Tillage equipment

Offset and tandem discs
Cultivators
PROVED EFFICIENCY

Now Versatile quality is implemented in a new product line of tillage equipment. Offset and tandem discs, cultivators and chisel ploughs – all that is a result of a 50-year manufacturing and developments tested by tens of thousands of tilled hectares. Each part and component is made of durable materials and conforms to the most severe working conditions.

In production of our machinery we are always trying to take into account all details of tillage in order to achieve maximum possible efficiency of our equipment on the field, to minimize potential idle time and breakdowns, thus making farmer’s everyday work much easier. Our equipment is pulled by almost any agricultural vehicle starting from light 100 hp tractors and ending with heavy-duty tractors of over 500 hp. VERSATILE Tillage Equipment may be described as multipurpose, simple, reliable and designed to work under the most severe conditions.
RUSSIA

Rostov-on-Don
Rostselmash

Klever
produces adapters for Rostselmash harvesters, trailed/mounted forage machinery, equipment for grain processing and storage, municipal vehicles and snowploughs.

Morozovsk, Rostov Region
Morozovskselmash
manufactures adapters for Rostselmash harvesters and drawn/mounted forage machinery.

CANADA

Winnipeg
VERSATILE
produces 190-575 h.p. VERSATILE tractors. Central VERSATILE spare parts store.

Morden
Farm King
manufactures grain reloaders, grain cleaners, snow throwers and compact tillers. Central Farm King spare parts store.

Vegreville
BUHLER EZEE-ON
Produces reliable and cost effective tillage and seeding equipment.

USA

Salem
Feterl Manufacturing Corp
manufactures grain processing and storage equipment supplied to the Russian market under the trademark of ROSTSEL-MASH.

Fargo
Farm King
produces bale carriers, grader blades, front-end loaders supplied to the Russian market under the trademark of ROSTSEL-MASH.

Villmar
VERSATILE
manufactures pull-type and self-propelled sprayers supplied to the world market under the trademark of VERSATILE.
EXPERIENCE. INNOVATIONS. SUCCESS

Over 80 years Rostselmash has produced agricultural machinery demanded all over the world. This fact made it possible to gain a tremendous experience allowing to make a real-time response to constantly changing customer demands and to develop effective harvesting solutions.

Today Rostselmash unites 13 enterprises located all around the world and aimed at one single target – production of reliable and efficient machinery capable of becoming an indispensable assistant to each farm.

Investment in production development, attention to customer opinion and tendency to use innovative technologies together with accumulated experience are the basis of Rostselmash success. Our equipment has outgrown its traditional CIS markets long ago gaining confidence of a large number of farmers from Canada, USA, Argentina, Eastern Europe, Middle East and Africa.

As of today Rostselmash offers 15 different models and modifications of Grain harvesters which are united into 4 series – TORUM, ACROS, VECTOR, NIVA. Thus, everyone from a small farmer to CEO of an agricultural holding company may choose for themselves the most efficient Rostselmash equipment.

From the year 2012 Rostselmash has started to sell Versatile tillage and seeding equipment manufactured by its new Canadian assets. Canadian weather conditions are very similar to Russian. Same large fields and same enormous seasonal loads on agricultural machinery. Therefore, requirements to reliability and failure-free operation are as high as possible. Rostselmash product line was replenished by disc harrows, tillage cultivators, wide-coverage drills with hoe openers and air carts.
A floating hitch is important in that it allows the implement to follow irregular ground contours closely. Unlike conventional hitch designs, the floating hitch moves up or down with the tractor without interfering with the operation of the implement. In case of riding into obstacles, for example stones or roots, or in case of uneven surfaces, for example land erosion, the machine just rolls through or over them without overloading front gangs. Thus, the risk of damaging expensive disc blades or gang bearings is decreased considerably. Spring-cushioned screw crank reduces time spent on fore/aft leveling of disc harrow. Floating hitch is a standard equipment for all tandem discs, cultivators, chisel plows and SD1050 offset disc.
**410 WSS SERIES HEAVY-DUTY BEARINGS WITH TRIPLE SEALING FOR SEVERE TILLAGE CONDITIONS**

Rated at 6396 kg (33 rpm) radial load rating, 410 WSS unique bearings are one of the distinctive features of VERSATILE disc harrows. The bearing has seven (7) 2.38 cm (15/16”) steel ball bearings that are contained within a greaseable housing. The bearing features triple lip seals that cannot be damaged by over-greasing and seal guards protect the seals from rock damage or material wrapping around the gang shaft. The 410 WSS bearing uses a bolt-on cast housing that allows self-alignment which minimizes wear.

**T2-215 TRUNNION MOUNTED BEARINGS WITH TRIPLE SEALING**

These “heavyweight” bearings are an exclusive Versatile feature installed as standard on the largest and heaviest offset and tandem discs. The T2-215 series bearings are trunnion mounted to provide positive alignment and handle gang shaft deflection that results from shock loads. Two 215 series ball bearings are positioned back-to-back within the oversized regreaseable housing and protected by two triple-lip seals. Each 215 bearing uses eleven (11) 1.74 cm (11/16”) steel ball bearings and each T2-215 bearing unit is rated at 10 342 kg (22,800 lb) radial load rating at 33-1/3 rpm. Housing design makes it simple to remove gangs by removing one bolt per bearing housing. Bearing trash guards are an option and recommended for rocky conditions or in case of high possibility of housing damage.
Offset discs are used for primary tillage and are produced in three different weight classes from 820 kg/m to 1560 kg/m. Durable and simple design, heavy-duty bearings, optional interlocking half-spools, long failure-free performance and superior disc gang bolt torque of 5153 Nm, all of that distinguishes Versatile harrows among other competitors.

