



ADDITIONAL EQUIPMENT



Slurry Tankers

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IDEALLY EQUIPPED FOR ALL TASKS

In order to adapt your slurry tanker perfectly to your operational requirements, we offer you a wide range of additional equipment. Because only tailor-made technology prepares you for all tasks in the field. Rely on the wide range of accessories and the proven garant quality.



FILLING

No matter where and how you want to fill your slurry tanker: the various garant equipment options allow you to put together the best solution for your business. Suction arms and docking stations offer maximum ease of operation; cutting unit devices protect the pump and spreading technology from foreign bodies. Filling aids increase the suction efficiency of vacuum slurry tankers, while filling domes enable external filling.

Suction arms

Our garant suction arms enable you to fill your professional slurry tanker easily, quickly and safely – with no losses whatsoever. You stay clean and work comfortably and efficiently at the same time.



Suction arm with a swivel joint



Suction arm with two swivel joints



Front suction arm



Suction arm on top of the container

suction arms options

| | Suction arm with a swivel joint | Suction arm with two swivel joints | Front suction arm | Suction arm on top of the container |
|---|---------------------------------|------------------------------------|--|---|
| <i>Docking height (m)</i> | ca. 1.30 | ca. 1.30 to 4.30 | ca. 1.30 to 4.20 | ca. - 2.50 to 5.00 |
| <i>Positioning</i> | right or left | right or left | In the front hydraulic system of the tractor | on top of the container |
| <i>Special features</i> | — | — | Lighting, ballast weights (500 kg), parking supports | swivels up to 270 degrees |
| <i>Suction pipe (continuous)</i> | NW 200 or NW 250 | NW 200 or NW 250 | NW 200 or NW 250 | NW 200 |
| <i>Centrifugal pump/filling aid at the end of the suction arm for increased filling capacity (up to 12 m³/min)</i> | optional | optional | standard | standard |
| <i>Further options</i> | — | PVC suction hose for pits | Quick coupler for suction hose | rear drip funnel, telescope, automatic parking position |

Docking stations

If you store large quantities of slurry in pits or elevated tanks, docking stations in combination with a suction arm are a particularly efficient means of filling your tank.

Our garant radio docking stations offer you maximum safety, especially when filling from elevated tanks.



Docking station for pits



Radio docking station



Docking station for elevated tanks and pits

Docking station options

| | Docking stations for pits | Radio docking station | Docking stations for elevated tanks and pits |
|--|---------------------------|--|--|
| <i>Usable for...</i> | pits | elevated tanks and pits | elevated tanks up to 3 m high and pits |
| <i>Three-point transport trestle</i> | standard | standard | standard |
| <i>Support rollers for positioning</i> | — | standard | standard |
| <i>Suction line (continuous)</i> | NW 200 | NW 200 with hydraulic knife gate valve | NW 200 |
| <i>Quick coupler</i> | NW 200 | NW 200 | NW 200 |
| <i>Special features</i> | — | <ul style="list-style-type: none"> Numerous safety functions (secured radio frequency, proximity sensor, PLC safety circuit with signal lamp for operating status, automatic slide closure in case of operating error, emergency stop switch, integrated tractor battery with charger) Optional with NIR sensor and flow meter | — |

Cutterbar device with stone trap

A cutterbar device with stone trap protects the pump, the pipes and the spreading technology from damage caused by foreign bodies. In addition, the slurry becomes much more free-flowing, so that blockages in the spreading technology are largely prevented. The optimum cutting force of the cutterbar device can be set manually or auto-matically.



Cutterbar device with stone trap

Filling aids

Filling aids help you fill your vacuum slurry tanker much more efficiently. They not only save time, but also achieve a significantly higher degree of filling in addition to creating a vacuum effect.

Another advantage is the low foam produced in pig manure. When handling cattle manure you avoid the vacuum-induced increase in volume. This means that the filling aid also protects the vacuum compressor.



Profi filling aid NW 200

Filling dome

Whether for regular filling or exclusively for maintenance – we offer the right filling dome variant for every need. In addition to simple mechanical filling domes with hinged or swivel lids, we also provide hydraulic alternatives.



