

GRASS-MANAGER GRASS-MANAGER-PRO PNEUMATICSTAR PNEUMATICSTAR-PRO
MACHINES FOR GRASSLAND CARE, RESEEDING, UNDERSEEDING AND SEEDING

Einböck



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MACHINES FOR GRASSLAND CARE, RESEEDING,
UNDERSEEDING AND SEEDING

**GRASS-MANAGER
GRASS-MANAGER-PRO
PNEUMATICSTAR
PNEUMATICSTAR-PRO**



GRASS-MANAGER

The GRASS-MANAGER is designed for **grassland care** without the possibility of re-seeding. A pneumatic airseeder can easily be retrofitted.

If a pneumatic airseeder is mounted on the GRASS-MANAGER, this combination is called PNEUMATICSTAR.

from page 10



PNEUMATICSTAR

The PNEUMATICSTAR is designed for **grassland care** and **under- and re-seeding and seeding**. The seeding roller is driven mechanically via the support wheel.

It is an allrounder, therefore it is also suited for mechanical weed control.

from page 19, pneumatic airseeder from page 32



PNEUMATICSTAR-STI

The PNEUMATICSTAR-STI is the PNEUMATICSTAR with the **SPEED-TRONIC control unit**. The seeding roller is driven electrically.

The machine is identical to the PNEUMATICSTAR except the seeding roller drive. So please see the technical data in the PNEUMATICSTAR-section.

from page 19, pneumatic airseeder from page 38

THE PERFECT MACHINE

FOR PERFECT GRASSLAND CARE

GRASS-MANAGER-PRO

The GRASS-MANAGER-PRO is the robust version of the GRASS-MANAGER. It was especially designed for **contractors, machinery associations, large scale farms** and for farms with uneven grassland with many moelhills.

If a pneumatic airseeder is mounted on the GRASS-MANAGER-PRO, this combination is called PNEUMATICSTAR-PRO.

from page 15



PNEUMATICSTAR-PRO

The PNEUMATICSTAR-PRO is perfectly suited for **grassland care** and **under- and re-seeding and seeding**. The seeding roller is driven mechanically via the support wheel.

It was especially designed for **contractors, machinery associations, large scale farms** and for farms with uneven grassland with many moelhills.

from page 23, pneumatic airseeder from page 32



PNEUMATICSTAR-PRO-STI

Like the PNEUMATICSTAR-STI, the PNEUMATICSTAR-PRO-STI also uses the **SPEED-TRONIC control unit**. The seeding roller is also driven electrically.

The machine is identical to the PNEUMATICSTAR-PRO except the seeding roller drive. So please see the technical data in the PNEUMATICSTAR-PRO-section.

from page 19, pneumatic airseeder from page 38





Which stress factors influence the grassland?

Besides an intensive cultivation there are many more stress factors influencing the grassland:

- Manure spreading in too concentrated form
- Manure spreading by unfavourable weather
- Unbalanced fertilization, potash-lack in autumn, therefore reduced resilience
- Grass was too tall in winter
- Grass was too short in winter (risk of snow mould, support of mice population)
- Cultivation method (mowing or haying too deep)
- Grazing
- Drought

Gaps in the grass turf have to be avoided, because they are populated by weeds first.



Too tall grass in winter supports the mice- and mole- population. The mole-hills can perfectly be evened with the front-levelling plates.



Mowing or haying **too deep** has to be avoided.



Too much moss indicates a lack of nutrients in the soil and eventually waterlogging.





GRASSLAND CARE

Why is an active grassland care so important?

The good plant stock of old meadows is in a sensitive balance, controlled by the kind of soil, the weather and the cultivation. Only grassland with a high amount of efficient and high-quality plant types is the basis for a high feed performance. Well maintained, re-seeded and fertilized grassland achieves more than double yield compared to extensive plant stocks.

Frequent mowing (4 - 6 cuts per year) prevents a natural re-seeding like at the haymaking. The seed potential of the meadow is getting reduced.

If the meadows do not get re-seeded, the grass-balance is becoming unstable (less performance-grass like ryegrass, orchard grass, but more weeds like rough stalked meadow grass, rose chafer, sorrel, etc...). Regular re-seeding can prevent this undesirable development.

Which actions should be taken?

The actions for an effective grassland care should already be taken in spring.

- **Removing the damages from winter**

Just towing is not enough for a high yield of the grassland. Besides levelling the mice- and molehills and removing scars and trampling damage (for example through grazing) it is also important to remove dead, shallow rooting grasses. Snow mould, which appears increasingly in warm, rainy winters in too tall grasses has to be weeded.

- **Stimulating the tillering of the grass turf**

The tines slightly slit the grass. This stimulates the tillering. The grass grows denser and produces more organic matter.

- **Closing gaps in the grass turf**

Gaps in the grass turf have to be seeded with precious forage grasses, otherwise weeds like the rough stalked meadow grass is spreading. A re-seeding can preventatively be done every year. The risk of a smeared soil surface is becoming very high, if there are molehills or open gaps.

- **Working fertilizer into the soil**

Manure has to be chopped up and worked into the grass turf. If the manure keeps lying on the plant it can etch the plant, and the rotting of the manure is inhibited.

- **Reducing the food-pollution**

If the mole-hills do not get evened and spreaded in the grass turf and the manure does not get worked in, they get back into the food during the mowing (harvest). The raw ash content is being increased and the food is getting inedible.



Grassland restoration

In extreme cases a normal grass land care is not enough anymore. Then there has to be done a grassland restoration. This is necessary, if there was not done a regular grassland care and therefore the yield of the grassland has been significantly reduced.



If the grassland looks like on these pictures a grassland restoration is absolutely necessary.

Grass needs light for growing. A grassland restoration causes open gaps in the grass turf by weeding out strong felting and weeds. The re-seeded seed has the best germination conditions in these gaps. Re-seeding on strongly felted meadows is pointless.



The grass seed can germinate very well in these gaps.



The amount of the weeded material can be quite enormous.



GRASSLAND CARE

Grassland care measures

Einböck has been a pioneer in developing grassland care machines for more than 20 years. The machines of the GRASS-MANAGER- and PNEUMATICSTAR-series are perfectly suited for achieving the best yields from your grassland at yearly usage.

