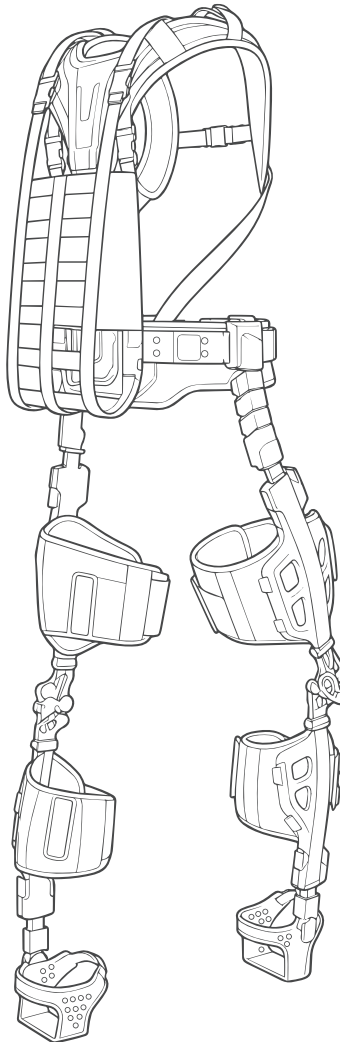


AlpWalk U1
Agile Exoskeleton

User Manual

[V1.0 Aug. 2026]



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Introduction

Legal Liability and Responsibility

These terms and conditions apply to the AlpWalk U1 Agile Exoskeleton. By using this product, you confirm that you have read, understood, and accepted this entire manual and agree to operate the device strictly in accordance with all instructions and safety precautions contained herein.

1. Liability Disclaimer

AlpWalk shall not be held liable for any personal injury, property damage, or product malfunction arising from:

- failure to follow the instructions or safety warnings in this manual;
- use of unauthorized third-party accessories or non-original parts;
- unauthorized modifications, repairs, or servicing performed by non-certified personnel;
- improper handling, neglect, or reckless operation; or
- force majeure events (e.g., fire, earthquake, flood, etc.).

2. Warranty Coverage

This product is warranted against defects in materials and workmanship for a period of one (1) year from the date of manufacture. During this period, AlpWalk will replace, free of charge, any parts found to have manufacturing defects, subject to the exclusions below.

The warranty does not cover:

- routine maintenance or normal wear and tear;
- damage caused by improper use, transportation, or relocation;
- damage resulting from any of the actions listed in section 1 (Liability Disclaimer);
- damage caused by natural disasters or external accidents.

3. User Responsibility and After-Sales

Before first use and at least once every six (6) months thereafter, you must perform a full performance check of the product. Keep this manual together with the device for future reference. For any technical issues, please contact your local dealer or AlpWalk's after-sales service department.

Reading Instructions

All safety precautions and warning instructions are clearly defined in this manual. Please read it carefully before operation and follow the relevant information to correctly use this exoskeleton.

 **Prohibited:** Failure to avoid may result in serious personal injury or substantial property damage.

 **Caution:** Failure to avoid may result in minor personal injury or device damage.

 **Note:** Important information or practical tips not involving risk of personal injury or device damage.

Prohibited

1. Do not use with incompatible devices.
2. Do not exceed the product's maximum load capacity.
3. Do not use the exoskeleton when excessively fatigued or injured—this may aggravate physical strain.
4. Do not modify this product without authorization. Unauthorized modifications include disassembly, replacement of key components, or alteration of the mechanical structure.

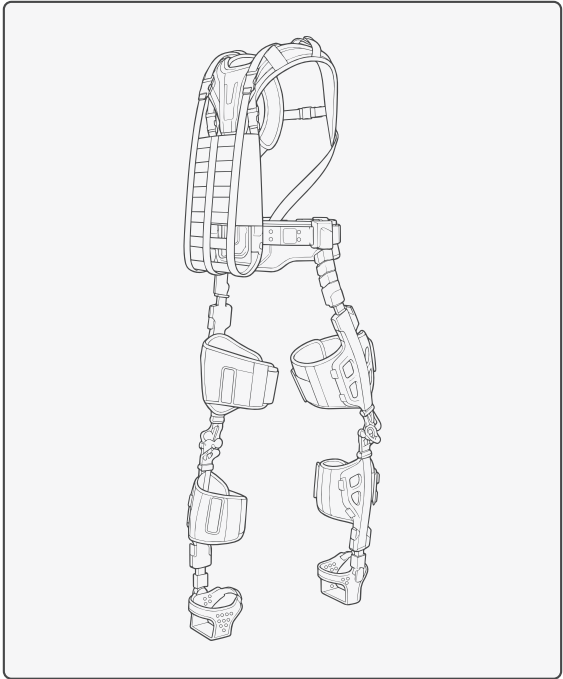
Caution

1. This product contains plastic components. Do not disassemble or apply excessive force, as this may cause damage.
2. If you experience abnormal looseness or unusual noise during use, stop using the product immediately.
3. Wear the exoskeleton correctly. Improper wear may impair function or cause personal injury.

