Operating Manual

AMAZONE

FT 1001

Front tank for mounted UF field sprayer

MG3058
BAG0065.10 09.22
Printed in Germany

Please read this operating manual before commissioning. Keep it in a safe place for future use.

en

Reading the instruction

Manual and following it should seem to be inconvenient and superfluous as it is not enough to hear from others and to realize that a machine is good, to buy it and to believe that now everything should work by itself. The person in question would not only harm himself but also make the mistake of blaming the machine for possible failures instead of himself. In order to ensure success one should enter the mind of a thing, make himself familiar with every part of the machine and get acquainted with how it's handled. Only in this way could you be satisfied both with the machine and with yourself. This goal is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Sark.

Manufacturer's address

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Spare part orders

Spare parts lists are freely accessible in the spare parts portal at www.amazone.de.

Please send orders to your AMAZONE dealer.

Formalities of the operating manual

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Compilation date:	09.22

1 User Information

The User Information section provides information on use of the operating manual.

1.1 Purpose of the document

This operating manual

- describes the operation and maintenance of the machine.
- provides important information on safe and efficient handling of the machine.
- is a component part of the machine and should always be kept with the machine or the towing vehicle.
- Keep it in a safe place for future use.

1.2 Locations in the operating manual

All the directions specified in the operating manual are always seen in the direction of travel.

1.3 Diagrams

Instructions and responses

Activities to be carried out by the user are given as numbered instructions. Always keep to the order of the instructions. The response to an instruction is given by an arrow.

Example:

1. Instruction 1

→ Machine response to instruction 1

2. Instruction 2

Lists

Lists without an essential order are shown as a list with bullets.

Example:

- Point 1
- Point 2

Item numbers in diagrams

Numbers in round brackets refer to the item numbers in the diagrams. The first number refers to the diagram and the second number to the item.

Example: (Fig. 3/6)

- Figure 3
- Item 6

2 General safety instructions

This section contains important information on safe operation of the machine.

2.1 Obligations and liability

Comply with the instructions in the operating manual

Knowledge of the basic safety information and safety regulations is a basic requirement for safe handling and fault-free machine operation.

Obligations of the operator

The operator is obliged only to let those people work with/on the machine who

- are aware of the basic workplace safety information and accident prevention regulations.
- have been instructed in working with/on the machine.
- have read and understood this operating manual.

The operator is obliged

- to keep all the warning symbols on the machine in a legible state.
- to replace damaged warning symbols.
- If you still have queries, please contact the manufacturer.

Obligations of the user

Before starting work, anyone charged with working with/on the machine is obliged

- to comply with the basic workplace safety instructions and accident prevention regulations.
- to read and follow the "General safety information" section of this operating manual.
- to read the section "Warning symbols and other labels on the machine" (page 14) of this operating manual and to follow the safety instructions represented by the warning symbols when operating the machine.
- to get to know the machine.
- to read the sections of this operating manual that are important for carrying out their work.

If the user discovers that a function is not working properly, then they must eliminate this fault immediately. If this is not the task of the user or if the user does not possess the appropriate technical knowledge, then they should report this fault to their superior (operator).

Risks in handling the machine

The machine has been constructed to the state-of-the art and the recognised rules of safety. However, operating the machine may cause risks and restrictions to

- the health and safety of the user or third parties,
- the machine,
- other property.

Only use the machine

- for the purpose for which it was intended.
- in a perfect state of repair.

Eliminate any faults immediately which could impair safety.

Guarantee and liability

Our "General conditions of sales and delivery" are always applicable. These shall be available to the operator, at the latest on conclusion of the contract. Guarantee and liability claims for damage to people or property will be excluded if they can be traced back to one or more of the following causes:

- Improper use of the machine.
- Improper installation, commissioning, operation and maintenance of the machine.
- Operation of the machine with defective safety equipment or improperly attached or non-functioning safety equipment.
- Non-compliance with the instructions in the operating manual regarding commissioning, operation and maintenance.
- Unauthorised design changes to the machine.
- Insufficient monitoring of machine parts which are subject to wear.
- Improperly executed repairs.
- Disasters through the impact of foreign bodies and Acts of God.

2.2 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol and the highlighted signal word. The signal word (DANGER, WARNING, CAUTION) describes the gravity of the risk and has the following significance:

DANGER

Indicates an immediate high risk which will result in death or serious physical injury (loss of body parts or long term damage) if not avoided.

If the instructions are not followed, then this will result in immediate death or serious physical injury.

WARNING

Indicates a medium risk, which could result in death or (serious) physical injury if not avoided.

If the instructions are not followed, then this may result in death or serious physical injury.

CAUTION

Indicates a low risk which could cause minor or medium level physical injury or damage to property if not avoided.

IMPORTANT

Indicates an obligation to special behaviour or an activity required for proper machine handling.

Non-compliance with these instructions can cause faults on the machine or disturbance to the environment.

NOTE

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your machine in the best way possible.

2.3 Organisational measures

The operator must provide the necessary personal protective equipment as per the information provided by the manufacturer of the crop protection agent to be used, such as:

- Chemical-resistant gloves,
- Chemical-resistant overalls,
- Water-resistant footwear,
- A face mask,
- Breathing protection,
- Safety glasses;
- Skin protection agents, etc.

The operating manual

- **must always be kept at the place at which the machine is operated.**
- **must always be easily accessible for the user and maintenance personnel.**

Check all safety equipment regularly.

2.4 Safety and protection equipment

Before starting up the machine each time, all the safety and protection equipment must be properly attached and fully functional. Check all safety and protection equipment regularly.

Faulty safety equipment

Faulty or disassembled safety and protection equipment can lead to dangerous situations.

2.5 Informal safety measures

As well as all the safety information in this operating manual, comply with the general, national regulations pertaining to accident prevention and environmental protection.

When driving on public roads and routes you should comply with the statutory road traffic regulations.

2.6 User training

Only those people who have been trained and instructed may work with/on the machine. The operator must clearly specify the responsibilities of the people charged with operation and maintenance work.

People being trained may only work with/on the machine under the supervision of an experienced person.

Activity \ Person	Person specially trained for the activity	Trained operator	Person with specialist training (specialist workshop*)
Loading/Transport	X	X	X
Commissioning	--	X	--
Set-up, tool installation	--	--	X
Operation	--	X	--
Maintenance	--	--	X
Troubleshooting and fault elimination	X	--	X
Disposal	X	--	--
Legend:	X = permitted	-- = not permitted	

1) A person who can assume a specific task and who can carry out this task for an appropriately qualified company.

2) Instructed persons are those who have been instructed in their assigned tasks and in the possible risks in the case of improper behaviour, have been trained if necessary, and have been informed about the necessary protective equipment and measures.

3) People with specialist technical training shall be considered as a specialist. Due to their specialist training and their knowledge of the appropriate regulations, they can evaluate the work with which they have been charged and detect possible dangers.

Comment:

A qualification equivalent to specialist training can be obtained from several years' experience in the relevant field.

If maintenance and repair work on the machine is additionally marked "Workshop work", only a specialist workshop may carry out such work. The personnel of a specialist workshop shall possess the appropriate knowledge and suitable aids (tools, lifting and support equipment) for carrying out the maintenance and repair work on the machine in a way which is both appropriate and safe.

2.7 Safety measures in normal operation

Only operate the machine if all the safety and protection equipment is fully functional.

Check the machine at least once a day for visible damage and check the function of the safety and protection equipment.

2.8 Danger from residual energy

Note that there may be residual mechanical, hydraulic, pneumatic and electrical/electronic energy on the machine.

Use appropriate measures to inform the operating personnel. You can find detailed information in the relevant sections of this operating manual.

2.9 Maintenance and repair work, fault elimination

Carry out prescribed setting, maintenance and inspection work in good time.

Secure all media such as compressed air and the hydraulic system against unintentional start-up.

Carefully fix and secure larger assemblies to lifting gear when carrying out replacement work.

Check all the screw connections for firm seating. On completion of the maintenance work, check the function of the safety devices.

2.10 Design changes

You may make no changes, expansions or modifications to the machine without the authorisation of AMAZONEN-WERKE. This also applies when welding support parts.

Any expansion or modification work shall require the written approval of AMAZONEN-WERKE. Only use modification and accessory parts approved by AMAZONEN-WERKE so that the type approval, for example, remains valid in accordance with national and international regulations.

Vehicles with an official type approval or with equipment connected to a vehicle with a valid type approval or approval for road transport according to the German road traffic regulations must be in the state specified by the approval.

WARNING

Risk of crushing, cutting, catching, being drawn in or impact from the failure of support parts.

It is strictly forbidden to

- drill holes in the frame or on the running gear.
- increase the size of existing holes on the frame or the running gear.
- weld support parts.

2.10.1 Spare and wear parts and aids

Immediately replace any machine parts which are not in a perfect state.

Only use genuine AMAZONE spare and wear parts or those approved by AMAZONEN-WERKE so that the type approval remains valid according to the national and international regulations. The use of spare and wear parts from third parties does not guarantee that they have been constructed in a way as to meet the requirements placed on them.

AMAZONEN-WERKE shall accept no liability for damage caused by the use of non-approved spare and wear parts or aids.

2.11 Cleaning and disposal

Handle and dispose of any materials used carefully, in particular

- when carrying out work on lubrication systems and equipment and
- when cleaning using solvents.

2.12 User workstation

The machine may only be operated by one person sitting in the driver's seat of the tractor.

2.13 Warning symbols and other signs on the machine

Always keep all the warning symbols on the machine clean and in a legible state. Replace illegible warning symbols. You can obtain the warning symbols from your dealer using the order number (e.g. MD 075).

Warning symbols - structure

Warning symbols indicate danger areas on the machine and warn against residual dangers. At these points, there are permanent or unexpected dangers.

A warning symbol consists of two fields:

Field 1

is a symbol describing the danger, surrounded by triangular safety symbol.

Field 2

is a symbol showing how to avoid the danger.

Warning symbols - explanation

The column **Order number and explanation** provides an explanation of the neighbouring warning symbol. The description of the warning symbols is always the same and specifies, in the following order:

1. A description of the danger.

   For example: risk of cutting

2. The consequence of non-compliance with the risk avoidance instructions.

   For example: causes serious injuries to fingers or hands.

3. Risk avoidance instructions.

   For example: Only touch machine parts when they have come to a complete standstill.

2.13.1 Positions of warning symbols and other labels

Warning symbols

The following pictures show the positions of the warning symbols on the machine.

