

OPERATING INSTRUCTIONS

FLEXOMANT 1W -2W -3W -4W ^{CE}

FLEXOMANT 4W PLUS

**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.**

**The unit has been developed for the *undiluted*
application of ROUNDUP® products (Glyphosate).**

Important:

Before application, carefully read the usage instructions for the unit and the plant protective agent!
Observe safety instructions!

For questions regarding plant protective agents, 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 only by a competent user.

Remarks about usage of the unit:

Settings: This system is not suitable for the application of water.
Use herbicides for testing the spray action and calibration of the
flow rate.



Keep the applicator and pesticides out of the reach of children.

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

Manufacturer:

Mantis ULV-Sprühgeräte GmbH

D-21502 Geesthacht, Vierlander Str. 11 a

Telephone + 49 (0)4152 / 8459-0, FAX + 49 (0)4152 / 8459-11

USER SAFETY RECOMMENDATIONS for FLEXOMANT

- Always observe the safety recommendations for user protection in the "directions for use" of the chemical and wear the recommended personal protective equipment.
- Do not eat, smoke or drink when working with pesticides.
- Dispose of excess pesticide mix and rinse in accordance with label instructions.
- Always keep pesticides and applicators out of the reach of children.
- After use, thoroughly clean the applicator.

Exchange the chemical in the tank for tap water and turn the wheels for approx. 2 minutes.

SET-UP AND OPERATION OF THE APPLICATOR

**Plug the 2-core plug of the control box in the socket of your tractor.
Operate switch of the control box.**

The atomisers are powered by the tractor battery. The fluid metering is handled by a metering pump. The droplets are formed by the centrifugal force of the atomiser and discharged downwards through an adjustable segment. Flow rate can be affected by temperature fluctuations, therefore the flow rate specified in the calibration table has to be checked and adjusted as required. Check the atomiser daily to be sure it is clean and operating smoothly. The spray hood should pass closely over the top of the area to be treated. During operation, some of the chemical will collect in the atomiser and will trickle out for approx. 30 sec. after closing the valve on top of the chemical tank. Be sure to close valve about one minute before end of treatment and allow atomiser to continue running. Switch off the atomiser at the end of the treatment.

CAUTION

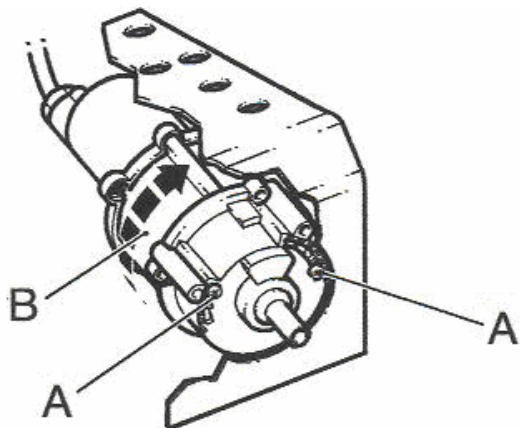
Before lifting the spray hood, be sure to close valve and switch off atomiser.

Set the Spray band of the atomiser by adjusting the spray limiters (see drawing). The spray band should be set so that the droplets are discharged across the entire compartment width. Fill tank and open the valve. Find a clean dry surface, preferably a concrete base, or place a cardboard panel under the spray hood and check the coverage on the panel. Adjust as required and recheck. Be sure you understand all the functions of the applicator before starting treatment.

FLEXOMANT-1 W

Assembly Instruction

- A. Set height of spray hoods
- B. Connect electrical plug into control box socket.
- C. Adjust spray width of atomizers (see drawing).



A = Spray width variation

B = Direction of rotation

Checking the Flow Rate

1. Fill tank with chemical solution.
2. Fit screw cap with cock and filter.
3. Open shut-off valve.
4. Set metering knob to suggested letter (A-F). Refer to table.
5. Disconnect hose coupling.
6. Collect fluid in the metric measuring cup for 50 wheel rotations.
7. Check table and (if required) adjust metering knob to obtain desired flow rate.
8. Repeat steps 5 & 6 (if necessary)

FLEXOMANT-1W Calibration Instruction

Roundup - undiluted -

Checking the flow rate

The pump type MAFEX-95 MS mounted on the wheel axles deliver the herbicide directly to the spray hoods.

