



**COLOMBO AGRO**

**PRODUCT CATALOGUE & PRESENTATION**



**NO-TILL SEEDERS**



## ABOUT US

*GLOBAL TRADE CORPORATION LTD, operating under the trademark "COLOMBO AGRO" is a prominent player in the agricultural machinery and services industry in Bulgaria. Established in 2011, our company has consistently fostered strong business relationships with partners spanning Bulgaria, Italy and other countries.*

*At COLOMBO AGRO, we specialize in the importation of cutting-edge No-Till machines from Italy, crafted with precision and quality by the renowned Italian company VSD (Vella Semina Diretta). Our product line includes pneumatic seeders, mechanical seeders and equipment, designed to meet the diverse needs of our customers.*

*In addition to providing state-of-the-art agricultural machinery, we offer the expertise of qualified personnel in various fields, including agronomy consulting and technical support. This comprehensive approach ensures that our customers receive not only the best equipment but also the support and knowledge necessary for successful agricultural practices.*

*What truly distinguishes COLOMBO AGRO is our partnership with VSD, making us the official representative of their patented, uniquely designed machines. We are dedicated to promoting and facilitating the adoption of No-Tillage technology in Bulgaria, contributing to sustainable and efficient agricultural practices in the region.*

*We tailor our services to cater to the specific needs and objectives of each customer, ensuring optimal outcomes for everyone.*

*At COLOMBO AGRO, we pride ourselves on our strong relationships with our partners. The commitment to staying at the forefront of innovation and industry trends allows us to provide cutting-edge solutions to our customers. We foster a culture of collaboration, excellence, and continuous improvement to meet the evolving needs of the agricultural sector.*

*Our vision extends beyond Bulgaria's borders as we aim to expand our presence internationally. Building upon our successful partnerships in Italy and Bulgaria, we aspire to create enduring relationships with manufacturers and dealers in other countries. Our commitment to growth is driven by our passion for advancing sustainable agriculture and providing top-tier products and services to our valued customers.*

*COLOMBO AGRO invites you to join us on our journey towards a more innovative, efficient, and sustainable agricultural future. With our unwavering dedication to quality, technology, and customer satisfaction, we are poised to make a significant impact in the agricultural machinery and services sector, both locally and globally.*



*The VSD (Vella Semina Diretta) company was established by Antonio and Claudio Vella in the 1990s, after years of accumulated experience and testing the first no-till machines in the family business.*

*The family business is located in a "difficult" area from an agricultural point of view, having characteristics such as: clayey soils, stones, high slopes (40%), altitude from 200m to 1100m above sea level. All this put the hard-working machines and the Vella brothers to the test.*

*The first step forward was made in 2004, learning about new cultivation techniques during a trip to Argentina: this is the date of the total turning point.*

*After learning the Argentine agronomic skills, he began a long period of comparison with different machines, together with the CNR (National Research Center of Rome). After this period, which lasted 5 years,*

*The Vella brothers set up the company of the same name, starting a collaboration with VHB and then transforming into BTI AGRA.*

*The company committed itself to improving the machines, knowing the needs of Europeans, which are higher, from all points of view: technology, materials, dimensions.*

*Over the years, after many tests and experiences in difficult areas, a high standard of production and quality has been achieved. VSD also provides qualified personnel for any need: whether agronomic, engineering or mechanical.*

## DIRECT SEEDING (NO-TILL)

"It is done on untilled soil by opening narrow slots with sufficient width and depth to create seed coverage without using any other type of processing."

Phillips & Young (1973)

### DIRECT SEEDING IS A FULLY DEVELOPED AND SUSTAINABLE AGRICULTURAL PRODUCTION SYSTEM THAT IS BASED ON:

- 1 No-tillage practices, avoiding soil disturbance.
- 2 Permanent ground cover with stubble.
- 3 Carbon sequestration.
- 4 Enhancement of natural soil structure and its microorganisms.
- 5 Water conservation.
- 6 Significant reduction in fuel and resource consumption.

