TILLAGE MACHINERY
CONTENTS

DU CAT
Compact Disc Harrows p. 6

SHILLING
Intensive Stubble Cultivators p. 12

THALER
System Carrier p. 19

FRANK
Subsoilers p. 22

GULDEN
Two-level Subsoilers p. 26

CHERVONETS
Seedbed Cultivator p. 30

ZLATNIK
No-Till Seed Drill p. 34

CROWN
No-Till Units p. 40

POUND
Land Roller p. 44

LIRA
Hydraulic Spring-Tooth Wide Level Harrows p. 48

REAL
Units for Spreading of Plant Protecting Agents and Liquid Mineral Fertilizers p. 54
LOZOVA MACHINERY — a wide range of modern energy-efficient and innovative tillage and drilling implements.

History of the LOZOVA MACHINERY production has started in the late 90s at Lozova Forging-Mechanical Plant (LKMZ).

Since 1999 LKMZ has started serial production of the ZPG-24 and ZPG-15 spring tooth harrows, which became popular in Ukraine and still have been holding leading positions among tooth harrows under the new name - LIRA.

Then the KLD stubble cultivators (now SHILLING) have been launched into production and favored by farmers.

Breakthrough came in 2009, when the first disc harrow (DUCAT) was designed and launched into production. LKMZ disc harrows are not inferior to the state-of-art foreign analogues and even surpass them in some parameters.

Original design solutions implemented in LOZOVA MACHINERY provide energy and costs efficiency of the implements. For example, spring tines of the DUCAT disc harrows provide significant fuel savings, 3D protection of the bearing unit (excluding damages when hitting obstacles), disc self cleaning during operation (which enables operation even on wet soil without blocking).

For many farmers it is important that LOZOVA MACHINERY implements are adapted both to domestic and import tractors, so they are suitable for small farms (with low power tractors of 80-180 hp), as well as for large agricultural enterprises, focused on large-scale soil treatment (with the most powerful tractors).

LIRA tooth harrow is a legendary tillage machine, which has been popular among farmers for more than 16 years.

LOZOVA MACHINERY implements are equipped with HARP AGRO UNIT bearing units, which do not require any maintenance for entire service life.

LOZOVA MACHINERY is the only Ukrainian manufacturer of the full line of disc harrows (with working width from 2,5 to 16 m).

The optimal solution, suitable to any tractor.

MONEY WORKS!

www.agro.upec.ua
LOZOVA MACHINERY for various tillage technologies

CONVENTIONAL TECHNOLOGY

- Primary tillage
  - Ducat disc harrows
  - Shilling stubble cultivators
  - Guldens subsoiler
  - Francis subsoiler

- Subsoiling
  - Pourn land roller
  - Ducat disc harrows
  - Chervonets seedbed cultivator

- Seedbed preparation
  - Ducat disc harrows
  - Shilling stubble cultivators

MULCHING TECHNOLOGY

- Primary tillage
  - Ducat disc harrows
  - Shilling stubble cultivators

- Seedbed preparation
  - Ducat disc harrows
  - Shilling stubble cultivators

CONSERVATION TECHNOLOGY

- Primary tillage
  - Ducat disc harrows
  - Shilling stubble cultivators
  - Francis subsoiler
  - Guldens subsoiler

- Seedbed preparation
  - Ducat disc harrows
  - Shilling stubble cultivators
  - Ducat disc harrows
  - Shilling stubble cultivators

NO-TILL TECHNOLOGY

- Seeding
  - Zlatnik no-till seed drill
  - Crown no-till unit
All the LOZOVA MACHINERY implements are designed for specific energy-efficient technologies and operation conditions.
Stubble cultivation, basic/seedbed preparation

DUCAT
COMPACT DISC HARROWS

RESULT IN ONE PASS
The DUCAT compact disc harrows are presented as a full range of highly-efficient implements with working widths of 2,5 m to 16,75 m.

They are applied for:
- stubble cultivation;
- mulching;
- shallow and surface basic cultivation;
- seedbed preparation.

DUCAT disc harrow is the most suitable for stubble cultivation. It provides intensive mixing of the soil and vegetation with a depth up to 14 cm. Design and position of working elements ensure high-quality seedbed preparation, making possible considerable expansion of the compact disc harrow application area in agriculture, increase of its annual capacity and operation efficiency.
Stubble cultivation, basic/seedbed preparation

DUCAT

Advantages of the DUCAT disc harrows

3D-spring tine of the DUCAT provides the following advantages:

- 20% reduce of the implement draught and fuel consumption;
- 3D-protection of the bearing unit when hitting any obstacles, which prevents damage of discs, bearings, tines and frame;
- uniform cultivation depth as the harrow doesn’t raise when one of the discs hits an obstacle;
- disc self-cleaning, which ensures efficient operation on the wet soil.
- the angle of the working bodies of 20° attacks.
- the angle of entry into the soil 12°.

Discs are made of high-quality hardened boron steel (Bellota, OFAS) and have almost in two times longer service life than discs made of steel 65 Mn (65G – GOST).

Discs spacing of 125 mm and low-frequency lateral tine vibrations provide cultivated seedbed, even by depth and without deep furrows.

