Electric ONE MAN rigging system – V2

Manual

Version 2.1

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1 Important instructions / safety

Notes with a warning sign requires a special attention.

Notes with an informative sign provides with useful information.

The Electric One Man Rigging System is designed for ground handling of a glider airplanes as an aid to glider assembly.

All information is presented for reference only.

Information in this document is subject to change without notice. SoaringXX reserves the right to change or improve their products and to make changes in the content of this material without obligation to notify any person or organisation of such changes or improvements.

It is highly recommended to read the manual before assembling and using the Electric One Man Rigging System.

SoaringXX is not liable for any damage caused by a lack of responsibility and improper use of its products.

2 Packing list

The Electric One Man Rigging System contains the following parts:

1. Main unit (frame, caster wheels, battery and electric motor housing),
2. wing holder,
3. wing holder bolt and safety pin,
4. wing locking arm,
5. locking arm holder,
6. top wing-holder,
7. set of wheels (2x),
8. set of safety pins for the wheels (2x Linch Pin, 1x R - Pin),
9. axle,
10. a bolt and a nut for securing the axle,
11. locking mechanism (optional)
12. remote controller (with battery),
13. battery charger.

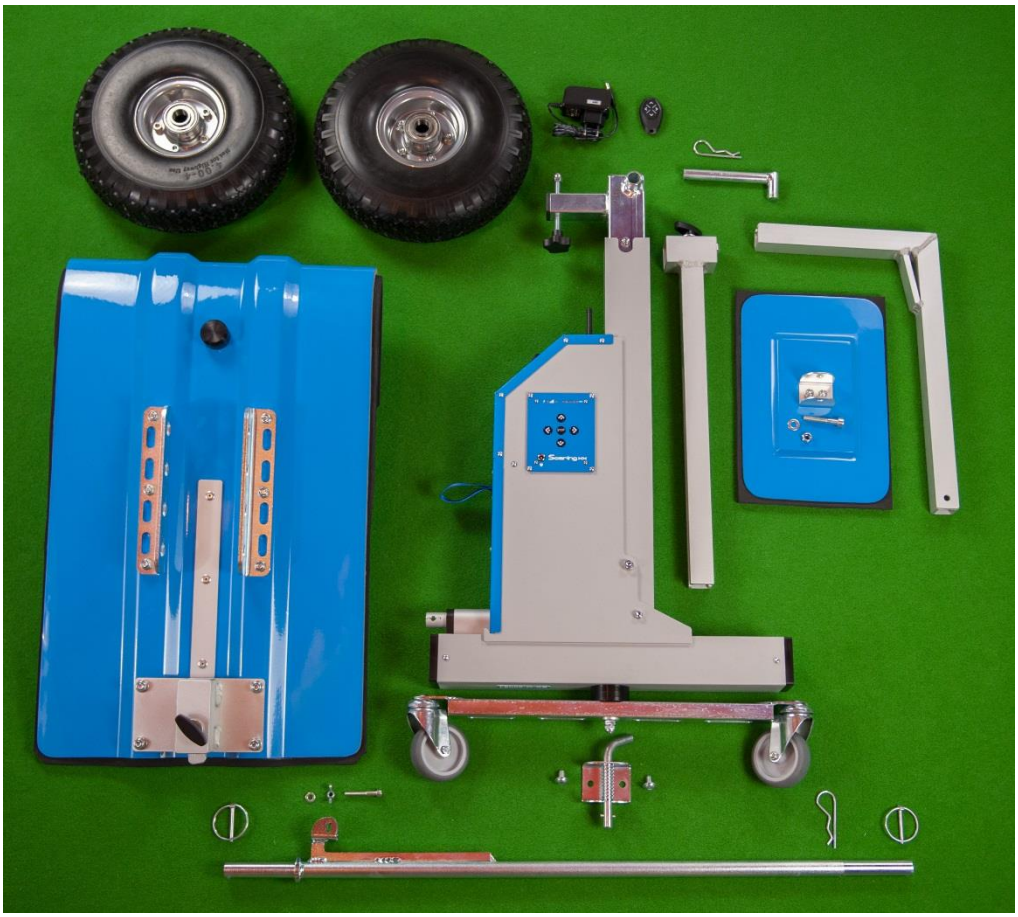


Figure 1: *ONE MAN's parts.*

3 Basics

The Electric One Man Rigging System is a light and compact electric wing positioning system that is used for assembly and disassembly of gliders. The main unit (containing the battery and the electric motor) is made from anodised aluminium and galvanized steel to ensure a lightweight and sturdy construction. It is a 9-piece assembly that is easy to assemble and disassemble. It is designed to make the assembly and disassembly of gliders as easy as possible.

