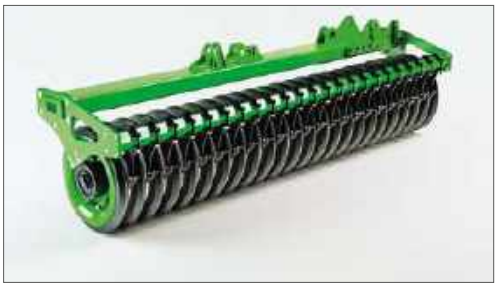
To view the equipment in action, scan the video's QR-code

VELES AGRO

The metal-wedge roller is universal and can perform its work qualitatively in sweet conditions, on overcompacted soils. The reliable all-welded construction breaks up lumps and provides compaction over the entire working depth. Cleaners-smoothers ensure the cleanliness of the roller in any conditions and level the treated soil.

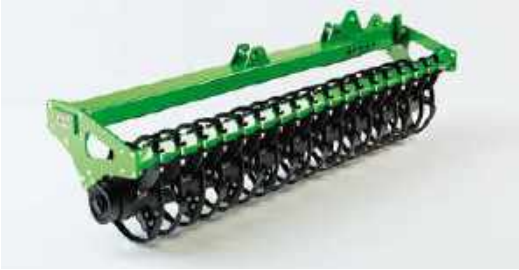
Tube roller is the most simple and versatile compactor. The large diameter of 580 mm provides a high bearing capacity, and the optimum number of transverse tubes contributes to high-quality crumbling and formation of evenly compacted surfaces.

Rubber V-shaped roller is optimal in most applications for leveling the surface. Soil compaction is carried out by stripes. The diameter of the roller, 580 mm, contributes to the even alignment of the treated surface and has a high bearing capacity, and a large weight ensures high-quality rolling and crushing of boulders at high speeds. Such a compactor forms compact strips that contribute to moisture accumulation and formation of an optimal soil structure. This roller is equipped with adjustable varnish for hardened, wear resistant solid steel.



Indenting roller is optimal for a comprehensive back filling throughout the capture area. Suitable for heavy soils, it has proved itself well in work on sandy soils, because it requires a small traction effort. The toothed structure well covers large fraction of treated soil. The compactor provides even depth of consolidation of soil with loose top layer. This roller is equipped with adjustable variable cleaners from hardened, wear-resistant special steel.

Segmented roller is a roller of spring segments; it contributes to a deep consolidation of soil. Due to the conical performance of the spring vibration segments, the roller is self-cleaning. Segments are made of special steel, which passes multistage complex thermomechanical



processing, and they are variables. This roller is equipped with adjustable variable cleaners from hardened, wear-resistant special steel. The roller is used on soaked soils with a large amount of sloppy residues.

Square-spindle roller with an aggressive profile of a large diameter of 560 mm leaves a loose, resistant to formation of stalk, surface of soil. It well proved itself on heavy dry soils. The roller breaks large fractions by simultaneously conducting a strip sealing, which preserves optimal circulation of air in upper layers of soil. Stable on rocky soils.

Knife roller is available as an option for disk rollers of KRONOS and ZEUS. Adjustment of the depth of the roller is hydrophilic, and roller washers allow for precise fixation in the selected position. The knives themselves are made of wear-resistant, special steel, which undergoes multistage complex thermomechanical processing. They have a double girth to extend the service life (with wear that rotates by 180 degrees and life expectancy is doubled, compared with the classic mounting method). Runners on which the compactor is mounted to the frame structure with the help of damping shock absorbers, to prevent the impact of vibration and shock loads on the frame of the unit. As an option, the roller can be equipped with a hydraulic accumulator for more precise and smooth replication of the relief.

FORWARD PRE-SEEDING AGGREGATE

FORWARD pre-seeding aggregate
is used for leveling and preparation of fields for sowing of cereals and industrial crops.

Uncompromising arguments in favor of FORWARD:
- tractor tracer extender, adjustable for a certain track and load
- perfect copying of the surface of field at the expense of spring stabilizers
- plate roller with a large cutting capacity and bearing units with cup seals
- spring tine of working body with mechanism for preventing overload, equipped with wear-resistant palm of boron-based steel
- convenient adjustment of depth of processing by a screw mechanism
- massive coarse spindle bearing roller with damping housing of bearing assemblies
- compact assembly of the unit for transportation

VELES AGRO

Characteristics	UM.	FORWARD 5	FORWARD 6	FORWARD 8
Working width	m	5	6	8
Transport width	m	3	3	3
Transport height	m	3	3,5	4,25
Type of unit	-	semi-mounted	semi-mounted	semi-mounted
Working speed	km/h	≤ 14	≤ 14	≤ 14
Depth of cultivation	mm	25 - 100	25 - 100	25 - 100
Number of working bodies	pcs	20	24	32
Productivity	ha/h	5,0 – 7,0	6,0 - 7,2	8,0 - 9,6
Width of the shovel	mm	260	260	260
Weight	kg	4 890	5 400	6 950
Required power	hp	165	180	250
Number of operations per pass	pcs	6	6	6

In one pass the unit performs:

1. Bursting of tractor's trail
2. Preliminary leveling of soil
3. Grinding depths with a cutting knife
4. Cultivating with a classic shovel
5. Sealing and grinding of soil with a star-wheeled roller
6. Finishing leveling of surface with a tube bedplate

HIT GRINDER ROLLER

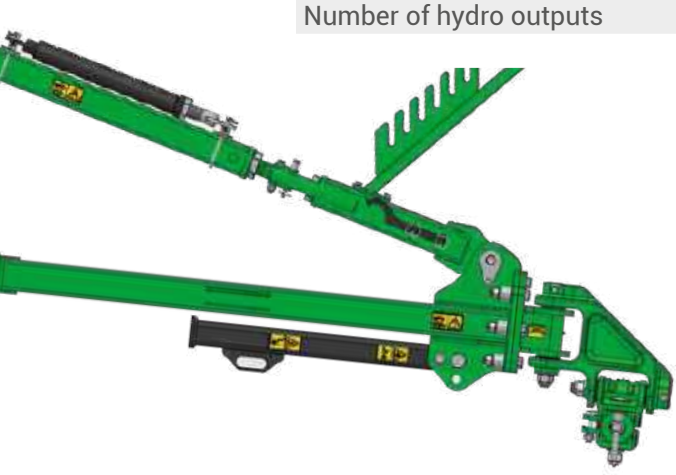
HIT grinder roller designed for simultaneous grinding of crop residues, mulching, leveling and sealing of soil surface.

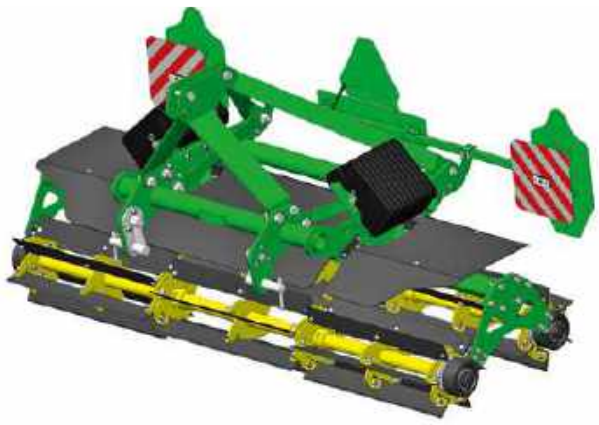
Load of the roller could be increased by filling its working cylinders with liquid. Due to its large diameter (860 mm) and soil pressure (1300 kg/m²) roller provides a qualitative alignment of soil. Roller bearings are protected with rubber dampers and allow to withstand critical loads. While working on dry soil on the speed above 15 km/h roller not only crushes the remains but also chops the top layer of soil that allows it to mulch the surface of the field.

The lateral sections of the roller work in floating mode that allows them to flatter an unaligned surface. For ease of use and transportation on public roads, rollers have a hydraulic folding function.

To view the equipment in action, scan the video's QR-code

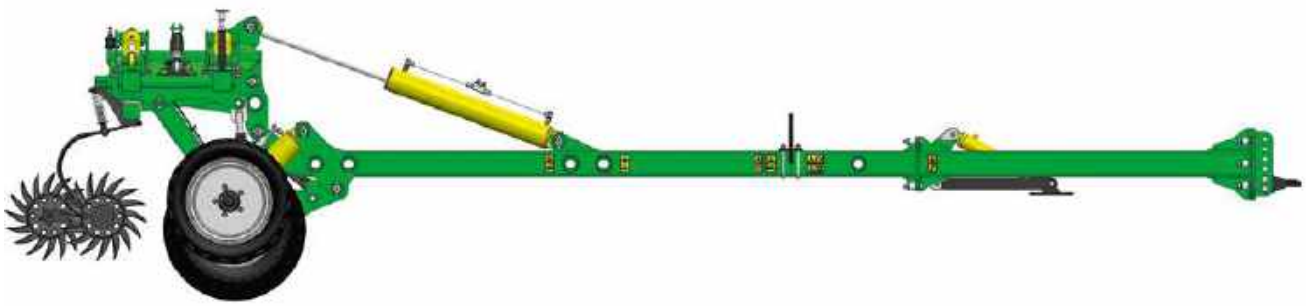
Characteristics	UM.	HIT 3	HIT 6
Working width	m	2,9	6,2
Working depth	cm	3 - 5	3 - 8
Unit type		mounted	semi-mounted
Pressure per 1 meter	kg	-	1 050 - 1 300
Working speed	km/h	8 - 20	8 - 20
Transport speed	km/h	20	20
Roller diameter	mm	300	860
Cutter width	mm	6	6
Relief copying	degr.	-4 / +4	-4 / +4
Transport length with illumination	m	2,1	7
Transport width	m	2,99	3
Transport height	m	1,21	4
Required power	hp	від 92	180 - 270
Weight	kg	1 300	6 500
Weight with water	kg	-	8 000
Number of hydro outputs	pcs	-	2





DEMETRA ROTATIONAL HARROW

The DEMETRA rotational harrow designed for surface tillage. Needly-like tandem of working systems mounted on the pendulum type workpiece allows perfect repetition of the surface. Elastic strut and spring safety assembly minimize plant injury during processing. Double row bearing body with cuff seals needs no maintenance and provides maximum work life. Spur wheels are designed to penetrate into the soil at an angle, which provides the maximum effect of deepening, mulching and loosening the surface of the field. The barrier mesh prevents residues from getting into the glass and mirrors.