A **tight line spacing** ensures, that our machines weed out very much material, besides dead grasses especially weeds like shallow-rooting rough stalked meadow grass. Depending on the amount of felting the weeding can be done more often. the re-seeding is only done in the last weeding process.



Cranked tines weed very effective and adapt very good to the soil surface.



The tines stimulate the tillering of the grasses.



The **triangular front levelling plate** of the PRO-series.



A **perfectly spreaded molehill** looks like this.

The front levelling plates ensure a perfect levelling of molehills. The „on-hold“-position scrapes the hills and spreads the material better in the grass turf. The soil pores keep open and do not get smeared. This offers the best germination conditions for the reseeded seed.



All models were designed for **easy usage**.

Our **pneumatic airseeders** offer a full-area, equal and almost wind-independent exactly dosed re-seeding. There are many configurations available, from a mechanical ground drive to an electronical drive of the seeding roller and different kinds of fans (mechanical, electrical, hydraulic).



The **distribution plates** grant a perfect spreading of the seed.

THE BEST GRASSLAND TINES

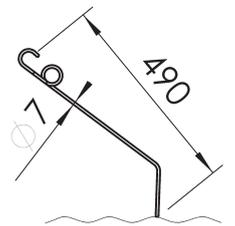
RELIABLE MACHINES ARE THE RESULT OF LONG LASTING EXPERIENCE

The set-up of the tines and the bottom hook enable the tines to follow the surface, e.g. the tines will also work in tracks. Also grooves will be de-thatched (vertically adjusted tines cannot work the turf on deeper spots).



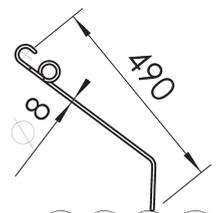
STANDARD ON THE GRASS-MANAGER, PNEUMATICSTAR AND PNEUMATICSTAR-STI

The standard tine with a diameter of 7 mm and a length of 490 mm is most suitable in **medium conditions**. If the machine mainly works in grassland, the 8 mm tine is recommended.



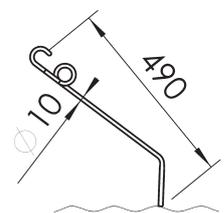
STANDARD ON GRASS-MANAGER-PRO, PNEUMATICSTAR-PRO UND PNEUMATICSTAR-PRO-STI

In heavy soil the tines with 8 mm diameter and 490 mm length should be used. **These tines are most common.**

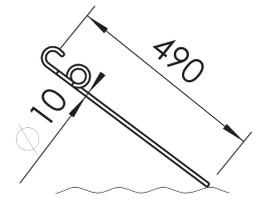




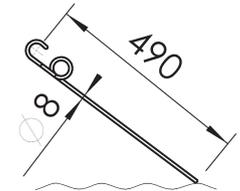
 In **heavily felted grassland** or extremely heavy soil, tines with 10 mm diameter and 490 mm length must be used. These tines are ideal to **fight rough stalked meadow grass** in summer. (only for PRO-series and „heavy frames“)



 For **stony soil and heavily felted grassland**, in order not to bring stones to the surface, we recommend the straight tines with a diameter of 10 mm and a length of 490 mm. Tines adjusted “dragging” protect the turf in **wet or boggy grassland**. (only for PRO-series and „heavy frames“)



 For **stony soil**, in order not to bring stones to the surface, we recommend the straight tines with a diameter of 8 mm and a length of 490 mm. Tines adjusted “dragging” protect the turf in **wet or boggy grassland**.





GRASS-MANAGER

GRASSLAND NEEDS SPRING-CARE IT IS IMPORTANT, WHEN THE JOB IS DONE

During long winters, mice and winterkill harm the pasture. Levelling of molehills, dethatching of the turf as well as spreading of manure and slurry are the most important jobs to be done in spring as soon as the grass starts germinating. Towing in high yield pasture is not sufficient and not up to date. The GRASS-MANAGER was designed for these jobs and gives the optimal result!

Consider the following in spring work:

- don't work when it's too wet
- dethatch the turf and if necessary collect moss, lost crop etc.
- don't work before the grass starts to germinate
- work molehills with levelling boards
- choose the correct tines for your soil





In front of the weeder section a levelling plate can be mounted, which is overload-protected by a leaf spring. This **levelling plate** is height adjustable and ensures an excellent **distribution and levelling of molehills**. In addition, it distributes and levels manure and slurry. It can easily be retro-fitted.

For small molehills which appear in a small number, **grassland sheets** which are bolted directly onto the tines can be used.

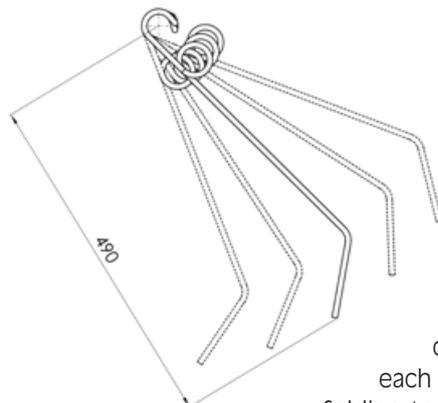
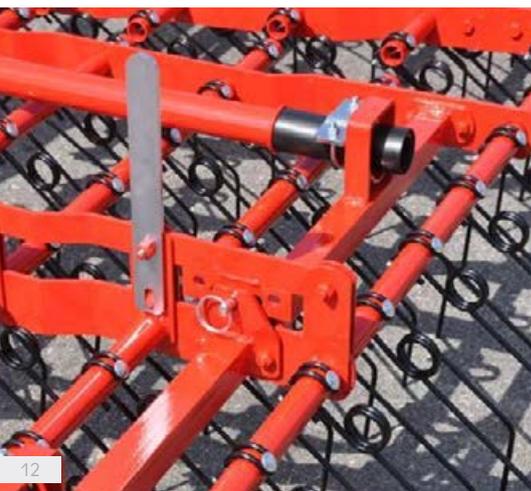
The **pipe carrying the tines** is stable and does not twist. This guarantees the same adjustment of the tines over the full length of the pipe, which again ensures an **equal aggressiveness of the tines** in working position. This is extremely important, especially in hard soil conditions.