Due to mounting of the bearing unit on the other side of the tine, the problem of furrow after the outer disc is solved (additional parts are not necessary).

The roller has no central axle, thus there is no roller blockage even under overwatered and weed infestation conditions.
DUCAT disc harrows are equipped with original superreliable bearing units.

HARP AGRO UNIT is a maintenance-free bearing unit, optimized for application in agricultural machinery.

HARP AGRO UNIT has failure-free long term operation and extended service life.

- Fully sealed bearing with high-quality Chevron grease, which does not require additional lubrication for the entire life cycle.

- Bearing unit has three-level protection (labyrinth cutter; high-quality cassette sealing; integrated reinforced lip-type sealing).

- Bearing is located along the pull line, which reduces its absorbed loads.

- Massive forged housing provides high durability and reliability of the unit, as well as maximum stability under all operating conditions.

Bearing unit of the roller is also low-maintenance for entire service life due to high-quality cassette sealings and HARP-AGRO fully sealed bearings.

Roller axles are mounted on the cage by means of rubber buffers, which additionally reduce absorbed loads of the bearing unit.
Stubble cultivation, basic/seedbed preparation

DUCAT

Field contours following systems

Application of the different following systems with uniform distribution of loads on the working elements allows efficiently operating on fields with complex contours.

Design of the DUCAT provides precise depth control and good levelling.

Optional:

- Spring teeth in front of the discs allow uniform distributing of the stubble remains (including windrowed) on the field.

- Spring teeth in front of the roller prevent penetration of soil from the second disc row into the roller and its blockage during high-speed operation, and additionally break large soil particles into smaller ones.

- Baffle plates between the front and rear disc rows control the soil flow, form an optimal mulch cover and soil fraction.

High-quality contours following for perfect cultivation.
**Stubble cultivation, basic/seedbed preparation**

**DUCAT**

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th></th>
<th>DUCAT-2,5</th>
<th>DUCAT-3</th>
<th>DUCAT-4</th>
<th>DUCAT-5</th>
<th>DUCAT-6</th>
<th>DUCAT-8</th>
<th>DUCAT-12</th>
<th>DUCAT-16</th>
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<tr>
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<td>3</td>
<td>4</td>
<td>5,25</td>
<td>6,25</td>
<td>8,25</td>
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<td>12,25</td>
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<td>min. 100</td>
<td>min. 130</td>
<td>min. 150</td>
<td>min. 170</td>
<td>min. 250</td>
<td>min. 300</td>
<td>min. 350</td>
</tr>
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<td>mounted</td>
<td>mounted</td>
<td>semi- mounted</td>
<td>semi- mounted</td>
<td>semi-trailed</td>
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<td>4482</td>
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<td>Operating speed, km/h</td>
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<td>10...17</td>
<td>10...17</td>
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<td>10...17</td>
<td>10...17</td>
<td>10...17</td>
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<td>4,5...5,5</td>
<td>4,5...5,5</td>
<td>4,5...5,5</td>
<td>4,5...5,5</td>
<td>4,5...5,5</td>
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<td>4,5...5,5</td>
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<tr>
<td>Transport dimensions (length x width x height), mm</td>
<td>2456x 2691x 1450</td>
<td>2456 x 3000 x 2000</td>
<td>2456 x 4190 x 1550</td>
<td>5789x 3020x 3210</td>
<td>5780x 3086x 3723</td>
<td>5630x 3960x 2641</td>
<td>8497x 3020x 3636</td>
<td>18944x 3960x 4095</td>
</tr>
</tbody>
</table>
The SHILLING intensive stubble cultivators are effectively applied for minimum tillage, which encourages germination and development of crops. SHILLING has the best performance when cultivating the soil before and after grain and legume crops, and widely used for conventional tillage, fallow maintenance and seedbed preparation.

The cultivator performs the following operations in one pass:
- soil loosening and crumbling;
- weeds undercutting;
- chopping and incorporating the plant residues, fertilizers for mulching;
- levelling and compaction of the soil;
- seedbed preparation with stable depth.

The SHILLING intensive stubble cultivator can be also applied for the intercrops incorporation. Its design provides high-quality mixing of crop residues with soil for rapid decomposition.

PERFECT STUBBLE CULTIVATION
Stubble cultivation, basic/seedbed preparation

SHILLING

There are two stages of cultivation with the SHILLING.

At the first stage the wing shares with special shape cover the volunteer seeds, weeds and organic mass with the topsoil at shallow depth. This encourages their rapid germination, whilst the water capillaries are broken to retain moisture, and precipitations are absorbed.

The SHILLING has advantages over disc implements with rigid tine, such as higher quality of cultivation with precise depth control and levelled seedbed. Working tools have much smaller soil shoe compared to disc harrows.

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At the first stage the wing shares with special shape cover the volunteer seeds, weeds and organic mass with the topsoil at shallow depth. This encourages their rapid germination, whilst the water capillaries are broken to retain moisture, and precipitations are absorbed.

The second stage follows approximately in two weeks. Soil is cultivated to the depth of 10-15 cm, and seedlings are cut off over the whole field surface and removed with roots. At the same time SHILLING uniformly incorporates organic mass in the cultivation depth and mixes it with the soil.

