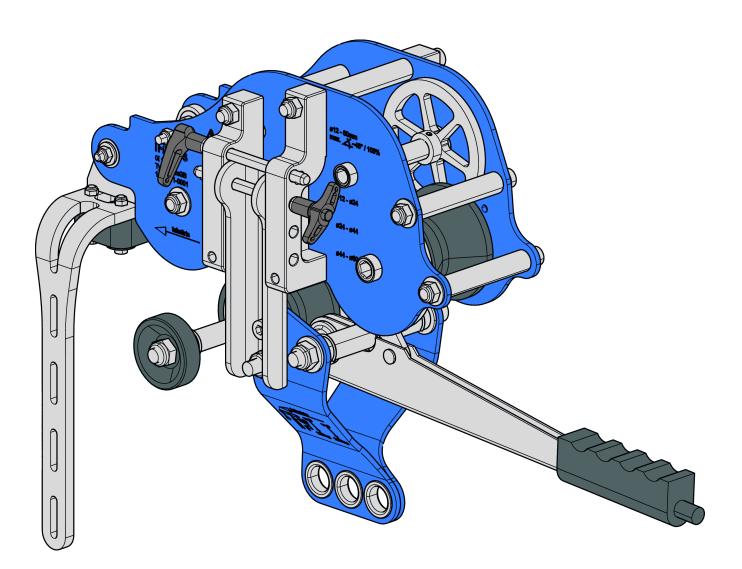


Operating Manual

Type SS1 mGB



Operating Instructions IMMOOS Cable Carriage SS1 mGB | en | V01 | 01.08.2024

IMMØS

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Imprint

All information and notes in these operating instructions have been compiled taking into account applicable standards and regulations, the state of the art and many years of experience.

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List of changes

Version	Date	Change
01		Technical data (rope diameter & rope inclin- ation), range of use redefined
00	25.03.2022	Re-creation

1 Introduction

1.1 Purpose of this manual

These operating instructions are intended to ensure the safe and proper use of the cable carriage. The cableway operator must ensure that the operating personnel have read and understood the operating instructions. The operating instructions must be kept within easy reach. The cableway operator must ensure that the instructions for use of the associated products are also read and understood.

1.2 Target group

The cableway operator is responsible for the required qualification of the operating personnel. The cableway operator must ensure that only personnel commissioned by them work on the cable carriage.

Operating personnel

Persons working with and operating the cable carriage must be adequately trained for the respective activities. The operating instructions must have been read and understood.

The operating personnel are responsible for observing the warning notices and for using your product properly. Any improper use of the product entails an additional source of danger. If you have any doubts or if anything is unclear, please contact IMMOOS GmbH.

The training video (www.immoos.com/SS1de) as well as the operating instructions of the cable carriage serve as an aid and do not replace the obligatory training by IMMOOS GmbH specialists or by a body authorized by IMMOOS GmbH. IMMOOS GmbH recommends a refresher course every three years.

Specialist personnel

Persons who maintain and repair cable carriages must be competent and:

- be sufficiently trained for the respective activities.
- know and follow the relevant technical rules and safety regulations.
- have read and understood the operating instructions.

A person is deemed to be competent if, on the basis of their professional training and experience, has sufficient knowledge in the field of cable carriage technology and is familiar with the relevant regulations pertaining to health and safety at work and accident prevention, the guidelines and generally accepted codes of practice and the standards to such an extent that they are able to assess the safe working condition of the cable carriage.

The cable carriage may only be repaired by persons who, in addition to operation and maintenance, have also been trained on commissioning. In principle, they must have the same knowledge as the operating personnel. For this purpose, they must be provided with appropriate tooling by the manufacturer of the equipment.

Qualified personnel IMMOOS GmbH	Qualified personnel of IMMOOS GmbH who are trained and authorised to perform the actions described in this document.
Authorised Service Centre	Qualified personnel who have been trained and author- ised by IMMOOS GmbH to perform the actions described in this document.

1.3 Warranty conditions

IMMOOS GmbH grants an unlimited warranty on material and manufacturing defects for products manufactured by Immoos GmbH.

For better traceability, it is important that all operations and inspections are fully documented. The form for the documentation can be found at the end of this operating manual.