TECHNICAL DETAILS

WITH POWER TO CONVINC



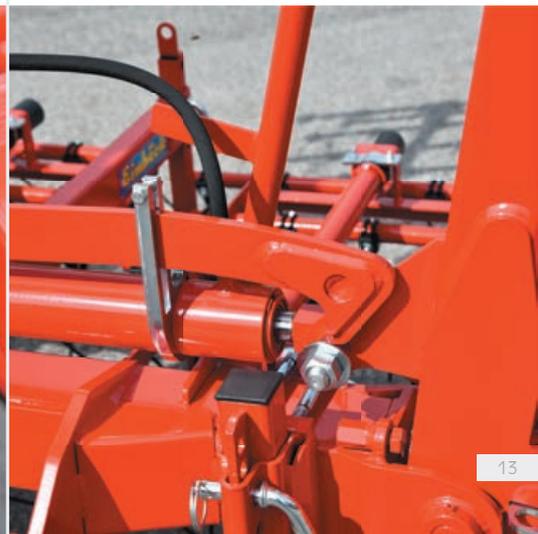
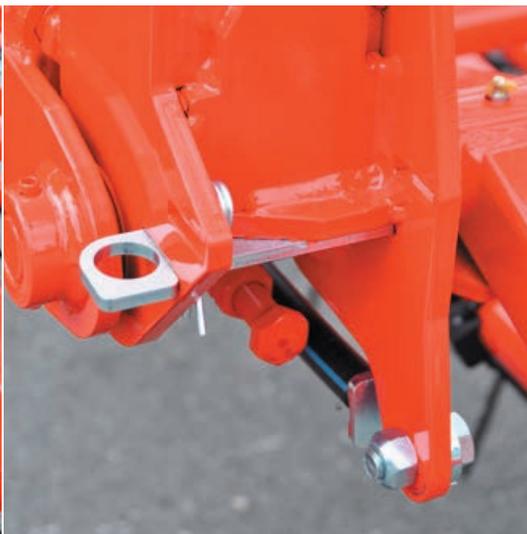
The aggressiveness of the spring tines can be adjusted via a **central lever** per each section in 5 different positions. When folding to the transport position the tines should be adjusted to the flattest position.





■ By taking away or demounting the stop bar on the wing (only on machines without shear folding) the machine **follows the contours of the land surface perfectly**.

■ The **transportation lock** is unlocked via a rope pull (only on machines without shear folding).





Standard equipment base machine GRASS-MANAGER

Solid frame
Hardened and tempered joint bolts, equipped with bushings
Tines Ø 7 mm, 490 mm long
Tines made from patented pulled spring steel wire
Non-twisting tine pipe – weeder sections 6-rows with central tine adjustment
Improved vibrating effect because of special tine holder
Free movement of the tine (no danger of breaking)
Plastic protection of the weeder forks (no wear and tear of the steel pipes)
Line spacing 2.5 cm
Large, bearing mounted support wheels, Dimension 16 x 6.50/8 (shear retraction: 18 x 8.50/8 on the mainframe)
Automatic folding of the wings through parallel guiding
Parking support (only for foldable machines)
Machines with shear folding require 2 double-acting hydraulic remotes
Transport width 1.50 m – 3.00 m
Greasing points on all joints
Operating instructions

Optional equipment base machine GRASS-MANAGER

Tines 490 mm long, Ø 8 mm instead of standard tine
Tines 490 mm long STRAIGHT, Ø 8 mm instead of standard tine
Tines 490 mm long, Ø 10 mm instead of standard tine, (only for heavy frames, SR)
Tines 490 mm long STRAIGHT, Ø 10 mm instead of standard tine, (only for heavy frames, SR)
Spring mounted levelling plate (only up to 6 m working width and for 900 SR and 1200 SR, not in combination with hydr. tine adjustment)
Hydr. tine adjustment
Grassland sheets mounted on the tines (only on Ø 8 mm tines)
Hydr. valve, necessary in case the tractor only has 1 double-acting valve (for machines with shear folding)
Tine loss protection
Hydr. transport lock
Warning signs and lights
On the GRASS-MANAGER a pneumatic airseeder or the ROTOSEEDER can be retrofitted any time (please ask for the special brochures)

Technical data GRASS-MANAGER

Type/ Working width cm	Number of tines	Support wheels	rigid	Folding mech.	hydr.	Transport width m	Sections	hp/kW	Weight approx. kg
GRASS-MANAGER 150	60	2	•			1,5	1	20/15	190
GRASS-MANAGER 200	84	2	•			2	1	25/18	200
GRASS-MANAGER 300	120	2	•			3	2	30/22	250
GRASS-MANAGER 450	180	4			•	2,6	3	40/29	520
GRASS-MANAGER 500	204	4			•	2,6	3	50/37	540
GRASS-MANAGER 600	240	4			•	3	4	60/44	640
GRASS-MANAGER 600 SR	240	4			•	3	4	60/44	800
GRASS-MANAGER 750	300	4			•	2,6	5	70/51	870
GRASS-MANAGER 900 ^{1,3}	360	4			•	3	6	80/59	1170
GRASS-MANAGER 900 SR ³	360	4			•	3	6	80/59	1260
GRASS-MANAGER 1200 ^{2,3}	480	4			•	3	8	90/66	1310
GRASS-MANAGER 1200 SR ³	480	4			•	3	8	90/66	1420

¹ can be extended to 12 m working width

² can be reduced to 9 m working width

³ shear folding

SR heavy frame for contractors or communities



Standard equipment base machine GRASS-MANAGER-PRO

Solid frame
Lower and top lift link mountings equipped with hardened bushings
Heavy, spring suspended front levelling bar (triangular) working in front of the support wheels
Weeder sections parallel guided with hydraulic level control
Tines \varnothing 8 mm, 490 mm long
Tines made from patented pulled spring steel wire
Non twisting tine pipe – weeder sections 6 rows with central tine adjustment
Improved vibrating effect because of special tine holder
Free movement of the tine (no danger of breaking)
Line spacing 2.5 cm
Large, bearing mounted support wheels Dimension 16 x 6.50/8 (on the main frame duals)
Parking support
Transport width 3.00 m
Operating instructions

Optional equipment base machine GRASS-MANAGER-PRO

Tines 490 mm long, \varnothing 7 mm instead of standard tine
Tines 490 mm long STRAIGHT, \varnothing 8 mm instead of standard tine
Tines 490 mm long, \varnothing 10 mm instead of standard tine
Tines 490 mm long STRAIGHT, \varnothing 10 mm instead of standard tine
Tine loss protection
Warning signs and lights
On the GRASS-MANAGER-PRO a pneumatic airseeder or the ROTOSEEDER can be retrofitted any time (please ask for the special brochures)
Front mounting frame