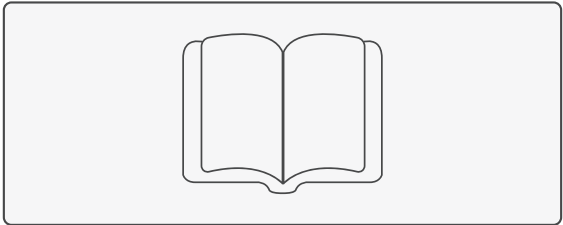
Note

1. Assemble and disassemble the exoskeleton only as instructed in this manual.
2. Before use, adjust the product to fit your body size.
3. When using for the first time, you may feel some discomfort. Familiarize yourself with its functions and gradually adapt to its assistive effects.
4. On uneven terrain or when carrying heavy loads, the exoskeleton may affect your balance. Stay alert.

In The Box



Body Structure × 1



User Manual × 1

Product Overview

Component Diagram

As shown in Figure 1, AlpWalk U1 consists primarily of shoulder support, spine assembly, waist belt, hip joints, thigh support, knee joints, calf support, ankle joints, and shoe covers.

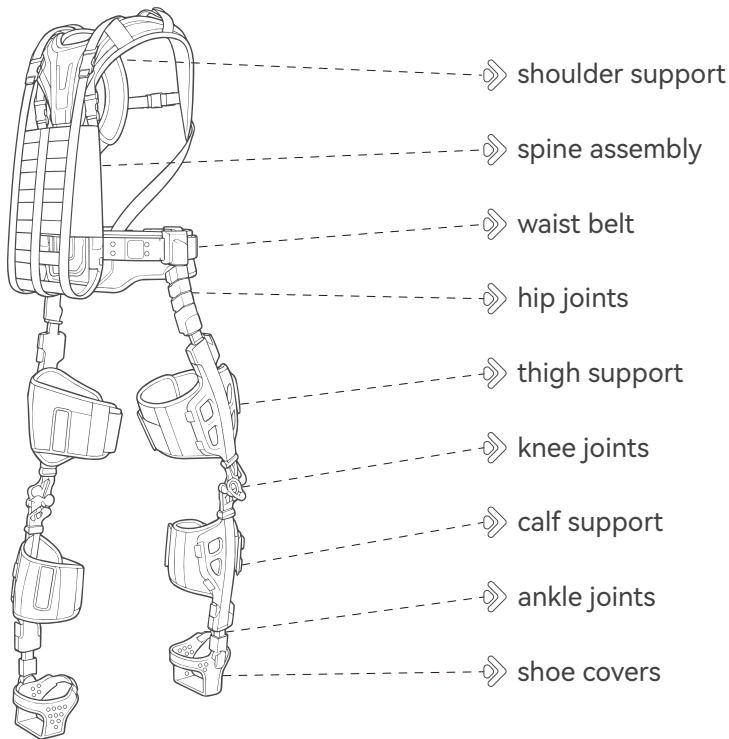


Figure1 Structural Schematic of the Exoskeleton

To accommodate wearers of different body types, the exoskeleton is equipped with multiple adjustment mechanisms. The adjustment structures for each part of the exoskeleton are shown in Figure 2:

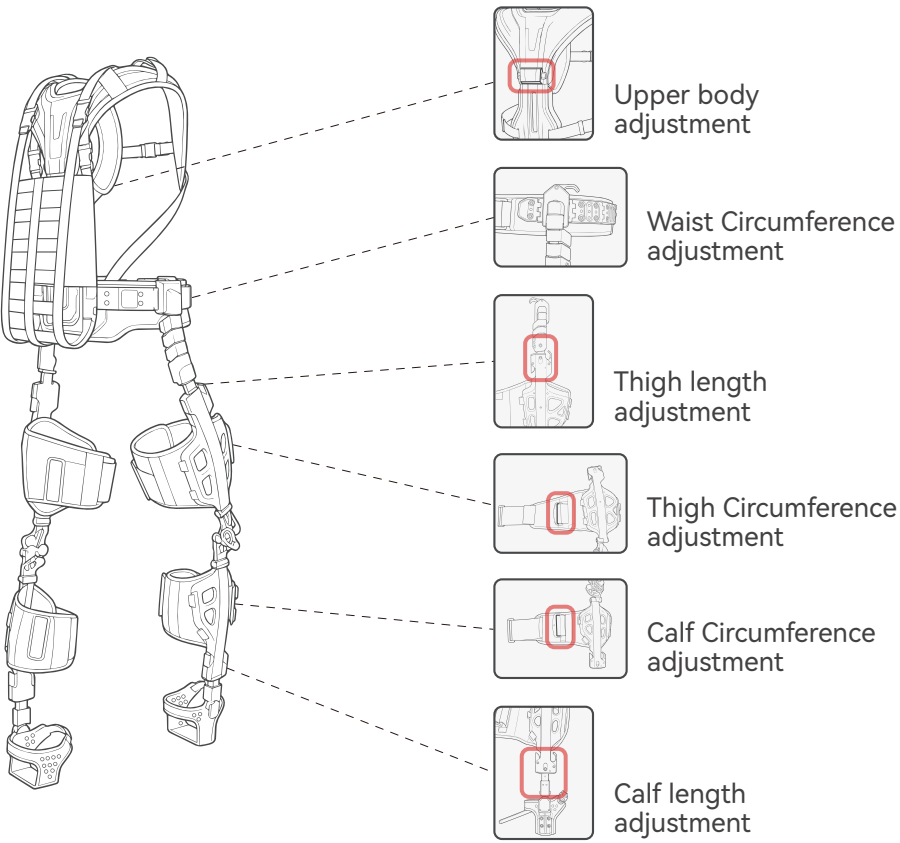


Figure2 Exoskeleton Adjustment Schematic

Upper body adjustment: Press the buttons on both sides to slide the upper body assembly up or down to adjust length.

Waist Circumference adjustment: Open the cam switch on the hip joint, select the appropriate waist circumference, and align the position to complete the adjustment.

Thigh length adjustment: Refer to the height adjustment chart and select the appropriate setting.

Thigh Circumference adjustment: Adjust the elastic band length through the tri-glide buckle on the thigh strap to accommodate different thigh circumferences.

Calf Circumference adjustment: Adjust the elastic band length through the tri-glide buckle on the calf strap to accommodate different calf circumferences.

Calf length adjustment: Refer to the height adjustment chart and select the appropriate setting.

Technical Specifications

Product Name	AlpWalk U1
Product Type	Agile Exoskeleton
Product Model	PaExo-QT1000
Weight	4.5kg
Rated Load Capacity	25kg
Maximum Load Capacity	50kg
Total Donning and Doffing Time	≤1 min
Height Range	165 ~ 185cm
Shoulder Force Transfer Efficiency	≥70%
Maximum Force Transfer Efficiency of the exoskeleton	≥25%

Unboxing and Installation

Unboxing

Open the package and place all components on a clean surface.

Installation

1. Insert the calf rod into the calf support.

(1) Prepare the right shoe cover and right calf support. The corresponding positions are marked with "R" (Right), as shown in Figure 3.

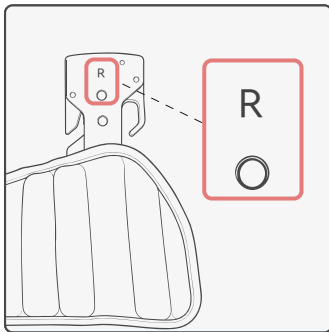
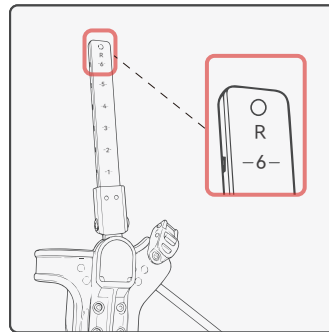


Figure 3 Right Calf Support



Right Shoe Cover

(2) As shown in Figure 4a, with the cam adjustment in the open state, press the adjustment switch and insert the calf rod into the calf support. As shown in Figure 4b, after selecting the appropriate setting, release the adjustment switch, then close the cam adjustment. Please refer to Figure 4c for the final result.

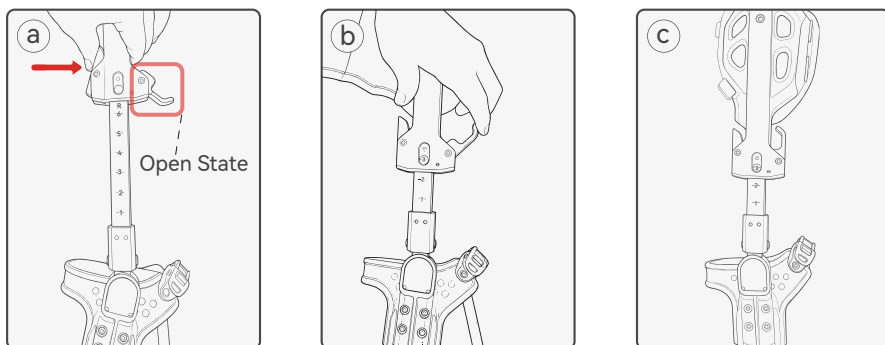


Figure 4 Inserting the Calf Rod into the Calf Support

2. Insert the thigh rod into the thigh support

(1) Prepare the right hip joint and right thigh support. The corresponding positions are marked with "R" (Right), as shown in Figure 5.