Excluded from the warranty are: improper use, use for purposes not intended, oxidation, unauthorized modification, regular wear and tear or aging (e.g. due to UV radiation). The warranty is void if the cable carriage is used by untrained operators. Guarantee claims and cases are reported directly to IMMOOS for processing.

1.4 Exclusion of liability

IMMOOS GmbH declines any liability or obligation to pay damages if accidents or damage are attributable to:

- Noncompliance with legal and official regulations.
- Non-compliance with regulations or contractually agreed conditions of IMMOOS GmbH.
- Non-intended use of the IMMOOS cable carriage.
- Failure to observe the instructions regarding safety, transport, storage, assembly, commissioning, maintenance, repair and disposal of the component.
- Actions by untrained personnel.
- Unauthorized changes to parts of the device.
- Replacement of parts by other materials.
- Additional load and stress on parts.
- Parts not designed, manufactured and supplied by IMMOOS GmbH.
- Disasters caused by foreign bodies and force majeure.
- Revisions carried out by unauthorised service centres.

1.5 Representation conventions

Symbols and text markup

This document contains various symbols and text markups.

Symbol	Name	Function		
•	Enumeration	The bullet point marks an enumeration.		
► Action		The black triangle marks actions that must be performed in the appropriate order.		
	Reaction	The white triangle marks the reaction to an ac- tion.		
(1)	Position numbers	The brackets enclose the references to the po- sitioning within the image.		
Customer service [> 7]	Cross-reference	Cross-references are used to refer to a chapter within the document. They are linked and can be executed in the PDF with a mouse click.		



Tips are used to assist the reader in using the product.

1.6 Intended use

The IMMOOS cable carriage is designed for cable traversing on stranded cables (also with plastic profiles, e.g. like the Performa rope). They may be used for one to a maximum of two persons. Any other use, such as the transportation of equipment, is not allowed.

No changes may be made to the cable carriages.

Misuse

Any use of the product beyond its intended use or any other use is considered misuse and may lead to dangerous situations. Claims of any kind for damage due to improper use are excluded.

1.7 Customer service

For technical information, please contact our customer service.

Immoos GmbH Tramweg 35 CH - 6414 Oberarth Tel. +41 (0)41 857 06 66

www.immoos.ch info@immoos.ch

Service Center EU : Immoos Service-Center Montafonerstrasse 8 A - 6780 Schruns

2 Safety instructions

2.1 Warnings

Warnings are identified by symbols and introduced by signal words expressing the extent of the hazard.

A DANGER



Danger

This safety warning applies in the event of a hazard that can lead directly to serious personal injury or death.

Measures to avoid the hazard.

MARNING



Warning

This safety warning applies in the event of a hazard that may potentially lead to serious personal injury or death.

• Measures to avoid the hazard.

<u>A</u> CAUTION



Caution

This safety warning applies in the event of a hazard that may result in minor or moderate personal injury.

Measures to avoid the hazard.

NOTE



Note

Signal word for a potentially harmful situation that may cause damage to the machine or an object in its vicinity.

Measures to avoid the harmful situation.

2.2 Residual risks

The component has been built in accordance with the applicable standards and the recognized safety rules. It corresponds to the state of the art. Nevertheless, danger to life and limb of the user or third parties or damage to the component and other material assets may occur during use.

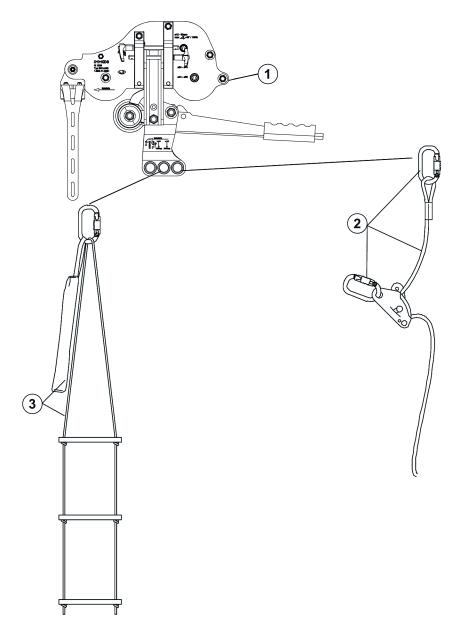


Danger due to moving components

Rotating and/or linearly moving components can cause serious injuries:

- Never reach into or handle moving components during operation.
- Wear personal protective equipment.