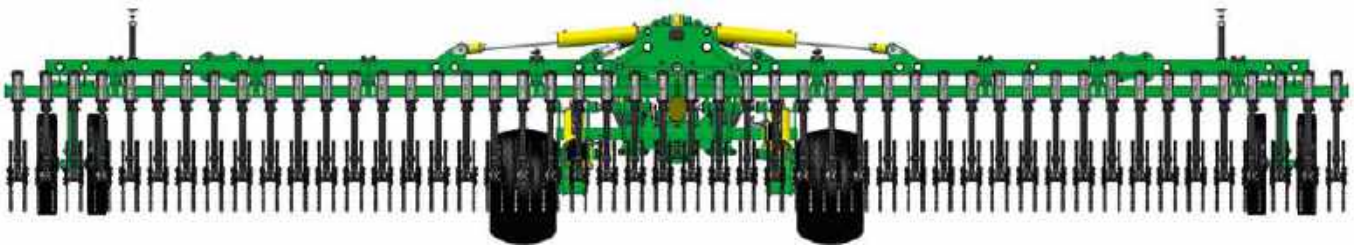
VELES AGRO

In one pass unit performs:

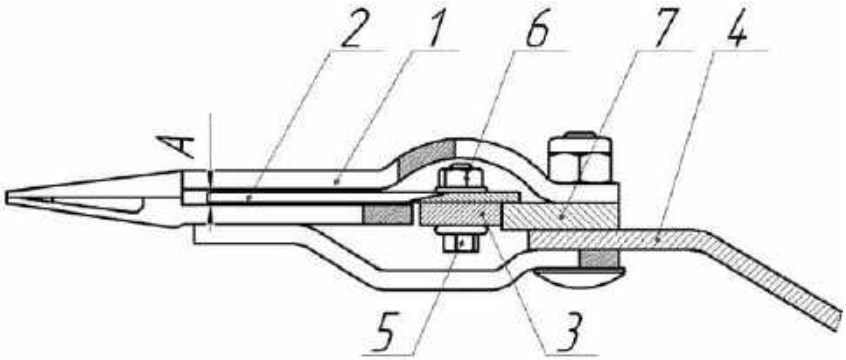
- shallow loosening
- mulching the surface
- maintenance of oxygen-water balance of soil
- destruction of weeds in the early stages of development
- cultivation of row crops
- wrapping of mineral fertilizers in the soil
- surface alignment

To view the equipment in action, scan the video's QR-code

Characteristics	UM.	RBN 6	RBN 6D	RBN 6L	RBN 8L	RBN 10L	RBP 12
Working width	m	5,85	5,85	5,85	7,95	10	11,8
Working depth	cm	3-8	3-8	3-8	3-8	3-8	3-8
Working speed	km/h	8-20	8-20	8-20	8-20	8-20	8-20
Transport speed	km/h	20	20	20	20	20	20
Spur wheel diameter	mm	540	540	540	540	540	540
Pitch pattern	mm	105	105	105	105	105	105
Working units quantity	pcs	28	28	28	38	48	56
Wheels quantity	pcs	56	56	56	76	96	112
Transporting length with illumination	m	1,5	1,2	1,2	1,2	1,2	7
Transporting width	m	3	6	3	4,3	5,15	3
Transporting height	m	4	1,7	2,6	2,6	2,6	2,6
Required power	hp	82-130	82-130	82-130	> 120	> 120	> 140
Weight	kg	1 650	1 500	1 710	2 180	2 650	5 250
Hydro output quantity	pcs	2	0	2	2	2	3



To view the equipment in action, scan the video's QR-code



Cutting machine:
1) double finger;
2) segment;
3) back of the knife;
4) cutting board;
5) bolt;
6) nut;
7) guiding strip;

A) gap of the double finger.

Pro-Drive Schumacher

Sunflower harvester in combination with the grain-harvesting self-propelled combine is intended for cleaning sunflower in the stage of full ripeness.

Provides high-quality operation of the combine with minimal losses. In one pass combine provides: cut of the tops of plants, the threshing of seeds, collecting peeled seeds in the bunker, grinding threshed baskets and spreading them across the field. It is suitable for all soil types and climatic zones, for the fields with an inclination up to 8°.

The most effective usage of harvester is for harvesting sunflower at full ripeness at optimal harvesting speed of 6 km/h at crop fields, which has the following main characteristics:

- maximal height of the stem is approximately 230 cm
- distance from the ground to the lowest baskets higher than 60 cm
- seed moisture from 12% to 20%, basket humidity lower than 60%
- field clogging must comply with the accepted technological standards and not exceed 5%, weeds should not interfere with the normal flow of the process
- the header is intended for operation on fields with an inclination up to 8º at air temperature from minus 5 ºC to plus 45 ºC
- fields on which the harvester operates must have an even surface. There should be no foreign objects in the fields (stones, metal objects, etc.)

Polyamide screw. As an option, the header can be equipped with a polyamide auger instead of the conventional metal auger. As tests have shown, the use of a polyamide screw has a number of advantages:
— reduced vibration due to the softness of the material of the auger turns when solid objects enter the header;
— thanks to the segmented design of the auger, it is possible to quickly and easily replace a damaged auger coil without welding;
— due to the softness of the material of the auger coils, damage to the bottom of the header becomes unlikely;
— no corrosion of working surfaces.

Characteristics	UM.	CX 6	CX 8,4
Type		mounted	
Constructional width of the reaper grip by side dividers	m	6 ± 0,02	8,4 ± 0,02
Productivity		Matches the performance of the combine thresher and does not limit its operation	
Speed -working -transport	km/h	 up to 12 20	
Drive		Cardan gear from the combine's GDP	
Adjustable cutting height	mm	250 - 800	
Dimensions - length - width - height	mm	 2 845 6 230 1 065	 2 845 8 675 1 065
Clearance	mm	300	
Distance between stelelifts	mm	350	
Gap between stelelifts	mm	45 - 65	
Overall mass	kg	1 750 ± 5%	2 100 ± 5%
Cutting machine: - type - knife driver - segment pitch - knife stroke Knife cyclicity	 mm vel./min.	 Finger-type, with steel double fingers, closed type; Pro-Drive Schumacher 76,2 85 522	

TROLLEYS FOR TRANSPORTATION OF HARVESTER

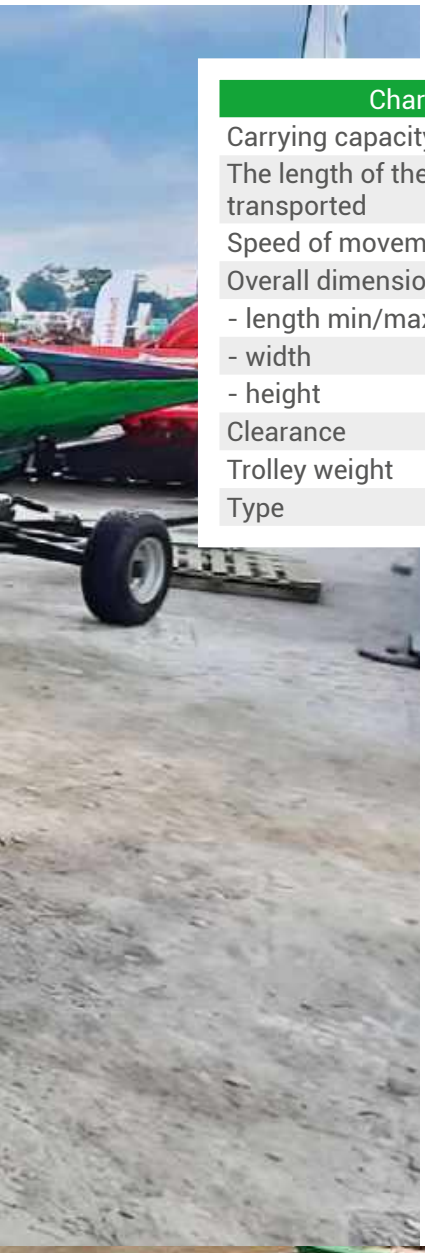
To view the equipment in action, scan the video's QR-code

Universal trolleys are agricultural machines intended for transporting harvesters in the field or on public roads in accordance with the current traffic rules.

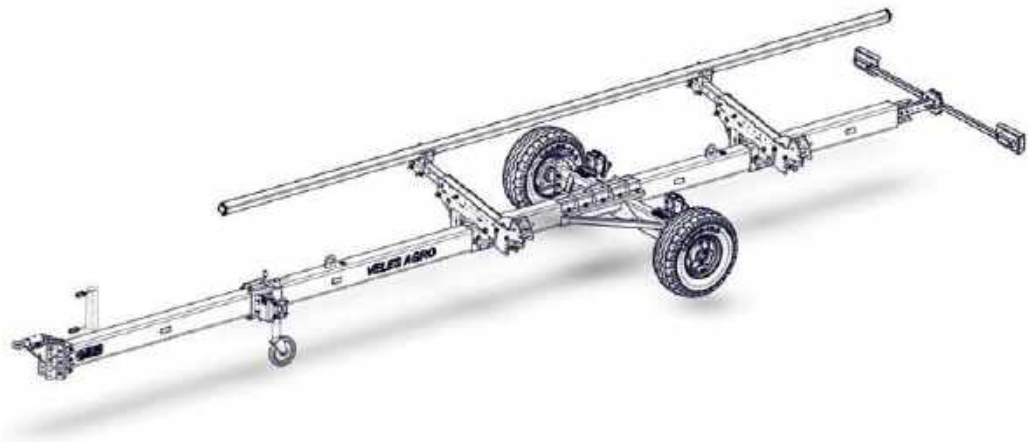
The harvester is loaded onto the cart with the help of a combine harvester and fixed with transport fasteners. On each support, the lozenges are installed, which are designed to catch the rear lower beam of the harvester, also through all the supports, a support pipe is installed, on which the stem lifters of the harvester rest. For various designs of harvesters, adjustment is provided across the bed beam and support pipe, as well as the angle of inclination of the support. In addition, the adjustment of the distance of the supports along the beam of the cart is provided.