In today's context, it is considered an advanced system that not only aims to conserve natural resources and increase efficiency but has also become the only production system capable of sustaining global food production growth. It is also the only system capable of mitigating the consequences of climate change, especially in regions where the effects of rising temperatures and subsequent water scarcity are most severe.

### MECHANICAL CULTIVATION: NEGATIVE EXTERNAL EFFECTS

- 1 Erosion (water/wind)
- 2 Energy consumption (direct and indirect) (CO<sub>2</sub> emissions)
- 3 Loss of organic matter (CO<sub>2</sub> emissions)
- 4 Soil degradation
- 5 Nutrient depletion (N)
- 6 Water pollution

### DIRECT SEEDING

-90% erosion -> improved fertilizer use (N)



### BIODIVERSITY:

Soils + Living organisms





## 10 RULES FOR APPROACHING DIRECT SEEDING

### 1 DIRECT SEEDING IS NOT AN INNOVATION

*... Time passes, and in the meantime, knowledge, experience, technologies, and technical resources continue to improve*

### 2 TRANSITIONING TO DIRECT SEEDING MEANS REVOLUTIONIZING BUSINESS MANAGEMENT AND A WAY OF LIFE.

*...it means setting a long-term course, avoiding improvisation, not rushing for immediate results, and not getting demoralized...  
...and adopting a series of practices in addition to direct seeding*

### 3 TO SUCCEED IN TRANSFORMATION, YOU MUST BELIEVE IN IT!

*...otherwise, every failure becomes an opportunity to revert, and everything turns into the fault of the soil. Difficulties and limitations should be turned into a reason for "improving" the technique.*

### 4 THERE ARE HUNDREDS OF SUCCESSFUL EXPERIENCES IN ITALY AND AROUND THE WORLD...

*...those who have overcome the difficulties and now practice direct seeding gain more and work better... Let's not stay at home, let's get to know these difficulties!!*

### 5 THE ONLY LIMITATION OF DIRECT SEEDING IS IN OUR MINDS AND MENTAL "BOUNDARIES."

*...is wrong, the one who thinks that "they already know everything"..  
... the one who says "but it's different here"..  
... the one who believes "there are no solutions to the problems"... gets caught up in the "neighbor's comments"..  
...those who say "it has always been done this way here"..  
...those who don't have the courage to "admit their mistakes."*

**THE FARMER IS A PROFESSIONAL!**



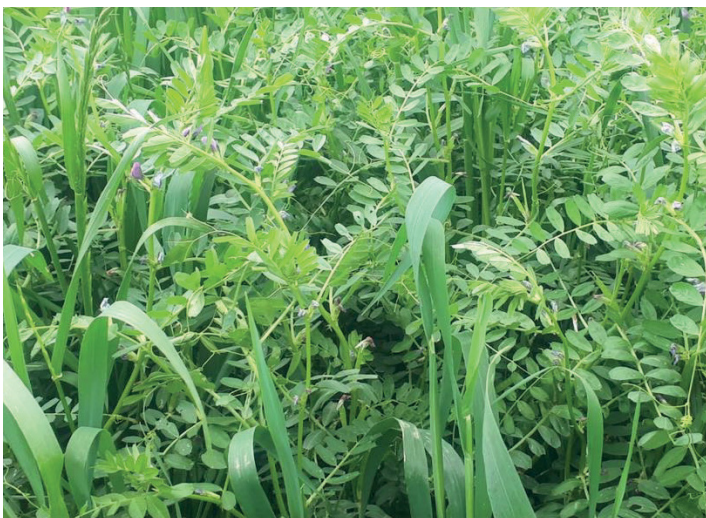
### 6 SUCCESS IS BASED ON INNOVATION AND THE FLOW OF KNOWLEDGE

*..It is essential to communicate with experienced individuals, gather information, ask questions every day, and use your mind... or rely on the right people..  
...The right seeder is good starting point, but it's not the end.*