Rigid hanger (standard).
Durable rigid hanger is designed and manufactured specially for withstanding the most severe conditions. SD550 and SD650 are equipped with hangers made of high-strength steel with thickness of 32 mm, and SD1050 hangers are made of tube steel. Both types of hangers have slim profile, which provides durability and an opportunity to work on fields with large amount of crop residue.

Blade scrapers.
All VERSATILE discs feature special scrapers for blades. Carbon steel scrapers are notable for high wear resistance and thorough disc cleaning. The scrapers are perfectly adjusted to each disc due to U-bolting on the bar. The scrapers are mounted as close to the inner disc face as possible, thus allowing to pass crop residue without jamming or wrapping.

Adjustable gang angle.
VERSATILE tillage equipment is multipurpose and ensures necessary results regardless of external factors. VERSATILE offset discs allow operator to set three different gang angles: 25°, 22°, 19° (SD1050 – 25°, 22°). Due to this there is an opportunity to make fine adjustment of the harrow for operation under any moisture, soil and residue conditions.

Removable spindle axles.
Versatile offset discs were designed in such a way as to shorten maintenance time and to minimize operator’s effort. In order to replace or repair a wheel the operator doesn’t need to unscrew it by laying under the harrow for a long time. Each spindle is fastened inside the sleeve by just one bolt, unscrewing of which releases the axle with the wheel hub and saves precious time.
Precise depth control. Main frame rockshaft with diameter of 14 cm adds more frame durability and provides reliable functioning of the single point depth control system. Very simple adjustment of depth by segments mounted on the main cylinder will reduce setting time. Adjustable disc leveling crank makes it possible to find balance between ground pressure generated by front and rear disc gangs.

Steel spools. As compared with fragile cast iron spools, high-grade steel spools withstand greater stress loads resulting from riding into stones or roots, thus the risk of their damage is reduced. Forget about checking disc gang bolt tightening all the time. Use of steel spools allows to tighten bolts with an incredible torque of 5153 Nm. All Versatile disc gangs are tightened at the factory.

Large gang shaft. The shaft with diameter of 50 mm is made of high carbon steel. Its vital difference is its large dimensions excelling most of the other competitors. Due to such tangible advantage the shaft guarantees additional endurance and reliability of disc fastening and makes the machine more durable. As an option we can offer a shaft with a key end for maximum grip of large diameter disc blades and their protection from turning against spools.

Furrow filler blades. In order to get the most uniform and consistent field finish, Versatile offset discs have furrow filler blades as standard equipment. On larger working widths two furrow fillers are standard, one 4” smaller than the working blades and one 8” smaller (only one furrow filler is used on model SD1050). One furrow filler blade that is 4” smaller than the working blades is standard on smaller working widths. These blades along with full sized blades to create a uniform well-worked field.

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OFFSET DISCS ARE USED FOR PRIMARY TILLAGE.

Stone Flex hanger (option). 32x64mm C-shaped spring steel Stone Flex hangers protect the frame, discs and gang bearings from premature wear and damage, reduce stress loads resulting from riding into stones, roots or other obstacles and, finally, they reduce resistance in both vertical and, which is especially important, in horizontal directions, while disc depth remains the same.

Pan-style scrapers (option). Available on models SD550 and SD650, pan-style scrapers contact lower down on the disc blade to provide more effective cleaning and prevent sticky soil from building up. As a result, blades cut cleaner and draft is lighter. Scraper material is a boron alloy steel for enhanced wear characteristics. All scrapers are adjustable individually or as a group for optimum field performance.

Disc blades. All Versatile harrows are equipped with high-quality discs made in accordance with brand new microstructure boron steel technology. Such alloy has two different characteristics: high viscosity and at the same time high resistance to abrasive materials. These unique properties enable the sprayer to till much more hectares without changing the discs.

Manufacturing tests. Before being shipped to the customer the blades undergo a number of flexibility and durability manufacturing tests. Main tests include: rotating disc blade resistance to repeated bending and qualitative steel tests, that is simulation of extreme disc loads at which low-quality blades usually break. As a result you receive blades suitable for operation under the most severe conditions.
**SD550 Offset Disc** is a multipurpose machine suitable for both primary and secondary tillage. SD550 is available in 230 and 267 mm spacing. The disc is designed to manage corn stalks and heavy residue, as well as, break hay fields and heavy pasture. This model may be also used for preparing an even seedbed.

**Weight of SD550 – 820 kg/m**

**SD650 Offset Disc** is perfect for primary tillage and is designed for forage breaking, discing of heavy residue fields and deep tillage with partial soil turning.

**Weight of SD650 – 967 kg/m**
**SD1050** is an extremely heavy-duty disc for deep 22–25 cm tillage with partial soil turning. The disc may also be used for construction works (eradication of bushes, sprouting trees and canes, preparation for road works) and extraction of seam.

**Frame.** Tube steel welded structure with dimensions of 254 x 102 x 12.7 mm. Standard notched discs 813 x 12 mm and heavy-duty trunnion T2-215 bearing.

**Tyres** 12.5Lx15 Fl for operation on damp soil and frequent and long transportations. Enhanced cross-country capacity.

**Heavy duty rock-shaft** with diameter of 17 cm and thick walls. The shaft is rotating on greaseable bearings with plastic and graphite gaskets preventing metallic friction wear.

**OFFSET DISC**

**SD1050** is an extremely heavy-duty disc for deep 22–25 cm tillage with partial soil turning. The disc may also be used for construction works (eradication of bushes, sprouting trees and canes, preparation for road works) and extraction of seam.

**FLOATING HITCH**

As compared with competitive models, all SD1050 Offset Discs are equipped with a floating hitch. The hitch is of great importance for the disc harrow, because it enables the implement to follow uneven ground surface. Unlike conventional hitch, the floating hitch moves up and down with tractor without disbalancing disc gangs.