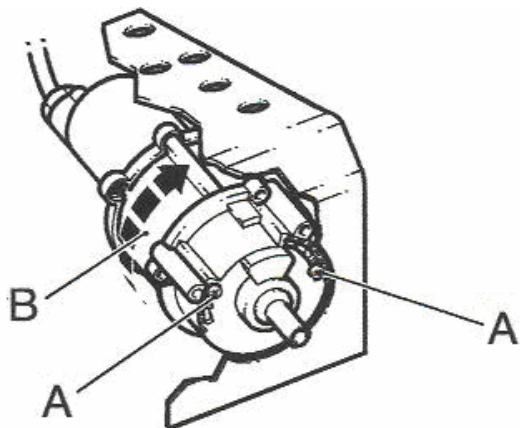
Application Rate of undiluted ROUNDUP PER HECTAR treated area	Spray hoods 50 cm Ø Required yield for 50 wheel rotations per atomizer	Metering knob setting approx.
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1,0 l	2 ml	A
2,0 l	4 ml	C
3,0 l	6 ml	F

FLEXOMANT-2 W

Assembly Instruction

- A. Set height of spray hoods
- B. Connect electrical plug into control box socket.
- C. Adjust spray width of atomizers (see drawing).



A = Spray width variation

B = Direction of rotation

Checking the Flow Rate

1. Fill tank with chemical solution.
2. Fit screw cap with cock and filter.
3. Open shut-off valve.
4. Set metering knob to suggested letter (A-F). Refer to table.
5. Disconnect hose coupling.
6. Collect fluid in the metric measuring cup for 50 wheel rotations.
7. Check table and (if required) adjust metering knob to obtain desired flow rate.
8. Repeat steps 5 & 6 (if necessary)

FLEXOMANT-2W Calibration Instruction

Roundup - undiluted -

Checking the flow rate

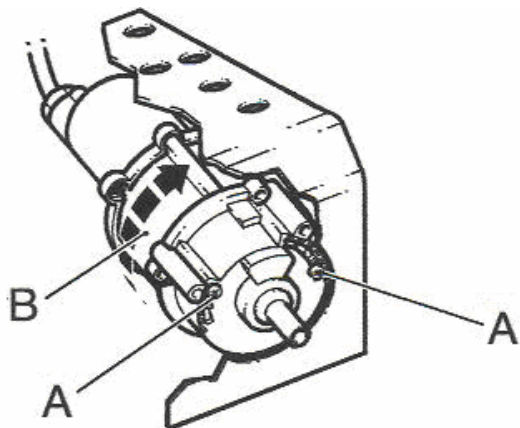
Each of the 2 pumps type MAFEX-95 MS mounted on the wheel axles deliver the herbicide directly to the spray hoods.

Application Rate of undiluted ROUNDUP PER HECTAR treated area	Spray hoods 50 cm Ø Required yield for 50 wheel rotations per atomizer	Metering knob setting approx.
1,0 l	2 ml	A
2,0 l	4 ml	C
3,0 l	6 ml	F

FLEXOMANT-3 W

Assembly Instruction

- A. Set height of spray hoods
- B. Connect electrical plug into control box socket.
- C. Adjust spray width of atomizers (see drawing).



A = Spray width variation

B = Direction of rotation

Checking the Flow Rate

1. Fill tank with chemical solution.
2. Fit screw cap with cock and filter.
3. Open shut-off valve.
4. Set metering knob to suggested letter (A-F). Refer to table.
5. Disconnect hose coupling.
6. Collect fluid in the metric measuring cup for 50 wheel rotations.
7. Check table and (if required) adjust metering knob to obtain desired flow rate.
8. Repeat steps 5 & 6 (if necessary)

FLEXOMANT-3W Calibration Instruction

Roundup - undiluted -

Checking the flow rate

- A.** In direction of travel the pump on the right hand wheel (Pump Type MAFEX-95 MS) pumps the liquid into the centre spray hood.

Application Rate of undiluted ROUNDUP PER HECTAR treated area	Required yield for 50 wheel rotations per atomizer	Metering knob setting approx.
1,0 l	2,40 ml	A
2,0 l	4,70 ml	C
3,0 l	7,10 ml	E

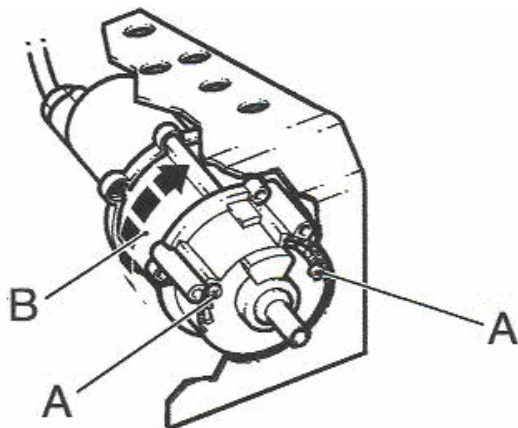
- B.** In direction of travel the pump on the left hand wheel (pump Type MANKAR-95) pumps the liquid into the 2 conical spray hoods.