Depend on a chosen type of Electric ONE MAN rigging system it can be used for a single and double seaters.

4 Technical specifications

4.1 Battery:

- 1x **Lead Acid Battery 12V/2.9 Ah (BP12-2,9)**,
- Dimensions: 79x56x102mm,
- Weight: 1.1 Kg,
- Nominal Voltage: 12 Volt,
- Nominal Capacity: 2.9 Ah 20 hours rate to 1.80 V/cell at 25°C,
- Cycle use: Initial charging current less than 0.87A Voltage 14.4-15.0 V at 25°C,
- Standby use: No limit on initial charging current voltage 13.5V – 13.8V at 25°C,
- Self-discharge: batteries may be stored for up to 6 months at 25°C and then a freshening charge is required,
- Maximum charging current: 0.5 A,
- Case ABS,
- Internal resistance: 55 mΩ

4.2 Motor:

- 2x **12V DC Linear actuators** (for lifting and shifting) **120kg MAX** lifting power (standard motor for single seater version),
- or 1x **12V DC Linear actuators** (for lifting only) **150kg MAX** with faster speed (for double seater)

4.3 Weight:

- T-frame: 15 kg,
- GFK mounting: 7 kg,
- **Total: 22 kg**

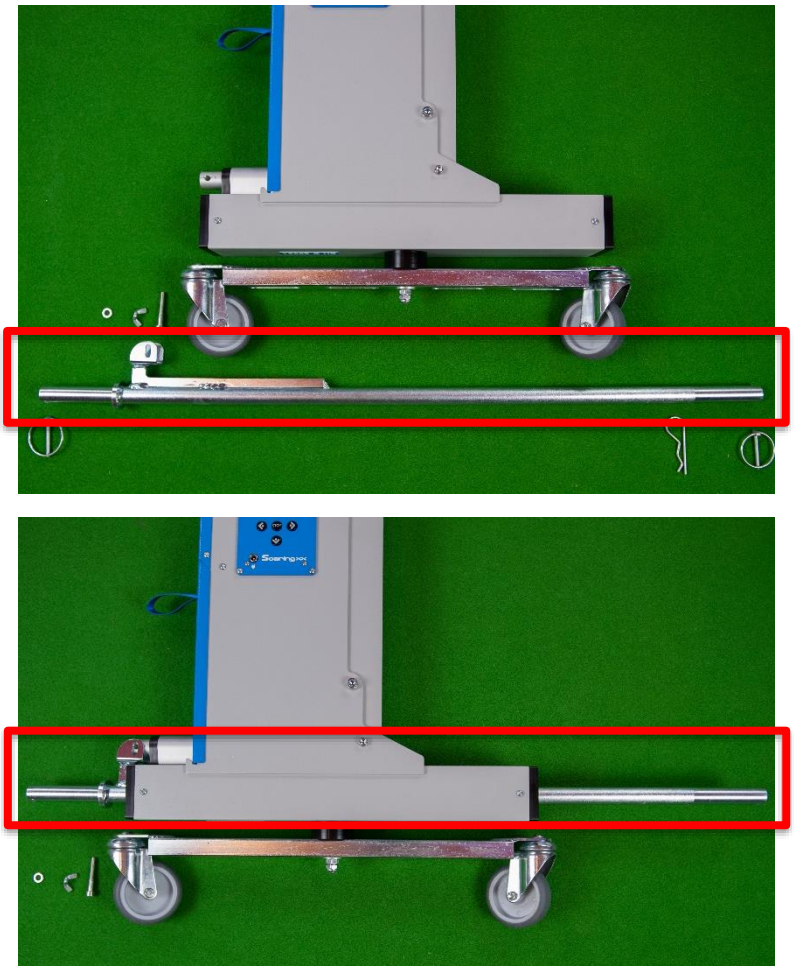
Total weight of Electric ONE MAN rigging system can vary ± 2 kg.

