BELAGROMASH-SERVIS n.a. V.M. Ryazanov, OJSC

CATALOGUE
of tillage equipment and spare parts of European quality
January, 2024

RELIABLE, HIGH-QUALITY EQUIPMENT
FOR THE EVERLASTING LAND!

BELAGROMASH-SERVIS
n.a. V.M. Ryazanov, OJSC

TILLAGE EQUIPMENT OF EUROPEAN QUALITY

Belagromash–Servis n.a. V.M. Ryazanov, OJSC is one of the largest plants for the production of high–performance tillage and other agricultural machinery, which has proven as one of the best agricultural manufacturers.

Since 1998, we have been successfully operating in the market of tillage equipment. We value our status of a reliable partner, therefore, we create maneuverable and efficient machines for soils of any complexity.

The history of our company began with the production of equipment for nuclear power plants, components for energy and gas industrial systems. After conversion of the plant in 1997, Belagromash–Servis n.a. V.M. Ryazanov, OJSC started production of specialized tillage equipment.

The main production facilities of the plant are equipped with the latest high–precision Japanese, German, Italian, American equipment, which allows us to produce competitive products that meet European quality standards. This is confirmed by the high awards that the company received at Russian and international exhibitions.

Our dealer network is successfully operating not only in Russia, but also in the international market. Our products are sold in more than 40 regions of the Russian Federation, Belarus, Uzbekistan, Kazakhstan, Bulgaria, France, Poland, Canada, Mongolia and Africa.

Belagromash–Servis n.a. V.M. Ryazanov, OJSC offers various options for cooperation – individual work with clients, wholesale deliveries to the region, the possibility of creating a dealership in your area.

Striving for perfection, we offer you reliable and affordable equipment!

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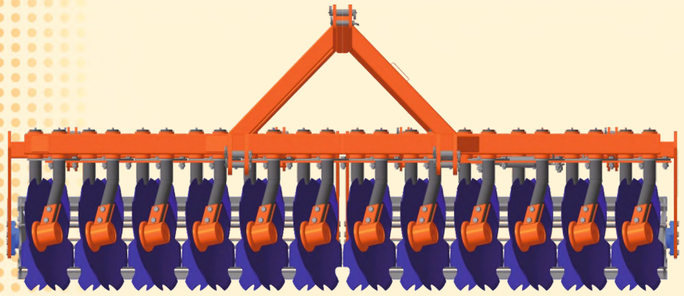
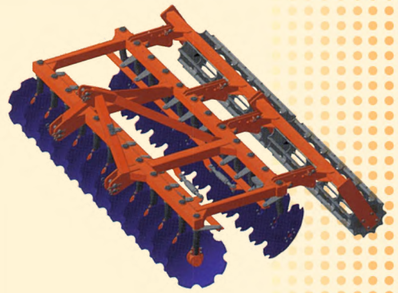
Disc Harrow

BDM–2,4x2N, BDM–3,2x2N



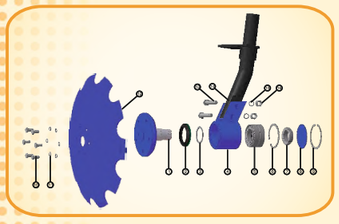


The disc mounted harrow with a 2–row arrangement of the working elements (discs) BDM–2,4x2N, BDM–3,2x2N is designed for loosening and preparing the soil for sowing; destroying weeds and crushing crop residues; for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops in 2 runs.

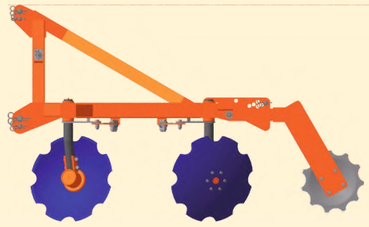
Independent row adjustment of the approach angles of the discs helps to improve the agrotechnical indicators of tillage, as well as reduce the required tractor towing force. The absence of a single axis for several discs eliminates the winding of plant residues and eliminates the need for the use of scrapers in the design.

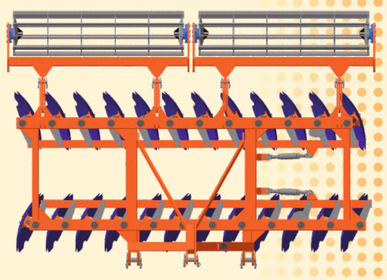
The harrow is designed to work on all soils with a soil moisture content of no more than 28%, a slope of field surface of no more than 10°, and a soil hardness in the cultivated layer of no more than 3.0 MPa.

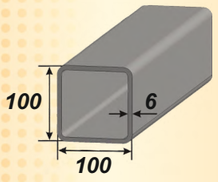
Soil contamination with a large accumulation of straw and crop residues, as well as stones and tree roots, is not allowed.



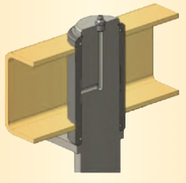
UR–4KPS (page 52)







Steel 09Г2С



Lubrication scheme
of the BDM stilt with a lubricator

Nut M36x2

MAIN SPECIFICATIONS

Parameters	Unit	Values	
		BDM–2,4x2N	BDM–3,2x2N
Type of harrow		mounted	
Productivity per hour of basic time	ha/hour	2.4	3.2
Working speed	km/h	8–12	8–12
Transportation speed	km/h	up to 20	up to 20
Working coverage	m	2.4	3.2
Cultivation depth	cm	14	14
Structural weight	kg	970	1300
Approach angle of the cutting elements	degrees	0–30	0–30
Number of working elements – in one row – total	 pcs pcs	 9 18	 12 24
Diameter of working elements – disc – packing wheel	 mm mm	 560–570 400	 560–570 400
Number of rows of discs	pcs	2	2
Distance between the tracks of discs in a row	mm	260	260
Distance between rows of discs	mm	800	900
Dimensions in travelling position: – width – height – length	 mm mm mm	 2400 1275 2070	 3200 1400 2250
Standard service life	years	5	5

BDM–2,4x2N aggregation with tractors of class 1,4 with a capacity of 81 h.p.
BDM–3,2x2N aggregation with class 2 tractors with a capacity of 130 h.p.

Disc modular harrow

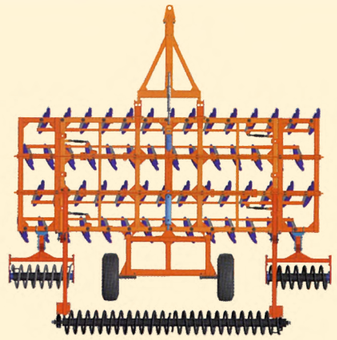
BDM–2,4x4PM, BDM–3,2x4PM, BDM–4x4PM, BDM–5x4PM, BDM–6x4PM

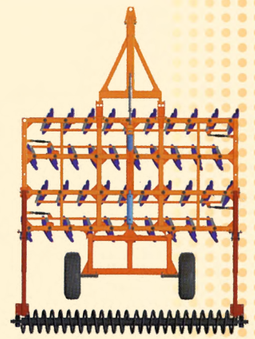
Disc trailer modular harrow with 4–row arrangement of working elements. BDM–6x4PM is designed for loosening and preparing the soil for sowing; weed destruction and crushing of crop residues; for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops.

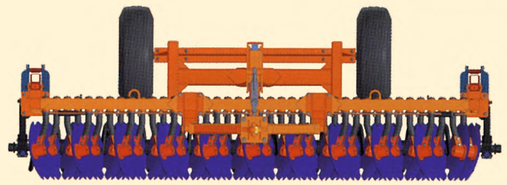
During one run the harrow performs grinding, trash burial of the forecrop and weed vegetation into the soil, loosens and levels the soil layer, buries the applied fertilizer.

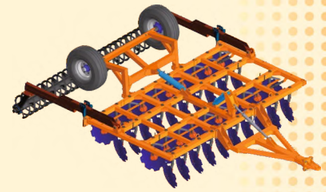
Each disc is located on an individual axis, independent row adjustment of the approach angles of the discs helps to improve the agrotechnical indicators of tillage, as well as reduce the tractor's pulling force. The absence of a single axis for several discs eliminates the winding of plant residues.

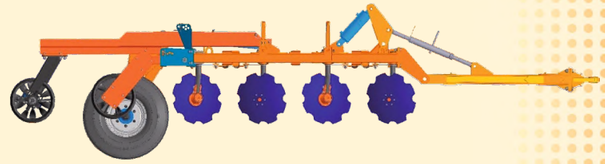
BDM–6x4PM is equipped with spiral or ring–star packing wheels designed for crushing, levelling and compacting the soil.





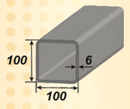






Spiral–shaped packing wheel

Star–shaped packing wheel



Steel 09Г2С

Lubrication scheme
of the BDM stilt
with an oil feeder

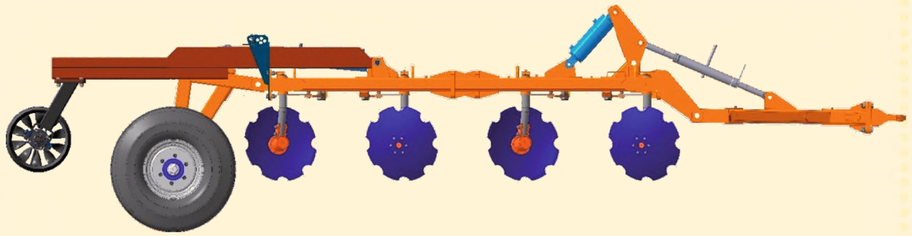
MAIN SPECIFICATIONS

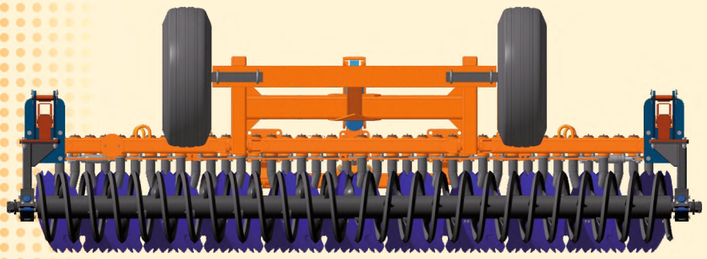
Parameters	Unit	Value				
		BDM–2,4x4PM	BDM–3,2x4PM	BDM–4x4PM	BDM–5x4PM	BDM–6x4PM
Type of harrow		semitrailer				
Productivity per hour of basic time, not less than	ha/hour	2.16	3.2	4.0	5.0	5.6
Working speed	km/h	up to 12	up to 12	10–12	10–12	10–12
Travelling speed, maximum	km/h	up to 20	20	20	20	до 20
Working coverage at discs approach angle 20°	m	2.4	3.2	4	5	5.6
Depth of soil cultivation, maximum	cm	14	14	14	14	14
Structural weight without packing wheel	kg	2150	2350	3462	4348	4764
Specific load on one disc	kg	88	63±3	82	90,5	63
Approach angle of discs (in cutting assemblies)	degrees	0–30	0–30	0–30	0–30	0–30
Number of working elements (discs): – in one row – total	 pcs	 6 24	 8 32	 10 40	 12 48	 14 56
Diameter of working elements (discs)	mm	560–570	560–570	560–570	560–570	560
Distance between tracks of the discs in the plan	mm	100	100	100	100	100
Number of rows of discs	pcs	4	4	4	4	4
Distance between rows of discs	mm	700	700	700	700	700
Dimensions in travelling position: – width – height – length	 mm mm mm	 2600 1740 5094	 3806±20 1740±25 6170±25	 4605 1740 6170	 5000 1740 6170	 6358* 1740 6170
Ground clearance	mm	350	320±25	320	320	320
Service personnel	people	machine operator	machine operator			
Established area covered per season, at least	ha	500	820	820	1000	1000
Operation life, minimum	years	5	5	5	5	5

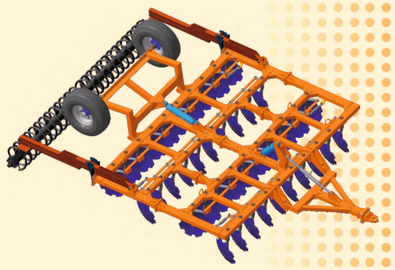
* – when disconnecting two side modules, ensuring overall width
BDM–2,4x2PM aggregation with class 2 tractors with a capacity of 120 h.p.
BDM–3,2x4PM aggregation with class 3 tractors with a capacity of 160 h.p.
BDM–4x4PM aggregation with class 4 tractors with a capacity of at least 180 h.p.
BDM–5x4PM aggregation with class 4 tractors with a capacity of at least 200 h.p.
BDM–6x4PM aggregation with class 4 tractors with a capacity of 300 h.p.

Disc modular harrow

BDM–3,2x4–09, BDM–4x4–09, BDM–5x4–09





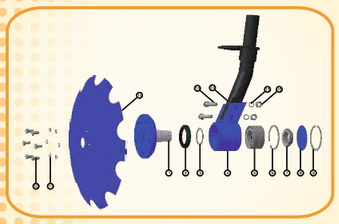


Disc modular harrow is used for traditional and minimal basic tillage for grain, industrial and forage crops, renovation of sod–covered meadows and stubble breaking.

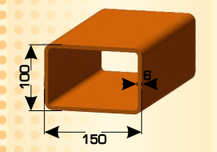
During one run the harrow performs grinding, trash burial of the forecrop and weed vegetation into the soil, loosens and levels the soil layer.

BDM allows to reduce cultivation time 2–3 times due to the four–row arrangement of discs. The machine is equipped with a spiral or ring–star packing wheel.

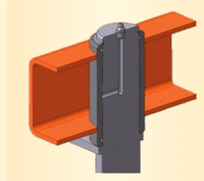
A distinctive design feature of the BDM is that each disc is located on an individual axis with a lubricated sleeve and a 900 mm row spacing. Each row of discs may be adjusted as for the approach angle and the working width of the disc.



UR–4KPS (page 52)



Steel 09Г2С



Lubrication scheme of the BDM stilt with a lubricator

Spiral–shaped packing wheel

MAIN SPECIFICATIONS

Parameters	Unit	Value		
		BDM–3,2x4–09	BDM–4x4–09	BDM–5x4–09
Type of harrow		semitrailer		
Productivity per hour of basic time, not less than	ha/hour	3,2	4,0	5,0
Working speed	km/h	10–12	10–12	10–12
Travelling speed, maximum	km/h	20	20	20
Working coverage at discs approach angle 20°	m	3,2	4	5
Depth of soil cultivation, maximum	cm	14	14	14
Structural weight without packing wheel	kg	3045	3645	4500
Specific load on one disc	kg	75	70	93
Approach angle of discs (in cutting assemblies)	degrees	0–30	0–30	0–30
Number of working elements (discs): – in one row – total	pcs	8 32	10 40	12 48
Diameter of working elements (discs)	mm	560–570	560–570	560–570
Distance between tracks of the discs in the plan	mm	100	100	100
Number of rows of discs	pcs	4	4	4
Distance between rows of discs	mm	900	900	900
Dimensions in travelling position: – width – height – length	mm mm mm	3605±50 1658±25 6664±25	4400 1658 6690	5345 1660 6665
Ground clearance	mm	320±25	320	320
Aggregation with tractors of traction class	t	3 (МТЗ:1523)		
Service personnel	people	machine operator		
Established area covered per season, minimum	ha	1000	1000	1000
Operation life, minimum	years	5	5	5

Aggregation with class 3 tractors with a capacity of 150 h.p.
– for a four–row harrow combining 3–5 operations in one pass
BDM–3,2x4/09 – aggregation with class 3 tractors with a capacity of at least 160 h.p.
BDM–4x4/09 aggregation with class 4 tractors with a capacity of at least 200 h.p.
BDM–5x4/09 aggregation with class 4 tractors with a capacity of at least 250 h.p.

Disc modular tractor–mounted harrow

BDM–6x4–09, BDM–7x4–09, BDM–8x4–09

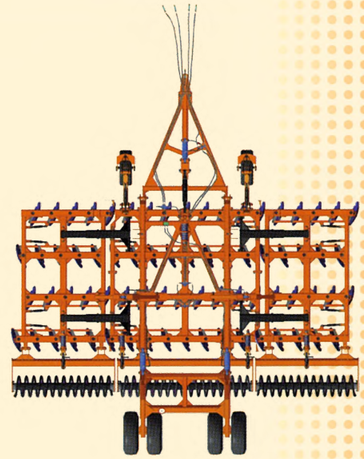
Disc modular tractor–mounted harrow BDM6x4–09 with a 4–row arrangement of working elements (discs) is designed for loosening and preparing the soil for sowing grain, technical and forage crops, destroying weeds and crushing crop residues, cultivation of soil without preliminary plowing and tillage after harvesting thick–stemmed crops.

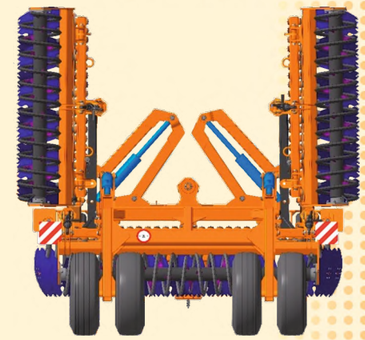
The frame structure of the harrow is designed for copying the relief of the field during tillage. Copying takes place in two directions: plane–parallel movement of the side frame relative to the central one, as well as the inclination of the side frame with a positive and negative degree relative to the axis of its attachment (see diagram). Moreover, the machine allows cultivation with a fixed position of the side frames in the horizontal plane.

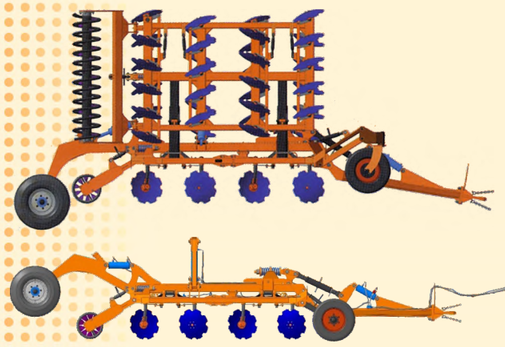
Disc harrow BDM6x4–09 is equipped with a set of support spiral packing wheels KS. The spiral winding of the packing wheel is made of a square bar 30 located "on the edge", which contributes to less clogging with earth and crop residues when working in wet weather. Design of the packing wheel allows to adjust the pressing force on the soil, thereby adjusting the depth of cultivation. The adjustment is carried out using a stretching screw with a ratchet.

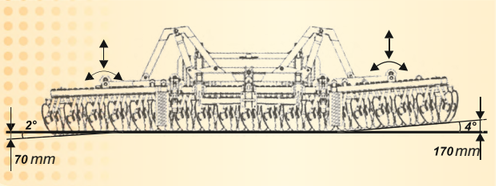
To move on roads, the unit is folded into a transport position with a size of 3.8 m and has a mechanical fixation in the transport position of the hydraulic cylinders of the carriage and side frames.

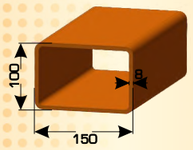
The non–standard arrangement of each disc on an individual axis and independent row adjustment of the approach angles of the discs contribute to improving the agrotechnical indicators of tillage, as well as reducing the tractor's pulling force.



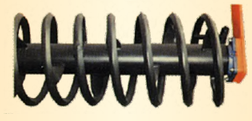








Steel 09Г2С



Spiral packing wheel (30 mm square) "on the edge"

MAIN SPECIFICATIONS

Parameters	Unit	Value		
		BDM–6x4–09	BDM–7x4–09	BDM–8x4–09
Type of harrow		semitrailer	semitrailer	semitrailer
Productivity per hour of basic time	ha/hour	6	7	8
Working speed	km/h	10...12	10...12	10...12
Transportation speed	km/h	up to 20	up to 20	up to 20
Working coverage	m	6	7,2	8±0,1
Cultivation depth	cm	14	14	14
Structural weight	kg	7450	8400	8950±50
Approach angle of the cutting elements	degrees	0...30	0...30	0...30
Number of working elements	pcs	60	72	80
Diameter of working elements	mm	570	570	570
Number of rows of discs	pcs	4	4	4
Distance between tracks of the discs in the plan	mm	100±10	100±10	100±10
Distance between rows of discs	mm	900±10	900±10	900±10
Dimensions in travelling position: width height length	 mm mm mm	 3812±25 3253±25 7830±25	 3812±25 3655±25 7830±25	 3812±25 4050±25 7830±25
Ground clearance	mm	400	400	400±10
Established area covered per season	ha	1500	1800	2000
Standard service life	years	5	5	5
Aggregates with the following tractors	class	5 power not less than 300 h.p.	from 5 power not less than 350 h.p.	from 5 power not less than 400 h.p.

1. For this machines, when used with tractors, that run on paired wheels, these units can optionally be equipped with a trailing extension.
2. These machines may be equipped with a two–point trailer device at the customer request (the type of attachment for each tractor is to be confirmed by the lead manager).

Disc modular tractor–mounted folding harrow
BDM–4x4–09S, BDM–5x4–09S

Disc modular tractor–mounted folding harrow BDM–4x4–09S (further – the harrow) is used for traditional and minimal basic tillage for grain, industrial and forage crops, renovation of sod–covered meadows and stubble breaking.

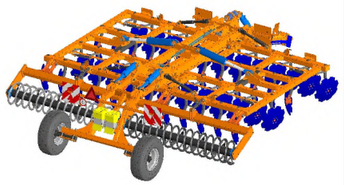
During one run the harrow performs grinding, trash burial of the forecrop and weed vegetation into the soil, loosens and levels the soil layer, buries the applied fertilizer.

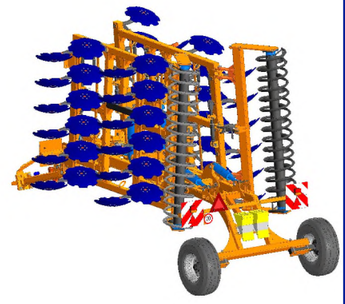
The discs are the working elements of the harrow. In operation, the disc works as a ploughshare and a blade, which contributes to a better turnover of the cut layer, its crumbling. Every disc is located on an individual shaft. Each row of discs may be adjusted as for the approach angle and the working width of the disc.

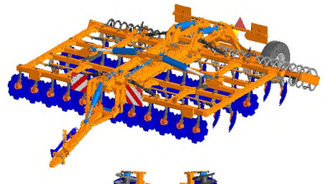
BDM is especially useful during the treatment of large area cultivated fields and smooth relief where it is possible to cultivate the soil with the speed of 12 km/hour for the achievement of maximum unit productivity and reduction of soil cultivation terms.

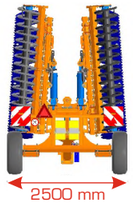
MAIN SPECIFICATIONS

Parameters	Unit	Values	
		BDM4x4–09S	BDM5x4–09S
Type of harrow		semitrailer	semitrailer
Productivity per hour of basic time	ha/hour	4	5
Working speed	km/h	10...12	10...12
Transportation speed	km/h	up to 20	up to 20
Working coverage	m	4	5
Cultivation depth	cm	14	14
Structural weight	kg	4400	5200
Approach angle of the cutting elements	degrees	0...30	0...30
Number of working elements	pcs	40	48
Diameter of working elements	mm	570	570
Number of rows of discs	pcs	4	4
Distance between tracks of the discs in the plan	mm	100±10	100±10
Distance between rows of discs	mm	900±10	900±10
Dimensions in travelling position: width height length	 mm mm mm	 2500 3050 7430	 2500 3450 7430
Ground clearance	mm	380	380
Established area covered per season	ha	820	820
Standard service life	years	5	5
Aggregates with the following tractors	class	3...4 power not less than 220 h.p.	3...4 power not less than 250 h.p.









! The machine in the transport position has an acceptable size for moving along public roads

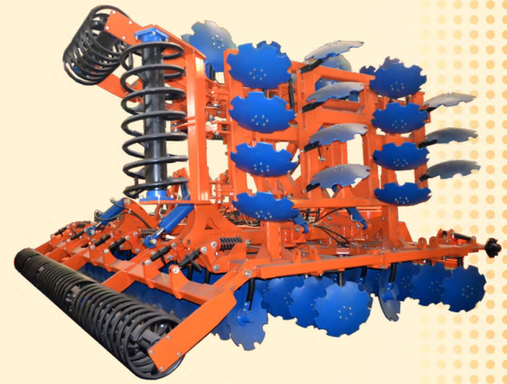
Disc modular tractor–mounted harrow
BDM 9x4–09

Disc modular harrow BDM 9x4–09 (further – BDM) is used for traditional and minimal basic tillage for grain, industrial and forage crops, renovation of sod–covered meadows and stubble breaking.

In one pass, the BDM provides grinding and embedding of plant residues of the preceding crop and weed vegetation into soil, creates a loosened and leveled soil layer, and provides embedding of fertilizers.

A distinctive design feature of the harrow is that each disc is located on an individual axis. Each row of discs may be adjusted as for the approach angle and the working width of the disc. As the BDM has no disc gangs with a single axis, it can work during wet weather in fields with a large number of stubble residues of thick–stemmed crops, as well as on fallow lands with weed vegetation, while preventing the plant residues from winding on the axis of the disc and dense clogging of the inter–disc space. There is no need to include scrapers in the design, since the disc is self–cleaning during operation.

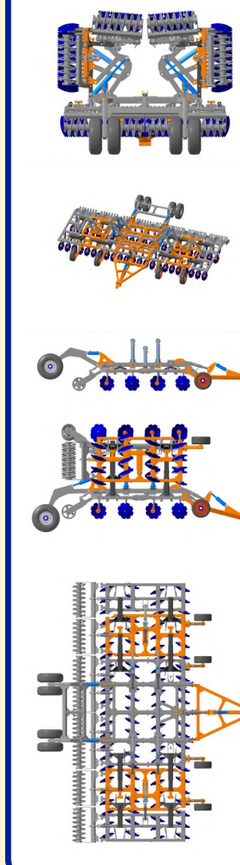
BDM is especially useful during the treatment of large area cultivated fields and smooth relief where it is possible to cultivate the soil with the speed of 12 km/hour for the achievement of maximum unit productivity and reduction of soil cultivation terms.



