

» **SAMSON PG II** 2-AXLE SLURRY TANKERS



- growing together



SAMSON 2-axle PG II slurry tankers

SAMSON AGRO will be launching a 2-axle PG II for the 2015 season. This slurry tanker will be available in 16, 18 and 20 cubic meters and therefore carry the names PG II 16, PG II 18 and PG II 20. They are the smaller versions of the 3-axle PG II field slurry tankers, PG II 27, PG II 31 and PG II 35, which SAMSON AGRO launched for the 2014 slurry season.

Similarly to the 3-axle PG II, the 2-axle PG II slurry tankers have been developed for the professional users of slurry application equipment, who have vigorous requirements for the capacity, efficiency, durability and reliability of the machines, but also for their ease of use and maintenance

The PG II series offers many new exciting features designed to take it many years into the future.

The 2-axle PG II slurry tanker is particularly suited to the application of slurry on smaller fields, very hilly terrain or in very wet fields that cannot carry the large 3-axle slurry tankers.

New construction

The new PG II slurry tankers from SAMSON AGRO have a very simple but robust construction. An optional extra is hydraulic suspension on the drawbar that can absorb the shocks that propagate to the tanker from the tractor. The tank is placed horizontally on two through-going strong

profiles. The tank is also supplied with three anti-surge partitions for improved stability, even when carrying smaller loads. This type of construction gives a very strong and stable tanker that allows for a faster drive both in the field and on the road and in this way makes the application of slurry easier and faster.

Even when the vehicle is on level ground, the inclined bottom construction ensures optimal flow to the centrifugal discharge pump at the front end of the slurry tanker.

New discharge pump

SAMSON AGRO has developed a completely new high-capacity discharge pump. The pump is centrifugal and of simple construction. There is no contact between the rotating blades and the casing. The pump can therefore cope with all forms of foreign bodies including stones, bits of metal and plastic, and is distinguished by being particularly robust and requiring very little maintenance. The pump has a very high capacity of up to 15,000 litres per minute. This ensures that the full capacity can be utilised even with the widest booms, also at low engine speeds. A reduction gear is an optional extra if a lower pump capacity and a reduced diesel consumption is desired.

New pump tower

The new pump tower has a very compact design. The reflux pipe, hydraulic hoses, etc., are now better integrated inside the pump tower and therefore better protected. The pump tower consists of only two moving parts compared with three parts in the previous versions of the SAMSON AGRO pump towers. The new parts are very flexible, making the operation of the pump tower very fast and easy. The pump tower



is also fitted with a double telescopic extension which makes it more compact while not compromising on its reach. The new construction of the pump tower makes it easier to empty covered slurry lagoons and other slurry stores that are not easily accessible.

Working lights (optional extra) are also fully integrated in the pump tower, ensuring a perfectly lit working area around the pump tower.

A camera (optional extra) fitted underneath the pump tower is another new feature. It ensures a good view for the driver

during filling and makes it very easy to fold the pump tower back into place once the tank is full. The driver can oversee the operation without the need to turn around in the seat. The long working days in the slurry season are in this way made more comfortable.

The diameter of the filling pipe is now 30% larger than on SAMSON AGRO's existing pump tower. The hydraulics of the pump tower have also been optimised in order to increase the capacity of the filling pump.



The pump tower is now more compact. The 6-inch reflux pipe is integrated into the pump tower. It now has a telescopic function giving it a longer reach.



The new pump tower is more flexible, making the operation of the pump tower easier when emptying covered slurry lagoons where you navigate through small openings, or when emptying underground slurry stores.

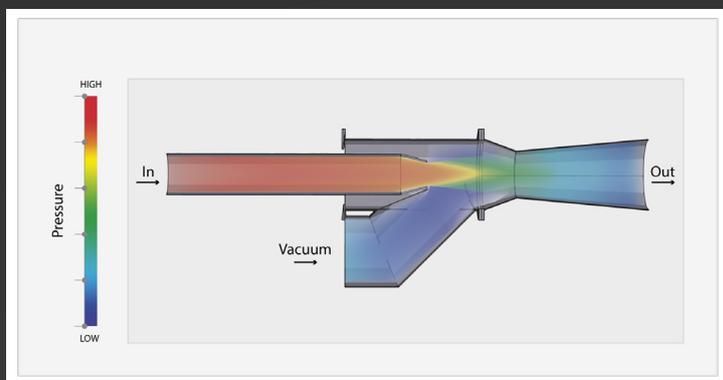
New revolutionary **Ejector**

SAMSON AGRO has developed a new powerful ejector-vacuum pumping system (simply called the ejector in the following). This is a robust pump that can pump any kind of liquid, needs very little maintenance, has very low operating costs and does not lose its effect over time.

