

OPERATING INSTRUCTIONS

Flexomant

ONE & ONE-S, TWO & TWO-S



**ULV- Applicator for weed control
in areas of specialised cultivation such as nurseries, orchards and
vineyards, ornamental plant and vegetable gardens, as well as
agricultural, forestry, communal and non-cultivated lands.**

Important:

Before application, carefully read the usage instructions for the ULV-applicator and the plant protective agent!

Observe safety instructions!

For questions regarding plant protective agents (herbicide), consult the manufacturer!

Observe the requirements and regional regulations for the use of herbicides and, if necessary, obtain approval from the responsible authorities (e.g. environmental conservation agency)!

Application is to be performed by competent users only.



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FLEXOMANT

For the undiluted application of Roundup® products (Glyphosate)

Intended usage:

Weed control in areas of specialised cultivation such as nurseries, orchards and vineyards, ornamental plant and vegetable gardens, as well as agricultural, forestry, communal and non-cultivated lands.

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Noise emission from the unit equates to less than 70 dB.

Protective measures

Please observe the remarks above regarding herbicide usage and wear the recommended body protection for user safety. Wear protective gloves when filling the tank with chemical substance.

Do not eat, smoke or drink while working with herbicides.

Avoid chemical spillage without fail. Thoroughly clean hands and face after completion of work.

Thoroughly clean and dry the unit immediately following its usage. Never use the mouth to blow out nozzles or other small parts!



Keep the ULV-applicator and chemical substances away from children.

Before first use:

For unit assembly, as well as spray hoods, please refer to page 4. Please do not connect the hoses until the output volume is checked. To check the spray width, place underlay (cardboard or paper) on the ground and select desired output quantity (see page 3-4).

General remarks regarding the ULV-applicator and the spraying of herbicides: This ULV-applicator has been designed for the undiluted application of Roundup® products (Glyphosate). Practical experience has shown, however, that other herbicides can also be deployed in conjunction with this technology. Considering the many products on the market with their differing formulations, it is not possible to provide a complete list with application rate recommendations. Specifications for adjusting the unit listed on following pages relate to the usage of Roundup UltraMax (Glyphosate 450 gr/litre). In general, all products with a comparable viscosity are suitable. If you wish to use a product other than Roundup UltraMax, its application should be first tested over a small area on a trial basis. Usage instructions for the chosen herbicide should be observed in every case, along with local regulatory requirements.

