

GK 10

User manual

28-09-2021, Rev. 1.0



EU DECLARATION OF CONFORMITY

We,

Gøma A/S
Petersmindevej 6
DK-8800 Viborg,



Hereby declare under our sole responsibility that the following product: GK 10



For use in various flushing or water collection operations which are covered by this declaration and are in accordance with:

- DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL OF MAY 17, 2006.

Viborg, September 28, 2021



Jakob Møller, Production/Technical Manager

Dear customer,

Congratulations on the purchase of your GK trailer from Gøma. The machine is of the highest quality as well as surface treated to ensure long life. We hope you will enjoy the product.

If you at any time have any questions about functionality, maintenance, or other things, you are always welcome to contact Gøma, and we will do our best to help you. When contacting Gøma regarding your product, please make sure to note the product's serial number to be able to identify your product in connection with your inquiry.

Thank you again for your purchase of a GK trailer from Gøma!



Read this user manual carefully before using the product

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GK trailer

This user manual is applicable for Gømas products with the following functionality and specifications:

Functionality

A GK trailer is used for various flushing operations. The trailer is attached to a tractor.

A GK trailer is made in many different versions depending on the customer's wishes. Small changes compared to the below may occur.

General specifications

Trailer*	GK trailer
Length:	8.1 m (GK10)
Width:	2.5 m (GK10)
Height:	3.1 m (GK10)
Tank diameter:	1.7 m (GK10)
Total weight at full load:	22 t (GK10)
Capacity:	10 m ³

Remote control

Buttons:	4 pcs. 2 - Step buttons. 8 pcs. Analog
Durability:	IP 66
Measurements:	245mm X 79 mm X 56 mm

High pressure pump

Type:	MW 50
Drive type:	PTO (power take-off)
Max RPM:	800
Max pressure:	Customer specific/see the pump's data plate
Max volume:	Customer specific/see the pump's data plate
Standard adjustment:	Manually operated
Adjustment (extra equipment):	Remote control
Protection against overpressure:	Safety valve
Oil type:	Meropa 220

*A GK trailer can be supplied with various extra equipment. Thus, individual differences may occur. Contact Gøma for specific numbers for your trailer.

** Each trailer must be weighed separately as the trailers are customer specific.

*** Other models may exist.

High pressure pump

Default number of hoses:	2
Default open/close:	Manual
Inner diameter small:	Customer specific
Length small:	Customer specific
Default roll-out small:	Hydraulic
Inner diameter large:	Customer specific
Length large:	Customer specific
Default roll-out large.:	Hydraulic

Vacuum pump

Standard type:	Liquid mechanical vacuum pump
Sealing compound for liquid mechanical vacuum pump	Water with coolant
Type (extra equipment):	Lamella pump
Oil type for lamella pump:	10W/40 engine oil
Max pressure:	Customer specific/see the pump’s data plate
Flow:	Customer specific/see the pump’s data plate
Drive system:	Mechanical/hydraulic

Control panel central

Ball valve:	Open and close air on the trailer
PLC:	Bodas RC10-10
Display:	Bosch rexroth DI4