Hydraulic filling dome with sliding lid for pump tankers



Hydraulic filling dome with hinged lid for vacuum tankers



Mechanical filling dome with swivel lid for vacuum tankers

Options filling aids

| | NW 150 Standard | NW 200 Standard | NW 200 Profi |
|------------------------------|---|---|--|
| <i>Required oil quantity</i> | 60 l | 60 l | 80 – 100 l |
| <i>mounting options</i> | front left or right under the tank at the suction arm | front under the container, suction possibility right and left via T-piece or at the suction arm | at the front under the container, suction possibility right and left via T-piece or at the suction arm |

Options filling dome

| | Filling dome with hinged lid | Filling dome with sliding lid | Filling dome with swivel lid |
|-------------------------|------------------------------|-------------------------------|------------------------------|
| <i>Actuation</i> | hydraulic | hydraulic | mechanical |
| <i>Diameter</i> | 600 mm | 650 x 500 mm | 450 mm |
| <i>Suitable for ...</i> | vacuum tankers | pump tankers | vacuum tankers |



EMPTYING

With the two-chamber system and uphill and downhill emptying, we offer you tailor-made solutions for the efficient emptying of your slurry tanker.

Two-chamber system

With the garant two-chamber system, you can optimise the drawbar load on the tractor, especially on slopes. The principle is simple and smart: the inside of the slurry tank is divided into two chambers. There is more slurry in the front chamber during the spreading process than in the rear chamber. This ensures that a sufficient drawbar load is maintained on the tractor, especially when driving uphill.

This is how the two-chamber system works: the front baffle in the container is closed at the top. An overhead pipe connects the first with the second chamber. If the two-chamber system is activated, first the rear chamber and then the front chamber are emptied during spreading. If the liquid level in the rear chamber drops below the edge of the baffle, the liquid manure gradually flows on.



Baffles in the two-chamber system

Uphill/Downhill emptying

Pump or vacuum tankers cannot be emptied completely without further ado during ascents and descents. The solution: the garant systems for uphill and downhill emptying. An additional pipe in the tank brings the liquid manure from the lowest point of the tank to the pump or to the application technology, despite inclines or slopes. This process enables complete emptying so that you can make optimum use of the volume of your slurry tank.



Pipe run: uphill emptying with pump tanker



Pipe run: downhill emptying with vacuum tanker



MEASUREMENT AND CONTROL

The requirements for process safety and documentation are constantly increasing – for quality reasons, for ecological reasons and for economic reasons. garant technology enables you to keep track of all values in an easy and reliable manner: Flow meters or a rotary lobe pump with on-board hydraulics allow you to precisely measure and control the application rates. And with the help of intelligent sensors, you can determine the nutrients in the slurry and make optimum use of them.

NIR sensor

Know what's inside. A near-infrared sensor (NIR sensor) allows you to determine the precise ingredients of the liquid manure in real time. While you are filling your container or spreading the slurry, the NIR sensor measures the total nitrogen, ammonium nitrogen, phosphorus, potassium and dry matter content. This measuring method ensures easy and reliable compliance with the legal requirements. In addition, you can spread the liquid manure on the basis of nutrient target values and limit values in kilograms per hectare as required.



Mobile nutrient measuring station with NIR sensor and flow meter

Metering systems

If your slurry tanker is used in several plants, the operating hours or the drums driven are the basis for an exact accounting. Our metering systems provide the data you need, conveniently and efficiently.

A vibration meter records the operating hours of your slurry tanker by means of vibrations. If your vacuum or pump tanker is equipped with a float ball, you can alternatively use a drum counter.



Vibration meter



Drum counter

Flow meter

An inductive flow meter continuously determines the amount of liquid manure spread in a measuring range from 0.5 to 12.0 cubic metres per minute. The current value can be read on a digital display at any time. If desired, you can also actively control the spread rate.



Flow meter

On-board hydraulics for rotary lobe pumps

Pump tankers with rotary lobe pumps can be optimally controlled via on-board hydraulics. This is because the on-board hydraulics drive the rotary lobe pump via a separate unit and make it independent of the tractor PTO shaft speeds. A speed sensor on the pump measures the flow rate. This allows you to control the desired application and nutrient quantity via the on-board hydraulics without delay and in an infinitely variable manner. The technology only delivers the quantity you really need and thus avoids unnecessary wear on the pump. No additional flow meter or gearbox is required.