## 10 RULES FOR APPROACHING DIRECT SEEDING

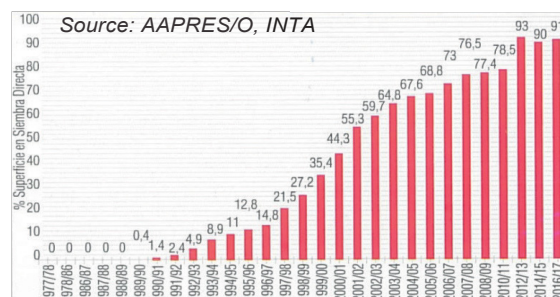
- 7 TO BE SUCCESSFUL IN THE FIELD DOESN'T JUST MEAN PRODUCING MORE**  
*..but it also means stabilizing yields, tolerating challenging years better, requiring fewer capital investments, reducing risks, controlling expenses (fixed and variable), increasing margins, simplifying business management...  
..working less and/or working better..  
...and getting a good night's sleep..*
- 8 MYTHS AND COMPANY PRIORITIES ARE CHANGING**  
*..It's not necessary to look at yields, but at net profit margins... and the risks, and efforts needed to achieve them...  
..The giant tractor? Only if you really need it' It's better to invest in highly efficient equipment that truly matters for crop care and yields!*
- 9 WITH DIRECT SEEDING, "LESS IS PRODUCED"**  
*...you might end up with ZERO harvest if you are not doing things right...  
...but if you do things right, yields improve even in the FIRST year... with all the advantages of direct seeding.*
- 10 GIVE IT TIME TO ENJOY**  
*...the more time passes, the better the results. The better the work, the more the soil improves...  
...mistakes leave memories, and the soil remembers... SO  
LET'S TREAT IT WELL'  
...when the soil increases its organic matter content, things change! Wait for the moment and make sure...*





## EVOLUTION OF MECHANIZATION AND WATER, SOIL, AND CROP MANAGEMENT FOR SUSTAINABLE PRODUCTION

The benefits of implementing direct seeding (DS) can be measured in several aspects and can be consolidated into a more sustainable production system, which can be explained as follows:



Source: AAPRES/O, INTA  
Development of direct seeding areas by cultures in Argentina. Campaign 1977/78 to 2016/17 year.

It improves the balance of organic and biological substances in the soil

It enhances water use efficiency (improving infiltration and reducing evaporation).

Significantly reduces erosion (up to 90% less compared to traditional cultivation)

Greatly increases the number of hectares cultivated per person

Significantly reduces fuel consumption and polluting emissions

Extends the life of tractors (66% reduction in use)

Requires fewer agricultural machines and reduces fuel consumption by up to 40% compared to conventional soil preparation (AAPRESID/INTA)

Permits planting where plowing is not feasible due to water scarcity

Allows for 25% to 40% higher crop yields with greater stability over the years

Expands planting possibilities

Minimizes the formation of surface crusts

Prolongs the agricultural cycle

## THE TURBO DISC

The set of working tools should include a turbo disc with excellent cutting ability of the previous crop and the removal of residue in the furrow formed by the double disc, where the seeds are placed. The use of a turbo disc allows for effective cutting and the formation of the furrow bottom to achieve good root development and plant emergence. To achieve this in different soils and environments, there are various designs of the turbo disc (width, arrangement, and number of waves) depending on cutting requirements and micro-soil conditions of the seeding location.



### **IN DIRECT SEEDING MACHINES, THE TURBO DISC IS THE HEART OF THE MACHINE AND MUST MEET THE FOLLOWING REQUIREMENTS:**

- 1** Effective cutting of crop residues
- 2** Preparation of planting strips by removing the previous crop with a 2 cm width and 8 cm depth.

Then, the double disc opens the planting bed, and seeds are sown at uniform and consistent depths. After mowing, the crop residue may or may not be cleaned. Regarding the uniformity of the seeding depth, it is important to use residue cleaners as they clean the strip that the depth-limiting wheels overlap, ensuring they are in contact with the firm soil and crop residue. Other additional advantages include the emerging seedlings receiving sunlight just above the soil surface, aiding in the direct increase in temperature by receiving sunlight without crossing the crop residue, which helps germination.

This way, the peripheral wheels follow the ground's surface and allow the blade (double disc) to always open the channels at a consistent programmed depth."