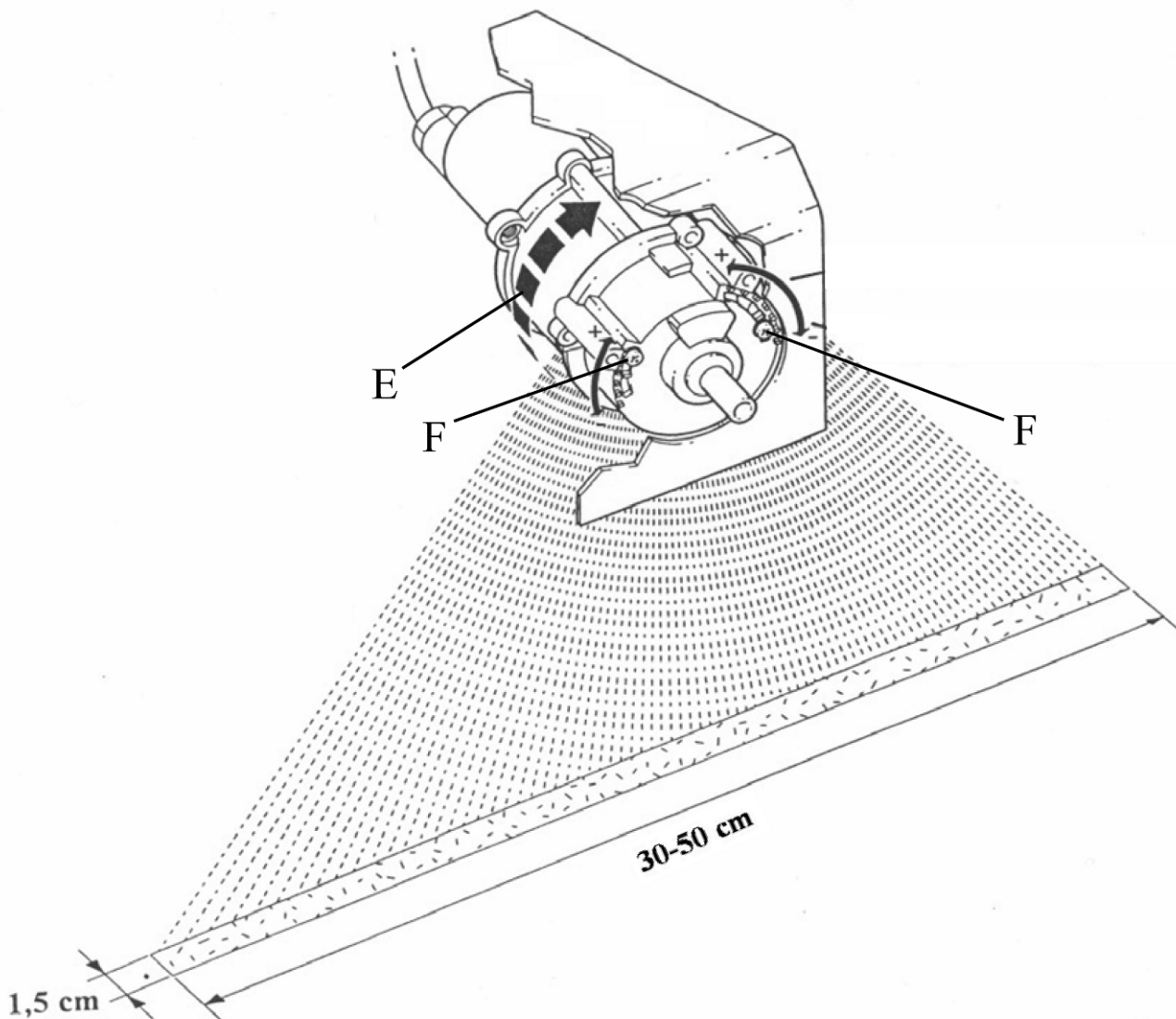
The functioning of the ULV-applicator: Rotating atomisers are driven by means of a rechargeable battery. Metering on all the units mentioned is path-dependent and takes place by means of a wheel driven pump. Droplets are formed by the centrifugal force of the rotating atomiser. The droplets are discharged downwards by the rotating atomiser through a continuously variable, adjustable segment. Residual chemical in the tank not intended for application is approx. 50 ml. This residual fluid can be refilled back into the original herbicide container.

Checking the ULV-applicator function: Chemical solutions may flow quicker or slower due to temperature fluctuations, for which reason the flow rates in the Metering table should be checked and corrected as necessary. This system is not suitable for the application of water. Please use herbicides only when testing the spray process and calibrating the flow rate. Check the rotating atomiser daily for cleanliness and free turning motion. Check the output volume from time to time throughout the season.

Using the ULV-applicator: Adjust the height of the spray hood in such a manner that it is as close to the ground as possible - if it is set too high, the risk of spray driftage exists. During operation, chemical fluid will collect in the rotating atomiser reservoir and will continue to drip for approx. 30 seconds after the shut-off valve has been closed if the unit is tilted. To avoid damage to cultivated plants due to dripping, we recommend closing the shut-off valve, for example, at the end of a row, folding the spray hood upwards and waiting approx. 30 seconds until the reservoir has emptied.

Adjusting the Spray width

- Place an underlay (cardboard or paper) on the ground and rest the unit on a stand(s).
- Turn the ULV-applicator on with the switch on the power pack while simultaneously turning the wheel by hand. Observe the spray width obtained, initially at one location. The spray width must be set in such a manner that the droplets are discharged over the entire width of the spray hood. The optimal spray width under standard operating conditions is set by the manufacturer.
- Compensate for deviations is possible by loosening screw (F) and sliding the width adjustment on the atomiser (see drawing).
- Should you require further details regarding width adjustment, please refer to your MANKAR dealer.