Levelling discs, following after the duckfoot tines, burst ridges, then the soil is levelled and recompacted by the roller, creating the perfect seedbed with optimal soil density.

Soil cultivation

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Levelling discs, following after the duckfoot tines, burst ridges, then the soil is levelled and recompacted by the roller, creating the perfect seedbed with optimal soil density.
Advantages of the SHILLING cultivator

- Demountable support wheels, which height can be adjusted by a screw, provide precise depth control even when using tractors without position control of the mounted system.

- Levelling concave discs are mounted on the roller parallelogram, so the additional discs adjustment is not required when depth changing.

- Optimal position of the center of gravity is achieved by simple rearrangement of the depth limiter axle and forward displacement of concave discs with roller. This significantly reduces loads on the tractor coupling and allows cultivator transportation.

- Cultivator tines slope angle can be adjusted by means of the shear bolt replacement, providing perfect penetration even in dry and heavy soil.

- Wide wing shares are mounted at a special angle, ensuring undercutting the soil seam over the whole surface and optimal mixing even at shallow depths. The working width of the share long edge points is stable during entire service life.

- Working tools are made of high-quality hardened boron steel (Bellota, OFAS, AMA).

- The frame height is 80 cm, which allows cultivating the fields with a lot of crop residues.
• Geometry of the doubled rod-cage roller makes the soil, flinging out of the first roller, change its direction and speed of the second roller. Therefore the soil is optimally crumbled and levelled.

• Special design of the doubled roller provides intensive soil crumbling and its optimal recompacting. This encourages the best germination of the fallen seeds and weeds.

• Hardened roller blades cut any crop residues.

• The front blade roller is sharpened and hardened for better cutting of the crop residues.

• The absence of central axle prevents roller blockage even in overwatered and weed infestation conditions.

• Bearing unit of the roller is maintenance-free for entire service life due to high-quality cassette sealings and HARP-AGRO fully sealed bearings.

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<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>SHILLING-2</th>
<th>SHILLING-3</th>
<th>SHILLING-4</th>
<th>SHILLING-6</th>
<th>THALER + 2 pcs. of SHILLING-4</th>
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</thead>
<tbody>
<tr>
<td>Working width, m</td>
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<td>3,14</td>
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<td>6,0</td>
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</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 80</td>
<td>min. 130</td>
<td>min. 160</td>
<td>min. 300</td>
<td>min. 450</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>mounted</td>
<td>mounted</td>
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<td>semi-trailed</td>
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<tr>
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<td>1480</td>
<td>2906</td>
<td>5764</td>
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<tr>
<td>Number of tines, pcs.</td>
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<td>7</td>
<td>9</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Operating depth, cm</td>
<td>5-22</td>
<td>5-22</td>
<td>5-22</td>
<td>5-22</td>
<td>5-22</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>7...12</td>
<td>7...12</td>
<td>7...12</td>
<td>7...12</td>
<td>7...12</td>
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<tr>
<td>Efficiency, ha/h</td>
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<td>Fuel consumption, l/ha</td>
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<td>6...15</td>
<td>6...15</td>
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<tr>
<td>(length x width x height), mm</td>
<td>x1450</td>
<td>x1450</td>
<td>x1850</td>
<td>x3900</td>
<td>x4080</td>
</tr>
</tbody>
</table>

Konstantin Gayno (Director of Private Company 'Gayno', Zaporozhye region)

“I have been using SHILLING for 4 years and have cultivated over 2000 ha. It is used for seedbed preparation at depth of up to 10 cm. The implement shows perfect work even on heavy soil.”
Stubble cultivation, basic/seedbed preparation

THALER

SYSTEM CARRIER
The THALER system carrier is a multi purpose unit for creation of the different wide-coverage implements, which consist of mounted implements with working width of 3,5-4,2 m.

There are available combinations of the DUCAT disc harrows or SHILLING stubble cultivators.

It is very convenient and beneficial that mounted implements can be used individually. This saves investments for machine and tractor fleet.
Stubble cultivation, basic/seedbed preparation

THALER

Advantages of THALER

• Design of the system carrier ensures effective field contours following, which guarantees a perfect cultivation quality.

• The implement doesn’t raise when hitting the obstacles, and cultivates the soil uniformly.

• Two mounted systems of the carrier enable mounting of the implements of II and III categories.

• There is a possibility to adjust working height of the implements mounting.

• Quick folding and unfolding improve the implement performance.

• Reliable hydraulic lock fixes the implement in a transport position.
### TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>2 pcs. of DUCAT-4</th>
<th>2 pcs. of SHILLING-4</th>
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<tbody>
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<tr>
<td>Tractor power, hp</td>
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<tr>
<td>Coupling with tractor</td>
<td>semi-trailed</td>
<td>semi-trailed</td>
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<tr>
<td>Basic weight, kg</td>
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<td>5764</td>
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<tr>
<td>Operating depth, cm</td>
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<td>5...22</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>10...17</td>
<td>7..12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
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<td>max. 7,92</td>
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<td>Fuel consumption, l/ha</td>
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<td>6...15</td>
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<tr>
<td>Transport dimensions</td>
<td>5630x3086x3723</td>
<td>5734x3323x4080</td>
</tr>
</tbody>
</table>

Vasily Tkatch (Director of farm SFG "Tkatch", Dnepropetrovsk region)

“I saw this implement at the exhibition. I was interested in the design, but I had some doubts concerning providing the uniform depth. On the first day we realized that this purchase will be compensated in many times by a lot of benefits.”
THE BEST ALTERNATIVE TO PLOWING
The FRANC subsoiler is one of the most effective means to improve water-air soil regimes, capable to create quality mulch from the crop residues. It is designed for loosening of the soil compacted by the horizontal cultivation implements, such as plows, disc and tine cultivators.