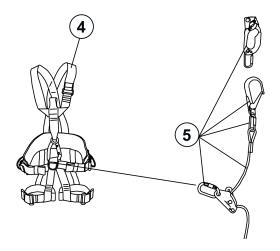
2.3 Equipment Cable carriage equipment

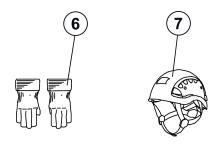


- 1 IMMOOS self-driven cable carriage
- 3 Descent and ascent aid with carabiner and material bag
- 2 Lanyard with rope shortener incl. two O-carabiners

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Personal protective equipment



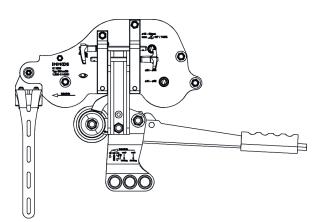


- 4 Safety harness with a seat belt eyelet in accordance with EN 813 and a sternal catch eyelet in accordance with EN 361
- 6 Work gloves

- 5 Lanyard with rope shortener, two O-carabiners, aluminium safety hook, hand ascent clamp with carabiner
- 7 Safety helmet

3 Technical data

Self-driven cable carriage type SS1 mGB with automatic centrifugal brake, dead man's brake and hand brake.



Range of application on stranded rope:

Cable diameter	Cable slope
12 – 15 mm	0 - 60 %
12 - 15 11111	From 60 % only with safety brake FB1
16 – 60 mm 0 – 105 %	
Dimensions (H x W x D)	54 x 36 x 21 cm
Weight	~ 7 kg
Max. speed	~ 1.8 m/s
Service load (v≠0)	125 kg (1.25 kN)
Service load (v=0)	250 kg (2.5 kN)
Certified according to regulation	Cable car regulation (EU) 2016/424 and EN standard 1909

4 Product overview

4.1 Product description

The IMMOOS cable carriage type SS1 mGB is mainly used for cable access without restraint cable. When travelling, the cable carriage has a maximum payload capacity of 125 kg (1.25 kN) ($v \neq 0$). When stationary by means of a dead man's brake, 250 kg (2.5 kN) is permissible (v = 0, e.g. for abseiling/rescue or similar).

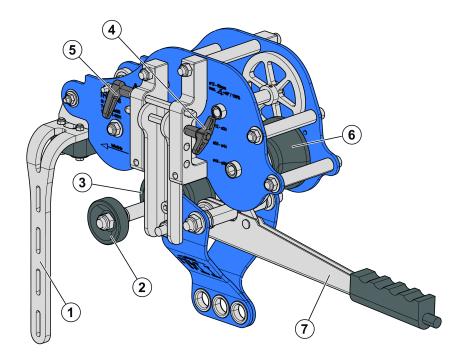
The cable carriage basically consists of:

- Housing with drive brake roller 6, guide roller and back-pressure roller.
- Centrifugal brake limiting the speed to ~ 1.8 m/s.
- Hinged suspension as connection with the lower part of the housing.
- Quick-release pins 4+5 on both sides for setting the correct cable diameter.
- Suspension with four attachment points.

The IMMOOS cable carriage SS1 mGB is equipped with an automatic centrifugal brake. It is approved for a max. cable slope of 105 % (~45°).

The cable carriage has a hand brake 7. It is used to reduce speed when approaching obstacles. When travelling, the dead man's brake 1 must always be pushed forward until the rubber no longer touches the cable. The brake stops the cable carriage if the user is unable to act.

The handwheel **2** on the back-pressure roller **3** provides additional braking on steep slopes. It may only be tightened so far that the back-pressure roller can still rotate at any time.



- 1 Dead man's brake
- 3 Back-pressure roller
- 5 Upper quick-release pin
- 7 Hand brake

- 2 Handwheel
- 4 Lower quick-release pin
- 6 Drive-brake roller

4.2 Options

Flat-cable sections

Flat-cable sections can be travelled on easily with various aids.

A hand crank can be used on short, flat cable sections.



A cordless drill **1** with the matching insert can be used for longer cable sections and slight gradients.