Technical data GRASS-MANAGER-PRO

Type/ Working width cm	Folding rigid	Folding hydr.	Number of tines ¹	Support wheels	Sections	hp/kW	Weight approx. kg
GRASS-MANAGER-PRO 300	•		120	4	2	60/44	670
GRASS-MANAGER-PRO 600		•	240	6	4	80/59	1.280
GRASS-MANAGER-PRO 1200 ¹		•	480	8	8	170/125	4.450

¹ trailed



GRASS-MANAGER-PRO

PROFESSIONAL TECHNOLOGY FOR PERFECT GRASSLAND

The GRASS-MANAGER-PRO is the consequently further developed version of the GRASS-MANAGER that has been proven in years. Every section is mounted on a parallelogram. One hydraulic cylinder per section ensures a perfect adaption to uneven ground and an optimal pressure compensation of the sections. The pressure can easily be adjusted from the tractor. A heavy triangular front levelling plate in front of the support wheels evens the mole hills.



For the PRO-series there is a **front mounting frame** available. With this frame an existing rear mounted machine can easily be converted into a front mounted machine.

When front mounted, **steerable support wheels** instead of fixed ones are standard.





NEW MACHINES

PROVIDE SPACE FOR FRESH GREEN

The GRASS-MANAGER, PNEUMATICSTAR and the PNEUMATICSTAR-STI are designed with steady frames and are, depending on the working width, rigid, mechanically or hydraulically foldable. Using high-quality materials and through the special, solid construction you can put additional pressure on the 6-row tine sections in hard soil conditions.





PNEUMATICSTAR



QUICKLY CLOSE GAPS ACHIEVE HIGH YIELDS

Even when you are satisfied with the yield on your pasture you should maintain and overseed your grassland to keep or further improve it. When you realized during analyzing your pasture that it can be improved by overseeding, then the PNEUMATICSTAR is the ideal machine for you. **Gaps in the turf** reduce productivity and provide space for weeds to germinate. Therefore they **need to be filled up with seeds of nutritious grasses**. Crops felled with rough stalked meadow grass can be rehabilitated by proper operation with the PNEUMATICSTAR.

Good conditions for overseeding:

- areas with wet summers:
after the first cut, because of rainfall, during summer and up to the beginning of September
- areas with dry summers:
after the first cut (this should be done early), mid to end of may in order to have sufficient humidity in the soil

The PNEUMATICSTAR is also suitable for underseeding. **Seeding of clover or clover/grass into grain can collect up to 100 kg nitrogen/ha**. Fields with cover crops are very environmentally friendly due to the good nitrogen balance. Underseeding of grass in maize provides the following advantages:

- improved practicability during harvest or fertilizing
- control of late germinating weeds
- collection of nitrogen in autumn, therefore good utilization of slurry after harvesting of maize
- improved fertility of the soil
- reduced need to utilize herbicides





The **hydraulic tine adjustment** makes adjustment to the GRASS-MANAGER, PNEUMATICSTAR and PNEUMATICSTAR-STI in changing soil conditions easier. Also, folding to the transport position is more convenient as you can easily put the tines into a flat position. The hydraulic tine adjustment can be retro-fitted.



Depending on the working width, the GRASS-MANAGER, the PNEUMATICSTAR and the PNEUMATICSTAR-STI are guided by two or four pneumatic **rubber support wheels**. The support wheels prevent the springtines from entering the soil too deep in light conditions and are adjustable in the half-breadboard.



The PNEUMATICSTAR and the PNEUMATICSTAR-STI are available with **reconsolidation rolls**. These are made from FARMFLEX-rubber and cannot get stuck with soil. The rolls are mainly used for new seeding or to re-seed large gaps in the turf to establish seed/soil contact. The short pressing rolls (3 units for every 1.5 m working width) with axle-pendular mounting follow the surface of the turf precisely.



■ The **6 row weeder section** carries 60 tines on 1.5 m working width; this equals a **line spacing of 2.5 cm**. This narrow line distance ensures a good effect in dethatching of the soil and excellent result.

■ The **weeder sections**, which are mounted pendular, can follow the surface of the turf very precisely. The plastic tine holders ensure an exact guiding of the tines during work. This keeps the tines in driving direction and **improves the vibration effect**. The holders make sure the tines won't twist or get loose. The spring of the tine is situated underneath the holder, therefore the tines have more freedom to vibrate and every movement is made by the spring.



Standard equipment basic machine PNEUMATICSTAR, PNEUMATICSTAR-STI

- _____ Solid frame
- _____ Hardened and tempered joint bolts, equipped with bushings
- _____ Tines Ø 7 mm, 490 mm long
- _____ Tines made from patented pulled spring steel wire
- _____ Non-twisting tine pipe – weeder sections 6-rows with central tine adjustment
- _____ Improved vibrating effect because of special tine holder
- _____ Free movement of the tine (no danger of breaking)
- _____ Plastic protection of the weeder forks (no wear and tear of the steel pipes)
- _____ Line spacing 2.5 cm
- _____ Large, bearing mounted support wheels, dimension 16 x 6.50/8 (shear folding: 18 x 8.50/8 on the mainframe)
- _____ Automatic folding of the wings through parallel guiding
- _____ Parking support
- _____ Machines with shear folding require 2 double-acting hydraulic remotes
- _____ Transport width 1.50 m – 3.00 m
- _____ Greasing points on all joints
- _____ Pneumatic seeder with stirring shaft and separate section on the seeding roller for every hose
- _____ Operating instructions

Optional equipment basic machine PNEUMATICSTAR, PNEUMATICSTAR-STI

- _____ Tines 490 mm long, Ø 8 mm instead of standard tine
- _____ Tines 490 mm long STRAIGHT, Ø 8 mm instead of standard tine
- _____ Tines 490 mm long, Ø 10 mm instead of standard tine (only for heavy frames, SR)
- _____ Tines 490 mm long STRAIGHT, Ø 10 mm instead of standard tine (only for heavy frames, SR)
- _____ Spring mounted levelling plate (only up to 6 m working width and for 900 SR and 1200 SR, not in combination with hydr. tine adjustment)
- _____ Hydr. tine adjustment
- _____ Grassland sheets mounted on the tines (only on Ø 8 mm tines)
- _____ Hydr. valve, necessary in case the tractor only has 1 double-acting valve (for machines with shear retraction)
- _____ Hydr. transport lock
- _____ Tine loss protection
- _____ Warning signs and lights

