



# Forage wagon **Giga-Vitesse** <sup>CFS</sup>



**steaumann**



# Focus on performance

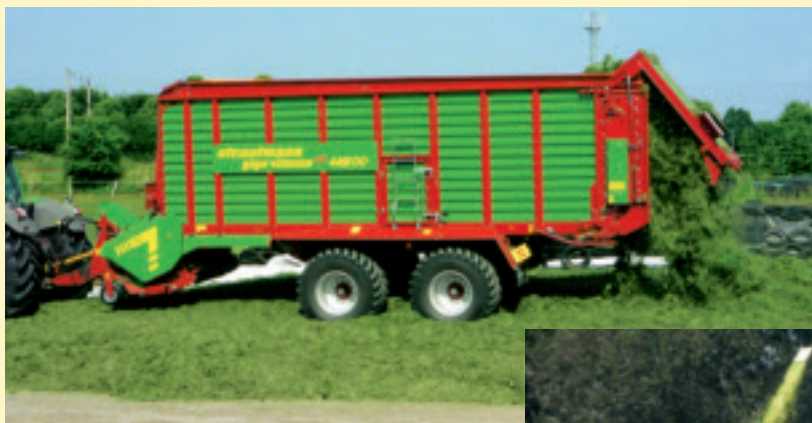
The market sector for high-performance silage trailers is facing increasing demands for higher efficiency to compete with self-propelled forage harvesters. On the other hand, low drag resistance and low power requirement are called for when using professional forage trailers.

The Strautmann Giga-Vitesse<sup>CFS</sup> with its new conveying unit (Continuous Flow System) is now providing an almost unrivalled product for contractors and large enterprises.



This forage trailer is setting standards with regard to optimum loading, low power requirement and cost effectiveness.

The Giga-Vitesse<sup>CFS</sup> is continuing the successful path which Strautmann has pursued since the introduction of the Giga-Vitesse. A high-performance conveying assembly with a unique cutting unit together with a solid body and a variety of chassis types for most different conditions have gained an excellent reputation over the years.



The Giga-Vitesse<sup>CFS</sup> is available in four different sizes (from 30 to 42 m<sup>3</sup> of filling volume according to DIN) including a comprehensive equipment package which offers an individual solution for any application.



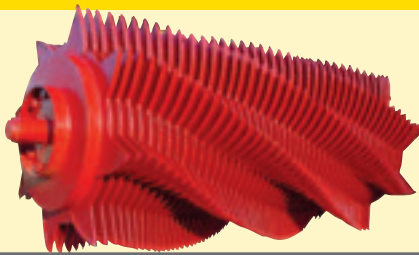
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# CFS the system of the future

**Strautmann forage wagons** have a lower drag resistance than those of the competitors. The „CFS“ increases this advantage as experience has shown during the past years. It is the continuous material flow „Continuous Flow“ which makes the difference.

## CFS stands for:

1. energy savings
2. optimal utilization of capacity
3. time savings
4. closer alignment to the contours of the ground
5. protection of the drive section
6. longer lifespan

### 1. Low power requirement

The newly developed pick-up and the „CFS drum“ disperse the swath (widening effect) and feed it over its total width to the rotor and the cutting unit. The rotor which is mounted 100 mm higher conveys the pre-wilted green fodder through the correspondingly shortened conveyor duct into the load space thus saving energy and reducing the power requirement by approx. 10%.



### 2. Optimum filling

The material is loaded into the load space over its total width thus improving the filling efficiency. We measured 10% more weight per cubic meter several times. The tonnage is important, not the volume of the load space.



### 3. High acreage performance

Better filling efficiency also means greater output. The areas to be harvested can be cleared more quickly and the fodder is taken faster into the silo. After all, time is money.

### 4. Optimum adaptation to ground contours

Due to the design of the CFS drum, the pick-up is in a very flat position such that the pressure exerted on the roller feelers is very low which enables the pick-up to better adapt to undulations in the field. Furthermore, the green fodder is continuously and gently picked up due to the V-shaped helical arrangement of the pick-up tines.