In case of riding into obstacles, the machine just rolls over them without overloading front gangs. Thus, the risk of damaging disc blades or bearings is decreased, while stress loads on the frame are reduced. Spring-cushioned screw crank reduces time spent on fore/aft leveling of disc harrow.

"Life is like a grindstone – whether it wears you down or polishes you up depends on what you are made of."  

*American proverb*
Tandem discs (X-shaped) are designed to handle virgin and fallow lands, to prepare fields for fallow and seeding, to manage crop residue and incorporate fertilizers into the soil. All tandem discs are equipped with a floating hitch allowing to make tillage more even as compared with other competitors. Disc gangs are tightened with an incredible torque of 4339 Nm at the factory. While Versatile bearing assemblies are considered to be the best in the industry, therefore you will face no problems on the field and tillage will be done on time.

Rigid Hanger (standard). Hangers stand the most extreme conditions. They have a thin profile, which provides durability and an opportunity to work on fields with large amount of crop residue. TD500N and TD500 are equipped with reinforced high-strength 16 mm steel hangers, while TD600, TD600F, TD700 and TD700F hangers are made of high-strength steel and have a size of 32x127 mm. All hangers are fastened to the gang beam with U-bolts for easy adjustment and maintenance.

Blade Scrapers. All VERSATILE discs feature 100 mm scrapers for blades. Carbon steel scrapers provide high wear resistance. The scrapers are perfectly adjusted to each disc due to U-bolting on the bar. The scrapers are mounted as close to the inner disc face as possible, thus allowing to pass crop residue without jamming or wrapping. Such design also reduces horsepower requirements.

Staggered Front Gangs. 65 mm overlapping front gangs are a characteristic feature of all Versatile tandem discs ensuring even tillage and weed extermination in the center of the harrow. Thus, as opposed to other competitive tillage equipment, there is no need for an additional shank, disc blade or bulk buster between rear gangs.

Transportation. Any machinery should not only be efficient in operation, easy in maintenance, but also convenient in transportation, especially concerning large-size and wide-cut equipment. Standard safety lock-out valves prevent accidental engagement of hydraulic cylinders during transportation. TD600F and TD700F model have a decreased transport height of 4.3 m and 4.2 m respectively, and are easy to transport by public roads.
Removable spindle axles. VERSATILE tandem are easy and convenient in maintenance. The operator doesn’t need to perform unnecessary operations. In order to replace or repair a wheel the operator doesn’t have to unscrew it by laying under the harrow for a long time. Each spindle is fastened inside the sleeve by just one bolt, unscrewing of which releases the axle with the wheel hub.

Steel spools. As compared with fragile cast iron spools, high-grade steel spools withstand greater stress loads resulting from riding into stones or roots, thus the risk of their damage is reduced. Forget about checking disc gang bolt tightening all the time. Use of steel spools allows to tighten bolts with an incredible torque of 4339 Nm.

Furrow filler blades. These blades are required for even tillage without leaving furrows. They ensure that all soil thrown off by front disc gangs is returned back by rear disc gangs. Furrow filler blades are standard equipment for tandem discs. The system includes two discs: the outer is 20 cm smaller in diameter than the working blades and the second is 10 cm smaller.

Rephasing Hydraulic Lift System. Depth control segments are mounted on each cylinder and provide constant tillage depth. Wing cylinders are synchronized with the main cylinder and ensure even depth along the whole operating width. Wing frames are leveled by eye-bolt conveniently located at the mounting point of hydrocylinders. Cylinder arm on each of the rockshafts are equipped with replaceable wear resistant bushings for prolonged trouble free performance.

**AS COMPARED WITH THE MAJORITY OF COMPETITIVE MODELS, ALL TANDEM DISCS ARE EQUIPPED WITH A FLOATING HITCH, WHICH ENABLES THE MACHINE TO PERFORM EVEN FIELD TILLAGE**

Tandem Walking Beam Axle. Standard for the following tandem disc models: TD500, TD600, TD600F, TD700 and TD700F. Each walking beam pivots on two tapered roller bearings to improve weight distribution, stability during transportation and to eliminate unexpected accidents, which may disable the harrow.

Large gang shaft 50 mm diameter gangshaft is made of high carbon steel. Its large dimensions excel most of the other counterparts. Such advantage vests the harrow with a number of strong points distinguishing it from other competitors. For example, due to such a great difference in size and using of steel spools, it becomes possible to tighten gang assembly with 4339 Nm of torque.

Stone Flex hanger (option). 32x64mm C-shaped spring steel Stone Flex hangers protect the frame, discs and gang bearings from wear and damage, reduce stress loads resulting from riding into obstacles and, finally, they reduce resistance in both vertical and, which is especially important, in horizontal directions, while disc depth remains the same.

Interlocking Half Spools. Half spools are an exclusive technical solution from VERSATILE. Bearing sleeve interlocks constantly with adjoining half spools to minimize turning of large diameter discs and bearing sleeves against the shaft. Optional with 660 mm blades, standard with 710 mm blades and larger (available on 267 and 305 mm spacing).
**TD500 (TD500N)**

**TANDEM DISC**

**TD500 and TD500N Tandem Discs** pertain to light weight class and are used for shelling cereal stubble at the depth of up to 10 cm, seedbed preparation and fallow tillage. Disc weight equals to 670 kg per one meter of operating width and weight per blade to 68-75 kg. This harrow is available in working widths from 5,5 to 12,3 m and blade spacings of 203 and 230 mm. 3-bar tine harrows are available as optional equipment for improved braking of large clods and even distribution of crop residue along the field.