Application Rate of undiluted ROUNDUP PER HECTAR treated area	Spray hoods 50 cm Ø Required yield for 50 wheel rotations per atomizer	Metering knob setting approx.
1,0 l	1,90 ml	A
2,0 l	3,80 ml	B
3,0 l	5,60 ml	F

FLEXOMANT-4 W

Assembly Instruction

- A. Set height of spray hoods
- B. Connect electrical plug into control box socket.
- C. Adjust spray width of atomizers (see drawing).



A = Spray width variation

B = Direction of rotation

Checking the Flow Rate

1. Fill tank with chemical solution.
2. Fit screw cap with cock and filter.
3. Open shut-off valve.
4. Set metering knob to suggested letter (A-F). Refer to table.
5. Disconnect hose coupling.
6. Collect fluid in the metric measuring cup for 50 wheel rotations.
7. Check table and (if required) adjust metering knob to obtain desired flow rate.
8. Repeat steps 5 & 6 (if necessary)

FLEXOMANT-4W Calibration Instruction

Roundup - undiluted -

Checking the flow rate

- A.** In direction of travel the pump on the right hand wheel (Pump Type MANKAR-95) pumps the liquid into the centre spray hood.

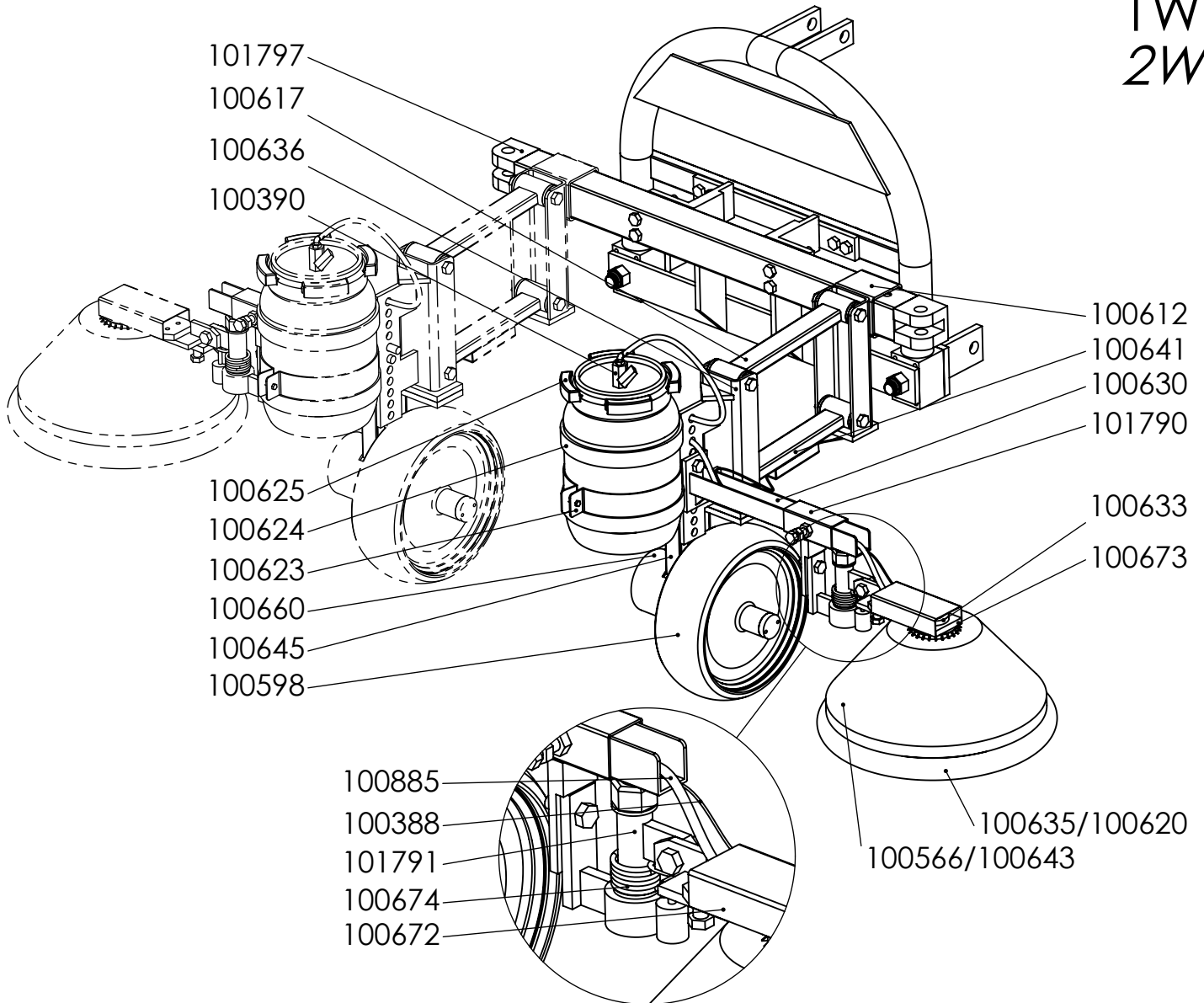
Application Rate of undiluted ROUNDUP PER HECTAR treated area	Width of spray hood	Required yield for 50 wheel-rotations per atomizer	Metering knob setting approx.	Width of spray hood	Required yield for 50 wheel-rotations per atomizer	Metering knob setting approx.
2,0 l	75 cm	3,5 ml	B	100 cm	4,8 ml	D
2,5 l	75 cm	4,4 ml	C	100 cm	6,0 ml	E

