

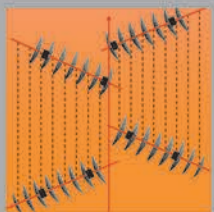
PHENIX *trailed tandem disc harrow*



RAZOL

the Mastery of the soil

The PHENIX disc harrow takes up all the challenges : the unique design of its double beam frame and the direct management of the gangs' working angle pushes away the soil conditioning limits. The cabin's centralized controls allows each operator to adapt the implement to the working conditions in peace of mind.



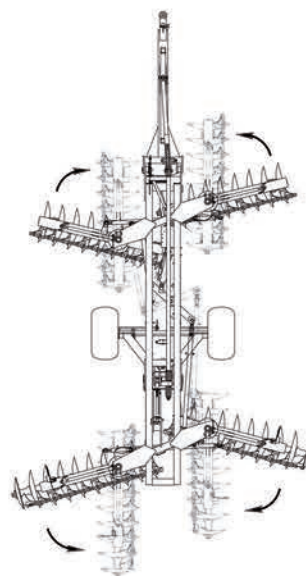
100% *the PHENIX concept* hydraulic

An implement with VARIABLE GEOMETRY

The controls are centralised in the tractor cabin

This new generation of disc harrows combines robustness, accessibility and design. All the implement's functions are directly operated from the tractor cabin, associated to the tractor's performance, the disc harrow management becomes intuitive.

To modify the gangs' working angle on the move, to level the machine, to control the roller's pressure according to the soil finish required, to change from the working position to the transport position, all these controls are from now on at hand.



The PHENIX range adapts to all conditions

Frame structure

Using CAD and the RAZOL know-how have led to this unique frame : a double beam structure associated to one piece and careened casings. All the efforts generated at work are distributed in a uniform way by using high tensile steels.



Work levelness

From 32 discs onwards all the models in the PHENIX range are equipped with reinforced arms which eliminate any deformation during intensive work.



Discs' rotation plates

The plates are machined and rectified after welding to guarantee the levelness of contact between the casing and the disc gang beam. Furthermore, the plates are equipped with an internal greasing circuit to distribute the grease uniformly. The pivots are greased and provided with wear rings.



Treated pins

The number of grease nipples has been considerably cut down : the use of treated pins and toggles limit the greasing time.



Depth control

A double acting ram allows, by a hydraulic cursor associated to a graduated ruler, to control the working depth in a very precise way. This cursor is also a transport safety device.



A UNIQUE frame concept

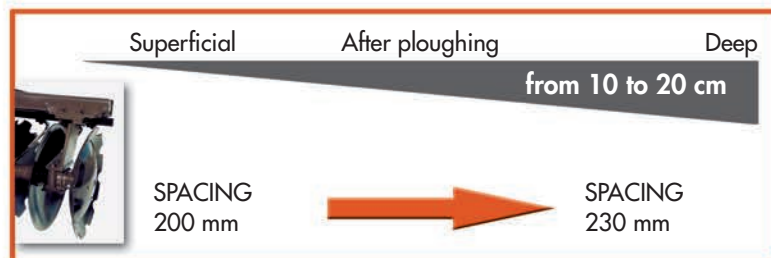
The double beam frame offers a much better distribution of the weight on the 4 disc gangs. The lodging of the control organs in between the 2 side frames ensures an exceptional accessibility to the adjustment, maintenance and operating points.

The one piece casings and the side frames give to the PHENIX range a modern and functional esthetic.



An adapted spacing between discs

The discs choice is capital in agronomical and financial terms : to preserve ones soils with a maximum productivity. That is the reason why the choice and spacing of the discs vary according to your soils and the type of work to be done.



Go into a 2-length lead

The unique design of the 4 disc gangs' synchronization allows the operator to chose the angle better adapted to the working conditions and the result expected. To change angle on the move without having to go down of the tractor cabin constitutes an undeniable advantage. All the hydraulic functions are operated from the driving seat.

Design, ergonomy and precision : pilote your PHENIX disc harrow with the finger tips !

LEVELLING SYSTEM

The rear comb harrow HPS 10 offers exceptional levelling capacities no matter the kind of soil. This equipment is perfectly adapted at the same time to a use in very dry or moist conditions. It is ideal for minimum tillage applications because of its residue and bad weed management and distribution.

The harrow is made of 3 rows of treated steel double tines. Their double coil spring allows a progressive deformation on the ground whatever the volume of soil or residues. The manoeuvre levers synchronize the tines' angle change that can retract when reversing.

The folding and pressure control are made in a sequential way : only one double acting function is necessary. A mechanical stop on the rear lifting ram allows the pressure control on all the harrow. The 2 springs fitted under the frame lift the equipment when meeting an obstacle, important to preserve the security of the whole implement.



CONSOLIDATION ROLLER

The rear roller ROL 10 is recommended for stubble incorporation, levelling after ploughing and for soil conditioning before drilling. It allows to break clods and to consolidate the soil. The lifting and folding operations are made in a sequential way and only need one double acting ram. Coupled together with 2 shock absorbing springs, the implement works without any jolts. A control valve allows the pressure control adjustment on the ground.