Cleaning

Do not clean the ULV-applicator unit with a high-pressure sprayer or with an intense water jet spray.

Cleaning during the season:

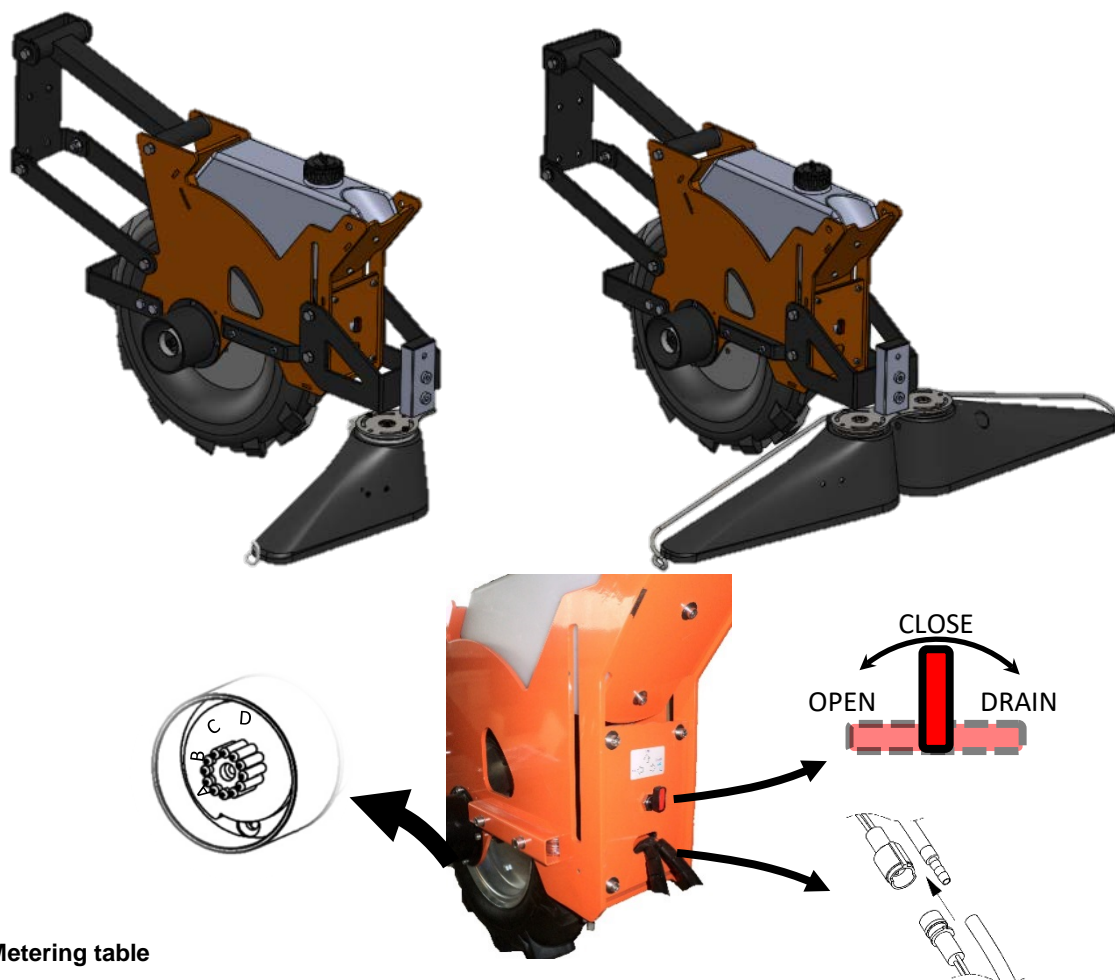
During short work breaks (a few hours), herbicide can remain in the system if the shut-off valve remains closed. After work completion: before cleaning, refill the chemical solution into its original container. Open the shut-off and set the metering pump to maximum. Fill the chemical tank halfway with water, then, with the unit positioned, turn the wheel smoothly 50 times, allowing the fluid from the unit to drain into a collector tank or, operating the unit for approx. 100 m, dispersing the cleaning fluid to the already treated surface. Remove any remaining water from the tank and turn the wheel 50 times once again until the system is completely empty.



