

## OPERATING INSTRUCTIONS



# VARIMANT - ONE Flex VARIMANT - TWO Flex

**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:

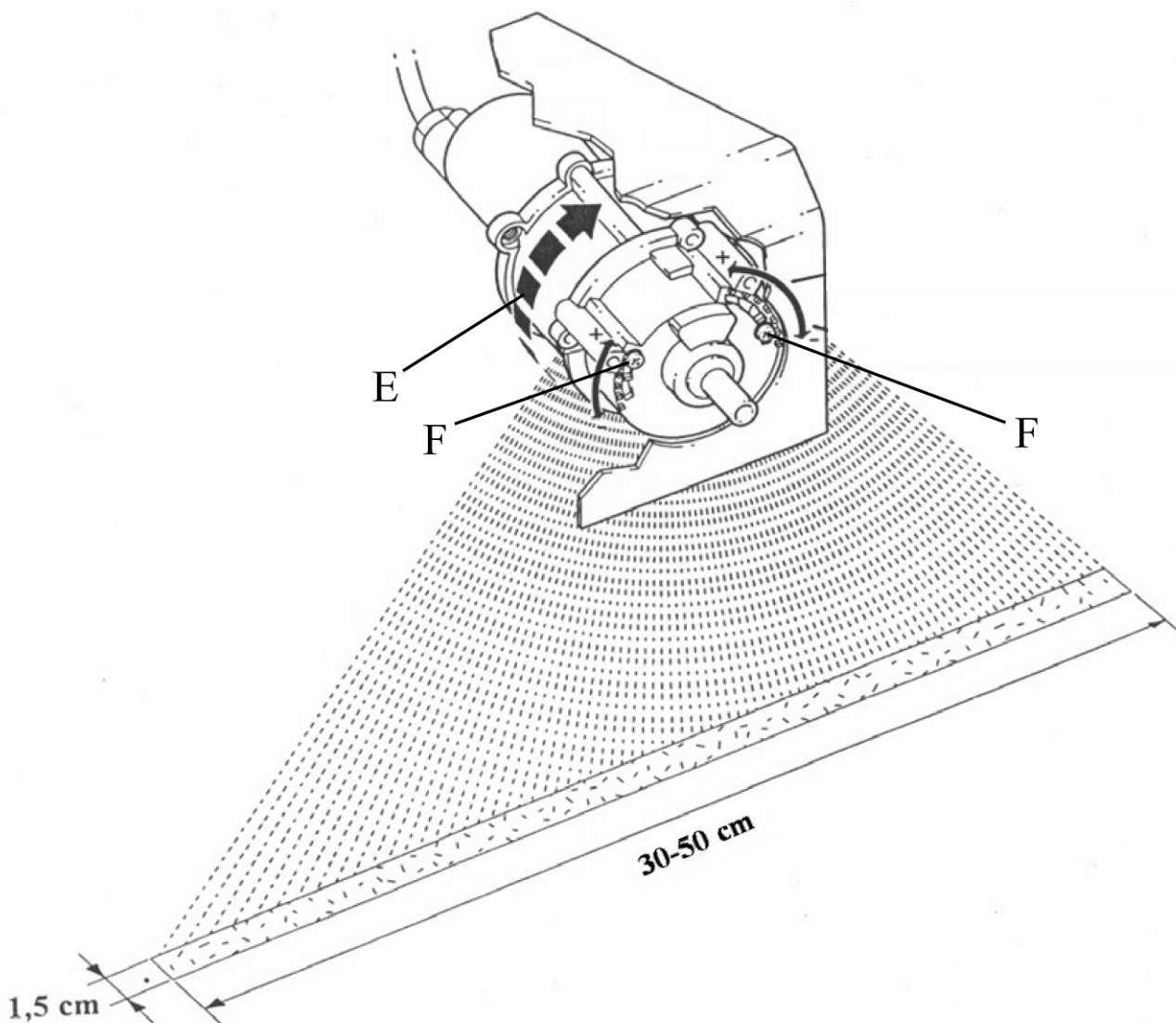
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### Spray width

- Place an underlay (cardboard or paper) on the ground and prop up the unit on stands.
- Actuate the switch button on the powerpack while simultaneously turning the wheel and appraising 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).
- Further details regarding operating width adjustment can be found on the respective pages for the individual applicator units.