Control panel back

Display:	Bosch rexroth DI4
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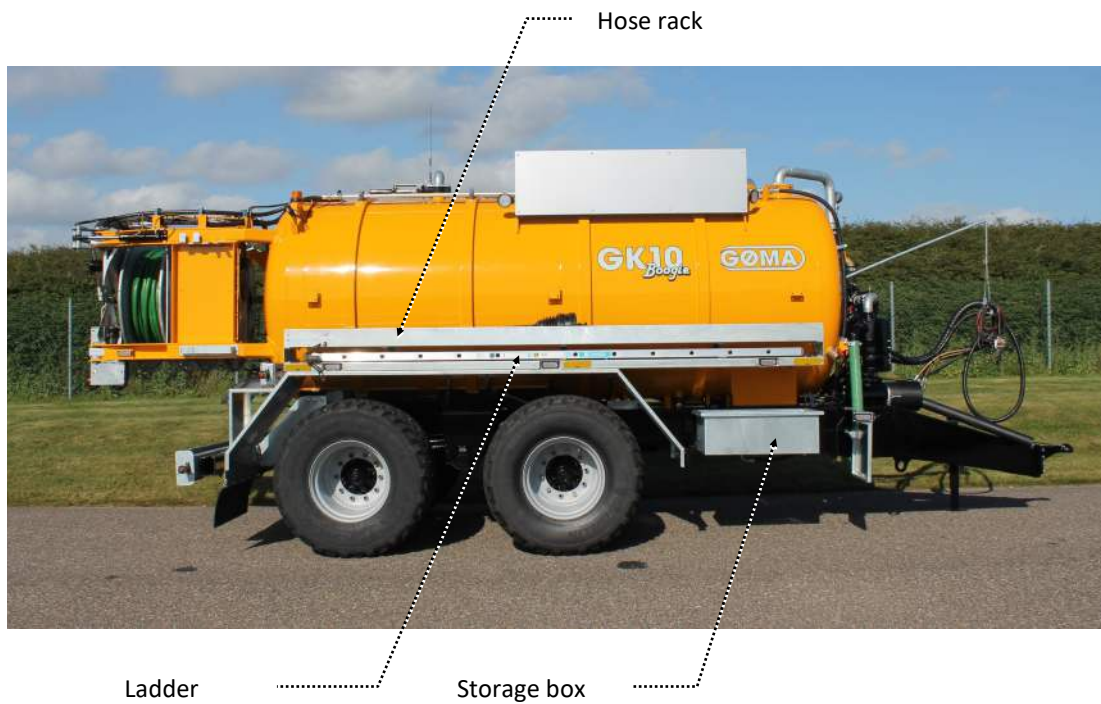
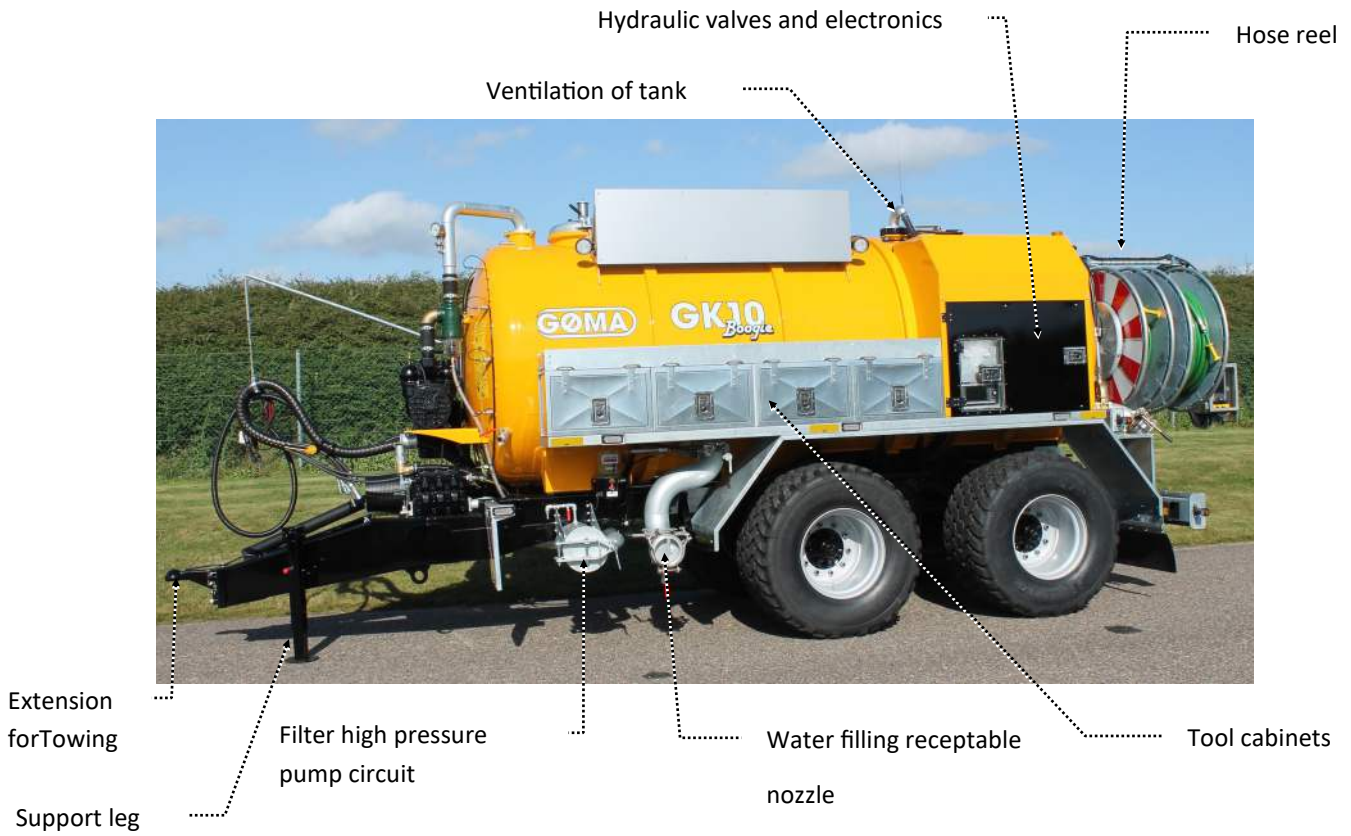
Extractable bumper