SPECIFICATIONS

Parameters	Unit	Values
Type of harrow		semitrailer
Productivity per hour of basic time, not less than	ha/hour	9.0
Working speed	km/h	10...12
Travelling speed, maximum	km/h	20
Working coverage at discs approach angle 20°	m	9±0.1
Depth of soil cultivation, maximum	cm	14
Structural weight	kg	11950±50
Number of rows of discs	pcs	4
Number of working elements (discs): – in one row – total	 pcs	 23 92
Specific load on one disc	kg	116±1
Approach angle of discs (in cutting assemblies)	degrees	0...30
Diameter of working elements (discs)	mm	565
Distance between tracks of the discs in the plan	mm	100±10
Distance between rows of discs	mm	900±10
Dimensions in travelling position: width height length	 mm mm mm	 4372±25 3622±25 7800±25
Ground clearance	mm	470±10
Aggregates with the following tractors	traction class	8 (power 530...550 h.p.)
Service personnel	people	1
Established area covered per season, minimum	ha	2300
Specific fuel consumption when processing stubble with a hardness of up to 3.5 MPa to a depth of 12 cm at an approach angle of 24°, max*	kg/ha	9.0*
Reliability parameters		
Process reliability coefficient, max.		0.98
Shift time use rate, minimum		0.75
Availability factor taking into account organizational time, minimum		0.98
Mean time between failures, minimum	hours	100
Warranty service life	years	1
Standard service life	years	5
Main indicators of quality of the technological process implementation		
Ridges of the soil surface, max.	cm	4
Crumbling of soil at a cultivation speed of 12 km/h (size of lumps is max. 25 mm), minimum	%	90
Weed destruction, minimum	%	100
Crushing of crop residues of large–stemmed crops to the size of 60–100mm (in 2 passes), minimum	%	60
Clogging and sticking of the working elements		not allowed

BDM 9x4/0.9 – aggregation with class 8 tractors with power of 530–550 h.p.



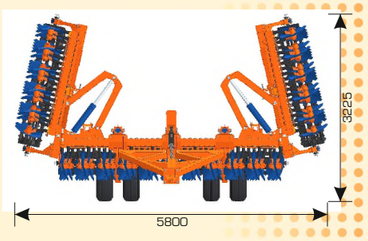
Disc Harrow
BDR–8x4, BDR–10x4

The disc cutting harrow with a 4–row arrangement of the working elements BDR–8x4, BDR–10x4 is designed for loosening and preparing the soil for sowing; destroying weeds and crushing crop residues; for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops.

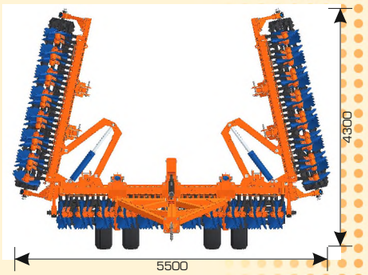
During one run the harrow performs grinding, trash burial of the forecrop and weed vegetation into the soil, loosens and levels the soil layer, buries the applied fertilizer.

A distinctive design feature of the BDR is that each disc is located on an individual axis. Each row of discs may be adjusted as for the approach angle and the working width of the disc.

The absence of disc gangs with a single axis in the design of the product allows the BDR to work in wet weather, in fields with a large number of stubble remnants of thick–stemmed crops, as well as on fallow lands with weeds.



BDR–8x4

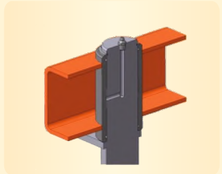


BDR–10x4

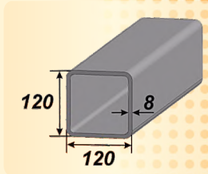
MAIN SPECIFICATIONS

Parameters	Unit	Value	
		BDR–8x4	BDR–10x4
Unit type		trailer	trailer
Productivity per hour of basic time, not less than	ha/hour	9	13,5
Working speed	km/h	up to 15	up to 15
Travelling speed, maximum	km/h	up to 20	up to 20
Working coverage	m	8,1	10,1
Cultivation depth	cm	up to 16	up to 16
Structural weight		8100	9550
Specific load on one disc	kg	88,4	97,4
Approach angle of discs (in cutting assemblies)	degrees	0–30	0–30
Number of working elements (discs): – in one row – total	pcs	20,21 82	23,24 98
Diameter of working elements (discs)	mm	560–570	560–570
Distance between tracks of the discs in the plan	mm	100	100
Quantity of disc rows	pcs	4	4
Distance between rows of discs	mm	700	700
Dimensions in travelling position: – width – height – length	 mm mm mm	 5800 3225 7000	 5500 4300 6200
Ground clearance	mm	400	400
Service personnel	people	machine operator	machine operator
Established area covered per season, minimum	ha	4500	4500
Service life	лет	5	5

BDR–8x4 – aggregation with tractors of class 6 with a capacity of at least 400 h.p.
BDR–10x4 – aggregation with tractors of class 6 with a capacity of at least 500 h.p.



Lubrication scheme of the BDM stilt with a lubricator



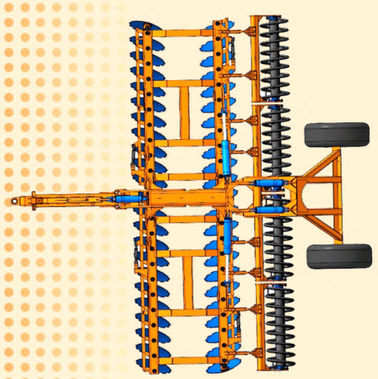
Steel 09Г2С

Star–shaped packing wheel

Spiral–shaped packing wheel

Disc modular harrow
BDM–6x2P, BDM–7x2P

BDM–6x2P



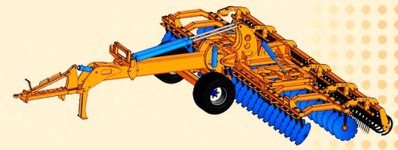
The disc modular semi–trailer harrow with a 2–row arrangement of the working elements (discs) BDM–6x2P, BDM–7x2P is designed for loosening and preparing the soil for sowing; destroying weeds and crushing crop residues; for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops.

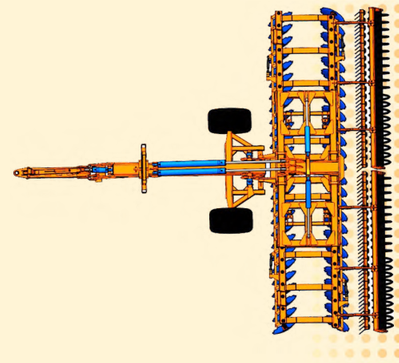
Main specifications of the working element (advantages): the discs are made of boron–containing steel 30MnB5. After quenching and tempering, the steel acquires high strength and hardness, which provide increased operational durability of finished products – their service life is longer compared to products made of 65Г steel. The non–standard arrangement of each disc on an individual axis and independent row adjustment of the approach angles of the discs contribute to improving the agrotechnical indicators of tillage, as well as reducing the tractor's pulling force. The absence of a single axis for several discs eliminates the winding of plant residues and eliminates the need for the use of scrapers in the design. The cutting units are maintenance–free.

The main characteristics of the frame (advantages): the central frame is the main bearing element of the structure and is designed to install on it units for adjusting the approach angle of discs, a carriage, a drawbar, as well as mounting the harrow hydraulic system and installing side frames. It is a welded solid structure made of rectangular tubes 250x350x12 mm. On the front and rear ends of frame there are lugs for the installation of a drawbar and carriage.

The set of thrust wheels consists of four spiral packing wheels. The packing wheels are used for breaking earth–balls, packing and levelling of soil surface layer, with the aim of receiving small homogeneous soil grain, and also for the operating depth regulation by the assembly discs.

BDM–7x2P





MAIN SPECIFICATIONS

Parameters	Unit	Value	
		BDM–6x2P	BDM–7x2P
Unit type		semitrailer	semitrailer
Distance between working elements	mm	270	270
Number of working elements:	pcs	43	52
Arrangement of working elements (overlap)	mm	135	135
Distance between rows of discs	mm	1150	1150
Quantity of disc rows	row	2	2
Depth of soil cultivation, maximum	cm	15	12
Weight	kg	5000±100	7000±100
Overall dimensions in the transport position: – width – height – length	 mm mm mm	 2500±100 mm 3700±100 mm 5840±100 mm	 2760±100 mm 4000±100 mm 5985±100 mm
Overall dimensions in the working position: – width – height – length	 mm mm mm	 6250±100 1370±100 5900±100	 7131±100 mm 1300±100 mm 8324±100 mm

BDM–6x2P harrow is aggregated with tractors of at least class 4 with a capacity of 260 h.p.
BDM–7x2P harrow is aggregated with tractors of at least class 5 with a capacity of 320 h.p.

Disc Harrow

BDS–4x2P, BDS–6x2P, BDS–8x2P, BDS–10x2P


BDS–8X2P

Folding disc harrows BDS–4x2P, BDS–6x2P and BDS–8x2P with 2–row arrangement of working elements on individual stilts with spring rubber elements (elastomers) are designed to prepare the soil for sowing grass and grain crops, as well as to destroy weeds and grind crop residues without prior plowing.

BDS–4x2P folding disc harrow can be supplied and used in a hinged version.

BDS–8x2P and BDS–6x2P perform the following operations:

- grinding and embedding of plant residues and weed vegetation into soil;
- crumbling of large clods of earth into small fractions;
- levelling and mulching of soil.

Non–standard arrangement of each disc on an individual stilt helps to improve the agrotechnical indicators of soil cultivation, as well as reduce the pulling force of the tractor and fuel consumption. Installing discs on individual stilts eliminates the clogging of inter–disc spaces with plant residues, and there is no need to use scrapers in the design. Due to such attachment the discs move consistently in the soil without lateral deviation. One more advantage of such attachment is a reliable protection from overloads.

Every discs row has the option of disc shifting adjustment. The absence of disc batteries with a single shaft in the product design allows BDS to work in humid weather in fields with the large amount of thick–stalked crops residue, and also on long–fallow lands with weed vegetation; this excludes the wrapping of plant residues and heavy blocking of a wheelspace. There is no need to include scrapers in the design, since the disc is self–cleaning during operation.

BDS is especially useful during the treatment of large area cultivated fields and smooth relief, where it is possible to cultivate the soil with the speed of up to 15 km/hour for the achievement of maximum unit productivity and reduction of soil cultivation terms.

BDS–4x2P, BDS–6x2P, BDS–8x2P: rubber or double (tubular–plate) packing wheels ensure accuracy of adjusting the depth of cultivation up to 1 cm with simultaneous levelling and packing of soil.

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BDS–4X2P

The hydraulic system allows combined smooth control of hydraulic cylinders for lifting and lowering ide frames, drawbar and carriage during various handling actions.

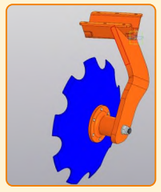
The harrow is designed to work on all types of soils with moisture content of no more than 23%, a lope of field surface no more than 10°, and a soil hardness in the cultivated layer of no more than 3.0 Mpa.

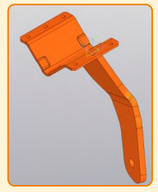
It is not allowed to use the harrow on soils with stumps, tree roots and contamination with stony nclusions of more than 0.5%, with a size of more than 100 mm.

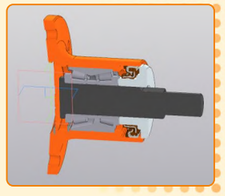
A new cutting unit with a sheet metal stilt and a lightweight body has been developed


BDS–6X2P


BDS–10X2P


Cutting unit


Cutting unit stilt


Bearing assembly

MAIN SPECIFICATIONS

Name	Unit	Values			
Type of harrow		Tractor–mounted			
		BDS–4x2P	BDS–6x2P	BDS–8x2P	BDS–10x2P
Productivity per hour of basic time, not less than	ha/hour	4,8	7,2	9,5	up to 12
Working speed	km/h	12...15	12...15	12...15	10...12
Travelling speed, maximum	km/h	20	20	20	20, max
Working coverage	m	4	6	8	10
Depth of soil cultivation, maximum	cm	12	12	12	12, max
Structural weight	kg	3950	5500	6700	8650±100
Specific load on one disc	kg	118-123	100±3	100±3	110±3
Discs cutting angle	degrees	6	6	6	5
Approach angle of discs (in cutting assemblies): • in front row • in rear row	degrees	 17 14	 17 14	 17 14	 17 14
Number of working elements (discs): • in one row • total	pcs	 16 32	 24 48	 30 60	 8/40 80
Diameter of working elements (discs)	mm	510	510	510	510
Discs shifting adjustment			mechanical		
Distance between tracks of the discs in the plan	mm	125±10	125±10	125±10	250
Quantity of disc rows	pcs	2	2	2	2
Distance between rows of discs	mm	850±10	850±10	850±10	792
Overall dimensions in the transport position: – width – height – length	 mm mm mm	 3040±20 2624±25 5450±20	 3100±20 3690±25 6060±20	 3100±20 4000±25 6120±20	 3700±10 3700–100 7800±100
Ground clearance in the transportation position	mm	500±25	560±25	260±25	360–400
Aggregation with tractors of traction class	Vehicle	3 (power not less than 180 h.p.)	5 (power not less than 280 h.p.)	5 (power not less than 380 h.p.)	6 (power not less than 460 h.p.)
Service personnel	people	tractor driver	tractor driver	tractor driver	tractor driver

Disc cutter

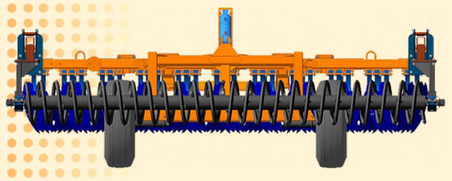
DM–3.2, DM–4, DM–5.2

Disc cutters with 4–row arrangement of working elements (discs) DM–3,2, DM–4, DM–5,2 (further – the cutters) are designed for loosening and preparing the soil for sowing; destroying weeds and crushing crop residues; for tillage without preliminary plowing and tillage after harvesting thick–stemmed row crops.

The cutting unit is the main working element of the tool and is designed for cutting, chipping and turning the layer of earth. It is possible to complete the cutters with cutting units with direct or reverse disc arrangement. The cutting unit consists of a C–shaped stilt, possible configuration with maintenance–free or maintainable housing.

The frame is the main structural element and is used for installation of cutting units, the carriage, the drawbar, packing wheels, and also for cutter hydraulic system assembly. It is a welded structure made of 100x100x6 mm square section pipe with brackets for installing the levelling mechanism lever, hydraulic cylinders, as well as brackets for installing the packing wheel. The frame has a detachable design. On the front and rear crossover bars there are lugs for the installation of a drawbar and carriage. Mounting brackets for fastening cutting units are located on the lower side of lateral bars.

Installation of a packing wheel on cutters is designed to break up clods of earth and level the surface of arable land. It is a welded packing wheel rotating in two bearing assemblies. The bearing beams of the packing wheel are pivotally mounted on the frame of the cutter. The cutters may be equipped with both spiral and star–shaped packing wheels. A drawbar is available to connect the cutter to the tractor and transfer the traction force to the central frame.

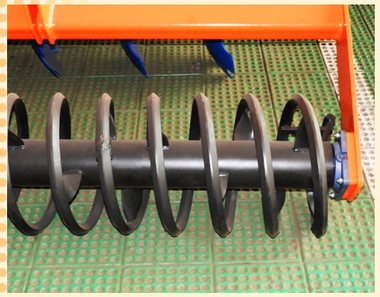


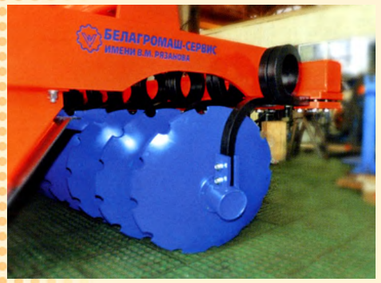
MAIN SPECIFICATIONS

Parameters	Unit	Value		
		DM–3.2	DM–4	DM–5.2
Unit type		trailer	semitrailer	semitrailer
Productivity per hour of basic time per 1 m of working width, not less than	ha/hour	1,2	1,2	5,2...7,8
Working speed	km/h	12...15	12...15	10...15
Travelling speed, maximum	km/h	20	20	25
Working coverage	m	3,2	4	5,2±0,1
Depth of cultivation, maximum	cm	12	12	12
Structural weight	kg	3366±20	3792±20	5100 ±100
Specific load on one disc	kg	100	98,7	98
Approach angle of discs (in cutting assemblies):	degrees	20	20	20±30
Number of working elements (discs): – in one row – total	pcs	8 32	10 40	13 52
Diameter of working elements (discs)	mm	560±1	560±1	560±1
Distance between tracks of the discs in the plan	mm	100	100	100±10
Quantity of disc rows	pcs	4	4	4
Distance between rows of discs	mm	900	900	900±10
Dimensions in travelling position: – width – height – length	 mm mm mm	 3805 1616 6795	 4605 1616 6795	 5575±20 2010±25 6775±20
Ground clearance	mm	325	325	350±25
Aggregation with tractors of traction class	Traction class	3	4	5
Service personnel	people	tractor driver	tractor driver	tractor driver
Established area covered per season, minimum	ha	320	400	520
Service life	years	5	5	5

DM–5.2 and DM–3.2 – to be aggregated with tractors of class 4–5 with a capacity of at least 240 h.p.

Disc cutter
DM–3x2M, DM–4x2





Disc cutter DM–3x2 and DM–4x2 with two–row arrangement of working elements on individual spiral stilts is used for preparation of soil for seeding–down of grass and grain crops, and also weed destruction and reducing of crop residue without prior plowing.

Non–standard arrangement of each disc on an individual spiral stand helps to improve the agrotechnical indicators of soil cultivation, as well as reduce the traction force of the tractor and fuel consumption.

Installing discs on individual spiral stands eliminates the clogging of inter–disc spaces with plant residues, and there is no need to use scrapers in the design.

Disc cutter DM–3x2 M is equipped with a maintenance–free cutting assembly, which ensures uninterrupted operation of the unit during the entire warranty operation period and does not require additional maintenance time. The disc is mounted on the axis of a maintenance–free bearing assembly. Its reverse location on the outside of the hub allows to reduce the axial load on the mounting of the disc axis, as well as reduce the risk of clogging the inter–disc space.

DM–4x2 performs the following operations:

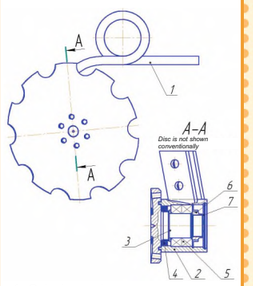
- grinding and embedding of plant residues and weed vegetation into soil;
- crumbling of large clods of earth into small fractions;
- levelling and mulching of soil.

Double packing wheels (tube and plate) provide the tilling depth accuracy up to 1 cm with simultaneous levelling and packing of soil. The disc cutter may also be completed with rod–shaped or spiral–shaped packing wheels.

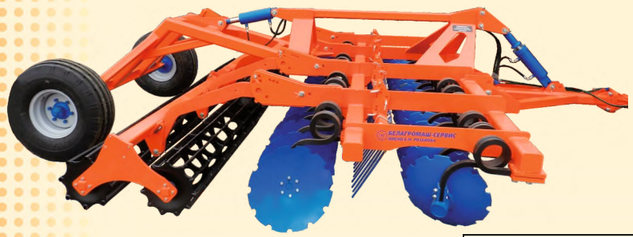
The unit is designed to work on all types of soils with moisture content of no more than 28%, a slope of field surface no more than 10°, and a soil hardness in the cultivated layer of no more than 3.0 MPa.

Rod–shaped packing wheel

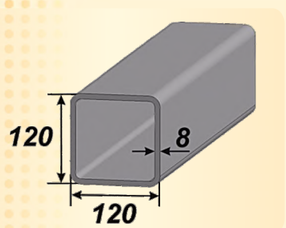
Cutting unit



1. Spiral stand
2. Housing
3. Cassette seal of 3 56x80–13–14.5 75 NBR 106200 type.
5. Bearing 6U–37909K1S17
6. Nut
7. Cover



DM–4x2



Steel 09Г2С

MAIN SPECIFICATIONS

Parameters	Unit	Value	
		DM–3x2 M	DM–4x2
Unit type		semitrailer	semi–trailer, mounted
Productivity per hour of basic time, not less than	ha/hour	3,6	4,8
Working speed	km/h	12–15	
Travelling speed, maximum	km/h	20	
Working coverage	m	3	4
Depth of cultivation in one pass through the stubble, max	cm	12	
Structural weight (with packing wheels)	kg	2400	3700±50
Specific load on one disc	kg	111	109±3
Approach angle of discs (in cutting assemblies):	degrees	20	
Number of working elements (discs): – in one row – total	pcs pcs	13 26	17 34
Diameter of working elements (discs)	mm	570–610	
Distance between tracks of the discs in the plan	mm	125±10	
Quantity of disc rows	pcs	2	
Distance between rows of discs	mm	1020±10	
Dimensions in travelling position: – width – height – length	 mm mm mm	 3500 1800 5900	 4510±20 1800±25 5900±20
Ground clearance	mm	400±25	
Service life	years	5	
Aggregation with tractors – class – power	 h.p.	 3 150	 3 180

Disc cutter
DM–5x2M, DM–6x2M, DM–7x2M, DM–9x2M

Disc cutters DM–5x2M, DM–6x2M, DM–7x2M, DM–9x2M with two–row arrangement of working elements on individual spiral stilts are used for preparation of soil for seeding–down of grass and grain crops, and also weed destruction and reducing of crop residue without prior plowing.

Disc cutters DM–5x2M, DM–6x2M, DM–7x2M, DM–9x2M perform the following operations:

- grinding and embedding of plant residues and weed vegetation into soil;
- crumbling of large clods of earth into small fractions;
- levelling and mulching of soil.

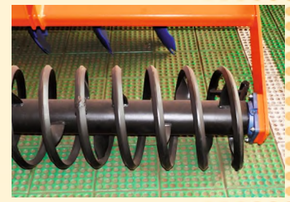
Non–standard arrangement of each disc on an individual spiral stand helps to improve the agrotechnical indicators of soil cultivation, as well as reduce the traction force of the tractor and fuel consumption. Installing discs on individual spiral stands eliminates the clogging of inter–disc spaces with plant residues, and there is no need to use scrapers in the design.

Double packing wheels (tube and plate) provide the tilling depth accuracy up to 1 cm with simultaneous levelling and packing of soil. The disc cutter may also be completed with rod–shaped or spiral–shaped packing wheels.

Possible to complete with a U–shaped double packing wheel.

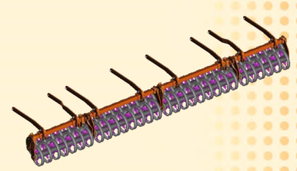
MAIN SPECIFICATIONS

Name	Unit	Values			
		DM–5x2M	DM–6x2M	DM–7x2M	DM–9x2M
Unit type		semitrailer	semitrailer, mounted	semitrailer	semitrailer
Productivity per hour of basic time, not less than	ha/hour	6	7,2	8,4	10,8
Working speed	km/h	12...15			
Travelling speed, maximum	km/h	20			
Working coverage	m	5	6	7	9±0,1
Depth of soil cultivation, maximum	cm	12			
Structural weight	kg	5566±50	6250	7170±50	9320±20
Specific load on one disc	kg	130±3	125	124±3	126
Approach angle of discs (in cutting assemblies)	degrees	20±1 º			
Number of working elements (discs): – in one row – total	 pcs pcs	 21 42	 25 50	 28 58	 37 74
Diameter of working elements (discs)	mm	570–610			
Distance between discs traces	mm	125±10			
Quantity of disc rows	pcs	2			
Distance between rows of discs	mm	1020±10			1400±10
Overall dimensions in the transport position: – width – height – length	 mm mm mm	 3000+50 3440±25 6450±20	 3000±50 3950±25 6400±25	 4010±50 3950±25 6400	 5590+50 3983±50 7050±50
Ground clearance in the transportation position	mm	400±25			
Specific fuel consumption, max	kg/ha	5,8			
Service personnel	people	machine operator			
Aggregation with tractors	class power, h.p.	4–5 240	5 280	6 320	6 420



Spiral–shaped packing wheel

Rod–shaped packing wheel



U–shaped double packing wheel


DM–6x2SP

Disc cutters DM–4x2SP, DM–6x2SP, DM–7x2SP and DM–8x2SP with two–row arrangement of working elements on individual spring–loaded stands are used for preparation of soil for seeding–down of grass and grain crops, and also weed destruction and reducing of crop residue without prior plowing.

DM–4X2SP, DM–6X2SP, DM–7X2SP AND DM–8X2SP PERFORM THE FOLLOWING OPERATIONS:

- grinding and embedding of plant residues and weed vegetation into soil;
- crumbling of large clods of earth into small fractions;
- levelling and mulching of soil.

The discs are made of boron–containing 30MnB5 steel. After quenching and tempering, the steel acquires high strength and hardness, which provide increased operational durability of finished products – their service life is longer compared to products made of 65Г steel. Non–standard arrangement of each disc on an individual spring–loaded stand helps to improve the agrotechnical indicators of soil cultivation, as well as reduce the traction force of the tractor and fuel consumption. Installing discs on individual spring–loaded stands eliminates the clogging of inter–disc spaces with plant residues, and there is no need to use scrapers in the design. Due to such attachment the discs move consistently in the soil without lateral deviation. One more advantage of such attachment is a reliable protection from overloads. The cutting units are maintenance–free. No lubrication is required. Double packing wheels (tube and plate) provide the tilling depth accuracy up to 1 cm with simultaneous levelling and packing of soil. The carriage is a welded pipe structure with wheel hubs mounted on conical bearings. The units are designed to work on all types of soils with moisture content of no more than 23%, a slope of field surface no more than 10°, and a soil hardness in the cultivated layer of no more than 3.0 MPa. It is not allowed to use the cutters on soils with stumps, tree roots and contamination with stony inclusions of more than 0.5%, with a size of more than 100 mm.

