

USER MANUAL

Fellow bottom-mounted tank



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EU Declaration of conformity

Happowa Oy
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We declare under our sole responsibility that the product **Fellow bottom-mounted tank** starting from production number 0000 is in conformity with the relevant Union legislation Machinery Directive 2006/42/EC.

This product is also in conformity with the relevant safety requirements of the following directives:

Directive 89/392/EEC

Directive 91/368/EEC

Directive 93/44/EEC

Directive 93/68/EEC

The following standards have also been considered in designing the product, as applicable:

EN 292-1

EN 292-2

EN 294

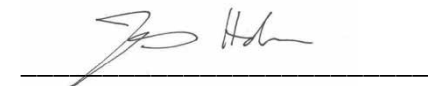
EN 349

EN 811

EN 1152

SFS 5091

In Ylihärmä 4.1.2019



Johannes Holkkola, managing director

1. Safety

The tank is made of polyethylen (PE). Only use the tank for purposes described in this manual.

1.1 General safety instructions

- In addition to the instructions given in the manual, you must obey all the general safety rules concerning mechanical working.
- Before using the applicator, make sure that the device has been connected correctly and that covers are at place.
- Before using the applicator, make sure that all the hoses, couplings and nozzles connected to the system are suited for the preservatives used.
- All operating personnel must be familiar with the operating functions and the manual of this machine.
- Keep children and unauthorised people away while using, assembling or maintaining the machine.
- Always stop the tractor prior to maintenance or repairs. Apply the parking brake, remove the ignition key and disconnect the dosing machine before leaving the cab.
- Keep the rear window of the tractor closed while using the acid applicator.
- Always keep enough clean rinse water on hand.
- Pump a large amount of clean water through the system before maintenance. Always handle acids with caution. Always use acceptable personal protective equipment.
- Inspect the condition of the hoses and the couplings regularly. Replace any damaged parts with new ones

immediately. Notice that even a small detrition or corrosion may cause danger.

1.2 Handling of acids

- Familiarise yourself with the safety and handling instructions of the preservative manufacturers.
- Always handle the acid applicator with caution and use appropriate personal protective equipment.
- Only use the acid applicator outdoors or in spaces with adequate ventilation.
- An acid applicator that has not been cleaned can only be placed on a surface that is acid resistant.

1.3 Personal protection

- Use an appropriate respirator if ventilation is inadequate.
- Use tight-fitting safety goggles to protect your eyes and keep clean water in a bottle for rinsing out eyes.
- Use protective clothing or an apron of a sufficient size and boots to protect from any splashing.
- Use neoprene or PVC gloves to protect hands.

1.4 First aid instructions

- Inhalation of acid fumes: move to fresh air, keep warm and calm. Consult a doctor if necessary.
- Acid splashing on skin: rinse splashes from the skin immediately using plenty of water and take off stained clothes.
- Acid exposure to eyes: rinse eyes immediately with plenty of water, also under the eyelids. Consult a doctor.
- If acid gets into mouth: rinse your mouth immediately with plenty of water. A few glasses of water may be drunk. Consult a doctor if necessary.

1.5 Restrictions on use

- The operator of the acid applicator must not be under the influence of narcotics, alcohol or powerful medications.
- In case of illness or disablement, the operation of the machine must be authorized by the attending physician.
- The acid applicator must not be used dry.
- Pumping inflammable liquids, liquids for human consumption, or additives is forbidden.
- Do not pump acid that has been diluted with water unless specifically permitted by the manufacturer.

2. Usage

The Fellow bottom-mounted tank is primarily intended for transporting preservatives used in the process of silage preservation during the harvesting stage. For this purpose, the tank is mounted to a silage loader wagon and connected to an applicator that doses the preservative from the tank to the grass flow.



3. Contents

- Tank
- Clamp irons
- Pair of filler quick couplings
- Suction pipe
- Suction filter
- Breather valve



4. Technical specifications

	Fellow 700	Fellow 600	Fellow Tera
Capacity	700 l	600 l	660 l
Length	125 cm	100 cm	125 cm
Mounting width	185-225 cm	185-225 cm	185-225 cm
Mounting height	35-55 cm	35-55 cm	35-55cm
Weight	80 kg	80 kg	80 kg

5. Assembly

5.1 Mounting the tank

The tank is mounted underneath the silage loader wagon's bed, behind the axles.