Rotary lobe pump with on-board hydraulics

TwinFlow system for rotary lobe pumps with hydraulic drive

Rotary lobe pumps achieve an output of up to 14,000 litres per minute. However, a single cutterbar device with a stone trap would reduce the output. That's why we install two cutterbar units with two suction and two pressure lines each in the garant TwinFlow system. This doubling allows you to exploit the full performance potential of the rotary lobe pump. Another advantage is the service-friendly positioning of the pump.



"Filling" with the TwinFlow system



"Stirring" with the TwinFlow system



"Spreading" with the TwinFlow system

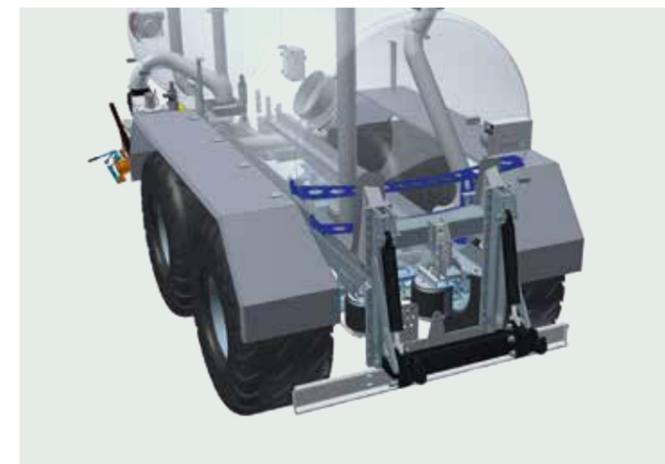


LIFTING GEAR

Our durable and robust garant three-/four-point hydraulics are the basis of your success. Choose between sizes L, XL and XXL depending on your requirements.

Lifting gear options

| | Four-point hitch | Four-point hitch size XL | Four-point hitch size XXL | Pivoting four-point hitch |
|--|--|---|---|--|
| <i>Maximum tractive force (t)</i> | 2 | 3 | 4 | 2.5 |
| <i>Maximum lifting forces (t)</i> | up to 4.25 | up to 7.5 | up to 7.5 | up to 7.5 |
| <i>Suitable for ...</i> | drag hose or drag shoe distributor up to 30 m light injection equipment up to 2 t | drag hose distributor > 30 m trailing shoe distributor > 18 m heavy injection equipment up to 3 t | heavy injection devices up to 4 t | · drag hose or drag shoe distributor up to 30 m · light injection equipment up to 2.5 t |
| <i>Reinforced rear panel 8 mm</i> | — | standard | internal, welded reinforcing elements | standard |
| <i>Bracket for cross beam for top link</i> | optional | standard | standard | standard |
| <i>Lower link with catch pockets and safety hook in cat. 3, optionally also cat. 2</i> | standard | · standard · firmly welded | · standard · firmly welded | standard |
| <i>Manhole</i> | flat manhole cover at the rear of the container | manhole cover offset laterally to the container | manhole cover offset laterally to the container | manhole cover offset laterally to the container |



Four-point hitch size XXL

With a four-point hitch size XXL, the rear wall of the container is reinforced. In addition, internal struts and a welded cross beam ensure increased stability, making this hitch particularly suitable for heavy spreading techniques.



OTHER

The most efficient possible spreading of liquid manure not only benefits you, but also the environment. It enables you to improve your work processes and also makes optimum use of nutrients. To further increase efficiency, we offer you various additional equipment options.

Tyre pressure control system

Our tyre pressure control systems allow you to work three times more efficiently. Lower the tyre pressure in the field, increase the contact area and thus reduce the pressure on the ground. On the road, you can reduce rolling resistance by increasing tyre pressure and thus significantly reduce diesel consumption. This also reduces tyre wear.

We offer you only proven and reliable tyre pressure control systems from the manufacturers PTG (single and dual pipe systems) and STG (single pipe systems). Depending on the size of your slurry tanker, the number of tyres and the tyre size, different compressor systems are available. Depending on the tyre size and air capacity of the compressor, the pressure can be increased from 1.5 bar to 3.5 bar within 2.5 minutes.

A supply via the tractor compressor is a possible option. You can also choose the patented PTG quick release valves.