DM–4x2SP – the cutter frame is the main structural element and is used for installation of carriage, drawbar, packing wheels, and cutting units on it, and also for cutter hydraulic system assembly. It is a welded structure made of longitudinal beams and transverse pipes of square (120x120) cross–section with brackets for installing a drawbar, as well as brackets for installing packing wheels and a carriage. On the underside of the transverse pipes there are brackets for mounting the cutting units. The disc cutter may also be completed with spiral–shaped packing wheels. The hydraulic system allows combined smooth control of hydraulic cylinders, drawbar and carriage during various handling actions.

DM–6x2SP – The central frame is the main structural element and is used for installation of carriage, drawbar on it, and also for the cutter hydraulic system assembly and installation of side frames. It is a welded structure made of rectangular tubes 250x350x10 mm. On the front and rear ends of frame there are lugs for the installation of a drawbar and carriage. Brackets are welded on the left and right sides for fixing side frames, installing tie rods and folding hydraulic cylinders. Double packing wheels (tube and plate) provide the tilling depth accuracy up to 1 cm with simultaneous levelling and packing of soil. The disc cutter may also be completed with spiral–shaped packing wheels. The hydraulic system allows combined smooth control of the drawbar, side frames and the carriage by hydraulic cylinders during various handling actions.

DM–7x2SP – The central frame is the main structural element and is used for installation of carriage, drawbar on it, and also for the cutter hydraulic system assembly and installation of side frames. It is a welded structure made of rectangular tubes 250x350x10 mm. On the front and rear ends of frame there are lugs for the installation of a drawbar and carriage. Brackets are welded on the left and right sides for fixing side frames, installing tie rods and folding hydraulic cylinders.

DM–8x2SP – The backbone frame is the main structural element and is used for installation of carriage, drawbar on it, and also for the cutter hydraulic system assembly and installation of central frame. It is a welded structure made of rectangular tubes 350x250x12 mm. At the front and rear ends of the frame there are brackets for installing a drawbar and a carriage, as well as a bracket for fixing the side frame retainer for transportation in a travelling position. Main characteristics of the drawbar, carriage (advantages): The hydraulic system allows combined smooth control of the drawbar and carriage by hydraulic cylinders during various handling actions.


DM–8x2SP

Disc cutter
DM–4x2SP, DM–6x2SP, DM–7x2SP, DM–8x2SP

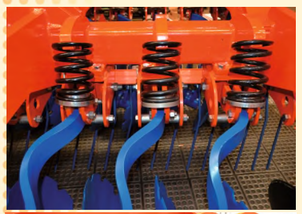

DM–4x2SP


DM–4x2SP


DM–6x2SP

DM–6x2SP

DM–8x2SP



MAIN SPECIFICATIONS

Name	Unit	Values			
Unit type		DM–4x2SP semitrailer	DM–6x2SP semitrailer	DM–7x2SP semitrailer	DM–8x2SP semitrailer
Productivity per hour of basic time, not less than	ha/hour	4,8	7,2	8,3	9,7
Working speed	km/h	12...15			
Travelling speed, maximum	km/h	20			
Working coverage	m	4	6 ±0,1	7	8
Depth of soil cultivation, maximum	cm	12			
Structural weight	kg	4550±50	7300±50	8400±50	9500
Specific load on one disc	kg	110±3	120±3		
Approach angle of discs (in cutting assemblies)	degrees	17			
Number of working elements (discs): – in one row – total	pcs	17 34	25 50	28 56	32 64
Diameter of working elements (discs)	mm	610			
Distance between tracks of the discs in the plan	mm	125±10			
Quantity of disc rows	pcs	2			
Distance between rows of discs	mm	1020±10	1150±10	1150±10	1148±10
Overall dimensions in the transport position: – width – height – length	mm mm mm	4490±20 1750±25 5850±20	3060±20 4000±25 6600±20	3000±20 4700 ±25 6660±20	3000±20 4150 ±25 5660±20
Ground clearance in the transportation position	mm	300±25	600±25	600±25	500±25
Aggregation with tractors of traction class	Vehicle	3 (power not less than 200 h.p.)	5 (power not less than 300 h.p.)	5 (power not less than 420 h.p.)	5–6 (power not less than 460 h.p.)
Service personnel	people	tractor driver			

DM–6x2SP and DM7x2SP may be equipped with a two–point trailer device at the customer request (the type of attachment for each tractor is to be confirmed by the lead manager).

Heavy Disc Harrow
BDT–2,8, BDT–2,8S, BDT–3,8–PR

Heavy two–track disc harrow BDT–2.8 is designed for loosening and preparing soil for sowing; for destruction of weeds and crushing of crop residues; for cutting soil layers after plowing with bush–swamp plows; for pre–sowing soil preparation without preliminary plowing and cultivation after harvesting thick–stemmed row crops. It also can be used for development of fallow lands. The crescent–shaped disc of the patented design is ideal for the mentioned works.

The harrow is designed to work on all soils with a soil moisture content of no more than 35%, a slope of no more than 10°, and a soil hardness in the cultivated layer of no more than 5 Mpa.

BDT–2.8S harrow is designed for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops, destroying weeds and crushing crop residues; for cutting soil layers after plowing with shrub–swamp plows. The use of crescent–shaped discs on heavy–duty harrows allows you to get the following advantages compared to conventional toothed discs:

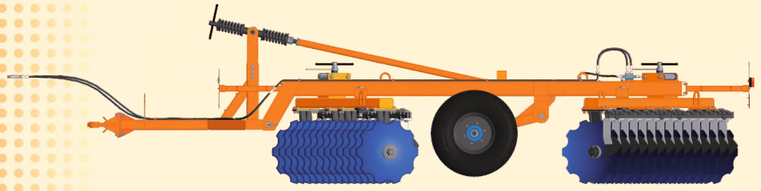
- Deeper penetration into soil in drought season.
- Best grinding and mixing of crop remains.
- Higher speeds of cultivation.
- It can be used in high humidity.
- Reduction of traction force from 20 to 28% depending on the cultivation depth, while saving up to 30% of diesel fuel.
- Depth of cultivation in one pass is up to 25 cm, depending on the type and moisture content of soil.

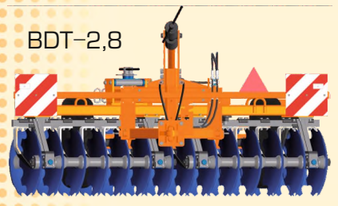
Based on these advantages, we recommend using BDT–2.8S harrow for heavy working conditions: during dry period in summer; for cultivating fallow lands; after harvesting thick–stemmed row crops in fields with a large amount of crop residues. You will always get a good result.

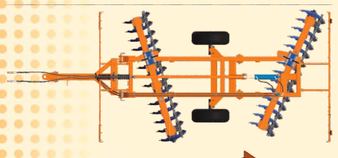
BDT–3.8 harrow is designed for destruction of weeds and crushing of crop residues, for cutting soil layers after plowing; for tillage after harvesting thick–stemmed row crops, for development of fallow lands.

The crescent–shaped disc of special design is ideal for the mentioned works.

The harrow is designed to work on all soils with a soil moisture content of no more than 35%, a slope of field surface of no more than 10°, and a soil hardness in the cultivated layer of no more than 3.5 MPa.







MAIN SPECIFICATIONS

Name	Unit	Value		
		BDT–2.8	BDT–2.8S	BDT–3,8–PR
Unit type		Semitrailer	Semitrailer	Semitrailer
Productivity per hour of basic time, not less than	ha/hour	3	3	3
Working speed, max	km/h	8–12	8–12	up to 12
Travelling speed, maximum	km/h	20	20	up to 20
Working coverage	m	2,8	2,8	3,8
Depth of soil cultivation, maximum	cm	up to 16	up to 25	up to 20
Structural weight	kg	with ballast – 2400	with ballast – 4000	3800 with ballast – 4400
Specific load on one disc	kg	128 (143)	128 (143)	130
Discs approach angle	degrees	9; 12; 15; 18; 21	9; 12; 15; 18; 21	9; 12; 15; 18; 21
Number of working elements (discs):	pcs	28	22	28
Diameter of working elements (discs)	mm	660	800	800
Distance between working elements	mm	220	280	280
Number of disc gangs: – front – overlapping	pcs pcs	1 1	1 1	1 1
Overall dimensions in the transport position: – width – height – length	mm mm mm	3000 2240 6500	3020 2240 7014	3860 2240 7360
Standard service life	years	5	5	5
Aggregation with tractors: – class – power	h.p.	3 minimum 175	3 minimum 200	3 minimum 200

Heavy Disc Harrow
BDT–5–PR, BDT–6–PR, BDT–7–PR

BDT–5–PR, BDT–6–PR, BDT–7–PR harrow is designed for destruction of weeds and crushing of crop residues, for cutting soil layers after plowing; for tillage after harvesting thick–stemmed row crops, for development of fallow lands.

The crescent–shaped disc of special design is ideal for the mentioned works.

The harrow is designed to work on all soils with a soil moisture content of no more than 28%, a slope of field surface of no more than 10°, and a soil hardness in the cultivated layer of no more than 3.5 MPa.

MAIN SPECIFICATIONS

Parameters	Value		
	BDT–5–PR	BDT–6–PR	BDT–7–PR
Productivity, $^{ha}/_{hour}$ (per hour of the main time) at a speed of 10 km/hour at approach angle of 21°	4	4,8	5,6
Working width, m	5	6	7
Maximum depth of tillage (in one pass), cm	up to 25	up to 25	up to 25
Discs approach angle, degrees	9; 12; 15; 18; 21	9; 12; 15; 18; 21	9; 12; 15; 18; 21;
Weight per 1 disc, kg	182	167	150
Number of working elements (discs), pcs	36	44	56
Number of disc sections (gangs), pcs	4	4	4
Diameter of working elements (discs), mm: – front – rear (overlapping)	800 800	800 800	800 800
Distance between working elements, mm	280	280	280
Overall dimensions, mm · in transportation position length width height · in working position length width height	7400 3310 3720 7900 5025 2710	8005 3345 4200 7900 6000 2710	8680 3325 4350 8810 7535 2372
Harrow weight, max., kg	6540	7040	8500
Ground clearance, minimum, mm	389	389	200
Travelling speed, max., km/hour	20	20	20
Number of pneumatic wheels, pcs	4	4	4
Service personnel, people	1	1	1

Warranty service life.....1 year

Standard service life.....5 years

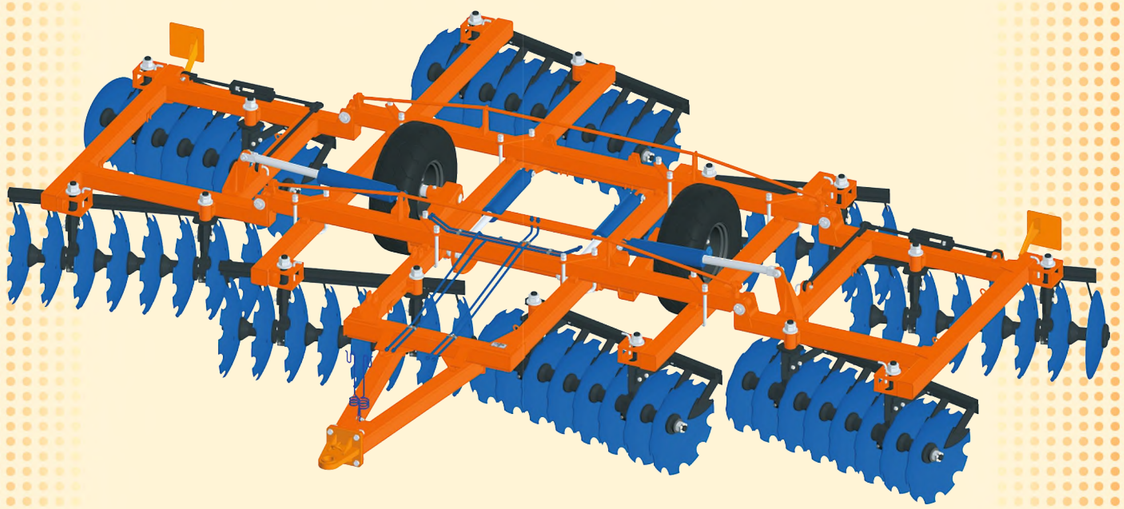
BDT–5–PR harrow is aggregated with class 5 tractors with an engine power of 184 kW (280 h.p.) equipped with a separate hydraulic system (K–700, K–701, T–250, etc.).

BDG–6–PR harrow is aggregated with tractors of at least class 5, rated pulling force of 5tf (50 kN) (330 h.p.) (K–700; K–701; K–744 R2, etc.), equipped with a separate aggregate hydraulic system.

BDT–7–PR harrow is aggregated with tractors of at least class 5, with an engine of at least 220 kW (430 h.p.), equipped with a separate aggregate

These machines may be equipped with a two–point trailer device at the customer request (the type of attachment for each tractor is to be confirmed by the lead manager).

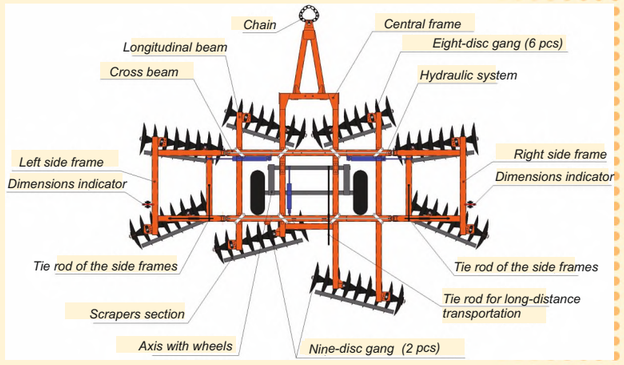
Heavy reinforced disc harrow
BDT–7UK B

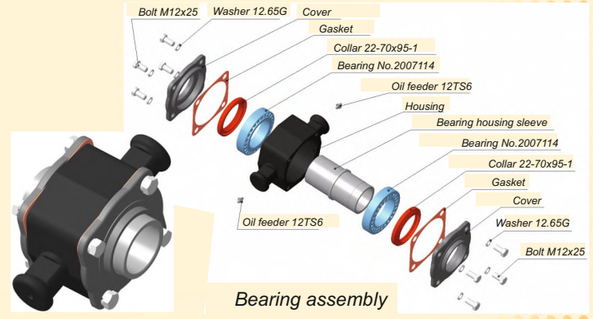


Heavy reinforced disc harrow BDT–7UK B is designed for loosening and preparing the soil for sowing, destroying weeds and crushing crop residues, for cutting soil layers after plowing virgin lands, for tillage without pre–plowing and tillage after harvesting thick–stemmed row crops, as well as for caring for meadows and pastures.

The harrow is designed to work on all soils with a soil moisture content of no more than 35%, a slope of field surface of no more than 10°, and a soil hardness in the cultivated layer of no more than 3.5 Mpa.

In BDT–7UK B model, the axis of the disc gangs is a square shaft with a cross section of 40x40 mm.





Bearing assembly

MAIN SPECIFICATIONS

Parameters	Unit	Values
Unit type		trailer
Productivity per hour of basic time, not less than	ha/hour	7
Working speed	km/h	up to 12
Transportation speed	km/h	up to 20
Working coverage	m	7
Cultivation depth	cm	up to 12
Structural weight	kg	4300
Specific load on one disc	kg	63
Discs approach angle	degrees	12; 15; 18;
Number of working elements (discs):	pcs	66
Number of disc gangs	pcs	8
Diameter of working elements (discs)	mm	660
Distance between working elements	mm	220
Dimensions in travelling position:		
– width	mm	5200
– height	mm	3000
– length	mm	5380
Ground clearance	mm	250
Established area covered per season, minimum	ha	
Service life	years	5

Aggregation with tractors of class 3–5 tf

Disc&chisel unit
ADU–4CH, ADU–5CH

Disc&chisel unit ADU–5CH (ADU–4CH) is a machine from the industry–leading manufacturer that has advantages when working on the field and is able to withstand large pulling forces. Thanks to the combination of front discs, chisel legs and a packing wheel, the unit provides work with all types of crop residues, makes it possible to control the degree of soil compaction, level the cultivated field and conduct efficient and economical tillage for further sowing of seeds. Cultivator ADU–5CH creates optimal conditions for increasing yields and generating more income!

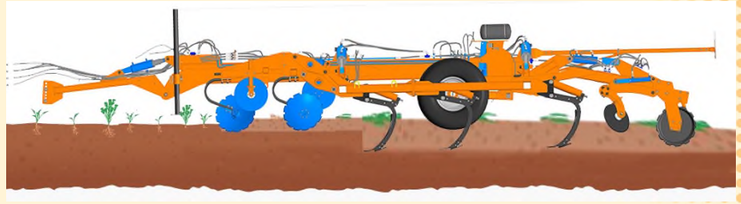
Conventionally, ADU–5CH machine is divided into 4 working zones of tillage.

The first tillage zone is a two–row disc harrow with cutting assemblies on a spring–loaded C–shaped stilt with a disc diameter of 610 mm. The tillage depth of these assemblies is up to 15 mm, which allows for complete crushing of crop residues and mixing them with the soil. The spring–loaded C–shaped stilt ensures complete overlap of the tillage area due to vibrating movements.

Next is the chisel legs area. Depending on the design of the chisel leg, both deep tillage up to 30 cm and pre–sowing tillage up to 20 cm are possible. Each stilt is equipped with an individual spring–loaded rock protection.

High–quality levelling of the cultivated soil layer is the main condition for uniform back compaction. That is why the subsequent zone is a series of levelling discs and is designed to level the residual ridges after tillage with chisel legs for subsequent compaction of the soil.

The final treatment is compaction of the soil with an annular packing wheel. Design of the packing wheel ensures the formation of alternating cultivated and not cultivated strips, which ensures the preservation of moisture in the resulting hollows.



SPECIFICATIONS

Parameters	Unit	Value	
		ADU–4CH	ADU–5CH
Unit type	–	semitrailer	
Productivity per hour of basic time, not less than	ha/hour	6,0	7,5
Working speed	km/h	up to 15	
Working coverage	m	4	5
Number of cutting discs	pcs	22	26
Diameter of disc	mm	610	
Discs cultivation depth	cm	5–15	
Number of chisel legs	pcs	11	13
Depth of tillage with chisel stilts	cm	5–30	
Diameter of packing wheel	mm	600	
Dimensions in working position			
length	mm	9850±50	
width	mm	5100±50 / 6025±50	
height	mm	1800±50	
Dimensions in travelling position			
length	mm	9850±50	
width	mm	3000±50	
height	mm	3800±50 / 4000 ±50	
Structural weight	kg	9000±50	9500±50
Aggregation with tractors	class, h.p.	5 from 420 / from 450	

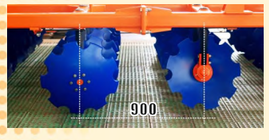
Multi–purpose disc unit
ADU–6B

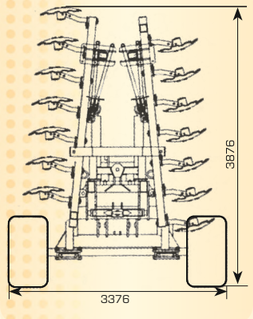
Multi–purpose disc unit ADU–6B with 4–row arrangement of working elements on individual stilts, equipped with a spiral packing anti–erosion wheel, is designed for basic tillage, as well as preparing the soil for sowing, destroying weeds and crushing crop residues without preliminary plowing and tillage after harvesting thick–stemmed row crops. The unit is used for surface tillage for grain, industrial and forage crops.

ADU–6B provides a depth of tillage from 6 to 14 cm with the following operations:
– grinding and embedding of plant residues and weed vegetation into soil;
– crumbling of large clods of earth into small fractions;
– creating a mulched layer at a speed of at least 12 km/h.

Four rows of cut–out spherical discs Ш560 (570) mm, 6 mm thick, mounted with an inclination on the side frames, cut and grind coarse plant residues well.

Non–standard arrangement of each disc on an individual axis, independent smooth adjustment of the approach angles of the discs in each row allow the most optimal setting of the tillage machine to work in different weather conditions on soils of any type, regardless of the degree of compaction. Additional crumbling and compaction of the surface layer of soil is carried out with the help of packing wheels, they also help to adjust the depth of cultivation. The absence of a single axis for several discs eliminates the winding of plant residues and eliminates the need for the use of scrapers in the design.

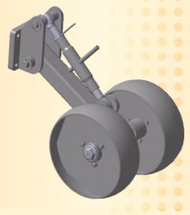




MAIN SPECIFICATIONS

Parameters	Unit	Values
Type of harrow		tractor–mounted
Productivity per hour of basic time	ha/hour	5,6–8,4
Working speed	km/h	10–15
Transportation speed	km/h	20
Working coverage	m	5,6
Cultivation depth	cm	14 +/–2
Structural weight	kg	6500
Specific load on one disc	kg	88
Approach angle of discs (in cutting assemblies)	degrees	0–30
Number of working elements (discs): – in one row – total	pcs	 14 56
Diameter of working elements (discs)	mm	560–570
Distance between tracks of the discs in the plan	mm	100
Quantity of disc rows	pcs	4
Distance between rows of discs	mm	900
Dimensions in travelling position: – width – height – length	 mm mm mm	 3376 3735 7863
Ground clearance	mm	388
Established area covered per season, minimum	ha	1200
Standard service life	years	5

ADU–6B – aggregation with class 5 tractors with a capacity of 280–300 h.p.



Support wheel with BDM–7x4/09

Cultivator–deep tiller
KGN–4x6

The deep tiller is designed for tillage to a depth of 45 cm for grain, industrial and forage crops.

In one pass, the unit forms vertical and horizontal slits, thanks to which air and moisture penetrate to the depth of tillage, the compacted soil layer is destroyed while preserving crop and plant residues on the surface.

Legs with an offset cutting element and an inclined stilt are installed on the deep tiller. When working with the offset cutting element, the center of lifting force is located under the center of gravity of the soil mass for loosening. This alignment of forces and resistances optimizes the power needed to lift the soil mass. The leg stilt is not straight, but is deflected by 10 degrees to facilitate lifting and avoid deformation. Like a bucket with beveled walls to make it easier for the contents to fall out, the leg lifts the soil without mixing the layers. This design of the legs allows to save up to 30% of energy compared to straight or curved legs.

The spring protection of the legs allows to work in the most difficult conditions. The energy of movement of the leg support optimally helps to clear the space when colliding with an obstacle. Springs react immediately even at high speed, unlike hydraulic protection, which stops operation with a significant increase in speed or when several legs collide with an obstacle at once.

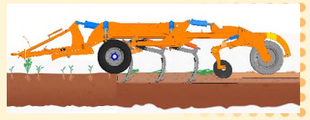
The use of a bar packing wheel provides a predetermined tillage depth with high accuracy of levelling the raised soil layer and preserving moisture in it.

MAIN SPECIFICATIONS

Name	Unit	Values
Type of machine	mounted	
Productivity per hour of basic time	ha/hour	4±0,2
Working coverage	m	4,0
Cultivation depth	cm	до 50
Working speed	km/h	8 – 10
Distance between the stilts of working elements	mm	645±25
Number of working elements	pcs	6
Transportation speed	km/h	up to 50
Number of service personnel	people	1
Structural weight	kg	2683
Overall dimensions in the working position – length – width – height	mm	 2500±20 4000±20 1560±20
Number of packing wheels	pcs	1
Diameter of packing wheel	mm	515
Aggregation with tractors of traction class		5
Performance indicators		
Crumbling of soil, at least Size of lumps up to 50 inclusive, mm over 100mm	%	 80±5 not allowed
Ridges of soil surface, max		5cm
Stubble preservation (to combat wind erosion), at least	%	90
Content of erosion–dangerous soil particles in a layer from 0 to 5 cm (to combat wind erosion)		does not increase
Height of plant and crop residues	cm	up to 50
Cutting weeds	%	100
Clogging and sticking of the working elements	–	not allowed
Shift time use rate	–	0,85
Mean time between failures, minimum	hours	150
Availability factor taking into account organizational time, minimum	–	0,98

Aggregated with tractors with a capacity of 320 h.p.

Stubble cultivator
KSP–5, KSP–6



MAIN SPECIFICATIONS

Name	Unit	Values	
		KSP–5	KSP–6
Type of machine		semitrailer	
Productivity per hour of basic time	ha/hour	5–9	7–10
Working coverage	m	4,8	6
Tillage depth with a chisel–shaped leg	cm	up to 30	
Tillage depth with a leg b =325 mm.	cm	5–20	
Working speed	km/h	10–18	
Number of cultivator legs	pcs	15	19
Pitch of placing legs on the track	mm	315	
Number of discs	pcs	10	14
Number of packing wheels	pcs	15	17
Number of support wheels	pcs	2	
Travelling speed, maximum	km/h	20	
Structural weight	kg	5800	6300
Number of service personnel	people	1	
Overall dimensions in the working position: – length – width – height	mm	6360 5290 1370	6360 6380 1370
Overall dimensions in the transport position: – length – width – height	mm	6342 3166 3130	6342 3166 3560
Aggregated with a tractor of traction class	t	5 (from 240 h.p.)	5 (from 280 h.p.)
Ground clearance in the transportation position, at least	mm	275	
Standard service life	years	5	
PERFORMANCE INDICATORS			
Crumbling of soil, percentage of lumps up to 50 mm inclusive, minimum	%	80	
Crumbling of soil, percentage of lumps over 100 mm in size, max	%	0	
Stubble preservation, percent, at least	%	80	
Destruction of the soil crust,	%	100	
Weed destruction, minimum	%	100	
Ridges of soil surface, max	cm	5	
Bringing out the wet layer	–	not allowed	
Clogging and sticking of the working elements	–	not allowed	
Specific average fuel consumption	kg/ha	10,5	
Shift time use rate, minimum	–	0,75	
Mean time between failures of the product, minimum	h	150	
Availability factor taking into account organizational time, minimum	–	0,98	

Equipped with a three–circuit hydraulic system with a nominal operating pressure of 16–20 MPa.