The tank is attached to the body of the wagon. The model of the clamp irons included in the delivery content is universal but the mounting width of the tank can be adjusted by changing the position of the clamps, which means that the tank can be fitted to most wagon models.

The clamp iron is attached to the body with one M16 screw (included in the delivery) or two M12 screws. In case of most wagon models, more fastening holes must be drilled to the body for attaching the tank. Take caution when drilling in order not to damage the hoses and cables located inside the body of the wagon.

Make use of the clamp iron holes at different heights in adjusting the distance between the tank and the chain-and-slat floor. The top surface of the tank is often left at 5-15 cm apart from the chain-and-slat floor of the wagon.

The tank is mounted near the rear axle. If there is space at the back of the wagon, it is advisable to leave a little free space in front of the tank so that there is room for the grass accumulating on top of the tank to be cleared out.

The tank is primarily mounted with its filling/draining side facing the right side of the wagon. However, the Fellow 600 tank can also be mounted with its filling/draining side facing the left side of the wagon, in which case the specially shaped side of the tank faces the back of the wagon.

⚠ MAKE SURE THAT THE SCREWS ARE TIGHT.

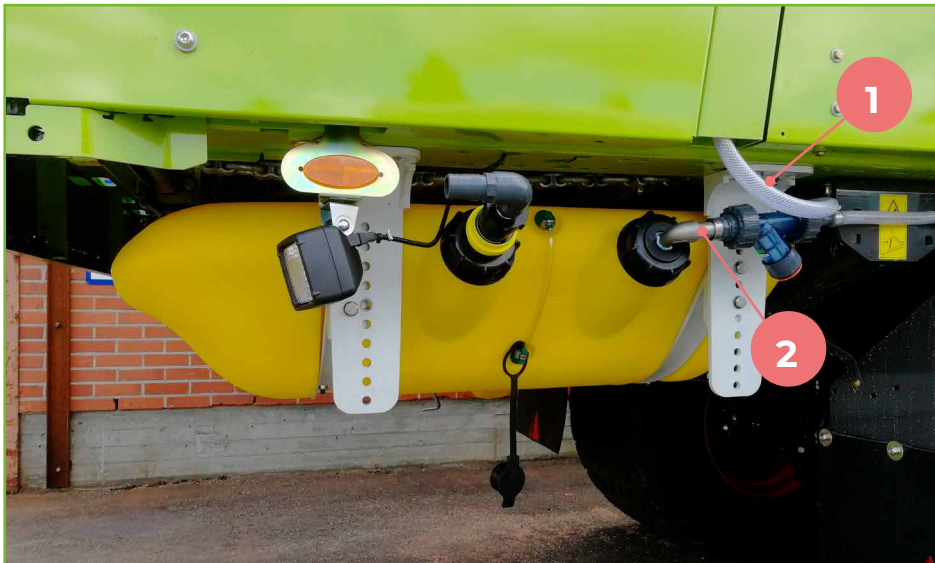
⚠ MAKE SURE THAT THE MOUNTING OF THE TANK DOES NOT CAUSE ANY TWISTING FORCE TO THE CLAMP IRONS OR TO THE TANK ITSELF.

5.2 Installing the breather valve

The main function of the **breather valve (1)** is to provide enough air to the tank, which prevents the formation of excess pressure while filling the tank as well and vacuum conditions while draining it. Install the hose of the breather valve in the front corner of the tank.

The breather valve should be installed as high to the side of the wagon as possible.

In order to prevent overflow, the breather valve must be located higher than the liquid surface level of the storage container the tank is filled from. In many wagon models, the breather valve and its hose can be installed e.g. inside the uprights, where they are well sheltered (see picture below).