FRANC-2,5 is a subsoiler for solid deep tillage, which is conceptually similar to the most common European subsoilers.

FRANC is a good alternative to plowing, especially for the firm soil.

The implement performs chisel tillage, leaving on the surface 30-60% of crop residues, which solves the problem of soil erosion, maintaining the organic composition of the soil and ensuring its long-term fertility.

Duration of the agronomic effect after subsoiling is 3-4 years, and the number of active roots in subsoiled area is doubled.
Advantages of the FRANC subsoiler

- Quick-change front point and shim protect the tine from wear, and the geometric configuration allows deeper penetrating of the working tool into firm soil.

- Side wings, fixed with bolts on the tine, increase subsoiling effect. Application of the side wings at high speed causes the "firm soil wave blasting" effect.

- Balancing mounting of the doubled roller provides the constant contact of both rollers with the soil.

- Doubled self-cleaning roller with spikes with balanced mounting completes the soil tillage. Spikes break large clods, thrown on the surface, prepare and level the soil, facilitating further final seedbed preparation. Rotating spikes embed crop residues into the soil lower layers and mix them with soil at depth of 15-20 cm.

- The FRANC is assembled with superreliable maintenance-free HARP AGRO UNIT bearing units. Application of high-quality German plain bearings prevents wear of the roller adjustment mechanism rotary units.

- Depth adjustment is simply performed by means of the pins, which limit the displacement of the roller frame parallelogram mounting.

- Shear bolt is applied for protection against exceeding loads, excluding the possible damage to frame.
Subsoiling

FRANC

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>FRANC</th>
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<tr>
<td>Transport dimensions (length x width x height), mm</td>
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</tr>
</tbody>
</table>

Ihor Tischenko (Chief of "Merchanskoe" cooperative, Kharkiv region)

"In 2015 the autumn was very hot and dry. There was an area of the barley remains, which caused breakage of the tillers during cultivation. In spring we applied the FRANC subsoiler to the depth of 25 cm and perfectly broke the compacted soil. Practice has shown that the FRANC subsoiler can be effectively used both in autumn and spring. I shall note significant fuel savings – in 1,5-2 times!"
GULDEN
TWO-LEVEL SUBSOILER
The GULDEN subsoiler is designed for solid two-level nonmoldboard cultivation instead of fall and spring tillage, chiselling on the slopes and leas, post-harvest loosening and seedbed preparation of stubble and mulch backgrounds, eroded soils, as well as for cultivation of the long-fallow and forage lands.

Application of the GULDEN subsoiler is a reasonable alternative to the conventional soil preparation technology, which allows seedbed preparing in one pass. Technological combination of several operations significantly saves resources.

The implement can be effectively used in all the periods of field works (for loosening or soil slitting), which significantly reduce costs for machine park.

Results of subsoiling with the GULDEN:
- increased soil porosity in several times;
- enhanced microbiological processes, which improve the soil nutrient status and circulation of elements;
- bigger amount of active roots in the loosened area;
- prevention of water-air erosion processes on slope lands.

. . . AND SOIL BREATHES!
Advantages of the GULDEN subsoiler

- Deltaic frame is made of shaped tube in the form of an isosceles triangle, which redistributes efforts and reduces loads on the frame.
- Two rows of tines: 1) for deep soil cultivation to the depth up to 45 cm (front row); 2) additional row for intensive top mulching to the depth up to 25 cm (rear row).
- Adjustments of the working depth for the first and second rows are independent of each other. The depth is adjusted by pins on the roller mounting parallelogram for the front tines and on the rear tines mounting parallelogram.
- The implement is equipped with doubled crowfoot roller for additional topsoil crushing and leveling of the field surface, and even distribution of crop residues.
- Balanced mounting of the doubled roller provides constant contact with the soil of both rollers. Spikes break large clods, thrown on the surface, prepare and level the soil, facilitating further final seedbed preparation. Rotating spikes embed crop residues into the lower layers of soil and mix them with soil at depth of 15-20 cm.
- The GULDEN is assembled with superreliable maintenance-free HARP AGRO UNIT bearing units. Application of high-quality German plain bearings prevents wear of the roller adjustment mechanism rotary units.
**Subsoiling**

## GULDEN

<table>
<thead>
<tr>
<th>TECHNICAL DATA</th>
<th>GULDEN</th>
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<td>Tractor power, hp</td>
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<tr>
<td>Coupling with tractor</td>
<td>mounted</td>
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<tr>
<td>Basic weight, kg</td>
<td>2678</td>
</tr>
<tr>
<td>Number of discs</td>
<td>front row - 7; rear row - 6</td>
</tr>
<tr>
<td>Operating depth, cm</td>
<td>front row up to 45 cm; rear row up to 25 cm</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>8...12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>max. 3,58</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>10...18</td>
</tr>
<tr>
<td>Transport dimensions (length x width x height), mm</td>
<td>4344x4054x2053</td>
</tr>
</tbody>
</table>

Viktor Milchenko (Director of "Phenix-agro", Chernihiv region)

“We have import subsoilers for breakage of the plow underpan, which facilitates roots development and increases the crop productivity. The GULDEN is much cheaper analogue of import implements.”
Seedbed preparation

CHERVONETS

SEEDBED CULTIVATORS
The CHERVONETS seedbed cultivator creates a perfect seed bed: compacted layer, embedded with well-loosened soil on top.