TECHNOLOGICAL PROCESS

Stubble cultivator KSP–6, KSP–5 is designed for high–quality stubble processing, soil preparation for sowing, cutting fallow lands and deep loosening without layer turnover.

The cultivator performs the following operations:

•Loosening the soil to a depth of 30 cm with a chisel–shaped leg;

•Loosening and 100% cutting of weeds to a depth of 20 cm with a pointed leg;

•Crumbling of large clods of earth and plant residues into small fractions;

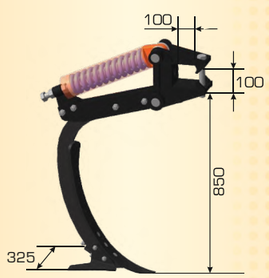
•Homogeneous mixing of a large amount of straw and crop residues, creating a mulching layer.

•Levelling and compaction of soil.

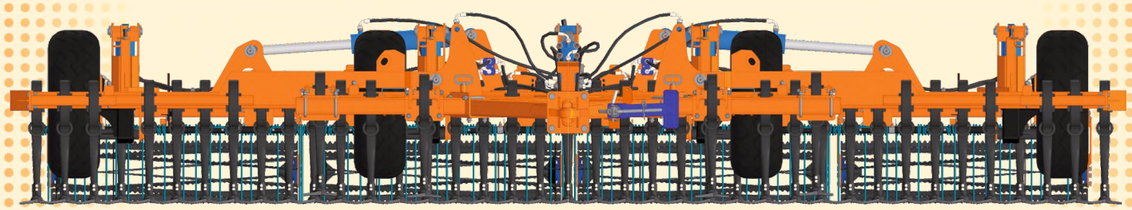
The cultivator is designed to work on all types of soils with moisture content of no more than 30%, a slope of field surface no more than 10°, and a soil hardness in the cultivated layer of no more than 3.0 Mpa.

Three–row arrangement of the cultivator legs with a pitch along the track of 315 mm and a reliable safety device against stones with a trigger force of 600 kgf, high position of the frame, the presence of a row of discs and packing wheels of increased cross–country ability ensure high cross–country ability of the cultivator and versatility of its application.

The design and category in terms of the impact of climatic factors of the external environment comply with GOST 15150–69 (version U, location category 1).



Pre–sowing stubble cultivator
KPS–6, KPS–9, KPS–12



KPS pre–sowing stubble cultivator is designed for high–quality pre–sowing tillage, including stubble, with a tillage depth of up to 15 cm.

The cultivator performs the following operations:

Pre–sowing tillage to a seed depth of 3...8 cm;

Loosening and 100% cutting of weeds to a depth of up to 15 cm;

Crumbling of large clods of earth and plant residues into small fractions;

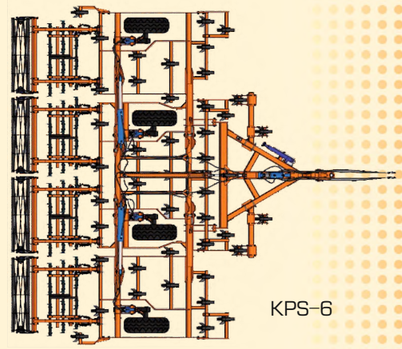
Levelling and compaction of soil.

This unit has 4 rows of working elements. Equipped with Italian stilts of 70x12 mm with spring–loaded legs with a width of 280 mm. Arrangement of the stilts makes it possible to eliminate clogging with plant residues. Width of the legs and arrangement of the stilts provide an overlap of less than 50 mm.

The cultivator is equipped with a screw packing wheel with a diameter of 350 mm. It is possible to operate the cultivator without the packing wheel.

The machine is designed to work on all types of soils with moisture content of no more than 30%, a slope of field surface no more than 8°, and a soil hardness in the cultivated layer of no more than 2.5 Mpa.

Four–row arrangement of the cultivator legs with a pitch along the track of 170 and 230 mm, additional spring stilt reinforcement, high frame arrangement, the presence of 3–row spring teeth with an adjustable approach angle ensure high cross–country ability of the cultivator and versatility of its application.

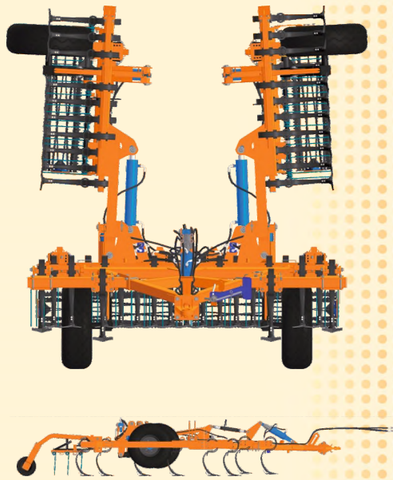


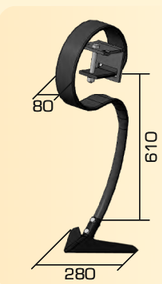
KPS–6

MAIN SPECIFICATIONS

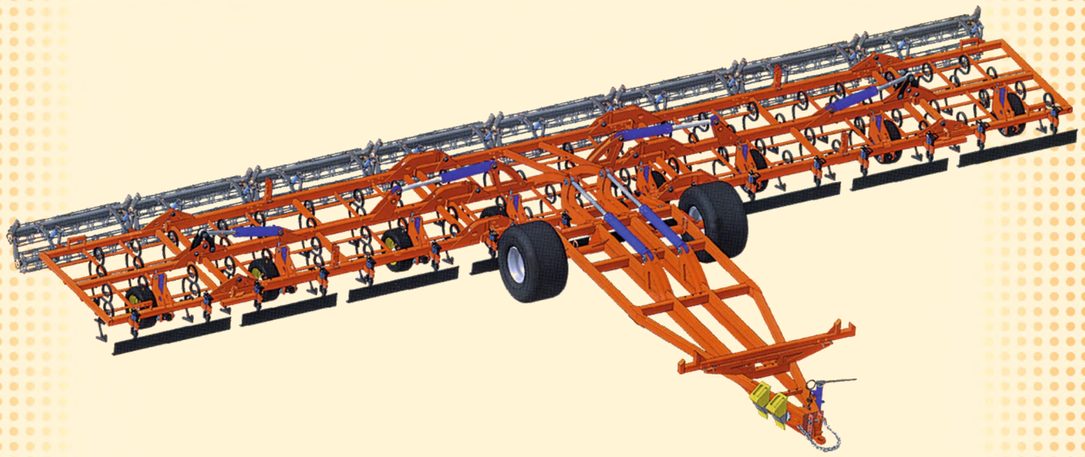
Name	Unit	Values		
		KPS–6	KPS–9	KPS–12
Type of machine		semitrailer		
Productivity per hour of basic time	ha/h	up to 9,6	up to 14,5	up to 17,2
Working coverage	m	6±0,1	9±0,1	12,3±0,1
Cultivation depth	cm	up to 15	up to 15	up to 15
Working speed	km/h	up to 16	up to 16	up to 14
Transportation speed	km/h	up to 25	up to 25	up to 20
Working coverage of the loosening leg	mm	200	280	280
Number of stilts of working elements	pcs	43	39	53
Pitch of placing legs on the track	mm	170±10	230±10	230±10
Number of spring teeth	pcs	47	45	96
Number of sections of packing wheels	pcs	4	6	8
Number of rows of spring teeth	pcs	3	3	3
Number of support wheels	pcs	4	4	2
Diameter of packing wheel	mm	370±10	370±10	370±10
Track width during transportation	mm	2230±50	2300±50	2635±50
Structural weight	kg	4000±50	5150±50	7500±50
Number of service personnel	people	1	1	1
Overall dimensions in the working position: – length – width – height	mm	6300±50 6600±50 1148±50	6416±50 9323±50 1148±50	7350±50 12400±50 1320±50
Overall dimensions in the transport position: – length – width – height	mm	6300±50 3650±50 3670±50	6416±50 4500±50 4350±50	7350±50 6370±50 4440±50
Aggregated with a tractor of traction class	t	3 power not less than 190 h.p.	3 power not less than 220 h.p.	5 power not less than 320 h.p.
Ground clearance in the transportation position	mm	430±20	385±20	320...430
Standard service life	years	5	5	5

The cultivator is equipped with a two–circuit hydraulic system with a nominal operating pressure of 16 Mpa





Cultivator for pre–sowing tillage
KPO–9, KPO–13CM, KPO–16CM



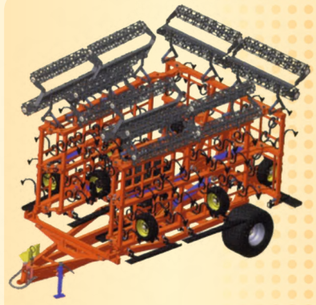
The cultivator for pre–sowing tillage KPO–9, KPO–13CM, KPO–16CM is designed for loosening with layer–by–layer crumbling of soil, cutting of weeds, levelling and compaction of soil.

The cultivator frame is a welded structure of rectangular pipe 120x80x6 mm.

The main working elements: stilt with a tillage leg with a width of 135 or 200 mm and a reinforcing spring. Additionally, the stilt may be equipped with a chisel–shaped tip for deep loosening of soil.

To compact and level the surface layer of soil, to obtain fine homogeneous fraction of soil, the cultivator is equipped with a double packing wheel or a single packing wheel with a front row of spring harrows.

The transport width of the new KPO–13CM cultivator is 3.5 m, which facilitates its transportation on public roads.



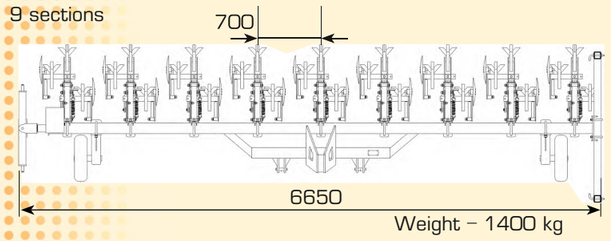
MAIN SPECIFICATIONS

Name	Unit	Values		
		KPO-9	KPO-13CM	KPO-16CM
Type of machine		semitrailer		
Productivity per hour of basic time, not less than	ha/hour	9,0	15-20	20-25
Working coverage	m	9	13	16
Cultivation depth	cm	3-8	3-8	3-8
Working speed	km/h	up to 18	up to 18	up to 18
Structural weight	kg	3200	5300	7100
Number of working elements:				
Leg 135 mm	PCS	83	111	143
Leg 200 mm	PCS	53	77	97
Pitch of arrangement of loosening legs in clearance				
Leg 135 mm	mm	110	115	115
Leg 200 mm	mm	170	170	170
Working coverage of the loosening leg	mm	135 or 200		
Number of packing wheels sections/combined sections	pcs	6/6	8/8	10/10
Number of packing wheels per section	pcs	2	2	2/1
Diameter of packing wheel	mm	270	270	270
Travelling speed, maximum	km/h	20	20	20
Overall dimensions in the transport position:				
– length	mm	5190	5962	5962
– width	mm	4400	3500	3500
– height	mm	4000	3800	3800
PERFORMANCE INDICATORS				
Crumbling of soil, at least, the size of lumps up to 20 mm inclusive	%	80±10	80±10	80±10
Destruction of the soil crust	%	100	100	100
Destruction (cutting) of weeds	–	100	100	100
Ridges of soil surface, max	cm	2,5	2,5	2,5
Shift time use rate	–	0,80	0,80	0,80
Mean time between failures, minimum	h	160±10	190	190
Availability factor taking into account organizational time, minimum	–	0,98	0,98	0,98

KPO–9 – aggregation with tractors of class 3 with a capacity of 150 h.p.
KPO–13CM – aggregation with tractors of class 5 with a capacity of 250 h.p.
KPO–16CM – aggregation with tractors of class 5 with a capacity of 350 h.p.

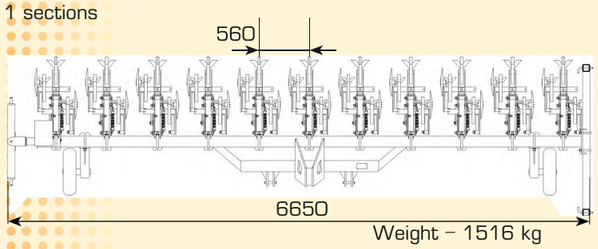
Inter–row tillage cultivator
KMO–6

9 sections



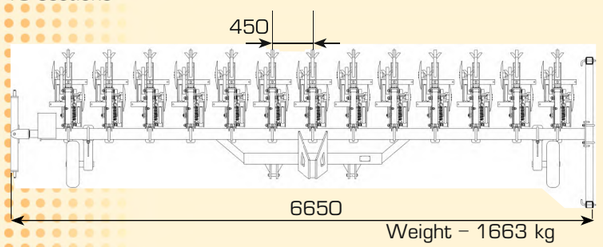
Weight – 1400 kg

11 sections



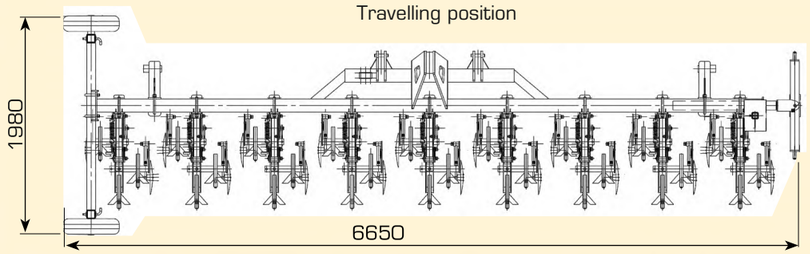
Weight – 1516 kg

13 sections



Weight – 1663 kg

Travelling position



Aggregation with class 2 tractors with a capacity of 82 h.p.

The cultivator of KMO series is designed for inter–row tillage of sugar beet, sunflower, corn and other row crops with the ability to quickly reconfigure to various row spacing pitches: 45 cm, 56 cm, 70 cm and with adaptation with both domestic and imported 8–, 10–, 12–row seeders.

The cultivators ensure high–quality performance of the following operations:

– 100% destruction of the soil crust;
– 100% weed destruction in the tillage area;
– loosening of soil between rows;
– hilling;
– protection of cultivated plants from damage and covering with a raised layer of soil.

The parallelogram arrangement of the cultivator sections ensures accurate copying of the soil relief with slopes of more than 5°, and the presence of a screw pair with a thrust thread on the support wheel stilt of each section makes it possible to accurately adjust the depth of cultivation.

Completed (by agreement) with various working elements:

1. Pointed legs with a width of B=140 mm; 200 mm; 220 mm.
2.. Flat–cutting one–sided legs.
3. Chisel–shaped legs.
4. Hillers.

It is possible to use both spring and rigid stilt. The basic configuration includes spring stilts with pointed legs, a transport drawbar and a carriage.

Inter–row cultivator with fertilization
KMO–6 with SVU–01

The cultivator of KMO series is designed for inter–row tillage of sugar beet, sunflower, corn and other row crops with the ability to quickly reconfigure to various row spacing pitches: 45 cm, 56 cm, 70 cm and with adaptation with both domestic and imported 8–, 10–, 12–row seeders.

The cultivators ensure high–quality performance of the following operations:

- 100% destruction of the soil crust;
- 100% weed destruction in the tillage area;
- loosening of soil between rows;
- hilling;
- protection of cultivated plants from damage and covering with a raised layer of soil;
- equipped with a granular fertilizer application system.

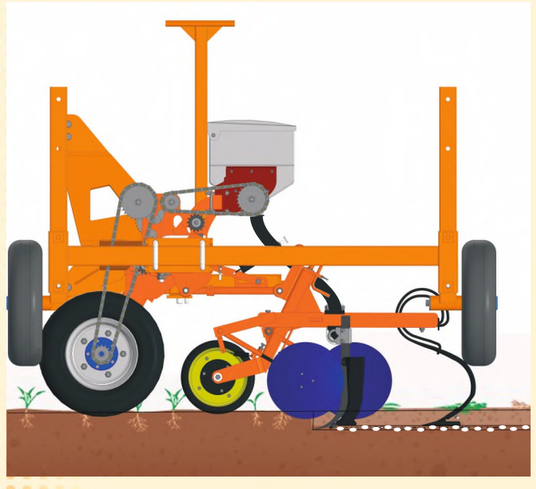
The parallelogram arrangement of the cultivator sections ensures accurate copying of the soil relief with slopes of more than 5°, and the presence of a screw pair with a thrust thread on the support wheel stilt of each section makes it possible to accurately adjust the depth of cultivation.

Completed (by agreement) with various working elements:

- pointed legs with a width of B=140 mm; 200 mm; 220 mm;
- flat–cutting one–sided legs;
- chisel–shaped legs;
- hillers.

It is possible to use both spring and rigid stilt. The basic configuration includes spring stilts with pointed legs, a transport drawbar and a carriage.

The granular fertilizer application system is installed on the cultivator frame and is easily dismantled. The total volume of eight containers is 400 kg. Unique mechanical gearboxes of our own design and production with chain drives from the support wheels allow the cultivator to set fertilizer application rates from 34 to 348 kg/ha. All documents are in Russian. The warranty period is 12 months.



Aggregation with class 3 tractors with a capacity of at least 130 h.p.

Inter–row tillage cultivator
KMO–9

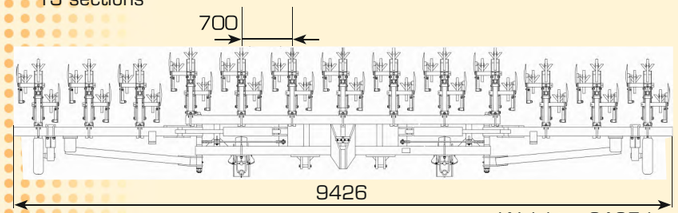
The cultivator of KMO–9 series is designed for inter–row tillage of sugar beet, sunflower, corn and other row crops with the ability to quickly reconfigure to various row spacing pitches: 45 cm, 56 cm, 70 cm and with adaptation with both domestic and imported 12–, 16–, 18–row seeders.

The cultivators ensure high–quality performance of the following operations:

- 100% destruction of the soil crust;
- 100% weed destruction in the tillage area;
- loosening of soil between rows;
- hilling;
- protection of cultivated plants from damage and covering with a raised layer of soil.

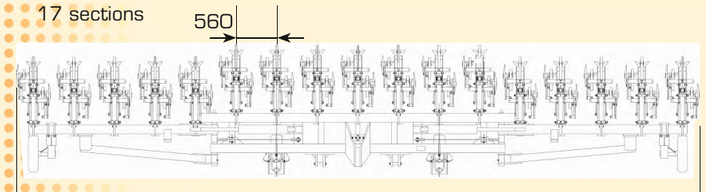
The parallelogram arrangement of the cultivator sections ensures accurate copying of the soil relief with slopes of more than 5°, and the presence of a screw pair with a thrust thread on the support wheel stilt of each section makes it possible to accurately adjust the depth of cultivation.

13 sections



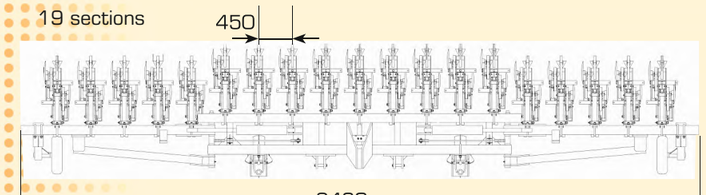
Weight – 2195 kg

17 sections



Weight – 2430 kg

19 sections



Weight – 2445 kg

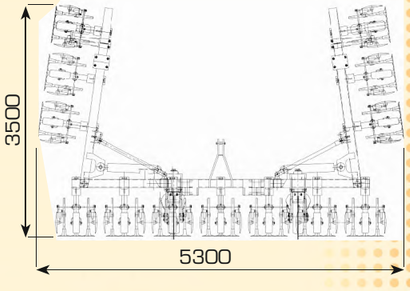
Aggregation with class 2–3 tractors with a capacity of 130 h.p.

Completed (by agreement) with various working elements:

1. Pointed legs with a width of B=140 mm; 200 mm; 220 mm.
2. Flat–cutting one–sided legs.
3. Chisel–shaped legs.
4. Hillers.

It is possible to use both spring and rigid stilt. The basic configuration includes spring stilts with pointed legs, two support wheels, two guide wheels with flanges.

Travelling position



Inter–row tillage cultivator

KMO–11

The cultivator of KMO series is designed for inter–row tillage of sugar beet, sunflower, corn and other row crops with the ability to quickly reconfigure to various row spacing pitches: 45 cm, 56 cm, 70 cm and with adaptation with both domestic and imported 16–, 20–, 24–row seeders.

The cultivators ensure high–quality performance of the following operations:

– 100% destruction of the soil crust;

– 100% weed destruction in the tillage area;

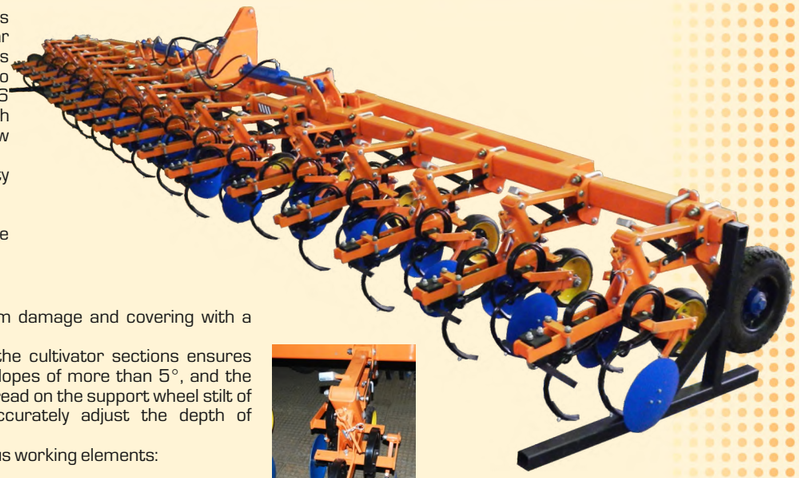
– loosening of soil between rows;

– hilling;

– protection of cultivated plants from damage and covering with a raised layer of soil.

The parallelogram arrangement of the cultivator sections ensures accurate copying of the soil relief with slopes of more than 5°, and the presence of a screw pair with a thrust thread on the support wheel stilt of each section makes it possible to accurately adjust the depth of cultivation.

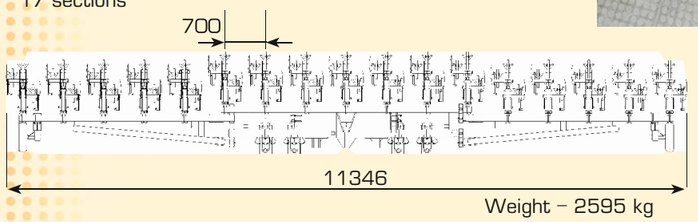
Completed (by agreement) with various working elements:



1. Pointed legs with a width of B=140 mm; 200 mm; 220 mm.
2. Flat–cutting one–sided legs.
3. Chisel–shaped legs.
4. Hillers.

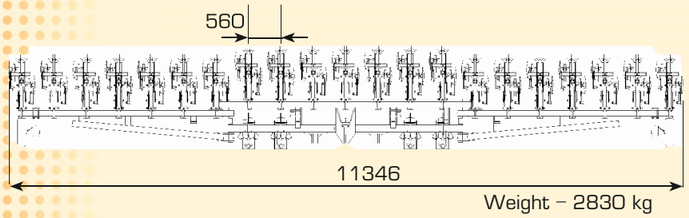
It is possible to use both spring and rigid stilt. The basic configuration includes spring stilts with pointed legs, 2 support wheels, 4 guide wheels with flanges.

17 sections



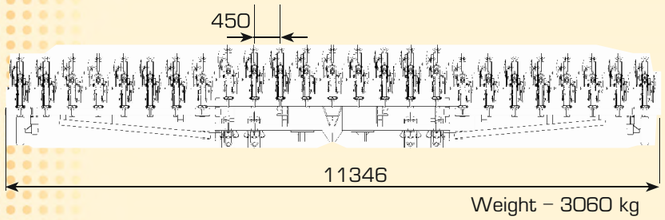
Weight – 2595 kg

21 sections

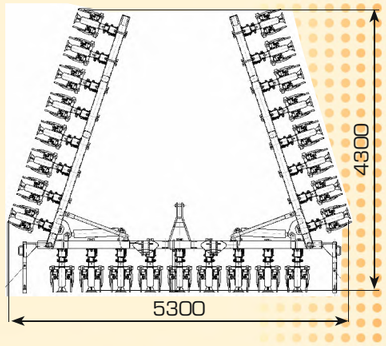


Weight – 2830 kg

25 sections



Weight – 3060 kg



Aggregation with class 4 tractors with a capacity of at least 200 h.p.

Inter–row cultivator with fertilization

KMO–11 with SVU–02

The cultivator KMO–11 is designed for inter–row tillage of sugar beet, sunflower, corn and other row crops with the ability to quickly reconfigure to various row spacing pitches: 45 cm, 56 cm, 70 cm and with adaptation with both domestic and imported 16–, 20–, 24–row seeders.

The cultivator provides high–quality performance of the following operations:

- 100% destruction of the soil crust;
- 100% weed destruction in the tillage area;
- loosening of soil between rows;
- hilling;
- protection of cultivated plants from damage and covering with a raised layer of soil;
- equipped with a system for applying liquid complex fertilizers.

The parallelogram arrangement of the cultivator sections ensures accurate copying of the soil relief with slopes of more than 5°, and the presence of a screw pair with a thrust thread on the support wheel stilt of each section makes it possible to accurately adjust the depth of cultivation.

Each section of the cultivator is equipped with rubberized depth control wheels.

Completed (by agreement) with various working elements:

1. pointed legs 140, 200, 220 mm wide;
2. flat–cutting one–sided legs;
3. chisel–shaped legs;
4. hillers.