The TUBE roller with a 400 or 550 mm diameter is ideal for consolidating light and beaten soils. The helical tubes guarantee that the roller revolves even in soft soils. They are also appreciated in stony conditions. The roller is made of 8 or 10 tubes Ø 35 mm, and of 30 mm bearings.

The FLAT BAR roller with a 400 or 500 mm diameter is recommended in dry clayey soils and in high rates of clods in the soil. It makes a greater finishing job and ensures a good trash and stubble mix in surface, ideal for the germination of volunteer seeds. They are made of 8 or 10 flat bars in 40 x 10 mm, and 30 mm bearings.





tandem disc harrow **PHENIX TMX** *24 to 40 discs*

Working width from 2.75 to 4.10 m, from 80 to 150 HP



1 DA connection

- Double beam frame in 180 x 100 x 8 mm
- Disc gang beams in 150 x 100 x 8 mm
- Transport carriage equipped with a DA ram with hydraulic cursor
- MANUAL angle adjustment by plates with pins 5 positions
- Lateral fold to 2.50 m for road transport
- Parallel lift system with shock absorber and load transfer (mechanical compensation)
- Manual levelling adjustment by turnbuckle
- Wheels with 300/80-15.3 FL+ tires and reinforced rims standard

Drawbar with fix hitch ring

The **TMX** hitches up to the tractor's attachment or hitch bar. A reduction ring is included to limit the play and to be able to adapt to all kinds of tractors. Swivel hitch optional.

2.50 meters for road transport

The **DOUBLE BEAM** frame allows the 4 disc gangs to fold at 2.50 m : ideal on the road. Each plate is equipped of a **TRANSPORT** position. The low pressure wheels with 400/60-15.5 **FLOTATION** + tires (optional) contribute to the comfort during the manoeuvres and the transport.

MANUAL angle adjustment

Each plate has 5 adjustment positions by pins. It is possible to chose the same angle at the front as at the back, or to chose different angles. The angles vary from 10 to 24°. The implement's front to rear levelling is adjusted by a turnbuckle fitted on the drawbar.

Depth adjustment with the wheels

The working depth control is achieved by the wheels so as to work with great precision on all the implements width. The wheels ensure the work regularity at high speed and favours the levelness of the stubble incorporation or soil conditioning before drilling.



Working width from 2.75 m to 4.10 m, from 80 to 150 HP



Drawbar with fix hitch ring

The **TGX** hitches up to the tractor's attachment or hitch bar. A reduction ring is included to limit the play and to be able to adapt to all kinds of tractors. Swivel hitch optional.

2.50 meters for road transport

The **DOUBLE BEAM** frame allows the 4 disc gangs to fold at 2.50 m : ideal on the road. Each plate is equipped of a **TRANSPORT** position. The low pressure wheels with 400/60-15.5 **FLOTATION** + tires (optional) contribute to the comfort during the manoeuvres and the transport.

HYDRAULIC angle adjustment

The working angle is given by a **DA** ram : the 4 disc gangs are adjusted simultaneously from 10 to 24°. A fitting of +/- 2° is possible to modify the rear angle. The implement's front to rear levelling is adjusted by a turnbuckle fitted on the drawbar. A hydraulic ram on the drawbar with an independant adjustment is available optional.

Depth adjustment with the wheels

The working depth control is achieved by the wheels so as to work with great precision on all the implements width. The wheels ensure the work regularity at high speed and favours the levelness of the stubble incorporation or soil conditioning before drilling.

2 DA
connection

- Double beam frame in 180 x 100 x 8 mm
- Disc gang beams in 150 x 100 x 8 mm
- Transport carriage equipped with a **DA** ram with hydraulic cursor
- **HYDRAULIC** and **SYNCHRONIZED** disc gang angle adjustment
- Additional adjustment of the rear disc gangs by turnbuckle
- Graduated visual indicator of the working angle
- Lateral fold to 2.50 m for road transport
- Parallel lift system with shock absorber and load transfer (mechanical compensation)

- Manual levelling adjustment by turnbuckle

- Wheels with 300/80-15.3 **FL+** tires and reinforced rims standard





Working width from 4.10 m to 5.50 m, from 130 to 220 HP



Drawbar with fix hitch ring

The **TBX** hitches up to the tractor's attachment or hitch bar. A reduction ring is included to limit the play and to be able to adapt to all kinds of tractors. Swivel hitch optional.

2.50 meters for road transport

The **DOUBLE BEAM** frame allows the 4 disc gangs to fold at 2.50 m : ideal on the road. Each plate is equipped of a **TRANSPORT** position. The low pressure wheels with 500/50-17 **FLOTATION** + tires (optional) contribute to the comfort during the manoeuvres and the transport.

HYDRAULIC angle adjustment

The working angle is given by a **DA ram** : the 4 disc gangs are adjusted simultaneously from 10 to 24°. A fitting of +/- 2° is possible to modify the rear angle. The implement's front to rear levelling is adjusted by a turnbuckle fitted on the drawbar. A hydraulic ram on the drawbar with an independant adjustment is available optional.