When moving on public roads, depending on the current traffic rules, the cart can be attached to the traction-coupling device of a combine harvester, tractor or tractor and move along with it.

VELES AGRO



Characteristics	UM.	BTG	CXT
Carrying capacity	kg	4 500	4 500
The length of the harvester being transported	m	6,5	9,5
Speed of movement	km/h	20	20
Overall dimensions:			
- length min/max	mm	9 660 / 10 140	13 100 / 13 580
- width	mm	2 350	2 250
- height	mm	1 100	1 100
Clearance	mm	340	245
Trolley weight	kg	1 100 ± 5%	1 490 ± 5%
Type		semi-mounted	trailed



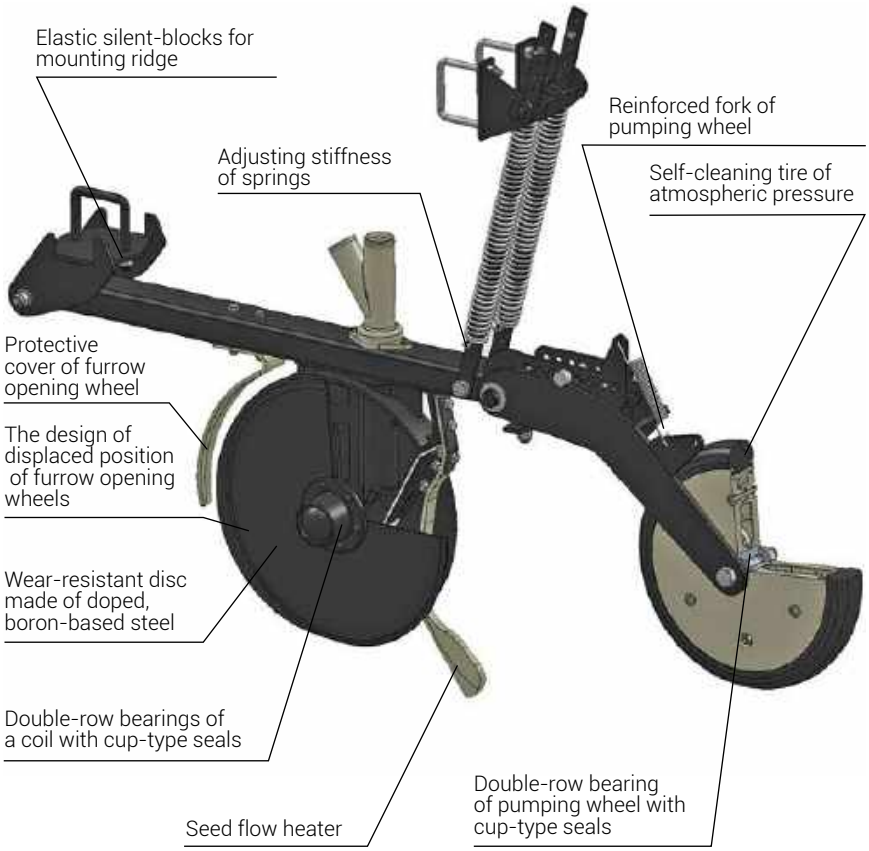
SZM GRAIN SEEDERS, MINI-TILL SOWING TECHNOLOGIES

NIKA mechanical grain seeders of SZM Series are intended for in-line seeding of cereals, legumes, industrial crops, as well as grasses, vegetables and grain mixtures with simultaneous application of mineral fertilizers, with the minimum technology of tilting.

The attachment for SZM series drills is designed to work on **NO-TILL** technology (zero tillage technology). The console is a frame structure equipped with turbo disks. Thanks to the turbodisks, the soil is loosened, which allows the coulters to maintain the correct depth and carry out sowing without hindrance. The effort of the turbo disks is regulated by hydraulic cylinders and spacers on them. For convenient and safe transportation the attachment can be folded by means of hydraulic cylinders.

Characteristics	UM.	SZM 4	SZM 6
Working width	m	4	6
Transport width	m	2,5	2,5
Type of seed drill		trailed	trailed
Number of shoots	pcs	26	39
Intermediate row width	cm	15,24	15,24
Pressure of the coulter to the ground	kg	80 - 120	80 - 120
Volume of seed bunker	L	910	1 365
Volume of fertilizer bunker	L	350	525
Volume of grass bunker	L	120	180
Depth of sowing	mm	10 - 89	10 - 89
The rate of seeding of cereals	kg/ha	8 - 400	8 - 400
Sowing rate of grass bunker	kg/ha	1 - 40	1 - 40
Fertilizer rate	kg/ha	25 - 250	25 - 250
Productivity	ha/h	2,5 - 4,0	4,0 – 7,0
Weight	kg	2 050	4 300
Required power	hp	82 - 105	130 - 150

VELES AGRO



Features:

- SAAB (Sweden) high-strength boron solid steel coil disc
- the displaced placement of discs allows the first disc to cut the stems
- two-row radial-thrust bearings of a disk of a coil with cuff seals and sealed lid
- pulling wheel clearly maintains depth of sowing
- load on a coil is 80-120 kg
- spacious bunkers for seeds and fertilizers
- sowing part of the stainless steel tray with fertilizers
- traumatic coils of sowing machines made of durable abc-plastic

Shafts of gear boxes of speed changes are installed on case bearings of USF 205series.
Installed chains of PR - 19,5 (GOST) series.
Box stars are made of wear-resistant steel.

SPM SPACING DRILLS

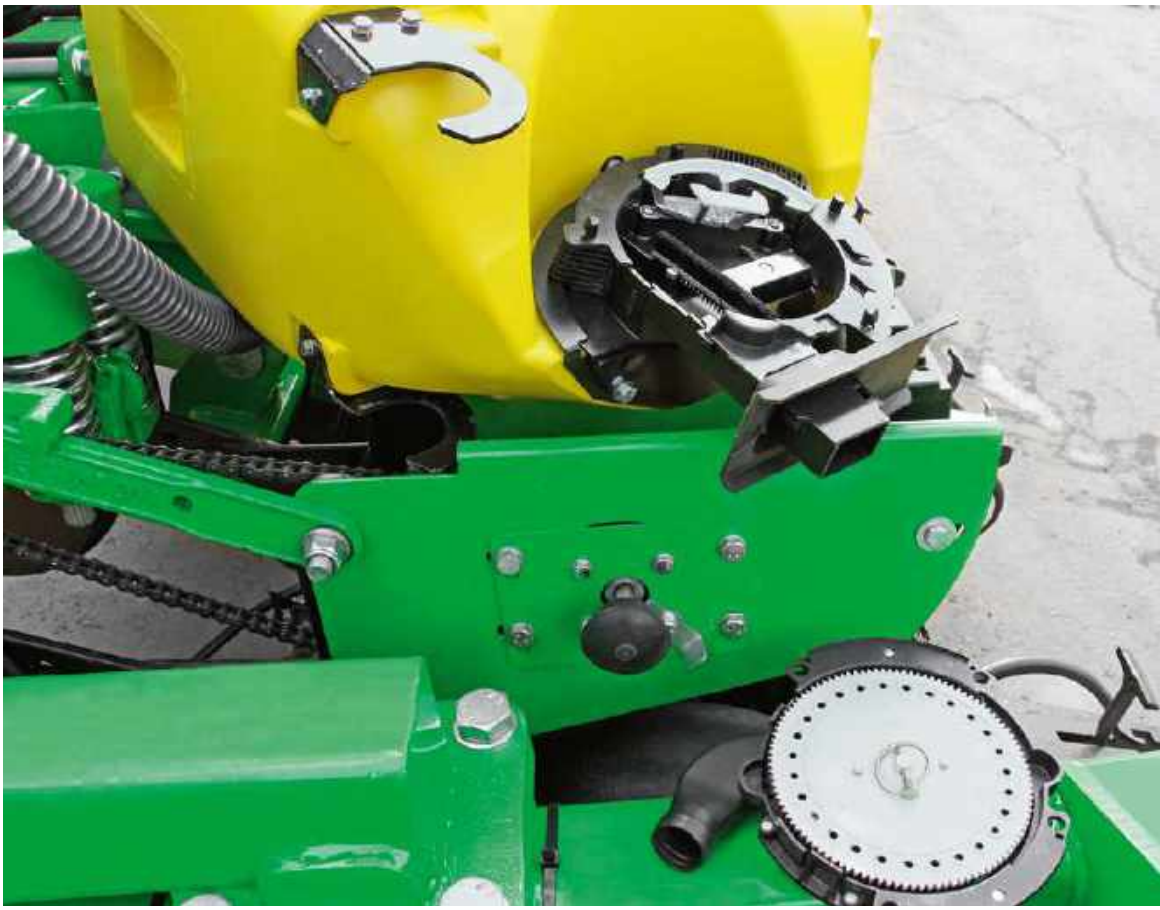
Spacing drills, SPM series, are designed for single-grain sowing of calibrated and uncalibrated seeds of corn, sunflower, soybeans with the simultaneous application of dry fertilizers and micro-fertilizers. The most responsible knot in the seed drill is the sowing machine. We succeeded in achieving high quality seeding by choosing the vacuum precision plant **«Precision Planting» (USA)**.