Extractable length:	80 cm
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Inscription plate

Location:	Right frame rails
Number format:	XXXX—year

The GK trailer is available with several extra features, not all of which are mentioned. Please get in touch with Gøma for a list of add-on options.





PTO

Wide load mark

Oil separator / exhaust box



Inspection hatch

Vacuum pump

High pressure pump

Beacon

Hose reel



Display bag

Water filling receptable nozzle

Emergency stop

Hose engine

Hydraulic piston for rolling in/out

Extractable bumper

Traffic lights back



Safety

Please read this user manual carefully before using the machine. Failure to comply with the instructions may lead to increased danger to the people around the machine as well as reduce the lifetime of the machine.



Warning!

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- Make sure to follow this user manual carefully before using the machine. If you do not do this, an improper start-up can take place, which can lead to component damage or, in the worst case, put your life in danger.
 - It is assumed that installation and dismantling of the GK trailer are carried out by qualified personnel who knows how to handle hydraulics. Improper handling of hydraulics can result in personal injury
 - Do not climb on top of the machine while it is operating!
 - Harmful gases can develop in the tank. For this reason, the tank must be empty and vented if the inside of tank needs to be inspected in case the tank has been used for liquids with harmful gases.
 - Climbing below the GK trailer, while it is operating, is extremely dangerous and may result in a life-threatening situation. It must not take place under any circumstances.
 - Make sure that the tractor is dimensioned for the GK trailer incl. full load. Gøma takes no responsibility for the lack of lifting capacity on the tractor and the damage associated with it.
 - The GK trailer must under no circumstances be near open flames, as flammable gases may develop in the sludge tank.
 - If chains from the shielding on the power take-off are not securely mounted on the tractor and machine, there will be direct access to the power take-off. The power take-off can cause great personal injury, so mount the chains with great care!
 - All operations of the machine's functions must be done at a safe distance from the machine's actuators, which are capable of causing great damage.
 - Complying with limits on brake pressure and tire pressure is the customer's responsibility. Damage that occurs due to incorrect tire pressure or brake pressure cannot be attributed to Gøma.
 - The GK trailer is not frost-proof. It is the customer's responsibility to empty the trailer of liquids when it is frosty.
 - Lethal gases can develop during the pumping of manure and sludge. Make sure to provide adequate ventilation during the pumping of manure and sludge.

- All work with the PTO shaft must only be carried out if the ignition key has been removed. Connecting and disconnecting the PTO shaft should be carried out only after having read the user manual for the PTO shaft carefully.
- The owner of the GK trailer is the one responsible for complying with all traffic laws, including limits on the combined vehicles' total weight.
- The GK trailer must be completely empty before the support leg can be used. The support leg is not dimensioned for weight greater than the weight of the machine itself.
- It is not allowed to climb on top of the GK trailer. All work performed on the GK trailer must be performed from a safe and approved platform.
- Failure to comply with maintenance/service specifications may lead to component damage, and, in the worst case, it may lead to personal injury. For this reason, it is important to read this section carefully and to contact Gøma if something seems unclear.
- When the hoses are rolled in and out, you must maintain a safe distance of at least 2 meters to avoid personal injury. Rolling the hose in and out is done with great force and can cause personal injury.

Requirements for the tractor

The following must be observed to drive with a GK

trailer:

Hydraulics

- Pressure, P (3/4" quick coupling male)
- Return, T (3/4" quick coupling female)
- Additional features (1/2" quick coupling female)

Traffic lights

- 7 pole plug

Power supply 12V

- ISO Bus connector
- JD plug (30A)

Putting into service

Before the machine is used:

- The machine must only be used by people who are qualified in handling large agricultural machines. Improper handling can endanger the life of the operator and people around the trailer!