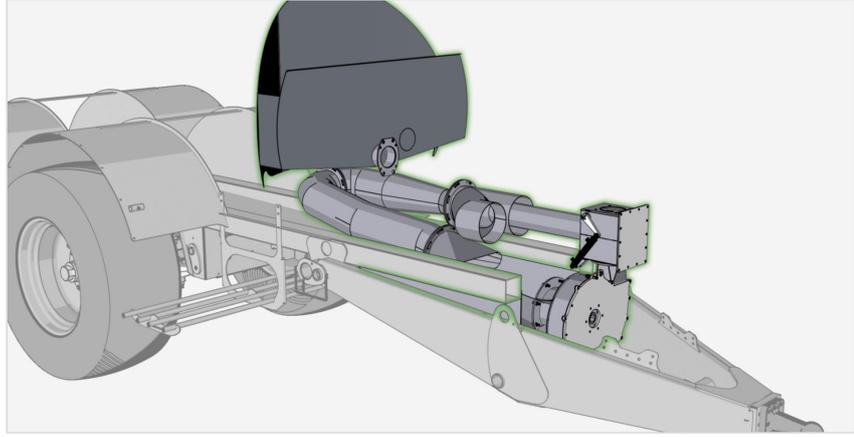
The ejector uses the so-called Venturi effect, which is named after the Italian physicist Giovanni Battista Venturi who described the effect back in the 19th century.

In simple terms, the Venturi effect is the acceleration of a fluid when it is compressed. This takes place, for example, if a fluid carried in a pipe has to go through a narrower section. In the narrowed part the velocity of the fluid will increase and a vacuum will be built around the fluid.

The SAMSON AGRO ejector is a so-called inline ejector, where the construction minimises flow losses and optimises the creation of a vacuum. This type of ejector is a well-recognised pumping technique within the maritime and offshore sector. The simplicity and robustness of the system also makes the ejector very handy when very difficult fluids need to be pumped.



SAMSON AGRO Ejector vacuum system



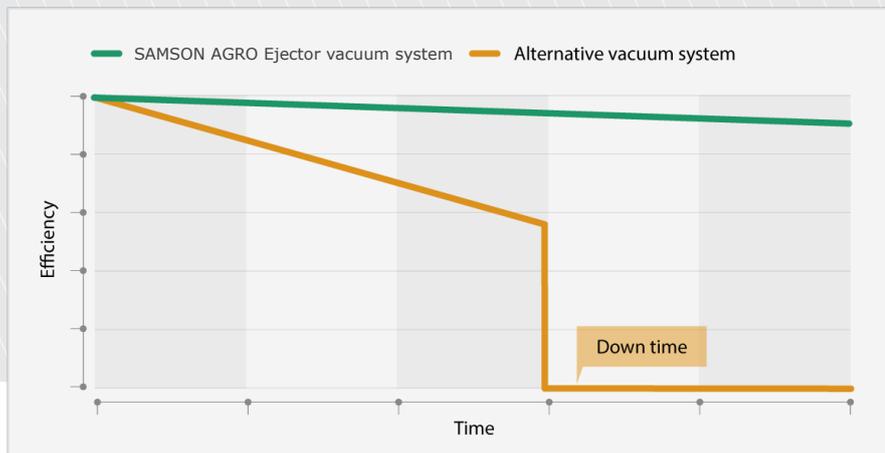
Sketch SAMSON AGRO's ejektor

More than just an ejector

In order to drive the SAMSON AGRO ejector, a small volume of slurry needs to be retained in the slurry tanker. The slurry is retained in a reservoir within the tanker. If the ejector is not used, this retainer function can be disconnected. The ejector can be used for filling the tanker under its own power via a valve at the side of the tanker or for vacuum attachment of centrifugal pumps to either the fixed filling pump, the SAP or pump tower. The use of centrifugal pumps results in a higher performance of the filling system. The ejector is fitted with a safety valve that ensures that the flow of slurry is only one way with no reflux.

No reduction in pump effect

Since the ejector does not have any moving parts, there is very little wear and tear. Even when slurry contains a lot of foreign objects, these will have free passage through the ejector. This means that the high capacity of the ejector will be maintained even after many years of heavy use. There is no need for regular renovations or repairs, which are normal practice for other pumping systems.