**Weight of TD500 (TD500N) – 670 kg/m**

**Frame.** Tube high-strength steel welded structure with dimensions of 102 x 102 mm (tube thickness: TD500N – 6.5 mm and TD500 – 9.4 mm).

**Tyres** 11Lx15Fl, optimal for this type of harrows, standard equipment.

**Wing wheels** move forward in the working mode, which enhances harrow balance and makes finishing tillage even and without any ridges or furrows.

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**TD600 (TD600F)**

**TANDEM DISC**

**TD600 and TD600F Tandem Discs** pertain to medium weight class and are a multipurpose equipment for shelling cereal, sunflower and corn stubble, seedbed preparation, fallow tillage and forage lands breaking. Disc weight equals to 856 kg per one meter of operating width and weight per blade to 88–102 kg. This disc harrow is available in working widths from 7,6 to 12,8 m and 230 and 267 mm blade spacing. The discs are equipped with heavy-duty bearings (410WSS or optional T2-215). TD600F differs from TD600 by reduced transport height of 4,3 m.

**Weight of TD600 (TD600F) – 856 kg/m**

**Frame.** Tube high-strength steel welded structure with dimensions of 152 x 102 x 9.4 mm.

**Wing wheels** move forward in the working mode, which enhances harrow balance and makes finishing tillage even and without any ridges or furrows.

**Main frame rockshaft** is made of thick-walled tube with 140 mm diameter. The rockshaft rotates freely in greaseable saddle bearings and provides precise depth control.
TD700 (TD700F) TANDEM DISC

TD700 and TD700F Tandem Discs pertain to heavy weight class and are used for shelling corn, sunflower and beet-root stubble, seedbed preparation, fallow tillage and forage lands breaking. Disc weight equals to 1043 kg per one meter of operating width and weight per blade to 112–154 kg. This harrow is produced with working width from 7,3 to 13,0 m and 230, 267 and 305 mm blade spacing. Standard T2-215 bearings and floating hitch make harrow even more multipurpose. TD700F differs from TD700 by reduced transport height of 4,3 m.

FLOATING HITCH

As compared with competitive models, all Versatile tandem discs are equipped with a floating hitch. The hitch is of a great importance for the disc harrow, because it enables the implement to follow uneven ground surface. Unlike conventional hitch, the floating hitch moves up and down with tractor without disbalancing disc gangs.

In case of riding into obstacles, the machine just rolls over them without overloading front gangs. Thus, the risk of damaging disc blades or bearings is decreased, while stress loads on the frame are reduced. Spring-cushioned screw crank reduces time spent on fore/aft leveling of disc harrow.

Frame. Tube high-strength steel welded structure with dimensions of 203 x 102 x 9,4 mm.

Main frame rock-shaft is made of thick-walled tube with 170 mm diameter. The rockshaft rotates freely in greaseable saddle bearings and provides precise depth control.

Blades of 711 x 9 mm size are standard for all TD700 and TD700F Discs. While additional options are standard for models with 305 m blade spacing.

Weight of TD700 (TD700F) – 1043 kg/m

T2-215 BEARING ASSEMBLY WITH INTERLOCKING HALF SPOOL

Trunnion housing
Interlocking sleeve
Press-on half spool
T2-215 bearing
50 mm shaft
Smooth/notched disc blades

As compared with competitive models, all Versatile tandem discs are equipped with a floating hitch. The hitch is of a great importance for the disc harrow, because it enables the implement to follow uneven ground surface. Unlike conventional hitch, the floating hitch moves up and down with tractor without disbalancing disc gangs.

In case of riding into obstacles, the machine just rolls over them without overloading front gangs. Thus, the risk of damaging disc blades or bearings is decreased, while stress loads on the frame are reduced. Spring-cushioned screw crank reduces time spent on fore/aft leveling of disc harrow.
VERSATILE Cultivators have established a great reputation among different farms all around the world. C500 and C600 Cultivators are produced with operating width from 7.2 to 18.3 m. They can easily handle a number of various tasks, such as: chisel tillage, seedbed preparation, embedding of fertilizers and handling of fallow. C700 Chisel Cultivators are able to work under the most severe conditions and to chisel as deep as 25-30 cm. Chisel cultivators are recommended for soils vulnerable to wind and water erosion as an alternative to tillage. The cultivators are equipped with 4-bar tine harrows for more even tillage. All VERSATILE Cultivators may be used as seeding machines within single sowing complex. For this purpose they should be equipped with an air distribution kit and mounted packers. All of the above turns VERSATILE Cultivators into multipurpose and efficient machinery capable of performing almost any field task starting from primary tillage and finishing with seeding.

**Single Cylinder Depth Control.**
Precise depth control is achieved by segments mounted on the main cylinder shaft. Simple and reliable design, as opposed to parallel cylinders, eliminates leakages between hydraulic cylinders and allows to make field tillage more even. Different combinations of control segments make it possible to change depth with increment of 3 mm (standard equipment for C500 and C700).

**Quick Wing Levelers.**
In order to ensure even tillage depth along the whole operating width it is important for the cultivator to be leveled relative to the horizon. VERSATILE has design their cultivators with due account of all requirements to convenience and simplicity of adjustments. A single person is able to level the wing sections side to side by these quick wing levelers.

**Castor Wheels.**
The castering axle rotates on a nylon graphite wear washer. Such design was used by engineers in order to increase wear resistance, to provide smooth rotation and to extend assembly life. L-shaped caster reduces mud or crop residue jamming by 50%, as opposed to U-shape. 11Lx15 Fl tyres (with C, D or F load ranges) are standard.

**Tandem Walking Axles.**
Tandem walking beams are standard for all VERSATILE cultivators. Each walking beam rotates on two tapered roller bearings to improve weight distribution and to make movement steady and stable. Moreover, the walking beams increase cross-country ability of the cultivator, allowing it to move on a rough field or across furrows.
Front to Rear Leveling. VERSATILE design provides for special adjustable pusharms, which connect castor wheels with the rockshaft. Due to these pusharms the machine may be quickly and easily leveled in fore/aft directions, which is vital for precise operation.