The CHERVONETS is suitable for almost all types of seedbed preparation:
- seedbed preparation (loosening of the soil to a depth from 3 to 15 cm);
- incorporation of solid and liquid manure;
- harrowing-out of the thread-like weeds.

Being effective on small and large areas, the CHERVONETS is a multi-purpose and conventional implement for seedbed preparation. Hardly any other implement can be such versatile.
Advantages of the CHERVONETS

- Four rows of S-shaped spring tines with different working tools provide perfect soil tilling with further pulverization.

- 3-D tine can be additionally spring-loaded for rougher operation conditions.

- Three types of tools with working width from 35 mm to 150 mm.

- Doubled balance roller provides constant soil compacting with both rollers independently of ground contours.

- Front and rear rollers have different diameters and rotation speeds, providing the finer soil fraction.

- The roller has no central axle, thus there is no roller blockage even in overwatered conditions.

- On medium and heavy soils the spring-loaded multi-levelling bar is set backward, to "grip". This compensates any unevenness in one pass. Springs protect the bar from damage. On light soil the bar is set forward, to "drag". Therefore, on level ground less soil piles in front of the bar, and the implement has a lower drag.

Seedbed preparation
Aleksandr Bubelich (Owner of "Zelenaya Energiya Agro", Odessa region)

“The work is great. It performs all necessary operations: cultivation and loosening, weeds harrowing out and levelling of the soil. And all of this only in one pass!”

CHERVONETS

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th></th>
<th>CHERVONETS-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width, m</td>
<td>8</td>
</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 150</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>mounted / semi-trailed</td>
</tr>
<tr>
<td>Basic weight, kg</td>
<td>2673...3590</td>
</tr>
<tr>
<td>Number of tines, pcs</td>
<td>65</td>
</tr>
<tr>
<td>Operating depth, cm</td>
<td>3-15</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>10...15</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>до 8,55</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>3,5...5,0</td>
</tr>
<tr>
<td>Transport dimensions</td>
<td>mounted – 3555х3020х4000 semi-trailed – 5345х3020х4000.</td>
</tr>
</tbody>
</table>
The ZLATNIK seed drill can be applied both for min-till and no-till technologies due to the seeding unit with reinforced double disc coulters. Fluted discs in front of each coulter enable operation with a lot of stubble remains and under no-till technology.

Application:
- seeding of grain and industrial crops (from poppy to bean);
- seeding under min-till and no-till technologies;
- application of starter fertilizers simultaneously with seeding;
- application of the free running mineral fertilizers.
Seed drill has modular design, consisting of the tank and seeding unit. The tank can be used both individually and together with other seeding units or tillage implements, which are equipped with the seeding units. The seeding unit can be matched with other tanks.

- Divided tank with volume of 2 and 3 m³, which allows applying seeds and fertilizers in various combinations.

- Tank is made of special polymeric material with high resistance to ultraviolet and chemically aggressive media, thus it is absolutely corrosion-resistant.

- The weight of seeding unit, which is absorbed by one section, is 135 kg and can be increased by the tank’s weight. The coulter spring pressure is up to 250 kg.

- The ZLATNIK fluted discs and coulter discs are assembled with super-reliable maintenance-free HARP AGRO UNIT bearing units with extended service life. Multi-level protection, high-quality grease and massive forged housing provide reliability and durability in any operation conditions.

- Row spacing of 150 cm provides uniform nutrition area.
• Pneumatic system for distribution of seeds and fertilizers together with central tank allow significantly reducing of ineffective time for filling of separate tanks, eliminating their unequal filling and, relatively, unequal devastation, as well as reducing time for the tank cleaning after seeding. There is more time for seeding.

• Seeding unit with infinitely variable seed rate provides rapid and precise adjustment of seed rate and/or application of fertilizers without time-consuming changing of the drive sprockets. Therefore there is more time for seeding and the seed rate adjustment is more precise.

• Seeding unit has also micro-seeding feature to seed the small-seeded crops (rape, grass etc.) with seed rate from 2.3 kg/ha.

• The seeding unit parts are made of corrosion-resistance materials, which eliminate loss of their function caused by corrosion.

• Seeding control system provides on-line control and immediately signalizes if any of coulters is blocked.
ZLATNIK

Advantages of the ZLATNIK:

• Seeding unit driven by the tank transport wheel provides precise synchronizing of the seeding unit rotation speed with the seed drill speed.

• Fan driven by the tractor PTO shaft enables coupling with tractors having no good hydraulic take-off.

• The auger conveyor with hydraulic drive makes the filling of tank with seeds and fertilizers much easier.