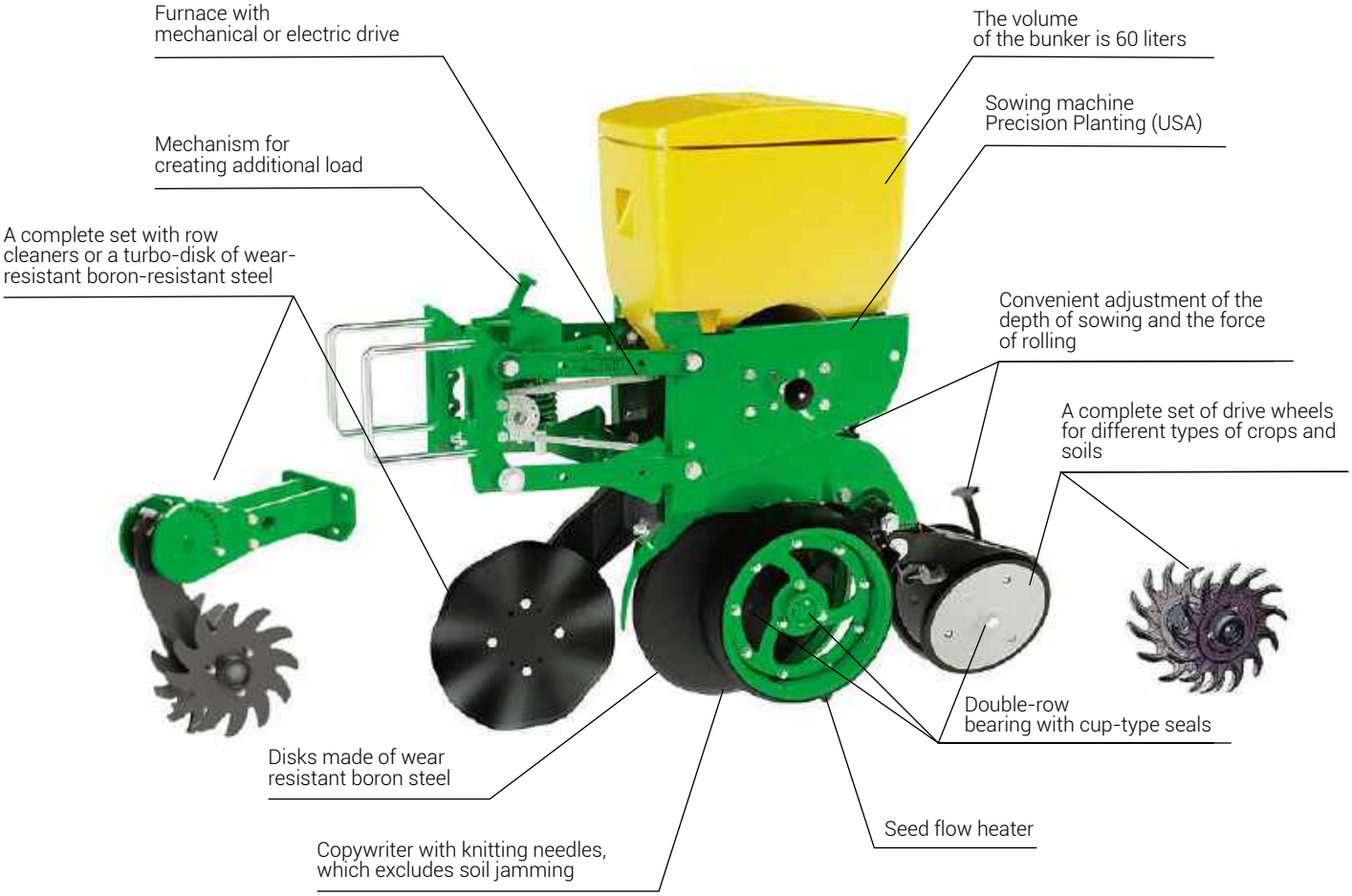
Sowing of seeds at a given depth is provided with a two-disc coulter with double-wheel copiers, which provides a stable depth of sowing. Grabbing crops is carried out by V-shaped moving wheels with adjustable pulling force.

For work on zero technology (No-Till), the drill is equipped with corrugate turbo disks that prepare soil and clean the seedbed from cultivating residue. SPM spacing drills are equipped with a sowing control system that reliably controls sowing aggregate figures. Fertilizing is performed through a two-disc coulter, which can be adjusted to a given depth and distance from the sowing bed. The sowing machine of the drill is equipped with disks for sowing corn and sunflower. The ordered seed drill can be equipped with a sowing machine drive system, which in turn improves speed and precision of seeding.

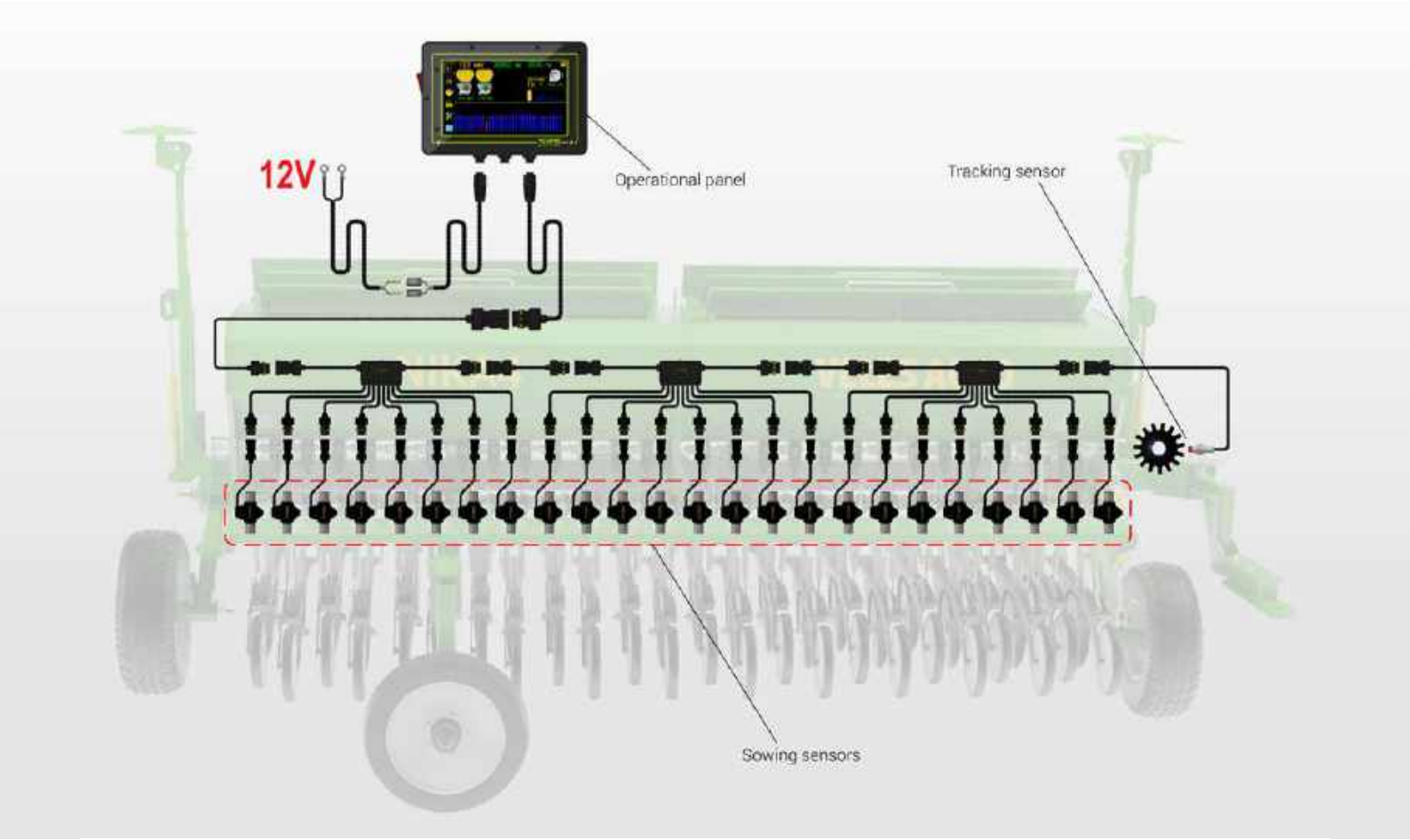
Characteristics	UM.	SPM 6	SPM 8
Number of shoots	pcs	6	8
Transport width	m	2,5	2,5
Type of sowing machines		vacuum	
Drive of sowing machine		mechanical / electric	
Volume of seed bunker	L	360	480
Volume of fertilizer bunker	L	750	800 / 1 000
Intermediate row width	mm	700	
Pressure of the coulter to the ground	kg	150 - 200	
Depth of sowing	cm	2 - 12	
Fertilizer rate	kg/ha	30 - 500	
The speed of sowing	km/h	8 - 11	
Weight	kg	3 000	3 800
Required power	hp	82	100

VELES AGRO

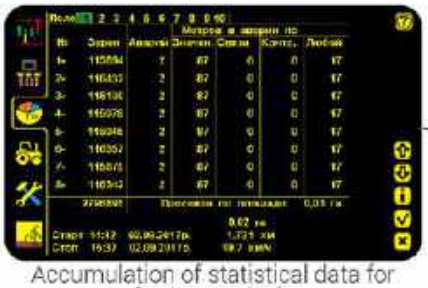



Furnace with mechanical or electric drive
The volume of the bunker is 60 liters
Sowing machine Precision Planting (USA)
Mechanism for creating additional load
A complete set with row cleaners or a turbo-disk of wear-resistant boron-resistant steel
Convenient adjustment of the depth of sowing and the force of rolling
A complete set of drive wheels for different types of crops and soils
Double-row bearing with cup-type seals
Disks made of wear resistant boron steel
Seed flow heater
Copywriter with knitting needles, which excludes soil jamming