Wheel Hub Seals. Protecting wheel bearings in a dust filled environment can be a challenging task. Versatile’s hub sealing system is designed specifically for this situation. A triple lip seal is fixed to the spindle, while the seal cup positioned in the hub turns. The result is a longer life of operation and the ability to grease without pushing the seal out.

Ezee-A-Tach Mounted Packers (option). 51 cm diameter polyurethane packers are available for all working widths of cultivators. Each gang is fastened to the arm by a hinge, thus allowing to follow field contour and to roll over obstacles with ease. Packers can be easily removed and replaced with tine harrows. In this way the cultivator becomes a flexible tillage tool.

Flex-Wing Hinges. These hinges allow the fore/aft travel by the wing sections. Firstly, it is necessary to follow field contour. Secondly, use of Flex-Wing Hinges reduces frame torsional stress. Fixed hinge on the second row of each section provides weight transfer from frame to frame to ensure proper depth penetration by each frame section.

Mounted Tine Harrows. It is highly recommended to equip all cultivators with 3- or 4-bar mounted harrows required for making even ground surface, braking large clods during seedbed preparation and distributing crop residue on the field during deep tillage. Tines with dimensions of 10x460 mm are made of spring steel and have 6 position angle adjustment.

Shank Assembly. Massive C-shank pivots on a maintenance-free nylon-graphite bushing with high sliding ratio, which prolongs whole assembly life. Shanks with dual springs having initial breakout force of 159 kg or 250 kg (295 kg for C700 Chisel Cultivator) maintain constant depth. In case of riding into an obstacle, the shank bends back without damaging the opener and absorbs loads imposed on the frame and bolts.

Shank Lowering Kit (option). Optional plates with thickness of 3, 6 and 13 mm are mounted between the frame and shank assembly in order to increase the depth of openers following tractor’s track. Such technical solution provides stable and even depth along the whole operating and ensures full cut of weed. It is recommended to install up to 16 kits on one machine.

Transport. Striving for designing efficient machinery we shouldn’t forget about trifles, which at the first glance are not related to the immediate objective of the cultivator. Its wheelbase is increased in transport position. This feature is especially important if the cultivator or chisel plough is equipped with mounted harrows or packers.

CHISEL CULTIVATORS ARE RECOMMENDED FOR SOILS VULNERABLE TO WIND AND WATER EROSION AS AN ALTERNATIVE TO PLOUGHING.
C500 Cultivator is a well-balanced and multipurpose machine suitable for various applications. It is available in working widths from 7.2 to 13.9 m. Heavy dual spring trip assemblies enable the cultivator to perform like a chisel plough. Five-row frame allows it to pass through a large amount of crop residue, while floating hitch and optional trip shanks with initial breakout force of 159 kg make the cultivator beyond the reach of its competitors.

C700 Chisel Cultivator was especially designed for tilling under the most severe conditions and conforms to all reliability requirements. In North America such cultivators are also called “Chisel Plows”. Massive frame, reinforced by 30% shanks (as compared with C500), heavy-duty rockshafts, Hitch length of almost 6 m, all of that enables the cultivator to operate at greater depths as distinguished from conventional cultivators. Chisel shaped ground engaging tools provide the machine with an opportunity to plough the soil with the depth of up to 30 cm.

5-Row Frame. No two shanks will ever be placed closely to each other. This reduces plugging from trash residue leaving a smooth field finish.

Working Wheelbase. Narrow 2.5 m frame and short 2.2 m wheelbase vest the cultivator with superior capabilities for operation on rough surface, thus the field will be tilled evenly.

Transport Wheelbase is increased in transport position in order to provide better stability and weight distribution, which is especially important if the cultivator is equipped with mounted harrows or packers.

Frame Depth. C700 Cultivator has an extra-long frame and high under-frame clearance (864 mm).

Bolt-on extensions allow to increase or reduce working width depending on soil conditions.

Lock-out Valves. Being locked they prevent the wings from unfolding in the transport position or if the hydraulic lever was moved accidentally.
VERSATILE C600 Cultivator is available in working widths from 13.3 to 18.3 m, with 203, 254, 305 mm spacing and initial breakout forces of 159, 250 and 272 kg. It may be used for heavy primary tillage and as a part of sowing complex. For example, at one of the farms C600 sowing complex with width of 18.3 m and AC400 tank capacity of 13742 l is capable of seeding up to 1500-2200 ha within 150 hours, while the cultivator itself ploughs 6000-7000 ha of fallow lands per season. This makes the cultivator a beneficial purchase to any farm.

FLOATING HITCH

The hitch is of a great importance for the cultivator, because it enables the latter to follow uneven ground surface. As opposed to conventional hitch, the floating hitch moves up and down with tractor without overloading the cultivator. Long towing bar (C500 – 4.8 m, C600/C700 – 5.8 m) adds to the advantages of the floating hitch and provides extra turning maneuverability and stability on hilly fields.

In the survey conducted by Kondinin Group, independent Australian information agency, in 2005, among customers of C500 Cultivators 94% of farmers are ready to purchase this model once again. In accordance with customers' reviews C500 got 5 stars out 5 possible for reliability.

Frame is welded from tube high-strength steel with dimensions of 102x102x6.4 mm. 140 cm diameter rockshaft is made of thick-walled tube.

Removable Wheel Spindles for quick removal and repair of complete wheel assemblies.

Hitch Stabilizers prevent coupling oscillations during transportation.

