

# Operating Instructions

## SchleppMAXXE®

### Typ 1 & 2



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## 1. Introduction

Dear Customers

thanks a lot for choosing an electrical aircraft tug produced by  
COMO GbR " SchleppMAXXE ®".

You purchased a product which corresponds to any safety-related requirements and which  
has been developed according to the latest technique.

### **1.1 Your aircraft tug**

Your aircraft tug is a result of long-term development and it offers best possible safety,  
economic efficiency and comfort in terms of tugging of aircrafts.

You have the responsibility to maintain these characteristics for a long time to be able to  
take advantage of the benefits resulting.

This operating instruction conveys valuable knowledge about initial commissioning, tugging  
of SchleppMAXXE ® as well as maintenance. We would like to point out that any inspection  
and maintenance work must be executed at regular intervals, together with appropriate  
technical advices and operating materials.

Maintenance and repair work which are not specified in this brochure requires particular  
expertise, special tools and measuring devices. Therefore, please contact your distributor or  
manufacturer.

Maintenance and repair are only allowed to be carried out by qualified and competent  
persons.

As the company permanently works on further development and improvement of its  
products, we kindly ask you for your understanding that illustrations and technical  
specifications relating to shape, equipment and technical alterations are reserved in the  
sense of progress.

That means that no rights can be asserted from the following information, illustrations and  
descriptions.

### **1.2 Intended usage**

Please use SchleppMAXXE ® only intentionally according to the manufacturer's described  
operations.

SchleppMAXXE ® provides lifting and moving of aircrafts by means of picking up the nose  
wheel. Please pay attention to max. carrying capacity!

Damaged or defective tugs must not be operated until proper repair.

It is not allowed to remove or to render ineffective safety switch, safety brackets and any  
safety set-ups.

Specified settings may not be changed without permission of the manufacturer.

### **Danger zone**

The danger zone defines the area in which persons are endangered by movements of the tug  
with or without aircraft picked up. Within the danger zone of the aircraft tug there must not  
be persons!

### **Roadways/parking areas**

Roadways must be plane, free from objects and fastened sufficiently. Guiding rails of hall doors, spillways and something like that must be balanced out so that it is possible to cross them over shock-free.

### Up or down gradients

Up and down gradients shall not exceed the stated figures and must show a sufficient rough surface.

On the up and lower end even and flat transitions should prevent the aircraft tug from any damages, e.g. caused by heavy touchdown.

To achieve full traction, up and down gradients should not exceed 1 per cent. The more higher the gradient, the more lower the traction.

Permanent operating on an up or down gradient (more than 5 minutes) could result in a fuse failure. This serves only for protection of the electronics assembly and doesn't present a malfunction of the device.

The aircraft tug should not be operated in case of steep gradient because the brake force of the engine would probably not be sufficient.

Attention: Non-compliance of the maximum values for up and down gradients may cause life-threatening! Aircraft and tug could be damaged!



The Directive concerning the minimum safety and health requirements for the workplace (89/654/EEC) must be followed according to the latest version.

For countries outside the EU national stipulations apply respectively.

### Fire prevention

The operator is responsible for providing sufficient fire prevention.

If necessary, he has to ensure additional fire prevention.

In case of any queries, please contact your relevant supervisory authority.

### 1.3 Improper Usage

Company SchleppMAXXE assumes no liability for any unauthorized usage of the aircraft tug. The following list is only an example without any claim to completeness.

The aircraft tug is not approved for

- transport of persons if the vehicle is not equipped accordingly
- usage in explosive and fire hazardous areas
- exceedance of the maximum pick-up load
- exceedance of the speed limit in case of maximum weight

### 1.4 Target Group and previous experience

This operating instruction is addressed to the following persons:

- Final customer, user
- Maintenance personnel of the aircraft tug
- Distributor

Commissioning, installing and handling of electric aircraft tugs requires the following knowledge:



- Mechanical and electro technical basic skills (respective training)
  - Reading this operating instruction
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### 1.5 Used symbols in safety notes

This operating instruction contains safety notes showing possible danger and redial danger. These safety notes and symbols have the following meaning:



**Danger:** This safety note indicates **imminent** danger for life and health of humans!  
*Non-compliance may cause in health consequences and life-threatening injuries as well as damage to property.*

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**Attention:** This safety note points out **possible danger** by **electric power!**  
*Non-compliance may cause in life-threatening injuries and damage to property.*

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**Notice:** This safety note shows important information to be regarded for a safe handling of the aircraft tug.