Technical data PNEUMATICSTAR, PNEUMATICSTAR-STI

Type/ Working width cm	Number of tines	Tankvol./ litres	Support wheels	Seeding rollers ⁵	Deflector plates	Folding rigid hydr.	Transport width m	Sections	hp/kW	Weight approx. kg
PNEUMATICSTAR 200 ¹	84	300	2	B,E	8	•	2	1	25/18	260
PNEUMATICSTAR 300 ¹	120	300	2	B,E	8	•	3	2	30/22	350
PNEUMATICSTAR 500 ¹	204	300	4	C,E	8	•	3	3	50/37	580
PNEUMATICSTAR 600 ¹	240	300	4	C,E	8	•	3	4	60/44	690
PNEUMATICSTAR 600 SR ¹	240	300	4	C,E	8	•	3	4	80/59	920
PNEUMATICSTAR 600 NR ⁷	240	500	4	C,F	8	•	3	4	80/59	1.100
PNEUMATICSTAR 900 ^{2,3,4}	360	300	4	G,H	12	•	3	6	80/59	1.400
PNEUMATICSTAR 900 SR ^{2,4}	360	300	4	G,H	12	•	3	6	80/59	1.490
PNEUMATICSTAR 1200 ^{2,4}	480	300	4	D,F	16	•	3	8	90/66	1.650
PNEUMATICSTAR 1200 SR ^{2,4}	480	300	4	D,F	16	•	3	8	90/66	1.760

¹ Electric double fan 12 Volt

² Mechanical fan with PTO-shaft (540 rpm or 1000 rpm)

³ can be extended to 12 m working width

⁴ Shear retraction

SR heavy frame for contractors or communities

NR with mechanical fan, also suited for the distribution of fertilizer (seeding unit as well as distribution plates made from stainless steel), stronger gearbox, no European folding - frame SR version (heavy frame)

⁵ STI-version not available in stainless steel

⁶ see photo of the seeding rollers on page 35



Standard equipment basic machine PNEUMATICSTAR-PRO, PNEUMATICSTAR-PRO-STI

Solid frame
Lower and upper links equipped with hardened bushings
Spring mounted heavy levelling board, triangular, working in front of the support wheels
Weeder sections parallel guided with hydraulic level control
Tines ø 8 mm, 490 mm long
Tines made from patented pulled spring steel wire
Non twisting tine pipe – weeder sections 6 rows with central tine adjustment
Improved vibrating effect because of special tine holder
Free movement of the tine (no danger of breaking)
Line spacing 2.5 cm
Large, bearing mounted support wheels
Dimension 16 x 6.50/8 (on the main frame duals)
Parking support with filling steps
Transport width 3.00 m
Pneumatic seeder with stirring shaft and separate section on the seeding roller per hose
Operating instructions

Optional equipment basic machine PNEUMATICSTAR-PRO, PNEUMATICSTAR-PRO-STI

Tines 490 mm long, ø 7 mm instead of standard tine
Tines 490 mm long STRAIGHT, ø 8 mm instead of standard tine
Tines 490 mm long, ø 10 mm instead of standard tine
Tines 490 mm long STRAIGHT, ø 10 mm instead of standard tine
Tine loss protection
Warning signs and lights
Front mounting frame

Technical data PNEUMATICSTAR-PRO, PNEUMATICSTAR-PRO-STI

Type/ Working width cm	Number of tines	Tankvol./ litres	Support wheels	Seeding rollers ⁶	Distribution plates	Folding rigid hydr.	Sections	hp/kW	Weight approx. kg
PNEUMATICSTAR-PRO 300 ^{1,3}	120	300	4	B,E	8	•	2	50/37	790
PNEUMATICSTAR-PRO 600 ^{1,4}	240	300	6	C,E	8	•	4	80/59	1.370
PNEUMATICSTAR-PRO 1200 ^{2,5}	480	500	8	D,F	16	•	8	170/125	4.440

¹ Electric double fan 12 Volt

² hydraulic fan with oil pressure manometer (requirements: pressure free return line, maximum capacity of the oil pump must not exceed 50 litres; recommendation: independent hydraulic valve or load sensing system)

³ 1 double-acting hydraulic valve necessary

⁴ 1 double-acting and 1 single-acting hydraulic valve necessary

⁵ 3 double-acting hydraulic valves and 1 single-acting hydraulic valve with pressure free return line necessary

⁶ see photo of the seeding rollers on page 35



PNEUMATICSTAR-PRO

■ GRASSLAND CARE AND UNDERSEEDING WITHOUT COMPROMISE

The PNEUMATICSTAR-PRO and the PNEUMATICSTAR-PRO-STI are like the PNEUMATICSTAR, designed for grassland care, re- and underseeding. The PRO-series has been specially designed for contractors, communities, big companies and for farms which have to work uneven pasture with large molehills.

You can work even more aggressively, which is important when fighting rough stalked meadow grass or dethatching. Also, the machine works very smoothly with a high working speed.

A **heavy levelling board** which is overload-protected by springs, levels molehills **in front of the support wheels**. It is adjusted "on hold", which lifts the soil and spreads it loose in the turf. Pores in the soil are not smeared up!





■ The joints consist of a **hardened bolt** with 35 mm Ø and brass bushings which can be greased.
■ By changing the position of the stop bar the **wings can even go down**. Not only the tine sections but also the heavy levelling boards follow the surface.

■ The main frame is made from
■ robust 150x100x6 steel pipes and on the edges it is reinforced with **sheets made from quality steel**.