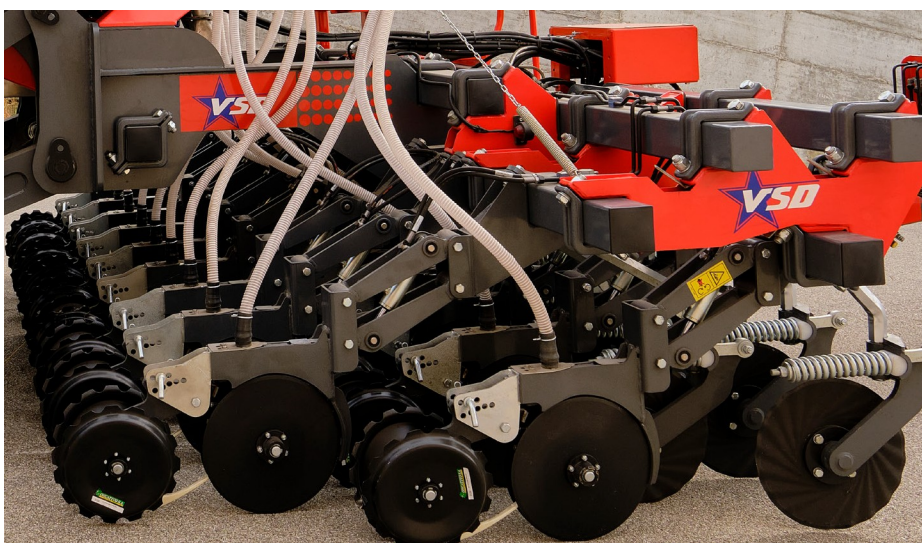
## FURROW CLOSING WHEELS

### VARIOUS OPTIONS DEPENDING ON THE TERRAIN TYPE

The seeding depth can be adjusted, ranging from a minimum of 1 cm to a maximum of 9 cm, with 0.7 cm increments for quick and easy adjustment. The pressure that the wheels should exert on the soil should not be excessive to avoid compacting the side perimeters of the furrow. However, some pressure is still useful to increase capillary water movement toward the seeds and stabilize the machine during operation.

After the furrow is made, the seeds are placed at the bottom and immediately pressed to ensure good contact between the seeds and the soil. This promotes germination and ensures a high and uniform germination rate. Ideal soil cover for the seeds involves creating a loose 'W' shape over the row, with the soil structure designed to minimize air space to reduce evaporation losses. At the same time, the soil should not be compacted to the extent that it hinders capillary action and prevents water from rising, allowing the seedlings to germinate without hindrance.

The technological advancements of the seeders have equipped them with electronic plant monitoring equipment, variable rate prescription seeding maps, and all the pneumatic sets for seed delivery and electric drives necessary for ecological and precision agriculture. The seeders also have the capability to incorporate starter fertilizers in the seeding line (low positioning doses) and/or high local doses of nitrogen fertilizers to avoid phytotoxicity. VSD seeders can be personalized to meet the individual needs of farmers and the specific requirements of the field.





## DIRECT SEEDING MACHINES VSD

### MODEL 007 MG - MECHANICAL

Spring or Autumn cultures from 2.7 to 4 m or 5 to 9 Rows



#### STANDARD EQUIPMENT

- Constant pressure hydraulic parallelogram mounted seed drill, double disc high stroke
- High flotation turbo disc
- Two-point hitch for work and transport (semi-mounted)
- Two-point hitch for work and transport (mounted, 5 rows) and (semi-mounted) 7 and 9 rows
- Transport and work wheels 550/70-22.5 high flotation
- High capacity seed and fertilizer hopper (60% seeds – 40% fertilizer), 1800 or 2300 L
- Chevron-type seed distributors made of durable plastic with oil-bath variator for seed and fertilizer dose variation
- Hydraulic ground precision adjustment (constant)
- Seeding depth adjustable on furrow closing wheel (1 cm – 9 cm)
- Double disc element (2 discs arranged in a V shape to open seeding furrow)
- Beaver Tail
- Lights and road signs kit, machine complies with CE standards