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**Danger:** This safety note indicates possible danger of crushing which sometimes exists in exceptional situations.  
*Non-compliance may cause in health consequences and life-threatening injuries as well as damage to property*

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**Notice:** Reference to the obligation of reading this operating instruction

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### 1.7 Safety notes

This operating instruction contains safety notes paying attention to possible dangers in order to provide a safe operation of the electric aircraft tug.  
Please pay regard to the safety notes *implicitly!*

In this chapter you will find general safety notes which do not concern to a specified process step.

You will find specified safety notes regarding the individual operations in the corresponding chapter of this operating instruction.

For further safety notes please look at the engine control.

### 1.7.1 General safety notes



Before initial commissioning of the aircraft tug please read this operating instruction implicitly and make it available to other users.



Never open the engine control or other covers!  
This may cause electric shock!



The engine control must basically only be operated with the nominal voltage of 24 V DC specified at the type plate.



Please always make sure that there are no connectors and switches damaged.  
It is not allowed to operate the aircraft tug if components are damaged!



In the event of a failure (e.g. the engine control stops running or a direction button sticks) *pull out the short-circuit plug immediately!*



Protect any electronical components from moisture, drip and splash water!



When connecting the nose wheel to the universal adapter there is the risk of crushing. Therefore, please make sure that there are no objects or persons in the danger zone and that nobody grips into the danger zone.



On tugging aircrafts there is the risk of crushing. Therefore, please make sure that there are no objects or persons in the danger zone and that nobody grips into the danger zone.



It is explicitly forbidden to rebuild or change the engine control, any operating elements, mechanisms and switches. Non-compliance results in *immediate loss of any guarantee and claims for compensation.*

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It is not allowed to operate the electrical aircraft tug in explosive atmosphere!

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This device is not intended to be used by persons with restricted physical, sensory and mental competences (including children), as well as persons with lack of experience and knowledge.

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## 1.8 Important service note

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Please only use original accessories which must be installed by competent service staff!  
*Non-compliance results in loss of any guarantee and claims for compensation!*

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The user may only reconnect cable with serial connectors.  
Further changes must be carried out by specialized companies.

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In case of a failure or an error please refer to COMO SchleppMAXXE<sup>®</sup> GbR.  
For repair of the electrical aircraft tug it is only allowed to use original replacement parts. Additionally, these parts may only be replaced by competent service technicians.  
*Non-compliance results in loss of any guarantee and claims for compensation!*

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## 2. Initial commissioning

The initial commissioning includes all activities which are necessary to use an electrical aircraft tug.

These are prerequisites for initial commissioning:

- Appropriate installation of the universal adapter as well as the wheel nose adapter
- Appropriate installation of the handgrip in order to handle the SchleppMAXXE<sup>®</sup>
- Appropriate installation of the battery portable box

### 2.1 Installation of the universal adapter

- Please put the universal adapter to the coupling tube on the SchleppMAXXE<sup>®</sup> and back it with bolt and safety splint as can be seen on the following photo.
- Open the hand lever. After that the Bowden cable and the tension spring are to be mounted and backed by means of a screw. Please make sure that the screw is only tightened by hand!