4.4 Dimensions:

- Height min - max: 85 - 110 cm.
- Width (axle): 83 cm.
- Width min-max (w. holder): 78 cm - 100 cm.
- Length (w. holder): 40 cm.
- Caster assembly length: 50 cm

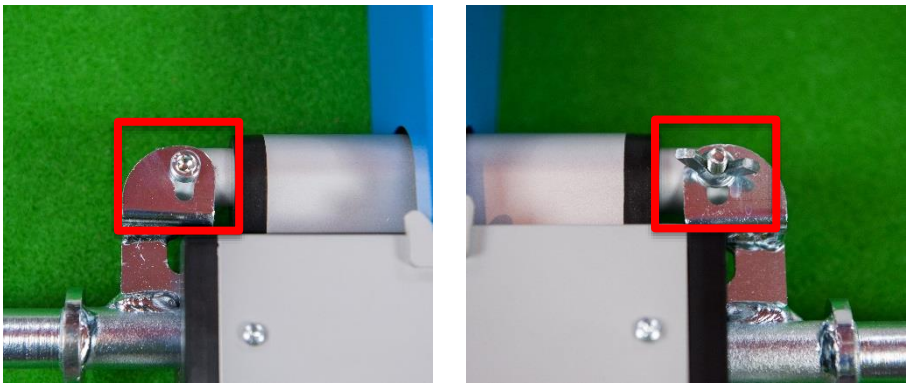
5 Assembly / Disassembly

Step 1: Slide the axle into the base of the main unit.



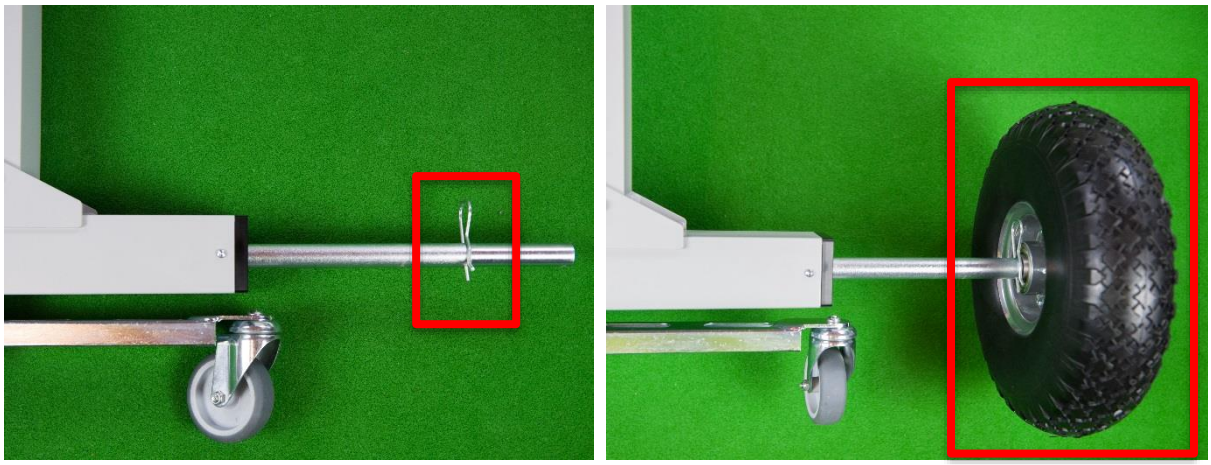
Figures 2 and 3: *Showing the axle in the outside and final position.*

Step 2: Put the screw through the hole in the bracket of the axle and the hole in the motor. Secure it with the screw and wing nut.