It is possible to use both spring and rigid stilt. The basic configuration includes spring stilts with pointed legs, 2 support wheels, 4 guide wheels with flanges.

The modular system of the section allows to install working elements in different variations.

The liquid fertilizer application system is installed on the cultivator frame and is easily dismantled. The total volume of two containers is 1200 liters. The Italian–made hydraulic pump is capable of providing UAN application rates from 30 to 300 kg/ha. The application rate is adjusted by means of a pressure regulation distributor.

The cultivator is transferred to the travelling position by folding the side wings together with the installed fertilizer application system.

All documents are in Russian. The warranty period is 12 months.

Aggregation with class 5 tractors with a capacity of at least 250 h.p.

Combined trailer–mounted cultivator

KPK–7.4

KPK–7.4 combined trailer–mounted cultivator, further – the "cultivator", is designed for continuous pre–sowing and fallow tillage with simultaneous harrowing with spring harrows, and autumn cultivation of stubble fields (spring harrows not to be used for stubble).

Main characteristics of the working element (advantages): The flat–cutting loosening element is designed for loosening soil, cutting weeds without turning the earth layer. The working element consists of a plane–cutting pointed leg bolted to the stilt. The stilt is fixed to the bracket using a plate, a clamp, and a bolt. In the front part of the bracket, the leg stilt is held by a clamp, which is pressed against the stilt by springs. Compression of the springs is adjusted by nuts.

Main characteristics of the drawbar, the carriage (advantages): The drawbar is designed to attach the cultivator to the tractor. There is an eye bar in the front of the drawbar. A stilt is welded on the back of the beam, on which two curved plates are attached to install the stretching screw. The carriage is used when moving the cultivator to the place of work, as well as for digging out working elements at the end of the run and on turns.

Availability of support wheels (optional installation): The tandem support wheels are mounted on the central and side frames and are designed to adjust and maintain a constant cultivation depth. The wheels mounted on the central frame also serve to move the cultivator in the transport position. The wheel brackets represent a welded structure, on one side of which a sleeve is welded to connect to the frame.

The main characteristics of adjustment of equipment for work:

• To move the cultivator to the working position, it is necessary to remove the transport tie–rod and the latches of the side frames in the portal.

• The cultivator provides work on the depth of tillage in two ranges: 1 (8–12 cm); 2 (12–16) cm, depending on the installation of the hydraulic cylinder for controlling the carriage. The cultivator is mounted to operate in range 2. To operate the cultivator in range 1, it is necessary to rearrange the eyelet of the hydraulic cylinder for controlling the carriage.

Control of deepening of the working elements is carried out by the support wheels of the side frames and a screw. The distance from the bottom of the legs of the working elements to the lowest point of the support wheels is equal to the depth of tillage. The axial gap is adjusted by the bearing tightening nut. The gap size should not exceed 0.3 mm.

The transfer of the cultivator from the working position to the transport position and back is carried out using the hydraulic system of the cultivator. The control is performed by the levers of the hydraulic distributor from the tractor cab.

MAIN SPECIFICATIONS

Unit type		trailer
Productivity per hour of the main time at a speed of 10 km/h	ha/hour	7,4
Working speed	km/h	7–10
Transportation speed	km/h	up to 15
Cultivation depth	cm	8–16
Number of working elements:	pcs	21
Number of spring harrows	pcs	3
Number of support wheels	pcs	4
Dimensions in travelling position – width – height – length	 mm mm mm	 5480 4620 3750
Dimensions in working position: – width – height – length	 mm mm mm	 5480 7590 1160
Working width	m	7,4
Weight	kg	3100
Standard service life	years	5
Ground clearance	mm	300

Aggregation with tractors of class 3–5 tf

Pre–sowing combined cultivator

KPK–9

The pre–sowing combined cultivator KPK–9 is designed for high–quality pre–sowing tillage to a depth of up to 8 cm by means of pointed legs.

The cultivator performs the following operations:

1. Pre–sowing tillage to a seed depth of 3...8 cm;
2. Loosening and 100% cutting of weeds to a depth of up to 8 cm;
3. Crumbling of large clods of earth and plant residues into small fractions;
4. Levelling and compaction of soil.

The machine is designed to work on all types of soils with moisture content of no more than 30%, a slope of field surface no more than 8°, and a soil hardness in the cultivated layer of no more than 2.5 Mpa.

The cultivator consists of six independent sections consisting of four conditional working zones:

Zone I – crushing and levelling – Front crushing plate packing wheels with a diameter of 270 mm, complemented by an adjustable levelling bar, grind and level the soil surface

Zone II – loosening – Two rows of arrow–shaped legs with a width of 250 mm, in the part for loosening, provide cutting along the entire profile and prepare a perfect shallow seedbed. Position of the legs provides the necessary force of penetration.

Zone III – crushing – The rear crushing packing wheel, supplemented with a levelling bar, breaks and crushes lumps and layers. The principle of operation is the same as that of the front roller.

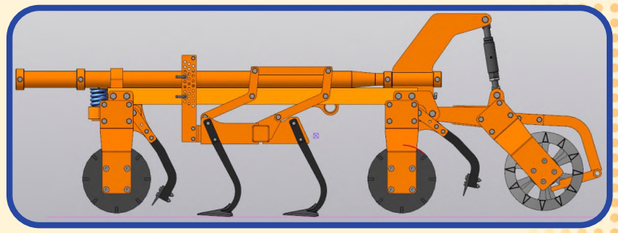
Zone IV – compaction – Good soil compaction and separation, the necessary separation of soil particles are provided by 380 mm rear ring–star packing wheels.

The design and category in terms of the impact of climatic factors of the external environment comply with GOST 15150–69 (version U, location category 1).

The cultivator is aggregated with tractors of traction class 5, with a capacity of 350 h.p. and a two–circuit hydraulic system with a nominal working pressure of 16 MPa. The method of aggregation is semi–trailer.

MAIN SPECIFICATIONS

Name	Unit	Values
		KPK–9
Transportation speed	km/h	up to 20
Cultivation depth	cm	up to 12
Number of stilts of working elements	pcs	36
Number of sections	pcs	6
Diameter of packing wheel	mm	270±10
Number of service personnel	people	1
Overall dimensions – in working position length width height – in transport position length width height	 mm	 8600±50 9200±50 1500±50 6500±50 3000±50 4000±50
Weight	kg	7500±50
Aggregates with the following tractors	Class	5 (from 350 h.p.)



I II III IV

Tooth harrow
BZ–15, BZ–21, BZ–27T

The tooth harrow is designed to work on all soils with moisture content of no more than 30%, field surface slope of no more than 10%, soil hardness in the cultivated layer of no more than 2.5 MPa, moisture closure, surface (up to 8 cm) cultivation of fallow fields; straw distribution and weed provocation. The entire field season is used.

The frame consists of seven sections with five rows of teeth. The tooth size is SH16x763 mm. The approach angle of the teeth is adjustable from 30 to 90 degrees. Adjustable clearance of the frame. Automatic transportation lock. Copying sections of teeth.

The original design of the heavy harrow allows to easily and quickly transfer it from the working position to the transport position and back without disassembly. Preparing the harrow for operation or transportation takes no more than five minutes, and can be performed by one machine operator.

Design of BZ–27T allows conversion to BZ–21T by removing two sections and frames of the beam 200x200x6 mm.

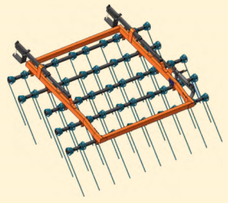
The section is a welded structure of rectangular cross–section 100x60x6 consisting of guides with spring teeth fixed on them. The frames of the sections are suspended on springs, which allows to copy the terrain of the soil. The angle of inclination of the teeth is adjusted using a stretching screw with a ratchet mechanism. There is an indicator of the angle of turning the teeth.

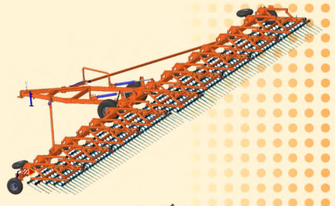
The harrow frame is the main load–bearing element of the structure and is designed for installation of working sections on it, as well as installation of a hydraulic system and electrical equipment. It is a welded structure made of 200x200x6 square longitudinal beams with brackets for mounting attachments. The frame consists of a central part and the left and right parts connected to it through hinges.The drawbar is a welded structure with a rectangular cross section of 200x100x6, designed to connect the harrow to the tractor and transfer the traction force to the frame. The drawbar eye bar has a Ш59 mm hole for connection with a tractor hydraulic hook. Hydraulic cylinders are installed on the drawbar, they are designed to transfer the harrow from the transport to the working position.

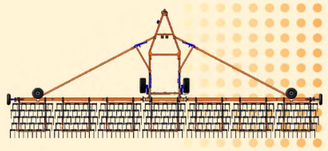
The harrow has 4 support wheels mounted on the left and right sides of the frame. At that, the two extreme side wheels are involved directly during the operation of the harrow, and the other two – during its transportation.

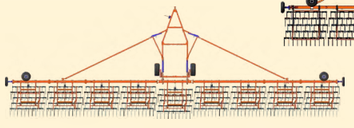
MAIN SPECIFICATIONS

Name	Unit	BZ–15	BZ–21	BZ–27T
Dimensions:				
in transportation position:				
– width	mm	4124±50	4397±50	4400±50
– height	mm	3444±50	3444±50	3800±50
– length	mm	12815±50	15890±50	19500±50
in working position:				
– width	mm	16026±50	22174±50	28700±50
– height	mm	1635±50	1635±50	1635±50
– length	mm	9109±50	9109±50	9109±50
Working width	m	15	21	27.8
Transport speed (limited by the requirements of GOST R 53489–2009)	km/h	20		
Working speed	km/h	8...20		8...20
Maximum cultivation depth, max	mm	80		80
Harrow weight	kg	5500±50	6500±50	10200±50
Weight of the harrow section	kg	410±10		
Number of sections	pcs	5	7	9
Number of teeth	pcs	125	175	225
Number of teeth per section	pcs	25		25
Aggregation with tractors	Vehicle	3 Power not less than 175 h.p.	5 Power not less than 280 h.p.	5 Power not less than 400 h.p.

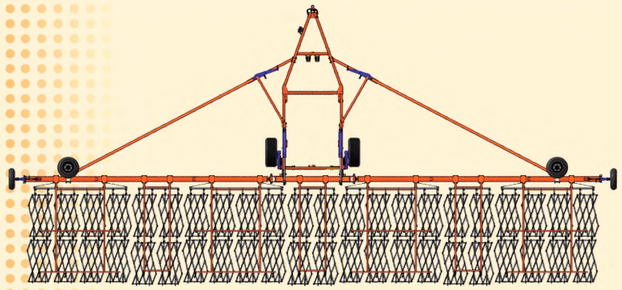


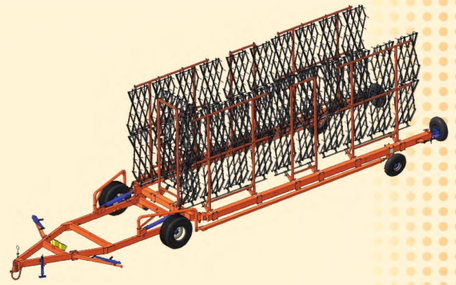






Hydraulic tooth harrow
BZG–21





The tooth harrow is designed to work on all soils with moisture content of no more than 30%, field surface slope of no more than 10%, soil hardness in the cultivated layer of no more than 2.5 MPa, moisture closure, surface (up to 8 cm) cultivation of fallow fields; straw distribution and weed provocation. The entire field season is used.

Operations:

1. Destruction (crushing) and distribution of straw — the harrow works on most plant residues. For the best cultivation quality, the speed can reach 20 km/h.
2. Embedding of seeds and fertilizers.
3. Pre–sowing provocation of growth and destruction of small weeds, closing of moisture, loosening in fallow fields, distribution of plant residues, provocation of weeds and fallen grain after harvesting. Vibration during movement allows loosening the soil to a depth of 2–8 cm.

It is not allowed to use the harrow on soils in which there are stumps, tree roots, lots of crop residues and lots of stony inclusions of more than 0.5% sizing over 100 mm.

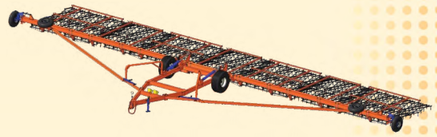
Distinctive design features of the harrow:

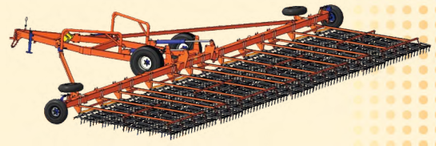
– Three–section frame, frame beam section 200x200x6 mm.
– Ten rows of teeth.
– The tooth size is 16 mm square with a length of 210 mm, the distance between the teeth along the track is 48 mm
– Approach angle of the teeth is 90 degrees
– Adjustable clearance of the frame
– Automatic transportation lock
– Copying sections of teeth.

The original design of the heavy harrow allows to easily and quickly transfer it from the working position to the transport position and back without disassembly. Preparing the harrow for operation or transportation takes no more than five minutes, and can be performed by one machine operator.

MAIN SPECIFICATIONS

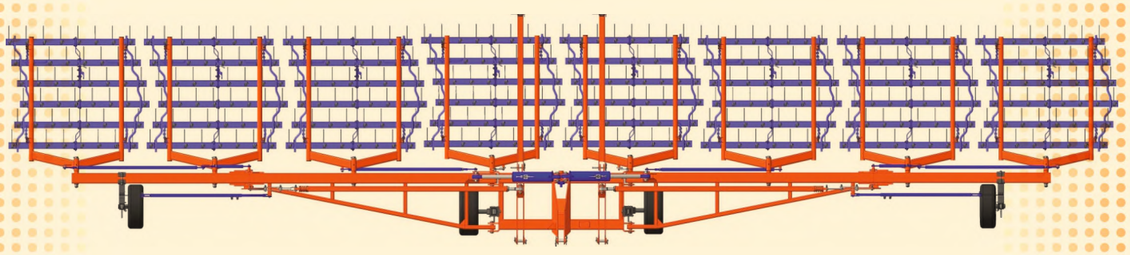
Name	Unit	BZG–21
Unit type		trailer
Dimensions:		
in transportation position:		
– width	mm	4397±50
– height	mm	4090±50
– length	mm	15890±50
in working position:		
– width	mm	22174±50
– height	mm	1635±50
– length	mm	9109±50
Ground clearance in the transportation position	mm	290±25
Working width	m	21
Transport speed (limited by the requirements of GOST R 53489–2009)	km/h	20
Working speed	km/h	8...20
Maximum cultivation depth, max	mm	Up to 100
Harrow weight	kg	6000±50
Weight of the harrow section	kg	275±10 and 490±10
Number of sections	pcs	7
Number of teeth	pcs	880
Number of teeth per section grid	pcs	20
Productivity per 1 hour of working time at a speed of 20 km/h, at least	ha/hour	43
Aggregation with tractors	VEHICLE	5 (Power not less than 280 h.p.)
Fuel consumption	l/ha	≈ 1,5 – 1,8
Service personnel	people	1
Ridges of soil surface, max	cm	4
Destruction of the soil crust	%	100
Damage to cultivated plants, max	%	3
Weed destruction, minimum	%	90
Guaranteed time between failures, minimum	hours	100





Mounted mesh harrow with spring teeth

BS–12



The mesh mounted harrow with spring teeth BS –1 2 (further – the harrow) is intended for:
– mechanical weed control;
– soil aeration;
– control of water balance;
– preservation of liquefied soil;
– blind harrowing, immediately before or after sowing.
To complete the planting of cereals [rapeseed, soybeans, peas, beans, potatoes, corn or pastures]:
– preservation of living organisms in the soil.

The harrow is made up of eight independent sections. Each section is individually attached on a suspension with the chains, which creates a non–rigid structure and allows to perfectly copy the terrain of the soil. Arrangement of the spring teeth ensures the cutting of ridges (i.e., one tooth follows the other), which allows cultivation with minimal gaps.

The pressure of the teeth is adjusted depending on the type of soil and the type of harvest. There are 10 adjustment positions, from the most gentle to the most aggressive cultivation.

The harrow is designed to work on all soils with a soil moisture content of no more than 28%, a slope of field surface of no more than 10°, and a soil hardness in the cultivated layer of no more than 2.0 Mpa.

Soil contamination with a large accumulation of straw and crop residues, as well as stones and tree roots, is not allowed.

ATTENTION! It is not recommended to use BS–12 harrow after plowing.

Parameters	Unit	Value
Type of harrow	–	mounted
Productivity per hour of basic time	ha/h	up to 12
Working speed	km/h	10...12
Transportation speed	km/h	20, max
Working coverage	m	12
Depth of tillage	cm	12, max
Structural weight	kg	1450
Number of sections in the coupling	pcs	8
Approach angle of the teeth, minimum	degrees	17
Number of working elements (teeth): – in one section – total	 pcs	 48 384
Diameter of working elements (teeth)	mm	7
Distance between the teeth in a row	mm	186
Number of rows of teeth in a section	pcs	6
Distance between rows of discs	mm	792
Dimensions in working position: width height length	 mm mm mm	 12000±10 1400 2300
Dimensions in travelling position: width height length	 mm mm mm	 3280±100 3610 2300
Aggregation with tractors with the following power	h.p.	100–150
Service personnel	people	tractor driver
Established area covered per season	ha	1000, at least
Service life	years	5, at least
PERFORMANCE INDICATORS:		
Clogging and sticking of the working elements		not allowed
Shift time use rate	–	0,75, at least
Availability factor taking into account organizational time	–	0,98, at least
Main indicators of quality of the technological process of soil tillage		
Weed destruction	%	100, at least
Grinding of crop residues of large–stem crops (in 2 passes) up to size 60...100 mm	%	60, at least
Completeness of covering of plant residues	%	70
Crumbling of soil (size of lumps not more than 50 mm)	%	90, at least
Ridges of the soil surface	cm	4, max

Hydraulic disc stubble breaker

LDG–12, LDG–15

The stubble breaker is designed for tillage and stubble breaking after harvesting grain crops, as well as for tillage after plowing as a single–track disc harrow when cutting layers and crushing lumps.

The stubble breaker can work on all soils with a soil moisture content of up to 27%, a field surface slope of no more than 8 °; soil hardness in the cultivated layer of no more than 2.5 Mpa.

The stubble breaker should not be used on stony soils and soils with stumps, tree roots, after harvesting perennial grasses, large–stemmed crops and heavily contaminated surfaces.

The main components of the stubble breaker are: a frame, two beams (right and left), carriages (right and left), eight disc gangs, a hydraulic system, two tie rods, two running wheels, a drawbar, a central drawbar with cutting elements.

The stubble breaker frame is mounted on two running wheels. In the front part of the frame there is a device for attaching to the tractor and a stilt on which the frame rests when it is disconnected from the tractor. The bars of the sections are pivotally attached to the back of the frame with their inner ends, the outer ends resting on the carriages.

The bars are connected to the front of the frame by tie rods. The hydraulic control mechanism is mounted on the frame and bars. Sections are pivotally attached to the bars, to which disc gangs are attached.

For high–quality tillage, a central drawbar with cutting elements is installed on the frame.

The working elements of the stubble breaker are spherical discs assembled into disc gangs.

The discs, while rotating during operation, cut plant residues, crumble the cultivated soil layer, partially turn it and shift it to the side.

The stubble breaker works throw–out from the middle of the machine. The greater the approach angle of the discs, the greater the degree of loosening of the layer, the more complete cut of plant residues and the greater the depth of tillage.

Design of the stubble breaker allows to set the approach angle at 35, 25, 15 and 0 degrees.

Stubble breaking should be carried out, as a rule, at an angle of 35 °, and only on slightly contaminated soils the approach angle can be reduced to 25 °.

When using the stubble breaker as a single–track harrow, approach angles of 15 and 0 degrees are used.

LDG–12B.09.00.00D Central drawbar assembly

Cutting elements

LDG–12B.15.00.00D
Cutting element of the central drawbar

LDG–12B.15.00.00D
Cutting unit

LDG–12B.15.00.00D–02
Cutting unit

LDG–12B.15.00.00D–03
Cutting unit

LDG–12B.15.00.00D–04
Cutting unit

LDG–12B.15.00.00D–05
Cutting unit

MAIN SPECIFICATIONS

Parameters	Unit	Value	
		LDG–12	LDG–15
Unit type		trailer	trailer
Performance	ha/hour	up to 13	up to 16
Working width: – at an approach angle of 0° – at an approach angle of 35°	 m m	 13 12	 16 15
Working speed	km/h	up to 12	up to 12
Travelling speed, maximum	km/h	20	20
Depth of cultivation, maximum	cm	4–10	4–10
Structural weight	kg	3750	4700
Discs approach angle	degrees	0; 15; 25; 35	0; 15; 25; 35
Number of discs with a diameter of 450 mm	pcs	84	102
Number of disc gangs	pcs	9	11
Distance between working elements	mm	170	170
Dimensions in travelling position: – width – height – length	 mm mm mm	 4350 1000 7860	 4430 1000 10040
Ground clearance	mm	300±50	300±50

1. When used with tractors that run on paired wheels, these units can optionally be equipped with a trailing extension.
2. These machines may be equipped with a two–point trailer device at the customer request (the type of attachment for each tractor is to be confirmed by the lead manager).
LDG–12 – aggregation with tractors of class 3 with a capacity of 220 h.p.
LDG–15 – aggregation with tractors of class 3 with a capacity of 260 h.p.

Sowing machine

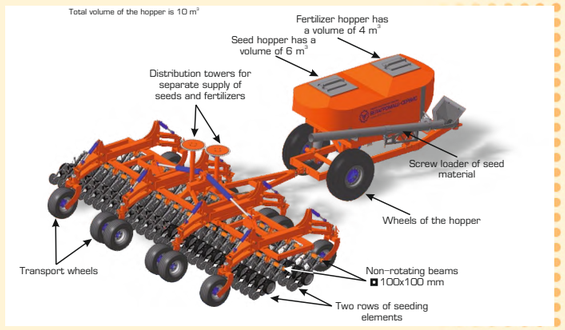
KP–9

Used for sowing cereals, legumes and grass crops using minimal and zero tillage technology. The unit implements the possibility of sowing with simultaneous application of granular mineral fertilizers in the same stream with seeds.

KP–9 is designed to work on all types of soils with moisture content of no more than 25%, a slope of field surface no more than 10°, and a soil hardness in the cultivated layer of no more than 3.5 MPa. Sowing can be carried out on non–stony soils with a content of stony material of no more than 0.5%.

The design and category in terms of the impact of climatic factors of the external environment comply with GOST 15150–69 (version U, location category 1).

It is advisable to use KP–9 in large areas with flat terrain, where high productivity is required.



Manufactured against order.
Manufacturing time is 6 months

Background of the field for sowing: previous crops – cereals, legumes, industrial crops, without pre–cultivation, with a cut height of no more than 20 cm.

The hopper for seeds and fertilizers with a total volume of 10 m^3 in a ratio of 40% and 60%, or 4 m^3 and 6 m^3, is attached to the frame of the transport carriage with a trailing device.

The sowing machine is aggregated in the following sequence: a tractor, a carriage with a hopper, then a seeder.

The dosing device is installed in the lower part of the hopper and provides adjustment of the seeding rate of the seed material in the range from 10 kg / ha to 300 kg / ha, and also has the ability to adjust depending on the size of the seeds (windage) of the seed material.

The supply to the seeding zone is carried out by means of air flow generated by a fan driven by a hydraulic motor.

The amount of air flow is controlled by the rpm of the hydraulic motor from 0 to 10 Mpa.

The amount of air flow is controlled using a pressure gauge installed in the tractor cabin.

The inlet nozzle of the fan turbine has a filter that prevents the ingress of plant residues into the pneumatic system of the dosing device.

The feed of the seed material is carried out evenly. For this purpose, distribution heads are installed, which allow the seed material to be evenly distributed into 48 sowing nozzles, sending it to each sowing element of the seeder, into the seeding zone.

The supply of seed material from the dosing device to the sowing nozzles is carried out using reinforced seed ducts, which are equipped with a control system that excludes the operation of the seeder with clogged nozzles.

The design of the seeder ensures folding into a transport position, while the width of the machine during transportation does not exceed 5 m.

The support wheels provide height adjustment for the seeding depth.

KP–9 sowing machine is equipped with single–disc coulters. Discs with a diameter of 457 mm are arranged with an approach angle of 7 °. Support wheels are used in each section, allowing to copy the irregularities of the field surface.

Each individual sowing coulter has a mechanical adjustment of the sowing depth from 1 cm to 8 cm and the pressure on the ground. The downforce is adjustable from 170 kg to 230 kg per coulter and ensures uniform deepening on hard soils.

The coulters are arranged in two rows on modular non–rotating beams with a square cross section of 100x100 mm. The distance in a row between adjacent coulters is 380 mm, the distance along the track is 190 mm.

10 main advantages of «no–till»

1. Saving resources (fuel, fertilizers, labor costs, time, spare parts, reducing depreciation costs).
2. Increasing agricultural profitability.
3. Preservation and restoration of the fertile soil layer (improvement of its chemical, physical and biological qualities, increase in the content of organic matter in the soil).
4. Reducing or eliminating soil erosion (there is no need to spend additional money to solve this problem).
5. Ecological management of weeds in crops.
6. Increasing soil moisture content (due to denser accumulation and retention of moisture in the soil).
7. Reducing the dependence of the crop on weather conditions.
8. Increasing crop yields.
9. Improving grain quality.
10. Agriculture: creation of a special culture of interaction with the environment.

The sowing machine is aggregated in the following sequence: a tractor, a carriage with a hopper, then a seeder.

The design of the seeder ensures folding into a transport position, while the width of the machine during transportation does not exceed 5 m.

Distribution towers allow the seed material to be evenly distributed into 48 sowing nozzles, sending it to each sowing element of the seeder, into the seeding zone.