5.3 Installing the suction pipe

While installing the suction pipe to the tank, please note that the suction pipe is not perfectly straight. Make sure that the strainer fits properly in the recess at the bottom of the tank. Check that the gaskets are in place. Install the **suction filter (2)** to the suction pipe and ensure that the couplings are airtight.

Any air leaks in the suction line significantly deteriorate the functioning of the dosing applicator. Attach the hoses to the body of the wagon e.g. by using cable ties.

⚠ MAKE SURE THAT THE COUPLINGS ARE AIRTIGHT!

5.4 Installing the filler quick couplings

Install the male quick coupler to the tank together with the quick coupler socket and make sure that the gaskets are in place. The diameter of the quick coupler's hose coupling is 32 mm. Only use a hose that is suitable for the preservatives in use.

6. Taking into use

Connect the tank to the pump unit by connecting the hoses between the pump unit and the suction filter.

6.1 Testing

Prior to preservative pumping the system must be tested by pumping clean water through it. The testing is easier to do after the tank has been mounted to the harvesting machine as the conditions are then similar to the actual use.

The following should be observed during the pumping test:

- The durability of the equipment and all the couplings.
- The tightness of the screws of the mounting parts.


A test run is also recommended prior to the beginning of the harvest season.

6.2 Filling the tank

The tank is filled with the filler quick coupling included in the delivery. The quick coupling has a hose coupling for a 32 mm hose. The tank is designed to be filled with free flow. When free flow is used for filling the tank, overfill must be prevented by placing the storage container at such a height that the breather valve is located higher than the liquid surface level.

It is not recommended to fill the tank by pumping. If you decide to do so anyway, make sure that the formation of excess pressure in the tank is prevented. Also make sure to prevent overfill (splashing hazard).

If you notice a leakage, stop the filling immediately. Drain the tank by pumping and make sure that all the couplings are tight.

 PRIOR TO FILLING CHECK THE CONDITION OF THE FILLER QUICK COUPLING.

 PERSONAL PROTECTIVE EQUIPMENT MUST BE USED WHILE FILLING THE TANK.

 NEVER TIGHTEN THE CORK WHILE THE TANK IS FULL!

 CLOSE THE TAP OF THE FILLING HOSE BEFORE DETACHING THE QUICK COUPLING.

6.3 Things to notice during the use of the tank

During the use of the tank, especially while emptying the wagon, make sure that grass is not accumulated between the tank and the chain-and-slat floor. Clean the space between the tank and the chain-and-slat floor if needed.

When driving over the silage stack take into account that the tank reduces the ground clearance of the wagon.

7. Trouble shooting

Error	Possible cause	Solution
The tank fills up slowly.	A block in the breather valve.	Clean the breather valve.
The output of the additive pump is weak.	A block in the suction filter.	Clean the suction filter.
	A leak in the suction line.	Check the couplings.
	A block in the breather valve.	Clean the breather valve.
The filler quick coupling leaks.	Damaged quick coupling.	Change the quick coupling.
	Damaged O-rings.	Change the O-ring.

8. Maintenance and storing

Always drain the tank after use. Obey the cleaning instructions given by the preservative manufacturer in their safety and handling instructions.

 Use the appropriate personal protective equipment!

After use, the tank must be stored in a dry place, protected from sunlight. If the tank is stored in a cold place, make sure there are no freezing liquids left inside the system.

9. Terms of guarantee

- The warranty period for the machines manufactured by Happowa Oy is 12 months.
- The warranty period begins on the date the authorized dealer has delivered the new equipment.
- Warranty covers manufacturing and material defects.
- Damaged parts that have been made a complaint about during the warranty period will be replaced or repaired free of charge if they are returned to the manufacturer, the shipping paid by the customer.
- The parts that have not been manufactured by Happowa Oy, such as the circuit cards and electric motors, are covered by the warranty of the supplier in question.
- Warranty does not cover the operating and travelling expenses.
- Warranty is only valid if the fault has been reported to our dealer within 14 days from the delivery date.

Warranty does not cover:

- Damages caused by normal wear or incorrect maintenance.
- Damages caused by incorrect use.
- Repairs or changes made without the consent of the manufacturer and the damages caused by them.
- Secondary damages and the financial losses caused by them.
- Damages caused by incorrect wiring.