- B.** In direction of travel the pump on the left hand wheel pumps the liquid into the 2 conical spray hoods.

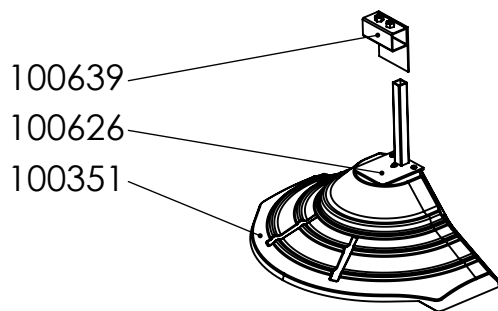
Application Rate of undiluted ROUNDUP PER HECTAR treated area	Spray hoods 50 cm Ø Required yield for 50 wheel rotations per atomizer	Metering knob setting approx.
2,0 l	3,8 ml	B
2,5 l	4,7 ml	C

FLEXOMANT

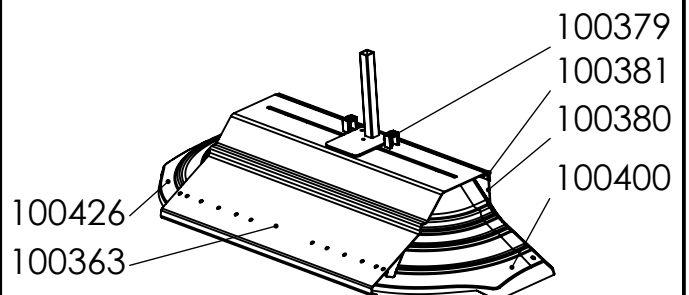
1W
2W



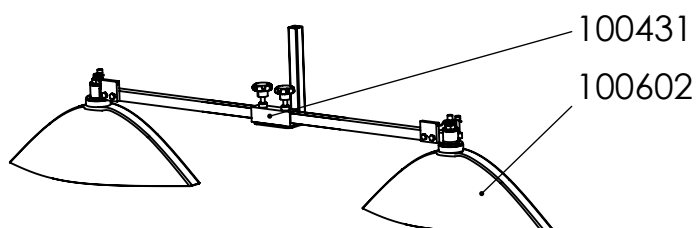
+ Flexomant 3W



+ Flexomant 4W

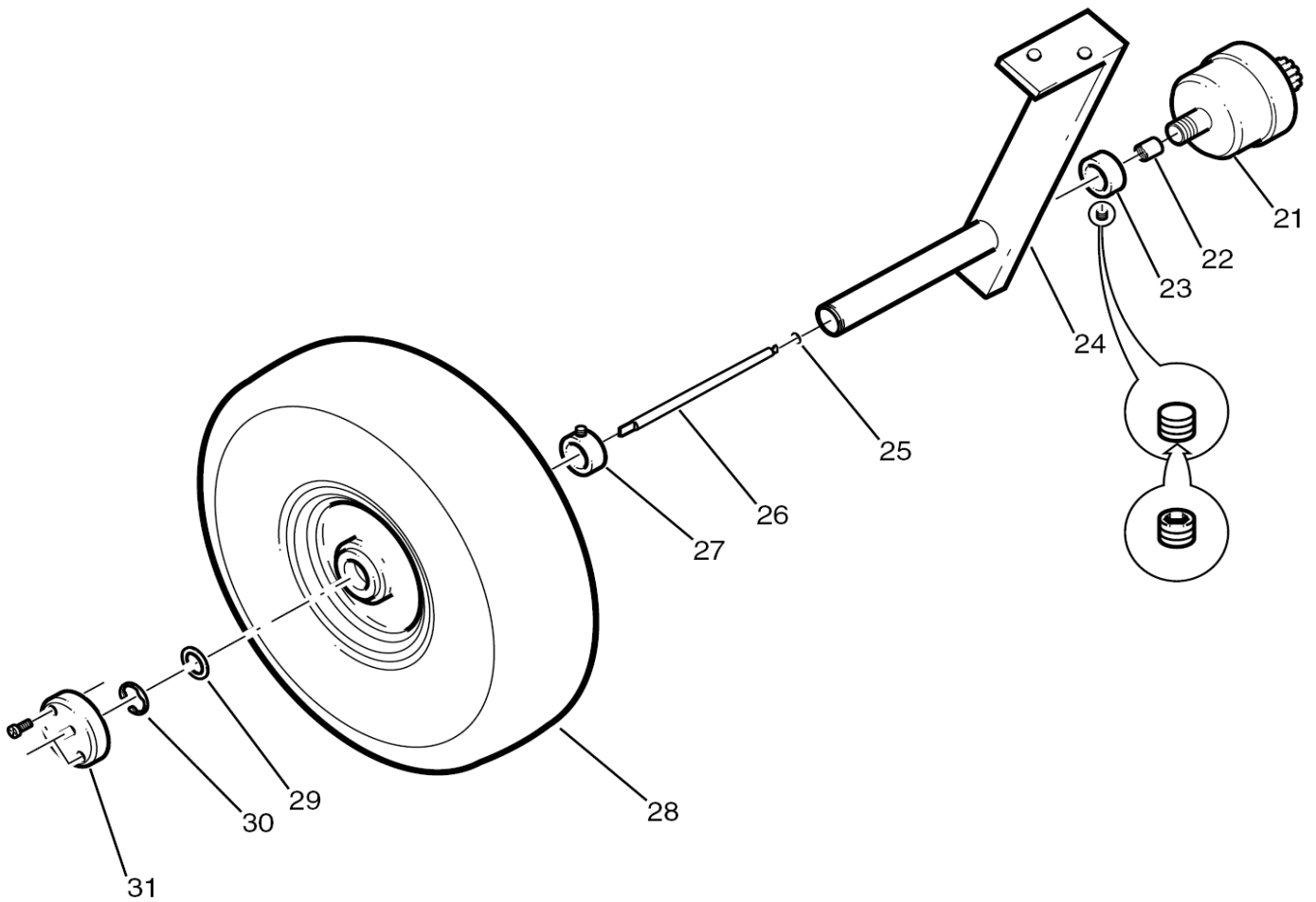


+ Flexomant 4W-Plus



FLEXOMANT

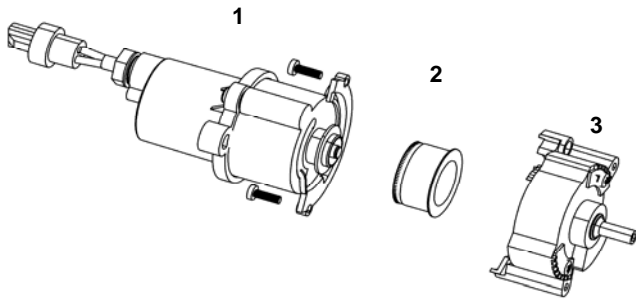
<u>Item</u>	<u>Part No.</u>	<u>Description</u>
1	101797	3-point hitch for FLEXOMANT-VARIMANT
2	100617	Parallelogram for FLEXOMANT and TRAMA, TRAMUS
3	100636	Height adjustment, Flexomant
4	100390	Ball valve
5	100612	Suspension
6	100641	Parallelogram with cable protection
7	100630	Extension U-profile
8	101790	Width adjustment, right for VARIMANT/FLEXOMANT