Cleaning at the end of the season:

Rinse the unit with warm water as described above. Additionally: Unscrew filter and clean screen as necessary. The spray hood and the atomiser housing can be cleaned with a moist cloth. Remove the atomiser disc to avoid damage. With heavy contamination, the atomiser housing should be unscrewed to remove contaminants and plant parts. Finally, connect the unit to the charging device.

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Metering table

Flexomant One

Roundup UltraMax application rate at 20°C

Spray hood 55cm	Spray hood 40cm
B 1,1 l/ha	A 1,1 l/ha
F 2,1 l/ha	D 2,1 l/ha
K 3,1 l/ha	G 3,1 l/ha
O 4,1 l/ha	K 4,2 l/ha

Flexomant Two

Spray hood 110cm	Spray hood 80cm
A 1,6 l/ha	B 2,5 l/ha
C 1,9 l/ha	D 3,0 l/ha
F 2,5 l/ha	F 3,5 l/ha
H 3,0 l/ha	H 4,2 l/ha

Assembly

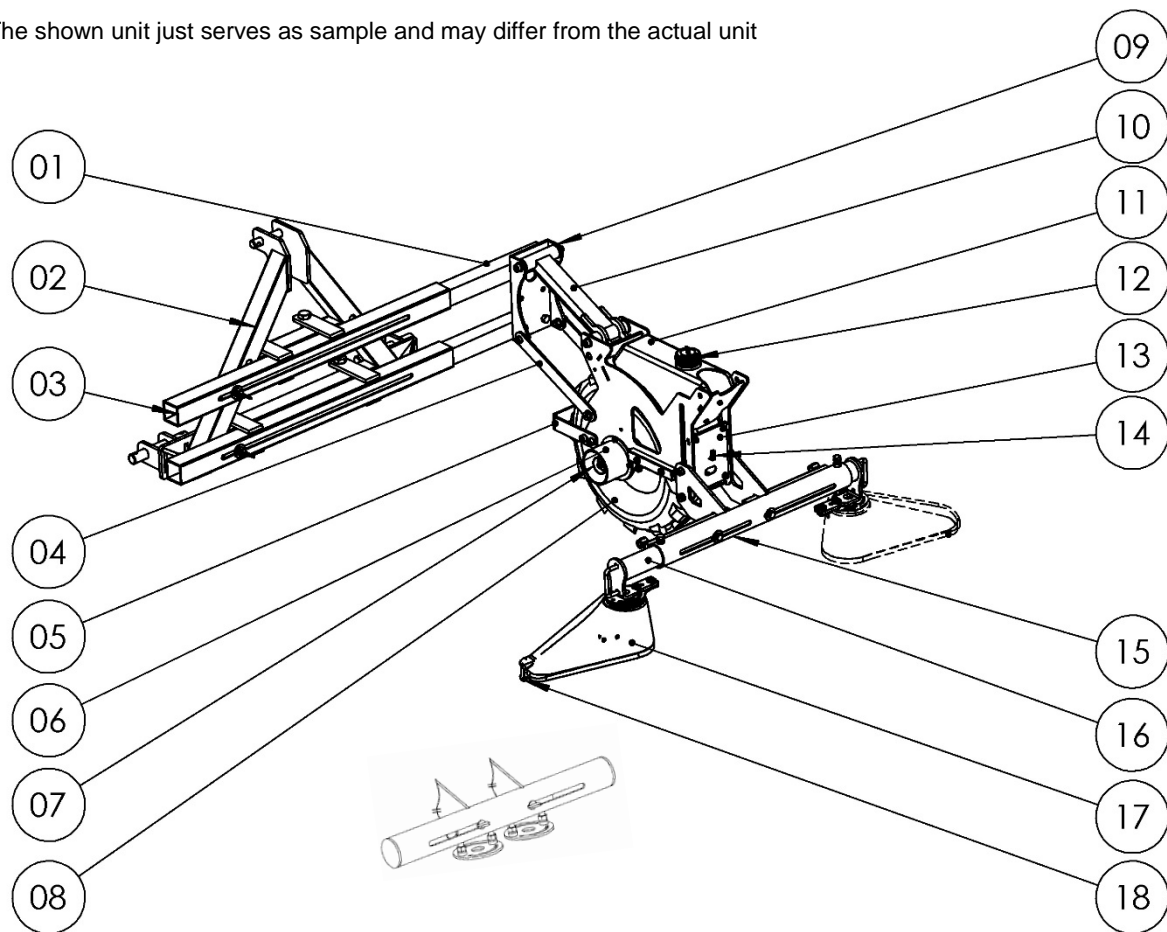
1. Mount the spraying system on the vehicle.
2. Connect electrical plug 12 V-with the socket of the vehicle. Please check the vehicle polarity. If the plug is removed, blue lead is (+), brown lead (-).
3. Set ground clearance of the spray hood.
4. Connect control box with pump unit .
5. Check spray width of the atomiser. (see drawing page 3)
6. After checking the output volume (workflow on the right) connect all hoses.