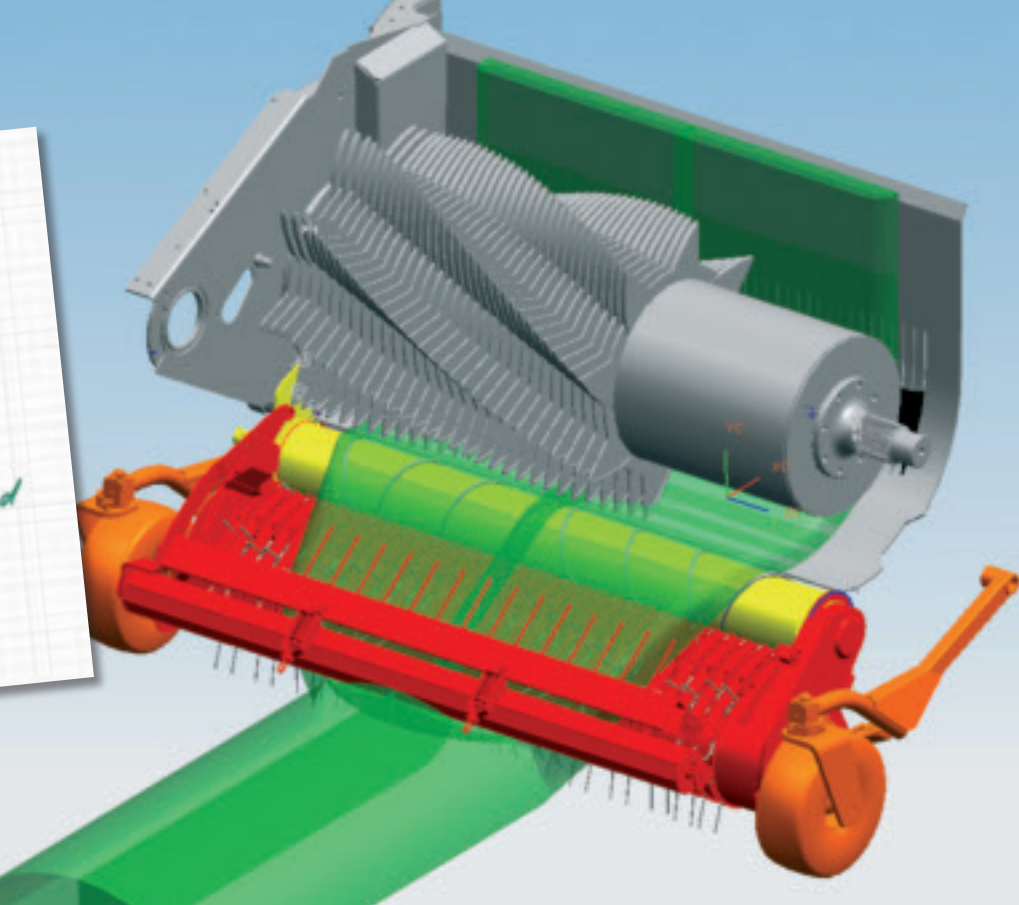
### 5. Protection of drive components

Due to the homogeneous and continuous flow of material, the CFS conveying unit runs very smoothly such that there are hardly any peak loads. And if there are no peak loads, the complete drive unit will not „suffer“ thus ensuring a long service life of the conveying unit and therefore of the complete forage trailer.

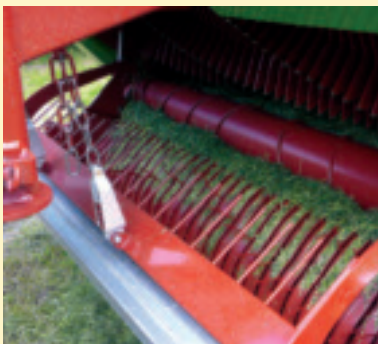
### 6. Longer service life of knives

Grinding of knives: Only if it's worth doing! The widening effect ensures a more even load of the knives. „CFS“ allows considerably longer grinding intervals. Grinding all knives is worth doing if all knives are blunt. But what if only the central knives were blunt? Grind all knives? Grind only the central ones? Exchange the exterior and interior ones?