Nok-On (or Bolt-On) Sweeps – 280 mm, 305 mm, 355 mm, 420 mm

Reversible Spikes for chiseling 16 x 50 x 400 mm
### DISC HARROWS

**Offset Disc**

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<th>SD550</th>
<th>SD650</th>
<th>SD1050</th>
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<tr>
<td>Blade spacing</td>
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<td>10.5&quot; (267 mm)</td>
<td>12&quot; (305 mm)</td>
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<td>Working width</td>
<td>6.5' – 20' (1.9 – 6.1 m)</td>
<td>6' – 20' (1.8 – 6.1 m)</td>
<td>6' – 20' (1.8 – 6.1 m)</td>
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<td>Weight per blade</td>
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<td>135 kg</td>
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<td>Horsepower required per meter of working width*</td>
<td>33 hp/m</td>
<td>33 hp/m</td>
<td>40 hp/m</td>
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#### Structure

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<th>SD550</th>
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<th>SD1050</th>
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<tr>
<td>Hanger Stone Flex, option</td>
<td>1.25&quot; x 2.5&quot; (32 x 64 mm)</td>
<td>1.25&quot; x 2.5&quot; (32 x 64 mm)</td>
<td>1.25&quot; x 2.5&quot; (32 x 64 mm)</td>
</tr>
<tr>
<td>Gang shaft</td>
<td>49 mm in diameter</td>
<td>49 mm in diameter</td>
<td>49 mm in diameter</td>
</tr>
<tr>
<td>Steel spools</td>
<td>External diameter 140 mm</td>
<td>External diameter 140 mm</td>
<td>External diameter 168 mm</td>
</tr>
<tr>
<td>Bearings</td>
<td>410 WSS</td>
<td>410 WSS / T2-215</td>
<td></td>
</tr>
<tr>
<td>Gang angle</td>
<td>Adjustable 25°, 22°, 19° front/rear</td>
<td>Adjustable 25°, 22°, 19° front/rear</td>
<td>Adjustable 25°, 22°, 19° front/rear</td>
</tr>
<tr>
<td>Blades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade sizes, standard</td>
<td>24&quot; x 5/16&quot; (610 x 8 mm)</td>
<td>24&quot; x 5/16&quot; (610 x 8 mm)</td>
<td>26&quot; x 5/16&quot; (660 x 8 mm)</td>
</tr>
<tr>
<td>Blade sizes, optional (smooth)</td>
<td>24&quot; x 5/16&quot; (610 x 8 mm)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Blade sizes, optional (smooth/notched)</td>
<td>26&quot; x 5/16&quot; (660 x 8 mm)</td>
<td>26&quot; x 5/16&quot; (660 x 8 mm)</td>
<td>26&quot; x 3/8&quot; (660 x 9 mm)</td>
</tr>
<tr>
<td>Depth control</td>
<td>Hydraulic cylinder c/w depth control segment (102 x 305 mm)</td>
<td>Hydraulic cylinder c/w depth control segment (102 x 305 mm)</td>
<td></td>
</tr>
</tbody>
</table>

* Depending on working depth, soil type, field speed, etc.

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**Standard equipment**

<table>
<thead>
<tr>
<th>SD550, SD650</th>
<th>SD1050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hitch jack</td>
<td>Floating hitch</td>
</tr>
<tr>
<td>Gang wrench socket</td>
<td>Depth control segments</td>
</tr>
<tr>
<td>Furrow filler blades</td>
<td>Interlocking half spools</td>
</tr>
<tr>
<td>102 mm wide scrapers</td>
<td>Tires 12.5 L x 15</td>
</tr>
<tr>
<td>Rigid bearing hangers</td>
<td>Safety light kit</td>
</tr>
<tr>
<td>Safety light kit</td>
<td>Optional equipment</td>
</tr>
<tr>
<td><strong>Optional equipment</strong></td>
<td>Bearing wear plates</td>
</tr>
<tr>
<td>Bearing wear plates</td>
<td>Safety chain</td>
</tr>
<tr>
<td>Safety chain</td>
<td></td>
</tr>
</tbody>
</table>
**DISC HARROWS**

### Tandem Disc

<table>
<thead>
<tr>
<th>Blade spacing</th>
<th>TD500N</th>
<th>TD500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width</td>
<td>18' – 32.5' (5.5 – 9.8 m)</td>
<td>35.5' – 40.5' (10.8 – 12.3 m)</td>
</tr>
<tr>
<td>Transport width</td>
<td>12' (3.66 m)</td>
<td>12' (3.66 m)</td>
</tr>
<tr>
<td>Transport height</td>
<td>12' 4&quot; – 16' 11&quot; (3.76 – 5.16 m)</td>
<td>12' 3&quot; – 16' 6&quot; (3.68 – 5.03 m)</td>
</tr>
<tr>
<td>Weight per meter</td>
<td>670 kg/mетр</td>
<td>670 kg/mетр</td>
</tr>
<tr>
<td>Weight per blade</td>
<td>68 kg</td>
<td>75 kg</td>
</tr>
<tr>
<td>Horsepower required per meter of working width*</td>
<td>20 hp/m</td>
<td>20 hp/m</td>
</tr>
</tbody>
</table>

#### Structure

- **Frame**: Welded from high-strength tube steel 102х102х6,5mm
- **Bearings**: 211 (standard), 410 WSS (option) 410 WSS 410 WSS
- **Gang angle**: Fixed 20° front / 17° rear
- **Gang shaft**: 49 mm in diameter, gang is tightened with the torque of 4339 Nm.