STG Tyre pressure control system with single-pipe system



PTG Tyre pressure control system with two-pipe system



Pressure gauge for tyre pressure control systems

Dosing device for nitrification inhibitors

Nitrification inhibitors increase the efficiency of liquid manure, especially on light soils. Nitrification inhibitors prevent the ammonium nitrogen that is immediately available to the plants from being washed out. A dosing system for nitrification inhibitors offers numerous advantages. Thanks to the storage tank, you don't have to constantly refuel. In addition, you can precisely dose the target quantity per hectare – and you can largely do so automatically.



Dosing device for nitrification inhibitors

Lubrication

A central lubrication system on your slurry tanker ensures simple and automatic lubrication of all lubrication points on the slurry tanker and on the application techniques. This reduces maintenance and increases the operational reliability of your technology. We offer lubrication systems with up to 125 lubrication points.



Central lubrication system

Alternatively, you can also choose a lubrication bar with progressive distributor or lubricate the axle manually.



Lubricating bar

Agitators for vacuum tankers

If liquid manure is kept in the container for a longer period of time due to long transport distances or if it contains rapidly sinking solids, the solid and liquid components can separate from each other. Agitators in the tank prevent blockages and ensure that the nutrients are evenly distributed before application.

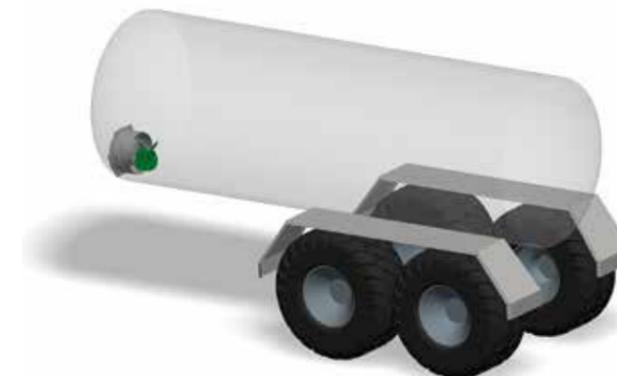
Air agitator

The air stirring line at the bottom of the tank flushes out deposits. A vacuum compressor installed on the slurry tanker generates the necessary compressed air.



Hydraulic agitator with wings

The hydraulic agitator with wings works according to the principle of a slurry mixer. It is mounted on the front wall of the tank and stirs up the contents.



Hydraulic agitator with flushing line

The hydraulic agitator with flushing line is installed at the front under the tank. A flushing line runs over the bottom to the rear wall of the tank. The liquid manure is conveyed from the front to the rear end of the tank and continuously mixed.



Camera systems

A camera system gives you more safety when reversing. In addition, you always have a good view of your application technology as well as the vehicles following you.

You can choose between a black-and-white camera (120 degree opening angle) and a colour camera (90 degree opening angle). Both models are equipped with a hardened, scratch-resistant front glass. The glass is heatable and ensures the best possible view in all weather conditions.

Connection options:

- 7-inch TFT LCD monitor (up to four cameras included)
- via existing tractor system (the possible number of cameras depends on the manufacturer)



Top cylinder

A top cylinder allows you to make optimum use of the tractive power of your tractor: The cylinder transmits power to the tractor, thus increasing the front axle load and improving tractive effort. A top cylinder can be fitted in conjunction with a drawbar suspension.



Air vents for vacuum tankers

If you switch from the “Spreading” function to the “Filling” function on a vacuum slurry tanker, the overpressure generated in the tank must escape and a vacuum must be generated. Air release valves can speed up this process, saving you valuable time. Venting can be done either via an electrical valve on the siphon or via a separate vent line.



For healthy growth

This has been our guiding principle in the five decades that we have been developing and producing individual slurry technology for agriculture under the “garant” brand. With a broad product portfolio, our family-run company based in Rieste, Lower Saxony, has become to the German market leader for liquid manure technology. Our slurry tankers stand out for their sophisticated technology that is tailored to your needs.

Every vehicle is different

Thanks to the modular construction principle, you can put together exactly the equipment for your slurry tanker that best meets your operational requirements. This brochure provides an overview of our accessories and all equipment options. Our slurry tankers and the options for the basic equipment are presented in the brochure „Slurry tankers“. Information on spreading technology and on our operator terminals can be found in the brochures of the same name.