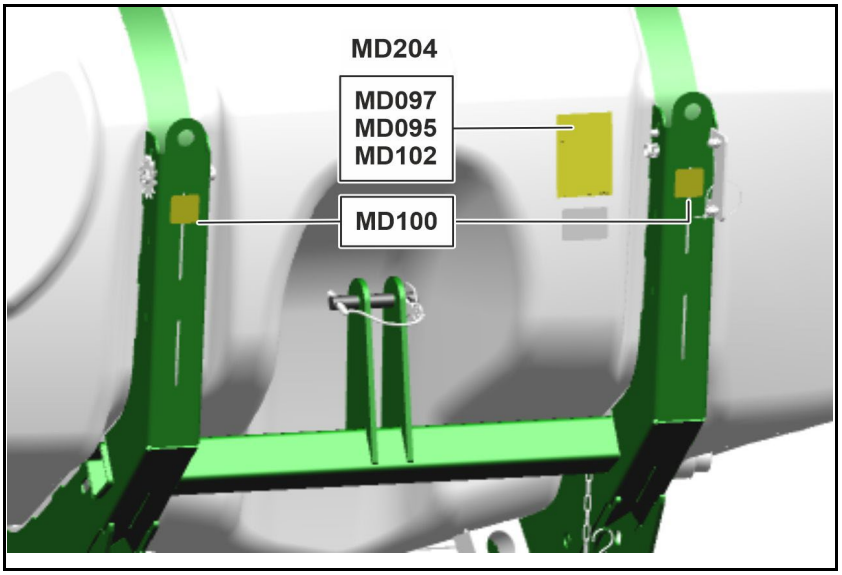


Fig. 1

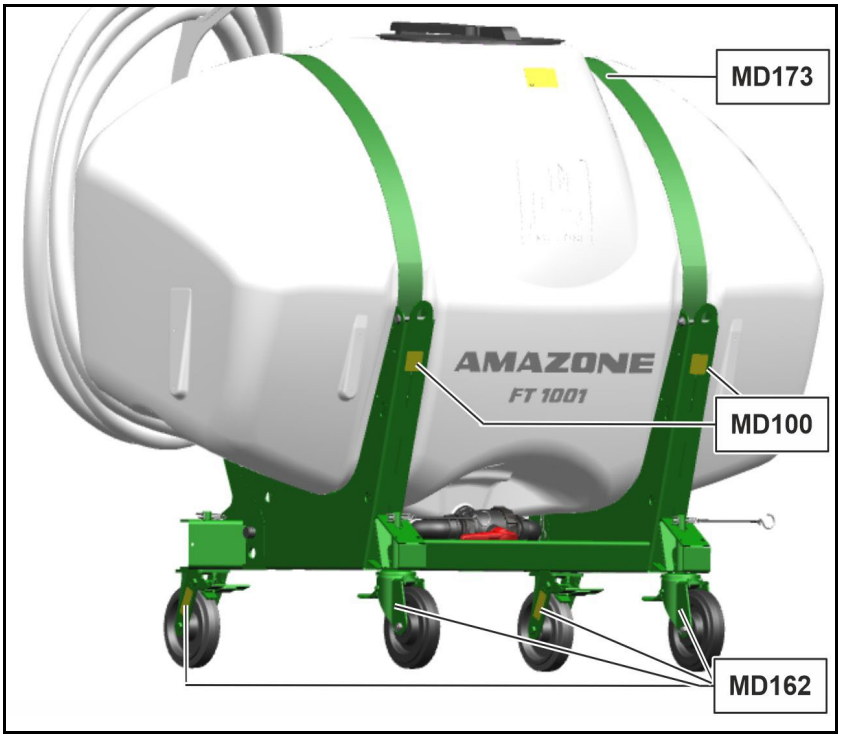
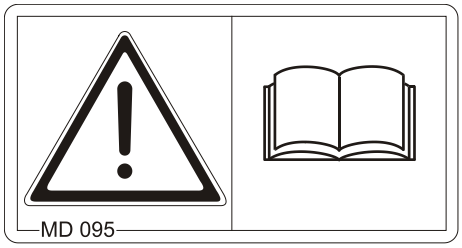


Fig. 2

MD 095

Read and follow the operating manual and safety information before starting up the machine!

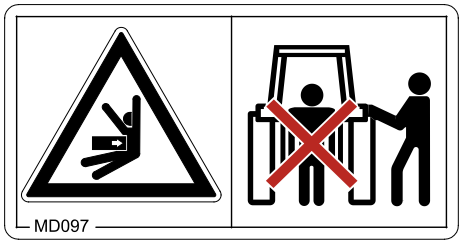


MD 097

Risk of crushing the entire body due to standing in the stroke area of the three-point suspension when the three-point hydraulics are actuated.

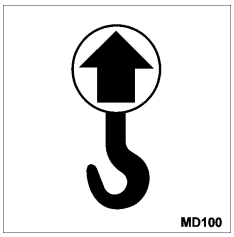
This danger can cause extremely serious and potentially fatal injuries.

- Personnel are prohibited from entering the stroke area of the three-point suspension when the three-point hydraulics are actuated.
- Only actuate the operator controls for the tractor's three-point hydraulic system
  - from the intended workstation.
  - if you are outside of the stroke area between the tractor and the machine.



MD 100

This symbol indicates anchorage points for fastening slinging gear when loading the machine.

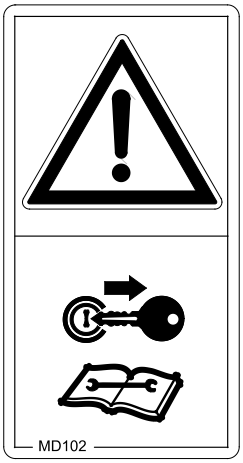


MD 102

Danger from intervention in the machine, e.g. installation, adjusting, troubleshooting, cleaning, maintaining and repairing, due to the tractor and the machine being started unintentionally and rolling.

These dangers can cause extremely serious and potentially fatal injuries.

- Secure the tractor and the machine against unintentional start-up and rolling before any intervention in the machine.
- Depending on the type of intervention, read and observe the information in the relevant sections of the operating manual.



MD 162

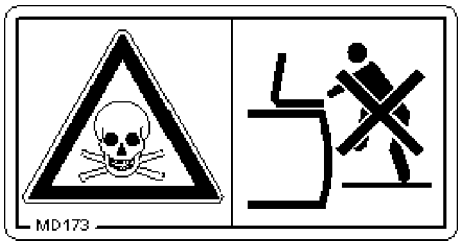
Maximum support load 800kg per transport roller.

MD 173

Risk of breathing in hazardous materials via poisonous vapours from the spray liquid tank.

This danger can cause extremely serious and potentially fatal injuries.

Never climb into the spray liquid tank.



2.14 Dangers if the safety information is not observed

Non-compliance with the safety information

- can pose both a danger to people and also to the environment and machine.
- can lead to the loss of all warranty claims.

In particular, non-compliance with the safety information could pose the following risks:

- Danger to people through non-secured working areas.
- Failure of important machine functions.
- Failure of prescribed methods of maintenance and repair.
- Danger to people through mechanical and chemical influences.
- Risk to the environment through leakage of hydraulic fluid.

2.15 Safety-conscious working

Besides the safety information in this operating manual, the generally applicable national workplace safety and accident prevention regulations are binding.

Comply with the accident prevention instructions on the warning symbols.

When driving on public roads and routes, comply with the appropriate statutory road traffic regulations.

2.16 Safety information for users

WARNING

Risk of crushing, cutting, catching, being drawn in or impacts from inadequate roadworthiness and operational safety.

Before starting up the machine and the tractor, always check their roadworthiness and operational safety.

2.16.1 General safety and accident prevention information

- Beside these instructions, comply with the generally applicable national safety and accident prevention regulations.
- The warning symbols and other labels attached to the machine provide important information on safe machine operation. Compliance with this information is in the interests of your safety.
- Before moving off and starting up the machine, check the immediate area of the machine (children). Ensure that you can see clearly.
- It is forbidden to ride on the machine or use it as a means of transport.
- Drive in such a way that you always have full control over the tractor with the attached machine.

  In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the connected machine.

Coupling and uncoupling the machine

- Only connect and transport the machine with tractors suitable for the task.
- When coupling machines to the tractor's three-point linkage, the linkages of the tractor and the machine must always be the same.
- Connect the machine to the prescribed equipment in accordance with the specifications.
- When coupling machines to the front or the rear of the tractor, the following may not be exceeded:
  - The approved total tractor weight
  - The approved tractor axle loads
  - The approved load capacities of the tractor tyres
- Secure the tractor and the machine against rolling unintentionally before coupling or uncoupling the machine.
- It is forbidden for people to stand between the machine to be coupled and the tractor whilst the tractor is moving towards the machine.
  Any helpers may only act as guides standing next to the vehicles, and may only move between the vehicles when both are at a standstill.
- Before connecting the machine to or disconnecting the machine from the tractor's three-point linkage, secure the operating lever of the tractor hydraulic system so that unintentional raising or lowering is prevented.

- When coupling and uncoupling machines, move the support equipment (if available) to the appropriate position (stability).
- When actuating the support equipment, there is a risk of injury from crushing and cutting points.
- Be particularly careful when coupling the machine to the tractor or uncoupling it from the tractor. There are crushing and cutting points in the area of the coupling point between the tractor and the machine.
- It is forbidden to stand between the tractor and the machine when actuating the three-point linkage.
- Coupled supply lines
  - must give slightly to all movements while cornering without tensioning, kinking or rubbing.
  - must not chafe against other parts.
- The release ropes for quick couplings must hang loosely and must not release themselves when lowered.
- Also ensure that uncoupled machines are stable.

Use of the machine

- Before starting work, ensure that you understand all the equipment and actuation elements of the machine and their function. There is no time for this when the machine is already in operation.
- Do not wear loose-fitting clothing. Loose clothing increases the risk of being caught by the drive shaft.
- Only start-up the machine, when all the safety equipment has been attached and is in the safety position.
- Comply with the maximum load for the connected machine and the permissible axle and drawbar loads for the tractor. If necessary, drive only with a partially filled tank.
- It is forbidden to stand in the working area of the machine.
- It is forbidden to stand in the turning and swivel range of the machine.
- There are crushing and cutting points at externally-actuated (e.g. hydraulic) machine points.
- Only actuate externally-actuated machine parts when you are sure that no-one is standing within the prescribed safety distance.
- Before leaving the tractor,
  - lower the machine onto the ground
  - switch off the tractor engine
  - remove the ignition key

Machine transportation

- Comply with the national road traffic regulations when using public highways.
- Before moving off, check:
  - the correct connection of the supply lines
  - the lighting system for damage, function and cleanliness
  - the brake and hydraulic system for visible damage
  - that the parking brake is completely disengaged
  - the function of the brake system
- Ensure that the tractor has sufficient steering and braking power.

  Any machines and front/rear weights connected to the tractor influence the driving behaviour and the steering and braking power of the tractor.
- If necessary, use front weights.

  The front tractor axle must always be loaded with at least 20% of the tractor empty weight, in order to ensure sufficient steering power.
- Always fix the front or rear weights to the intended fixing points according to regulations.
- Comply with the maximum load for the connected machine and the approved axle and drawbar loads for the tractor.
- The tractor must guarantee the prescribed brake delay for the loaded vehicle combination (tractor plus connected machine).
- Check the brake power before moving off.
- When turning corners with the machine connected, take the broad load and balance weight of the machine into account.
- If the machine is fixed to the tractor's three-point linkage or lower links, before moving off, ensure sufficient side locking of the tractor lower links.
- Before moving off, move all the swivellable machine parts to the transport position.
- Before moving off, secure all swivellable machine parts in the transport position against dangerous position changes. Use the transport safety catches intended for this.
- Before moving off, secure the operating lever of the three-point hydraulic system against the unintentional raising or lowering of the connected machine.
- Check that the transport equipment, e.g. lighting, warning equipment and protective equipment, is correctly mounted on the machine.
- Carry out a visual check that the upper and lower link pins are firmly fixed with the linchpin against unintentional release.
- Adjust your driving speed to the prevailing conditions.
- Before driving downhill, switch to a low gear.
- Before moving off, always switch off independent wheel braking (lock the pedals).

2.16.2 Field sprayer operation

- Comply with the recommendations provided by the manufacturer of the crop protection product with regard to
  - o personal protective equipment
  - o warnings concerning the handling of crop protection products
  - o regulations on dosing, applications and cleaning
- Pay attention to crop protection legislation regulations!
- It is forbidden to store contaminated protective equipment, spray agent canisters and used filters in the tractor cab.
- Take off protective equipment before entering the tractor cab.
- Never open lines which are under pressure.
- The nominal volume of the spray liquid tank may never be exceeded when filling!

- When handling crop protection products, observe the requirements of the safety data sheet for the substances used as well as the guidelines for personal protective equipment. Depending on the requirement of the safety data sheet of the active substances used, the following components belong to your personal protective equipment:
  - protective clothing according to DIN 32781
  - rubber apron according to EN 14605
  - eye protection according to EN 166
  - breathing mask according to DIN EN 143/149/405/14387, at least a half-mask with combined particle filter and gas filter A1-P2 (colour code: brown-white)
  - protective gloves with cuffs according to DIN 347/388/420
  - foot protection

  Use personal protective equipment if you could come into contact with crop protection products or fertiliser during one of the following activities:
  - filling of the spray liquid tank and addition of chemicals
  - spraying
  - settings on the implement
  - emptying and cleaning the tank
  - using different chemicals
  - maintenance
- Depending on the requirements of the safety data sheet of the active substances used, wear personal protective equipment in the tractor cab.
- Tractors with Category 4 cabs are prescribed when applying certain spray agents.
- Observe the information on the compatibility of crop protection agents and substances for the field sprayer.
- Do not spray any crop protection agents which have a tendency to stick together or set.
- Do not fill field sprayers with water from bodies of water which are open to the public, for the protection of people, animals and the environment.
- Fill the field sprayer only using original AMAZONE filling devices!