*Optional equipment: loading auger, hydraulic & pneumatic brakes, control & distribution monitors, ISOBUS, and more.*



## DIRECT SEEDING MACHINES VSD

### MODEL SUPERNOVA MG - PNEUMATIC

Spring or Autumn cultures from 3,6 to 8 m



#### STANDARD EQUIPMENT

- Constant pressure hydraulic parallelogram mounted seed drill, double disc high stroke
- High flotation turbo disc
- Two-point hitch for work and transport (semi-mounted)
- Transport and work wheels 550/70-22.5 or 700/55-22.5 high flotation
- High capacity seed and fertilizer hopper (60% seeds – 40% fertilizer), 3000 – 4500 L
- Distributors for seeds and fertilizers "accord"
- Hydraulic ground precision adjustment (constant)
- Seeding depth adjustable on furrow closing wheel (1 cm – 9 cm)
- Double disc element (2 discs arranged in a V shape to open seeding furrow)
- Beaver Tail
- Lights and road signs kit, machine complies with CE standards

*Optional equipment: loading auger, hydraulic & pneumatic brakes, control & distribution monitors, ISOBUS and more.*

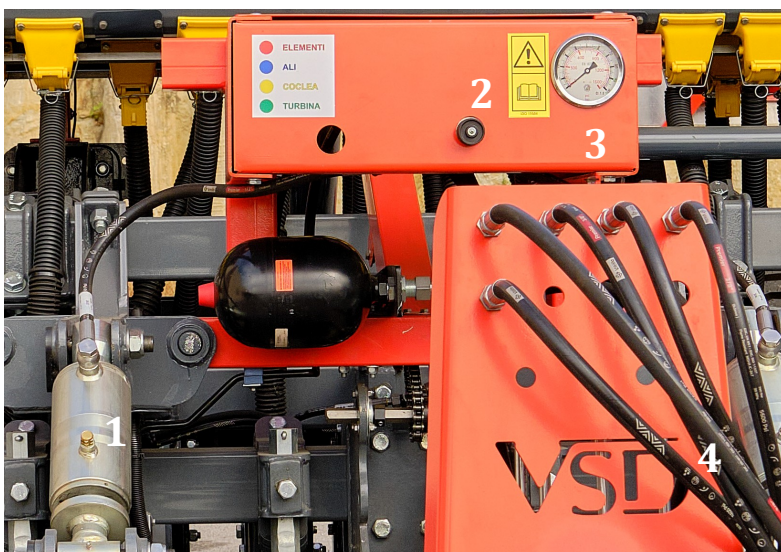


## SEEDING ELEMENT



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1. Hydraulic cylinder with active pressure</li> <li>2. Fertilizer pipeline</li> <li>3. Seed pipeline</li> <li>4. Furrow-closing wheels</li> </ul> | <ul style="list-style-type: none"> <li>5. Turbo disc</li> <li>6. Harrow tail</li> <li>7. Double disc for opening the sowing furrow</li> <li>8. Depth adjustment for seeding</li> </ul> |
|--|--|

## HYDRAULIC SYSTEM



- 1. Pistons for lifting the machine
- 2. Pressure regulation valve: active pressure system
- 3. Continuous monitoring of pressure during seeding
- 4. High-pressure and flexible hydraulic hoses



## TURBO DISC

1. Performs micro processing of the seeding row
2. Cuts all plant residues
3. Clears plant residues from the seeding row
4. Equipped with high-flotation springs



## HOPPER AND AUGER

1. Hopper capacity: 3,000 L  
(60% seeds and 40% fertilizer)
2. Hydraulic loading auger with a diameter of 150 mm
3. Wide-profile tires for weight distribution
4. Hydraulic control with direction reversal