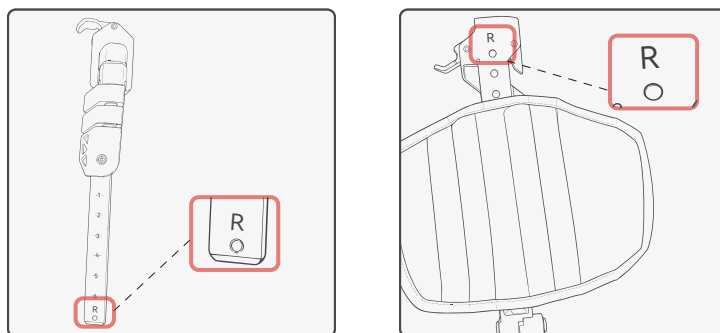


Figure 5 Right Hip Joint

Right Thigh Support

(2) As shown in Figure 6a, with the cam adjustment in the open state, press the adjustment switch and insert the thigh rod into the thigh support. As shown in Figure 6b, after selecting the appropriate setting, release the adjustment switch, then close the cam adjustment. Please refer to Figure 6c for the final result.

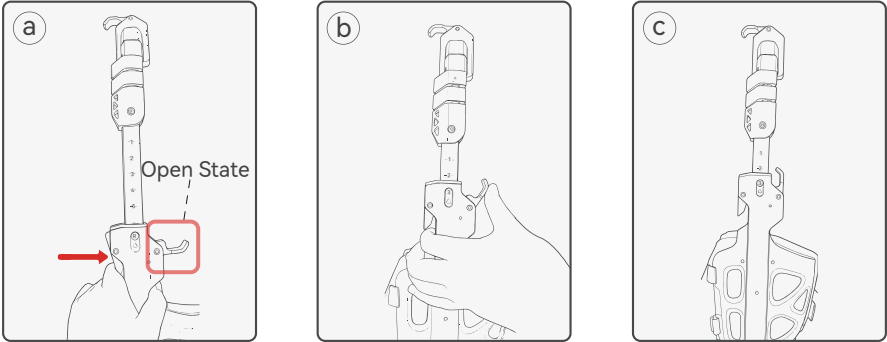


Figure 6 Inserting the Thigh Rod into the Thigh Support

(3) Repeat the above steps for the installation of left hip joint and left thigh support.

3. Attach the hip joints to the waist belt

(1) Prepare the upper body of the exoskeleton. As shown in Figure 7, the left hip joint should be installed on the left side, and the right hip joint on the right side.

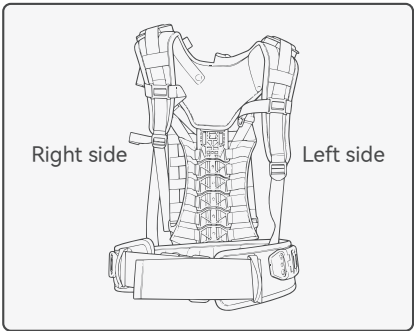


Figure 7 Upper Body of the Exoskeleton

(2) As shown in Figure 8a, the waist belt of the exoskeleton features multiple grooves to accommodate different waist sizes. It is recommended that the hip joint be installed at the position indicated by the solid circle in the middle. As shown in Figure 8b, the hip joint has protrusions that mate with the grooves on the waist belt. As shown in Figure 8c, a V-shaped groove on the side of the hip joint engages with the lower edge of the waist belt.