SYSTEM OF SOWING CONTROL FOR SZM AND SPM



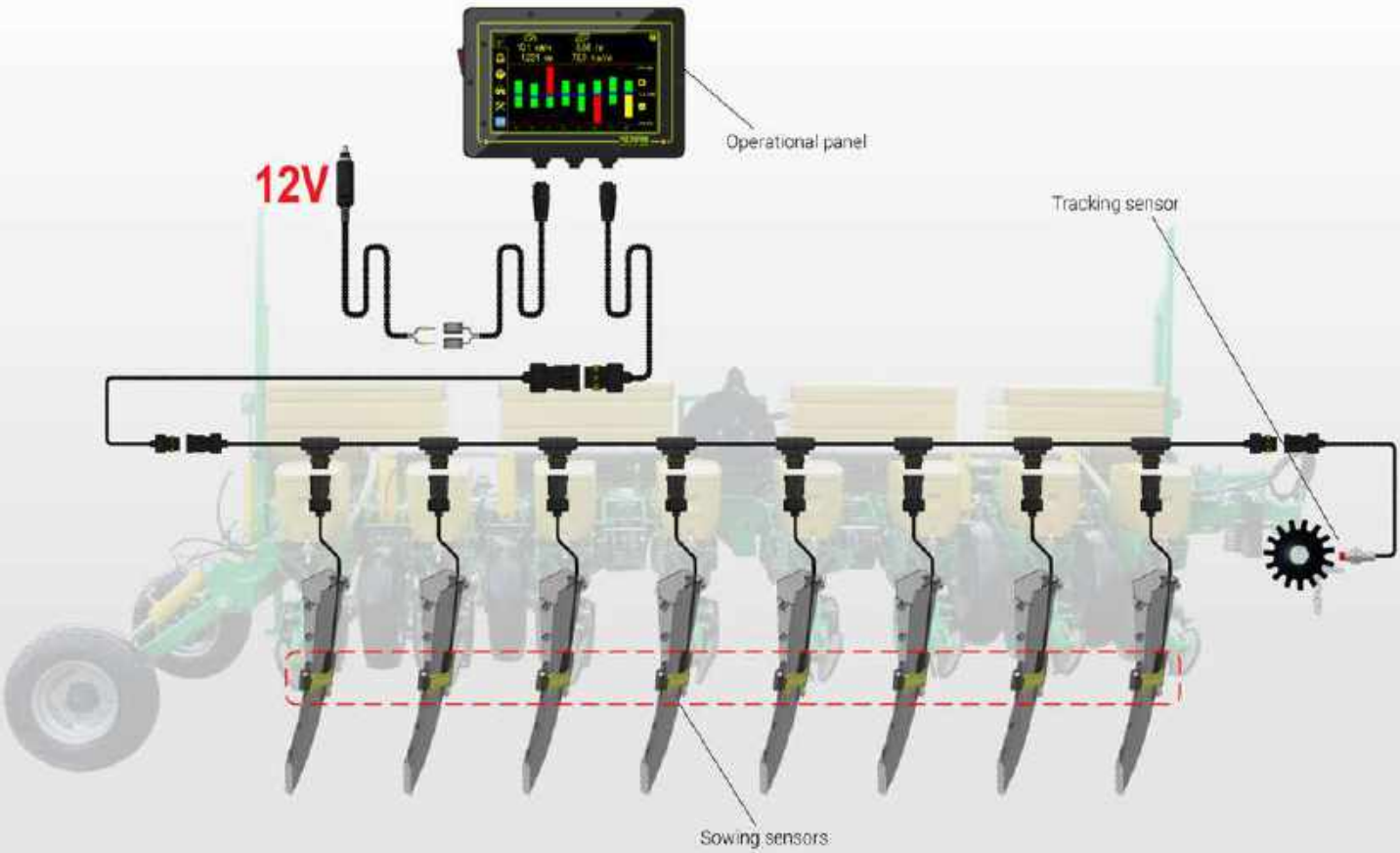
Displaying of the connected sensors



Accumulation of statistical data for further analysis

Individual presets for each sower

Quality grain sowing



Innovative solution for precision planting

Displaying of the connected sensors

Accumulation of statistical data for further analysis

Individual presets for each sower

Sower speed and trevelled distance

Sowed area and sowage norm per hectares

Factual "doppelgangers" and "misses"

Control of sowage norm with possibility of its adjustment

GRS ARROW-SHAPED DEEP TILLERS

Deep tillers of GRS series with fertilizer application are intended for loosening of soil on floating and non-tilted backgrounds with deepening of arable horizon, non-destructive tilting instead of spring and autumn plowing, and deep loosening on slopes and steam fields, with the simultaneous application of fertilizers.

Features:

- grinding of soil throughout the width of the unit
- blowing up the plow soles
- less fuel consumption thanks to the arrow-shaped arrangement of working bodies
- fertilizer application to a depth of 20-35 cm
- dismantling the depth with a shaft roller
- rotating bit of the mirror unit

Characteristics	UM.	GRS 2	GRS 3	GRS 4	GRS 5
Working width	m	2	3	4	5
Productivity	ha/h	1,6	2,4	3,2	4,0
Maximum working speed	km/h	8	8	8	8
Maximum depth of cultivation	cm	45	45	45	45
Number of working bodies	pcs	4	6	8	10
Sowing rate of fertilizers	kg/ha	30 - 500	30 - 500	30 - 500	30 - 500
Volume of fertilizer bunker	L	460	560	920	1 020
Weight with fertilizer system	kg	1 573	1 985	2 466	3 340
Required power	hp	140 - 160	280 - 320	320 - 360	400 - 500

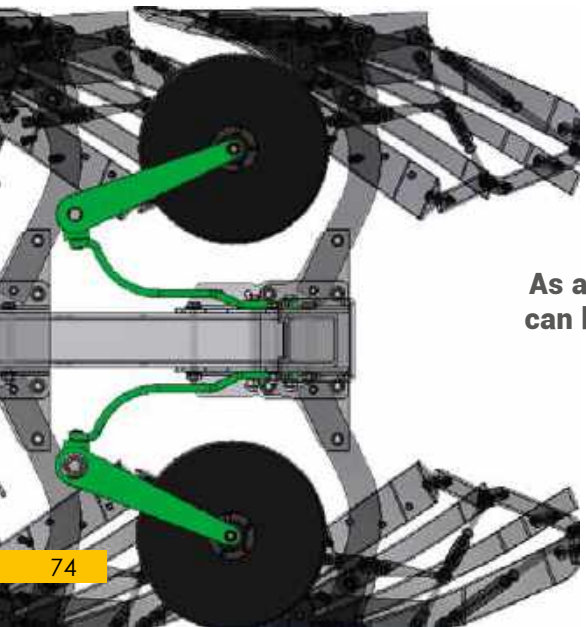
Ability to complete the system with introduction of dry fertilizers

Double roller. As an option, the subsoiler can be equipped with a double roller instead of the conventional single roller. As tests have shown, the use of a double roller has a number of advantages:

— improving the quality of rolling and grinding lumps;
— preventing clogging with crop residues;
— the ability to work at higher humidity due to the self-cleaning of the rollers from sticking wet soil;
— more stable operation of the rollers due to the tandem.

PON MOUNTED REVERSAL PLOWS

Reversible ploughs of PON Series are intended for tillage of soils for grains and technical crops to a depth of 18-35 cm that are not clogged with stones, slabs and other obstacles, with a specific soil resistance of up to 0.09 MPa, hardness up to 3.5 MPa.



As an option, the plow can be equipped with a split disc

VELES AGRO

Characteristics	UM.	PO 2-35+	PO 2-35+1	PON 3-35+	PON 3-35+1	PONM 3-35+	PONM 3-35+1	PON 4-40+	PON 4-40+1
Working width	m	0,5 - 0,75	0,75 - 1,08	0,84 - 1,6	1,12 - 1,6	0,9 - 1,35	1,2 - 1,8	1,32 - 2,0	1,65 - 2,5
Transport width	m	1,53	1,53	1,80	1,80	1,62	1,62	1,75	1,75
Unit type		mounted	mounted	mounted	mounted	mounted	mounted	mounted	mounted
Depth of plowing	cm	18 - 30	18 - 30	18 - 30	18 - 30	18 - 30	18 - 30	18 - 35	18 - 35
Height of stilt	mm	700	700	700	700	700	700	800	800
The distance between the stilts	mm	860	860	860	860	900	900	900	900
Enclosure width	cm	25 / 28 / 32,5 / 36	25 / 28 / 32,5 / 36	28 / 32 / 36 / 40	28 / 32 / 36 / 40	30 / 35 / 40 / 45	30 / 35 / 40 / 45	33 / 38 / 44 / 50	33 / 38 / 44 / 50
Operating speed	km/h	7 - 10	7 - 10	5 - 9	5 - 9	7 - 10	7 - 10	8 - 10	8 - 10
Maximum transport speed	km/h	15	15	15	15	15	15	15	15
Weight	kg	590	785	740	960	980	1 195	1 590	1 850
Required power	hp	65	90	82	120	120	180	180	230
Coulter		+	+			+	+	+	+
Trashboard				+	+				

PON SEMI-MOUNTED REVERSAL PLOWS

Characteristics	UM.	PONP 4-40+	PONP 4-40+1	PON 5-40+	PON 5-40+1	PON 7-40+	PON 7-40+1
Working width	m	1,32 - 2,0	1,65 - 2,5	1,65 - 2,5	1,98 - 3,0	2,31 - 3,5	2,64 - 4,0
Transport width	m	1,74	1,74	1,72	1,72	1,72	1,72
Unit type		semi-mounted	semi-mounted	semi-mounted	semi-mounted	semi-mounted	semi-mounted
Depth of plowing	cm	18 - 35	18 - 35	18 - 35	18 - 35	18 - 35	18 - 35
Height of stilt	mm	800	800	800	800	800	800
The distance between the stilts	mm	1 000	1 000	1 000	1 000	1 000	1 000
Enclosure width	cm	33 / 38 / 44 / 50	33 / 38 / 44 / 50	33 / 38 / 44 / 50	33 / 38 / 44 / 50	33 / 38 / 44 / 50	33 / 38 / 44 / 50
Operating speed	km/h	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10
Maximum transport speed	km/h	20	20	20	20	20	20
Weight	kg	2 160	2 425	2 500	2 750	3 100	3 450
Required power	hp	180	230	230	270	300	330
Coulter		+	+	+	+	+	+
Plow with ON-LAND system (by field)						+	+