Seed–fertilizer seeder

SZ–6

Seed–fertilizer seeder SZ–6 is designed for row sowing of seeds of cereals (wheat, rye, barley, oats), legumes (peas, soybeans, beans), cereals (buckwheat, millet, rice) with simultaneous application of granular mineral fertilizers.

For flexible adjustment of seeding rates, the seeder is equipped with a stepless gearbox.

Principle of operation of the seeder.

Seeds filled into the grain compartments, and fertilizers filled into the fertilizer compartments, go by gravity to the boxes of grain and fertilizer sowing machines. When the unit is moving in the working position, the coils of grain and fertilizer devices, while rotating, capture seeds and fertilizers and throw them into the seed ducts. While sliding under its own weight along the seed ducts, seeds and fertilizers enter the coulters and, then, through the branch pipe, they fall to the bottom of the furrows formed by the coulter discs in the soil.

Differences between the SZ–6 seeder and seeders from other manufacturers.

1. All–welded 4–section hopper with a total volume of 2.2 cubic meters with a capture width of 6 meters allows to sow longer without refuelling. Competitors have hoppers 0.2–0.3 cubic meters smaller.

2.. Weight of the seeder contributes to a stable run throughout the sowing operations, which has a positive effect on the uniformity of sowing. Competitors' seeders are light and subject to strong vertical rocking (bouncing) on soil irregularities, which, in combination with coulters, provokes the scattering of seeds over the surface and leads to under–sowing of rows.

3. Mechanical drives and transmissions are openly located on the left and right of the seeder and are extremely convenient for visual inspection or adjustment. Competitors have everything hidden and it is impossible to determine what is out of order without disassembly.

4. The rigid spatial frame and all–welded elastic hoppers are not afraid of overload in the transport position. A competitor's flat frame may bend along with the shafts in the transport position if the hoppers are full.

5. A hydraulic carriage with double wheels allows to sow at a higher speed, 12–15 km / h, including due to the weight distribution of the seeder. The competitor's seeding speed is lower: 6–9 km/h.

6. The hydraulic carriage with a three–point attachment of the seeder makes it easy to adjust the horizon of the first and second rows of coulters. A competitor does not have this, a situation may arise of the so–called hanging of the front or rear row of coulters, which will lead to unevenness of seeding.

7. SZ–6 does not have a complex system for turning on or off the seeding drive, it is enough to lift the entire seeder with a hydraulic carriage so that seeding stops and lower it until the support wheels touch the ground so that seeding begins. Touching and rolling of the wheels is visually perfectly controlled by the machine operator. Competitors need to look closely at the mechanisms of the seeder to understand whether the gearbox with coils is spinning or not, because not all seeders have a seeding control system.

8. The coulters have a parallelogram suspension, which ensures the accuracy of copying the relief by each coulter separately and increases the uniformity of deepening of the discs. The competitor has an outdated driving system, which, due to its geometry, does not allow to accurately copy the relief and, as a result, the accuracy of seeding suffers.

9. The double support wheels are located in close proximity to the coulter discs, which allows to maintain a constant seeding depth. The number of seeds planted to a given depth reaches 99%. The competitor's support wheel is located far from the discs at a considerable distance, which has a bad effect on the consistency of the seed depth, a maximum of 80%.

MAIN SPECIFICATIONS

Parameters	Unit	Values
Working speed	km/h	up to 15
Transportation speed	km/h	up to 20
Working coverage	m	6
Seeding depth (max)	cm	8
Row spacing	cm	19
Number of sowing coulters	pcs	32
Number of coulter rows	pcs	2
Distance between the coulters in a row	mm	380
Distance between the rows of coulters	mm	560
Overall dimensions (transport position)	mm	
– length		11700
– width		2500
– height (marker/hopper)		2300/3100
Structural weight	kg	4200
Aggregation with tractors with the following power	h.p.	от 130

Upgraded grain seeder

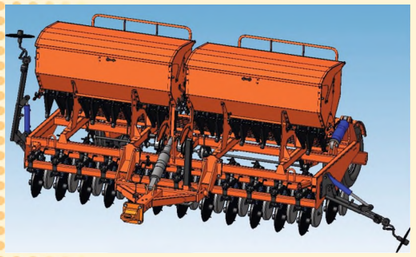
SZM–3,6

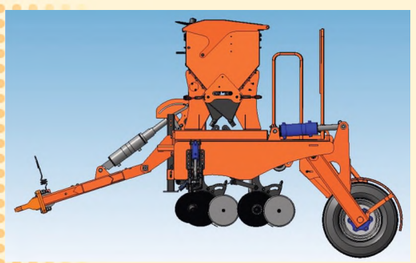
For better deepening of seeds, the seeder is manufactured and supplied to the consumer with packing wheels.

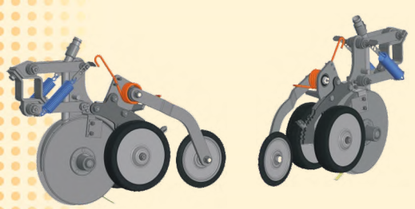
SZM–3.6 seeder is designed to work with a tractor of 1.4 t traction class at speeds up to 15 km/h on soils prepared for sowing in accordance with agrotechnical requirements.

Fields before sowing should be cultivated to the depth of seed embedding, not have ridges and back furrows, hidden lumps, uncultivated areas, large lumps, stones, large crop residues (sunflower, corn stems, etc.).

For normal operation of the seeder, the soil moisture should not exceed 20%.

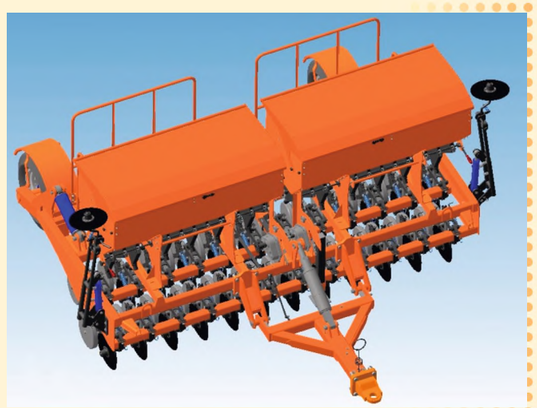






Upgraded grain seeder SZM–3.6 is designed for row sowing of seeds of cereals (wheat, rye, barley, oats), legumes (peas, soybeans, beans), cereals (buckwheat, millet, rice) with simultaneous application of granular mineral fertilizers and packing the soil after sowing.

The seeder can be used for sowing other crops that are similar in seed size and seeding rates, except for small ones (such as flax).



MAIN SPECIFICATIONS

Parameters	Unit	Values
Type of seeder		trailer
Working coverage,	m	3,6
Working speed at the main operations, max	km/h	15
Productivity per 1 hour of the main time at a speed of 10 km/h	ha	5,4
Travelling speed, maximum	km/h	20
Row spacing	cm	15
Seeding rate:	kg/ha	
wheat		10–380
barley		10–380
oats		15–275
rye		10–350
buckwheat		30–80
millet		6–30
legumes		28–400
Seeding rate of granular mineral fertilizers	kg/ha	35–180
Depth of seeding	cm	3–8
Seed damage, %, max:		
for grain crops		0,3
for leguminous crops		1
Type of coulters		two–disc
Number of coulters	pcs	24
Number of grain devices	pcs	24
Number of fertilizer devices	pcs	24
Number of seed ducts	pcs	24
Number of packing wheels	pcs	22
Ground clearance, minimum	mm	150
Total capacity of the boxes	dm^3	
grain part		764±10
fertilizer part		304±10
Overall dimensions in working and transport positions without a tractor	mm	
length		4100±25
width		3680±25
height		1700±25
Structural weight (the seeder boxes are not loaded with seeds and fertilizers)	kg	2050±50
The number of personnel by professions required to maintain the seeder (tractor driver, sower)		2

Aggregation with class 1,4 tractors with a capacity of at least 60 h.p.

Precision row crop seeder

SP–6

SP–6 seeder is designed for precise seeding of calibrated and sorted seeds of row crops and embedding them in prepared soil using a keeled coulter with or without simultaneous fertilization.

Fields before sowing should be cultivated to the depth of seed embedding, not have ridges and back furrows, hidden lumps, uncultivated areas, large lumps, stones, large crop residues (sunflower, corn stems, etc.). The seeder is used to work on all types of soils with moisture content of no more than 28%, a slope of field surface no more than 8°, and a soil hardness in the cultivated layer of no more than 1.5 Mpa.

The seeder is designed to work on non–stony soils with a stony material content of no more than 0.5%.

The design and category in terms of the impact of climatic factors of the external environment comply with GOST 15150–69 (version U, location category 1).

SP–6 seeder is designed to work with a tractor from 80 h.p. at speeds up to 12 km / h on soils prepared for sowing in accordance with agrotechnical requirements.

Principle of operation of the seeder.

Rotation of discs of the sowing devices and the impeller of the dispenser of the fertilizer system is carried out from the support & drive wheels, by means of a chain transmission and a gear change mechanism.

The vacuum in the seeding device is created by a fan driven by a hydraulic motor from the tractor's hydraulic system.

A pressure gauge is installed on the fan housing to control the amount of vacuum.

The seeds are sucked to the holes of the rotating disc located in the vacuum zone and transported to the ejection place. The removal of excess seeds stuck to the holes is carried out by a seed remover installed in the sowing device.

In the lower part of the sowing device, when the holes with seeds pass from the vacuum zone to the atmospheric pressure zone, the seeds fall off one by one from the holes and are sent by a seed duct to the seedbed formed by the keel of the anchor coulter.

Simultaneously with the sowing of seeds, mineral fertilizers are applied.

The screws of the fertilizer dispensers, when rotating, give direction and dose mineral fertilizers. The particles enter the furrow formed by the chisel in a uniform stream through the fertilizer duct.

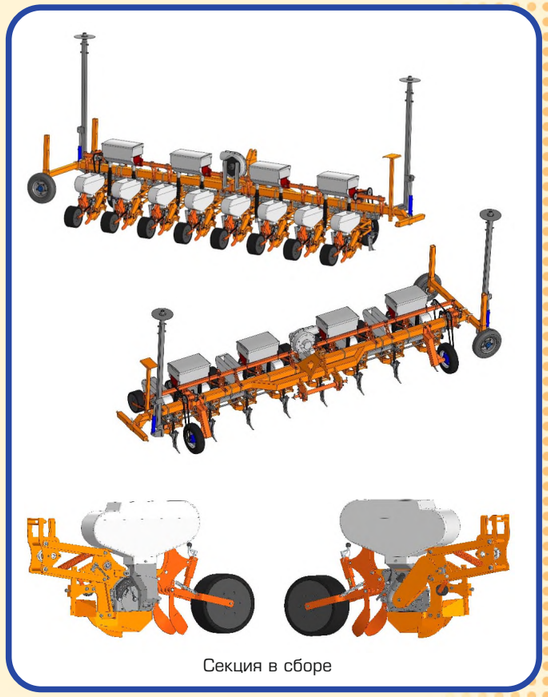
When the seeder is stopped, the sowing of fertilizers stops.

Adjustment of the depth of embedding of seed material into the soil is carried out using adjustable packing wheels. This contributes to a uniform depth of seed embedding. The packing wheels compact the soil over the furrows, creating contact between the seeds and the soil.

When moving the seeder on public roads, it is possible to use a transport device that consists of a wheelset and a drawbar

MAIN SPECIFICATIONS

Parameters	Unit	Values
Type of seeder	–	mounted
The seeder is aggregated with tractors of the following traction classes	–	1,4
Working speed	km/h	8–12
Number of seeding devices	pcs	8
Number of fertilizer devices	pcs	4 x 2
Row spacing	cm	70
Working coverage	m	5,6
Depth of seeding	cm	4–12
Dry weight of the seeder with a fertilizer system	kg	1400
Operational weight of the seeder (including seeds and fertilizers)*	kg	1800
Overall dimensions of the seeder (excluding the length of markers and transport device) length x width x height	cm	6700x 2000x 1400
Capacity of a fertilizer hopper (1 piece)	dm3	56
Capacity of a seed hopper (1 piece)	dm3	28
Mean time between failures, minimum	h	100
Instability of the total seeding, max	%	3
Unevenness of seeding between the devices, max	%	3
Seed crushing, max	%	0,2
The number of seeds embedded at a given depth ± 1 cm, at least	%	85



Секция в сборе

Ring–toothed field packer

KPKZ–9

The ring–toothed field packer KPKZ–9 (further – the packer) is designed for surface soil treatment before and after sowing:

crushing of lumps, levelling of the surface, packing of pre–plowed or loosened soil;

ensuring the contact of seeds with the soil, packing to form a dense surface layer to retain moisture (post–sowing treatment).

The working conditions of the packer shall meet the following requirements:

Soil temperature – from 0 °C;

Soil moisture – from 14% to 23%;

Soil hardness – no more than 3 Mpa;

The absence of boulders, stones and non–crushed crop residues.

The design and category in terms of the impact of climatic factors of the external environment shall comply with GOST 15150–69 (version U, location category 1).

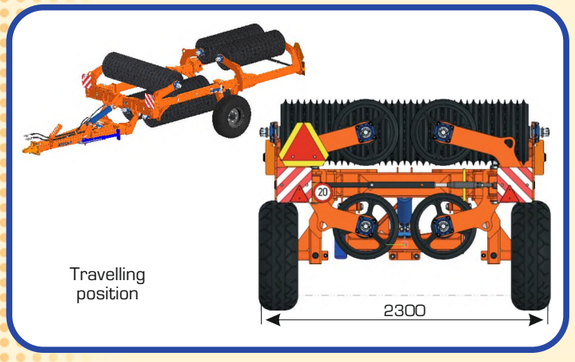
The packer design.

The packer consists of five modules: central (2 m), 2 side (2 m), 2 extreme (1.5 m). The modules are interconnected by hinged joints, which allows to copy the irregularities of the field within the width of the modules. The module is a load–bearing bar, to the cheeks of which a packing wheel is attached (the packing wheel has the ability to be dismantled from the module without removing the module from the main structure).

The transport wheels are mounted on a stilt pivotally connected to a bar, and have the ability to rotate to facilitate the unfolding of the packer into the working position. The design of the stilt implies the possibility of replacing the wheel with another standard size, if necessary – the recommended (as well as standard) wheel size of 12.5/80–15.3 by 14.

The working elements of the unit are ring–toothed packing wheels (2 and 1.5 m). The packer consists of a gang of wedge rings and toothed discs on a circular axis. The gang is clamped on the axis using crown nuts (at that the wedge rings must rotate simultaneously with the axis in the bearings, as a single gang). Disc springs allow to unload the side pieces of the packing wheel from the axial loads acting on the packing wheel (that is, with a short–term displacement of the packing wheel sideways). The packing wheel is supported by UCF210 bearing assemblies, the bearings in which have a spherical outer cage.

During operation, the toothed discs rotate freely on the outer part of the hubs of the wedge rings, in addition, together with rotation, the radial displacement of the discs relative to the rings occurs. The displacement and the difference in the rotation speed of the discs allows them to work as scrapers. Accordingly, the packing wheel is self–cleaning during operation.



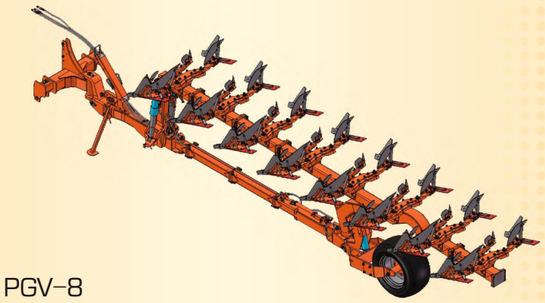
MAIN SPECIFICATIONS

Parameters	Unit	Values
Working coverage	m	8,9
Working speed	km/h	up to 12
Transportation speed	km/h	max 20
Productivity per hour of basic time:	ha/h	up to 10,7
Diameter of packing wheel	mm	530
Structural weight	kg	4600+–100
Overall dimensions In transportation position: – length – width – height In working position: – length – width – height	 mm mm 	 6700 2300 1700 3500 9200 1100
Aggregated tractor	h.p.	from 120
Aggregation method	–	semitrailer
Crumbling of soil (size of lumps 2–8 cm)	%	90

Smooth plow

PGV–3, PGV–4, PGV–5, PGV–8

PGV–5



PGV–8

The mounted rotary smooth plow (PGV–3) and semi–mounted smooth plow (PGV–4, PGV–5, PGV–8) make it possible to cultivate the soil without ridges and back furrows, convenient for the operation of seeders, combines.

A distinctive feature of the PGV plow is the stepwise adjustable grip width of the housing. The width of the housing grip (35 cm; 40 cm; 45 cm; 50 cm) is changed stepwise by manually turning the leg with the rearrangement of the mounting bolts of the leg on the frame. This makes it easy to adjust the plow according to different conditions (soil features, tractor, etc.).

The rotation of the plow is carried out using a double–acting hydraulic cylinder with automatic switching and does not require very high pressure of the tractor hydraulic system to turn over.

For optimal adjustment of the working position, it is possible to adjust the skimmers in the forward –backward, high–deep directions.

The special suspension of the support swing wheel with an elastic element allows to significantly reduce the dynamic loads on the unit, easily transfer it from the transport position and vice versa, which ensures safe transportation.

MAIN SPECIFICATIONS

Parameters	Unit	Value			
		PGV–3	PGV–4	PGV–5	PGV–8
Number of housings	pcs	3	4	5	8
Housing working width	cm	35; 40; 45; 50	30; 40; 45; 50	35, 40, 45, 50	35, 40, 45, 50
Plow working width	m	up to 1,8	up to 2	up to 2,5	up to 3
Distance between housings	cm	102	102	102	102
Weight	kg	800	1630	1700	4183
Plowing depth	cm	20–30	20–30	20–30	20–30
Distance from the support surface to the frame	cm	80	80	80	80
Housing protection		tensile bolt	tensile bolt	tensile bolt	tensile bolt
Type of blade		cylindrical, screw, strip	cylindrical, screw, strip	cylindrical, screw, strip	cylindrical, screw, strip
Depth of covering of plant residues	cm	12–15	15	15	15

Aggregation with tractors with a capacity from 143 h.p., type MTZ–1221.

Roll picker

PR–18

PR–18 roll picker is designed for loading, transporting and unloading rolls of hay, haylage, straw with formed balers. The control is carried out by one machine operator without leaving the cabin. When using the picker, just one tractor is needed, which does not require additional equipment and does not require the organization of work of a whole complex of agricultural machines for many days (there is no need to use loading and unloading equipment in the field and at the place of storing rolls).

The maximum number of rolls is 18 (with a roll length of 1220 mm and a weight of 732 kg). The weight of the transported cargo is 13200 kg. Loading of rolls takes place on the move without stopping the tractor. A distinctive design feature of the picker is that it is possible to grab the roll from either side (turns over automatically), load the rolls in two rows (automatic distribution in rows). The bale pusher is stopped using hydraulic limit switches (without operator involvement). There is a system to protect the pusher drive from emergency overloads. To facilitate unloading, the platform is tilted using two hydraulic cylinders. There is a selector hydraulic valve for loading/unloading. Loading is possible only in the extreme forward position of the bale pusher. There is a full load indicator. The movement of the rolls along the picker and unloading are carried out using chain conveyors powered by a hydraulic motor. The loading mechanism is equipped with a transport lock eliminating the possibility of spontaneous lowering of the grip. The picker is readjusted to different bale sizes (bale diameter, length). The width of the grip is 956 mm to 1376 mm. The picker is well balanced, which ensures smooth running and ease of control when driving.

The PR–18 is aggregated with tractors with a capacity of at least 130 h.p., a separate–aggregate hydraulic system with a flow rate of at least 76 l/min at an operating pressure of 14 MPa. Two hydraulic outputs are required for operation (from the tractor's hydraulic system).

MAIN SPECIFICATIONS

Name	Unit	Value
Unit type		
Transportation speed	km/h	20
Structural weight	kg	4400±50
Weight of the picker with cargo	kg	17600±50
Dimensions:		
in transportation position		
– width	mm	3225±20
– height	mm	3740±25
– length	mm	13940±20
in working position:		
– width	mm	5970–3630
– height	mm	3740–1840
– length	mm	13940
Ground clearance in the transportation position	mm	275±25
Capacity (number and weight of rolls)	pcs/kg	18/730 14/940 12/1100
Tires Number of tires		12,5/80–18
Service brake	–	Drum type
Service brake drive	–	Pneumatic (single–drive)
Parking brake drive	–	Mechanical (for two rear wheels)
Service personnel	people	tractor driver

Aggregation with tractors with a capacity of at least 130 h.p.

Wood waste shredder

ID–150

ID–150 wood shredder is designed for processing wood waste with a diameter of up to 150 mm into chips, which can be used as fertilizer, bedding for animals, as well as for forming briquettes for heating. It is excellent for agricultural and municipal needs (shredding of replaceable trees in urban conditions, disposal of scrubs of forest belts and park alleys, disposal of Christmas trees).

The shredder is aggregated with tractors of traction class 1.4 on a three–ton rear attachment NU–2 driven by a power take–off shaft of at least 40 h.p.

The feed rollers are driven from own hydraulic station with the possibility of adjusting the productivity and size of the chips. The direction of chips discharge changes, which allows it to be loaded into the vehicle body or container.

The shredder is designed according to a modular principle with the possibility of being driven in fixed conditions by an electric motor.

MAIN SPECIFICATIONS

Name	Unit	Value
Model type		disc
Chips thickness	mm	up to 8
Size of the inlet window of the feed chute	mm	990x870
Size of trees to be crushed	mm	up to 150
Number of blades	pcs	3
Weight	kg	460
Recommended rpm	rpm	1000
Power consumption	h.p.	40
Dimensions:		
– length	mm	1986
– width	mm	1634
– height	mm	2299

Roll picker

PR–18

PR–18 roll picker is designed for loading, transporting and unloading rolls of hay, haylage, straw with formed balers. The control is carried out by one machine operator without leaving the cabin. When using the picker, just one tractor is needed, which does not require additional equipment and does not require the organization of work of a whole complex of agricultural machines for many days (there is no need to use loading and unloading equipment in the field and at the place of storing rolls).

The maximum number of rolls is 18 (with a roll length of 1220 mm and a weight of 732 kg). The weight of the transported cargo is 13200 kg. Loading of rolls takes place on the move without stopping the tractor. A distinctive design feature of the picker is that it is possible to grab the roll from either side (turns over automatically), load the rolls in two rows (automatic distribution in rows). The bale pusher is stopped using hydraulic limit switches (without operator involvement). There is a system to protect the pusher drive from emergency overloads. To facilitate unloading, the platform is tilted using two hydraulic cylinders. There is a selector hydraulic valve for loading/unloading. Loading is possible only in the extreme forward position of the bale pusher. There is a full load indicator. The movement of the rolls along the picker and unloading are carried out using chain conveyors powered by a hydraulic motor. The loading mechanism is equipped with a transport lock eliminating the possibility of spontaneous lowering of the grip. The picker is readjusted to different bale sizes (bale diameter, length). The width of the grip is 956 mm to 1376 mm. The picker is well balanced, which ensures smooth running and ease of control when driving.

The PR–18 is aggregated with tractors with a capacity of at least 130 h.p., a separate–aggregate hydraulic system with a flow rate of at least 76 l/min at an operating pressure of 14 MPa. Two hydraulic outputs are required for operation (from the tractor's hydraulic system).

MAIN SPECIFICATIONS

Name	Unit	Value
Unit type		
Transportation speed	km/h	20
Structural weight	kg	4400±50
Weight of the picker with cargo	kg	17600±50
Dimensions:		
in transportation position		
– width	mm	3225±20
– height	mm	3740±25
– length	mm	13940±20
in working position:		
– width	mm	5970–3630
– height	mm	3740–1840
– length	mm	13940
Ground clearance in the transportation position	mm	275±25
Capacity (number and weight of rolls)	pcs/kg	18/730 14/940 12/1100
Tires Number of tires		12,5/80–18
Service brake	–	Drum type
Service brake drive	–	Pneumatic (single–drive)
Parking brake drive	–	Mechanical (for two rear wheels)
Service personnel	people	tractor driver

Aggregation with tractors with a capacity of at least 130 h.p.

Wood waste shredder

ID–150

ID–150 wood shredder is designed for processing wood waste with a diameter of up to 150 mm into chips, which can be used as fertilizer, bedding for animals, as well as for forming briquettes for heating. It is excellent for agricultural and municipal needs (shredding of replaceable trees in urban conditions, disposal of scrubs of forest belts and park alleys, disposal of Christmas trees).

The shredder is aggregated with tractors of traction class 1.4 on a three–ton rear attachment NU–2 driven by a power take–off shaft of at least 40 h.p.

The feed rollers are driven from own hydraulic station with the possibility of adjusting the productivity and size of the chips. The direction of chips discharge changes, which allows it to be loaded into the vehicle body or container.

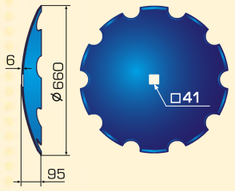
The shredder is designed according to a modular principle with the possibility of being driven in fixed conditions by an electric motor.