Advantages of the new SAMSON AGRO ejector

Foreign objects:

- Copes well with all forms of foreign objects in the slurry: stones, bits of metal, plastic, wood and wire/string from straw bales
- Needs no stone trap or slicers for chopping the slurry and foreign objects
- No unplanned stoppages or regular maintenance because of sharp objects in the slurry

Pump effect:

- Very high effect. Since there are no vacuum restrictors in the system, the ejector is capable of building a very high vacuum; under optimal conditions down to -0.9 bar. This means that emptying even from deeper stores is no problem
- Maximum filling capacity is up to 6,000 litres per minute in water at a lifting height of 1 m. Filling capacity will in practice depend on the filling method used, viscosity of the slurry, lift height, length of hose and hose diameter
- No risk of pumping system overheating. When filling at very high vacuum, there are no moving parts that can be worn or damaged and therefore result in reduced capacity
- Constant performance practically throughout the lifetime of the tanker

Inline-ejector principle:

- The tank on the vehicle is not exposed to a vacuum. This ensures a light construction
- No vacuum in the tank means that the slurry does not expand during filling and ensures that the tank is 100% full when filling has stopped
- No complicated valves and rubber balls for airing the tanker
- Quick priming of centrifugal pumps since only the pipe will be under vacuum and not the tank. This ensures a rapid start of the filling process
- Inbuilt safety valve. The valve ensures a one-way flow of slurry and no reflux. This prevents the slurry from running backwards and out of the filling system

Ejector:

- Simple system of pipes made from S235 steel. This ensures a high resistance to wear and a low weight
- Low unladen weight of approx. 150 kg
- No mechanical moving parts. This prevents wear and tear and the risk of broken parts
- No risk of incorrect operation or adjustments that damage the filling system

Service and maintenance:

- No topping up of lubricants or coolants needed
- No daily maintenance or inspections needed
- No regular repairs of the pumping system needed
- Only one annual clean and inspection needed





» **Several** Filling options

PG II slurry tankers can be filled in several ways. These filling options can be combined in different ways. Please check the price list for the different combinations. But the different options are:

» **EXTERNAL FILL**



External fill via
a funnel

» **PUMP TOWER**

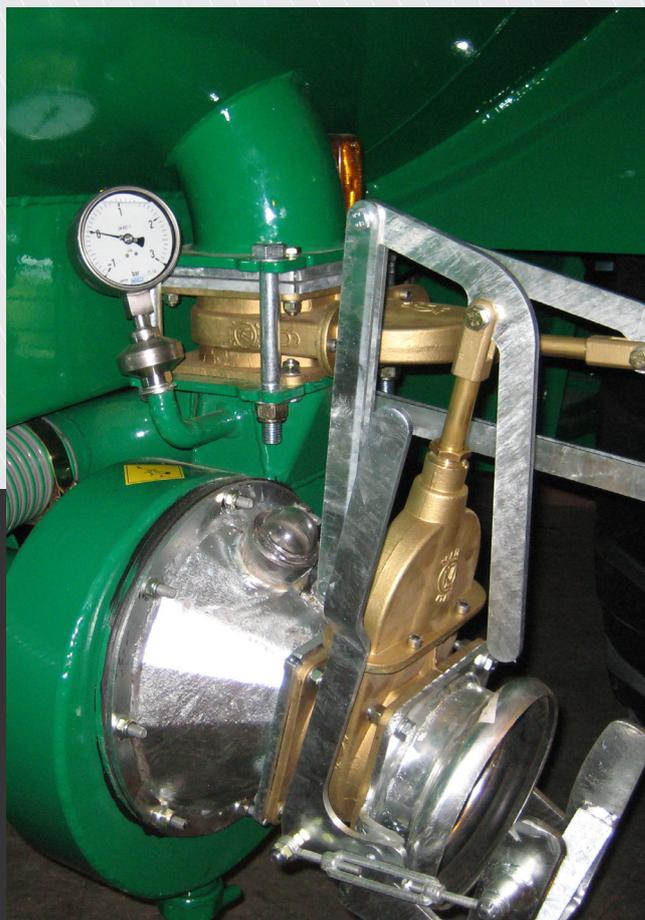


Pump tower with
telescopic arm

» EJECTOR



Hose connector



Hose with pump



Single-articulated SAP arm (SAP1) with or without pump

» EJECTOR



Double-articulated SAP arm (SAP2) with or without pump



Direct filling from underground storage of slurry



Filling by filling funnel

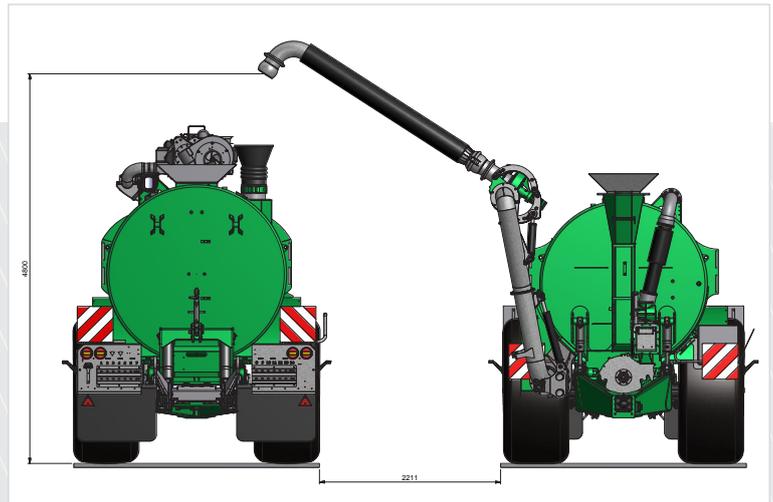


SAP2 with a filling hose mounted

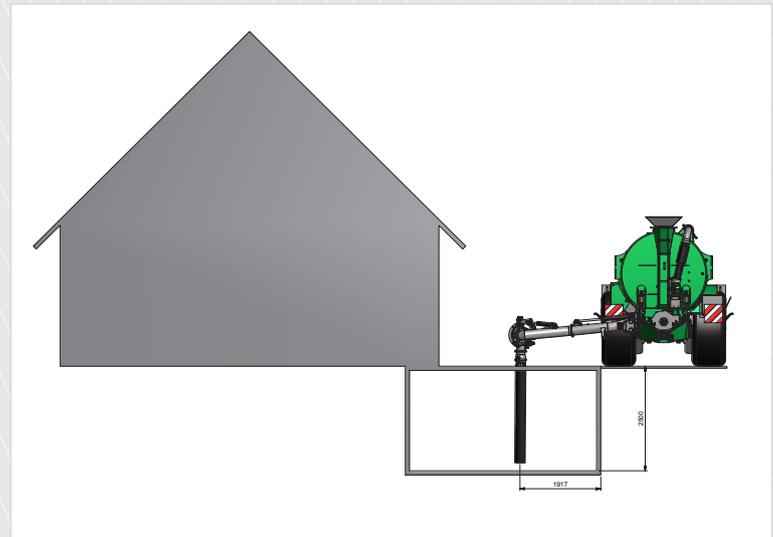
» Completely new filling possibilities with an ejector

The ejector pump can be combined with different filling solutions. Filling can take place via a hose connector or a hose and pump on the side of the slurry tanker, via a single-articulated SAP arm (SAP1) with or without a pump, via a double-articulated SAP arm (SAP2) with or without a pump, or via a pump tower with a suction plug/connection.

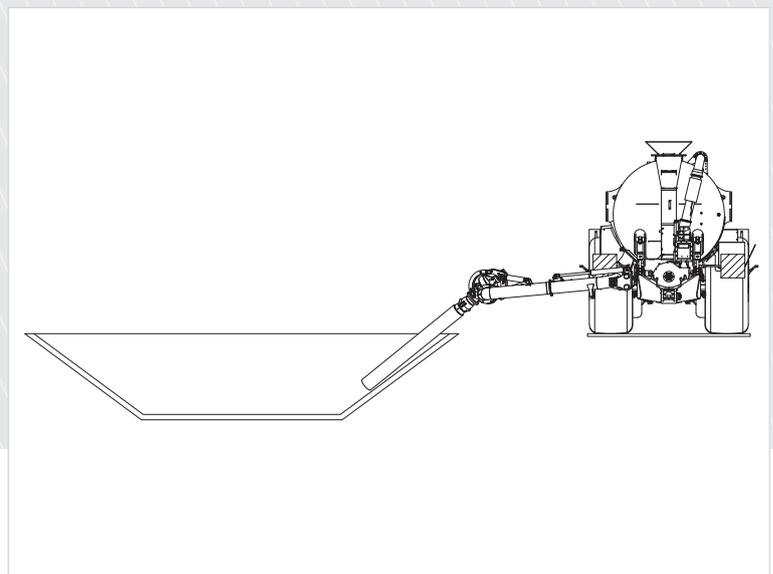
The SAP2 arm on the PG II slurry tanker enables the user to empty other tankers or trucks not equipped with a discharge pump. The user can also empty not easy accessible underground slurry stores or lagoons.