TOP MACHINES FOR TOP FOODSTUFF-QUALITY

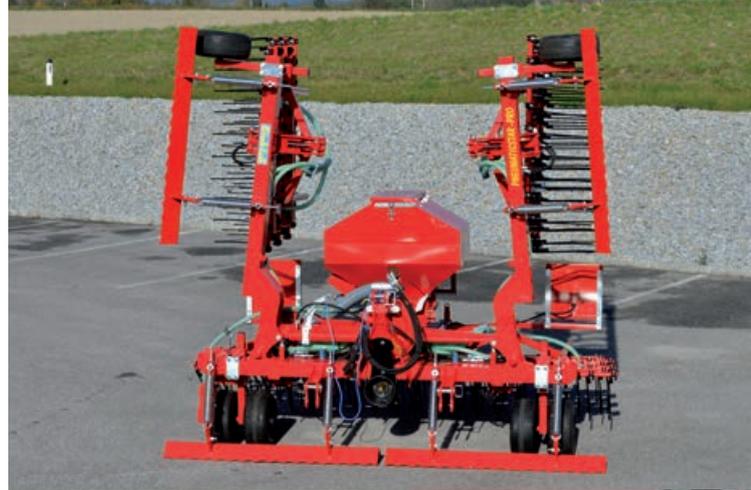


The effect of the hydraulic pressure regulation:

- Smooth operation in high working speed.
- Working pressure of the section can be adjusted from the tractor cab.
- Pressure regulation for the weeder sections – also in uneven fields equal tine pressure.
- Via the hydraulic system pressure can be put on the tines. In hard conditions the turf is de-thatched ideally. Perfect to fight rough stalked meadow grass in summer.
- Perfectly adapting to the soil surface in uneven fields.
- Pivoting forks with hydraulic level control ensure an improved following of the surface.



Six support wheels guide the frame also in high working speed smoothly, without shaking and with exact depth guidance across the grassland.



Warning signs and lights are available as optional extras.



Hardened bushings on the 3-point mounting ensure a long working life of the mounting.





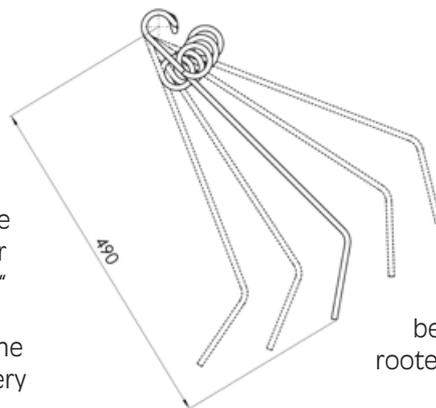
■ The **tine pipe cannot twist** and ensures the same tine position over the full pipe length, therefore **all tines work** with the **same aggressiveness**. The 28 mm long plastic tine holders ensure an exact guiding of the tines during work. This keeps the tines in driving direction and improves the vibration effect. The holders make sure the tines won't twist or get loose. The spring of the tine is located underneath the holder, therefore the tines have more freedom to vibrate and every movement is made out of the spring. In addition, this prevents the tines from scratching on the carrier.



PROFESSIONAL AND STRONG FOR BEST GRASSLAND QUALITY



The **tine aggressiveness** can be adjusted by a **central lever** per section in 5 positions. "On hold" adjusted tines have a stronger de-thatching effect and fight the rough stalked meadow grass very effectively.



The 6-row weeder section carries 60 tines on 1.5 m working width, this gives a line distance of 2.5 cm. Only this line distance guarantees the **de-thatching effect** and the desired result.

Many tines work and aerate the turf better and support tillering. Thinner tines, like the ones with 8 mm, enter mats better when they are adjusted "on hold". Valuable, deeper rooted grasses are not harmed.





The sophisticated **retraction mechanism** together with putting the tines into the lowest angle position makes it possible to reduce the transport width to only 3 m

For an efficient working and without losing too much time refilling the tank, a tank with a **volume of 500 litres** standard.

The construction of the main frame **enforced by cross braces** is a guarantee for a long product life.





PNEUMATICSTAR-PRO 1200

LARGE-AREA GRASSLAND WEEDER

The PNEUMATICSTAR-PRO 1200 is designed for large-scale farms. The chassis, which is attached to the lower links of the tractor, is carried by two large-dimensioned wheels. When in operation six additional support wheels on the wings will give the machine high operational stability. A stable sectional steel tube frame with cross braces will ensure that the frame of the weeder does not swing forward or backward.

OPTIMUM ADAPTATION TO THE GROUND

The very flexible frame ensures perfect copying of the soil contour of the levelling boards over the full working width – even in uneven terrain! The hydraulic levelling system guarantees an equal pressure on each weeder section. The turf is opened and an optimal seedbed for the re-seeding is made.





For heavy seeds we recommend a **retaining plate**, which is mounted on top of the stirring shaft and the seeding roller.



With the **mechanical fan** you can distribute heavier seeds up to 6 m working width due to the higher airstream. You can work with increased working speed. Recommended for communities and contractors.



A **chain with tensioner** connects the infinitely variable oil bath gearbox (or the electric seeding roller motor) with the seeding roller and the stirring shaft.



The **calibration pan** and cover are standard on the machines.



Mechanical jogging unit for sticky seeds.

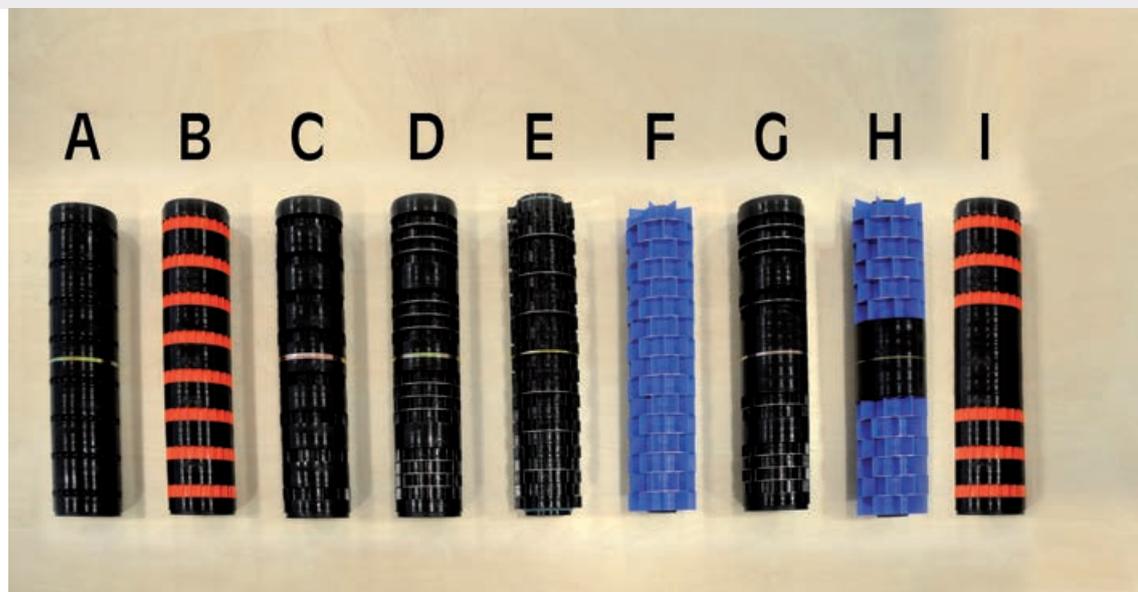




PNEUMATIC AIRSEEDERS

HIGHEST YIELD
ACHIEVED BY FIRST CLASS GRASSLAND

 One **seeding roller** with
 fine and one with coarse
 toothing are included in the
standard delivery.