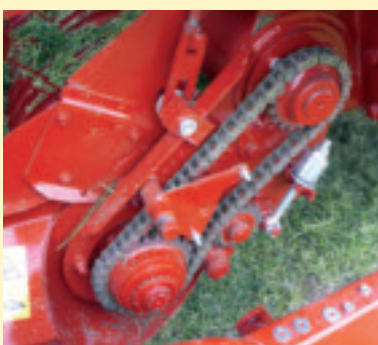



**Pick-up**

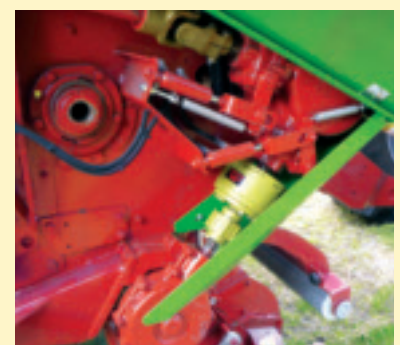
With its six helically arranged rows of tines, the cam-less pick-up with a working width of 1.80 m ensures gentle collection of the material. Furthermore, the helical form makes sure that the green fodder is dispersed and fed to the accelerator drum. Due to the standard guide roller in front of the baffle plate, better swath flow and a higher pick-up speed for the pre-wilted silage are achieved. For better adaptation to ground contours, additional roller feelers can be mounted behind the pick-up as an optional extra.


**Accelerator roller**

Like the pick-up, the accelerator roller mounted between the pick-up and the rotor ensures a widening effect and thus equal feeding of the rotor and the cutting unit. Due to the rotor being mounted at a higher level, the power required when conveying the loaded material into the cargo space is considerably reduced.


**Drive of accelerator roller, pick-up**

The accelerator roller is powered via a low-maintenance right angle gearbox. The standard slip clutch is equipped with an overload protection. Thus, risk of damage to the conveying unit caused by foreign objects is reduced to a minimum. The pick-up is powered via the accelerator roller by means of a reinforced  $\frac{3}{4}$ " roller chain.



# Sharp all around

## Rotor and cutting unit

**The rotor is the core** of each forage wagon. It is the rotor which ensures the cutting quality, the delivery rate and the transport of the loaded material into the interior of the wagon and thus high efficiency at constant optimum quality. The trailers of the Giga-Vitesse<sup>CFS</sup> series are equipped with 45 knives. The theoretical cutting length of 35 mm guarantees optimum fodder quality - from the animal nutrition and physiological point of view.



### Rotor drive

The stressless drive via the drive shaft positioned in the middle of the drawbar ensures a long service life of all drive components. The laterally attached, large-scale gearbox with a rotor support of 110 mm Ø is completely maintenance-free thus ensuring optimum power transmission to the rotor.

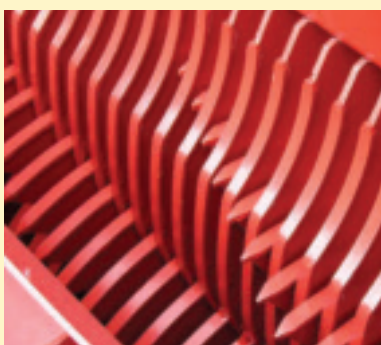


### Rotor

The strong tines are attached helically in 8 tine rows. The tine plates with Hardox steel reinforced tips are extremely low in wear and due to their width, they ensure easy, clean and exact cutting. The interaction of conveying tines and strippers guarantees maximum fodder protection and a high flow rate.

### Advantages:

- No mushy wet crops
- High cutting quality
- Easy, almost trouble-free transport into the wagon.