VELES AGRO

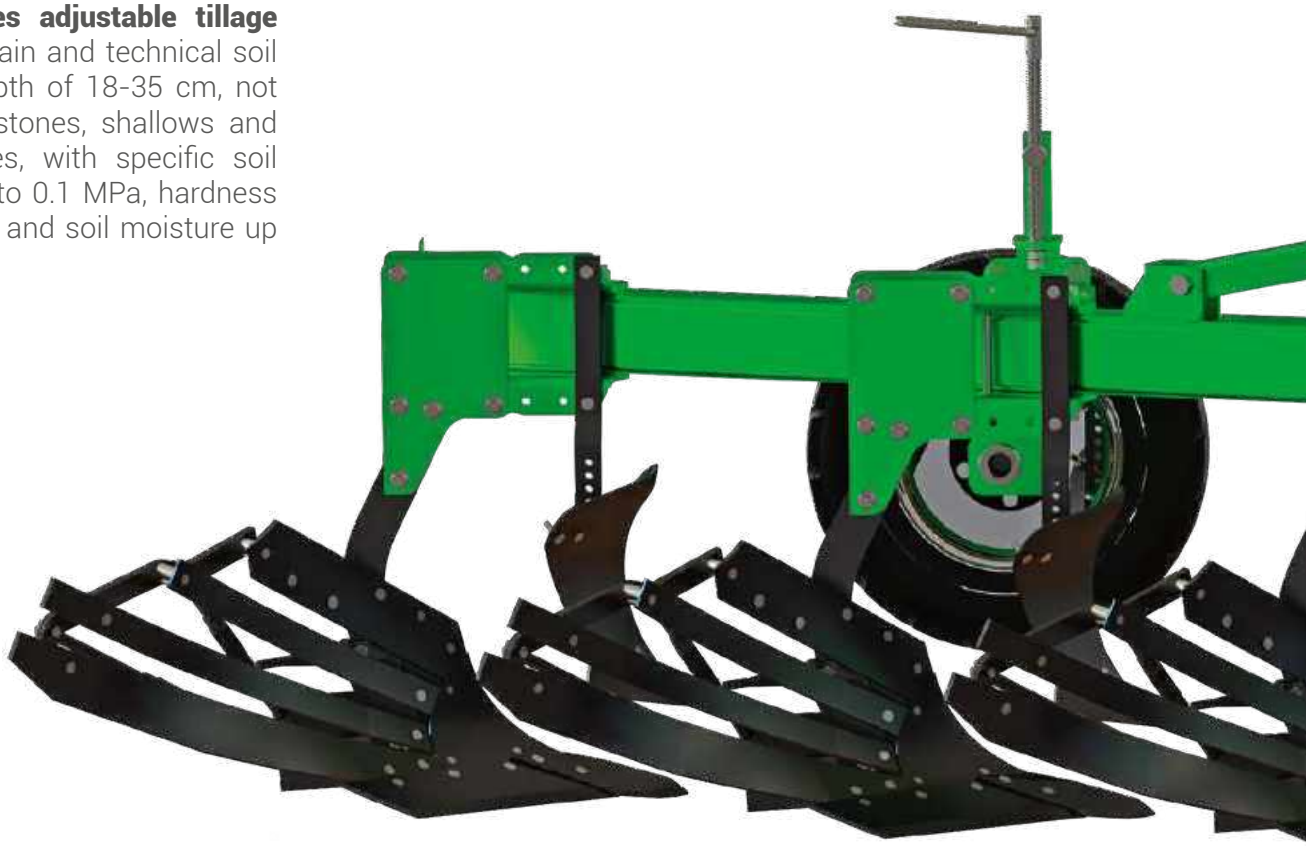
To view the equipment in action, scan the video's QR-code

Features:

- ability to easily change the width of gripping by working envelope
- high strength of the frame of ploughs — the key to the long service of unit
- ability to transport at high speed without causing a load onto the tractor's harness
- VELES AGRO provides a high wear resistance of produced by it working bodies saving on plowing costs

PNVB PLOUGHS WITH ADJUSTABLE WORKING WIDTH

PNVB series adjustable tillage ploughs for grain and technical soil crops to a depth of 18-35 cm, not clogged with stones, shallows and other obstacles, with specific soil resistance up to 0.1 MPa, hardness up to 4.0 MPa and soil moisture up to 27%.



Features:

- the ability to easily change the width of the working body
- high strength of the plow frame is the key to long-term service of the unit
- high wear resistance of working bodies produced by VELES AGRO ensures saving of plowing costs

VELES AGRO

To view the equipment in action, scan the video's QR-code

Characteristics	UM.	PNVB 3-35 (trashboard)	PNVB 4-35 (trashboard)	PNVB 3-40 (coulter)	PNVB 4-40 (coulter)	PNVB 5-40 (coulter)
Weight	kg	480	590	700	870	1 200
Length	mm	2 890	3 650	3 300	4 130	5 300
Width	mm	2 020	2 020	1 800	2 200	2 590
Height	mm	1 240	1 440	1 500	1 500	1 680
Working width of ploughs	m	0,84 - 1,2	1,12 - 1,6	0,9 - 1,5	1,12 - 1,6	1,65 - 2,5
Working width of the hull	mm	280/320/360/400		300/350/400/450		330/380/440/500
Working depth	cm	18 - 30		18 - 35		18 - 35
Frame clearance	mm	700		800		800
Hull gap	mm	860		900		985
Hull stance dimensions	mm	30 x 70		35x80		35 x 80
Main girder dimensions	mm	120 x 120 x 8		120 x 120 x 10		150 x 150 x 10
Maximal power	hp	105	120	120	160	210
Recommended working speed	km/h	7 - 10	7 - 10	7 - 10	7 - 10	7 - 10
Maximal transporting speed	km/h	15	15	15	15	15

KPG CULTIVATORS FIVE ROW

Cultivators of KPG series are designed for continuous pre-planting of soil and cultivation of steam with simultaneous harrowing, with specific soil resistance of 0.5 kgf/cm² (0.05 MPa) and humidity up to 27%.

Spring-tooth bristle with a roller

Working body

To view the equipment in action, scan the video's QR-code

Features:

- the location of support wheels on the pendulum suspension in the center of the unit allows clear maintaining a given depth of cultivation
- working body with an overload protection mechanism
- rack and paw made of wear-resistant spring boron steel
- easy adjustment of depth of work with quick-release aluminum stops
- adjusting the angle of the spring-tooth comb

Characteristics	UM.	KPG 4.5	KPG 6	KPG 8.2	KPG 11	KPG 14
Working width	m	4	6	8,2	11	14
Transport width	m	4	3	4,45	5,8	5,8
Working speed	km/h	8 - 15	8 - 15	8 - 15	8 - 15	8 - 15
Depth of cultivation	cm	6 - 13,5	6 - 13,5	6 - 13,5	6 - 13,5	6 - 13,5
Number of working bodies	pcs	17	26	42	47	59
Productivity	ha/h	4 - 5	6 - 10	8 - 14	10 - 16	12 - 25
Width of the shovel	mm	260	260	260	260	260
Weight	kg	1 750	2 700	4 100	6 100	6 500
Required power	hp	80 - 100	120 - 140	160 - 200	270	330

GELIOS INTER-ROW CULTIVATOR

Inter-row cultivator GELIOS is designed for inter-row cultivation of technical crops: sunflower, corn, sorghum, etc. Performs loosening of the upper layer of the soil to a specified depth with a variable width of the row spacing of 45-70 cm.

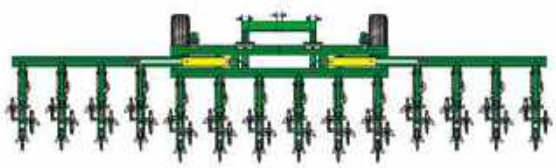
The GELIOS cultivator in the basic configuration is equipped with a three-point hitch that supports the frame of the unit and ensures the stable operation of the cultivator by repeating the trajectory of the tractor. When equipped with a **precision guidance system** (recognition of rows of agricultural crops), the cultivator is able to adjust its position in relation to the rows of crops and carry out cultivation with the exception of crop trimming.

Sections of working bodies have a parallelogram design and are attached to the frame with one bolt, which provides very easy adjustment of the row spacing. Each section is equipped with stepless height-adjustable support wheels that copy the topography of the soil, guarantee a constant depth of cultivation and allow working at high humidity without soil sticking. Cultivator legs are fixed on S-shaped spring struts and are made of high-strength steel with increased resistance to wear. Stepless adjustment of the placement of the paws along the width of the section ensures better overlap of the processing area. Protective discs (option) with a diameter of 430 mm provide good protection of plants in the initial phase of growth.

Characteristics	UM.	GELIOS 6		GELIOS 9	
Unit type		mounted	mounted	mounted	mounted
Width of capture	m	6,3	6,2	8,5	9,0
Spacing	mm	450	700	450	700
Number of sections	pcs	14	9	19	13
Processing depth	mm	4 - 7	4 - 7	4 - 7	4 - 7
Working speed	km/h	≤ 15	≤ 15	≤ 15	≤ 15
Weight with three-point attachment	kg	1 100	1 000	1 550	1 450
Weight with precision guidance system	kg	1 450	1 350	1 900	1 800
Working length	m	1,8	1,8	2,0	2,0
Working width	m	6,3	6,2	8,5	9,0
Working height	m	1,1	1,1	1,1	1,1
Transport length	m	1,8	1,8	2,0	2,0
Transport width	m	2,5	2,5	4,0	4,0
Transport height	m	3,1	3,1	3,5	3,7
Required power	hp	≥ 100	≥ 100	≥ 120	≥ 120

Features of the GELIOS cultivator:

- parallelogram maintenance of the processing depth on each row, adjusting the processing depth using an adjustable section support wheel;
- each section, if necessary, can be easily removed from the working state (for example, the edge of the field) by lifting it and fixing the parallelogram locking mechanism;
- active precision guidance system helps to avoid crop line cutting;
- high frame clearance of up to 800 mm and smooth adjustment of row spacing;
- hydraulic folding from the tractor cabin;
- clogging-resistant working bodies ensure good performance even with high density and height of weeds;
- a wide support wheel with a special tire helps to avoid soil sticking;
- the use of a cultivator allows you to reduce the amount of plant protection products applied — herbicides;
- as an option, it is possible to install a system for applying liquid or granular fertilizers;
- as an option, it is possible to install protective discs on each section to ensure reliable protection of plants from undercutting.