9	100633	Ball bearing 6206 ZZ
10	100673	swinging arm FLEXOMANT/VARIMANT
11	100625	Tank lid for 6L tank
12	100624	Tank, capacity 6 litre
13	100623	Tank bracket for 6 litre tank
14	100660	Pump protection
15	100645	Pump support complete
16	100598	Farmflex wheel 300 x 100 mm
17	100885	Tube PVC, 4 x 2 mm, sold by metre
18	100388	Cable for atomiser
19	101791	Swivel-joint for FLEXOMANT-VARIMANT
20	100674	Spring 4mm for pivot FLEXOMANT/VARIMANT
21	100672	Covering sheet
22	100620	Casing 40 cm diameter
23	100566	Spray hood, conical, 36 cm diameter, plastic
24	100639	Bracket for height adjustmen
25	100626	Height adjustment for spray hood
26	100351	Spray hood, 50 cm
27	100379	Pull relieve
28	100381	Fastener for rubber curtain
29	100380	Rubber curtain for MANKAR-110 P + GP
30	100400	Spray hood, splitted 25 cm, left
31	100426	Spray hood, splitted 25 cm, right
32	100363	Metal hood, 600 mm width
33	100431	Bracket for MANKAR-L
34	100602	spray hood 45cm for FLEXOMANT-VARIMANT-4 Plus