Subject to change without notice.

10. Responsibilities

Manufacturer is not responsible if the acid applicator is used contrary to safety regulations or this operating manual. Since the use of the acid applicator may cause situations for which there are no instructions or regulations, the operators are recommended to follow general machine safety instructions and directives.

Note that the incorrect use of acid may cause harm to people, animals, bodies of water and soil. Follow the instructions provided by the manufacturer of the preservative and other experts regarding the handling and use of preservatives.

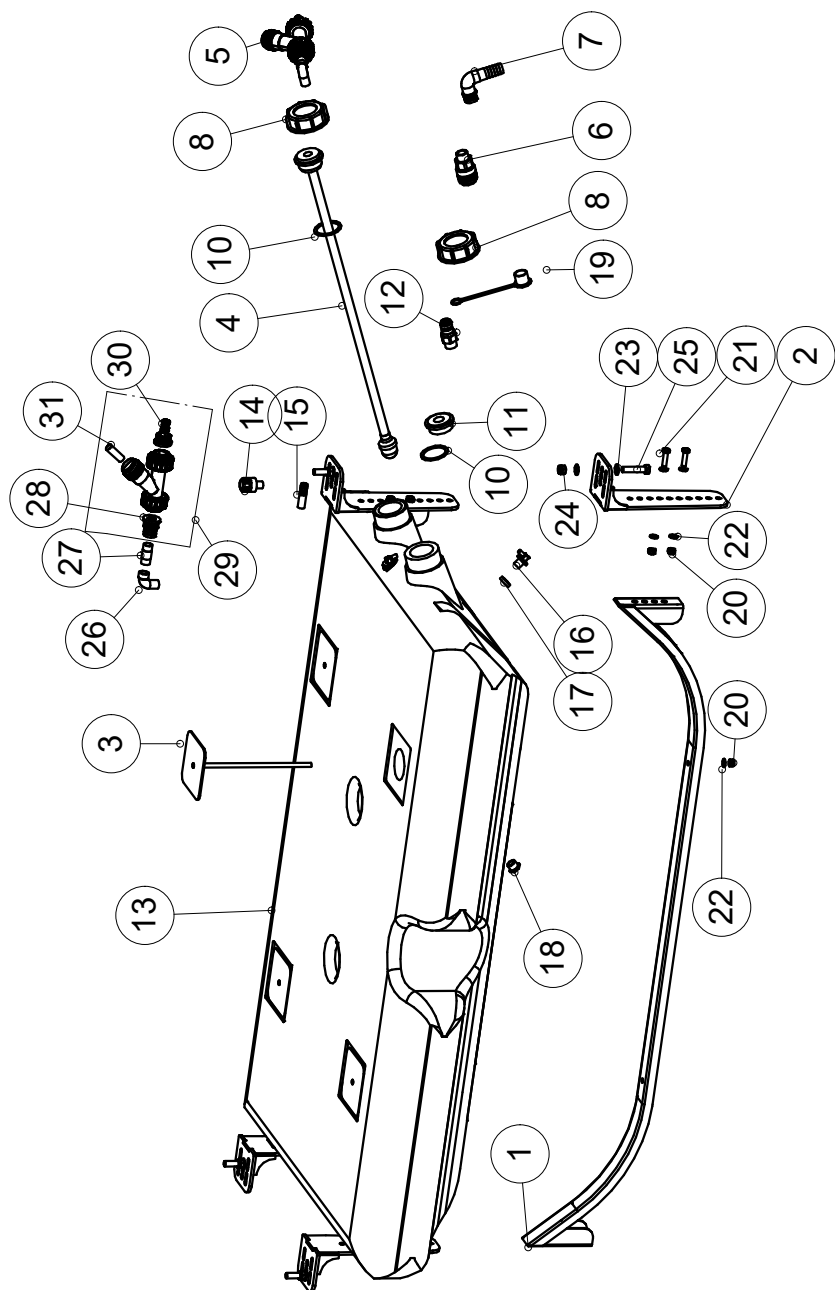
Manufacturer is not responsible for the incorrect use of preservatives or secondary damages caused by it. Manufacturer is not responsible for damages caused by the use of components manufactured by others. Manufacturer is not responsible for damages to other machines or equipment caused by the use of preservatives.