2.16.3 Cleaning, maintenance and repairs

- Due to toxic vapours in the spray liquid tank, climbing into the spray liquid tank is always forbidden.
- Repair work in the spray liquid tank must only be carried out by a specialist workshop!
- Only carry out cleaning, maintenance and repair work on the machine when
  - the drive is switched off
  - the tractor engine has come to a complete stop
  - the ignition key has been removed
  - the machine connector has been removed from the on-board computer
- Regularly check the nuts and bolts for firm seating and retighten them as necessary.
- Secure the raised machine and/or raised machine parts against unintentional lowering before performing any cleaning, maintenance or repair work on the machine.
- When replacing work tools with blades, use suitable tools and gloves.
- Dispose of oils, greases and filters in the appropriate way.
- Disconnect the cable to the tractor generator and battery before carrying out electrical welding work on the tractor and on attached machines.
- Spare parts must meet at least the specified technical requirements of AMAZONEN-WERKE. This is ensured through the use of genuine AMAZONE spare parts.
- When repairing field sprayers which have been used for liquid fertiliser application with ammonium nitrate / urea solution, observe the following points:

  Residues of ammonium nitrate / urea solutions may form salts by the evaporation of the water on or in the spray liquid tank. This produces pure ammonium nitrate and urea. In its undiluted form, ammonium nitrate is explosive when combined with organic substances, e.g. urea, and subjected to critical temperatures during repair work (e.g. welding, grinding, filing).

  This danger can be eliminated by thoroughly washing out the spray liquid tank or the parts intended for repair with water, because the salt of the ammonium nitrate / urea solution is water-soluble. For this reason, clean the field sprayer thoroughly with water before carrying out repair work.

3 Loading and unloading

Loading using a lifting crane

The machine has:

- Two attachment points in front (Fig. 3/1)
- One attachment point in back (Fig. 4/1),

CAUTION

When loading the machine using a lifting crane, use the marked attachment points (Fig. 3/1) for lifting belts.

DANGER

The minimum tensile strength of each lifting belt must be 100 kg!

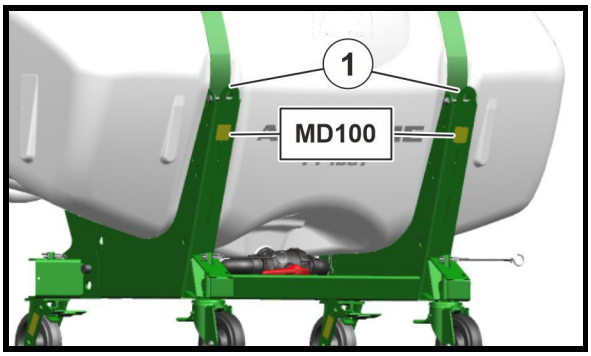


Fig. 3

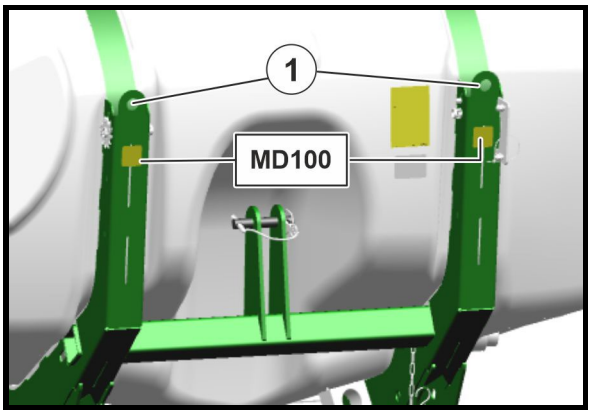


Fig. 4

4 Product description

4.1 Overview

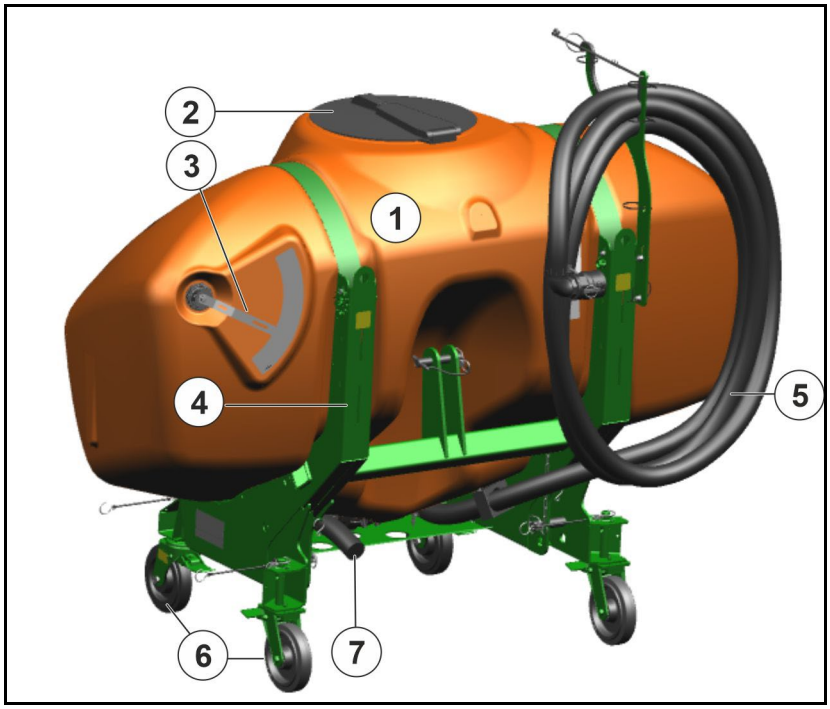


Fig. 5

Fig. 5/…

(without Flow Control)

(1) Tank

(2) Screw lid / hinged cover

(3) Filling level indicator with scale

(4) Three-point attachment frame

(5) Connection hose to field sprayer with 2-inch camlock coupling

(6) Transport device

(7) Complete discharging

Fig. 6/…

(1) Switch tap

- Position **x**

→ Fill / empty via connection hose

- Position **y**

→ Complete discharging

- Position **0**

→ Shutoff position

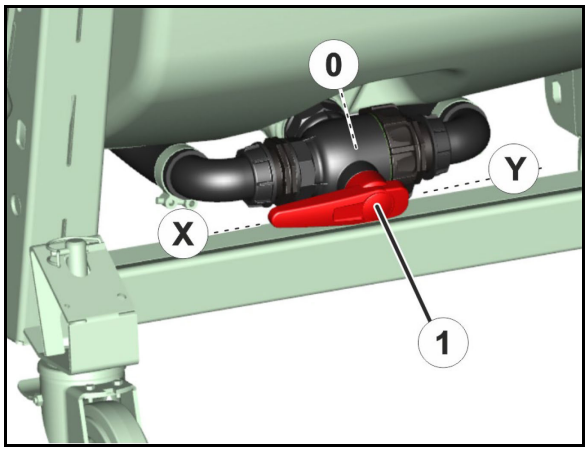


Fig. 6

4.2 Overview of Flow Control

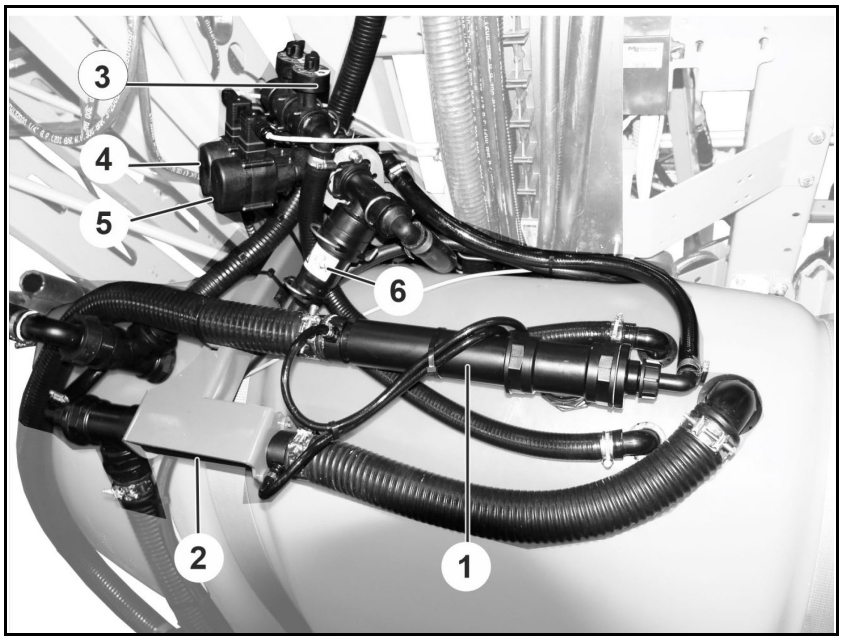


Fig. 7

(1) Fill FT injectors

(2) Empty FT injectors

(3) Volumetric remote control

(4) Fill FT valve

(5) Empty FT valve

6. Pressure relief valve

4.3 Technical data

Type	FT1001
Nominal tank capacity	1000 l
Actual tank capacity	1125 l
Filling height with rolling device	1670 mm
Total height with rolling device	1720 mm
Total width	2180 mm
Total length	960 mm
Tractor mount category	Cat. 2
UF01: Pump model FlowControl	BP 125
Delivery capacity at 540 rpm	115 l/min
Construction type	3- cylinder piston diaphragm pump
Pulsation damping	Pressure reservoir
UF02: pump model FlowControl+	BPS 160
Delivery capacity at 540 rpm	150 l/min
Construction type	3- cylinder piston diaphragm pump
Pulsation damping	Pressure reservoir

4.3.1 Payload

Maximum payload	**=**	**Permissible technical implement weight**	**-**	**Tare weight**

DANGER

Exceeding the maximum permissible payload is prohibited.
Risk of accident due to unstable driving conditions!
Carefully determine the payload, and therefore the permitted filling amount for your machine. Not all filling media can be used to fill the tank completely.

The permissible technical implement weight and the tare weight are specified on the implement rating plate.

4.4 Intended use

The FT1001 front tank

- is intended for transporting:
  - Water and liquid fertiliser
  - Crop protection agents (only with Flow Control)
- is designed exclusively for agricultural use for treating field crops in combination with the AMAZONE UF field sprayer.
- is attached to the category 2 front hydraulic system of the tractor and operated by one person.

The pH value of the spray liquid to be applied (particularly liquid fertiliser) must be greater than 1.5.

Sloping terrain can be traversed as follows:

- **Along the contours**

Direction of travel to left	20 %
Direction of travel to right	20 %

- **Along the gradient**

Up the slope	20 %
Down the slope	20 %

The intended use also includes:

- Compliance with all the instructions in this operating manual.
- Execution of inspection and maintenance work.
- Exclusive use of genuine AMAZONE spare parts.

Other uses to those specified above are forbidden and shall be considered as improper.

For any damage resulting from improper use:

- the operator bears the sole responsibility,
- the manufacturer will assume no liability whatsoever.

4.5 Danger areas and danger points

The danger area is the area around the machine in which people can be caught by:

- work movements made by the machine
- unintentional rolling of the tractor and the machine

Within the machine danger area, there are danger points with permanent or unexpected risks. Warning symbols indicate these danger points and warn against residual dangers, which cannot be eliminated for practical reasons. In such cases, the special safety regulations in the appropriate section are valid.

No-one may stand in the machine danger area:

- if the tractor engine is running with the PTO shaft / hydraulic system connected.
- if the tractor and machine are not protected against unintentional start-up and rolling.

The operating person may only move the machine or switch or drive the tools from the transport position to the working position or vice-versa when there is no-one in the machine danger area.

Danger points exist:

- Between the tractor and the front tank, especially when coupling and uncoupling.
- In the spray liquid tank due to poisonous vapours.
- Underneath raised, unsecured machines.

4.6 Machine rating plate

(1) Implement number

(2) Vehicle identification number

(3) Product

(4) Permissible technical implement weight

(5) Tare weight kg

(6) Model year

(7) Year of manufacture

4.7 Three-point attachment frame

The frame of the FT1001 front tank is designed to meet the requirements and dimensions of the three-point attachment of category II.

Fig. 9/…

(1) Upper coupling point with upper link pin and linchpin as a safeguard.

(2) Lower coupling points with lower link pins and linchpins as a safeguard.

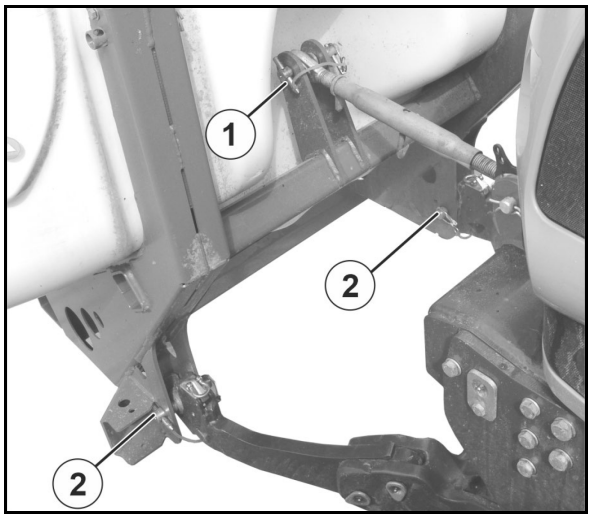


Fig. 8

4.8 Transport device (removable)

The removable transportation device enables easy coupling to the tractor's three-point hydraulic system and easy manoeuvring in the yard and indoors.