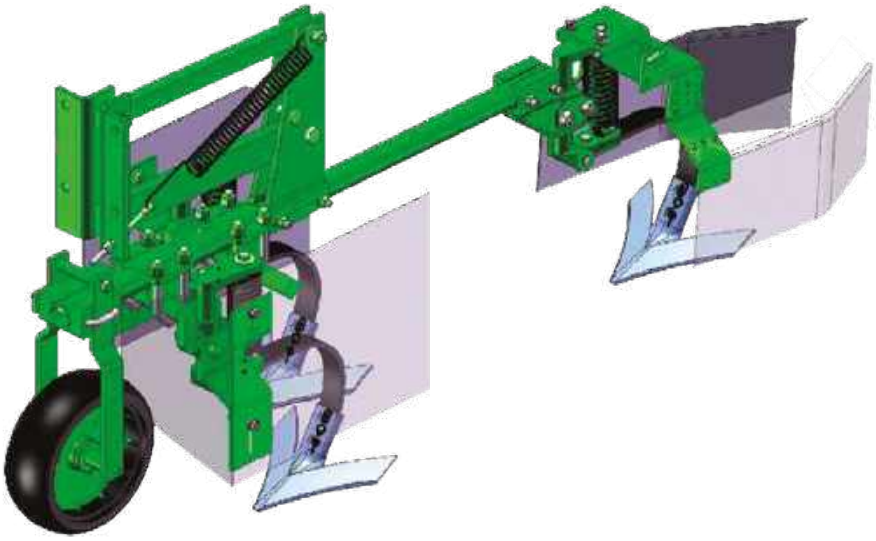


KM INTER-ROW CULTIVATOR

KM inter-row propagating cultivator is used for inter-row cultivation of high — stem technical crops-sunflower, corn, sorghum, and others.

Characteristics	UM.	KM 5.6
Working width	m	5,6
Transport width	m	2
Number of rows being labored	pcs	8
Number of sections	pcs	9
Productivity	ha/h	8
Working speed	km/h	8 - 12
Weight	kg	1 300
Required power	hp	82 - 120
Fertilizer application system		+

VELES AGRO



Features:

- the reinforced frame design allows withstanding of permissible loads
- parallel structure of the section clearly copies the surface of the processed field
- continuous depth adjustment is achieved by the support wheel section
- spring-loaded arrows with adjustable height, tilt and horizon provide the maximum width of the row spacing
- the side panels of sections protect the plants from injury when working at high speeds
- the reinforced section allows treatment of highly compacted soils
- hovering at speeds more than 10 km/h
- the working bodies are made of wear-resistant boron steel

AGN DISK SEMI-INTEGRAL PLOWING OUTFITS

Disk semi-integral plowing outfits, AGN series, are intended for basic and pre-planting soil preparation for sowing of cereals and industrial crops by loosening the field surface at a given depth with a specific soil resistance of 0.9 kg/sq.cm, hardness 35 kg.f/sq. cm (3.5 MPa) and humidity up to 27%.

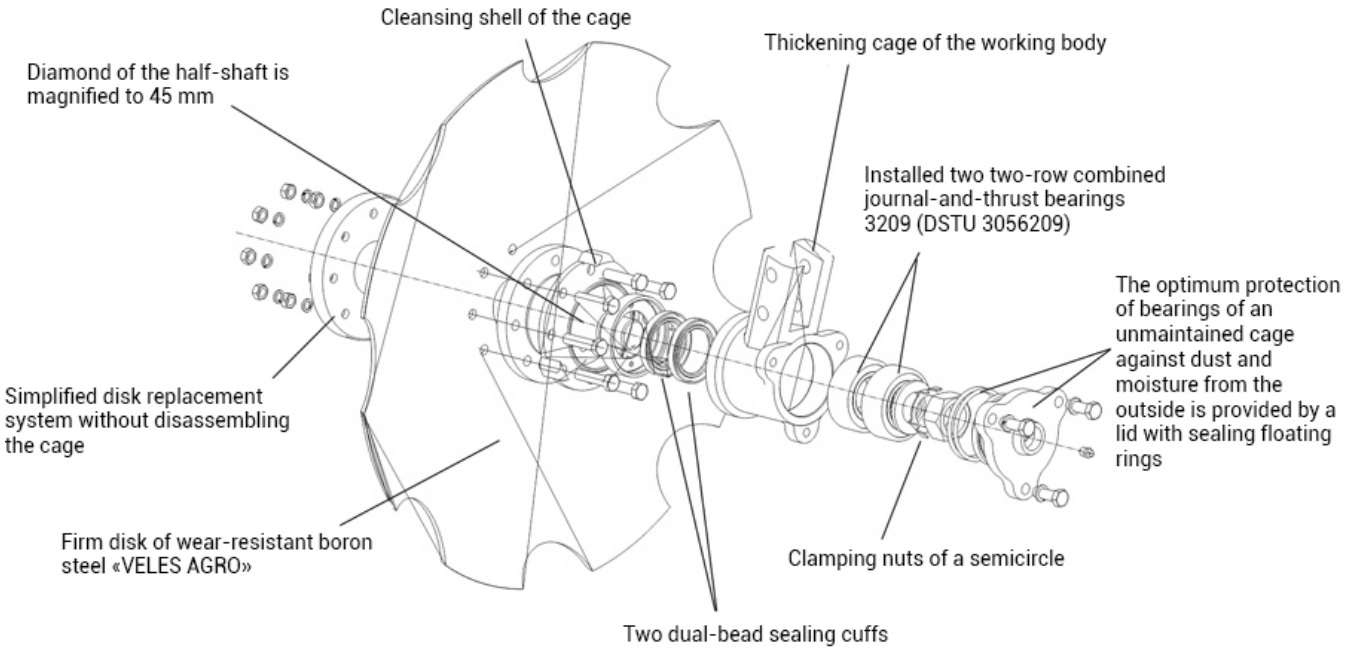
Features:

- adjustment of the intersection provides soil cultivation with a minimum height of rest-balks at the bottom of groove and uniformity of processing depth
- adjustable angle of attack of disks
- a disk of wear-proof boron steel
- continuous adjustment of depth of processing

Characteristics	UM.	AGN 2.5	AGN 3.3	AGN 4.2
Working width	m	2,50	3,30	4,20
Transport width	m	2,96	3,55	4,50
Transport height	m	1,56	1,56	1,70
Productivity	ha/h	2,0 - 2,5	2,6 - 3,3	3,0 - 4,2
Diameter of the disk	mm	640	640	640
Distance between disks	mm	350	350	350
Elevation angle of disks	degr.	16	16	16
Angle of attacks of disks	degr.	16 / 20 / 24	16 / 20 / 24	16 / 20 / 24
Working speed	km/h	8 - 10	8 - 10	8 - 10
Depth of cultivation	cm	8 - 18	8 - 18	8 - 18
Number of disks	pcs	14	18	24
Weight	kg	1 770	2 050	3 920
Required power	hp	80 - 100	100 - 135	170 - 220

To view the equipment in action, scan the video's QR-code

Unmaintained working body



AGM SEMI-INTEGRAL PLOWING OUTFIT

To view the equipment in action, scan the video's QR-code

AGM 4.2 semi-integral plowing outfit is intended for preparation of soils for sowing of grains and industrial crops by loosening the surface of field to a given depth with a specific soil resistance of 0.9 kg.f./sq.cm, hardness of 35 kg.f./sq.cm (3.5 MPa) and humidity up to 27%.

Features:

- adjustment of the interfaces between the adjacent disks provides the minimum height of the rest-balks on the bottom of grooves and uniformity of the depth of processing
- adjustable angle of attack of disks
- a disk of wear-proof boron steel
- continuous adjustment of depth of cultivation

Characteristics	UM.	AGM 4.2
Working width	m	4,2
Transport width	m	2,8
Transport height	m	3,1
Productivity	ha/h	3,4 - 4,2
Diameter of the disk	mm	640
Distance between disks	mm	350
Elevation angle of disks	degr.	16
Angle of attacks of disks	degr.	16 / 20 / 24
Working speed	km/h	8 - 10
Depth of cultivation	cm	8 - 18
Number of disks	pcs	24
Weight	kg	3 350
Required power	hp	170 - 220

PD DISK PLOUGHS

To view the equipment in action, scan the video's QR-code

Disk ploughs, PD series, with a rigid reinforced frame are designed to prepare soils that are not clogged with mooring and other obstacles for sowing of cereals and industrial crops by loosening the surface of field at a given depth with a specific soil resistance of 0.9 kg/sq.cm, with a hardness of 35 kg.f/sq.cm and humidity up to 27%.

Characteristics	UM.	PD 2.2	PD 2.5	PD 3.3
Working width	m	2,20	2,50	3,30
Transport width	m	2,40	2,90	3,60
Transport height	m	1,23	1,23	1,46
Productivity	ha/h	1,2 - 2,2	2,0 - 2,5	2,6 - 3,3
Diameter of the disk	mm	640	640	640
Distance between disks	mm	350	350	350
Elevation angle of disks	degr.	16	16	16
Angle of attacks of disks	degr.	16 / 20 / 24	16 / 20 / 24	16 / 20 / 24
Working speed	km/h	8 - 10	8 - 10	8 - 10
Depth of cultivation	cm	8 - 18	8 - 18	8 - 18
Number of disks	pcs	12	14	18
Weight	kg	1 000	1 170	1 480
Required power	hp	80 - 90	90 - 100	150 - 170

Features:
- rigid frame design
- adjustable angle of attack of disks
- convenient disk replacement system
- a disk of wear-resistant boron steel
- continuous adjustment of depth of soil cultivation

PDM DISK PLOUGHS WITH ADJUSTABLE INTERMITTENT

Disk ploughs with adjustable intermittent, PDM series, are intended for preparation of soils that are not clogged with wading and other obstacles for sowing of cereals and industrial crops by loosening the field surface to a given depth with a specific soil resistance of up to 0.9 kg/sq.cm, with a hardness of 35 kg.f/sq.cm and humidity up to 27%.