5

Storage

The IMMOOS self-driven carriage must be stored in a dry and dust-free environment with low temperature fluctuations.

6 Installation

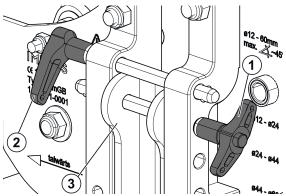
6.1 Preparation

- The material must be checked for completeness and condition each time before use.
- It must be checked whether the material is suitable for the intended use (limits of use).
- The operating personnel must wear the complete personal protective equipment.

6.2 Setting the cable diameter

Before mounting, the cable carriage type must be adjusted to the appropriate cable diameter. The following markings apply to the three cable diameters:

- ► Adjust the lower quick-release pin 1 on both sides to the cable diameter.
- Insert the upper quick-release pin 2 on both sides above the lower quick-release pin. It serves as a limit (stop) for the hinged suspension 3.

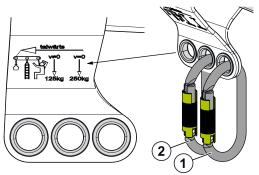


If the cable diameter is near the lower limit of a range and if the rollers of the cable carriage are slightly worn, the next smaller range can be set.

Range	Effective cable diameter
12 - 24 mm	12 - 27 mm
24 - 44 mm	24 - 48 mm
44 - 60 mm	44 - 60 mm

Carabiner fastening

Hooking the carabiner into the correct eyelet depends on the cable slope. The cable slope is set from the steepest cable span travelled.



- 1 Mousqueton pour tenir la corde de retenue (selon l'inclinaison de la corde)
- 2 Carabiner for ascent/descent aid (hook into a free eyelet)

7 Commissioning

7.1 Safety instructions

WARNING



Risk of injury due to inadequate safety devices

Defective or missing safety devices can lead to serious personal injury or death.Never override a safety device.

• Check safety devices for proper functioning before commissioning.

WARNING



Risk of injury from moving components

Rotating and/or linearly moving components can cause serious personal injury.Do not touch moving parts during operation.

7.2 Preparation

MARNING



A corresponding risk analysis must be carried out before travelling on a cable. In the case of cable cars, the tensioning device must absolutely prevent any movement of the cable and the system must be secured against travelling unintentionally.

• Check whether the system is secured.

Preventing cable movement

Before commissioning, the following points must be observed:

- The material must be checked for completeness and condition each time before use.
- The cable driver wears full personal protective equipment.

Operators must be in good health for activities at height. Motionless suspension in a belt can lead to serious injuries or even death (suspension trauma!). Learning how to use the self-driven carriage and appropriate safety measures is solely your responsibility.

7.3 Commissioning the cable carriage



NOTE Direction of travel of the cable carriage

When travelling uphill and downhill, the arrow must always point "downhill".

Ø

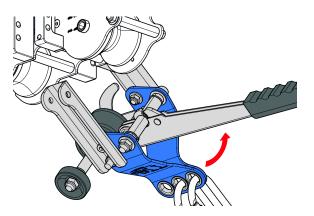
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)

- Assume a safe and comfortable position to work.
- ► Fully release the dead man's brake 1 and the handbrake 2.

Pull out the lower quick-release pin 1 just far enough for it to remain in the housing.

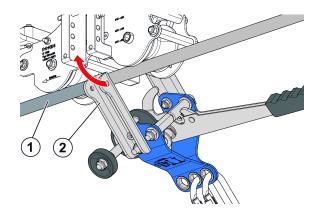
▷ Lower part of the cable carriage is folded out.



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1

- Place the cable carriage on the stranded cable 1.
- Tilt the upper part so that the lower part swings fully in or tilt the lower part of the cable carriage 2 fully back.



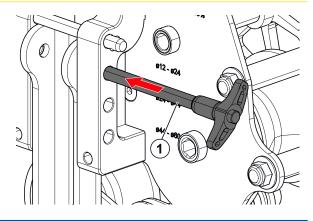
▲ CAUTION

Risk of injury due to falling down (cable carriage)



If the quick-release pin is not pushed all the way in, the cable carriage may fall off the cable.