• Two semi-frames with working tools are attached to the seeding unit frame wings by means of the pin joints, which allow uniformly distributing of the seeding unit weight between working tools. Such design eliminates imbalance of semi-frames from hydraulic cylinders, which is typical for other gang drills.

• Seed drill is equipped with the brake system, mounted on the tank, for safe transportation and prevention of vehicle accidents.

• Basic configuration includes a bout marker to help tractor driver orient in the field. The marker's disc is also mounted on the HARP AGRO UNIT.

Design of the two semi-frames attachment provides uniform distribution of the seeding unit weight.
### TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>ZLATNIK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width, m</td>
<td>6</td>
</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 160</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>semi-trailed</td>
</tr>
<tr>
<td>Basic weight, kg</td>
<td>7080</td>
</tr>
<tr>
<td>Number of coulters, pcs.</td>
<td>40</td>
</tr>
<tr>
<td>Row spacing, cm</td>
<td>15</td>
</tr>
<tr>
<td>Volume of two-section tank, m³</td>
<td>5 (3/2)</td>
</tr>
<tr>
<td>Seed rate, kg/ha</td>
<td>2.3...508</td>
</tr>
<tr>
<td>Seeding depth, cm</td>
<td>3...8</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>6...12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>max. 6</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>6.0...7.5</td>
</tr>
<tr>
<td>Transport dimensions</td>
<td>10570x3355x4055</td>
</tr>
</tbody>
</table>

Vadim Okhrimenko (Chief Mechanic of Private Company "Demetra", Zaporozhye region)

“Our practice has shown that ZLATNIK is the closest analogue of import machinery in sense of technical and operation characteristics, but twice cheaper. As main advantages we consider working width and large tank volume, which allow us working for 3 hours non-stop. With the ZLATNIK we have achieved very good barley seedling.”
CROWN
NO-TILL UNITS

GO BEYOND THE CONVENTIONAL AGRICULTURE
Application of the tillage attachment with the conventional grain drill of SZ type allows using it as a no-till unit with minimum investments. Such implement design allows using it for conventional and minimum tillage technologies, including no-till technology.

The implement consisting of the CROWN no-till unit and trailed seed drill for conventional technology (SZ type or other) cultivates the soil with fluted discs and drills seeds with disc coulters. During operation the fluted discs improve the soil structure rating.

The CROWN is designed for:
- cutting of crop residues with their separation to let the disc coulter work;
- local soil cultivation to create U-shaped groove with width up to 4 cm.
Advantages of the CROWN no-till unit

• the CROWN design allows the seeding coulters follow the cutting discs even when turning;

• parallelogram-guided hitch beam keeps the coupling link at height of 400 mm in work and transport position of no-till unit.

The CROWN working tool:
• the working tool is a fluted disc made of high-quality hardened boron steel (Bellota, OFAS, AMA);

• fluted disc provides local soil cultivation with U-shaped groove with width up to 4 cm;

• fluted discs are mounted on the individual times with spring protection, which allows the disc upward moving in order to prevent breakage when hitting the obstacle.

• vertical pressure on a disc is up to 200 kg.

Modern HARP AGRO UNIT bearing unit with three-level protection (cutter, cassette seal, lip seal) is maintenance-free for entire service-life.

HARP AGRO UNIT has long-term no-failure operation and increased durability.
CROWN

TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>CROWN-3,6+SZ-3,6</th>
<th>CROWN-5,4+SZ-5,4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width, m</td>
<td>3,6</td>
<td>5,4</td>
</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 80</td>
<td>min. 150</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>semi-mounted</td>
<td>semi-mounted</td>
</tr>
<tr>
<td>Basic weight, kg</td>
<td>1895</td>
<td>2628</td>
</tr>
<tr>
<td>Rows number</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>Row spacing, cm</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Operating depth, cm</td>
<td>3...8</td>
<td>3...8</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>6...12</td>
<td>6...12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>max. 3,24</td>
<td>max. 4,80</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>5,5...7,5</td>
<td>5,5...7,5</td>
</tr>
<tr>
<td>Transport dimensions</td>
<td>4764x3732x1800</td>
<td>5612x4353x3000</td>
</tr>
</tbody>
</table>

Viktor Ganov (Director of "OdMa" company, Zaporozhye region)

“The implement provides high-quality soil cultivation with fluted discs in one pass. It uniformly seeds and keeps moisture, and allows receiving the earlier uniform seedling. It also perfectly cuts crop residues of corn and sunflower.”
Rolling

POUND

LAND ROLLER

PROPER SOIL COMPACTING
The POUND roller is aggregated with tractors of 1.4...2.0 t classes and designed for compacting the surface layer to the depth of 10 cm with its simultaneous loosening to the depth of 4 cm, and mulching for water retention.

Application of the POUND roller:
- crumbling of clods;
- levelling and compacting the topsoil to the depth up to 10 cm;
- seedbed rolling (it reduces slipping of the seed drill support-drive wheels, therefore it improves evenness of seeding and regulates seeding depth);
- post-seeding rolling (it provides water retention, improves contact of seeds with soil leading to earlier and even germination of seeds and increases crop yield);
- spring rolling of winter crops for destruction of soil crust and creation of mulch layer for water retention;
- rolling of green manures.
The roller main working tools are toothed rings. They form cylindrical surface with diameter of 540 mm and angle solid spirals. Such shape provides an optimal soil compacting with additional levelling effect.