Checking the output volume

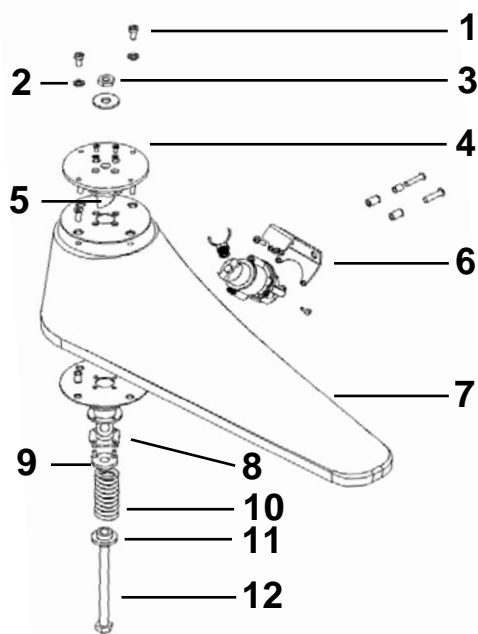
1. Place an underlay (e.g. cardboard or paper) on the ground and rest the unit on a stand(s).
2. Fill the chemical tank with herbicide - undiluted.
3. Remove the hose from the atomiser and place a measuring cup underneath.
4. Open the shut-off valve, initially setting the metering adjustment knob to the maximum flow rate and simultaneously turning the wheel; wait until the chemical solution is evenly applied.
5. Set the chemical solution volume according to the output table.
6. Volume calibration: Collect the chemical solution from 50 wheel revolutions into a measuring cup. If the desired volume is not reached, set a larger or a smaller volume with the pump metering adjustment knob.
7. Perform volume calibration again.
8. Reconnect the hose on the lower side of the flow rate control.
9. The unit is now ready for deployment.