#### Blades

- **Blade sizes (smooth)**: 22" x 1/4" (560 x 6,5 mm) 22" x 1/4" (560 x 6,5 mm) 22" x 1/4" (560 x 6,5 mm) 22" x 1/4" (560 x 6,5 mm)
- **Blade sizes, optional**: 24" x 9/32" (610 x 7 mm)
- **Blade sizes, optional (smooth/notched)**: 24" x 5/16" (610 x 8 mm) 24" x 5/16" (610 x 8 mm) 24" x 5/16" (610 x 8 mm) 24" x 5/16" (610 x 8 mm)

#### Features

- **Tyres, main frame**: (4) 11L x 15 Fl
- **Tyres, wing frame**: (2) 11L x 15 Fl
- **Depth control**: 3-cylinder series system c/w depth control segments
- **Hitch**: Auto-leveling, floating hitch

* Depending on working depth, soil type, field speed, etc.

### Tandem Disc TD600 TD600F

<table>
<thead>
<tr>
<th>Blade spacing</th>
<th>TD600</th>
<th>TD600F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working width</td>
<td>26.5’ – 35.5’ (8.1 – 10.8 m)</td>
<td>25’ – 35.5’ (7.6 – 10.8 m)</td>
</tr>
<tr>
<td>Transport width</td>
<td>17.5’ (5.4 m)</td>
<td>17.5’ (5.4 m)</td>
</tr>
<tr>
<td>Transport height</td>
<td>11’ 1” – 15’ 4” (3.38 – 4.7 m)</td>
<td>10’ 7” – 15’ 6” (3.3 – 4.7 m)</td>
</tr>
<tr>
<td>Weight per meter</td>
<td>856 kg/m</td>
<td>856 kg/m</td>
</tr>
<tr>
<td>Weight per blade</td>
<td>82 – 93 kg</td>
<td>103 – 113 kg</td>
</tr>
<tr>
<td>Horsepower required per meter of working width</td>
<td>32 hp/m</td>
<td>32 hp/m</td>
</tr>
</tbody>
</table>

#### Structure

- **Frame**: Welded from high-strength tube steel 152х102 mm
- **Bearings**: 410 WSS with triple sealing (standard), T2-215 (option)
- **Gang angle**: Fixed 20° front / 17° rear
- **Gang shaft**: 49 mm in diameter, gang is tightened with the torque of 4339 Nm.

#### Blades

- **Blade sizes (smooth)**: 22” x 9/32” (559 x 7 mm) 24” x 9/32” (610 x 7 mm)
- **Blade sizes, optional**: 24” x 5/16” (610 x 8 mm) 26” x 5/16” (660 x 8 mm) 26” x 3/8” (660 x 9 mm)
- **Blade sizes, optional (smooth/notched)**: 24” x 5/16” (610 x 8 mm) 26” x 5/16” (660 x 8 mm) 26” x 3/8” (660 x 9 mm) 26” x 3/8” (660 x 9 mm)

#### Features

- **Tyres, main frame**: (4) 11 L x 15 Fl (standard), 12.5 L x 15 Fl (optional)
- **Tyres, wing frame**: (4) 11 L x 15 Fl (standard), 12.5 L x 15 Fl (optional)
- **Depth control**: 3-cylinder series system c/w depth control segments
- **Hitch**: Auto-leveling, floating hitch

* Depending on working depth, soil type, field speed, etc.
DISC HARROWS

Tandem disc

<table>
<thead>
<tr>
<th>Blade spacing</th>
<th>TD700</th>
<th>TD700F</th>
</tr>
</thead>
<tbody>
<tr>
<td>9&quot; (230 mm)</td>
<td>24.5' – 41.5' (7.4 – 12.6 m)</td>
<td>24.0' – 42.5' (7.3 – 13.0 m)</td>
</tr>
<tr>
<td>10.5&quot; (267 mm)</td>
<td>25.0' – 42.5' (7.6 – 13.0 m)</td>
<td>37.0' – 42.0' (11.3 – 12.8 m)</td>
</tr>
<tr>
<td>12&quot; (305 mm)</td>
<td>24.5' – 42.5' (7.3 – 13.0 m)</td>
<td>38.5' – 42.5' (11.7 – 13.0 m)</td>
</tr>
</tbody>
</table>

| Working width | 24.5' – 41.5' (7.4 – 12.6 m) | 24.0' – 42.5' (7.3 – 13.0 m) |
| Transport width | 17.5' (5.4 m) | 17.5' (5.4 m) |
| Transport height | 12' 3 – 18' 5" (3.73 – 5.61 m) | 12' 7 – 19' 1" (3.84 – 5.82 m) |
| Weight per meter | 1043 kg/m | 1043 kg/m |
| Weight per blade | 112 – 117 kg | 125 – 136 kg |

Horsepower required per meter of working width* 40 hp/m

Structure

Frame Welded from high-strength tube steel 203 x 102 x 9.5 mm

Bearings T2・215

Gang angle Fixed 21° front / 19° rear

Gang shaft 49 mm in diameter, gang is tightened with the torque of 4339 Nm.

Blades

Blade sizes (smooth) 24" x 5/16" (610 x 8 mm) 26" x 5/16" (660 x 8 mm) 28" x 3/8" (711 x 9 mm) 6" x 5/16" (660 x 8 mm) 28" x 3/8" (711 x 9 mm)

Blade sizes, optional 26" x 5/16" (660 x 8 mm) 26" x 3/8" (660 x 9 mm) 30" x 3/8" (762 x 9 mm) 26" x 3/8" (660 x 9 mm) 30" x 3/8" (762 x 9 mm)

Features

Tyres, main frame (4) 12.5 L x 15 Fl (standard), 15.0 / 55-18 PR (optional) (4) 15.0 / 55-18 PR

Tyres, wing section (4) 12.5 L x 15 Fl (standard), 15.0 / 55-18 PR (optional) (4) 15.0 / 55-18 PR

Depth control 3-cylinder series system c/w depth control segments

Hitch Auto-leveling, floating hitch

* Depending on working depth, soil type, field speed, etc.