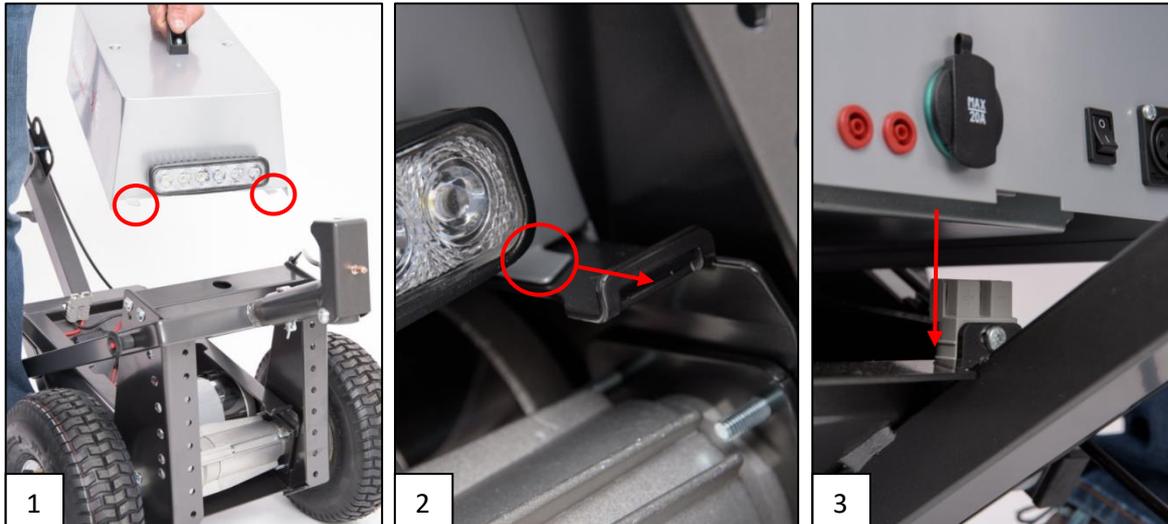
## 2.2 Assembly of hand grip

Insert the hand grip with the rocket switch on top into the square tube. Please make sure that the cable will not be damaged. After that the hand grip is to be fixed to the correct height by means of the hand grip screw.



## 2.3 Placing battery portable box

- When placing the battery portable box, you have to pay attention that both lugs of the portable box interlock to the guiding of the chassi.
- You can check the correct position of the plug connection by view of the side.



#### 2.4 Adjustment of universal adapter

- With the help of our ball lock pins it is possible to adjust and replace the adapter quickly. For this only pull out the steel ball lock pin by pushing the red button and adjust the respective adapter to the right length. Please make sure that both adapter do have the distance of the rim width to the aircraft nose wheel. In no case adjust the dimension smaller than the rim width.
- Should your aircraft not dispose of standard adapter with a diameter of 20mm or 25mm, please refer to your distributor or manufacturer because there are further specified adapter available.



#### 2.5 Adjustment of coupling bracket

For sufficient ground clearance and to achieve an ergonomic position when tugging it is important to adjust the coupling bracket to the correct height. For this both ball lock pins must be pulled out and the coupling bracket is to be placed in the height required.

After that, this adjustment is to be fixed by means of ball lock pins. In certain positions it may be necessary to lock the ball lock pin from the inside

- *For all settings please pay attention to sufficient ground clearance of the stand!*



### 3. Handling of SchleppMAXXE®

#### 3.1 Initial commissioning of SchleppMAXXE®

- On initial commissioning, your SchleppMAXXE® is charged to about 80% so that you don't need to charge it for a certain time.
- To set up electricity supply please take the short circuit plug from the hand grip and put it into the red marked socks. A blinking status light displays the running power supply. To switch off the SchleppMAXXE please pull the circuit plug out and put it into the hand grip until next use.
- In case of under and overvoltage, the intelligent electronics of the drive control switches off autonomously, so that is why you can use your SchleppMAXXE until it switches off autonomously. Then the device runs on reserve power so that you can finish the tugging process by one-time switching on and off. After finishing you can connect the battery portable box for charging.



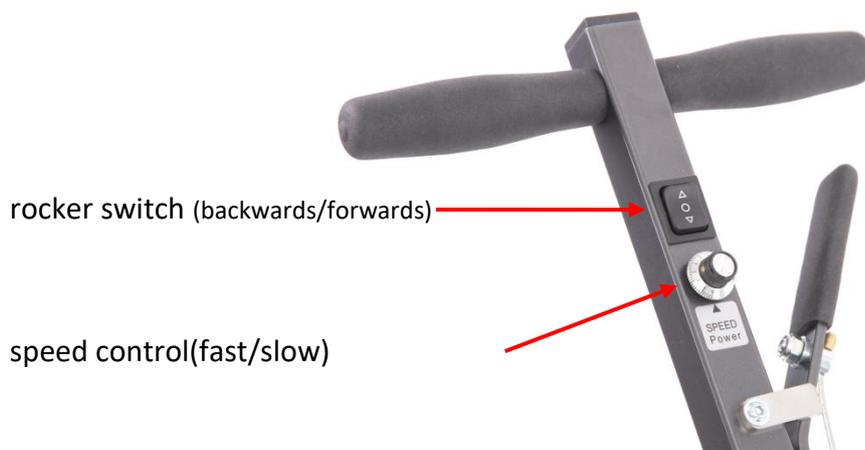
#### 3.2. Connecting to plane nose wheel

- Before connecting your plane nose wheel for the first time you should have carried out all appropriate settings.
- Open the universal adapter by means of the hand grip and move the SchleppMAXXE® to the plane nose wheel. It is more comfortable to connect without help of the drive.
- The easiest way is to couple the right adapter first (standing in front of the aircraft). Now you can close the hand grip and connect the left adapter at the same time. When the hand lever is locked completely you can start the tugging process.