- Mount the trailer with thorough mounting of pawl/spring cotter pin or on a ball depending on the tractor configuration.
- Check that the hydraulics are properly connected according to the specification:

Pressure (P),	black strips
Return (T),	white strips
Double acting x 2	green strips
- Install 12V plug on the tractor.
 - + red wire
 - black wire
- The 12V supply must supply the control panel as well as other electronics on the GK trailer which are not related to traffic lights.
- Install 7 pole plug and check that all lights work as they are supposed to.
- Mount the power take-off.
 - Adjust the length, so the power take-off fits the combined vehicle
 - Mount with the lock
- The chains on the power take-off are mounted on the tractor and the machine so that shielding is maintained during operation.

1: Left turn signal



2: Stoplight



3: Right backlight



4: Right turn signal



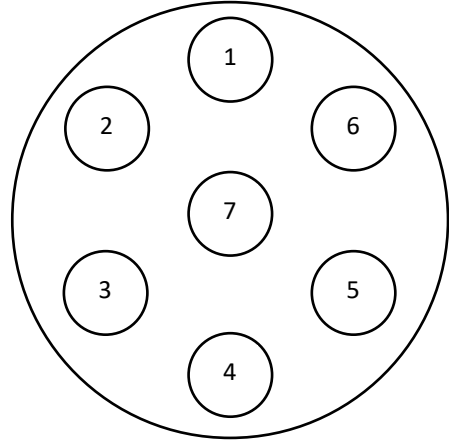
5: Chassis



6: Backlight

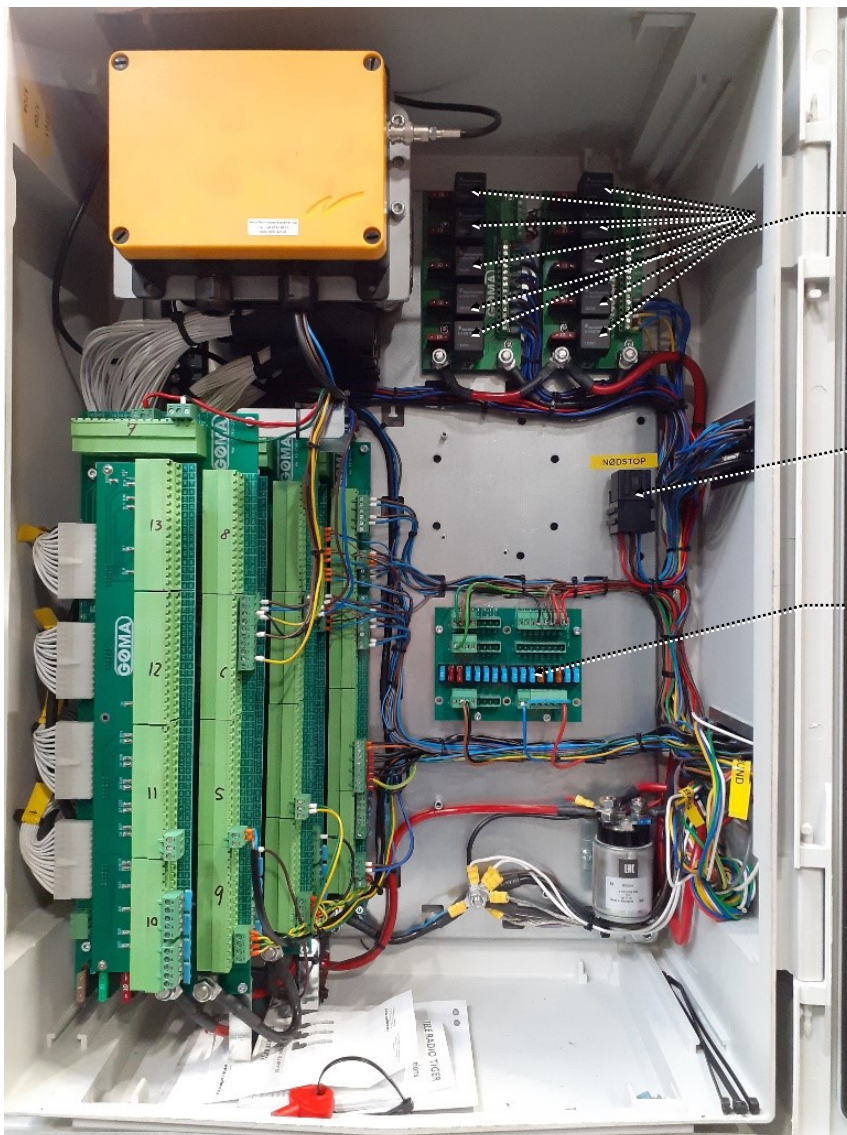


7: Left backlight



Operating the machine

Hydraulic valves and electronics



Relays

Emergency
Stop Relay

Fuses

The machine's functions are controlled by the remote control.