### Strippers

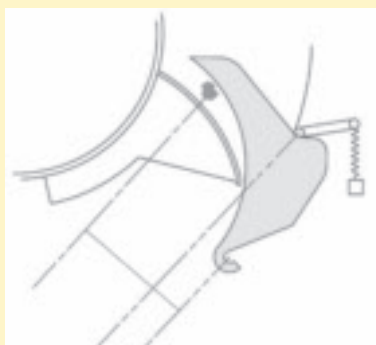
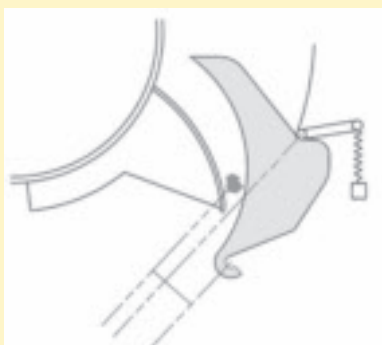
The strippers are also reinforced with weld-on Hardox plates for a long service life. A large angle between rotor tines and strippers (> 90 °) prevents the fodder from being damaged and favours a low power requirement.





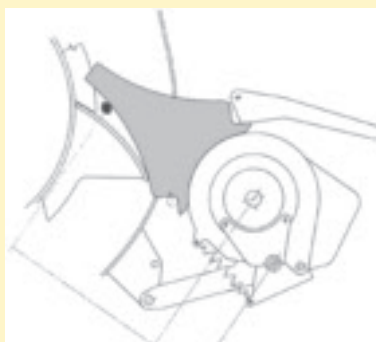
### Cutting unit

45 knives at one level ensure exact cutting over 35 mm. All knives are equipped with a double-sided, serrated edge. Each knife can be easily turned over - thus doubling the grinding interval. The whole cutting unit can be swung out of position by means of two hydraulic cylinders, thus allowing blockages to be cleared quickly and easily. If the knife tips wear out after several grinding procedures, the knife frame can be readjusted by means of upper links.



### Competitor knife protection systems

In knife protection systems that work by means of spring counter-pressure the triggering force in case of an obstacle occurring varies at each point of the knife. A foreign object hitting the knife at its bottom pushes itself along the edge up to the point where the force is great enough to trigger the protection mechanism thus causing damage to the complete knife edge.



### Straufmann knife protection system

In the unique Straufmann knife protection system, the triggering force is almost identical at any point of the knife and the knife triggers the protection mechanism even if a foreign object hits the bottom of the knife edge. Thus, the service life of the knives is increased many times over, depending on the operating conditions.

# Initiating mass movement

## Body and transport floor

**Double benefit thanks** to the Giga-Vitesse<sup>CFS</sup> body. It can be easily converted from a high-performance forage wagon into a trailer for forage maize harvesting. The main components of the double-benefit concept are reinforced body struts, the folding front panel (important when starting chopping) and a special maize plate which closes the rotor space. The steel floor gives the whole vehicle more stability and high tonnages can be moved without any problems by means of the robust plate-link chains of the transport floor.

Thus, possible additional hours of maize harvest extend the period of use of the forage wagon and contribute to the vehicle efficiency.



### Transport floor – Wood

For predominant use as a forage wagon, the standard models 3201, 3601 and 4001 are equipped with a strong wooden floor (not available for 4401). U-shaped floor slats and high-strength scraper floor chains with a diameter of 11 mm and a breaking load of 15 t each ensure homogeneous feeding of the loaded material. Automatic chain tensioners guarantee appropriate chain tension at all times.



### Transport floor – Steel

When using the Giga-Vitesse as a double-function trailer, we recommend optional equipment with a galvanized steel floor and plate-link chains (not for model 3201, standard equipment for model 4401). The scraper floor chains consist of solid square tubes welded to low-wear plate-link chains. These chains do not lengthen as much as round steel chains and must be retightened less. The galvanized steel floor gives the vehicle more stability.



### Transport floor drive

All Giga-Vitesse<sup>CFS</sup> models are equipped with a double-sided drive, two-stage switching is carried out via a series or a parallel circuit respectively of the hydraulic system. In addition, the drive shaft at the rear of the vehicle is equipped with a central bearing and support. The standard scraper floor drive motors are provided with a bumper buffer.