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TD500

Standard equipment
Floating hitch
Rigid hangers
102 mm wide scrapers
Furrow leveling blades (4)
Steel spools
Hydraulic transport lockups
Gang socket
Hitch jack
Safety lights

Optional equipment
Safety chain
Stone flex hangers
Mounted 3-bar tine harrows

TD600, TD600F, TD700, TD700F

Standard equipment
Full floating hitch
Rigid hangers
4" (102 mm) wide scrapers
Furrow filler blades
Steel spools
Hydraulic transport lockups
Gang socket
Hitch jack
Safety lights

Optional equipment
Safety chain
Stone flex hangers
Bearing wear plates
Heavy-duty scrapers
Wide pan scrapers
Interlocking half spools
Mounted 3-bar tine harrows
## CULTIVATORS

### Specifications

<table>
<thead>
<tr>
<th>Section</th>
<th>C500</th>
<th>C600</th>
<th>C700</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Working width</strong></td>
<td>23' 6&quot; – 40' 2&quot; (7.2 – 13.9 m)</td>
<td>44' – 60' (13.4 – 18.3 m)</td>
<td>26' – 40' (7.9 – 12.2 m)</td>
</tr>
<tr>
<td><strong>Main frame width</strong></td>
<td>13' 6&quot; – 16' (4.1 – 4.9 m)</td>
<td>16' (4.9 m)</td>
<td>14' – 16' (4.3 – 4.9 m)</td>
</tr>
<tr>
<td><strong>Transport width</strong></td>
<td>17' 10&quot; – 20' 6&quot; (5.4 – 6.2 m)</td>
<td>20' 6&quot; (6.2 m)</td>
<td>18' 9&quot; – 20' 9&quot; (5.7 – 6.3 m)</td>
</tr>
<tr>
<td><strong>Weight (without harrows)</strong></td>
<td>9' 8&quot; – 18' 10&quot; (2.9 – 5.4 m)</td>
<td>14' – 18' (4.3 – 5.5 m)</td>
<td>11' 0&quot; – 17' 10&quot; (3.4 – 5.4 m)</td>
</tr>
<tr>
<td><strong>Bec (без борон)</strong></td>
<td>4780 – 6818 kg</td>
<td>8991 – 10918 kg</td>
<td>4962 – 6572 kg</td>
</tr>
<tr>
<td><strong>Towing force per 1 m of working width (minimum)</strong></td>
<td>23 h.p.</td>
<td>23 h.p.</td>
<td>30 h.p.</td>
</tr>
</tbody>
</table>

### Structure

| Frame design | 5 rows, welded shaped tubes 102 x 102 x 6,4 mm | 4 rows, welded shaped tubes 102 x 102 x 6,4 mm |
| Frame depth | 98" (2.5 m) | 98" (2.5 m) | 98" (2.5 m) |
| Under frame clearance | Minimum 27" (686 mm) | Minimum 30" (762 mm) | Minimum 34" (864 mm) |
| Floating hitch | Standard, length 4.8 m | Standard, length 5.8 m | Standard, length 5.8 m |

### Operation

| Working depth | 3 – 20 cm | 3 – 20 cm | 5 – 20 cm |
| Working speed | 8 – 12 km/h | 8 – 12 km/h | 8 – 12 km/h |
| Wheel base | 85,5" (2.2 m) | 85,5" (2.2 m) | 85,5" (2.2 m) |
| Frame flexibility | 14,5° upwards, 8° downwards | 14,5° upwards, 8° downwards | 14,5° upwards, 8° downwards |

### Shanks

| Shank spacing | 203 or 254 mm | 203, 254 or 305 mm | 305 mm |
| Shank type, std | Dual spring cushion 250 kg. Shank angle – 47° | Dual spring cushion 250 kg. Shank angle – 47° | Dual spring cushion (295 kg). Shank angle – 50° |
| Shank type, opt | Dual spring cushion 159 kg. Shank angle – 47° | Dual spring cushion 159 kg. Shank angle – 47° | Dual spring cushion 272 kg. Shank angle – 50° |
| Shank pivot bushing | Nylon-graphite 19x89 mm | Nylon-graphite 19x89 mm | Nylon-graphite 31,7x127 mm |

### Features

| Trip height | 330 mm | 330 mm | 330 mm |
| Tires, main frame | 11L x 15 (5) | 11L x 15 (6), 12.5L x 15 (opt) | 11L x 15 (5) |
| Tires, wing | 11L x 15 (3) | 11L x 15 (3), 12.5L x 15 (opt) | 11L x 15 (3) |

| **Depth control** | Single 127 x 305 mm cylinder rotates heavy-duty rockshaft to raise or lower the entire implement, depth increment – 3 mm, no rephasing required. | Double 102 x 203 mm cylinder rotates heavy-duty rockshaft to raise or lower the entire implement, depth increment – 3 mm, no rephasing required. | Single 127 x 305 mm cylinder rotates heavy-duty rockshaft to raise or lower the entire implement, depth increment – 3 mm, no rephasing required. |

* Depending on working depth, soil type, field speed, etc.

### Standard equipment

<table>
<thead>
<tr>
<th>C500</th>
<th>C600</th>
<th>C700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floating hitch</td>
<td>Hitch stabilizer</td>
<td>Depth control segments</td>
</tr>
<tr>
<td>Safety lights kit</td>
<td>Safety lights kit</td>
<td>Safety lights kit</td>
</tr>
</tbody>
</table>

### Optional equipment

| Safety chain | Hitch stabilizer | Mounted harrows |
| Mounted packers | Multipurpose tow hitch | Spare tire/wheel carrier |
| Shank drop kits (behind tractor tracks) | Air distribution kit | |