Emptying another slurry tanker or truck with slurry



Emptying a slurry storage under the stable



Emptying a slurry lagoon



PG II

Samson

Samson

» SAMSON AGRO- Control systems

SAMSON AGRO has expanded the product program of controlling systems, whereby the customers are offered both technical simple controlling systems with only few hydraulic functions and up to more comprehensive controlling systems with lots of hydraulic functions.

You can read more about these different controlling systems in separate information materials.



The well-known **SlurryMaster6000** control system from SAMSON AGRO.

Market differences in the equipment

Please be aware that on the different markets there may be variations in what is defined as standard equipment and what are optional extras for PG II slurry tankers.

This is SAMSON AGRO's attempt to adapt to the different traditions or requirements for slurry application equipment on the individual markets. There may also be a difference in the range of new equipment launched on the different markets. Finally, the selection of, for example, the SlurryMaster control system will have an effect on the type of equipment and optional extras that can be added. But all this will be explained in the price list.



» Standard

1. BPW wheel axles

Wheels are mounted on specially designed, strong BPW axles with integrated speed sensor as standard. The brakes (410x180 mm is the standard) are dimensioned to comply with even the strictest legal requirements. The large 15-degree steering angle of the axles combined with the compact 900 mm wide chassis results in a very manoeuvrable slurry tanker. This reduces the damage to plants while driving in the field and the wear on tyres when driving on the road. The new steering system on the axles consists of a minimum of moving parts which results in fewer lubrication points and less maintenance.

2. Larger wheels

In order to reduce rolling resistance and diesel consumption and increase the tyre footprint area, PG II slurry tankers are supplied large wheels. They have a diameter on 165 cm. This reduces the tractive force needed and extends the lifespan of the tyres. It also minimizes damage to plants and soil compaction.



German BPW has supplied specially designed wheel axles for PG II slurry tankers.



The large wheels reduce rolling resistance.



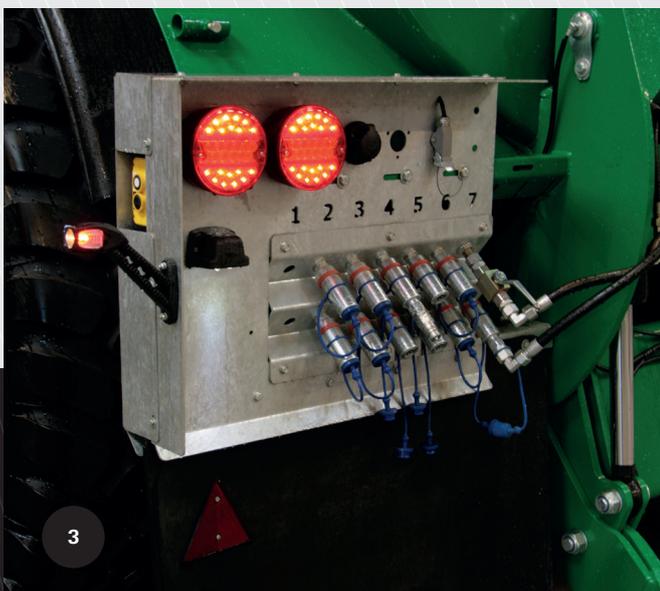
3. LED Lights, mudguards and PTO

All PG II slurry tankers are fitted with LED lights that are highly reliable and require a minimum of maintenance. Mudguards are also standard on all slurry tankers to avoid splash from tyres onto implements.

A Waltersheid PTO drive shaft is standard on all tankers. This has the advantage of long service and maintenance intervals.

4. Hydraulic coupling

There is space for as many as 14 hydraulic couplings and central lubrication points on the back of the slurry tanker. The couplings are placed on each side of the slurry tanker under the rear lights to avoid the need to get in between tanker and implement when attaching hydraulic hoses.



3

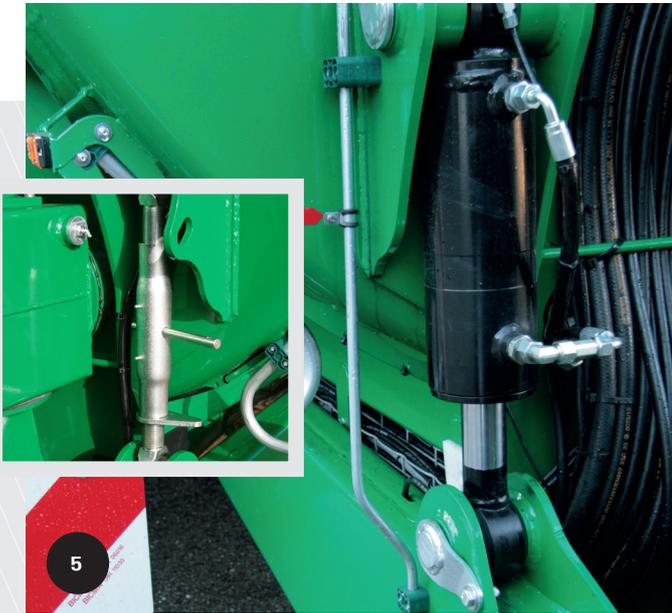
The PG II is fitted with LED lights and mudguards as standard.