### Body

The continuous side panels with the reinforced side posts give the vehicle a high stability even without body brackets. These brackets are available as an optional extra together with ropes tightened lengthwise across the load space.



### Load-protection bars

The standard load-protection bars prevent the fodder from overflowing during filling. In addition, a higher compression is achieved. The automatic loading system is integrated in the load-protection bars. The scraper floor is automatically switched on when the tines in the automatic charging system are lifted. Hydraulically folding load-protection bars are available as an optional extra.



### Securing loaded material

As an optional extra, all Giga-Vitesse <sup>CFS</sup> models can be equipped with a reinforced body tarpaulin covering the front third of the cargo space thus securing the loaded material and avoiding loss of loaded material on the road even in case of optimum filling.

The integrated rewinding mechanism permits short-term use of the vehicle in harvest chopping.



# Big mouth, exact metering

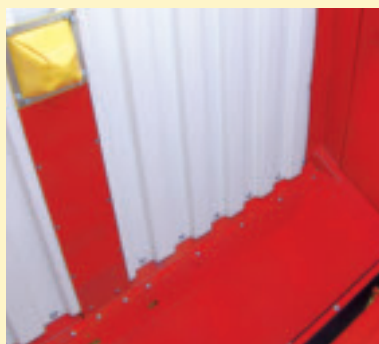
## Tailgate and metering unit

A powerful forage wagon not only excels by its high loading performance but also by quick and effective discharge at or on the silo. For discharge in front of the silo, the forage wagon model without metering drums will do. If discharge on the silo is intended while keeping the effort for distribution and compression as low as possible, we recommend the proportioning model with three distributing rotors. Very short chop length and even discharge on the silo provide the conditions for optimum compression of the silage.



### Forage wagon tailgate

The solid tailgate can be opened very wide by means of two double-acting hydraulic cylinders thus completely uncovering the opening. An electrical pressure switch for the level indicator is integrated in the tailgate. If the trailer is full, the green fodder presses against this switch thus operating acoustic and visual alarms in the tractor cab.



### Safe locking

A mechanical locking mechanism of the hydraulic tailgate (for forage wagon as well as for proportioning trailer) ensures proper transport of the loaded material. Two hydraulic cylinders vertically move the tailgate upwards until it is lifted out of the locking mechanism, and then swivel it to the rear.

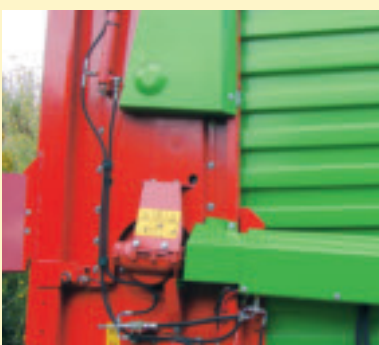




### Metering unit

The standard Giga-Vitesse <sup>CFS</sup>.DO models are equipped with a metering unit with three hexagonal rotors with aggressive ripping tines which loosen the fodder very well during unloading thus ensuring equal discharge on the silo. This metering unit is fitted with the same solid tailgate as the forage trailers. Depending on the type of discharge, this tailgate can be opened in two stages.

At the first stage, the tailgate is only opened wide enough to permit the discharge of a uniform blanket of forage not impacted by the wind. The opening width of the first stage can be individually set via the ISOBUS control. At the second stage, the tailgate is swivelled up to the top.



### Metering rotor drive

The bottom metering rotor is powered via a maintenance-free drive shaft and right angle gearbox which is directly attached to the bottom metering roller. The second and third rollers are alternately powered via 1" roller chains. This drive solution keeps the body width low.

When the trailer is full, the bottom roller moves backwards and stops the transport floor drive via a sensor. The metering rollers can now run free as discharge starts.





# Safety in the field and on road

## Chassis



### Bogie tandem chassis

All standard Giga-Vitesse<sup>CFS</sup> models are equipped with a bogie tandem chassis with parabolic suspension for an admissible axle load of 18 t. Due to the low pivot point of the chassis, the vehicle can easily be towed onto a bunker silo (roll-over effect). Furthermore, the standard forage wagon are fitted with a rear trailing steering axle. The chassis are designed for 22.5" and for 26.5" tyres.