MAIN SPECIFICATIONS

Name	Unit	Value
Model type		disc
Chips thickness	mm	up to 8
Size of the inlet window of the feed chute	mm	990x870
Size of trees to be crushed	mm	up to 150
Number of blades	pcs	3
Weight	kg	460
Recommended rpm	rpm	1000
Power consumption	h.p.	40
Dimensions:		
– length	mm	1986
– width	mm	1634
– height	mm	2299

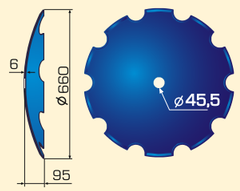
Discs range

Toothed disc BDT-7U.01K.00.08A



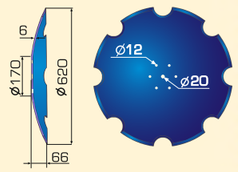
weight – 15 kg
hardness HRC-39...45
material – steel 65 g

Toothed disc (BDT – 7U)



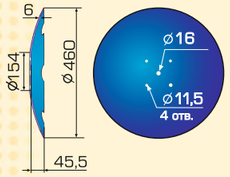
weight – 15 kg
hardness HRC-39...45
material – steel 65 g

Toothed disc Ø620x6"L"



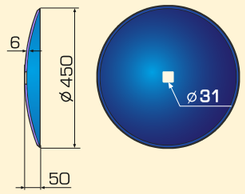
weight – 13,14 kg
hardness HRC-39...45
material – BORON
ø of hole centers – 130 mm

Disc Ø460x6"K"



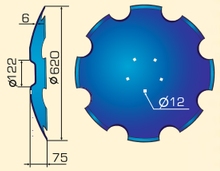
weight – 7 kg
hardness HRC-39...45
material – steel 65 g
ø of hole centers – 120 mm

Stubble breaker disc (LDG – 12B)



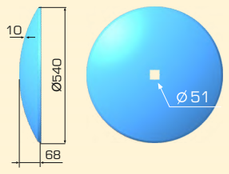
weight – 7,95 kg
hardness HRC-39...45
material – steel 65 g

Toothed disc L-620x6 "V"



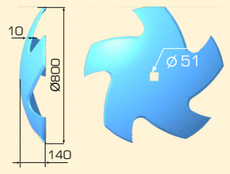
weight – 16 kg
hardness HRC-39...45
material – steel 65 g
ø of hole centers – 160 mm

Spherical smooth disc
BDT-6PR.06.00.110



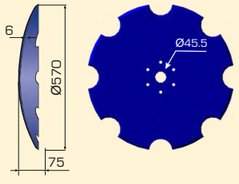
weight – 22 kg
hardness – HRC – 39...45
material – boron-containing steel
Size of the central hole – Ø51x51

Spherical crescent-shaped disc
BDT-6PR.06.00.106A/-01 (left/ right)



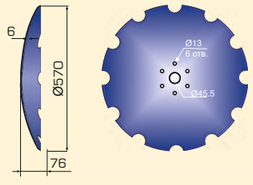
weight – 32 kg
hardness – HRC – 39...45
material – boron
Size of the central hole – Ø51x51

Toothed disc diam. 570x6
BDM 570x6



weight – 10,6 kg
hardness – HRC – 39...45
material – boron
size of the central hole – Ø45.5

DM 570x6 cutter disc



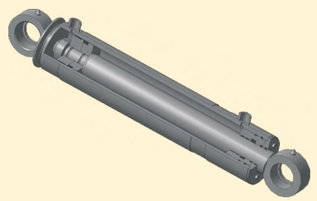
weight – 10,6 kg
hardness – HRC – 39...45
material – boron
size of the central hole – Ø45.5

Hydraulic cylinders

TSG-100.56x200.11-01

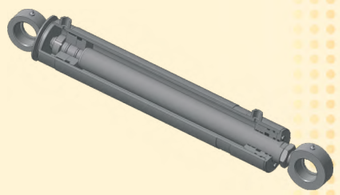
length – 584 mm
applicability:
BDM-4x4PM, 3,2x4P, 2,4x4P, 6x4P, 5x4P DM-3.2, DM-4, DM-5.2, DM-6, DM-3.2RK

TSG-100.56x400.11



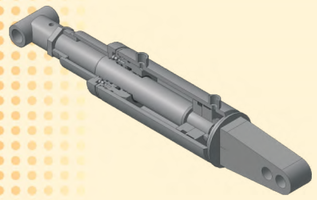
length – 690 mm
applicability:
BDM-4x4PM, 3,2x4P, 2,4x4P, 6x4P, 5x4P; DM-3.2, DM-4, DM-5.2, DM-6, DM-3.2RK, DM-9x2; SDM-6x2, ADU-6, 6A, 6N

TSG-100.56x500.11-01



length – 810 mm
applicability:
KMO-11, KMO-11/17, KMO-11/25, KMO-9, KMO-9/13, ADU-6A, ADU-6AK, DM-5x2, DM-6, DM-9x2, SDM-6x2

TSG-100.56x150/740

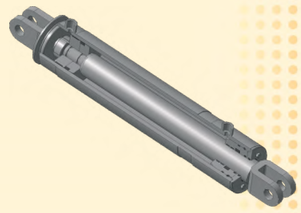


length – 795 mm
applicability:
DM-3x2M, DM-4x2, DM-6x2M, DM-7x2M, DM-9x2, ADU-6A, ADU-6AK

TSG-100.56x510.11

length – 890 mm
applicability:
DM-6x2M, DM-7x2M, DM-5x2M

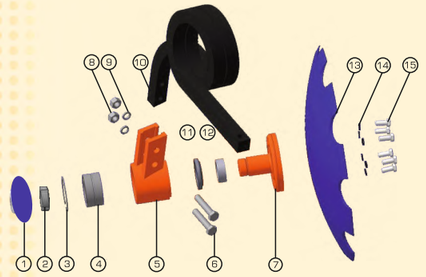
TSG-100.56x400.01



length – 792 mm
applicability:
KPO-9, KPO-13

Cutting units range

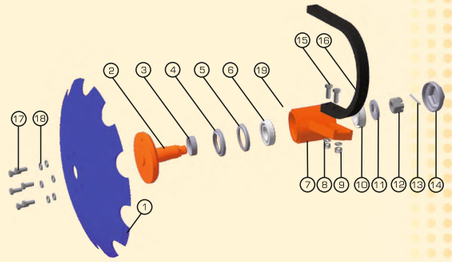
UR-9KPS 00.000.SB



No.	Name	Weight
1.	Cover UR-9KPS.01.200	0,1 kg
2.	Nut 45x2 UR-10.01.002	0.16 kg
3.	Ring V85	0,03 kg
4.	Bearing 6U-537909K1S17	0,90 kg
5.	Housing of the cutting unit UR-9.01.100 SB	3,38 kg
6.	Bolt M16x80	
7.	Disc axis UR-9.01.001	3,67 kg
8.	Nut M16	
9.	Washer 16.65G	
10.	Stilt DM-6x2PN.13.00.001	18,0 kg
11.	Collar 2.2-60x80-4	
12.	Spacer UR-10.01.004	0,12 kg
13.	Disc BDM 560-6A	10,6 kg
14.	Washer 12.65G	
15.	Bolt M12x25	

The cutting unit is installed on units of DM – "A" series

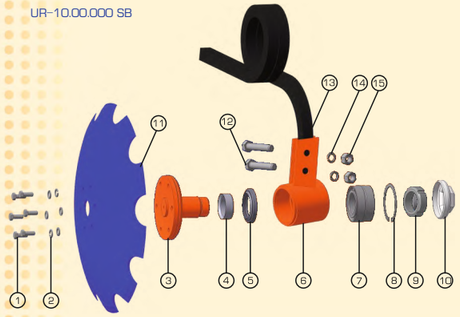
UR-5.00.00.000 "A" SB



No.	Name	Weight
1.	Disc BDM 560-6A	10,6 kg
2.	Axis of the disc BDM-4x4.01.001 "A"	4,84 kg
3.	Spacer BDM-4x4.01.004 "M"	0,15 kg
4.	Collar 2.2-60x85-4	
5.	Ring BDM-4X4.01.006 "M"	0,08 kg
6.	Bearing 7509 "A"	
7.	Housing of the cutting unit UR-5.01.01.000	5,01 kg
8.	Washer 20.65G	
9.	Nut M20	
10.	Bearing 7508 "A"	
11.	Washer BDM-4x4.01.007-03 "M"	0,12 kg
12.	Nut M 27x2 BDM-4x4.01.002	0,16 kg
13.	Cotter pin 4x50.016	
14.	Cover BDM-4X4.01.008 "SH"	0,27 kg
15.	Bolt M20x75	
16.	Stilt UR-5.00.00.001	9,51 kg
17.	Bolt M12x25	
18.	Washer 12.65G	
19.	Oil feeder 1.2.TS6	

The cutting unit is installed on four-row units DM-3,2, DM-4, DM-5,2, DM-6

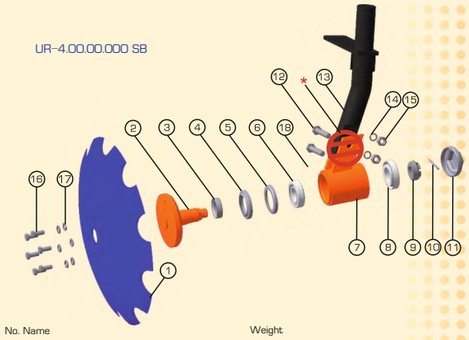
UR-10.00.000 SB



No.	Name	Weight
1.	Bolt M12x25	
2.	Washer 12.65G	
3.	Disc axis UR-10.01.001	3,90 kg
4.	Spacer UR-10.01.004	0,12 kg
5.	Collar 2.2-60x80-4	0,10 kg
6.	Housing of the cutting unit UR-10.01.100 SB	3,38 kg
7.	Bearing 6U-537909K1S17	0,90 kg
8.	Ring V85	0,03 kg
9.	Nut 45x2 UR-10.01.002	0,16 kg
10.	Cover BDM-4x4.01.008 "SH"	0,27 kg
11.	Disc BDM 560-6A	10,6 kg
12.	Bolt M 16x80	
13.	Stilt DM-6x2PN.13.00.001	17,0 kg
14.	Washer 16.65G	
15.	Nut M16	

The cutting unit is installed on the machines of DM series

UR-4.00.00.000 SB

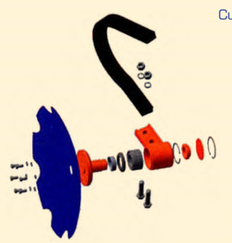


No.	Name	Weight
1.	Disc BDM 560-6A	10,6 kg
2.	Disc axis UR-4.02.00.001	4,12 kg
3.	Spacer BDM-4x4.01.004 "M"	0,15 kg
4.	Collar 2.2-60x85-4	
5.	Ring UR-4.02.00.003	0,07 kg
6.	Bearing 7509 "A"	
7.	Housing of the cutting unit UR-4.02.01.000	3,61 kg
8.	Bearing 7509 "A"	
9.	Nut BDM 5,2 05.02.009	0,16 kg
10.	Cotter pin 5x50.016	
11.	Cover BDM-4x4.01.008 "SH"	0,27 kg
12.	Bolt M16x90	
13.	Stilt UR-1.01.00.000 K	10,1 kg
14.	Washer 16.65G	
15.	Nut M16	
16.	Bolt M12x25	
17.	Washer 12.65G	
18.	Oil feeder 1.2.TS6	

The cutting unit is installed on the machines of BDM, ADU-6A series

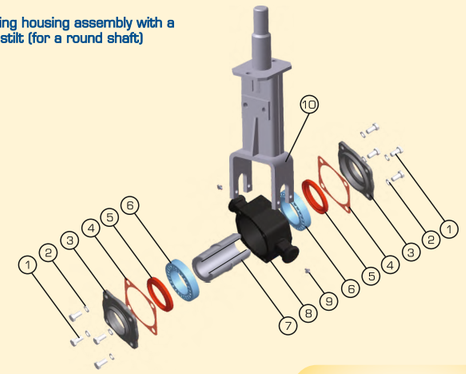
* – when ordering spare parts, pay attention to the coupling of the housing of the cutting unit with the stilt

Cutting unit UR-6

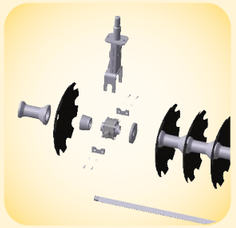


1.	Toothed disc diam.565x6	10,6 kg
2.	Axis of the disc UR-9.01.001P	3,48 kg
3.	Spacer UR-10.01.004	0,13 kg
4.	Collar 2.2-60x80-4 GOST 875-79	0,15 kg
5.	Bearing 6U-537909L1S17	0,79 kg
6.	Housing of the cutting unit UR-6.01.00.000 (right, left)	3,91 kg
7.	Ring V85 GOST 13943-86	0,0204 kg
8.	Nut UR-9.01.002P	0,196 kg
9.	Cover UR-9.01.003P	0,098 kg
10.	Ring V90 GOST 13943-86	0,0218 kg
11.	Bolt M12x25 GOST 7798-70 – 6 pcs.	0,037 kg
12.	Washer 12 GOST 6402-70 – 6 pcs.	0,00345 kg
13.	Bolt M20x85 GOST 7798-70 – 2 pcs.	0,2777 kg
14.	Washer 20 GOST 6402-70 – 2 pcs.	0,01269 kg
15.	Nut M20 GOST 5915-70 – 2 pcs.	0,07144 kg
16.	Stilt UR-6.00.00.001 right/left	10,46 kg

Bearing housing assembly with a stilt (for a round shaft)

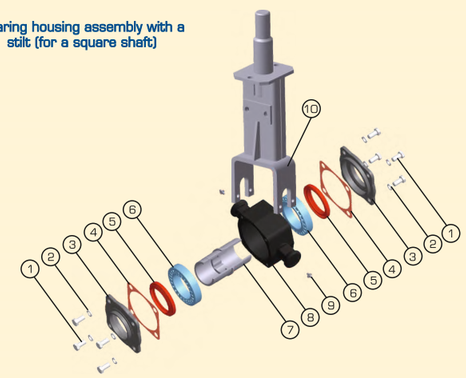


No.	Name	Weight
1.	Bolt M12x25	10,0 kg
2.	Washer 12.65G	4,04 kg
3.	Cover BDT-7UK.01.01.002	1,04 kg
4.	Gasket BDT-7U.01 K.01.003	
5.	Collar 2.2-70x95-1	0,08 kg
6.	Bearing No.2007114	
7.	Sleeve BDT-7U.01.03.01	1,79 kg
8.	Housing KAD-07A.01.00.05	9,05 kg
9.	Oil feeder 1.2.TS6	
10.	Stilt BDT-7U.01.01.00 SB	13,6 kg



The cutting unit is installed on the disc harrow BDT-7U

Bearing housing assembly with a stilt (for a square shaft)

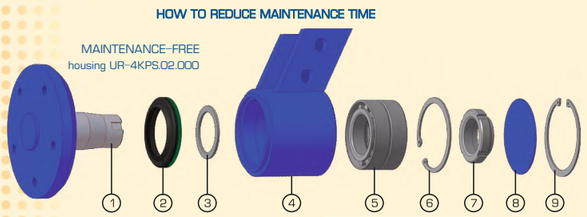


No.	Name	Weight
1.	Bolt M12x25	10,0 kg
2.	Washer 12.65G	4,04 kg
3.	Cover BDT-7UK.01.01.002	1,04 kg
4.	Gasket BDT-7U.01 K.01.003	
5.	Collar 2.2-70x95-1	0,08 kg
6.	Bearing No.2007114	
7.	Sleeve BDT-7U.01 K.01.001	1,13 kg
8.	Housing KAD-07A.01.00.05	9,05 kg
9.	Oil feeder 1.2.TS6	
10.	Stilt BDT-7U.01.01.00 SB	13,6 kg

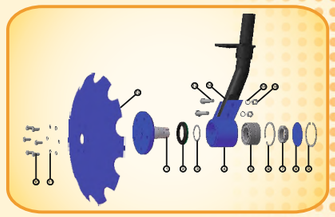
The cutting unit is installed on the disc harrow BDT-7UK"A"

Cutting units range

HOW TO REDUCE MAINTENANCE TIME



1. Disc axis UR–4KPS.02.001
2. Cassette seal (Germany)
3. Ring UR–10.01.003
4. Housing UR–4KPS.02.100 SB
5. Bearing 6U–537909K1S17 (Russia)
6. Ring V85.65G
7. Nut UR–9KPS.01.002 (45x2)
8. Cover UR–9KPS.01.200
9. Ring V90.65G



UR–4KPS

Calculation of operating time of disc harrows manufactured by Belagromash–Servis n.a. V.M. Ryazanov, OJSC

Machine	Number of assemblies	Operating time, at least
BDM–3,2x4	32 pcs	3200 ha
BDM–4x4	40 pcs	4000 ha
BDM–5x4	48 pcs	4800 ha
BDM–6x4	56 pcs	5600 ha
BDR–8x4	82 pcs	8200 ha
BDR–10x4	98 pcs	9800 ha

Advantages of housing UR–4KPS:

The use of UR–4KPS allows to increase the productivity of the machine by eliminating the time for maintenance of assemblies. The cutting unit does not require any maintenance during its entire service life. The machine operator does not need to lubricate the assemblies and adjust the gaps in the bearings, and this is a direct way to increase the productivity of the unit and eliminate downtime in the field.

The use of a Simrit cassette seal (oil seal in the oil seal) eliminates the ingress of dust and moisture into the hub.

The hub axis is made on high–precision equipment of the leading world manufacturers, the accuracy of the coupling dimensions is controlled by a computer, which eliminates the human factor.

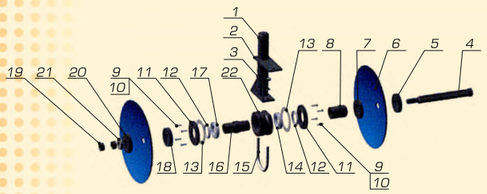
The length of the threaded connection of the axis was increased due to the use of a double bearing, which made it possible to fix the bearing more securely, control the torque of the nut tightening force and crimping the nut into the grooves of the axis by 100%. The axis undergoes heat treatment to increase strength, which eliminates failure at the threaded connection.

The fasteners are welded to the housing along the entire perimeter of the fastening (double–sided seam).
Double row hub bearing 6U–537909K1S17 (Russia) – analogues are used on GAZ–3111, Gazelle, and Sobol vehicles.

The combination of these advantages with high–quality manufacturing and assembly ensures guaranteed operating time per assembly of at least 100 ha.

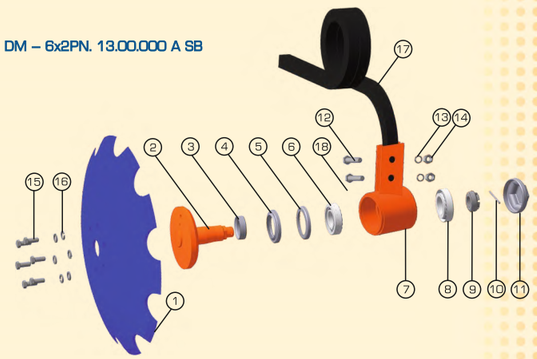
Подходит на все аналоги дисковых борон серии БДМ.

LDG–12B.15.00. D SB



1. Stilt assembly LDG–12B.15.02.00	6.2 kg
2. Nut M16	
3. Washer 16.65G	
4. Axis of the cutting unit LDG–12B.15.01.00D	2.5 kg
5. Outer washer LDG–12B.13.00.03	1 kg
6. Disc LDG–10M.04.00.11–02	6.8 kg
7. Convex sleeve LDG–12B.13.00.02	0.97 kg
8. Sleeve LDG–12B.13.00.08	1 kg
9. Bolt M8x30	
10. Washer 8	
11. Cover LDG–10M.01.01 A.04B	0.79 kg
12. Collar 1.1–55x80–3	
13. Gasket LDG–10M.01.01.06	0.005 kg
14. Oil feeder 1.2.Kdb	
15. Clamp LDG–12B.00.00.05	0.6 kg
16. Sleeve LDG–12B.13.02.01 B	1.2 kg
17. Bearing 111	
18. Concave sleeve LDG–12B.13.00.01	0.93 kg
19. Nut LDG–12B.13.00.06	0.1 kg
20. Preload washer LDG–12B.13.00.04	1 kg
21. Washer LDG–10M.04.00.12	0.1 kg
22. Housing LDG–12B.13A.02.02A	3.5 kg

DM – 6x2PN. 13.00.000 A SB

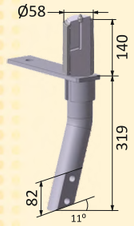


No.	Name	Weight
1.	Disc BDM 560–6 A	10.6 kg
2.	Disc axis UR–4.02.00.001	4.12 kg
3.	Spacer BDM–4x4.01.004 "M"	0.15 kg
4.	Collar 2.2–60x85–4	
5.	Ring UR–4.02.00.003	0.07 kg
6.	Bearing 7509	
7.	Housing of the cutting unit DM–6x2 PN.13.01.100A	3.84 kg
8.	Bearing 7508	
9.	Nut M36x2 UR–4.02.00.002A	0.16 kg
10.	Cotter pin 5x50.016	
11.	Cover BDM–4x4.01.008 "SH"	0.27 kg
12.	Bolt M16x80	
13.	Washer 16.65G	
14.	Nut M16	
15.	Bolt M12x25	
16.	Washer 12.65G	
17.	Stilt DM–6x2PN.13.00.001	17.0 kg
18.	Oil feeder 1.2.TS6	

The cutting unit is installed on double row units of DM series

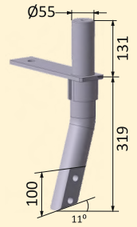
Stilts range

Rotary stilt BDM (UR–11AS)



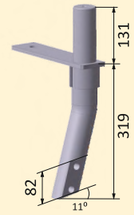
UR-1.01.00.000 "S"
weight – 10.0 kg

Rotary stilt BDM (UR–3)



BDM 4x4 01.21.000 "A"
weight – 8.5 kg

Rotary stilt BDM (UR–1)

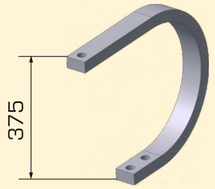


UR-1.01.00.000
weight – 10.8 kg

Rotary stilt BDM–8x4

BDR 8x4.11.01.00
weight – 11.2 kg

Stilt of the cutting unit UR–5A



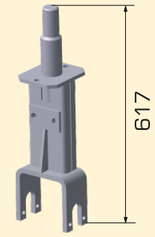
UR–5.00.00.001
weight – 9.51 kg

Stilt DM–6x2

DM–6x2 PN.13.00.001
weight – 17.3 kg

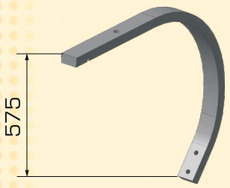
Stilt DM

Disc gang stilt



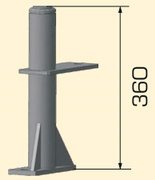
BDT–07.01.01.00 SB
weight – 13.1 kg

Cultivator stilt KPK–7,4



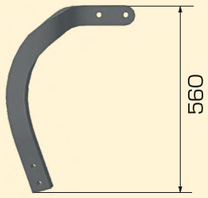
APP–04.03.00.05
weight –12.13 kg

Stilt LDG



LDG–12B.15.02.00 SB
weight – 6.38 kg

Stilt SP–1



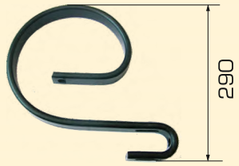
SP–1.00.00.001A
SP–1.00.00.001A–01
weight – 9.5 kg

Stilts from other manufacturers

Stilt KPO

1.W241032
weight – 3 kg

Spring KMO



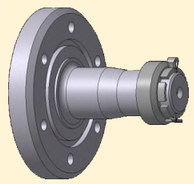
15–070
weight – 2.7 kg

Reinforcing spring

1.W241030–10
weight – 1.5 kg

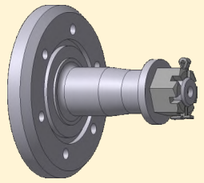
Axes range

Axis of the cutting unit UR–4.02.00.001
assembly with a nut M36x2



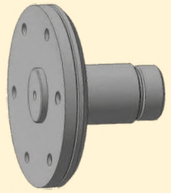
weight – 4.30 kg

Axis BDM 4x4.01.001
assembly with nut and washer M27x2



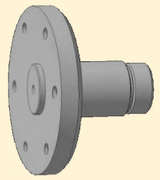
weight – 4.90 kg

Axis UR–9.01.001–01



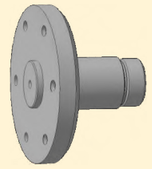
thread M45x2LH
weight – 3.57 kg

Axis UR–9.01.001



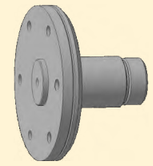
thread M45x2
weight – 3.57 kg

Axis UR–10.01.001–01



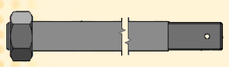
thread M45x2
weight – 3.57 kg

Axis UR–10.01.001



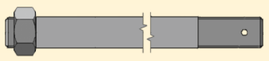
thread M45x2LH
weight – 3.57 kg

Axis BDT ∅ 45



BDT–7U.01.02.00 SB
length – 1722 mm, weight – 22.1kg
BDT–7U.02.01.00 SB
length – 1942 mm, weight – 24.9 kg

Axis BDT ∅ 40



BD–3,5.01.02.010 “A"
length – 1722 mm, weight – 21.7 kg
BD–3,8.01.02.010
length – 1942 mm, weight – 24.5 kg

Axis LDG–12B.13.01.00 SB

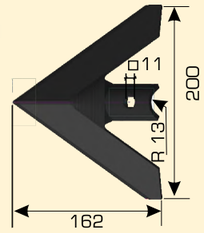
length – 1505 mm
weight – 10.53 kg

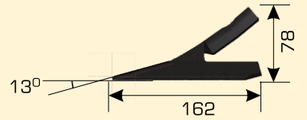
Axis BDT–B.PR.06.04.000

length – 2960 mm
weight – 60.38 kg

Legs range

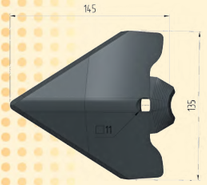
KMO–9.28.00.01



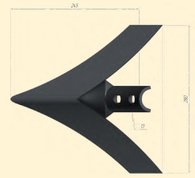


weight – 0.5 kg
hardness HRC 48...54

N–2089.000



KPS–9.07.00.001



Housings range

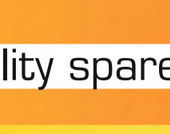
UR–1.02.01.000 "A" SB

housing of the cutting
unit BDM
weight – 4.3 kg

UR–4.02.01.000 "A"

housing of the cutting
unit BDM
weight – 3.61 kg

UR–5.01.01.000–01 SB



housing of the cutting
unit DM
weight – 5.05 kg

UR–5.01.01.000 SB

housing of the cutting
unit DM
weight – 5.05 kg

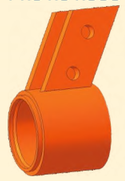
UR–9.01.100–01 SB

housing of the cutting
unit DM
weight – 3.38 kg

UR–9.01.100 SB

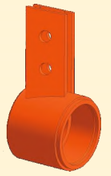
housing of the cutting
unit DM
weight – 3.38 kg