The owner of the machine is responsible for its use, care and maintenance. The owner of the machine is responsible for making sure that all people using the machine are sufficiently informed of its handling and use.

11. Disposal

The product should be recycled or disposed of according to the current legislation. The product is made of material which does not decompose naturally and which releases poisonous gases and substances when burned.

Spare parts



Osa Nr.	Tunnus Code	Suomi	English	Svenska	Kpl. Pc. St.
1	105220	Kiinnityskaari	Mounting bracket	Fästbygel	2
2	105221	Kiinnitysjalka	Foot fastener	Fotfäste	4
3	105223	Kiinnitystanko	Fastener	Fästdon	4
4	105240	Imuputki	Suction pipe	Sugrör	1
5	105270	Imusuodatin, täydellinen	Suction filter, complete	Sugfilter, komplett	1
6	105284	Pikaliitin 1", naaras, SMC	Quick coupler 1", female	Snabbkoppling 1", hona	1
7	105294	Kulma koottu, pikaliittimeen	Elbow adapter	Vinkelkoppling	1
8	105272	Korkki	Cork	Kork	2
10	105227	Tiiviste 67*80*3	Gasket 67*80*3	Tätning 67*80*3	2
11	105247	Kierrelaippa pikaliitin 1"	Flange for quick coupler 1"	Fläns till snabbkoppling 1"	1
12	105283	Pikaliitin 1" uros, SMC	Quick coupler 1", male SMC	Snabbkoppling 1", hane	1
13 a	105001	Säiliö 700 l	Container 700 l	Behållare 700 l	1
13 b	105051	Säiliö 600 l	Container 600 l	Behållare 600 l	1
13 c	105101	Säiliö terä, 600 l	Container terä, 600 l	Behållare terä, 600 l	1
14	105267	Huuhotin	Breather valve	Andningsventil	1
15	105261	Letkuliitin 19 mm	Hose coupler 19 mm	Slangkoppling 19 mm	1
16	47752_PP	Mittarietkun kulma	Elbow adapter for hose	Vinkelkoppling för slang	2
17	105278	Tiiviste mittaletkun kulmaan	Gasket	Tätning	2
18	105262	Pohjatulppa 3/4"	Plug 3/4"	Propp 3/4"	1
19	105293	Suojahattu 1", pikaliittimeen	Cap 1", for quick coupler	Skyddshatt 1"	1
20	D985.M12	Kuusiomutteri M16	Hexagon nut M16	Sexkantsmutter M16	8
21	D933.M12*45	Kuusioruuvi M12*45	Hexagonal bolt M12*45	Sexkantsskruv M12*45	8
22	D125.M12A4	Aluslevy M12	Washer M12	Bricka M12	20
23	D125.m16A4	Aluslevy M16	Washer M16	Bricka M16	8
24	D985.M16A4	Kuusiomutteri M16	Hexagon nut M16	Sexkantsmutter M16	4
25	D933.m16*70	Kuusioruuvi M16*70	Hexagonal bolt M16*70	Sexkantsskruv M16*70	4
26	105275	Kulmanippa 3/4"	Elbow adapter 3/4"	Vinkelkoppling 3/4"	1
27	105276	Jatkonippa 3/4"	Extension nipple 3/4"	Förlängningsadapter 3/4"	1
28	105281	Laippa 3/4"	Flange 3/4"	Fläns 3/4"	1
29	105283	Suodatin, 19 mm lähdöllä	Filter, 19 mm coupling	Filter, 19 mm kopplingar	1
30	105282	Laippa 19 mm letkulähdöllä	Flange, 19 mm coupling	Fläns, 19 mm koppling	1
31	105274	Suodatin irto, imusuodattimeen	Filterelement	Filterelement	1



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