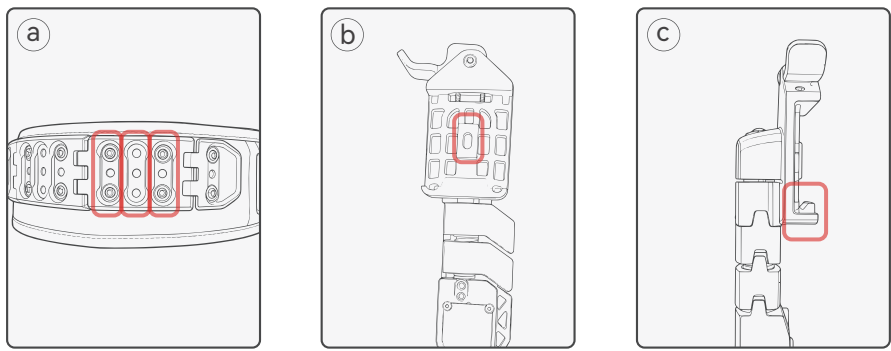


Figure 8 Exoskeleton Waist Belt Hip Joint

(3) As shown in Figure 9a, first align the V-shaped groove on the right hip joint with the lower side of the waist belt chain. As shown in Figure 9b, then align the protrusions on the right hip joint with the groove positions on the waist chain, close the cam switch, and the hip joint will be secured to the waist chain. Shake the hip joint left, right, up, and down — if it does not detach, the installation is successful. Please refer to Figure 9c for the final result.

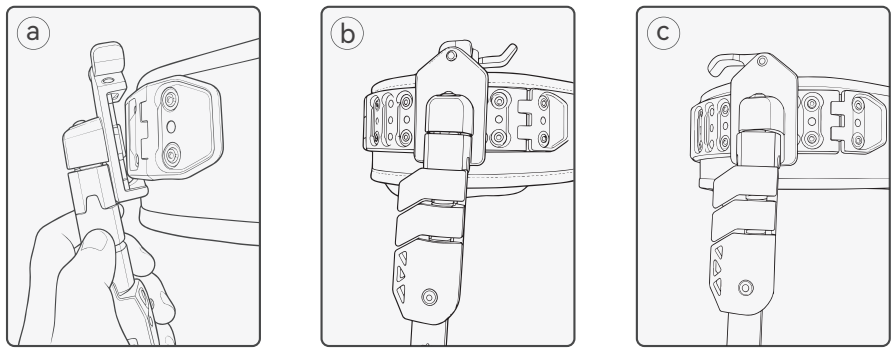


Figure 9 Installing the Hip Joint

(4) Repeat the above steps to install the left hip joint onto the left side of the exoskeleton upper body.

Once you have completed all the above steps, the exoskeleton is fully installed.

Donning and Doffing

Exoskeleton Adjustment

1. Height Adjustment

(1) Refer to the table below to adjust the calf rod, thigh rod, and exoskeleton upper body to the appropriate settings.

Height (ft/in)	Height (cm)	Calf Rod	Thigh Rod	Upper Body Setting
5'5"-5'7"	165-170	1-2	1-2	Lowest position
5'9"-5'11"	175-180	4-5	3-4	Adjust upward by 3-4 cm
5'11"-6'1"	180-185	5-6	4-6	Adjust upward by 5 cm (Highest position)

(2) Calf rod length and thigh rod length adjustment

Taking the right calf rod as an example, as shown in Figure 10a, first open the cam adjustment, then press the adjustment switch (Figure 10b). Next, push or pull the calf rod to the appropriate setting (Figure 10c), and finally close the cam adjustment (Figure 10d). The same procedure applies to the left calf rod and thigh rod adjustment.

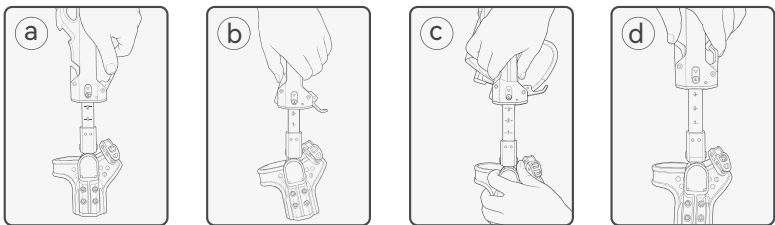


Figure 10 Leg Rod Length Adjustment

① **Note:** As body shapes vary, the recommended settings may not suit everyone. Adjust them based on your actual wearing comfort.

(3) Exoskeleton upper body adjustment

As shown in Figure 11a, the exoskeleton is at its lowest position. Press the adjustment switch (Figure 11b), pull the shoulder support upward to the appropriate setting, then release to complete the upper body adjustment, as shown in Figure 11c.