To prevent the machine from rolling, the castors are equipped with a locking system.

WARNING

When installing/removing the transportation device, secure the raised machine against unintended lowering.

Installation / removal:

1. Couple the machine to the tractor.
2. Raise the machine with the tractor's hydraulic system.
3. Secure the machine against unintentional starting and unintentional rolling.
4. Support the raised machine so that it cannot be lowered unintentionally.

For initial installation:

- Secure the linchpins on the machine (Fig. 10/5; Fig. 11/5) using the securing strap (Fig. 10/3; Fig. 11/3).
- Press the wire hooks together on the securing strap with pliers.

5. **Steerable** castors **front** (Fig. 10/1),
   Fixed castors **rear** (Fig. 11/1)
   - o Fit and secure with a linchpin (Fig. 10/2; Fig. 11/2) or
   - o Remove.

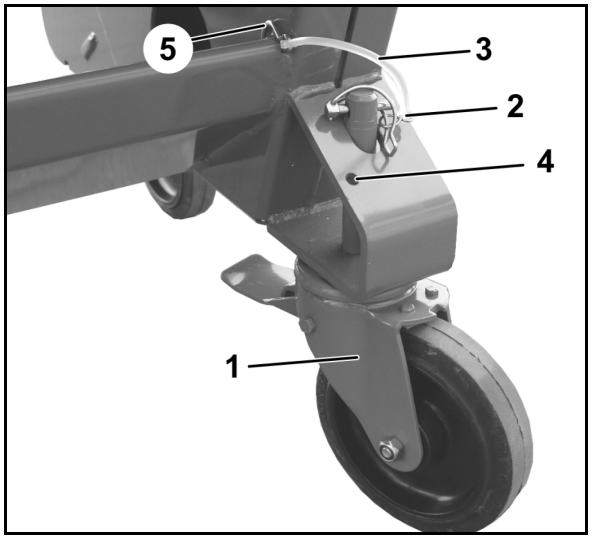


Fig. 9

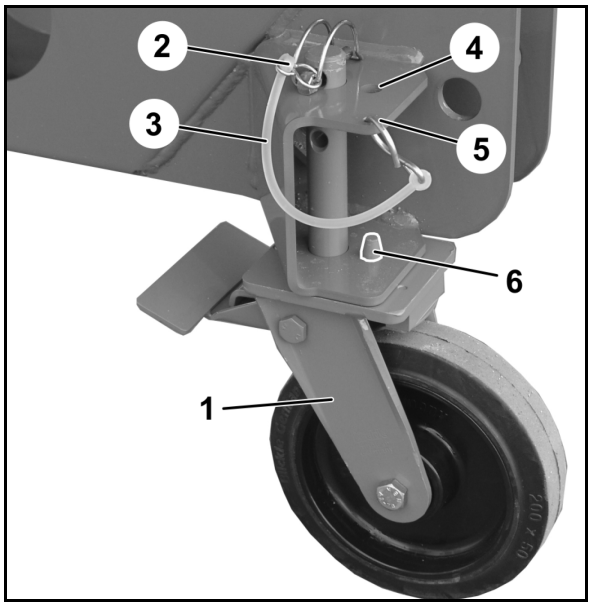


Fig. 10

When the transport castors are not in use, secure the clip pins in the parking position (Fig. 10/4Fig. 11/4).

When installing the fixed castors ensure that the pin (Fig. 11/6) goes through the hole in the frame, thus holding the castors in a longitudinal orientation.

4.9 Transportation equipment

Fig. 12: Front lighting

(1) 2 front limiting lights

(2) 2 warning signs

(3) Side reflector

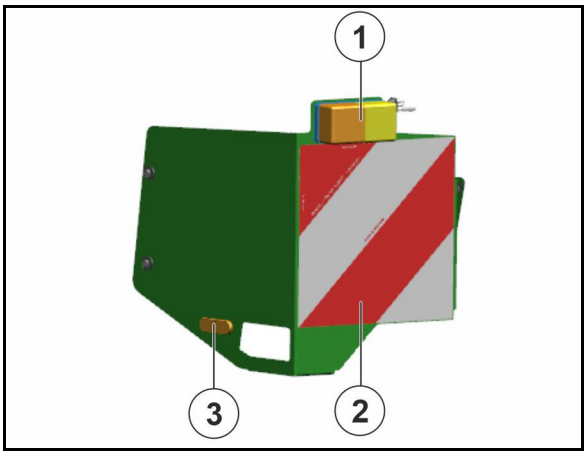


Fig. 11

4.10 Non-certified camera system

The non-certified camera system is used for monitoring the surroundings and as a manoeuvring aid.

It is used for cross-traffic monitoring with front-mounted implements. The non-certified camera system does not replace the banksman.

The implement can be equipped with one or several cameras.

WARNING

Risk of injury or even death.

If only the camera display is used to monitor cross-traffic, persons or vehicles can be overseen. The camera system is an aid. It does not replace the banksman.

Rely on the banksman when driving into intersections or junctions.

WARNING

Risk of injury or even death.

If the camera display alone is used for manoeuvring, persons or objects can be overlooked. The camera system is an aid. It does not replace the operator's awareness of the immediate surroundings.

Before manoeuvring, ensure that there are no persons or objects in the manoeuvring area by taking a direct look.

5 UF01 and FT 1001 without Flow Control

5.1 Filling the front tank via the UF01 field sprayer

The front tank is filled via the quick emptying connection of the UF02.

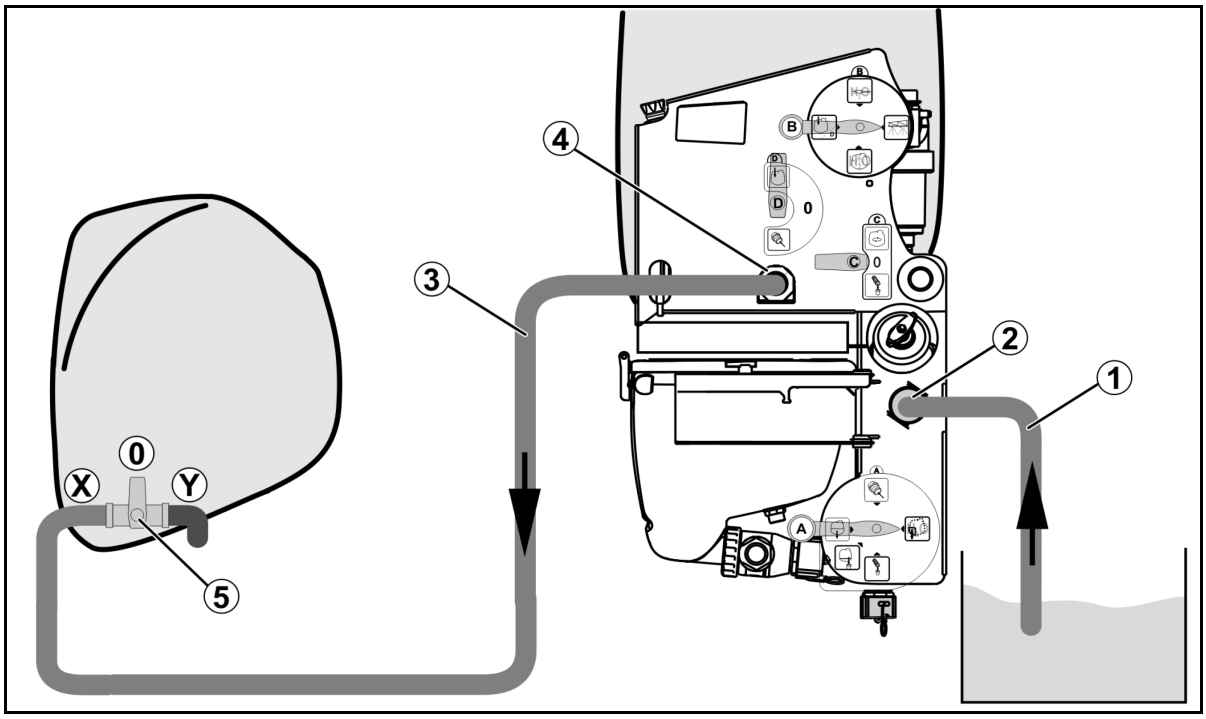


Fig. 12

Before filling the front tank, open its screw lid to ventilate it.

Close the lid again after filling it.

1. Couple the suction hose (Fig. 14/1) with the filling connection (Fig. 14/2).
2. Place the suction hose in the extraction point.
3. Couple the connection hose from the front tank (Fig. 14/3) with the quick emptying connection (Fig. 14/4).
4. Switch tap on the front tank (Fig. 14/5) in position **X**.

5. On the control terminal, move the switch taps to the specified position (Fig. 15):

   5.1 Move switch tap **F** to the **0** position.

   5.2 Move switch tap **E** to the **0** position.

   5.3 Move switch tap **D** to the  position.

   5.4 Move switch tap **B** to the  position.

   5.5 Move switch tap **A** to the  position.

6. Run the pump at approx. 540 rpm.

→ Front tank is filled.

Observe the filling level indicator on the front tank.

When the tank is full:

7. Move switch tap **A** to the  position.

8. Move switch tap **D** to the  position.

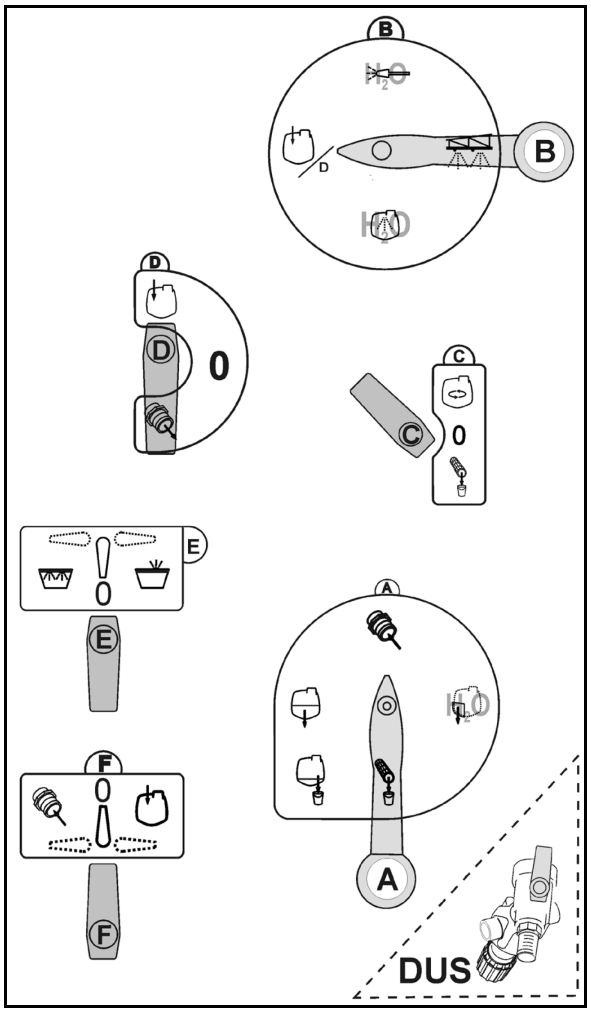


Fig. 13

5.2 Filling the UF01 spray liquid tank via the front tank

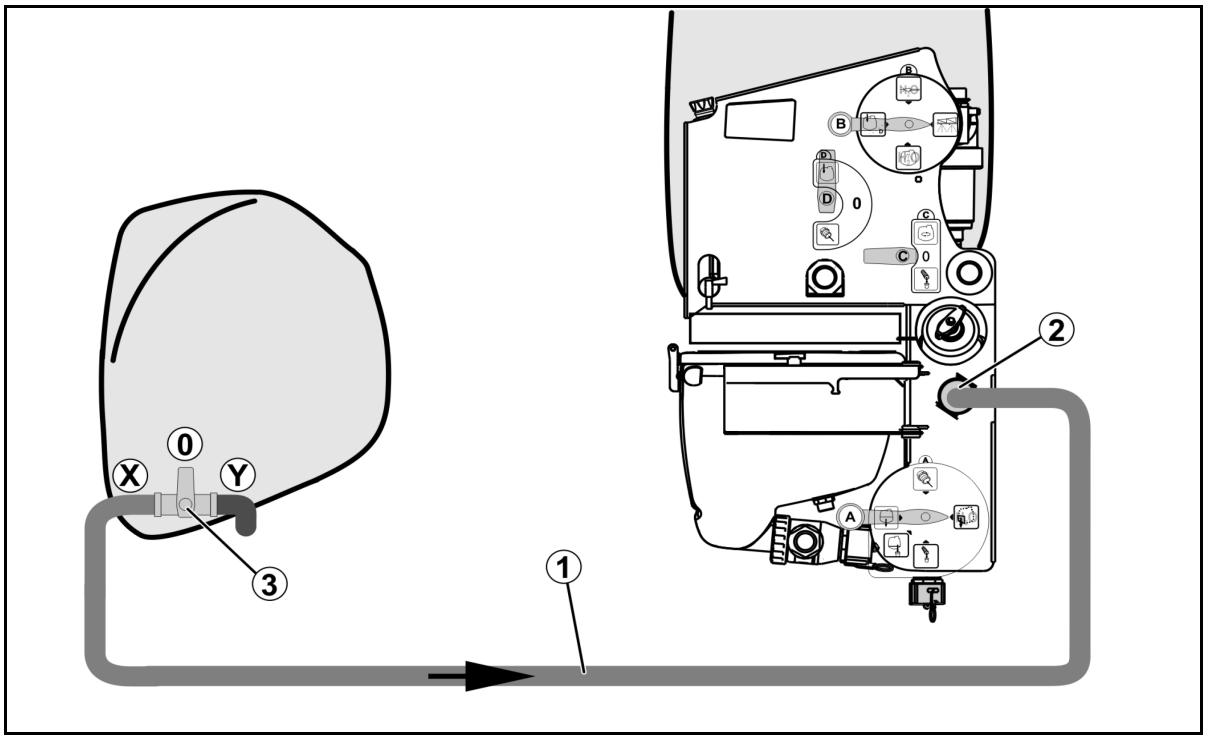


Fig. 14

1. Couple the connection hose (Fig. 16/1) from the front tank with the filling connection (Fig. 16/2).
2. Switch tap on the front tank (Fig. 16/3) in **X** position.
3. On the control terminal, move the switch taps to the specified position (Fig. 17):
   - 3.1 Move switch tap **F** to position **0**.
   - 3.2 Move switch tap **E** to position **0**.
   - 3.3 Move switch tap **D** to the  position.
   - 3.4 Move switch tap **B** to the  position.
   - 3.5 Move switch tap **A** to the  position.
4. Run the pump at approx. 540 rpm.

→ The spray liquid tank is filled from the front tank.

Observe the filling level indicator on the field sprayer.

When the tank is full:

5. Move switch tap **A** to the  position.

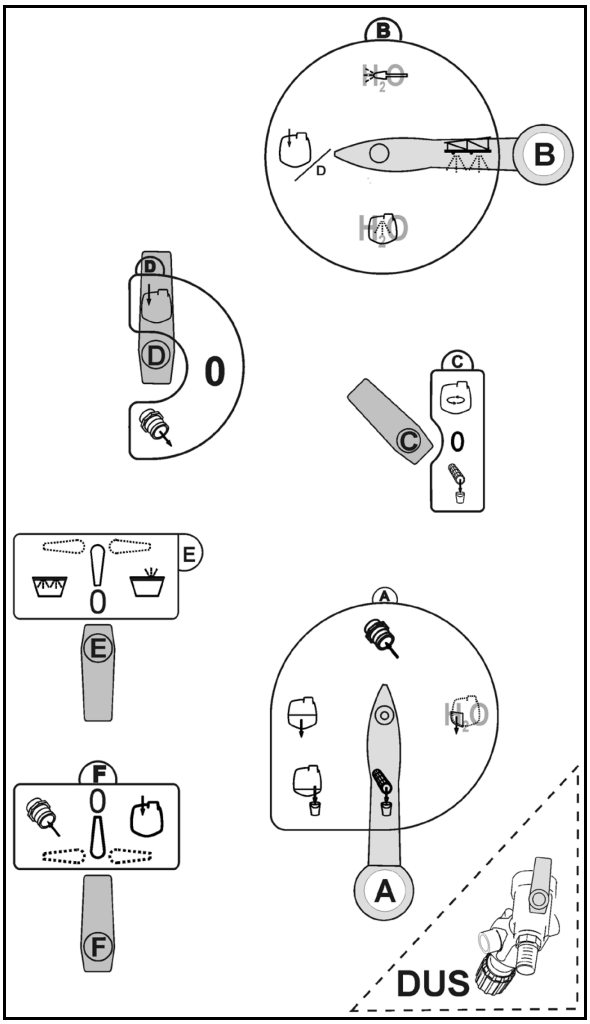


Fig. 15

6 UF01 and FT1001 with Flow Control (optional)

With `Flow Control`, the front tank is used in combination with the in-cab terminal as an additional container for spray liquid.

`Flow Control` operates in two modes:

- **Automatic** mode
- **Manual** mode

Before using the front tank with `Flow Control` on the in-cab terminal select the `UF01` machine type with `FT` in the setup menu.

6.1 Flow Control liquid circuit

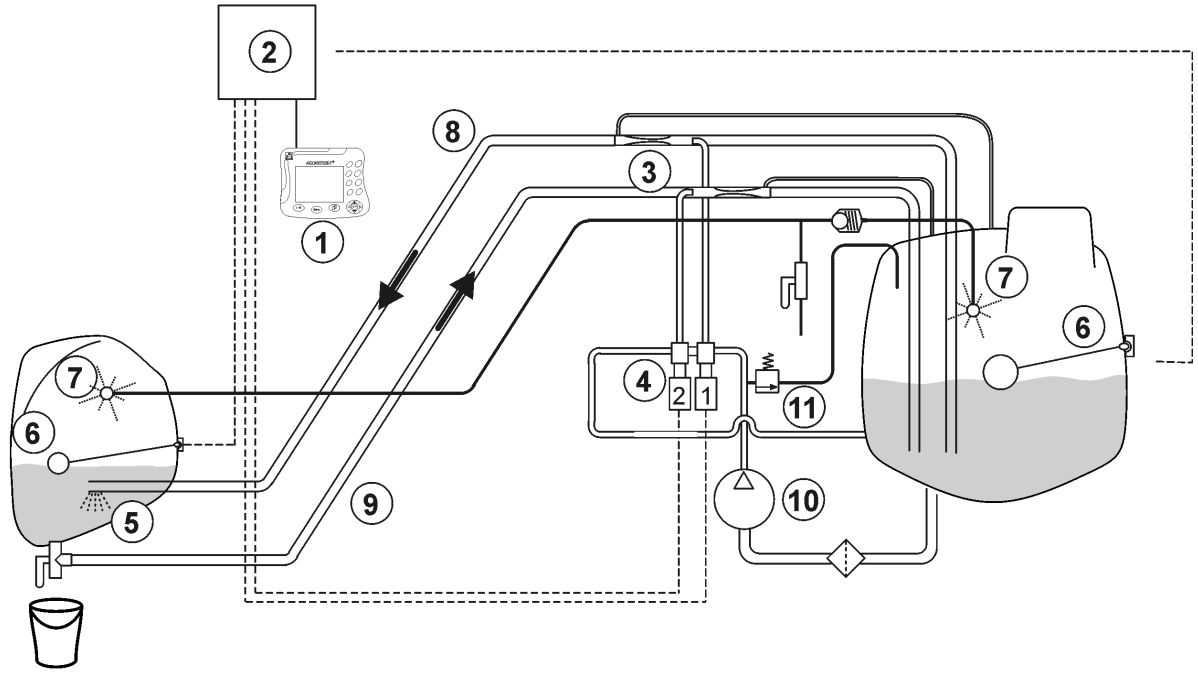


Fig. 16

(1) In-cab terminal
(2) Machine computer
(3) Flow Control injectors
(4) Flow Control valves
(5) Agitator functionality in the front tank
(6) Combined filling level indicator
(7) Internal cleaning
(8) Front tank inflow hose line
(9) Front tank outflow hose line
(10) Additional pumps
(11) Pressure relief valve

6.2 Additional tank for flushing water

The UF field sprayer with FT1001 and Flow Control is equipped with an additional flushing water tank with a capacity of 100 l.

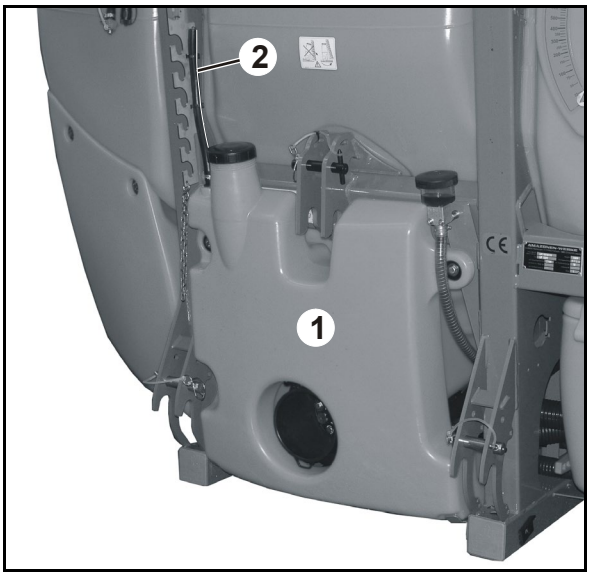


Fig. 17

(1) Additional tank

(2) Hose for ventilation

The additional tank and the UF flushing water tank are connected via a hose line.

- The content of the additional tank is drawn off via the UF flushing water tank.
- The additional tank is filled via the UF flushing water tank.

  For this purpose, the cover of the additional tank must be fitted.
- UF with optional filling connection:

  The additional tank is filled via the UF flushing water tank.
- If there is the risk of frost:

  Drain the additional tank via the hose connection at the rear.

The auxiliary tank provides protection for the pump drive shafts.

a

6.3 Connect field sprayer with Flow Control and front tank

To connect the field sprayer to the front tank, connect the following:

Fig. 20/…

(1) Front tank inflow hose line

(2) Front tank outflow hose line

(3) Connector cable of the filling level indicator

(4) Hose line for internal cleaning

To use the field sprayer without the front tank and Flow Control

Fig. 20/…

(5) Couple the front tank inflow with the outflow.

(6) Cap off the connector cable of the filling level indicator.

(7) Close the hose line for internal cleaning with blind plugs.

- IN-CAB TERMINAL work menu:

Select **Manual** mode.

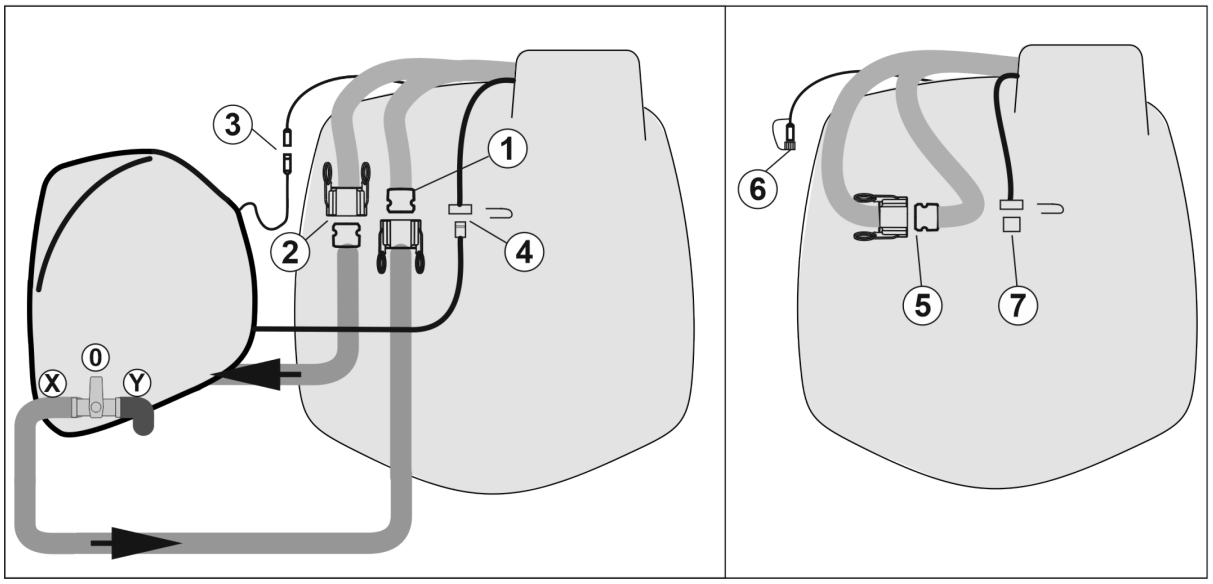


Fig. 18

6.4 Automatic mode

Before starting to spray, circulate the spray liquid for at least 5 minutes with agitating effect in automatic mode.