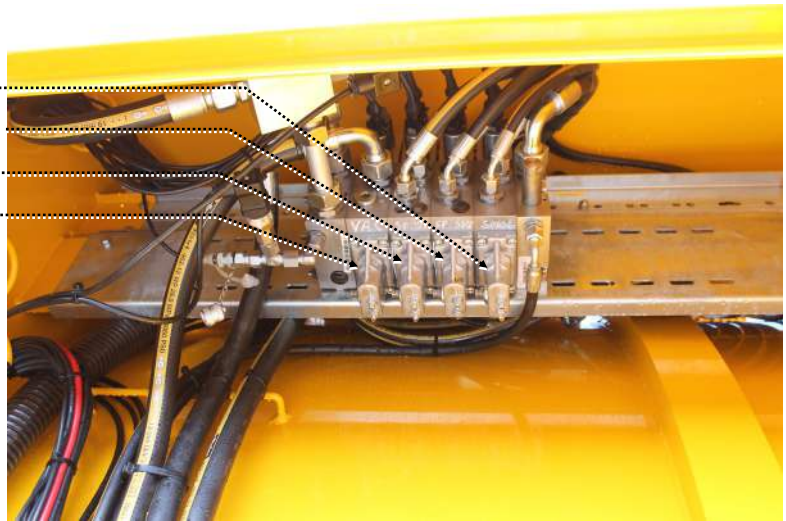
Operating concept

The remote control sends a signal to the PLC that can make the various valves open and close. In the case of the hydraulic functions, oil is sent to or from the actuators so that a movement is initiated.



Remote control

- Spades
- Hose reel 2 in/out
- Hose reel 1 in/out
- Vacuum pump



There are 2 displays on the machine from which you can control the machine manually. A central display (Left) and a display on the back of the machine as shown below. Via the central display, you can set up the remote control according to your own needs.



Control panel back with display

- Manometer Hydraulics
- Open/close air for the whole trailer
- Manometer Air
- Central display

Adjustment of hosing pressure

Valve for hose pressure

Water separator

Mist lubrication



Adjustment of max hose pressure

Open/close hose filter

Screw for manual open/close



Manual braking force adjustment

Vacuum pump

Functionality

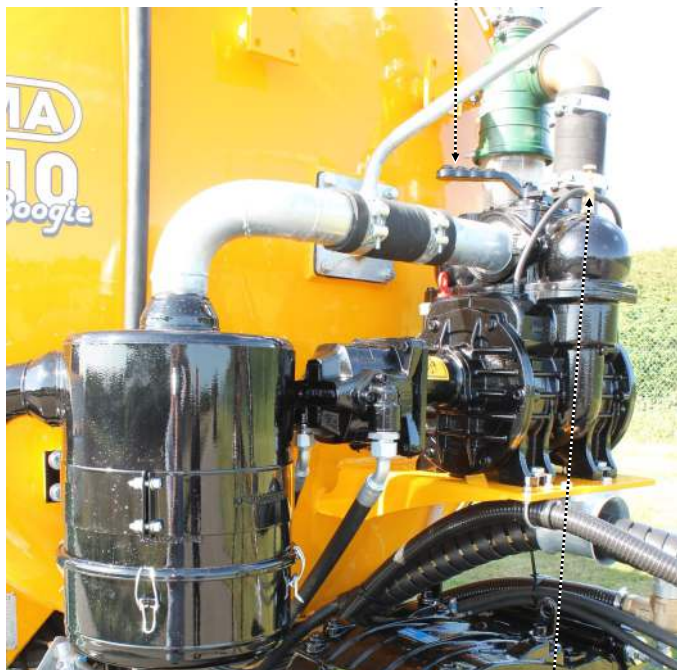
The vacuum pump is used for creating overpressure or underpressure in the tank to either empty or fill it.

Startup

1. Check the oil level on the pump. Fill with 10W/40
2. Check that the hydraulics are connected correctly (if hydraulically pulled), or PTO has been mounted in accordance with the requirements (if not hydraulically pulled).
3. Check that the oil influx is correctly set on the adjusting screw. Minimum 40 drips per minute when cold
4. Start the pump.

The vacuum pump is turned on and off with the remote control or manually on the display if it is hydraulically pulled.

Alternatively, the pump starts with the PTO.