Item Part No. Description

100686 Pump drive subassembly FLEXOMANT

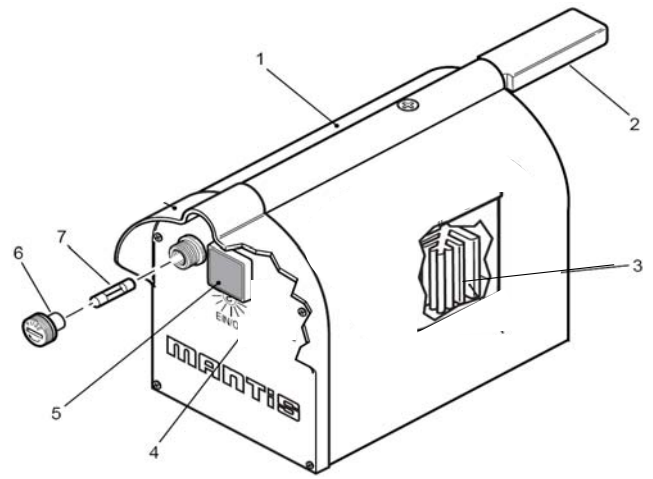
21	100522	Metering pump Mankar
22	100392	Screw socket
23	100389	Socket for pump
24	100645	Pump support complete
25	100141	O-ring 4,47 x 1,78 mm
26	100597	Cardan shaft-V
27	100377	Set collar 20 mm
28	100598	Farmflex wheel 300 x 100 mm
29	101832	Washer 28 x 1 mm
30	100394	Seeger circlip ring
31	100600	Cardan shaft driver



Teil Art.Nr. Bezeichnung

100320 Düse für MANKAR

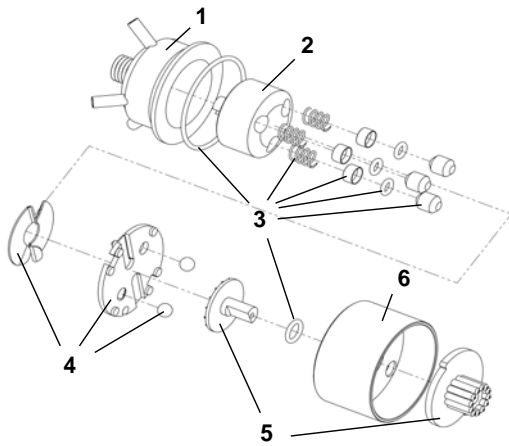
1	102417	Motor-Modul for atomizer MANKAR
2	100478	Atomiser disc for segment atomiser
3	101996	Segment-module for atomiser incl. Width adjustments



Teil Art.Nr. Bezeichnung

100459 Powerpack mit 1 Akku 6 V - 7 Ah für MANKAR-P,-110P

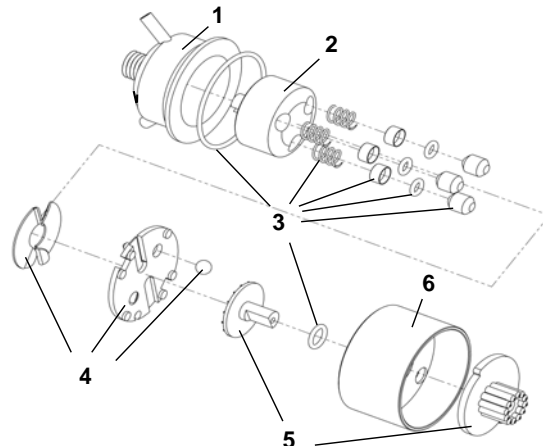
1	100469	Powerpack housing
2	100461	Powerpack mounting bar for MANKAR
3	100667	Converter 12V to 6V
4-7	101565	Powerpack-cover MANKAR, complete assembled
4	100466	Powerpack cover
5	100464	Switch with control light
6	100365	Fuse holder complete
7	100730	Fuse T3.15 Amp