VELES AGRO

Features:

- adjustment of the interfaces between the adjacent disks provides the minimum height of the rest-balks on the bottom of grooves and uniformity of the depth of processing
- adjustable angle of attack of disks
- a disk of wear-proof boron steel
- continuous adjustment of depth of cultivation

Characteristics	UM.	PDM 1.8	PDM 2.2	PDM 2.5	PDM 3	PDM 3.3
Working width	m	1,80	2,20	2,50	3,00	3,30
Transport width	m	2,08	2,43	2,82	2,99	3,59
Transport height	m	1,30	1,30	1,30	1,52	1,52
Productivity	ha/h	1,4 - 1,8	1,5 - 2,2	2,0 - 2,5	2,4 - 3,0	2,6 - 3,3
Diameter of the disk	mm	640	640	640	640	640
Distance between disks	mm	350	350	350	350	350
Elevation angle of disks	degr	16	16	16	16	16
Angle of attacks of disks	degr	16 / 20 / 24	16 / 20 / 24	16 / 20 / 24	16 / 20 / 24	16 / 20 / 24
Working speed	km/h	8 - 10	8 - 10	8 - 10	8 - 10	8 - 10
Depth of cultivation	cm	8 - 18	8 - 18	8 - 18	8 - 18	8 - 18
Number of disks	pcs	10	12	14	16	18
Weight	kg	900	1 070	1 110	1 400	1 690
Required power	hp	50 - 70	80 - 90	90 - 100	135 - 150	150 - 170

GST TRACTOR MANIPULATORS «DIAPAZON»

To view the equipment in action, scan the video's QR-code

VELES AGRO

Tractor manipulators of GST and GSTm series are intended for loading of loads.

Features:

- versatility of aggregation with all major tractor models
- high carrying capacity (1.5 tons at maximum discharge (5.2 m) and 3.0 tons on the «short» arrow (2.5 m))
- maximum lift height of 6.5 m (to hook) allows unloading vehicles with high board - 4 m from the ground - and loading seeds and fertilizers into crop complexes
- the rotary column provides the sector of executed work within 160 degrees
- simple and informative control of the manipulator with a high degree of protection against emergency situations does not require operator training
- compact dimensions in the transport position allow the tractor to move with a boom on roads of general use
- possibility of operation in the scheme «Tractor + Manipulator + Trailer» allows operatively to move loads for short distances and off-road

Characteristics	UM.	GST 1000	GSTm 1000
Type of unit		lift-type	lift-type
Width / Length / Height	m	1,6 / 1,6 / 3,15	1,9 / 1,6 / 3,15
Load-carrying capacity at the maximum boom length	kg	1 300	1 300
Maximum lift height	m	6,5	6,5
Maximum arrow exit	m	5,5	5,5
Required pressure in the hydraulic system of tractor	bar	160 - 180	160 - 180
Angle of backset of the tower	degr.	160	160
Weight	kg	995	1 050

RKD EQUIPMENT FOR THE PREPARATION OF LIQUID FERTILIZER

The principle of operation of the unit based on the hydrodynamic dissolution of solids with a solution with a minimum concentration. Fertilizers faded into the reactor by a screw conveyor with a shallow one built into the bottom of the reactor the grid. Due to the constant turbulence of the fluid flow, the solution washed out. Dry feed fertilizer is regulated by the frequency converter of the engine speed. The solution is circulated by a pump made of high quality alloy steel. If necessary, the pump can perform the functions of filling the tank with water or for pumping out the finished products. The choice of mode carried out using valves. Filters for filling and shipment of the finished product.

Characteristics	UM.	RKD
Overall dimensions:		
- length	m	3,9
- width	m	2,3
- height	m	3,2
Weight	kg	1 160
Volume of capacity	m^3	5
Hopper volume	m^3	0,9
Screw drive power	kW	1,1
Pump engine power	kW	2,2
Mains voltage	V	380
Current frequency	Hz	50 - 60
Screw rotation speed	rpm	0 - 91
Pump capacity	m^3/h	3

VELES AGRO

To view the equipment in action, scan the video's QR-code

The main advantage of liquid fertilizer application is minimal nitrogen loss, not exceeding 10%, while when applying the same amount of granular-fertilizers, 30-40% is lost nitrogen. The introduction of fertilizers in the liquid state has many positive technological aspects, and exactly:

- uniform placement in the introduced horizon or on the leaves of plants
- the possibility of using additional trace elements necessary in these soils in the solution
- combination of fertilizer application of pesticides
- conducting both root nutrition and leaf nutrition, depending on the stage of plant growth
- better absorption by plants of fertilizers at low temperatures.

SERVICE WARRANTY AND AFTER-SALES SERVICE

Warranty and after-sales service

After purchasing the equipment from VELES AGRO manufacturer, the engineers of the warranty service are free to go to the farm, where on-site commissioning and training of the rules of the equipment use are carried out. In addition, service engineers from VELES AGRO carry out warranty repairs as soon as possible and work on post-warranty maintenance of the equipment.

The VELES AGRO service department guarantees 100% technical support and blameless service at any time of the day.

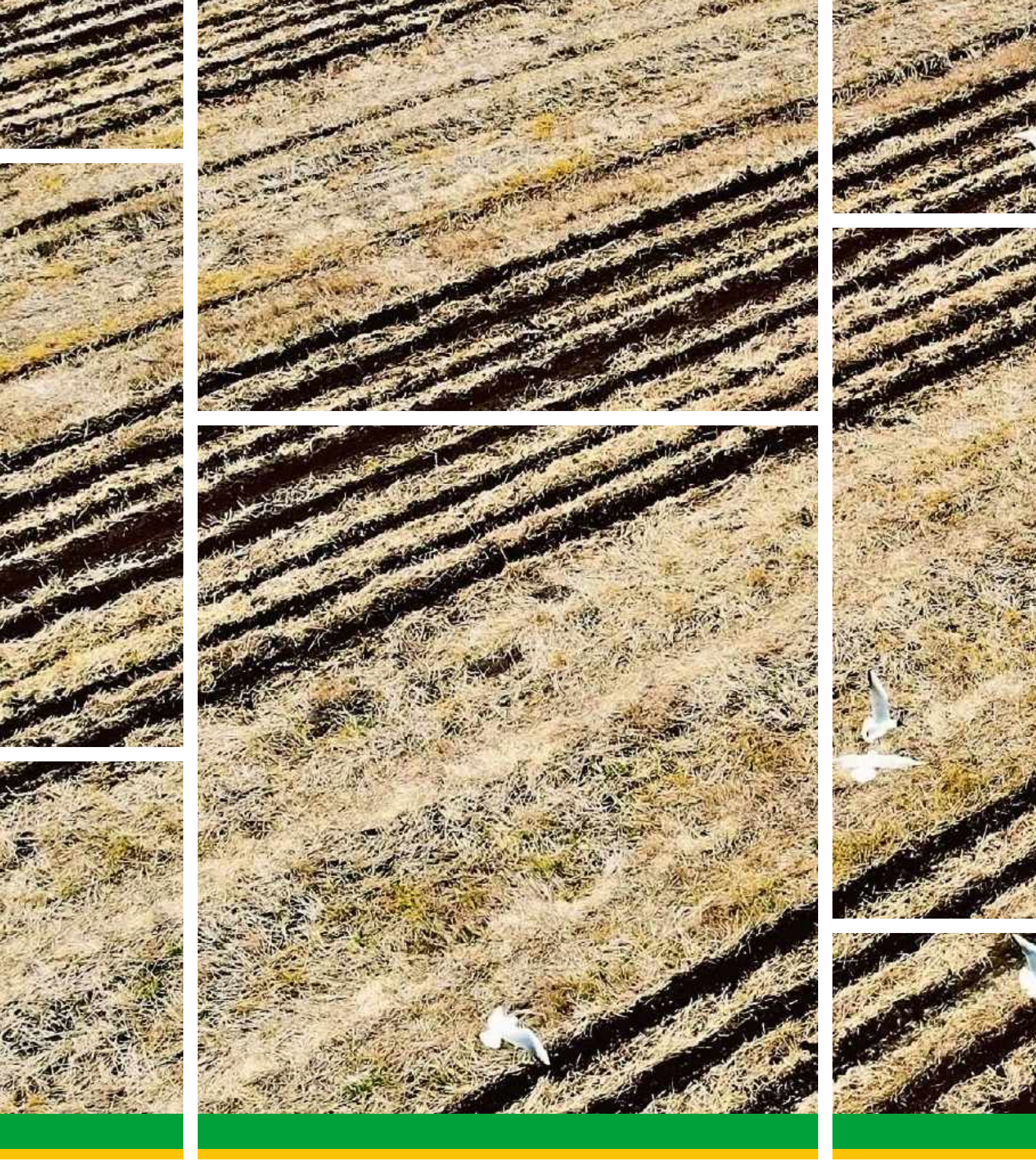
Manager of warranty service
Phone: +38 (050) 391 55 55
E-mail: service@velesagro.com

Spare parts for agricultural machinery

By purchasing spare parts for agricultural machinery directly from the manufacturer VELES AGRO, you always receive qualified and competent support for each order — from consulting and selection of spare parts, forming and processing of the order to their delivery. We guarantee the quality of all manufactured spare parts and accessories, providing your equipment with the best solutions.

Constantly in stock available more than 5000 names of spare parts of the manufacturer's equipment of VELES AGRO, as well as import and domestic production.

Manufacturer
«VELES-AGRO LTD.» LTD
Mykolayivska doroga str., 253
Odesa, 65013, Ukraine



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