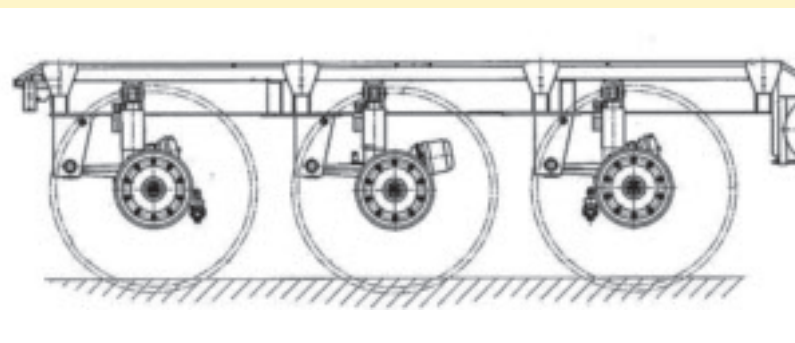


### Hydropneumatic tandem chassis

For further improvement of the driving comfort at high speeds, a hydropneumatic chassis is available for the models 4001 and 4401. The hydraulic axle compensation distributes the load even better onto all four wheels and provides considerably safer driving characteristics when traversing hills. Due to the wheel-base of > 1800 mm, a maximum total weight of 24 t is allowed.

### Tridem chassis

The Giga-Vitesse<sup>CFS</sup> 4401 can be equipped with a hydropneumatic tridem axle assembly on request. This increases the maximum gross vehicle weight rating to 31 t and also the contact area such that the ground contact pressure is reduced. Thus, the vehicle is prevented from being overloaded when used for grass drying plants or as a harvest chopping trailer for maize. The wagon is fitted with a hydraulic powered steering mechanism, the first and the third axle being steered.







#### Electronic powered steering axle for tandem chassis

In the electronic-hydraulic „Straumann Electronic Steering“ (SES) powered steering axle system, the steering input is not, unlike in conventional forced steering axle systems, hydraulically detected and transmitted via master cylinders, but electronically via an angle of rotation sensor. This sensor converts the steering angle into an electrical signal which is transmitted to the steering computer that takes over the steering of the steering cylinders at the steered rear axle.

The SES system offers high driving stability as the steering angle is adjusted to the speed.



#### Hydraulic drawbar

For travelling over silos, all Giga-Vitesse <sup>CFS</sup> models are equipped with a hydraulic drawbar with two double-acting cylinders. A hydraulic sprung drawbar (optional extra) ensures an even smoother ride of the Giga-Vitesse <sup>CFS</sup> during road travel.

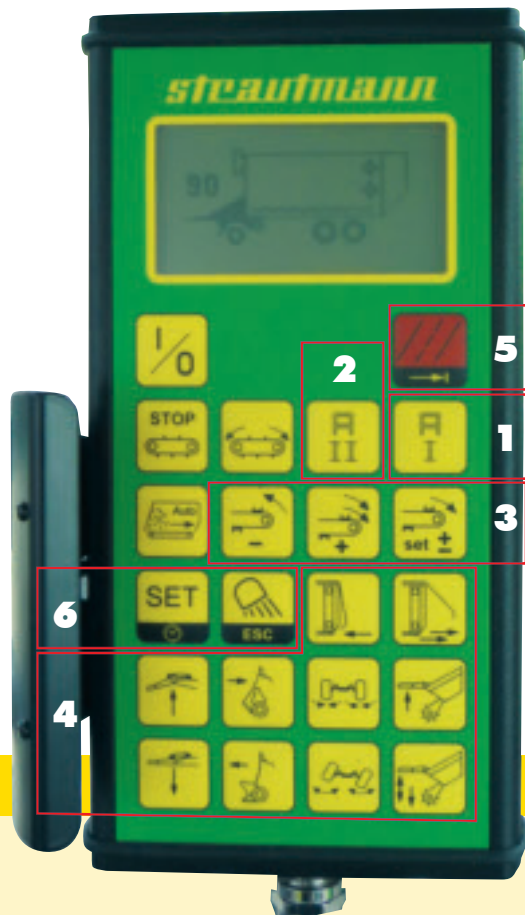


#### Bottom linkage

The standard models 4001 and 4401 are equipped with a bottom hitch with coupling head (optional extra for models 3201 and 3601) allowing a tongue load of up to 4 t (depending on the tractor model) and ensuring low-maintenance linkage free of clearance and safe road hold of the combination of tractor and trailer.