Depth adjustment with the wheels

The working depth control is achieved by the wheels so as to work with great precision on all the implements width. The wheels ensure the work regularity at high speed and favours the levelness of the stubble incorporation or soil conditioning before drilling.

2 DA
connection

- Double beam frame in 200 x 120 x 10 mm
- Disc gang beams in 150 x 100 x 8 mm
- Transport carriage equipped with a **DA ram** with hydraulic cursor
- **HYDRAULIC** and **SYNCHRONIZED** disc gang angle adjustment
- Additional adjustment of the rear disc gangs by turnbuckle
- Graduated visual indicator of the working angle
- Lateral fold to 2.50 m for road transport
- Parallel lift system with shock absorber and load transfer (mechanical compensation)
- Hydraulic **INDEPENDENT** levelling adjustment
- Wheels with 400/60-15.5 **FL+** tires and reinforced rims standard



Model	TMX 200 mm / 660 - 6 mm					TGX 200 mm / 660 - 6 mm					TBX 200 mm / 660 - 6 mm				
	Number of discs	28	32	36	40	28	32	36	40		44	48	52	56	
	Working width (in m)	2.75	3.15	3.55	3.90	2.75	3.15	3.55	3.90		4.30	4.70	5.10	5.50	
	Number of bearings	8	8	8	8	8	8	8	8		8	12	12	12	
	Weight (in kg)	3025	3175	3375	3425	3175	3325	3475	3685		4445	4755	4905	5055	

Model	TMX 230 mm / 660 - 6 mm					TGX 230 mm / 660 - 6 mm					TBX 230 mm / 660 - 6 mm				
	Number of discs	24	28	32	36	24	28	32	36		36	40	44	48	
	Working width (in m)	2.75	3.20	3.65	4.10	2.75	3.20	3.65	4.10		4.10	4.55	5.00	5.45	
	Number of bearings	8	8	8	8	8	8	8	8		8	8	12	12	
	Weight (in kg)	2920	3080	3240	3400	3070	3230	3390	3550		4205	4367	4688	4849	

Rollers	ROL 10	Working width (in m)	3.35	3.80	4.25	4.75	3.35	3.80	4.25	4.75	4.75	5.20	5.65	6.10	
	TUBES Ø 400 mm	Weight (in kg)	590	615	640	665	590	615	640	665	665	690	715	740	
	TUBES Ø 550 mm	Weight (in kg)	690	715	740	765	690	715	740	765	765	790	815	850	
	FLAT BARS Ø 400 mm	Weight (in kg)	590	615	640	665	590	615	640	665	665	690	715	740	
	FLAT BARS Ø 500 mm	Weight (in kg)	700	725	755	780	700	725	755	780	780	810	835	870	

Harrow	HPS 10	Working width (in m)	3.60	4.00	4.60	5.00	3.60	4.00	4.60	5.00	5.00	5.50	6.00	6.50	
	COMB HARROW Ø 10 mm	Weight (in kg)	530	585	605	620	530	585	605	620	620	635	680	705	

The PHENIX disc harrow range

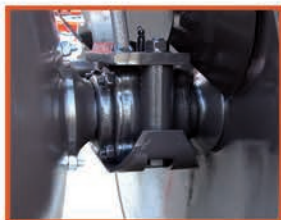
Chose your implement according to your needs

	Number of discs								
	24	28	32	36	40	44	48	52	56
TMX	<div></div>								
TGX	<div></div>								
TBX	<div></div>								

Optional equipments

Personalize your disc harrow

STANDARD protection



REINFORCED protection



Hectare meter



Deflector discs



Lateral deflectors



Hydraulic suspension



LOW PRESSURE wheels



Levelling ram



HYDRAULIC brake



80 to 150 HP

The TMX disc harrow is ideal for trash and stubble mixing and for tractors which engine ratings are comprised between 80 to 150 HP. Its specificity of being able to work with the wheels or with or without the roller according to the conditions, makes it versatile, especially in regions of mixed farming.

TMX



80 to 150 HP

The TGX disc harrow is ideal for trash and stubble mixing and for tractors which engine ratings are comprised between 80 to 150 HP. Its manoeuvrability makes its use functional for high yield jobs, even in divided plots of land.

TGX



130 to 220 HP

The TBX disc harrow is ideal for trash and stubble mixing and for tractors which engine ratings are comprised between 130 to 220 HP. Its simple and robust design, which has largely experienced big farms areas, provides it with the perfect aptitudes for trash and stubble mixing and for soil conditioning before drilling.

TBX



BREAKING CLOUDS and CONSOLIDATION

The ROL 10 roller is recommended for breaking clods and surface consolidation. During stubble mixing or after ploughing this equipment finds all its action potential in addition to the discs work, with speeds going from 7 to 10 km/h. Its combined work favours the volunteer seeds' germination and prepares the seed bed when making a finishing work.

ROL 10



LEVELLING

The HPS 10 is recommended in minimum tillage jobs to homogenize the harvest residues' distribution and to favour the germination of volunteer and bad weeds. This equipment gives excellent results when levelling the soil and participates to the soil conditioning before drilling.

HPS 10