4

Hydraulic couplings are located where they are easily accessible.

» **Optional** extras and accessories



Drawbar suspension gives optimal driving comfort. The height can also be adjusted.

5. Adjustable suspended drawbar with jack

An adjustable drawbar with hydraulic suspension is an optional extra for the 2-axle PG II slurry tanker. The drawbar absorbs shocks from both tractor and trailer, giving a more even ride. It also increases the lifespan of the slurry tanker since it reduces the stress on the chassis.

The height of the drawbar can be adjusted to ensure that the coupling between tractor and trailer is optimal at all times.

When the slurry tanker is being filled the drawbar can be adjusted to ensure the tank remains in a horizontal position, thus allowing it to be fully filled. For emptying, the front end can be lowered to improve the flow to the pump at the front.

An integrated hydraulic jack on the drawbar makes for easy hitching and unhitching when the tanker is parked.

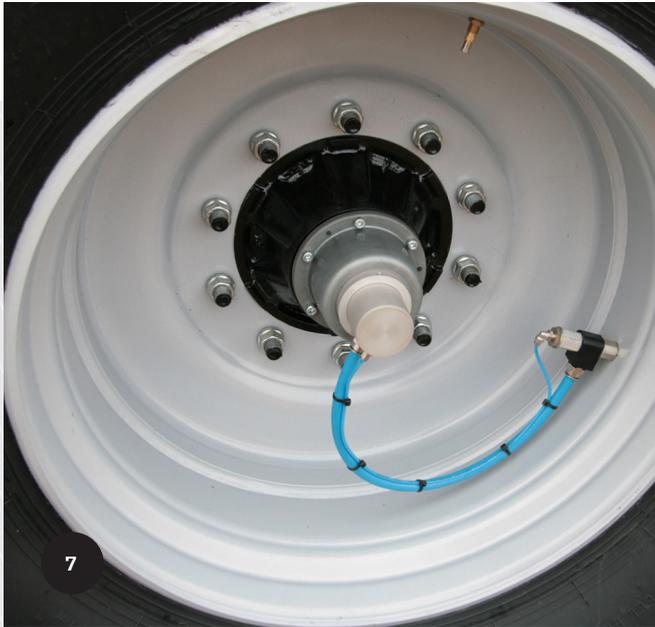


The new lift can lift up to 9 tonnes in a horizontal position and deliver a pressure of 5 tonnes.

6. Three-point lift

SAMSON AGRO has developed a brand-new three-point lift for the PG II slurry tankers. The lift has greater lifting capacity and lifting height. The higher lifting capacity meets the future requirements for larger and heavier implements. The improved lifting height ensures optimal clearance between the implement and the ground both when driving on the road and in the field. It will, for example, be easier to enter and exit fields without implements touching the ground.

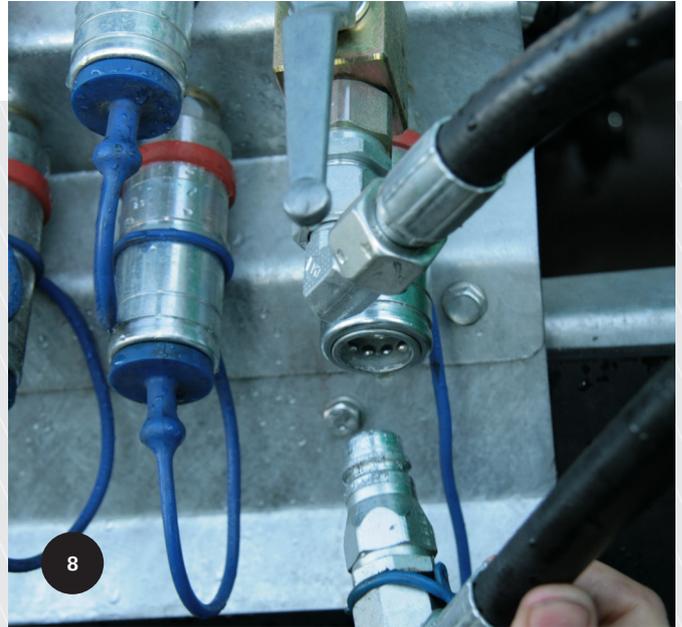
The lift is no longer bolted onto the tanker. Instead it is welded to the chassis of the slurry tanker which means re-tensioning of the lift is no longer required and the construction more stable and solid.