# Control

The standard Giga-Vitesse <sup>CFS</sup> is equipped with a BUS control based on ISO standard. The hydraulic functions are switched via a clearly arranged and solid control set with user-friendly keys, the signalling being carried out via an ISO terminal. Some functions for documentation of the work carried out are integrated in this control set. Furthermore, sensors are able to detect and eliminate problems at an early stage thus preventing subsequent damage which might occur due to operating errors, and ensuring outstanding reliability.



### ISO operation dosage wagon

1. Unloading process before driving over the silo (A I)
  - Lock steering axle
  - Lift hydraulic drawbar
  - Drawbar suspension off
2. Discharge procedure on the bunker silo (All)
  - Open tailgate
  - Switch gearboxes and clutches
  - Scraper floor on when metering rotors are running, the scraper floor is switched off if the speed falls below the admissible limit.
3. Manual scraper floor control
4. Operation of additional functions
  - PU, knives, hydraulic drawbar . . .
5. Road travel
  - Lock all functions
  - Lower hydraulic drawbar
  - Hydropneumatic suspension on
6. Set key
  - Setup menu
  - Work lights on/off

### ISO terminals

which can be used for control of the forage trailers according to the Strautmann ISO control.



### ISO 11783

The ISO control crucially contributes to reduce the stress of the operator, as functional sequences can be combined in work flows (AI and All) and sensors permit a better control of the machine. Thus, information about the steering axle, the tailgate and the position of the knives is provided by means of status indicators.



We are in close contact with other manufacturers. Please do not hesitate to contact us for any inquiries regarding compatibility.




**Short-cut forage / dosage wagon Giga-Vitesse<sup>CFS</sup>**

Type		GV CFS 3201	GV CFS 3601	GV CFS 4001	GV CFS 4401
Dimensions					
- Length	m	8,48	9,28	10,08	10,88
- Width (without/with metering unit)	m	2,55 / 2,76	2,55 / 2,76	2,55 / 2,76	2,55 / 2,75
- Height	m	3,86	3,86	3,86	4,00
Loading capacity acc. to DIN 11741	m <sup>3</sup>	30,0	34,0	38,0	42,0
- with metering unit	m <sup>3</sup>	-	32,0	36,0	40,0
Loading capacity, medium compression	m <sup>3</sup>	57,0	64,6	72,2	79,8
- with metering unit	m <sup>3</sup>	-	60,8	68,4	76,0
Own weight, standard equipment	kg	8.500	9.000	9.400	9.900
- with metering unit	kg	-	9.400	9.800	10.300
Gross vehicle weight rating					
- high drawbar	kg	20.000	20.000	-	-
- low drawbar (up to 40 km/h)	kg	22.000	22.000	22.000	22.000
- hydraulic tandem chassis	kg	-	-	24.000	24.000
- tridem chassis	kg	-	-	-	31.000
Bogie tandem chassis		standard	standard	standard	standard
Working width of pick-up	m	2,00	2,00	2,00	2,00
Conveying unit type		spiral rotor	spiral rotor	spiral rotor	spiral rotor
Number of knives		45	45	45	45
Metering unit, 3 rotors		-	optional	optional	optional
Power required	kW	93	99	110	126
	hp	126	135	148	170
Dimensions incl. tyres		710/40 R 22,5	710/40 R 22,5	710/40 R 22,5	710/50 R 26,5

Figures, technical data and weights may change due to technical development and are not binding for delivery.