Additional working tools – the row of loosening and levelling bars mounted in front of the main working elements. These bars are irreplaceable when tilling. They provide levelling and seedbed preparation in one pass.

• Staggered sections exclude uncultivated soil areas, ensuring an outstanding quality.
• The roller design provides the possibility of transversal ground following due to the pin-joint coupling of three two-meter sections. Wherein the load on entire working width keeps even.
• The POUND roller can be easily folded into operating position and backwards by means of hydraulic system. There is no necessity for an operator to leave the tractor cab. Transport stopper provides required safety when riding on the public roads.
• Bearing unit with super-reliable three-level protection is maintenance-free for entire service life.
• The roller axles are mounted on the rubber dampers, which additionally reduces the loads absorbed by the bearing unit.
## TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>POUND-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width, m</td>
<td>6</td>
</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 80</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>semi-trailed</td>
</tr>
<tr>
<td>Weight without loosening and levelling bars, kg</td>
<td>3247</td>
</tr>
<tr>
<td>Weight with loosening and levelling bars, kg</td>
<td>3860</td>
</tr>
<tr>
<td>Roller diameter</td>
<td>540</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>8...12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>max. 5.4</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>2.0...3.0</td>
</tr>
<tr>
<td>Transport dimensions</td>
<td>5742x2883x1595/2401</td>
</tr>
</tbody>
</table>

Andrey Sergienko (farmer, Poltava region)

“All I can say – the POUND roller perfectly copes with its work – compacts without blockage. I’m fully satisfied”.
HARROWING

LIRA

HYDRAULIC SPRING-TOOTH
WIDE LEVEL HARROWS
Application of the LIRA harrow allows not only weeds killing without expensive chemicals, but also moisture retaining and air access to seeds.

More than 16 years of successful work in the fields have made the LIRA spring harrow truly legendary! Its simplicity, reliability and the highest quality of work are familiar to farmers in Ukraine, Russia, Kazakhstan and many other countries.

The LIRA spring harrow is applied for:
• early spring harrowing for crust destruction and encouraging the weeds germination;
• weeds destruction in the “white fiber” phase;
• moisture retention by means of interruption of capillary flow from the substrate;
• even distribution of stubble remains on the field;
• incorporation of seeds and mineral fertilizers, distributed across the field;
• overall tillage when handling the fallow lands and seedbed preparation when fall-ploughing;
• windrowing of straw and hay.
Harrowing

LIRA

Intensive snow melting, abundant rainfall between seeding and seedling emergence, which alternate with hot and dry weather, lead to soil crust with a large number of capillaries, by which the water from substrate lifts to the surface and evaporates.

It is hard to believe, but up to 100 liters of water may evaporate in such a way from 1m² during one sunny day.

Besides, the superficial crust blocks the air access to seeds, which considerably impairs their germination and leads to their partial destruction. On heavy floating soils the effect of soil crust may be catastrophic.

Combine straw choppers, especially with wide headers, not always optimally distribute the straw, which entails broken seedlings, uneven ripening and significant deterioration of the harvesting quality. The LIRA harrow can remedy the situation.

Cultivation with the LIRA harrow facilitates water retention, air access to the seeds and roots of the plants, improvement of air circulation in the soil and increase of soil ability to absorb the atmospheric moisture, which appears due to temperature difference.
Advantages of the LIRA harrow

- Working sections consist of five rows of the offset spring teeth with spacing of 38 mm. Such teeth location excludes non-cultivated areas.

- Careful cultivation provided by the adjustable tilt angle of teeth.

- The teeth tilt angle is adjusted for entire section with limits from 15° to 90°, and interval of 15°.

- Blockage-free work of teeth and perfect loosening due to vibration effect.

- The harrow spring tooth with diameter of 10 mm.

- The spring tooth is made of high-quality special steel with special heat treatment: general bulk hardening and additional HFC hardening of ends up to 51...57 HRC. Such hardening significantly (in 2...3 times) increases the tooth wear-resistance in the working area with high wear, wherein the areas under torque stress are highly strength.

- Lifetime until the tooth working part wear

<table>
<thead>
<tr>
<th>Tooth made by other manufacturers</th>
<th>Tooth of LOZOVA MACHINERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>39-45 HRC</td>
<td>51-57 HRC</td>
</tr>
</tbody>
</table>

Lifetime of our tooth is three times higher than tooth of other manufacturers.
Harrowing

LIRA

Advantages of the LIRA harrow

• One tractor driver can fold and unfold the harrow due to design of frame and hitch.

• For rapid folding/unfolding the LIRA harrow is equipped with transport wheels with adjustable toe angle.

• Having the chained individual working sections, the LIRA spring harrow perfectly follows any field contours in spite of its wide working width.

• Special agricultural low-pressure tires almost fully eliminate the risk of damage to plants. Also there tires eliminate overcompacting of the soil and don’t leave tracks. Specific thread pattern allows drawing off the dirt and provides smooth running without adhesion of dirt even in overwatered conditions.

• Forged crosses compared to welded ones provide high durability and reliability regardless of “human factor”.