Teil Art.Nr. Bezeichnung

100522 Dosierpumpe MANKAR-3, Kapazität 5 - 10 ml/min für MANKAR-110 P un

1	100528	Pump housing, 2 pressure lines,
2	102209	Rotor-3, chromed brass for piston pump
3	102373	Sealing kit for MANKAR/MAFEX-3
4	101626	Repair kit, MANKAR, pressure plate/wobble plate
5	102429	Repair kit, MANKAR, selector/adjustment knob
6	100534	Pump cover

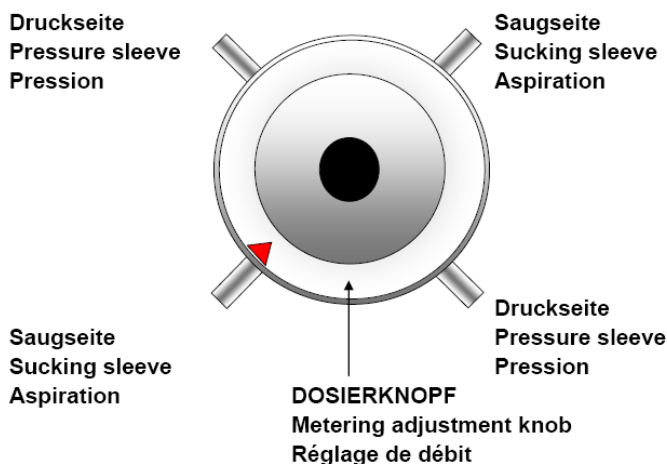


Teil Art.Nr. Bezeichnung

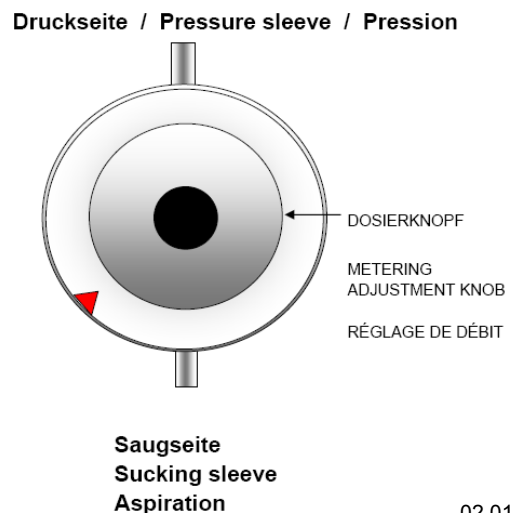
100492 Dosierpumpe MAFEX-3, Kapazität 2 - 20 ml/min

1	100493	Pump housing, 1 pressure line
2	102209	Rotor-3, chromed brass for piston pump
3	102373	Sealing kit for MANKAR/MAFEX-3
4	102436	Repair kit, MAFEX, pressure plate/wobble plate
5	102437	Repair kit, MAFEX, selector/adjustment knob
6	100534	Pump cover

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



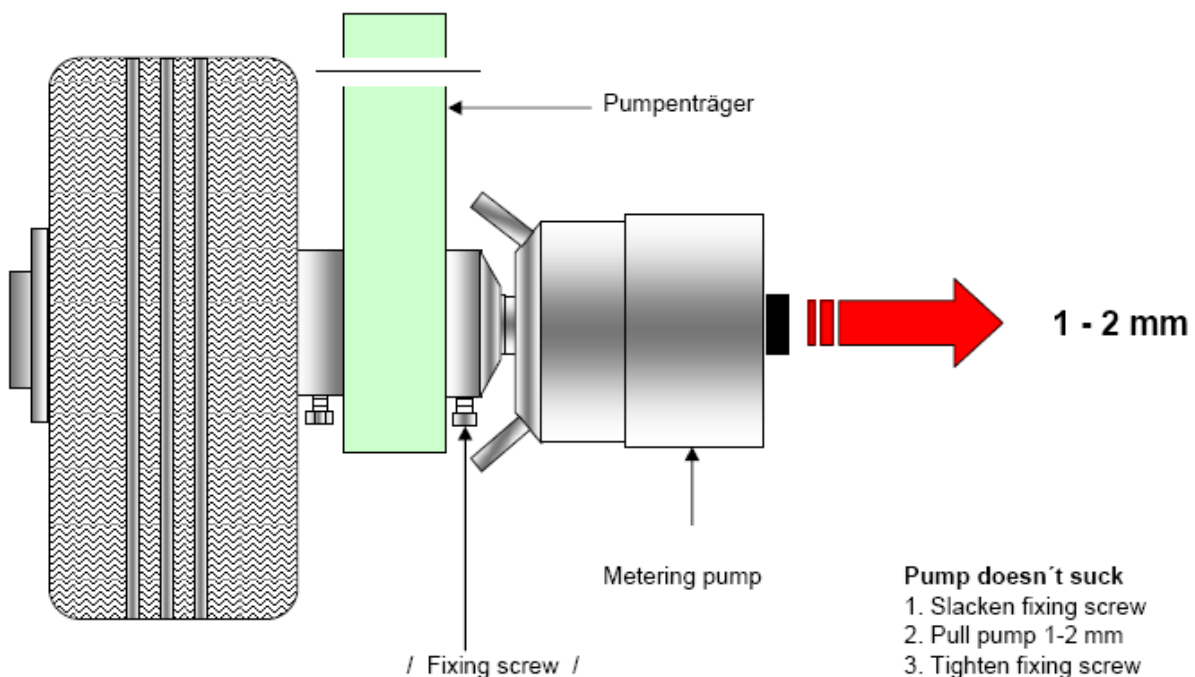
**Dosierpumpe MAFEX
Metering pump MAFEX
Pompe doseuse MAFEX**