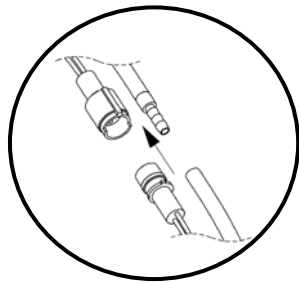
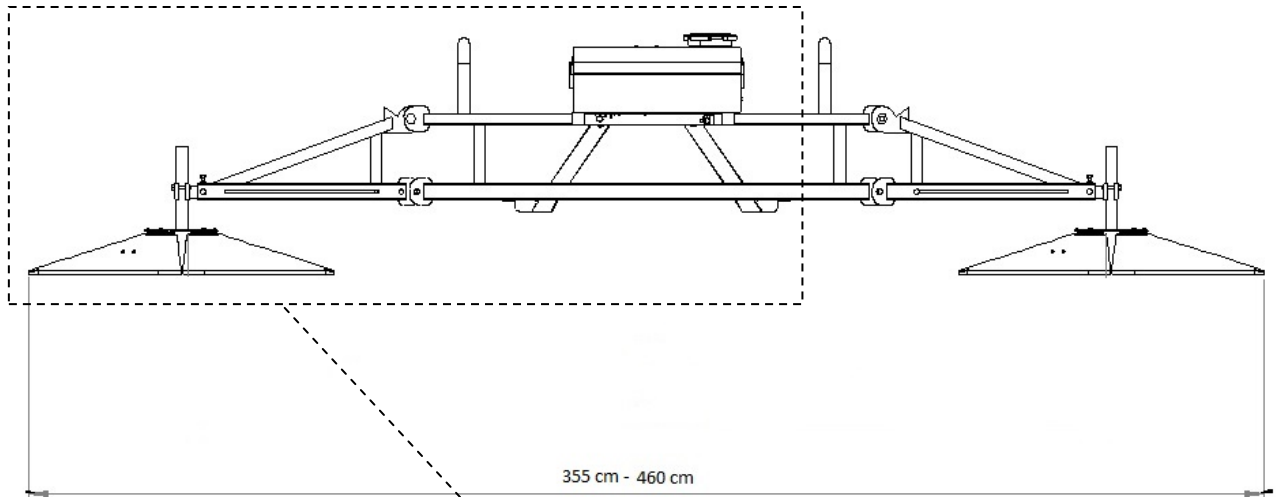
**Do not clean the applicator unit with a high-pressure sprayer or with an intense water jet spray.**

**Cleaning during the season:** During short work breaks (a few hours), herbicide can remain in the system as long as 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, switch the system on and let it run for 3 Minutes and allow the fluid to drain into a collector tank or, apply the cleaning fluid to the already treated surface. Remove any remaining water from the tank and let it run for approximately 2 Minutes 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 in order to avoid damage. With heavy contamination, the atomiser housing should be unscrewed to remove contaminants and plant parts. Connect the unit to the charging device (see below).