### 3.3. Handling in basic version

- In basic version, the driving direction is determined by means of a rocker switch. For permanent movement please keep the button pushed. The engine control disposes of smooth start-ups in order to provide a sensitive shunting. You will achieve the chosen speed after prolonged pressing of the rocker switch.
- Choose the speed via the electronic speed controller. Please pay regard that the controller is not set to zero because this would be equivalent to no movement. It is also possible to adjust the speed controller while driving.



### 3.4. Handling with tiller head control

In the version with tiller head control both speed and direction are controlled by means of the yellow paddle. The more you push the paddle in one direction, the more faster the final speed of the SchleppMAXXE®.

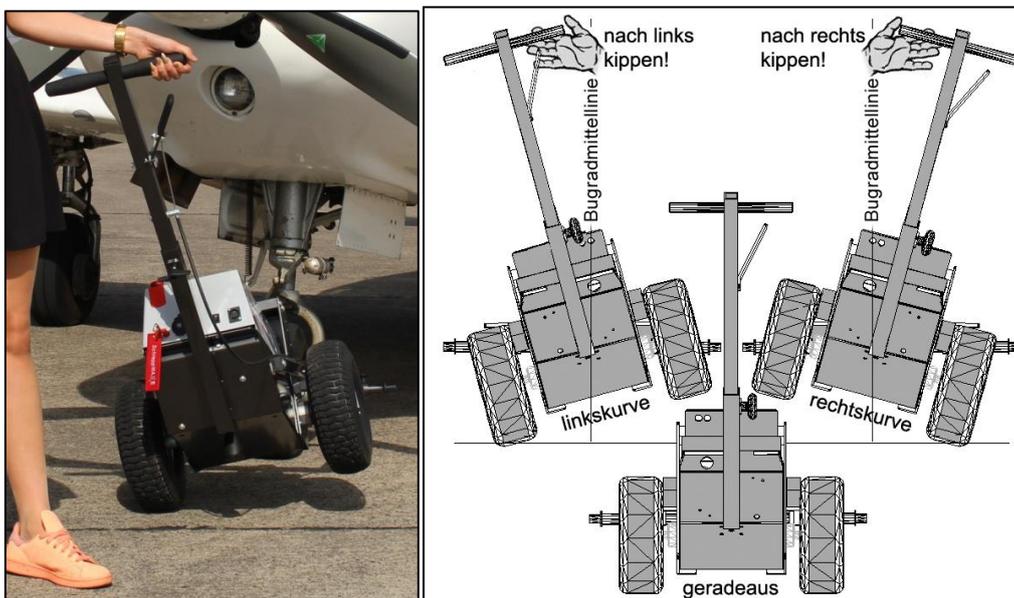
An anti-collision system (red button) avoids further backwards drive of the SchleppMAXXE® if you should get between tug and hall when shunting backwards

- Additionally, there is a horn above of the control system and on the right side there is a battery status play (green-yellow-red).



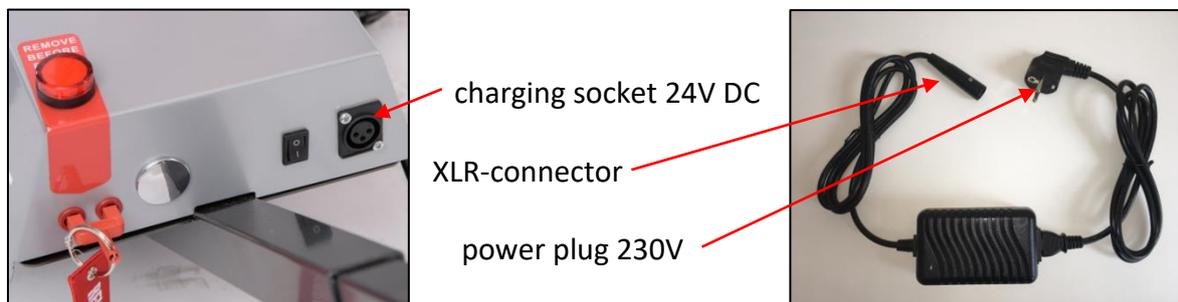
### 3.5. Steering of SchleppMAXXE®

- The SchleppMAXXE® is steered in curves via simple tilting through a wheel (pushing on the side). Should you want to shunt tighter you can move the SchleppMAXXE® via hoisting and swiveling simultaneously to the right or the left.