SAMSON AGRO's automatic tyre pressure regulation is a two-circuit system with shut-off valves in each wheel.

7. Tyre pressure regulation

The PG II slurry tankers can be fitted with an automatic tyre pressure regulation system to allow the driver to select different tyre pressures when, for example, changing from driving in the field to driving on the road. The pressure can also be adjusted according to soil and crop type. In this way crop damage and soil compaction are minimized. The compressor has a capacity of 3,300 litres per minute. The system is a two-circuit system with shut-off valves on each wheel. This has the advantage that there is only pressure on the turning parts when the pressure is adjusted. This minimizes the wear on these parts in the hubs.



The coupling functions between slurry tanker and implement have been improved with the new push-pull couplings.

8. "Push-pull" quick release couplings

It is possible to purchase push-pull hydraulic couplings as an optional extra, whereby hydraulic hoses can be removed or attached by a simple push-pull mechanism. There is space on the tanker for 14 couplings that are numbered to avoid errors when connecting hoses. The couplings have been turned 45 degrees towards the ground to avoid sharp bends in the hoses.



This is why you have to buy a **PG II slurry tanker**

» Long lifespan

Long lifespan

- The tank is made of 5 mm steel
- The tank is placed on two through-going supporting profiles
- The wheel guards are made of Domex 600 high-strength steel
- It has a fully-welded chassis
- A new anti-surge partition in the three sections of the slurry tanker ensure stability also at smaller loads
- Suspended adjustable drawbar able to absorb shocks and vibrations
- The wheels are positioned at the side of the slurry tank, which results in a low centre of gravity. This makes the construction more stable and less exposed to stress, extending the lifespan of the slurry tanker
- Can carry heavy and wide implements such as drip hose booms, grass disc injectors and black soil incorporators
- Less corrosion – strong surfaces on the inside and outside of the tank. The inside is epoxy-coated
- New durable ejector loading pump
- New optimised discharge pump

» High efficiency

High stability – faster driving and more loads per hour

- The wheels are positioned on the side of the slurry tank. This gives a low centre of gravity and allows for faster driving on the road and in the field

- Large 165 cm diameter wheels reduce rolling resistance
- Hydraulic suspension – stable driving
- A new optimised high-capacity unloading pump
- SM 80 ball hitch is standard

Effective workhorse

- Can use a wide range of implements such as drip hose booms, grass disc injectors and black soil incorporators
- New, more powerful lift with increased capacity and greater lifting height
- Numbered quick-release hydraulics couplings of the push-pull type between tanker and implement
- Rapid switches between implements
- New flexible pump tower that can be easily navigated into the openings on slurry lagoon covers
- Increased pump tower capacity
- Driver can remain in the cab during the filling process when using pump tower

Effective filling options

- Via pump tower
- Via filling plug/connector
- Via hose with a pump
- Via SAP arm (single- or double-articulated)

Effective ejector pump

- Large capacity
- Can pump even difficult, viscous or nonuniform fluids
- Does not lose its effect over time



Effective centrifugal pump for unloading

- The pump is immediately ready for use compared with a vacuum pump which needs time to build up a vacuum
- Can cope with many different types of liquid – results in fewer stoppages

Safety

- Specially designed BPW axles
- Stronger brakes, 410x180mm
- Electronic wheel steering
- Hydraulic supporting legs
- LED lights
- Rotating beacon and LED working light at the back

» Optimal application of slurry - optimal yield

- The centrifugal pump gives a more precise and consistent application along the entire width of the implement compared with a vacuum pump
- The weight of the slurry tanker is relatively low for its size, which minimizes crop damage and soil compaction
- The slurry tanker is made up of sections and the rear-most section is emptied first. This ensures high weight transfer to the tractor and minimises the risk of wheel spin and damage to the field
- Because of the high loading and unloading capacity, there is a greater chance of being able to apply the slurry and its nutrients at the most suitable time for crop uptake and in the most suitable weather conditions

» Low energy consumption (diesel)