Field contours following

Forged cross
VIKTOR SANDUL (DIRECTOR OF "NIVA" COMPANY, VINNITSYA REGION)

“ALL MACHINERY AT MY FARM IS IMPORTED, HIGH-QUALITY, EXPENSIVE, AND MADE BY WORLD LEADING MANUFACTURERS. WE USED TO HIGH-QUALITY AND HIGHLY-PERFORMANCE MACHINERY. THE LIRA FULLY MEETS MY REQUIREMENTS – IT IS NOT INFERIOR TO CANADIAN ANALOGUES: GOOD DESIGN, ASSEMBLY, ENDURABLE TEETH.”
REAL

UNITS FOR SPREADING OF PLANT PROTECTING AGENTS AND COMPLEX FERTILIZERS

RECEIVE DOUBLE EFFECT IN ONE PASS!
Universal REAL unit is applied for application of the plant protecting agents and complex fertilizers.

The unit consists of the trailed REAL-15 or REAL-24 sprayer with a set of equipment, easily mounted on the harrow, standard LIRA-15 or LIRA-24 spring-tooth harrow or other.

During conventional surface application most of the nutrients evaporate having no positive effect, and additional pass for their incorporation increases fuel and time consumption. These disadvantages can be eliminated with application of the REAL+LIRA complex, which spreads and incorporates nutrients in one pass.

Due to simultaneous incorporation of the applied spray material, the REAL unit allows achieving the most effective incorporation and minimizing of the agent consumption, as well as environmental impact (due to lower application rate), and reducing the number of the unit passes.
Protection and nutrition

**REAL**

Application of liquid mineral fertilizers

- The REAL consists of the tank for spray material with its own chassis and mixing/distribution system, and flexible piping with nozzles for the spray material application.

- For the uniform distribution of the spray material along entire working width, the REAL module is assembled with the ARAG high-quality control panel and the Annovi Reverberi axial-piston pump with tractor PTO drive.

- The REAL unit can be easily aggregated with any other standard LIRA spring-tooth harrow, as well as with spring harrows from other manufacturers, because it is fixed to frame by U-bolts and clamps.

- The unit is equipped with a brake system which enhances the operating safety.

- In comparison with fertilizer spreaders on the base of cultivators, the REAL is able to work with seeds and early seedling and has much higher productivity.

- In comparison with field sprayers the nutrient loss and operating costs are reduced due to the simultaneous incorporation of fertilizers in one pass of the REAL unit.
### TECHNICAL DATA

<table>
<thead>
<tr>
<th></th>
<th>REAL-15+LIRA-15</th>
<th>REAL-24+LIRA-24</th>
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</thead>
<tbody>
<tr>
<td>Working width, m</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Tractor power, hp</td>
<td>min. 80</td>
<td>min. 150</td>
</tr>
<tr>
<td>Coupling with tractor</td>
<td>semi-mounted</td>
<td>semi-mounted</td>
</tr>
<tr>
<td>Dry weight (excluding the harrow weight), kg</td>
<td>920</td>
<td>2040</td>
</tr>
<tr>
<td>Number of nozzles, pcs.</td>
<td>30</td>
<td>48</td>
</tr>
<tr>
<td>Tank volume, m³</td>
<td>2,5</td>
<td>5,0</td>
</tr>
<tr>
<td>Pump performance, l/min.</td>
<td>185</td>
<td>250</td>
</tr>
<tr>
<td>Distance between nozzles and soil, m</td>
<td>0,5</td>
<td>0,5</td>
</tr>
<tr>
<td>Operating speed, km/h</td>
<td>8...12</td>
<td>8...12</td>
</tr>
<tr>
<td>Efficiency, ha/h</td>
<td>max. 13,1</td>
<td>max. 21,0</td>
</tr>
<tr>
<td>Fuel consumption, l/ha</td>
<td>1,0...1,8</td>
<td>1,0...1,8</td>
</tr>
<tr>
<td>Transport dimensions (length x width x height), mm</td>
<td>13876x4200x2460</td>
<td>21600x4400x2460</td>
</tr>
</tbody>
</table>

Valeriy Gavrilchik (Chief Engineer of “Komsomolets” cooperative, Kharkiv region)

“The unit is endurable and comfort, and has already fertilized 900 ha. The folding system is very convenient. Wide working width, application and incorporation of fertilizers in one pass significantly reduce fuel consumption and costs for the machine servicers’ salary.”
SERVICE SUPPORT

Service Department performs warranty, post-warranty and off-warranty maintenance for agricultural machinery manufactured by LOZOVA MACHINERY. Together with service departments of the dealers it performs machinery commissioning, training of customer staff in the machinery operating rules, warranty repairing within the shortest possible time.

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mob: +38 (050) 327-10-43
service@upec-trading.com

LEASING

LOZOVA MACHINERY technique can be to lease the various programs. For more information visit lozovamachinery.com

SPARE PARTS
FOR AGRICULTURAL MACHINERY

A wide range of spare parts for the whole product line of machinery manufactured by LOZOVA MACHINERY is always available in stock:
- spring teeth;
- bearing units;
- discs and working elements;
- rubber components for the Real sprayer;
- tines and coulters;
- other consumables.

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