- Check that the quick-release pin is pushed fully in and that it cannot be pulled out without pressing the push button.
- Push the lower quick-release pin 1 fully in.
 The carriage is locked.



NOTE

Moving away the cable carriage



The cable carriage may start moving if the back-pressure roller is not sufficiently tightened.

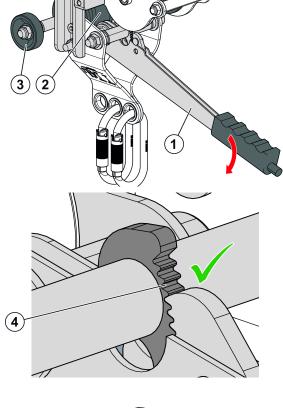
- The handwheel can be used to increase the braking effect of the back-pressure roller.
- ► The dead man's brake and braked back-pressure roller prevent the cable carriage from moving away.

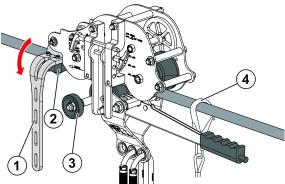
Commissioning

- Pull the handbrake 1 down and adjust it with the handwheel 3.
 - ▷ The back-pressure roller 2 must contact the cable.

- Check that the hand brake lever is at least two to three detents 4 away from the upper and lower stop.
- ▶ If necessary, readjust the cable diameter.

- Pull the dead man's brake 1 all the way down to the housing 2.
 - ▷ The cable carriage is now ready for travelling on the cable.
- ▶ If necessary, tighten the hand wheel **3** of the back-pressure roller.
- Hook the long lanyard 4 behind the SS1 mGB as a redundant safety device.





7.4 Climbing into the cable carriage

A CAUTION

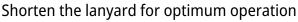


Breakage of the carabiner due to transverse load

If the carabiners are not hanging straight down, they might be subjected to transverse loads. The carabiners could break due to such excessive load.

▶ All carabiners must hang straight down to prevent transverse loading.

NOTE

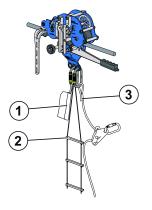




For optimum operation of the cable carriage, the position of the operating personnel must be as close as possible to the cable carriage.

• The short lanyard with the rope shortener must be shortened to the stop before moving off.

- Unpack the descent aid 2 from the material bag 1.
- Descending to the cable carriage.
- Shorten the lanyard 3 with the rope shortener up to the stop.
- Pack the descent aid 2 into the material bag 1.



7.5 Travelling with the cable carriage

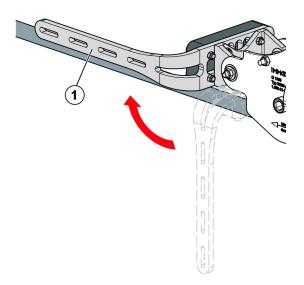
NOTE



The back-pressure roller must contact the cable

The back-pressure roller of the handbrake lever must be in contact with the cable during the entire journey. The cable carriage may otherwise become unstable.
Use the handbrake to adjust the position of the back-pressure roller.

- Release the dead man's brake 1.
 - The cable carriage starts moving. If it does not, the hand brake must be released by one detent.



NOTE



Failure to hold the dead man's brake

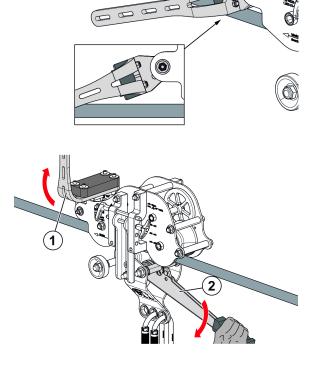
- A fully opened dead man's brake bypasses safety.
- ▶ The dead man's brake must be held forward until it does not touch the cable.
- ▶ The dead man's brake is not designed to reduce speed.

Commissioning

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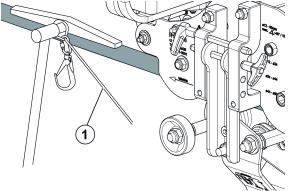
Hold the dead man's brake 1 so far forward that the cable is not touched.