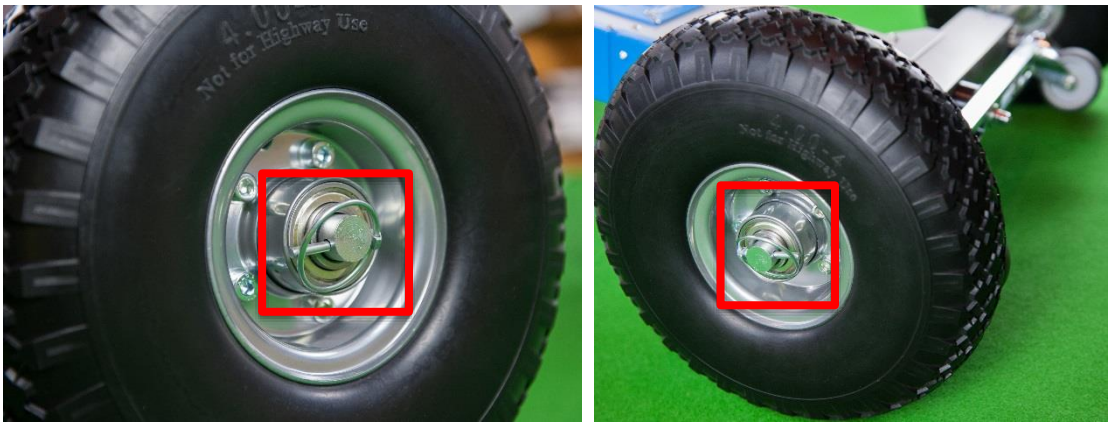
Figures 4 and 5: *Showing the way of connecting axle with a motor.*

Step 3: Put the R - Pin through the inner hole (opposite side of the motor) of the axle. When it is secured you can put the wheel on the axle.



Figures 6 and 7: *Showing the position of the R – Pin in the axle.*

Step 4: Put both wheels on the axle and then put the Linch Pin through the hole of the axle on the outer side of both wheels.

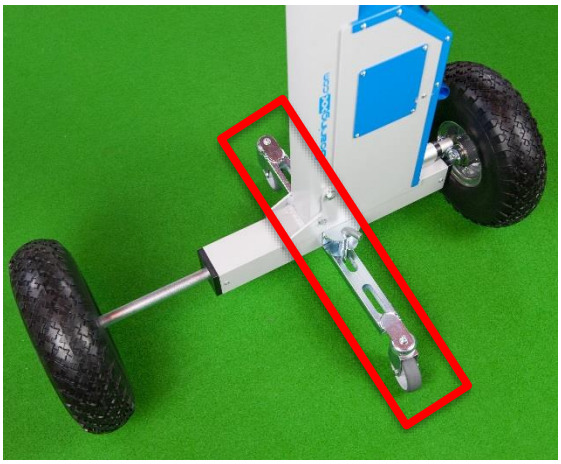


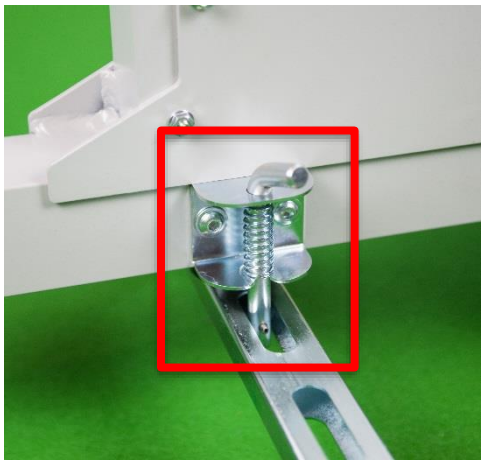
Figures 8 and 9: *Showing how to secure the wheels with the Linch Pin.*

Step 5: Screw the locking mechasnism to the lower part of the body.

Figures 10 and 11: *Show the screwing of the locking mechanism.*

Step 6: Turn the system upright and pivot the caster wheels assembly so it is perpendicular to the main unit and lock the locking mechanism.





Figures 12 and 13: *Showing the rotated caster wheels assembly and locking mechanism.*

Step 7: Open the battery holder with pulling the blue ribbon.

Figure 14: *Showing the blue ribbon for opening the battery holder.*

Step 8: Connect the battery to the control unit.