**For example:  
VARIMANT-TWO 80 Flex**



VARIMANT – ONE 80 Flex  
working width 175 - 230 cm

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

**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.

**Metering table**

**Roundup UltraMax application rate at 20°C**

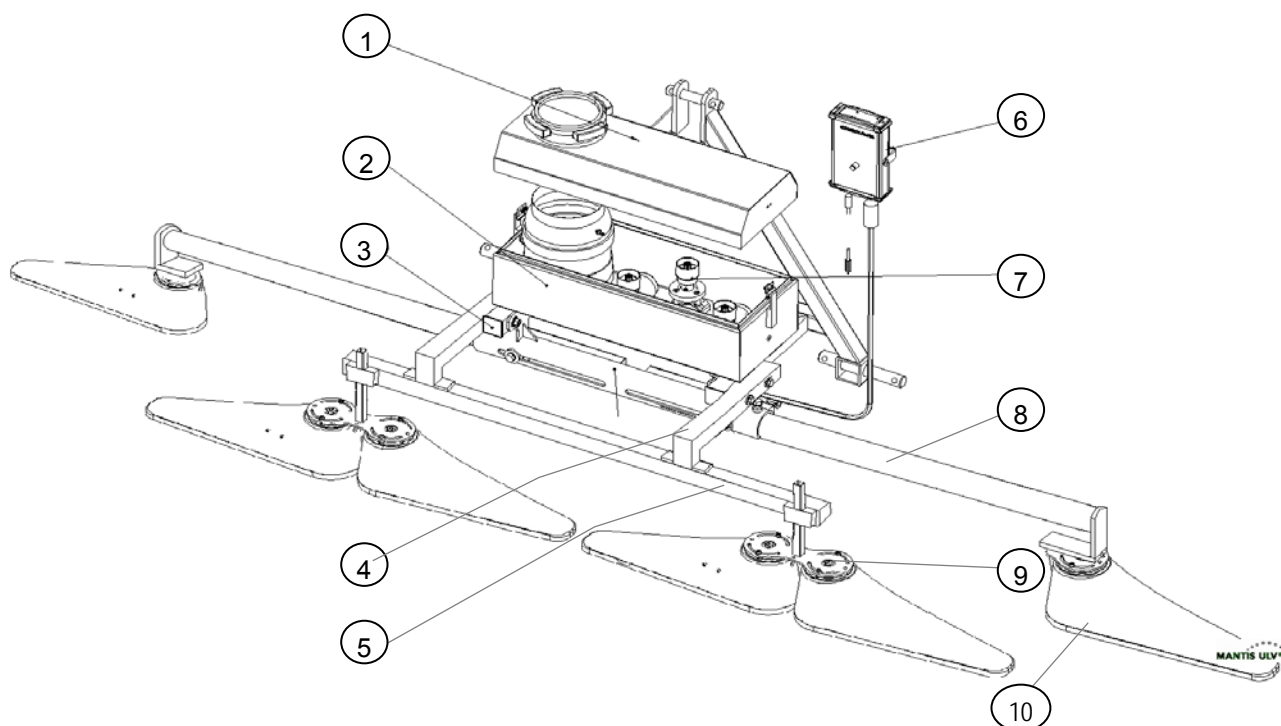
**Dosing pump Mankar -GP 3 Piston  
Pump calibration -E-  
for spray hood S-40 Flex**

Speed 2 km/h		Speed 4 km/h		Speed 8 km/h	
L/ha	Output in %	L/ha	Output in %	L/ha	Output in %
4,0	0	2,0	20	1,5	10
5,0	20-30	3,0	40-50	2,0	40-50
6,0	40-50	4,0	90	2,5	80

**Checking the output volume**

1. Place an underlay (e.g. cardboard or paper) on the ground and prop up the unit on stands.
2. Fill the chemical tank with herbicide –undiluted.
3. Open the pump box and set the chemical solution volume according to the output table.
4. Volume calibration: Collect the chemical solution in a metric measuring cup for one minute. If the desired volume is not reached, set a larger or a smaller volume with pump metering adjustment knob.
5. Perform volume calibration again.
6. Reconnect the hose
7. The unit is now ready for deployment