- Slowly brake with the hand brake 2 shortly before reaching an obstacle.
- Tilt the dead man's brake 1 all the way up ► and move as close as possible to the obstacle.
- Apply the handbrake. ►
- When the obstacle is reached, the handbrake can be released completely.
- Secure with the longer lanyard 1 at a suit-able point of carriage.
- Pull the longer lanyard taut.
- For the descent to the vehicle, extend the shorter lanyard and unhook it from the safety harness.



(1)

BA



Climbing over a carriage 7.6

A CAUTION

Risk of injury due to falling down (cable carriage)

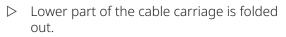


If the quick-release pin is not pushed all the way in, the cable carriage may fall off the cable.

▶ Make sure that the quick-release pin cannot be pulled out without pressing the push button.

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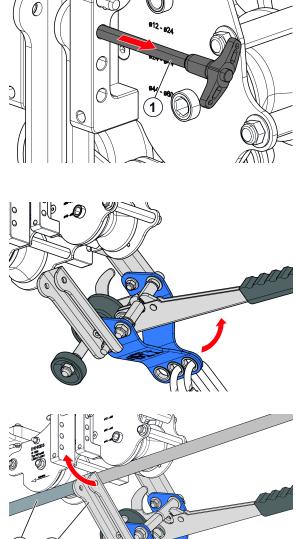
▶ Pull out the lower quick-release pin 1.

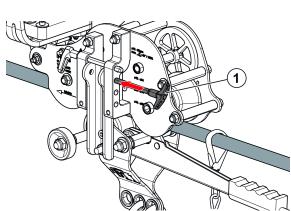


 Push the cable carriage over the clamp or the vehicle.

- Push the cable carriage over the clamp or the vehicle.
- Place the cable carriage on the stranded cable 1.
- Tilt the upper part so that the lower part swings fully in or tilt the lower part of the cable carriage 2 fully back.
- Push the lower quick-release pin 1 fully in.
- \triangleright The carriage is locked.
- Engage the hook 2 of the longer lanyard behind the cable carriage to the cable.
- Shorten the shorter lanyard as far as it will go.
- ▷ The cable carriage is ready for travelling further.

Important: Before travelling further, make sure that all lanyards are detached from the vehicle.





8 Maintenance

8.1 General

In order to ensure that the cable carriage operates safely throughout its service life within the scope of its intended use, it must be operated, regularly inspected and maintained by the cableway operator in accordance with the manufacturer's instructions. Maintenance work must be carried out by qualified personnel.

▲ DANGER



Danger when performing maintenance work

If you carry out maintenance work without the necessary training for qualified personnel, safety is no longer guaranteed. Death or serious personal injury can result. Observe all safety instructions and leave maintenance to trained personnel.

8.2 Regular Inspection

<u> A</u> DANGER



Risk of injury from damaged or incomplete device

- Damaged or incomplete equipment increases the risk of injury.
- ► The device must be checked by IMMOOS GmbH or a service centre authorised by IMMOOS GmbH.

Testing before each use

The safety of the operating personnel depends on the condition of the device.

Before each use, the operating personnel must perform a visual inspection of the cable carriage.

8.3 Visual inspection and functional check

The gears, axles, shafts and bearings must not be damaged. In cases of doubt, the IMMOOS GmbH or a service point authorised by IMMOOS must carry out an inspection.

The following points must be checked:

- ▶ Rollers must turn freely.
- ▶ The dead man's brake must engage by spring force when releasing the lever.
- The hand brake can be easily pulled down and clicks into place in any position. The hand brake can be easily released by pressing the button.
- ▶ The back-pressure roller can be turned smoothly and can be clamped by the handwheel.

Check every 12 months

A visual inspection and functional check of the carriage must be carried out at least every 12 months by a qualified person authorised by IMMOOS GmbH (in accordance with national regulations).

- General condition
- Scratches, cracks, sharp edges on the sheet metal parts
- Deformations
- Condition of the rubber of all rollers
- Condition of the gears (no broken teeth, no dirt between the teeth)
- Condition of the handbrake (no broken teeth, no dirt between the teeth)

- Condition of the automatic centrifugal brake (rotate the drive/brake roller using a high-speed drill and the appropriate insert. During the test, the automatic centrifugal brake must warm up noticeably.)
- The automatic centrifugal brake must be free of grease and oil
- Condition of the dead man's brake
- Condition of the quick-release pin
- Readability of the marking

8.4 Cleaning

- Clean the cable carriage with warm water or neutral soap. Do not use any aggressive cleaning agents or chemicals.
- Blow any brake dust off the automatic centrifugal brake using compressed air.
- Lubricate gears with dry lubricant "Interflon Fin Super" or equivalent.
- ▶ The automatic centrifugal brake must be free of grease and oil.
- If the device gets wet during usage or by cleaning, it must dry naturally and be kept away from direct heat.