 The **deflector plates** are equipped with a splash guard to make sure the seeds are evenly distributed. The holder of the plate can be adjusted infinitely variable.

 The **deflector plates**, which are mounted close to the surface on the third tine row, make sure the seeds are distributed equally in the prepared soil. The fourth, fifth and sixth tine row slightly work the seeds in the soil.



PNEUMATIC AIRSEEDERS ON PNEUMATICSTAR AND PNEUMATICSTAR-PRO

With our pneumatic seeding boxes you can distribute all standard seeds and mixtures up to a space of approx. 5 mm. Depending on seeding quantity and working speed, you can seed between 1 to 300 kg per hectare. The adjustment of the seeding rate is very simple. A stirring shaft prevents from unmixing and bridging in the tank.

A flexible shaft drives the infinitely variable oil bath gearbox which runs the seeding roller and stirring shaft via a chain. The seeding roller distributes the seeds into 8 separate outlets (6 sections in 9 m working width) which transfer the seeds via PVC-hoses to the deflector plates (which are adjustable). The deflector plates evenly spread the seeds over the full working width. As the seeds are distributed via air, wind is not as important as with mechanical seeders. The airstream distributing the seeds to the deflector plates is produced, depending on the required airstream and working width, by an electric, hydraulic or PTO-driven (via a shaft or directly from the tractor's PTO shaft) fan.

With the standard set up of every machine you can, with the coarse toothed seeding roller distribute grass seeds up to 40 kg/ha with a working speed of 10 km/h. If you want a higher seeding quantity, quicker working speed or if you want to distribute heavier seeds (e.g. grain) we ask you to get in contact with us, so we can put together the ideal combination of seeding roller and fan for you.

Via the **control unit**, which can easily be fixed in the tractor cab by a hook and loop fastener, you can switch the electric fan on or off.

The optional **airflow monitoring** checks the fan and warns of clogged seed hoses.

The **hectare counter** can be retro-fitted.



In case there are areas you do not want to seed, you can **disconnect the flexible shaft** from the gearbox by taking away the bolt where the shaft enters the gearbox. If you want to do so without leaving the tractor seat, you can get an electric adjustment of the seeding quantity (optional extra) which allows you to adjust the seeding quantity to "0".



Ground drive via the support wheel (PNEUMATICSTAR). The flexible shaft, which runs an infinitely variable oil bath gearbox, is protected by a hose. The information about working speed is provided from the support wheel. There is no additional ground wheel necessary.

On the **PNEUMATICSTAR-PRO** the heavy levelling board is mounted in front of the ground wheel. As the levelling bar lifts the soil and throws it over the board, the flexible shaft is connected to the ground wheel via an angular gear which protects it as the connecting point is in a higher position.



Standard equipment pneumatic seeder on PNEUMATICSTAR and PNEUMATICSTAR-PRO

Stirring shaft
Separate section on the seeding roller per hose
Calibration plate + pan
Electric cable with 3-pin connector for machines with electric fan
Control of seeding quantity via ground drive and stepless oil-bath-gearbox
Specially designed deflector plates with splash guard
Flexible shaft
Bolt to disconnect the flexible shaft from the gearbox
1 seeding roller with coarse toothing
1 seeding roller with fine toothing
Seeding roller exchangeable without tools
Window to control tank level
Steps for filling
Machines with double electric fan require 3-pin power plug, 12 V
9.00 and 12.00 m machines are equipped with mechanical fan and PTO shaft
Machines are completely assembled (little assembly might be necessary to optimize transport dimensions)
Operating instructions

Optional equipment pneumatic seeder on PNEUMATICSTAR and PNEUMATICSTAR-PRO

Hectare-counter (electronic)
Bigger tank volume (500 litres)
Mechanical fan instead of double electric fan (standard at 9 and 12 m working width)
Hydraulic fan (requirements: pressure free return line, maximum capacity of the oil pump must not exceed 50 litres; recommendation: independent hydraulic valve or load sensing system)
Electric adjustment of the seeding quantity
Retaining plate for heavy seeds
Stronger gearbox for machines up to 6 m working width (to seed heavy seeds like grain, peas, etc.)
Mechanical jogging unit for sticky seeds
Pneumatic airseeder with seeding unit made from stainless steel instead of standard
Deflector plates made from stainless steel instead of standard

Standard equipment pneumatic seeder on PNEUMATICSTAR-STI and PNEUMATICSTAR-PRO-STI

Stirring shaft
Separate section on the seeding roller per hose
Calibration plate + pan
Electric cable with big diameter
SPEED-TRONIC control unit - electronical quantity dosage
Linkage sensor
Ground wheel sensor
Specially designed deflector plates with splash guard
1 seeding roller with coarse toothing
1 seeding roller with fine toothing
Seeding roller exchangeable without tools
Window to control tank level
Steps for filling
Machines with double electric fan require 3-pin power plug, 12 V
9.00 and 12.00 m machines are equipped with mechanical fan and PTO shaft
Machines are completely assembled (little assembly might be necessary to optimize transport dimensions)
Operating instructions

Optional equipment pneumatic seeder on PNEUMATICSTAR-STI and PNEUMATICSTAR-PRO-STI

Bigger tank volume (500 litres)
GPS-sensor instead of ground wheel sensor
Radar sensor instead of ground wheel sensor
7-pole signal cable instead of ground wheel sensor and linkage sensor
Tank level sensor
Calibration button on the rear of the machine
Air flow control
Mechanical fan instead of double electric fan (standard at 9 and 12 m working width)
Hydraulic fan (requirements: pressure free return line, maximum capacity of the oil pump must not exceed 50 litres; recommendation: independent hydraulic valve or load sensing system)
Retaining plate for heavy seeds
Mechanical jogging unit for sticky seeds
Deflector plates made from stainless steel instead of standard





PNEUMATICSTAR-STI

WITH SPEED TO MORE YIELD



With the **calibration button** on the rear of the machine, the calibration test can be done directly at the machine (optional).