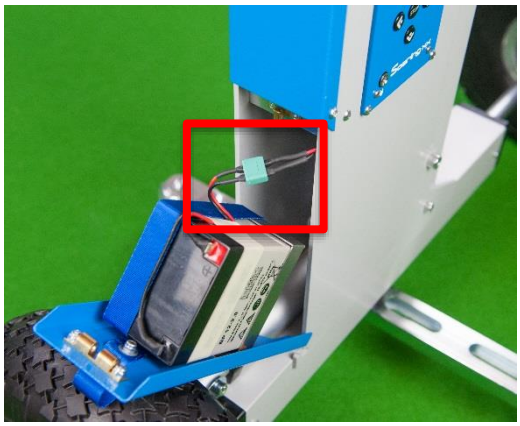


Figure 15: *Showing the way of connecting the battery to the control unit.*

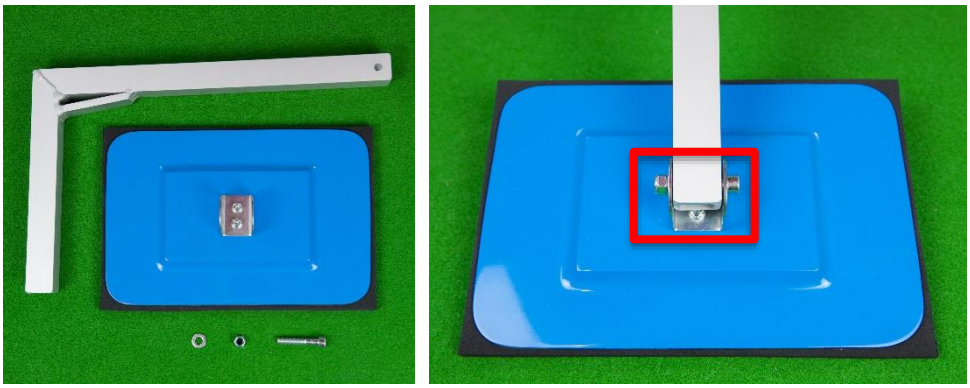
Step 9: Attach the wing-holder to the main unit (select a desired position) using the supplied bolt and safety pin.

Figures 16, 17 and 18: *Showing the way of attaching the wing-holder to the main unit with wing holder bolt and safety pin*

Step 10: Insert the straight aluminum profile to the bracket on the top of the wing-holder. Lock it in the desired position with the PVC screw on the bracket.

Figures 19 and 20: *Showing the straight aluminum profile inserted in the bracket and locked with the PVC screw.*

Step 11: Attach the top wing-holder to the angular profile as it is shown on the picture.



Figures 21 and 22: *Showing the way of attaching the top wing-holder to the* angular profile.

Step 12: Insert the angular aluminum profile into the bracket on the straight aluminium profile. Lock it in the desired position with the PVC screw on the bracket.

Figure 23: *Showing the way of attaching the angular profile to the straight profile.*

Step 13: Electric ONE MAN rigging system is ready to use.

Figure 24: *Fully assembled* electric ONE MAN rigging system.

6 Controls and functions

6.1 Panel function

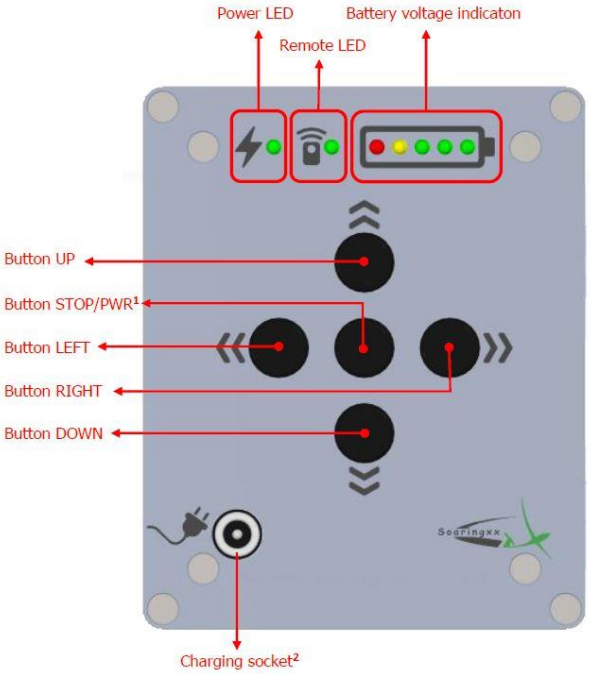


Figure 25: *Shows the panel functions.*

6.2 Activation and pairing procedure

Step 1: Switch the **ON/OFF switch** to ON (blue light is active).

Figure 26: *Shows the ON/OFF switch.*

Step 2: Check the status of the battery. If it needs charging, charge up the battery using the **charging port** and the included charging cable.