This ensures uniform active substance concentration.

During use and transport, the field sprayer / front tank combination is operated in **Automatic** mode.

Functions of **Automatic** mode:

- Constant circulation of the spray liquid with agitator effect in the front tank.
- Regulation of the fill levels of both containers in spraying operation.
  - → Field sprayer container is emptied by up to 30% of its capacity.
  - → The front tank fills the field sprayer container to up to 50% of its capacity.
  - → The front tank is emptied when the level of the field sprayer container is less than 30% of its capacity.

Work menu

Mode selection **Automatic** / **manual**

Display in the in-cab terminal work menu:

Fig. 21/…

(1) **Automatic** mode switched on.

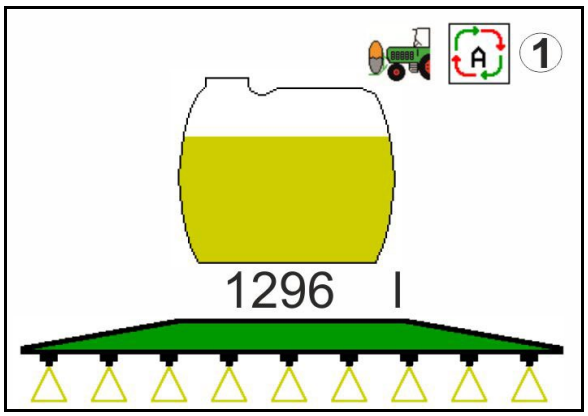


Fig. 19

6.5 Manual mode

In **manual** mode, the spray liquid distribution to both containers is controlled by the operator.

This is accomplished by these functions:

- Pump to front
- Pump to rear


Mode selection **Automatic** / **manual**

Display in the in-cab terminal work menu:

Fig. 22/…

(1) Manual mode switched on

(2) Display mode **Pump to rear** switched on.

(3) Display mode **Pump to front** switched on.

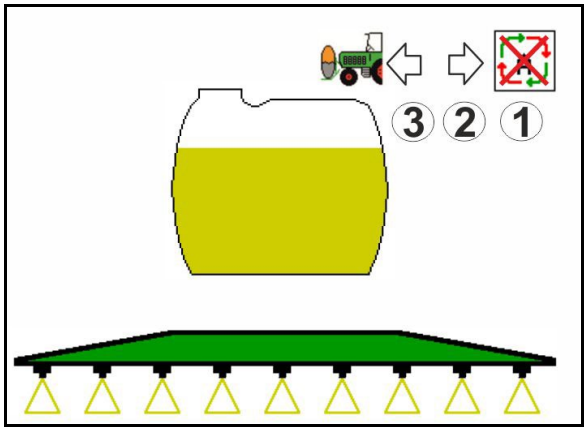


Fig. 20

Pump to front

1. 
Switch on **Pump to front**.

→ Observe the front tank's fill level via its filling level indicator.

2. 
Switch off **Pump to front**.

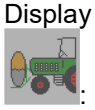
Pump to rear

1. 
Switch on **Pump to rear**.

→ Observe the field sprayer's fill level via its filling level indicator.

2. 
Switch off **Pump to rear**.

6.6 Front tank submenu

Display in the front tank function group menu  :

(1) **Automatic** mode switched on.

(2) Manual mode switched on

(3) Total filling level (UF+FT)

(4) Pumps switched on from FT to UF

(5) Pumps switched on from UF to FT

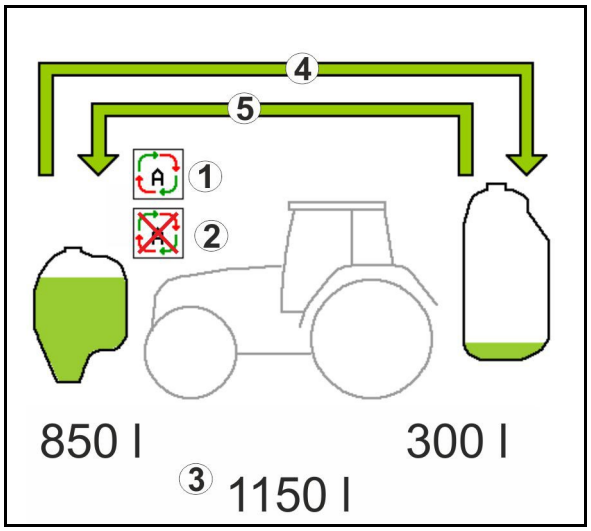
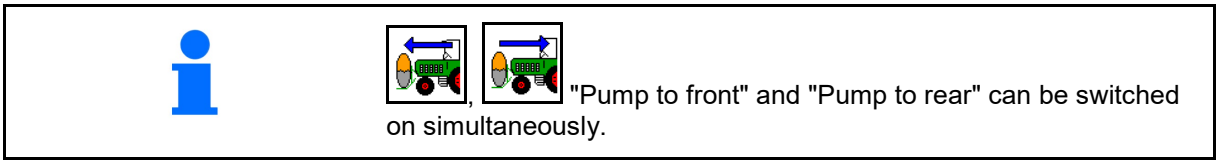


Fig. 21



6.7 Filling

See operating manual for field sprayer ISOBUS software.

CAUTION

When the UF front tank combination is filled, the UF tank nominal capacity must not be exceeded.

Automatic pumping during operation would overfill the UF tank.

The front tank is filled via:

- The UF field sprayer,
- The filling menu of the in-cab terminal

→ Refer to the UF and in-cab terminal operating manuals.

 Call up the filling menu for this purpose.

To fill the front tank / field sprayer combination:

- The UF container is filled when the UF fill level is < 20%.
- The front tank is filled when the UF fill level is > 20%.
- The UF container is completely filled when the **FT** fill level = 100% and the spray liquid circulation is switched on.

6.8 Internal cleaning

See operating manual for field sprayer ISOBUS software.

6.9 Failure of a level sensor

When a level sensor fails:

- An alarm signal appears.
- The mode switches from **Automatic** to **manual**,
- Both valves of the Flow Control close.

7 UF02 and FT 1001 without FlowControl

7.1 Filling the front tank via the UF field sprayer

Only possible for UF field sprayers with special optional quick emptying equipment.

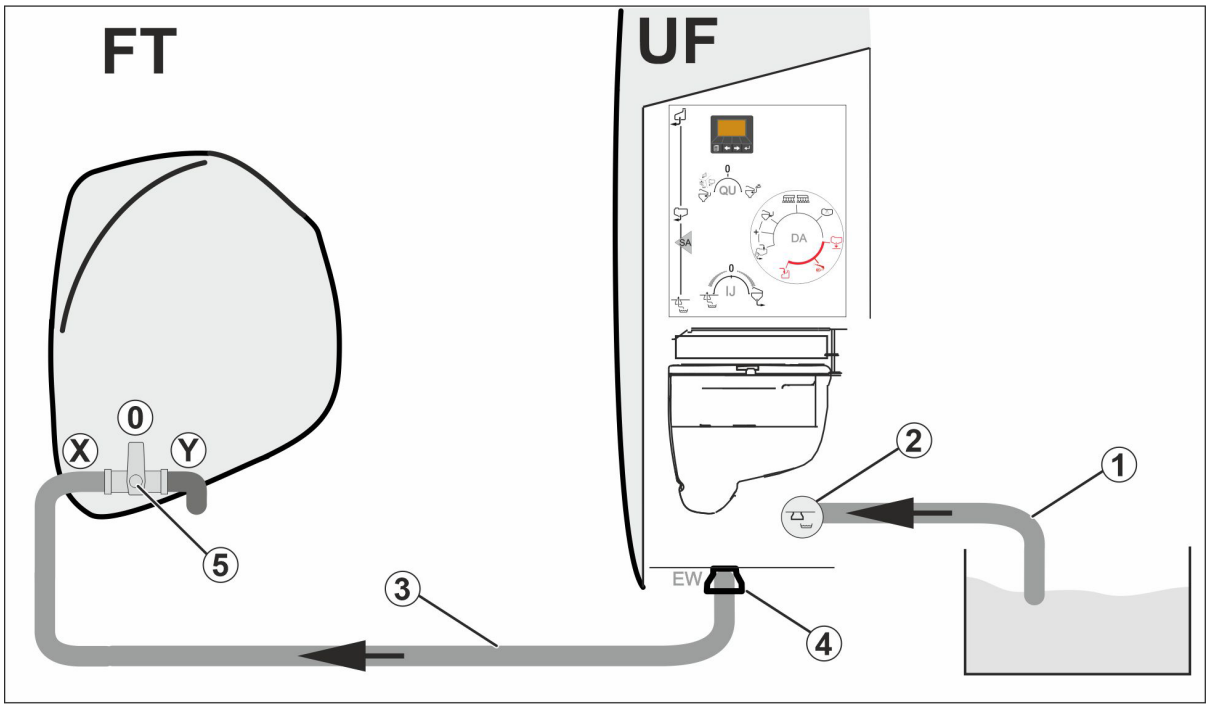


Fig. 22

Before filling the front tank, open its screw lid to ventilate it.

Close the lid again after filling it.

1. Couple the suction hose (1) with the filling connection (2).
2. Couple the connection hose from the front tank (3) with the quick emptying connection (4).
3. Switch tap on the front tank (5) in position **X**.

4. Run the pump.
5. Pressure valve chest **DA** in position  .
6. Switch tap **IJ** in position **0**.
7.

Comfort Package:

TwinTerminal:

- o Select suction filling  .
- o Enter a target fill level for the UF02 (greater than the actual fill level of the UF02).

→ Suction valve chest **SA** in position  .

→ The front tank will be filled.

No Comfort Package:

- o Suction valve chest **SA** in position  .

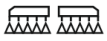
→ The front tank will be filled.

Pay attention to the fill level indicator on the front tank.

When the tank is full:

8. TwinTerminal:  Stop the filling procedure.

If necessary: Remove the suction hose from the extraction point before stopping so that the pump is able to suck up all remaining liquid from the suction hose.