UR–11.01.01.000 SB



housing of the cutting
unit BDM, ADU
weight – 3.23 kg

UR–10.01.100 SB

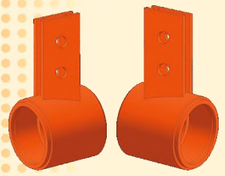


housing of the cutting
unit DM
weight – 3.38 kg

UR–10.01.100–01 SB

housing of the cutting
unit DM
weight – 3.38 kg

DM–6x2 PN.13.01.100 "A" SB
DM–6x2 PN.13.01.100–01 "A" SB



housing of the cutting
unit DM
weight – 3.84 kg

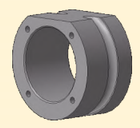
SP–1.03.01.000

Housing SP
weight – 4.15 kg

BDS–6x2 P.05.01.000
BDS–6x2 P.06.01.000

Housing of the cutting
unit BDS assembly
weight – 8.6 kg

LDG–12B.13A.02.02 "A"



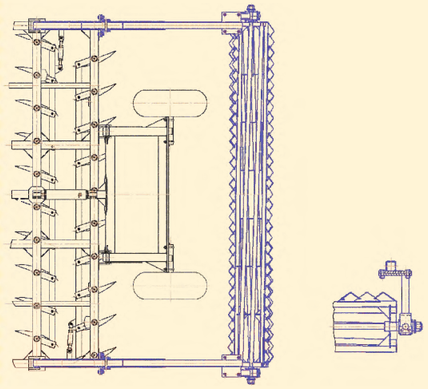
Housing LDG–12B
weight – 3.20 kg

KAD–07A.01.00.05

Housing BDT
weight – 9.05 kg

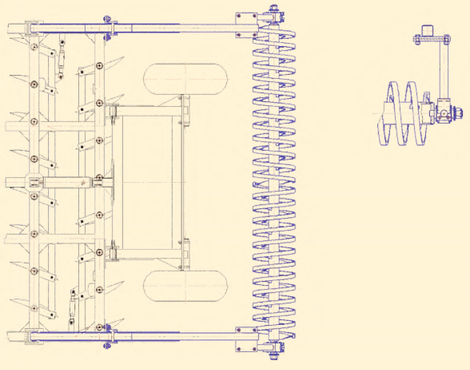
Packing wheels range

Ring–star packing wheel BDM



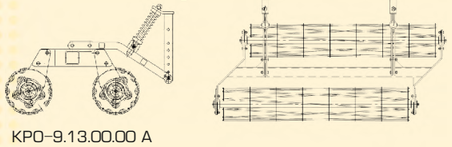
BDM–2,4x4 P.13.00.000 SB – 506.0 kg
BDM–3,2x4 P 12.00.000 SB – 549.5 kg
BDM–4x4 P 12.00.000 SB – 684.7 kg

Spiral packing wheel BDM

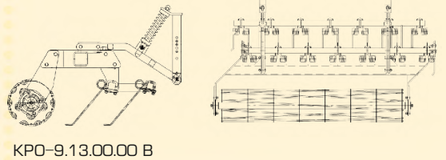


BDM–2,4x4 P.12.00.000–01 SB – 525.3 kg
BDM–3,2x4 P 12.00.000–01 SB – 734.4 kg
BDM–4x4 P 12.00.000–01 SB – 812.7 kg

Packing wheel module KPO

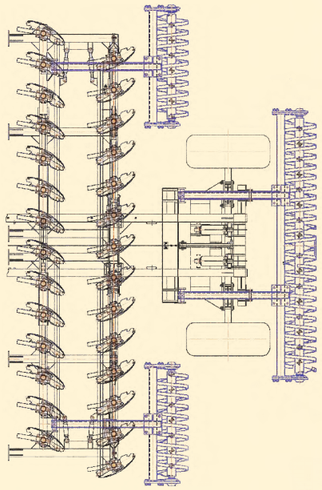


KPO–9.13.00.00 A

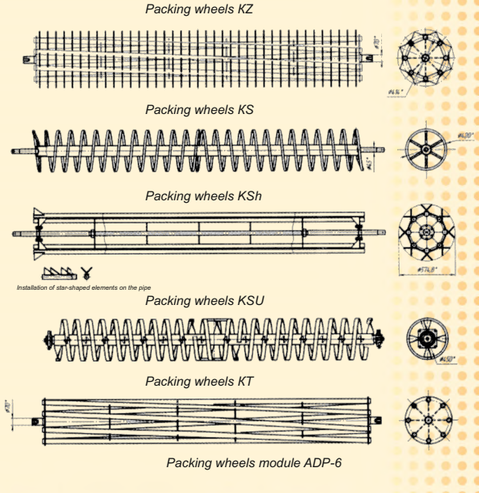


KPO–9.13.00.00 B

Spiral packing wheel ADU–6

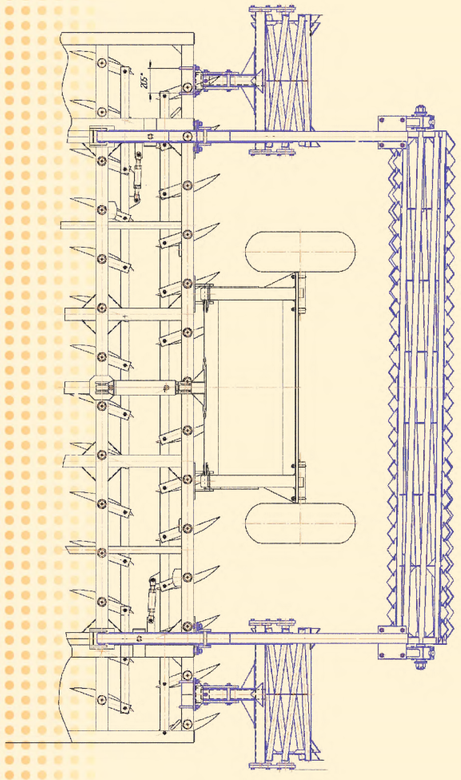


ADU–6.06.00.00 "M" SB
weight – 1375.7 kg



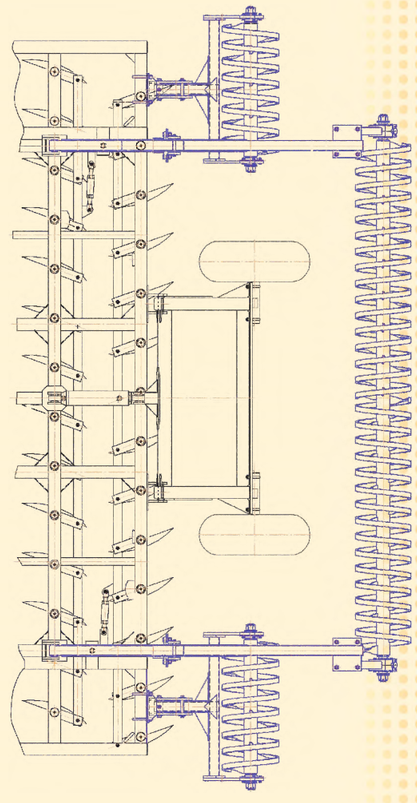
Packing wheels range

Ring–star packing wheel BDM



BDM–5x4 P.05.00.00 SB – 918.8 kg
BDM–6x4 P.05.00.000 SB – 1054 kg

Spiral packing wheel BDM



BDM–5x4 P.05.00.000–01 SB – 1138 kg
BDM–6x4 P.05.00.000 "S" SB – 1214 kg

Star-shaped packing wheel

Spiral packing wheel (30mm square) "on edge"

Components and spare parts manufactured at the plant

NUTS

M27x2

BDM–4x4.01.002
weight – 0.16 kg

M36x2

UR–4.02.00.002 A
weight – 0.16 kg

M39x4

BDT–7U.01 K.00.11 A
weight – 0.68 kg

M39x4

DB–2,8.02.03.006
weight – 0.8 kg

M42x3

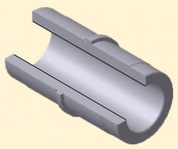
BDT–07.01.00.08
weight – 0.62 kg

M45x2

UR–10.01.002
weight – 0.16 kg

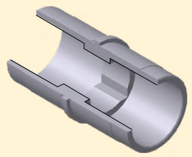
SLEEVES

BDT–7U.01.03.01



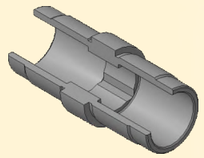
$\varnothing_{inner}$ 46
weight – 1.79 kg

BDT–7U.01K.01.001



Ø 41
weight – 1.13 kg

LDG–12B.13.02.01 B



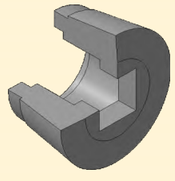
Ø 31
weight – 0.89 kg

Concave sleeve BDT–07.01.00.02

$\varnothing_{inner}$ 46.5
weight – 2.07 kg

Convex sleeve BDT–2,8.02.03.001 B

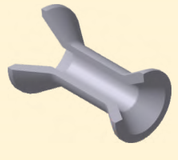
Convex sleeve BDT–07.01.00.01



Ø41
weight – 3.78 kg

SWIFTS

KAD–07A.01.00.01

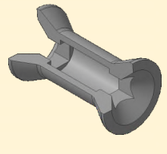


$\varnothing_{inner}$ 46
weight – 7.1 kg

BD–2,8.02.03.003

Ø 42
weight – 6.5 kg

LDG–10M.0400.08



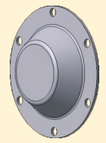
Ø 32
weight – 2.35 kg

European quality spare parts

Components and spare parts manufactured at the plant

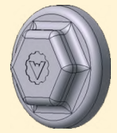
COVERS

Cover BDM–4x4



BDM–4x4.01.008–01
weight – 0.17 kg

Threaded cover BDM–4x4

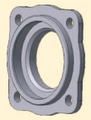


BDM–4x4.01.008 Sh
weight – 0.27 kg

Cover LDG

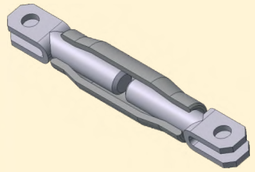
LDG–10M.01.01A.04"B"
weight – 0.80 kg

Cover BDT



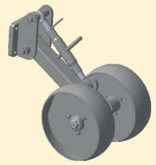
BDT–7U.01K.01.002 A
weight – 0.96 kg

BDM discs approach angle setting mechanism



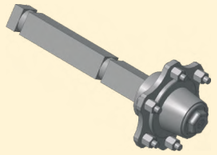
BDM–4x4 P.11.00.000
weight – 3.52 kg

Support wheel (with housing UR–4)



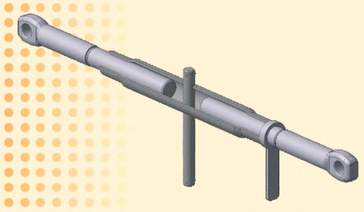
ADU–6.09.00.000 B
weight – 125.3 kg

Semi–axle of the carriage BDM



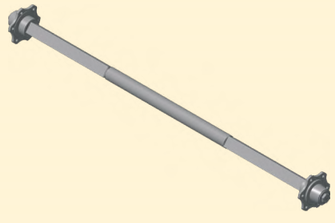
BDM–4x4 P.03.02.000 SB
weight – 25.34 kg

Tie rod assembly BDM



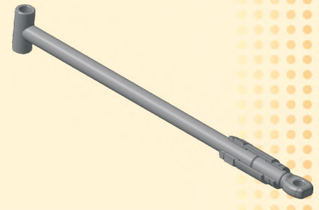
D 4x4 04.00.000
weight – 19.2 kg

Axle of the carriage ADU



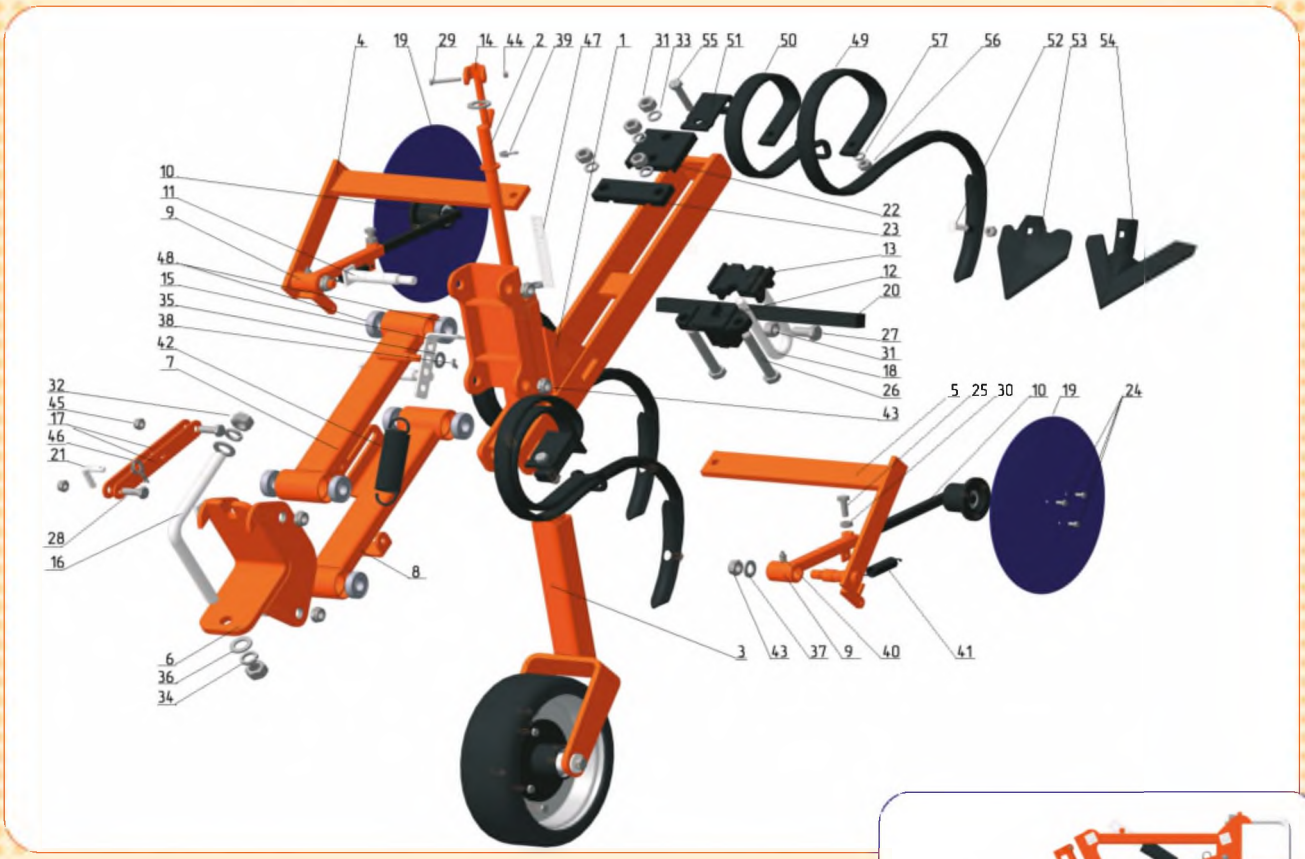
BDM 5,2.05.02.000 A
weight – 101.5 kg

Bracing ADP, ADU

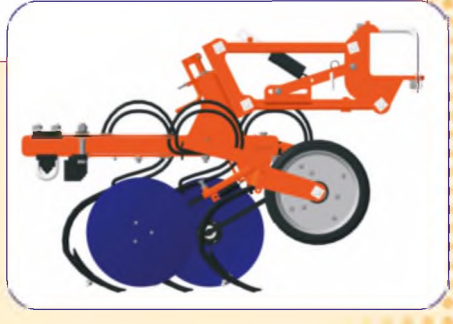


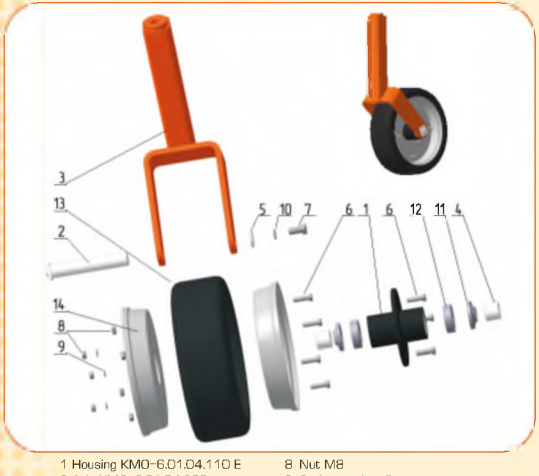
ADP–6.10.00.000
weight – 16.42 kg

Section KMO-6.01.00.000 E

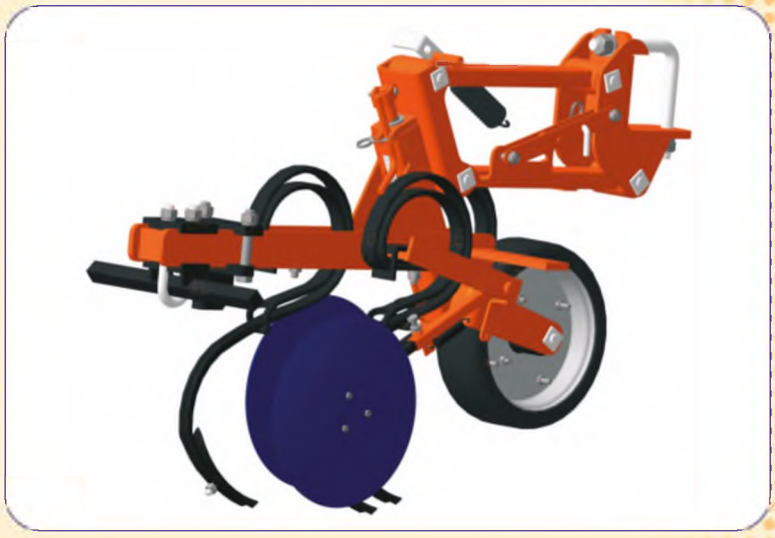


1 Frame KMO-6.0101000 E
2 Adjusting screw KMO-6.01.03.000 E
3 Wheel support KMO-6.01.01.000E
4 Right disc support KMO-6.01.05.000 E
5 Left disc support KMO-6.01.05.000 E -01
6 Bracket KMO-6.01.07.000 E
7 Upper tie-rod KMO-6.01.08.000 E
8 Lower tie-rod KMO-6.01.09.000 EE
9 Guide KMO-6.01.10.000 E
10 Bearing assembly KMO-6.01.11.000 E
11 Axle assembly KMO-6.01-12.00E
12 Holder KMO-6.01.13.000
13 Support plate KMO-6.01.15.000 E K
14 Handle KMO-6.01.16.000 E
15 Adjustment bar KMO-6.01.00.015 E
16 Clamp KMO-6.01.00.016
17 Tie-rod KMO-6.01.00.017 E
18 Bracket KMO-11.01.00.031E
19 Disc Ф810 KMO-11.01.00.020 A
20 Guide KMO-6.01.00.027E
21 Lock KMO-6.01.00.028 E
22 Clamping plate KMO-6.01.00.030 E
23 Slider KMO-6.01.00.025D
24 Bolt M6x14
25 Bolt M10x30
26 Bolt M16x105
27 Bolt M16x35
28 Bolt M12x35
29 Bolt M6x45
30 Nut M10
31 Nut M16
32 Nut M20x15
33 Spring washer 16
34 Spring washer 20
35 Washer 14
36 Washer 20
37 Washer 16
38 Cotter pin 3,2x25
39 Cotter pin 4x36
40 Oil feeder M10x1
41 Spring KMO-1101000.018 A
42 Spring KMO-1101000.014
43 Nut M16 DIN 985
44 Nut M6 DIN 985
45 Nut M12 DIN 985
46 Quick-release cotter pin 6.3032 4 7
47 Scale KMO-6.01.00.028 B
48 Bearing 80204
49 Stilt with a tip 32x10 1.W241032
50 Reinforcement spring 32x10 1W241030-10
51 Mounting bracket 50x6 1.NN17-3107
52 Planetary bolt (M10-8.8x40mm) 30.001-8
53 Pointed leg 135mm N-2089.000
54 Pointed leg H=200 KP0-9.28.00.01
55 Bolt M 12x60
56 Nut M12
57 Spring washer 12





1 Housing KMO-6.01.04.110 E
2 Axis KMO-6.01.04.200
3 Fork section KMO-6.01.04.300 E
4 Sleeve KMO-6.01.04.102 E
5 Washer KMO-6.01.04.001
6 Bolt M8x30
7 Bolt M12x25
8 Nut M8
9 Spring washer 8
10 Spring washer 12
11 Collar 2-32x52
12 Bearing 60205
13 Tire Sh-300X100
14 Disc KMO-11



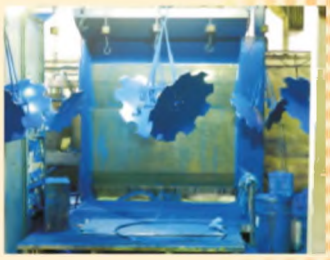
Production of discs

We have established production of discs of various modifications. We attach great importance to quality of our products. In order for our discs to meet the up-to-date requirements of tillage, a complex of technological innovations was introduced at the plant.

The discs are manufactured at a specialized site using tooling and modern high-tech equipment. Blanking operations are carried out on presses using multi-position dies. The disc forming operation is carried out simultaneously with quenching on water-cooled dies.

Increasing hardness and strength of the discs is provided by the operation of hard alloy surfacing. This operation not only makes the disc more wear-resistant, but also gives the effect of self-sharpening, which significantly extends service life of the disc. Using the available equipment allows us to significantly reduce the labor intensity and cost of discs, which makes it possible to compete not only with domestic, but also world manufacturers.



Our up-to-date painting facility allows to obtain high-quality coating with highly decorative properties. Due to electrostatic application, the distribution of powder paint is carried out evenly, and additional protection of the metal before painting in the form of application of insoluble phosphates to the surface makes this type of painting the best in terms of durability.

Equipment

The shop is equipped with machining centers of the world leading manufacturers capable of working in multimedia programs. The machining centers turn workpieces into the highest class parts in a minimum period of time.









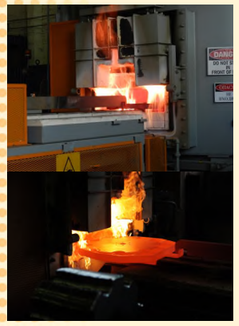


We provide high-quality services at an affordable price:


Welding, assembly, manufacture of metal structures.
- Semi-automatic electric arc welding.
- Argon arc welding..
- Welding production capacities, up-to-date Kemppi equipment and highly qualified workers make it possible to manufacture high-quality metal structures.

Mechanical processing.
- milling operation
- turning operation
- boring operation
- drilling operation
- grinding operation
- gear-milling operation
- slotting operation
- strip-cutting operation
- stamping operation.
- Technical characteristics and capabilities of our equipment, as well as dimensions of the processed products, are described in more detail on our website www.belagromash.ru.



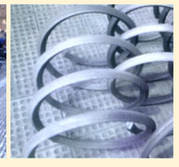




Heat treatment, carburization, high-frequency hardening.
- High-frequency device. Dimensions of the workpieces – square 34x34x1870 mm
- Heat treatment in electric shaft furnaces of workpieces Ø1000 mm, length 1500 mm
- Rotary furnace for heating disc-type workpieces Ø600 mm.•
- HFC. ДLength of workpiece – 100-1000 mm. Ø of workpieces – 20, 25, 45, 49, 55, 56, 60, 65, 75 mm.

Metal plasma cutting services.
- Plasma cutting of sheet metal made of carbon and high-alloy steels from 3 to 40 mm, of aluminium from 1.5 to 50 mm thick.

Table size – 2000x6000 mm.
- Oxygen cutting with a thickness of 3 to 120 mm.
- Mechanized gas cutting of sheet material with a thickness of 42 to 150 mm.



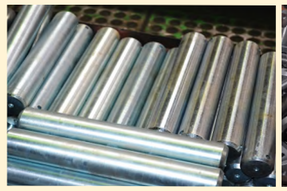


Rolling, bending.
- Three-roll sheet bending machine. Max. width – 2050 mm, bending thickness – 25 mm.
- Hydraulic bending press. Useful length of bending – 2085 mm.

Repair and maintenance of imported agricultural machinery, manufacture of spare parts.


Powder painting (orange), hand painting (orange, black, blue).
Dimensions of painted products – 4000 x 2300 x 600 mm.

Production of floor metal tiles.
Dimensions – 30 x 300 mm, thickness of metal – 1.5 mm.




Galvanizing.
Galvanizing in the drum. The largest dimensions of the workpieces – 500x60 mm.


Engraving, decorative inscriptions.
- Milling & engraving machine Epsilon 200/300. Processing area – 2000 x 3000 mm.
- Products made of plastic, wood – thickness up to 10 mm



Shot blasting.
Shot blasting is the most effective technology for removing all forms of rust and corrosive materials from steel profiles before varnishing or coating.

Painting site

Casting site

The main task of our plant is production of agricultural tillage machinery and spare parts of European quality (harrows, cultivators, disc harrows, plows).

The variety of metalworking equipment allows us to produce a wide range of products. The production facilities and technologies used allow us to manufacture products in strict accordance with the customer's drawings and meet the production deadlines.

We are ready to offer you long-term and mutually beneficial cooperation!

CONTENTS

Схема-карта расположения завода

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