### 3.5. Connecting SchleppMAXXE® for recharge

- To connect SchleppMAXXE® for recharge please make sure that there is a connection between charger and battery portable box. Therefore, please put the XLR connector into the charging socket on the battery portable box. Then switch on the power plug. Please pay attention to the right voltage for a battery charger of 230 V 50Hz.
- In the beginning of the loading process the LED is red, yellow or orange. After complete charge, the LED display changes to green.
- To finish the loading process, please pull out the power plug first and then disconnect from the battery portable box.
- Loading proceedings can be disrupted for partial load but this possibly may lead to a reduction of the duration of the batteries.



This battery charger should only be used in conjunction with a SchleppMAXXE® 24V DC battery portable box! It is forbidden to change the device!  
Non-compliance leads to exclusion of guarantee and claims for compensation!



To exclude the risk of fire, please operate the battery charger only in dry and ventilated rooms without any flammable liquids or flammable gases.  
Do not cover the battery charge to ensure free air circulation!  
Do not operate the battery charger during rain or snowfall!



Do never pull on the cable while disconnecting a junction to avoid damages of connector and cable.  
Defective battery charger may not be operated!

## 4. Further Information

#### 4.1 Manufacturer

**COMO GbR "SchleppMAXXE®"**  
**Dipl. Ing. Hanns & Axel Schickling**  
**Wöstendöllen 95-96**  
**49429 Visbek**

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Fax: +49 (0)4445 1747  
E-Mail: info@SchleppMAXXE.de

#### 4.2 Maintenance and care

The following care instructions refer to user as well as to maintenance personnel.

Never use petrol, acetone, turpentine, petroleum or other aggressive agents, solvents or scouring milk. Do always make sure that your cleaning cloth is free of coarse dust, and other coarse particles as these could result in scratches on the surface. Before cleaning the live parts, you must disconnect electricity supply (pull out the short-circuit plug).

##### **Cleaning of surface**

Remove normal stains by means of a clean and damp cloth.  
Stubborn stains should be cleaned by soapy water.

##### **Cleaning of live parts**

Cleaning of live parts must only be effected by means of a clean, smooth, dry and lightly damped cloth.

##### **Cleaning of painted metals**

Remove normal stains with a clean, smooth and, if necessary, damped cloth.  
Stubborn stains can additionally be cleaned with soapy water.

##### **Cleaning of plastic components**

Remove normal stains with a clean, smooth and if necessary damped cloth.  
Stubborn stains can additionally be cleaned with soapy water.  
All built-in components are considered to be maintenance-free in case of normal and appropriate usage.

#### 4.3 Accessory products

There are comprehensive accessories in the price list available which should only be mounted or installed by trained personnel.  
Should an adapter doesn't fit, please refer to your distributor or manufacturer.

#### 4.4 Final Disposal

If you intend to take SchleppMAXXE® out of operation, please regard the following information for disposal:



Notice: The engine control is an electrical device which is subject to EU Directive 2002/96/EC and it is marked with an information sign accordingly.



Notice: As the SchleppMAXXE<sup>®</sup> entails many different materials (power units, cable, control system, batteries etc.) please dispose it environmentally by waste separation.

#### 4.5 Standards



Notice: This product is subject to CE conformity declaration.

### 5. Technical disruptions and error messages

In this chapter you will find information about the following themes:

- Technical disruptions in handling the SchleppMAXXE<sup>®</sup>  
(Possible errors and their remedy)

Indication	Reason	Remedy
The SchleppMAXXE <sup>®</sup> does not start moving	Speed controller shows zero	Please increase the chosen speed by means of the speed controller
	Batteries discharged / status light has stopped blinking	Please charge the SchleppMAXXE <sup>®</sup>
	Battery portable box has been incorrectly put on	Please check if the plug connection is in the right position. If necessary, put on the battery portable box again
	Engine control or safety device defective	Please check the safety plug of the SchleppMAXXE. If necessary, you can send your engine control to your distributor or manufacturer for checking and repair
The SchleppMAXXE <sup>®</sup> starts moving but does not continue to move	The batteries probably have been discharged completely	Replacement of batteries or battery portable box.
The SchleppMAXXE moves only in one driving direction.	Probably the rocker switch is defective	Please check the plug connection on the rocker switch. Contact your distributor or manufacturer.
Der SchleppMAXXE <sup>®</sup> tends to one direction	The air pressure of the wheels is incorrect	Please check the air pressure of the wheels. Pay regard to the air pressure stated on the wheel.