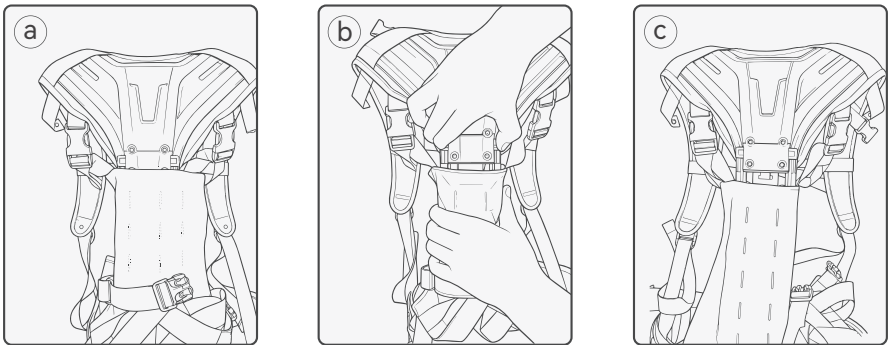


Figure 11 Exoskeleton Upper Body Adjustment

(4) Thigh circumference and calf circumference adjustment

Taking thigh circumference adjustment as an example, as shown in Figure 12, adjust the elastic band length through the tri-glide buckle on the thigh strap to position the strap at the appropriate fit. The same procedure applies to calf circumference adjustment.

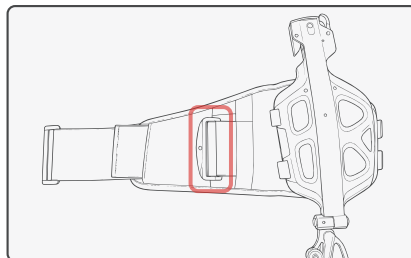


Figure 12 Leg Circumference Adjustment

Wearing the Exoskeleton

When worn correctly, the exoskeleton works at its best and allows you to move without restriction.

1. Wearing shoulder strap: Wear the exoskeleton shoulder straps on both shoulders using a backpack-style wearing method, as shown in Figure 13.

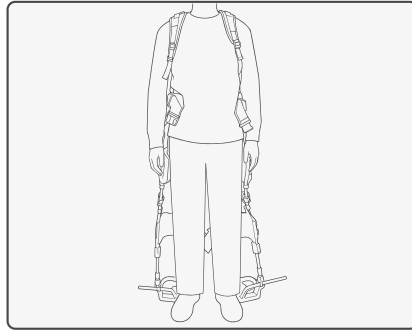


Figure 13 Exoskeleton Shoulder Strap Wearing

2. Wearing shoe cover: As shown in Figure 14a, insert the foot into the shoe cover. Then insert the toothed strap into the adjustment buckle (Figure 14b), and tighten the shoe cover by operating the adjustment switch (Figure 14c). The same procedure applies to the other foot.

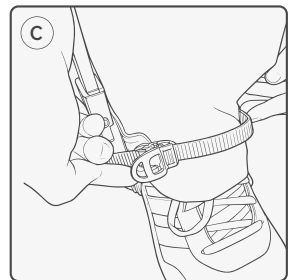
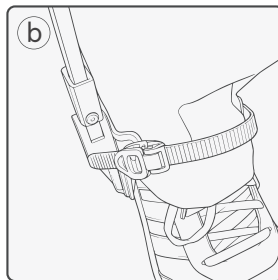
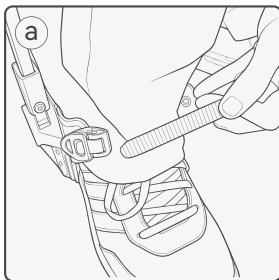


Figure 14 Shoe Cover Wearing

3. Wearing thigh and calf strap: First put on the calf strap, then the thigh strap. Taking the calf strap as an example, clip the snap buckle on the calf support (Figure 15b) to complete the wearing. The same procedure applies to the thigh strap wearing. Please refer to Figure 15c for the final result.

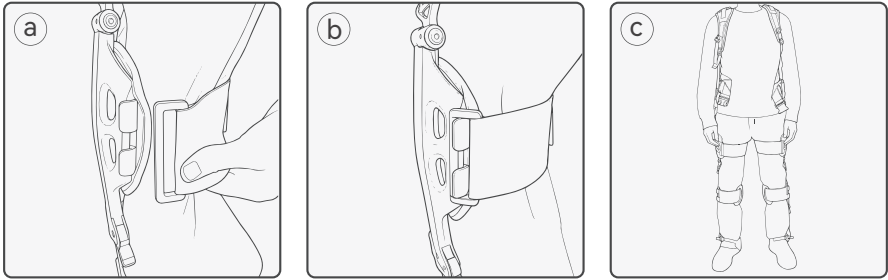


Figure 15 Thigh and Calf Strap Wearing

① Note: When worn, the exoskeleton's knee joint must align with your own. If not, adjust the calf rod accordingly.

4. Wearing waist belt and chest buckle: As shown in Figure 16a, fasten the waist belt buckle and tighten the webbing until the waist belt fits snugly against the body. Then fasten the chest buckle and tighten the webbing to complete the exoskeleton wearing. Please refer to Figure 16b for the final result.