Vredestein Flotation Pro



Vredestein Flotation Trac



Michelin CargoXbib



Trelleborg T 404



Alliance I 380



Nokian Country King

# Best ratings from German technical magazines like „particle accelerator“ or „turbo charger“...

profi **Fahrbericht**

Strautmann Giga Vitessa CFS 4001 DD



## Teilchen-Beschleuniger

CFS Continuous Flow System – damit will Strautmann nicht nur die Schnittqualität verbessern, sondern auch die Durchsatzleistung seiner Silowagen weiter steigern und den Kraftbedarf senken. Wir haben das System bereits in der Praxis erprobt.

**J**eder der einen Silowagen fährt, weiß, dass eine ungünstige Materialzufuhr in 6 aufeinanderfolgenden Schichten der Längsachse (M, L, H, H, H, H, H) dazu führt, dass die Schnittqualität unter einer ungünstigen Beschichtung des Aggregates leidet. Zudem verbleibt die Strautmann-Regenmaschine der Giga Vitessa mit dem neuen CFS System.

Merkmale des neuen Systems ist eine Bohrwelle mit 200 mm Durchmesser. Darauf sind 6 von Rotoren geschichtete, die spiralförmig nach außen verlaufen. Die Rotor ist zwischen Pickup und Rotor geschichtet und wird auf der rechten Seite über ein Winkelgetriebe und eine Seitenwelle mit Hochleistungsantrieben. Bei jeder die gleiche (Rechts) wie die Pickup über ein Getriebe auf der linken Seite wiederum von der Welle aus über eine Kette angetrieben. So kann die Drehzahl zwischen Pickup und Rotor per se nicht ein- oder ausgeschaltet werden, sondern wird von der Motorleistung in einem in den Rotor „geschaltet“.

Bei der Beschleunigung des Materials hat die Welle zwei weitere zentrale Öffnungen. Zum einen können die Übergangsbereiche, die vom Rotor zum Pickup in der Förderkette entstehen, entfallen. Zum anderen bewirkt der Rotor bei dem neuen CFS um 300 mm nach oben verschoben werden. Dadurch verlagert sich der Förderkanal über den Rotor hinweg. Nach diesen Erfahrungen von Strautmann wird dieses System die Leistungsleistung während des Ladensorgens spürbar erhöhen.



Um den Materialfluss zu den Seiten zu unterstützen und zusätzlich auch die Zwischenablagen des Pickup durch einen spiralförmig angeordnet. Die Spirale beginnt in der Mitte und verläuft dann nach außen. So kann der Materialfluss über die gesamte Breite des Aggregates hinweg verbessert werden, um die Leistung weiter möglichst gleichmäßig auf volle Breite zu beschleunigen.

Was gibt es sonst noch Neues? Das CFS gibt es nur für die Strautmann-Silowagen Giga Vitessa 4001 und nicht für die 40 und 50. Es wird für nächsten Saison verfügbar sein und kostet rund 1.000 Euro extra. Sie zu erhalten kann aber auch ein Modell sein, welches 2 von Hochleistungs-Rotoren die Kurbelwellen mit vier Laufschichten. Diese sind in einem Gehäuse durch einander und unterstützen ein Beschleunigen. Die Hochleistungsrotoren bestehen aus 10 x 30 mm Stahlröhren, was durch mit dem nächsten Laufen der Welle verschleißt. Um den Schaden zu vermeiden, laufen die Laufen jeweils auf zwei spezialisierten Beschleunigern.



Die Beschleuniger für 200 mm Durchmesser und oben in die gleiche Richtung wie die Rotor, um die Materialzufuhr zu unterstützen und die Zwischenablagen des Pickup durch einen spiralförmig angeordnet. Um den Materialfluss zu den Seiten zu unterstützen und zusätzlich auch die Zwischenablagen des Pickup durch einen spiralförmig angeordnet.



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Um den Rotor nach unten oder aufwärts zu bewegen, ist die Pickup angeordnet. Dadurch verlagert sich über den Rotor in dem Förderkanal, durch die Übergabe des Materials ist durch die neuen Beschleuniger weiter verbessert.

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profi **10/2009**

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