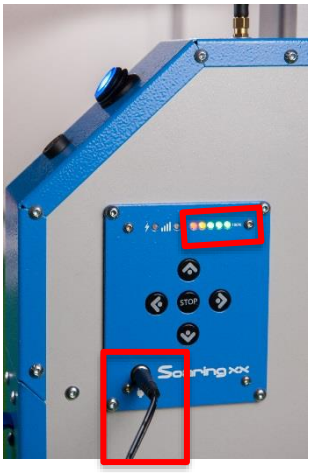


Figure 27: *Showing the the battery status, charging port and charging cable.*

Step 3: Process of pairing the remote controller with control unit:

- Press and hold the ''LEFT Button'' on the control panel,
- activate the ON/Off switch (blue light is active),
- release the ''LEFT Button'' (green light on the control panel starts blinking),
- within 5 seconds press any button on the remote controller and it is paired with the control unit.

When supplied the remote controller is already paired with the control unit.

6.3 Four channel wireless remote controller

It contains:

- Four buttons to move UP, DOWN, LEFT and RIGHT. Arrows are pointing the direction.
- Sender indicator light.
- Hole for the key ring (recommended for secure handling of the controller in tall grass).
- 2 X CR2016 batteries

Figures 28 and 29: *Four channel wireless remote controller and batteries.*

To change the batteries in the remote controller, unscrew the screws on the back of the housing and remove the back side of the remote controller.

6.4 Battery charging

- This system includes a charger and a charging cable. Unit can be charged by installing a cable into charging port on the device, while unit is switched OFF and not in use.
- A different LEAD-ACID type charger can be used.
- During charging time the blue light is active on the ON/OFF switch. Battery status is visible on the upper right corner of the control unit when it is activated.
- Charger on the motherboard is current and voltage regulated. It doesn't allow over charging. The system is charged with constant current and controlled voltage. When max. voltage is achieved the charging is switched off.

6.5 Battery Maintenance

- Battery is stored in the main unit in the battery storage. It is recommended to charge it through the main port for charging.

- During the winter time, it is recommended to take the battery out during winter time and store it at home at normal temperature.

6.6 Battery changing

- Open the battery holder with pulling the blue ribbon.
- Disconnect the battery from the control unit.
- Unfasten the blue ribbon with velcro strap which holds the battery.
- Pull the battery out of the battery holder and replace it with new one.

7 Use / handling

For easier understanding, please check the following video on the Youtube:

https://www.youtube.com/watch?v=GR5XSXxJf2I

Step 1: Position the rigging system next to the fuselage (near the cabin) so that it faces away from the plane, set the lower wheel arm in the 90 degrees direction (perpendicular to the main unit), to make it stable and take out the first wing.

Figure 21: *Rigging system positioned next to the fuselage.*

Step 2: While taking the wing out of the trailer carefully slide it into the wing-holder so that the wing is properly balanced (approx. 2/3 of the wing hangs over the wing-holder).

Figure 22: *Showing a properly balanced wing in a wing-holder.*

Step 3: Attach the locking arm and secure the wing with from falling while moving and rotating.

Figures 23 - 25: *Showing a secured wing with a locking arm.*

Step 4: Insert the wing into the fuselage by moving the wing with the help of the rigging system (you can use remote control for adjusting the position of the wing, so it fits in perfectly).

Figure 26: *Moving of the wing for inserting it into the fuselage.*

Step 5: Place the wing-stand under the wing then remove the locking arm and reposition the rigging system to the other side of the fuselage for the second wing.

Step 6: After using the rigging system tilt the wing-holder back to its vertical position.

8 Warranty

This SoaringXX product is warranted to be free from defects in materials or workmanship for one year from the date of purchase. Within this period, SoaringXX will, at its sole discretion, repair or replace any components that fail during normal use. Such repairs or replacements will be made at no charge to the customer for parts and labour, provided that the customer is responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, unauthorised alterations or repairs and accidents.

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Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. SoaringXX retains the exclusive right to repair or replace the unit or software, or to offer a full refund of the purchase price, at its sole discretion. SUCH REMEDY SHALL BE YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY BREACH OF WARRANTY.

To obtain warranty service contact SoaringXX directly.

9 Revision history

Table 1: *Table of revision history.*

Version	Date	Chapter	Remarks
1.1	12.5.2021	/	Initial release
2.1	18.1.2023	2,5,6	Second edition