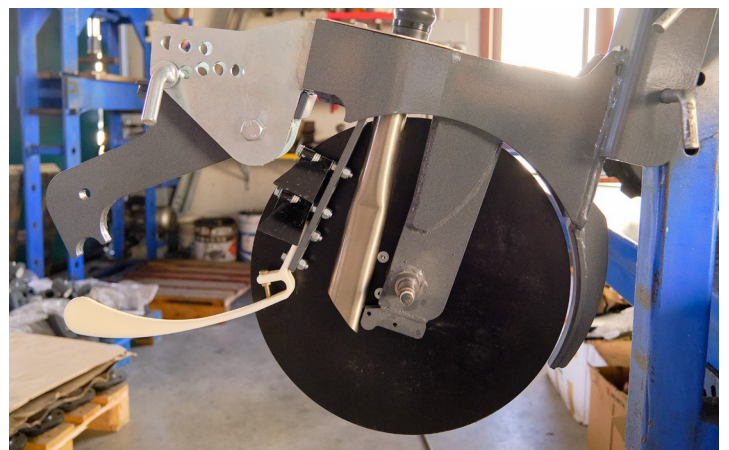
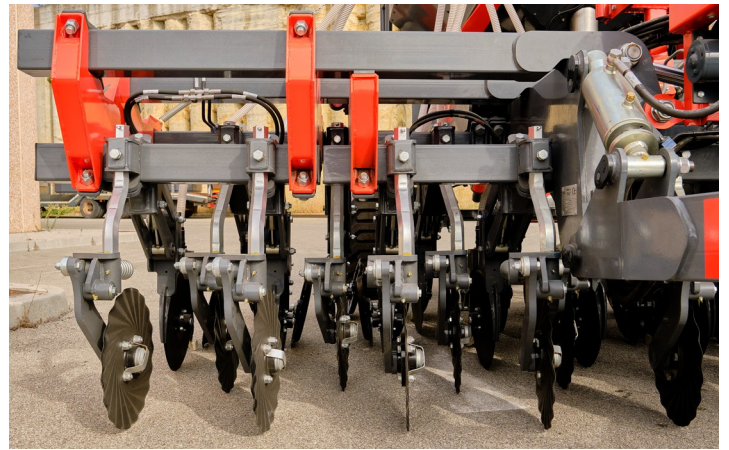
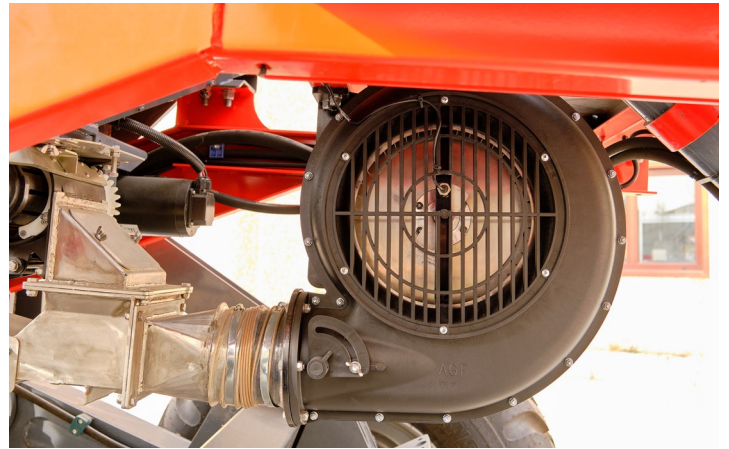


## LIGHTING SYSTEM

1. LED lights for illuminating the seeding elements
2. Excellent visibility even when working at night









## DIRECT SEEDING PROCESSED FIELDS





## TECHNICAL SPECIFICATIONS

- C45 steel for the sowing elements
- S700 steel for the frame
- Bearings from SKF only
- All Italian component part
- Seed discs, closing wheels and turbo discs made of steel with pine fiber
- Control electronics (MC ELETTRONICS, MULLER, QS CONTROL or CONTROL AGRO) depending on requirements
- Variable rate seeding
- System for seed scattering and controlled fertilization (ACCORD)
- Epoxy powder coating with anti-corrosion bottom
- Axles with brakes (TVZ) made of premium material
- Italian hydraulic system (VITILLO) with cathoporesis for the iron parts and zinc/nickel coating for studs and fittings, resistant to corrosion by fertilizers
- Seminiferous tubules resistant to UV rays
- Lighting and signaling systems with WURTH components







**SUPERNOVA MG**



**007 MG**



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