Flexomant

The shown unit just serves as sample and may differ from the actual unit

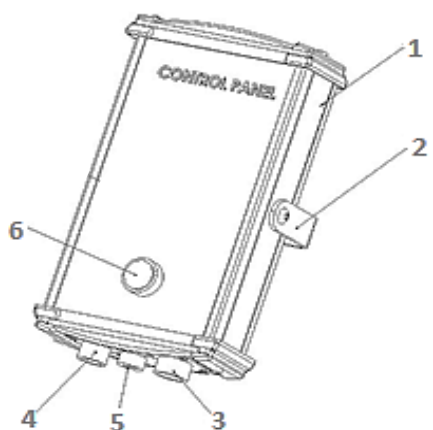


Item	Part-No.	Description
1	106109	Frame extension, right
1	106108	Frame extension, left
2	106107	3-point hitch cat. I-III heavy
3	106632	Boom bracket for 3-point hitch
4		Lower bar, parallelogram, Flexomant 2016
5		Protection strap, wheel unit, Flexomant 2016
6		Pump protector, Flexomant 2016
7	100492	Metering pump MAFEX-3/1, capacity 2 - 20 ml/min
7	100527	Metering pump MANKAR-GP/TWO 3/2, 5 - 12 ml/min
8		Wheel, Flexomant 2016
9		Mounting plate parallelogram, Flexomant 2016
10		Upper bar, parallelogram, Flexomant 2016
11	104281	Tank 3 L for Mankar-Roll without mounting parts
12	103320	Bottle lid for 0,5 litre reservoir with breather
13		Flexomant, Main frame 2016
14	104140	3-way ball valve Mankar-Roll
15	105600	Spray boom "VARIMANT"
16	105675	Ausleger Varimant 30cm -Standard- (Vers. 2015)
17	104021	Spray hood 40 cm, compl. with guard bracket, left
17	104022	Spray hood 40 cm, compl. with guard bracket, right
18	104023	Spray hood 55 cm, compl. with guard bracket, left
18	104024	Spray hood 55 cm, compl. with guard bracket, right
19	106103	Spray boom "UNIMA"



Item Part No. Description

1	103467	Filister head screw M 6 x 12 mm VA with Allen head
2	101868	Washer M6, Ø6.4 mm, 3D VA
3	103428	Nut, pressed, M10, hexagonal, VA
4	104740	Rotary disc, spray hood Mankar-Roll
5	104311	Mounting bush, rotary-joint Mankar-Roll
6	104810	Atomiser bracket, spray hood Mankar-Roll (old)
7	104855	Spray hood 55 cm Mankar-Roll without atomiser
	104840	Spray hood 40 cm Mankar-Roll without atomiser
	104824	Spray hood 25 cm, left Mankar-Roll without atomiser
	104825	Spray hood 25 cm, right Mankar-Roll without atomiser
8	104313	Intermediate bush, rotary-joint Mankar-Roll
9	104315	Spring retainer for pressure spring Mankar-Roll
10	104314	Pressure spring, rotary-joint Mankar-Roll
11	104315	Spring retainer for pressure spring Mankar-Roll
12	104316	Bolt, Allen key 10 x 130 mm, VA Mankar-Roll

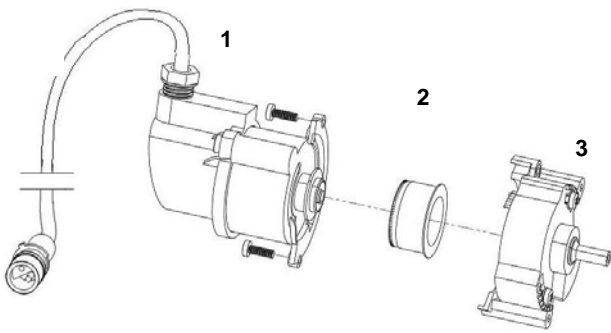


Item Part No. Description

106067 Control box with switches ONE, DC/DC for FLEXOMANT

106068 Control box with switches TWO, DC/DC for FLEXOMANT

1	103479	Aluminum housing
2	104959	Bracket for control box MAFEX 2010
3	102731	Socket (AMP) 9-pol
4	100121	Screwed cable gland PG 7, plastic
5	100365	Fuse holder complete MINI-MANTRA / MANKAR / FLEXOMANT /
6	102974	Pressure switch, green light, (round) for MANTRA and MANKAR
7	103831	Cover (AMP) for aluminum housing



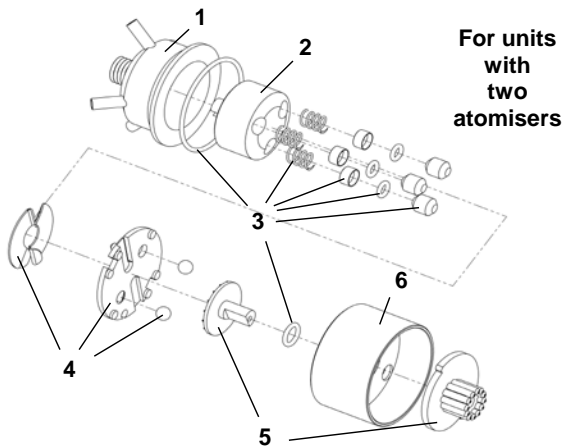
Item Part No. Description

103824 Atomiser for MANKAR-TWO Flex

1	103825	Motor-module for atomiser MANKAR-TWO Flex
2	100478	Atomiser disc for segment atomiser
3	101996	Segment-module for segmental atomiser incl. width adjustments