Fault remedy

Fault	Cause	Remedy
Atomiser disc not Turning	Atomiser contaminated Fuse blown No electrical contact Battery defective Atomiser motor defective	Thoroughly clean atomiser, remove plant parts if needed Replace fuse on powerpack (Replacement fuses are located in the powerpack housing) Check cable or connector contact Install new battery Install new motor Connect the brown cable to Plus (+).
Atomiser spray one-sided	Rotation disc turning in the wrong direction	Connect cable correctly! Selectively plug the brown cable onto the contact pin on the switch/valve unit Connect the blue cable via the round pin plug. Check to ensure the battery connection to the powerpack is correctly poled, blue cable to Plus (+).
Atomiser spray too wide	Width adjustment improperly set	Loosen the screw F (see page 4) and correct the width setting to the left or to the right, respectively
Atomiser drips	Pump incorrectly set Atomiser disc defective / contaminated Atomiser spray discharge contaminated	Check setting, see table Replace / clean disc Clean
Atomiser foams	Residual water in system	Completely empty container, hose, segmental atomiser.
Chemical not flowing evenly	Filter contaminated	Unscrew filter, clean screen.
Air in hose line	Hose connection / Filter leaking	Slightly shorten the hose and set onto a hose nipple. Re-tighten the screw on the filter.

Metering pump doesn't suck



GUARANTEE

The manufacturer guarantees that in accordance with the present state of technology the article of purchase is free from defects as regards raw materials and construction. Guarantee is valid for all machines and apparatus for 24 months. The period of guarantee begins from the date of purchase by the user.

The manufacturer will decide to repair or replace faulty parts or issue a credit note.

Parts damaged due to normal wear and tear will not be replaced under guarantee. Carriage costs are borne by the manufacturer for faulty goods.

Unresolved claims do not entitle purchaser to withhold payments or set them against non-approved claims. Parts not manufactured by manufacturer are guaranteed by the original manufacturer under their terms. Warranty claims must be submitted in writing within 4 weeks of the damage being seen.

Repairs will be carried out with original manufacturer spare parts by an approved dealer.

Acknowledgement of a claim by manufacturer is binding only when a written notice is issued. Unless the manufacturer cannot make a repair, there is no right to cancellation of orders or to mitigation. Compensation for direct or indirect damage will not be given.

Guarantee terminates if the article of purchase is altered by manipulation of third parties or by installing spare parts of extraneous origin and if the ascertained damage is directly caused thereby. Guarantee also terminates if orderer does not observe the operating instructions.

Guarantee does neither apply to natural wear, to damage caused during storage or by corrosion, nor to damage caused by negligent or improper handling. Guarantee does not apply to used machines or apparatus.

The operation instruction published by the manufacturer has been carefully prepared and is based on extensive tests.

Since manufacturer have no influence on installation and handling of apparatus, the company will not assume any responsibility for lack of success or for damages caused by the apparatus itself or by its use.

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

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

Typ	MANKAR-P, MANKAR-110-P, MANKAR-110-GP, MANKAR-L, MANKAR-110 SELECT EL
Typ	MANTRA, MINI-MANTRA / PLUS, MICRO-MANTRA, MICRO-VASO
Typ	FLEXOMANT-1W, FLEXOMANT-2W, FLEXOMANT-3W, FLEXOMANT-4W, FLEXOMANT-PLUS, VARIMANT-1, VARIMANT-2, VARIMANT-4 PLUS, VARIMANT-WINNER-TOP, VARIMANT-WINNER-UNO
Typ	MAFEX
Typ	ROFA

André Verder
Managing Director

Geesthacht January 2009

(Place and date of signature)

(Name, title and signature)