9. Pressure valve chest **DA** in position  .

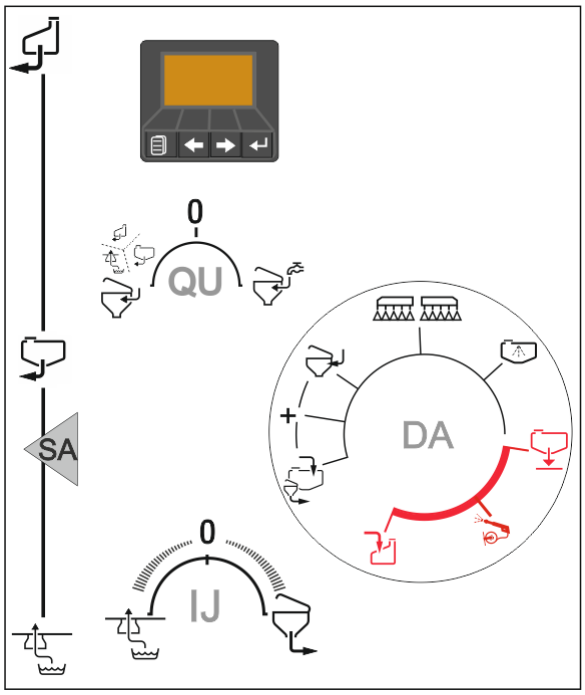


Fig. 23

7.2 Filling the UF spray liquid tank via the front tank

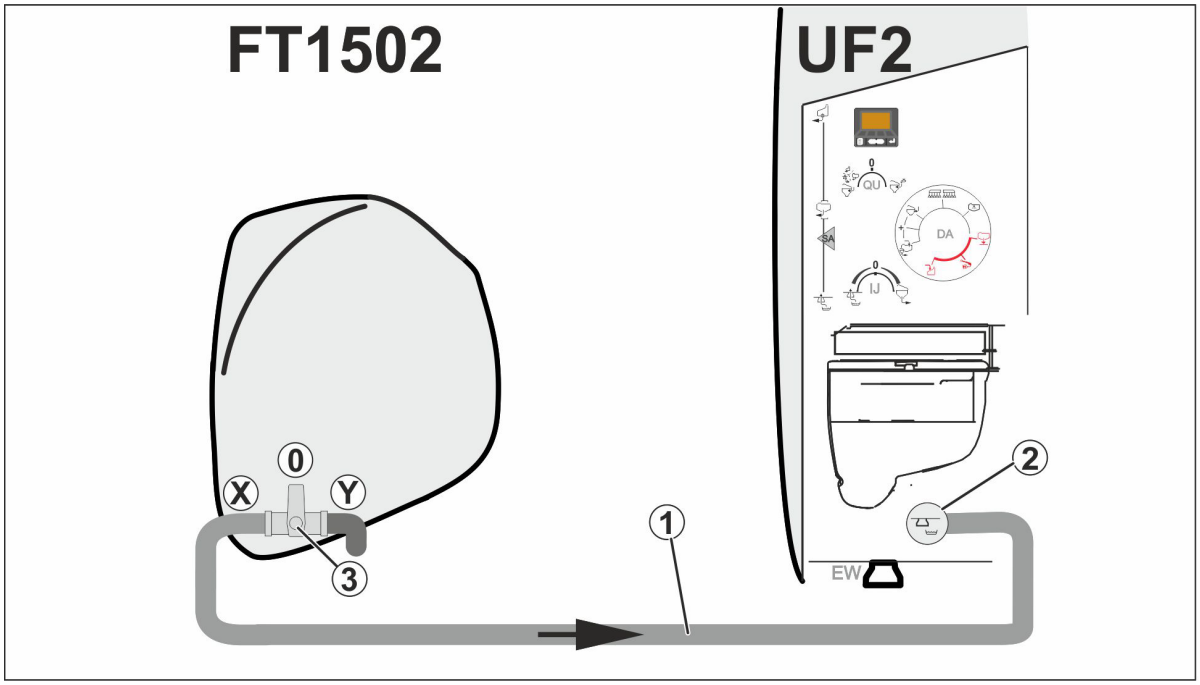


Fig. 24

1. Couple the connection hose from the front tank (1) to the filling connection (2).
2. Switch tap on front tank (3) in position **X**.
3. Run the pump.
4. Pressure valve chest **DA** in position .
5. Switch tap **IJ** in position **0**.
6.

Comfort Package:

TwinTerminal:

- o Select suction filling .
- o Enter the target fill level for the UF02 and confirm.

→ Suction valve chest **SA** in position .

→ The UF02 is filled.

Filling of the spray liquid tank stops automatically as soon as the target fill level has been reached.

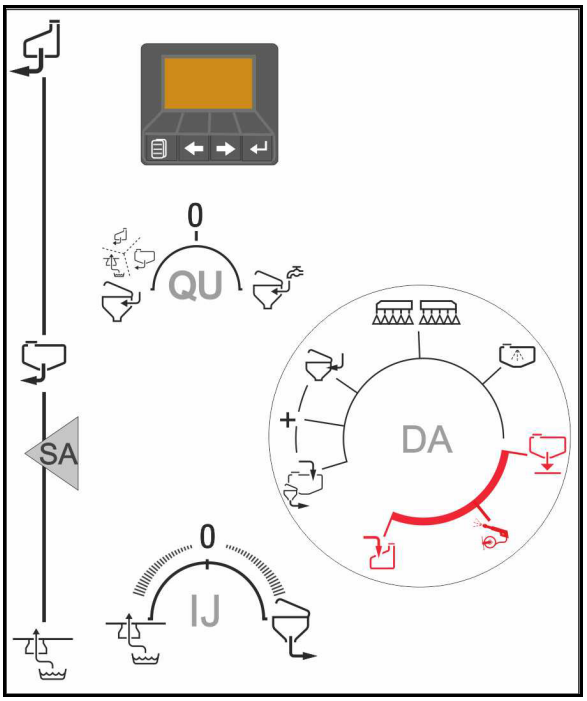


Fig. 25

No Comfort Package:

- o Suction valve chest **SA** in position  .

→ The UF02 is filled.

Pay attention to the fill level indicator on the field sprayer.

When the tank is full:

7. Suction valve chest **SA** in position  .
8. Pressure valve chest **DA** in position  .

8 UF02 and FT 1001 with Flow Control (optional)

With `Flow Control`, the front tank is used in combination with the in-cab terminal as an additional container for spray liquid.

`Flow Control` operates in two modes:

- **Automatic** mode
- **Manual** mode

Before using the front tank with `Flow Control` on the in-cab terminal select the `UF01` machine type with `FT` in the setup menu.

8.1 Flow Control liquid circuit

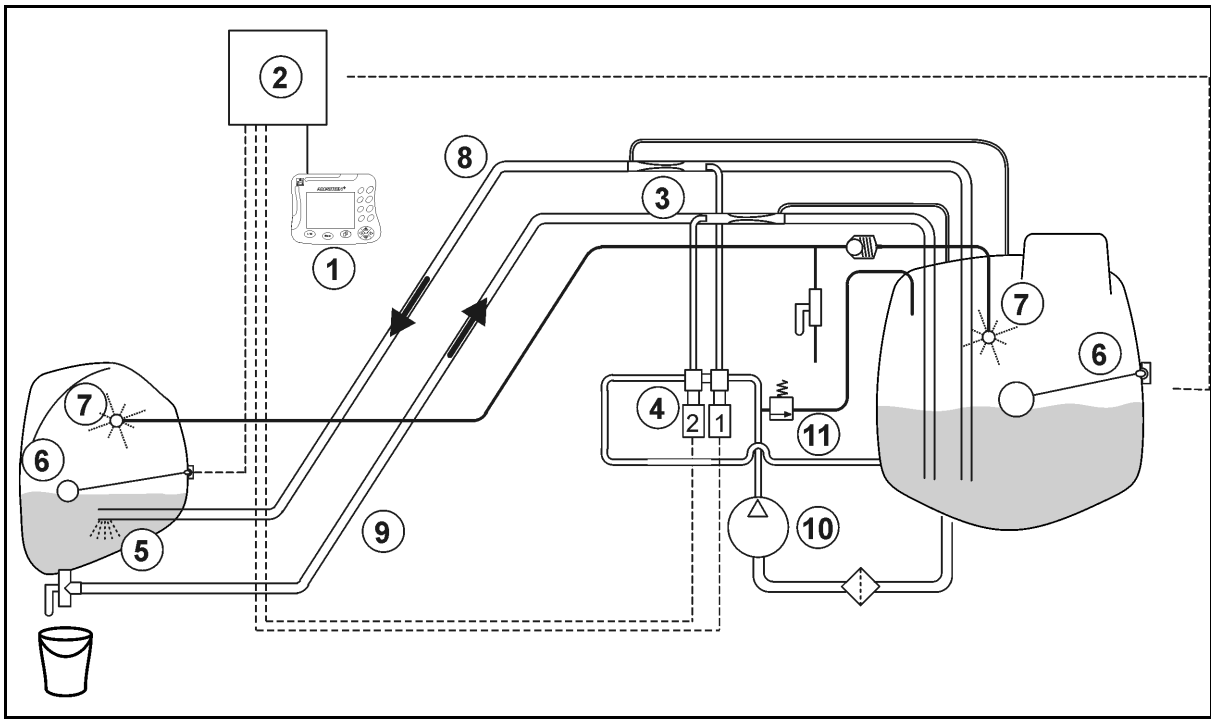


Fig. 26

(1) In-cab terminal
(2) Machine computer
(3) Flow Control injectors
(4) Flow Control valves
(5) Agitator functionality in the front tank
(6) Combined filling level indicator
(7) Internal cleaning
(8) Front tank inflow hose line
(9) Front tank outflow hose line
(10) Additional pumps
(11) Pressure relief valve

8.2 Connect field sprayer with Flow Control and front tank

To connect the field sprayer to the front tank, connect the following:

(1) Front tank inflow hose line
(2) Front tank outflow hose line
(3) Connector cable of the filling level indicator
(4) Hose line for internal cleaning

To use the field sprayer without the front tank and Flow Control

(5) Couple the front tank inflow with the outflow.
(6) Cap off the connector cable of the filling level indicator.
(7) Close the hose line for internal cleaning with blind plugs.

- IN-CAB TERMINAL work menu:

Select **Manual** mode.

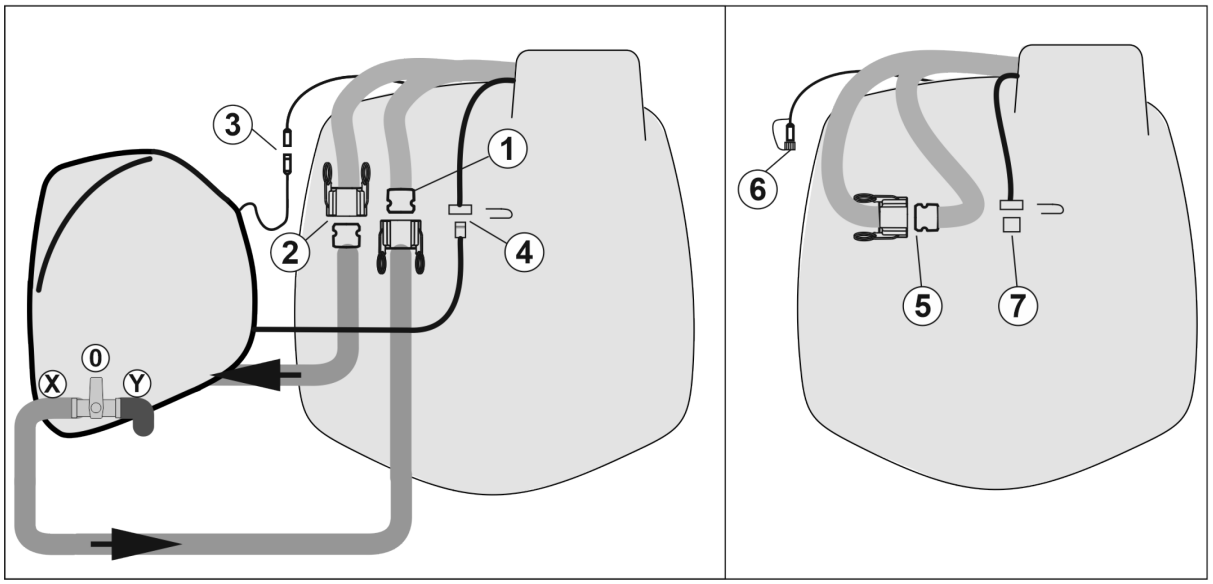


Fig. 27

8.3 FlowControl and ISOBUS

	**Modus Automatic / Manual**
	**Switching the pump to the front on / off**
	**Switch the pump to the rear on / off**

Display in the Work menu:

(1) Automatic mode switched off.

(2) Manual mode switched on

(3) Pumps switched on from FT to UF

(4) Pumps switched on from UF to FT

(5) Total fill level (UF+FT)

The fill level of the front tank can be shown on the multi-function display.

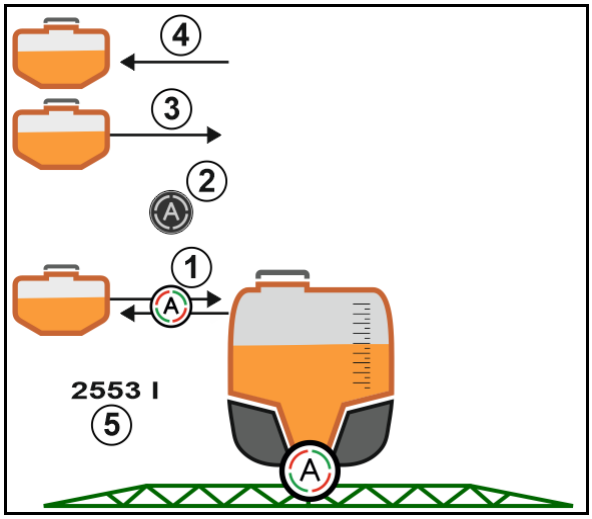


Fig. 28

Automatic mode:

During use / transport of the field sprayer / front tank combination, operate in **Automatic** mode.