103947 Atomiser for MANKAR, One-S, Two-S, Flex

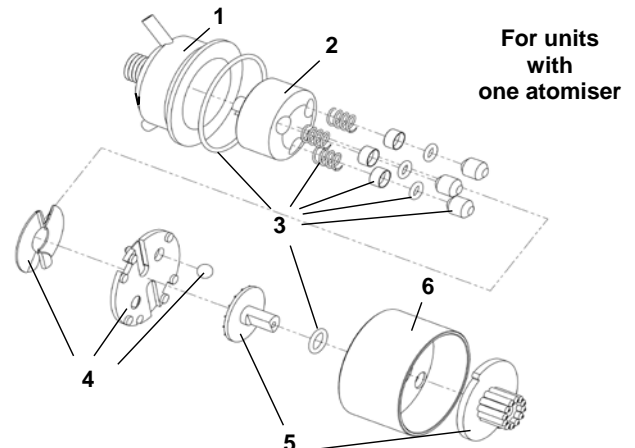
1	103946	Motor-Modul for atomiser MANKAR, One-S, Two-S
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Item Part No. Description

100527 Metering pump MANKAR-GP/TWO 3/2, 5 - 12 ml/min

1	100528	Pump housing for two-channel pump Metering pump MANKAR
2	102209	Rotor-3, chromed brass for piston pump MAFEX/MANKAR
3	102373	Sealing set for metering pump MANKAR-3/MAFEX-3
4	101626	Repair set, metering pump MANKAR, pressure plate/wobble plate
5	102429	Repair set, metering pump MANKAR, metering adustment knob/ selectordisc
6	100534	Cover for piston pump MAFEX/MANKAR



Item Part No. Description

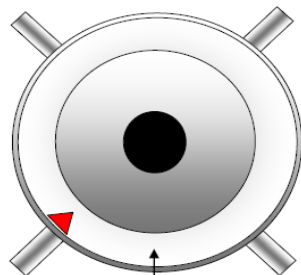
100492 Metering pump MAFEX-3/1, capacity 2 - 20 ml/min

1	100493	Pump housing for single-channel pump metering pump MAFEX
2	102209	Rotor-3, chromed brass for piston pump MAFEX/MANKAR
3	102373	Sealing set for metering pump MANKAR-3/MAFEX-3
4	102436	Repair set, metering pump MAFEX, pressure plate/wobble plate
5	102437	Repair set, metering pump MAFEX, selector/adustment knob
6	100534	Cover for piston pump MAFEX/MANKAR