Sight-glass. 40 drips / min. when cold

Handle for switching between vacuum and pressure

Manometer for displaying vacuum in the tank



High pressure pump

Functionality:

The high pressure pump is used to flush with clean water from the water tank. When the high pressure pump is turned on, it will either circulate the water in a water circuit in the machine or lead water to the hoses. There is a water divert valve on the machine which switches between these two features. The pressure of the pump is controlled by the remote control.

High pressure pump



Startup

1. Make sure that there is water in the tank
2. Power take-off mounted correctly
3. Open between tank and filter
4. Open vent pipe
5. Filter has been vented
6. Loosen pressure relief valve

Water divert valve

The high pressure pump runs across the P.T.O. Connecting and disconnecting the water can be done using the remote control.

NOTE! If the pump is turned on without an influx of water, the pump can be damaged, which is not covered by the machine's guarantee.

NOTE! If the pump is turned on with the valves close, the safety valve will open. If the seal is broken, the warranty is considered void.

Safety valve



Hosing

The hoses are wound on a reel behind the machine, as shown in the images

Startup

1. Clear the area covered by the reel when it is rolled out.
2. Position yourself in a way that you can keep an eye on whether the lock for the hose reel is opening correctly.
3. Start unloading the reel. The first step in the process is the lock opening correctly and releasing the reel.

NOTE! If this does not happen, stop the process.

4. Move the reel to the end position as shown in the image.
5. Open the ball plug valve for the chosen hose.
6. Adjust the water divert valve so the water will be diverted to the hoses.



Lock for hose reels









Maintenance/service



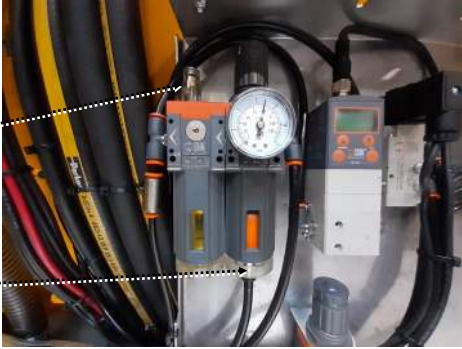
NOTE! All service and maintenance are performed at your own risk and Gøma cannot be held responsible for improper performance of service. Service and maintenance require that the service technician. For this reason, the machine must be stopped during service. If you have any questions about the below, Gøma is ready to help.

Always be aware of leaks, cracking, or other signs of defects/wear. If any kind of improper wear or any defect is observed, you should take care of it immediately. Contact Gøma if necessary.

To get the most out of your GK trailer and ensure a long product lifetime, you should do the following:

Description	Image	Frequency
<p>PTO</p> <p>Lubrication of PTO in accordance with PTO requirements.</p>		<p>Daily</p>
<p>Lubrication of chain</p> <p>Remove chain protection and lubricate the chain. Use suitable oil</p>		<p>Weekly</p>
<p>Clean water filter</p> <p>Close the water tank, loosen the tightening handle on the hatch, open the hatch. Take out the filter and clean it for particles.</p> <p>OBS! The filter may be full of water</p>		<p>Daily after the end of use</p>

Description	Image	Frequency
<p>Replace high pressure filter</p> <p>NOTE! The tractor must be turned off and the oil pressure taken off before beginning the replacement process.</p> <p>Remove high pressure filter and replace. Remove by screwing on the bottom</p>		<p>Annually</p>
<p>Lubrication of grease nipples (trailer without central lubrication system)</p> <p>Carry out a visual inspection of mechanical parts when lubricating</p> <p>Use suitable grease</p> <p>NOTE! Not all grease nipples are pictured.</p>		<p>Daily</p>
<p>Lubrication of grease nipples (Trailer with central lubrication system)</p> <p>Check lubrication points</p> <p>Add grease of the type EP2.</p> <p>NOTE! Remember to visually inspect mechanical parts daily</p> <p>NOTE! Not all lubrication points are shown.</p>		<p>Daily</p>

Description	Image	Frequency
<p>Brakes</p> <p>Check/adjust travel on brake arms.</p> <p>Brake arm adjustment</p>		<p>Weekly</p>
<p>Wheel bearings</p> <p>Inspection of wheel bearings and brakes - separate, lubricate, and adjust.</p>		<p>Annually</p>
<p>Empty water separator</p> <p>Empty water separator and fill with lubricating oil for air</p> <p>Fill with oil</p> <p>Empty water</p>		<p>Weekly</p>

Gøma support



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See opening hours at www.goma.dk