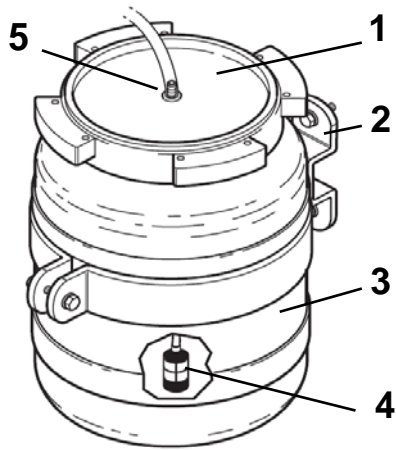
# VARIMANT- ONE / - TWO Flex



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

## Item Part No. Description

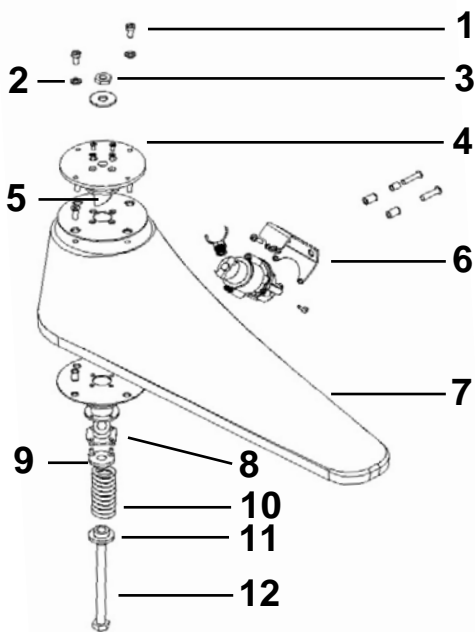
1	102975	Housing cover for UNIMA-CITY
2	102976	Housing for UNIMA-CITY
3	103184	Mounting frame for UNIMA-CITY housing
4	103185	Mounting frame for addition extension arm
5	103186	Addition extension arm 120 cm
6	102216	Control box with 1 switch, without converter for VARIMANT
7	100527	Metering pump MANKAR-3, capacity 5 - 12 ml/min for MANKAR-110 GP
8	103187	Extension arm VARIMANT 100 cm
9	104702	Height adjustment TWO Mankar-Roll
10	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



**Item Part No. Description**

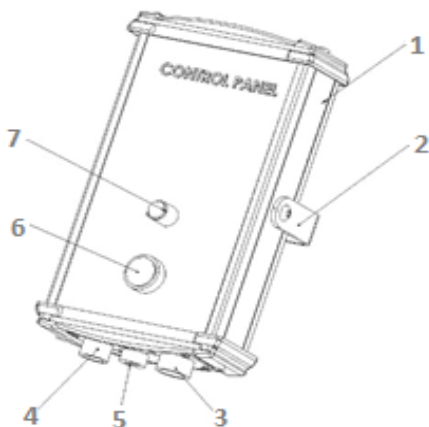
**100589 Tank 6L, tank holder, lid and filter complete for VARIMANT**

1	100625	Tank lid for 6L tank
2	100623	Tank bracket for 6 litre tank
3	100624	Tank, capacity 6 litre
4	100281	Filter MINI-MANTRA
5	100085	Hose grommet 6 mm MS for pump sets MAFEX / MANKAR



**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
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

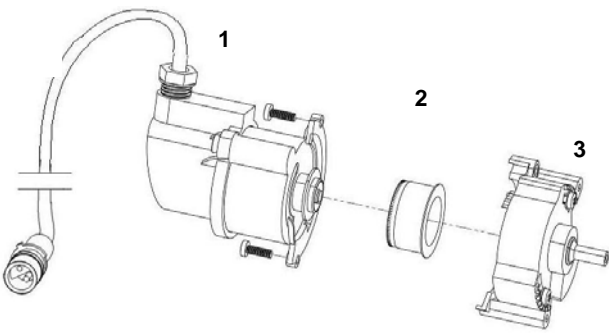


**Item Part No. Description**

**104962 Control box VARIMANT, UNIMA, ONE, TWO**

**104963 Control box, MAFEX 2010**

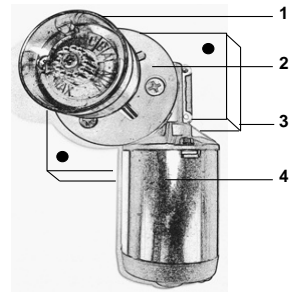
1	103479	Aluminum housing
2	104959	Bracket for controll box MAFEX 2010
3	102731	Socket (AMP) 9-pol
4	102732	Socket (AMP) 4-pol
5	100365	Fuse holder complete MINI-MANTRA / MANKAR / FLEXOMANT /
6	102974	Pressure switch, green light, (round) for MANTRA and MANKAR
7	104960	Control knob für control box
8	103831	Cover (AMP) for aluminum housing