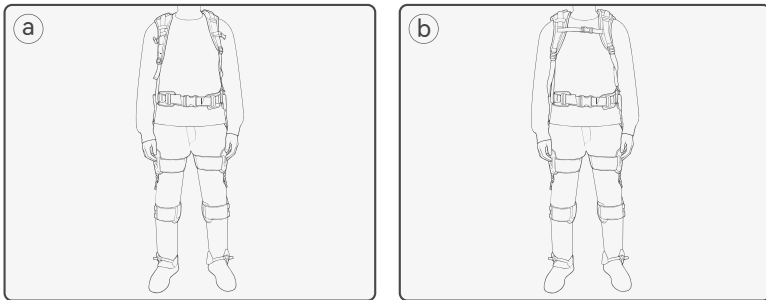


Figure 16 Waist Belt and Chest Buckle Wearing

① **Note:** After completing the wearing process, it is necessary to walk and adapt. If a pulling sensation occurs in the legs, adjust the thigh rod length upward to the appropriate position. If a pressing sensation occurs at the waist, adjust the thigh rod downward to the appropriate position.

5. Load carrying: Loading the backpack requires assistance from another person.

- (1) Open the buckle on the back carrier basket so that it hangs down freely (Figure 17a → 17b).
- (2) Adjust the webbing to accommodate backpacks of different sizes.
- (3) Put on the backpack, then re-fasten the buckle and tighten the webbing to securely cradle the load (Figure 17c).
- (4) Finally, fasten the shoulder restraining straps to complete the process (Figure 17d).

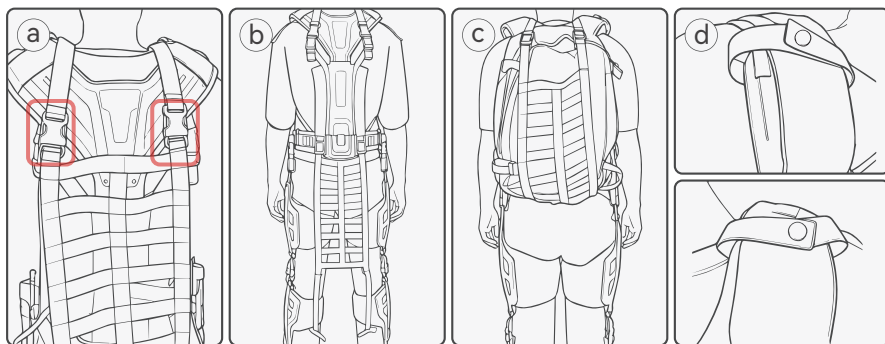


Figure 17 Load Carrying

6. Removing the load: As shown in Figure 17d, unfasten the shoulder restraining straps, then unfasten the lock buckle on the carrier basket (as the position indicated in Figure 17a), and finally take off the load.

Taking Off the Exoskeleton

1. Taking off the shoe covers: As shown in Figure 18a, press the switch at the indicated location with one hand while using the other hand to pull out the toothed strap (Figure 18b). Then remove the shoe cover from the foot and take it off (Figure 18c). The same procedure applies to the other shoe

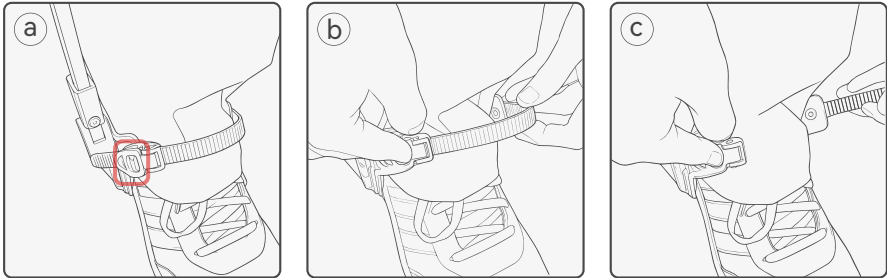


Figure 18 Taking off the Shoe Covers

2. Detach the snap buckles from the calf and thigh straps, unfasten the waist belt and chest buckles, and then take off the exoskeleton.

Maintenance and Storage

Routine Cleaning

Cleaning the Exoskeleton

Please strictly follow the guidelines below to clean the exoskeleton surface structure.

- ⦿ Gently wipe the device body with a soft damp cloth.
- ⦿ Ensure the exoskeleton is completely air-dried before storing or using.

Caution

- ⦿ Do not use corrosive or volatile chemical solvents (such as alcohol, gasoline, diesel, acetone) or any abrasive materials, to avoid damaging the device surface and internal components.
- ⦿ Do not use high-pressure washers or high-pressure water jets to clean the main structure, and avoid exposing the device to pressurized or high-velocity water flow.