**Dosierpumpe MANKAR
Metering pump MANKAR
Pompe doseuse MANKAR**

**Druckseite
Pressure sleeve
Pression**

**Saugseite
Sucking sleeve
Aspiration**



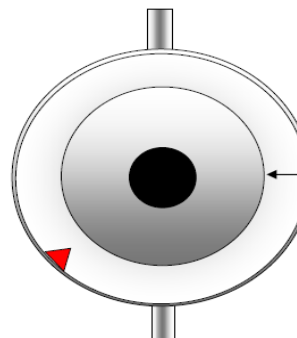
**Saugseite
Sucking sleeve
Aspiration**

**Druckseite
Pressure sleeve
Pression**

**DOSIERKNOPF
Metering adjustment knob
Réglage de débit**

**Dosierpumpe MAFEX
Metering pump MAFEX
Pompe doseuse MAFEX**

Druckseite / Pressure sleeve / Pression



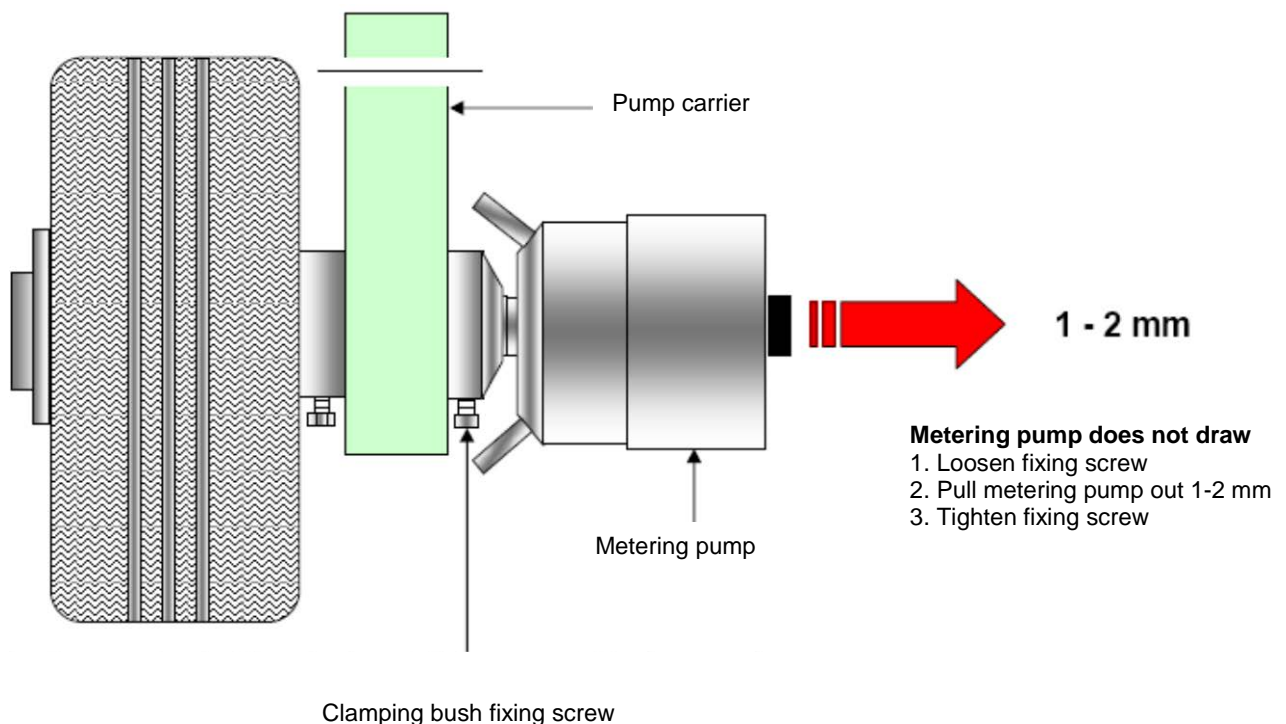
**DOSIERKNOPF
METERING
ADJUSTMENT KNOB
RÉGLAGE DE DÉBIT**

**Saugseite
Sucking sleeve
Aspiration**

Troubleshooting

Fault	Cause	Rectification
Atomiser disc does not rotate	Atomiser contaminated Battery empty Fuse blown No electrical contact Battery faulty Atomiser motor faulty	Thoroughly clean atomiser, remove plant parts as necessary Charge battery Replace fuse on power pack (Replacement fuses are located in the power pack housing) Check cable and connector contacts Install new battery Install new motor Connect the brown cable to Plus (+).
Atomiser spray one-sided	Incorrect width setting	Undo screws (F, see page 3) and adjust the width setting to the left or right
Atomiser drips	Metering valve incorrectly adjusted Atomiser disc faulty/contaminated Atomiser spray discharge contaminated	Check setting, see table Replace/clean disc Clean
Atomiser foams	Residual water in the system	Completely empty tank, hose and segmental atomiser.
Air in hose	Hose connection not airtight	Shorten the hose slightly and fit it on the hose nipple.

Metering pump does not draw



EG-Declaration of conformity Council Directive 2006/42/EG

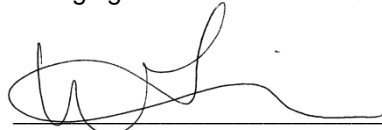
Mantis ULV-Sprühgeräte GmbH, Vierlander Straße 11 a, 21502 Geesthacht declare under our sole responsibility that the following products are in conformity with the provisions of the following Council Directive: 2006/42/EG

Typ FLEXOMANT

Hiske Weissmann
Managing Director

Geesthacht January 2021

(Place and date of signature)



(Name, title and signature)