**Item Part No. Description**

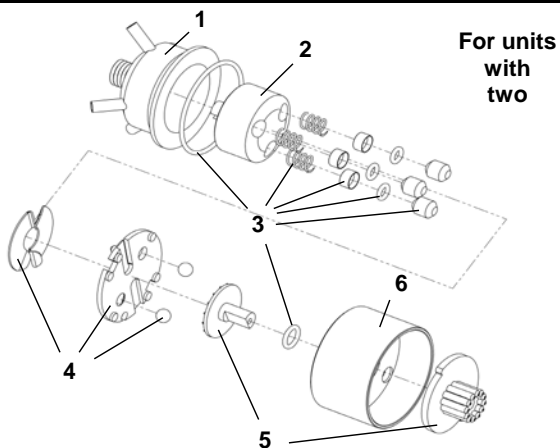
**103947 Atomiser for MANKAR, One-S, Two-S, Flex**

1	103946	Motor-Modul for atomizer MANKAR, One-S, Two-S
2	100478	Atomiser disc for segment atomiser
3	101996	Segment-module for segmental atomiser incl. width adjustments



**Item Part No. Description**

1	100522	Metering pump MANKAR-3, capacity 5 - 10 ml/min
2	103317	Mounting flange for electric dosing pump MAFEX/MANKAR
3	103318	Mounting plate for electric dosing pump MAFEX/MANKAR
4	100177	Pump motor 12 V with Hall-Sensor
no pic	100667	Converter 12V to 6V



**Item Part No. Description**

**100527 Metering pump MANKAR-3, capacity 5 - 12 ml/min for MANKAR-110 GP**

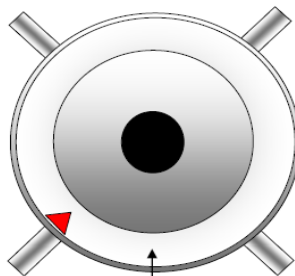
1	100528	Pump housing for two-channel pump Metering pump MANKAR
2	102209	Rotor-3, chromed brass for piston pump MAFEX/MANKAR
3	102373	Sealing set for metering pump MANKAR-3/MAFEX-3
4	101626	Repair set, metering pump MANKAR, pressure plate/wobble plate
5	102429	Repair set, metering pump MANKAR, metering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

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

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

**Druckseite  
Pressure sleeve  
Pression**

**Saugseite  
Sucking sleeve  
Aspiration**

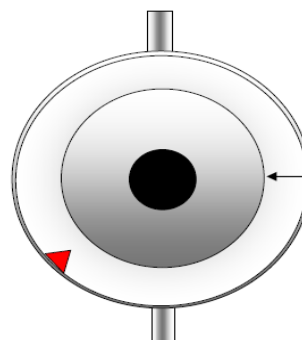


**Saugseite  
Sucking sleeve  
Aspiration**

**DOSIERKNOPF  
Metering adjustment knob  
Réglage de débit**

**Druckseite  
Pressure sleeve  
Pression**

**Druckseite / Pressure sleeve / Pression**



**DOSIERKNOPF  
METERING  
ADJUSTMENT KNOB  
RÉGLAGE DE DÉBIT**

**Saugseite  
Sucking sleeve  
Aspiration**

## Fault remedy

<b>Fault</b>	<b>Cause</b>	<b>Remedy</b>
<b>Atomiser disc not Turning</b>	Atomiser contaminated  No electrical contact Battery defective Atomiser motor defective	Thoroughly clean atomiser, remove plant parts if needed  Check cable or connector contact Install new battery Install new motor Connect the brown cable to Plus (+).
<b>Atomiser spray one-sided</b>	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.
<b>Atomiser spray too wide</b>	Width adjustment improperly set	Loosen the screw F (see page 4) and correct the width setting to the left or to the right, respectively
<b>Atomiser drips</b>	Pump incorrectly set Atomiser disc defective / contaminated Atomiser spray discharge contaminated	Check setting, see table Replace / clean disc Clean
<b>Atomiser foams</b>	Residual water in system	Completely empty container, hose, segmental atomiser.
<b>Chemical not flowing evenly</b>	Filter contaminated	Unscrew filter, clean screen.
<b>Air in hose line</b>	Hose connection / Filter leaking	Slightly shorten the hose and set onto a hose nipple. Re-tighten the screw on the filter.

### 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 **VARIMANT**

Hiske Weissmann  
Managing Director



Geesthacht January 2016

(Place and date of signature)

(Name, title and signature)