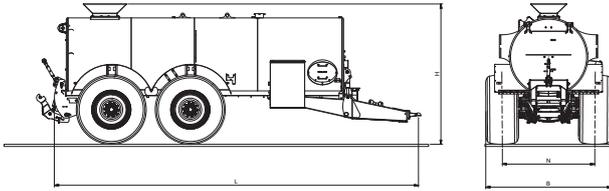
- The tanker has a relatively low weight for its size
- The tanker is emptied from the back first
- There is an effective centrifugal pump for unloading. The pump is immediately ready for use compared with a vacuum pump which needs some time to build up pressure

» Low maintenance costs

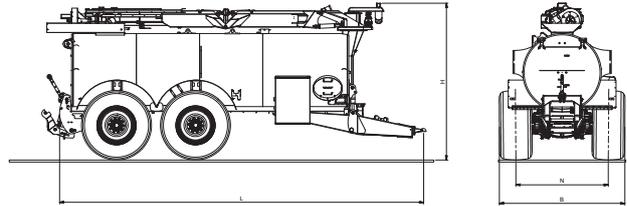
- Ejector has very low maintenance costs
- The centrifugal pump is made of standard components and replacements are available everywhere
- The unloading pipe is galvanised and bolted onto the tanker so that it can be easily modified and replaced
- The Danfoss PVG32 valve block is standard

» TECHNICAL SPECIFICATIONS

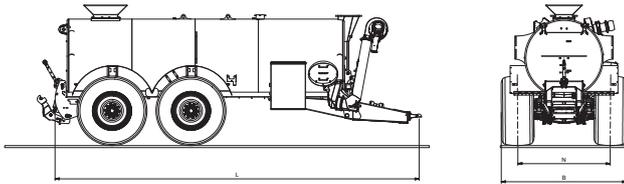
External filling



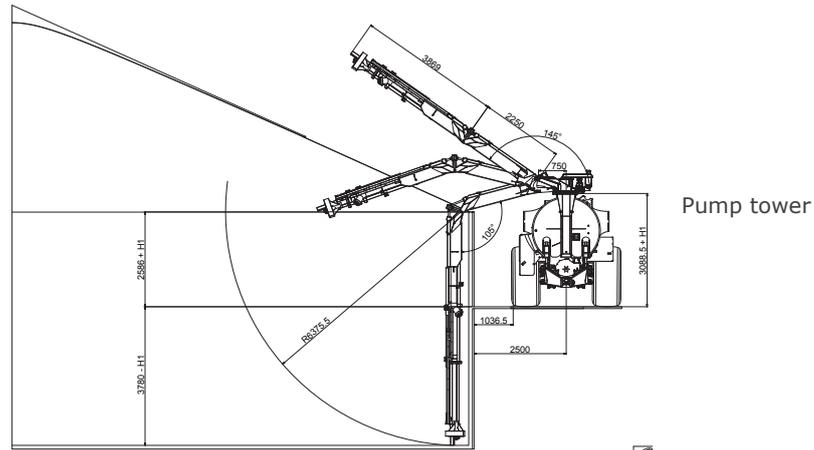
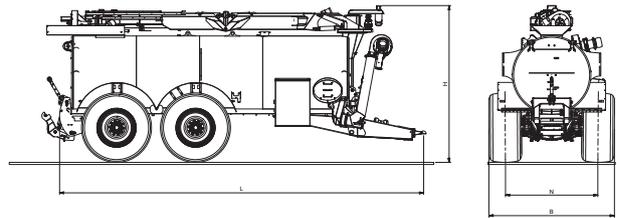
Pump tower



Ejector



Pump tower and ejector



Pump tower

Dimensions in mm / tanker size		PG II 16	PG II 18	PG II 20
Length	L	8600	8600	8600
Tanker diameter	Ø	1850	1950	2050
Height*	H		4000	
Alliance 23,1-26 Type 329 16PR		2840	x	x
Alliance 650/60-30,5 Diagonal type 328 ET -25			2850	
Alliance 650/60-30,5 Radial type 380 ET -25			2850	
Alliance 710/55-R 34 Radial type 388 ET -25			2930	
Nokian 710/55 R34 ELS SB ET-50			2960	
Nokian 800/50 R34 ELS SB ET -15			2980	
Nav-gauge	M	2150	2150	2150
Net weight**	M	8400	8600	8800
Gross volume, cubic meters***		16	17,8	19,8

* Max. Height with filling funnel or hydraulic swivel type unloading pipe

** Net weight for basic tanker with only standard equipment

*** When retention of slurry to ejector subtract 0.5 cubic meters

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