8.5 Service Life/Revision

The service life depends on the intensity and frequency of use as well as the handling of this product. Certain factors such as salt, snow, ice, moisture, sand etc. (list not exhaustive) can also negatively affect the service life to a considerable extent.

A revision by IMMOOS or a body authorized by IMMOOS is mandatory:

- If the rubber rollers are excessively worn
- If the gearbox is damaged
- In the event of other serious damage to the device
- After 10'000 meter of cable travel
- After a max. period of 10 years

The service life of the metal parts is unlimited if handled, stored and maintained correctly. The annual inspection must be documented.

Damage to the cable carriage

After a severe fall or impact (fall of the product itself or of an object onto the product) causing breakage or deformation of individual parts, this product must no longer be used. Any deformation can impair the function of the self-driven carriage or internal non-visible fractures can reduce its strength.

If there are doubts regarding the condition and functionality, the affected cable carriage can be sent to IMMOOS GmbH for maintenance and inspection or to a service centre authorised by IM-MOOS GmbH.

No changes may be made to the cable carriages.

Important maintenance work

Maintenance work	Before travelling	After travelling	Every 12 months	After 10'000 cable metres	After 10 years at the latest
Clean the cable carriage with warm water or neutral soap. Do not use any aggressive cleaning agents or chemicals.		Х			
Blow any brake dust off the automatic centrifugal brake using com- pressed air.		Х			
Lubricate gears with dry lubricant "Interflon Fin Super" or equivalent.		Х			
If the device became wet during use or when cleaning it, it must dry nat- urally and be kept away from direct heat.		Х			
Visual inspection of the cable carriage before each use	Х				
Visual inspection and function check (expert inspection)			Х		
Revision by IMMOOS or a body authorised by IMMOOS				Х	Х
Replace all wear parts (rubber rollers, dead man's brake pad)					Х
Replace centrifugal brake.					Х

9 Documents

9.1 Documentation of the annual expert inspection

Prescribed verification of the inspection conducted.

Product:	IMMOOS self-driven carriage Type	Serial number:
Owner		

Purchase date

Date of fist use

.....

Date of inspection	Assessment of deficiencies found	Official stamp / signature

9.2 Documentation of the distances travelled during use

Product: IMMOOS self-driven carriage Type Serial number:..... Serial number:.....

Purchase date

Date of fist use

.....

Date	Distance m	Number	Total distance	Official stamp / signature

10 Certificates

10.1 Type examination certificate



10.2 Declaration of Conformity



Evacuation and safety solutions IMMOOS GmbH Tramweg 35 CH-6414 Oberarth

info@immoos.com www.immoos.com

EU - KONFORMITÄTSERKLÄRUNG

Sicherheitsbauteile nach Verordnung (EU) 2016/424

Hersteller: IMMOOS GmbH Tramweg 35 CH-6414 Oberarth Bezeichnung des Sicherheitsbauteiles: IMMOOS Seilfahrgerät Typ SS1 mGB siehe Zertifikat SB-H24-1016 Verwendungsbedingungen: Die Konformitätsbewertung des Sicherheitsbauteils erfolgte nach Anhang II - Modul H - der Verordnung (EU) 2016/424 durch: Seilbahnbüro SCHUPFER GmbH & Co. KG Benannte Stelle: Obermieming 148 A A-6414 MIEMING EU-Kennnummer: 1339 EU-Prüfbescheinigung: SB-H24-1016, datiert 01.08.2024

Diese Erklärung bescheinigt die Übereinstimmung des bezeichneten Sicherheitsbauteiles mit den

Der Hersteller:

IMMOOS GmbH Tramweg 35 CH-6414 Oberarth

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Geschäftsführer IMMOOS GmbH Florian Immoos

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