The **linkage sensor** turns off the seeding roller when the machine is lifted up (standard).

The **ground wheel sensor** measures the speed precisely (standard).



The power-supply is done by the tractor. Sensor values of the tractor can be transferred via the **7-pol signal socket** (optional).

The sensors of the **airflow monitoring** signalize, whether one or more seeding hoses are clogged (optional).

The **tank level sensor** signalizes, when the tank is getting empty. The sensor works inductively, therefore it is vibration independent (optional).



PNEUMATICSTAR-PRO-STI

EXACT SEEDING IN HIGHEST PRECISION



The PNEUMATICSTAR and the PNEUMATICSTAR-PRO can be equipped with the SPEED-TRONIC control unit. Then they are called PNEUMATICSTAR-STI and PNEUMATICSTAR-PRO-STI.

The SPEED-TRONIC control unit with electrical quantity dosage is very easy to use. The seeding amount is regulated depending on the factual speed.

The necessary speed information can be obtained via various sensors or via the 7-pole signal socket of the tractor. With the PNEUMATICSTAR-STI and the PNEUMATICSTAR-PRO-STI all common kinds of seed up to a size of 5 mm can be seeded, depending on the seeding amount and the working speed with easy setting from approx. 1 kg to 300 kg of seed per ha.

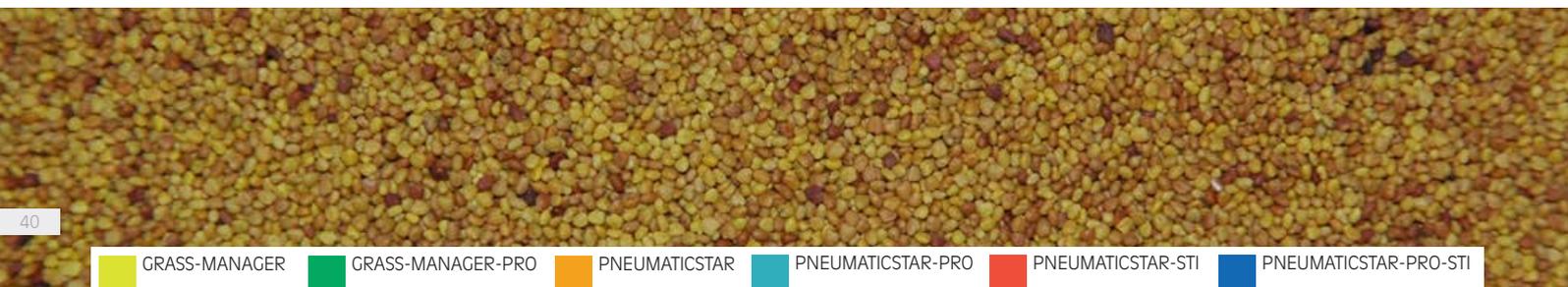
Besides the speed-dependent quantity dosage the SPEED-TRONIC control unit has many more functions, that make the usage and the monitoring of the airseeder easier:

- Hectare- and acre-counter (daily and total area, total area not deleteable)
- Operating hours counter
- Automatic calibration test – optional with calibration button directly on the machine
- Automatic switching off of the seeding roller at the headland through linkage sensor
- Pre-dose funktion
- Tank level control (sensor optional)
- Airflow monitoring (sensor optional)
- Choose between metrical and imperial measurement units
- Graphically animated display of the seeding roller speed
- Easy menu navigation (in different languages)



 The PNEUMATICSTAR is suitable for underseeding. **Seeding of clover or clover/grass into grain can collect up to 100 kg nitrogen/ha.** Fields with cover crops are very environmentally friendly due to the good nitrogen balance.   Underseeding of grass in maize provides the following advantages:

- improved practicability during harvest or fertilizing
- control of late germinating weeds
- collection of nitrogen in autumn, therefore good utilization of slurry after harvesting of maize
- improved richness
- reduced need to utilize herbicides



OPTIONS OVERVIEW



	100	200	300	300 SR	450	500	600	600 SR	750	900	1200
Tines 490 mm, Ø 7 mm	standard										
Tines 490 mm, Ø 8 mm	possible										
Tines 490 mm long STRAIGHT, Ø 8 mm	possible										
Tines 490 mm, Ø 10 mm	not possible	not possible	not possible	possible	not possible	not possible	not possible	possible	not possible	not possible	not possible
Tines 490 mm long STRAIGHT, Ø 10 mm	not possible	not possible	not possible	possible	not possible	not possible	not possible	possible	not possible	not possible	not possible
Tine loss protection	possible										
Hydraulical tine adjustment	possible										
Spring mounted front levelling plate	possible	not possible	not possible	not possible							
Heavy front levelling plate	not possible										
Front mounting frame	not possible										
Reconsolidation rolls	not possible										
Filling steps	not possible										
Retaining plate	not possible										
Mechanical jogging unit	not possible										
500 litre tank	not possible										
Mechanical fan fix mounted on the frame	not possible										
Hydraulic fan with oil pressure gauge	not possible										
P-BOX with seeding unit made from stainless steel	not possible										
Deflector plates made from stainless steel	not possible										
Stronger gearbox	not possible										
Angle unit for flexible shaft	not possible										
Mechanical hectare counter for P-BOX-MD	not possible										
Electrical control of seeding quantity for P-BOX-MD	not possible										
Airflow control	not possible										
SPEED-TRONIC control unit	not possible										
Ground wheel sensor	not possible										
Linkage sensor	not possible										
GPS-speed sensor instead of ground wheel sensor	not possible										
Radar sensor instead of ground wheel sensor	not possible										
7-pole signal socket instead of ground wheel sensor	not possible										
Tank level sensor	not possible										
Calibration button on the seeding machine	not possible										

■ standard

■ possible

■ not possible

Related brochures

- AEROSTAR, AEROSTAR-EXACT, AEROSTAR-ROTATION - Tined weeder
- SEEDING MACHINES



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