Function of the **Automatic** mode:

- Permanent circulation of the spray liquid with agitator effect in the front tank.
- Control of the filling level of both tanks in spraying operation.

Manual mode:

- In **Manual** mode the distribution of the spray liquid is controlled by the operator on both tanks.

  The following functions are used for this:

  - Pumping to the front.
  - Pumping to the rear.

Pumping to the front and pumping to the rear can be switched at the same time.

For using the field sprayer without front tank, switch off the front tank in the Implement menu.

8.4 Filling

See operating manual for field sprayer ISOBUS software.

The front tank is filled via the field sprayer UF.

- Before filling the front tank and field sprayer together, adjust the indicator limit for the fill level.
- To avoid overfilling of the front tank, the respective valve closes automatically when the nominal volume is reached.

8.5 Internal cleaning

The front tank is equipped with an internal cleaning that is operated parallel to the field sprayer.

→ See the operating manual UF.

During / after internal cleaning:

-  **Pumping to the rear** must be switched on until the front tank is empty.

→ Is carried out automatically on machines with Comfort Package!

- After internal cleaning: perform residual drainage.

8.6 Failure of a fill level sensor

In case of failure of a fill level sensor

- an alarm signal appears,
- switches from **Automatic** mode to **Manual** mode,
- closes both valves of the Flow Control.

8.7 Pump maintenance

For maintenance of the pump, also refer to the UF operating manual.

8.7.1 Adjust the air pressure in the pressure reservoir

The pressure reservoir (Fig. 32/1) attenuates the pressure peaks.

Required air pressure in the pressure reservoir:
3.0 bar

Check air pressure annually

Check and correct the air pressure at the air valve (Fig. 32/2) using an air pressure gauge.

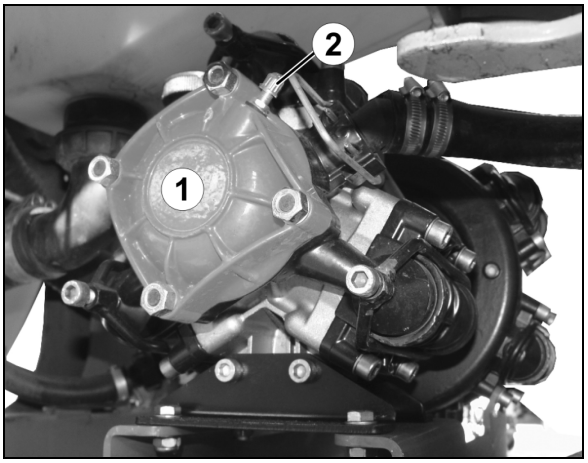


Fig. 29

8.7.2 Replacing the pressure reservoir diaphragm

CAUTION

Before removing the pressure reservoir cover (Fig. 33/1), bleed the air pressure from the pressure reservoir (Fig. 33/2) via the air valve (Fig. 33/3).

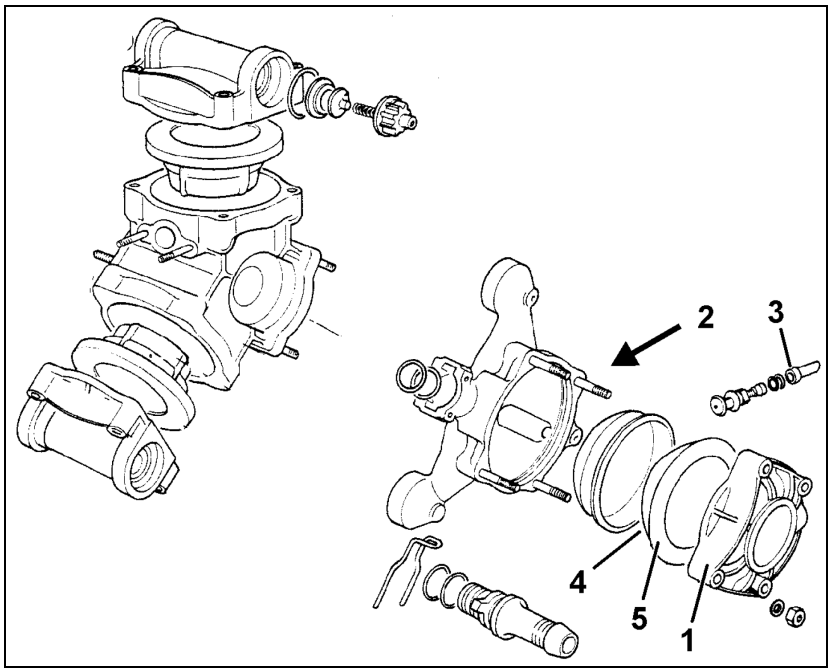


Fig. 30

1. Remove the pressure reservoir cover (Fig. 33/1) after unscrewing the four nuts.
2. Remove the diaphragm (Fig. 33/4).
3. Clean all sealing surfaces.
4. Install the new diaphragm.
5. Install the pressure reservoir cover. Tighten the nuts crosswise.

When fitting the diaphragm, ensure that it lays exactly in its seat and that the open surface (Fig. 33/5) of the domed diaphragm points in the direction of the pressure reservoir cover (Fig. 33/1).

9 Commissioning

This section contains information

- on commissioning your machine.
- on checking if it is possible to connect the machine to your tractor.

- Before operating the machine for the first time the operator must have read and understood the operating manual.
- Comply with the section "Safety information for the user", starting on page 18 when
  - coupling and uncoupling the machine
  - transporting the machine
  - using the machine
- Only couple and transport the machine to a tractor which is suitable for the task.
- The tractor and machine must meet the national road traffic regulations.
- The operator and the user shall be responsible for compliance with the statutory road traffic regulations.

Refer to the UF field sprayer operating manual, the chapter on putting into operation.

9.1 Fastening the front tank supply lines on the tractor

To fasten the supply lines (Fig. 31/1) you will need holders not included in the delivery.

Supply lines for the front tank with Flow Control

- Front tank inflow hose line
- Front tank outflow hose line
- Connector cable for level sensor
- Hose line for internal cleaning

Supply lines for the front tank without Flow Control

- Front tank connecting hose line

When fitting the hose lines, be sure to comply with the following instructions:

- Always install the hose lines so that, in all implement situations,
  - o external mechanical influences on the hose lines are avoided.

    Prevent the hoses from rubbing against components.
  - o The approved bending radii may not be exceeded.

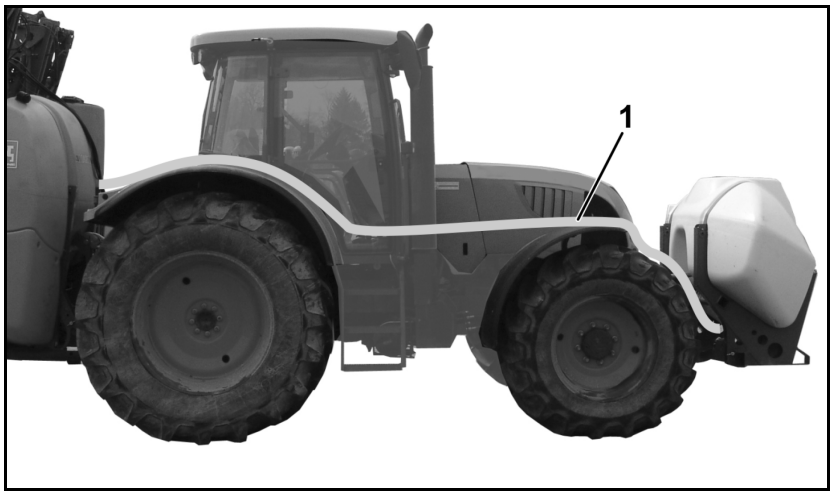


Fig. 31

10 Coupling and uncoupling the machine

When coupling and uncoupling the machine, comply with the section "Safety information for the user", page 18.

WARNING

Risk of crushing from unintentional starting and rolling of the tractor and machine when coupling or uncoupling the machine.

When coupling or uncoupling the machine, secure the tractor and machine against unintentional start-up and rolling before entering the danger area between the tractor and machine; refer to the UF operating manual.

WARNING

Risk of crushing between the rear of the tractor and the machine when coupling and uncoupling the machine.

Only actuate the operator controls for the tractor's three-point linkage

- from the intended workstation.
- if you are outside of the danger area between the tractor and the machine.

10.1 Coupling the machine

WARNING

Risk of breaking during operation, insufficient stability and insufficient tractor steering and braking power from improper use of the tractor.

You may only connect the machine to tractors suitable for this purpose. Refer to the UF operating manual chapter "Checking the suitability of the tractor".

WARNING

Risk of crushing when coupling the machine and standing between the tractor and the machine.

Instruct people to leave the danger area between the tractor and the machine before you approach the machine.

Any helpers may only act as guides standing next to the tractor and the machine, and may only move between the vehicles when both are at a standstill.

WARNING

Risk of crushing, being caught or pulled in, or impact when the machine is unexpectedly released from the tractor.

- Use the intended equipment to connect the tractor and the machine in the proper way.
- When coupling the machine to the tractor's three-point hydraulic system, ensure that the attachment categories of the tractor and the machine are the same.

  Upgrade the category II lower link pins on the machine to category III using reducing sleeves if your tractor is equipped with category III three-point hydraulics.
- Only use the upper and lower link pins provided to couple up the machine (original pins).
- Check the upper and lower link pins for visible defects whenever the machine is coupled. Replace the upper and lower link pins in the event of clearly visible wear.
- Secure the upper link pin and lower link pins in the attachment points of the three-point attachment frame against unintentional detachment using a linchpin.
- Perform a visual inspection to ensure that the upper and lower link hooks are correctly locked before reversing the tractor.

1. Secure the machine against unintentional rolling.
2. Always check for visible damage when coupling the machine:
3. Fasten the ball sleeves via the lower link pins in the hinging points of the three-point attachment frame.
4. Secure each of the ball sleeves with linchpins to ensure that they do not accidentally come loose.
5. Direct people out of the danger area between the tractor and machine before you approach the machine with the tractor.
6. Drive the tractor up to the machine, so that you can couple the top link.
7. Use bolts to couple the top link with the upper hinging point of the three-point attachment frame.
8. Secure the top link with a linchpin.
9. Align the machine so that the lower hinging points of the machine hold the lower link hooks of the tractor.
10. Raise the three-point hydraulic system of the tractor until the lower link hooks receive the ball sleeves and automatically interlock.
11. Lift the front tank into its working position.
12. Direct people out of the danger area of the machine.
13. Perform a visual inspection to ensure that the upper and lower links are correctly locked before reversing the tractor.

It may be necessary to remove the transportation device for ears treatment or with tall crops to avoid damaging the grains.

10.2 Uncoupling the machine

WARNING

Risk of crushing and/or impact

- **due to insufficient stability and the machine tipping over on soft or uneven ground.**
- **due to the machine unintentionally rolling when parked on a transportation device.**
- Always place the uncoupled machine with the tank empty on a horizontal storage space with a solid base.
- Secure the machine against unintentionally rolling when parked on a transportation device.
  Refer to the section "Transportation device", page 31.

1. Park the empty machine on a horizontal space with a hard surface.
2. Uncouple the machine from the tractor.
   - 2.1 Secure the machine against unintentionally rolling. See page 31.
   - 2.2 Relieve the load from the top link.
   - 2.3 Uncouple the top link.
   - 2.4 Relieve the load from the lower link.
   - 2.5 Unlock and uncouple the lower link hooks from the tractor seat.

11 Transportation

WARNING

Risk of crushing, cutting, being caught and/or drawn in, or impact through unintentional releasing of the coupled machine.

Carry out a visual check that the upper and lower link pins are firmly fixed with the linchpin against unintentional release.

WARNING

Risk of crushing, cutting, being caught and/or drawn in, or impact from tipping and insufficient stability.

- Drive in such a way that you always have full control over the tractor with the attached machine.

  In so doing, take your personal abilities into account, as well as the road, traffic, visibility and weather conditions, the driving characteristics of the tractor and the connected machine.
- Before transportation, fasten the side locking device of the tractor lower link, so that the connected or coupled machine cannot swing back and forth.

WARNING

Risk of breaking during operation, insufficient stability and insufficient tractor steering and braking power from improper use of the tractor.

These risks pose serious injuries or death.

Comply with the maximum load of the connected machine and the permissible axle and drawbar loads of the tractor. If necessary, drive only with a partially filled tank.

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