Cleaning Soft Fabrics

Please strictly follow the guidelines below to clean the exoskeleton soft fabrics.

- ⦿ Wipe the soft fabric surfaces with a soft damp cloth and mild detergent.
- ⦿ Ensure the soft fabrics are completely air-dried before storing or using.

Caution

- ⦿ Do not use cleaning agents containing bleach or strong alkaline substances, to avoid damaging the soft fabrics.
- ⦿ Do not machine wash, to avoid deformation or damage to the soft fabrics caused by vigorous agitation.
- ⦿ Do not tumble dry, and avoid exposing the soft fabrics to direct sunlight or high-temperature environments, as this may cause fading or deformation.

Replacing Soft Fabrics

Replacing Thigh and Calf Straps

- ⦿ **Thigh:** Remove the webbing at position ① from the thigh support, and take the webbing at position ② out of the open slot to detach the thigh soft fabric for replacement.

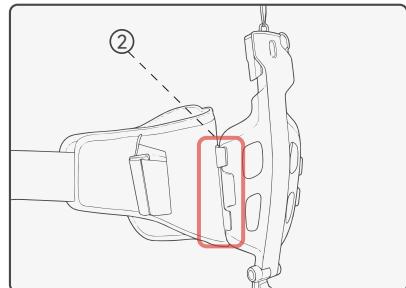
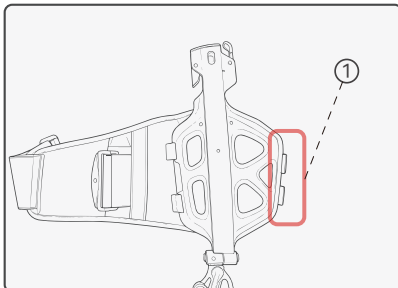


Figure 19 Thigh Strap

⦿ **Calf:** Similarly, remove the webbing at position ③ from the calf support, and take the webbing at position ④ out of the open slot to detach the calf soft fabric for replacement.

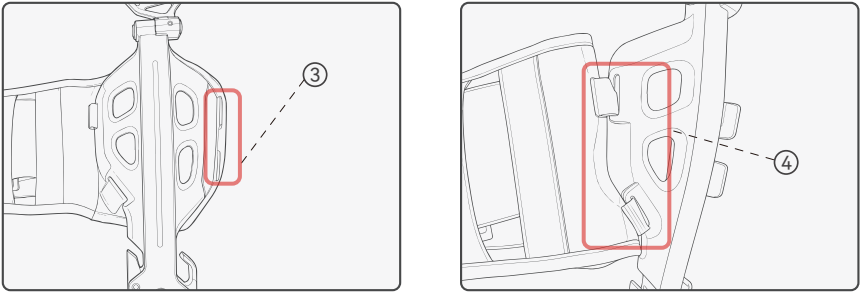


Figure 20 Calf Strap

Replacing the Upper Back Strap Assembly

⦿ Unfasten the lock buckle at position ⑤ on the upper portion of the back strap assembly, and the lock buckle at position ⑥ on the lower portion of the back.

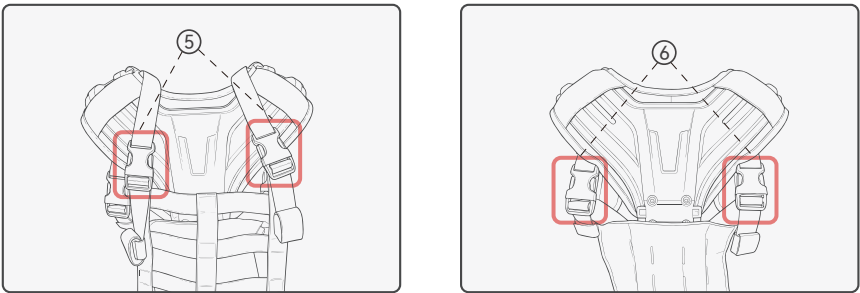


Figure 21 Unlocking the buckle

- ⦿ Unfasten the button at position ⑦ on the back strap assembly.

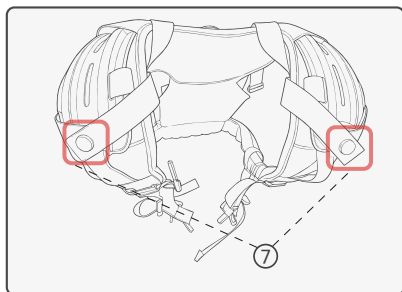


Figure 22 Unfastening the s nap button

- ⦿ Take the webbing at position ⑧ out of the open slot, as shown in the figure 23.

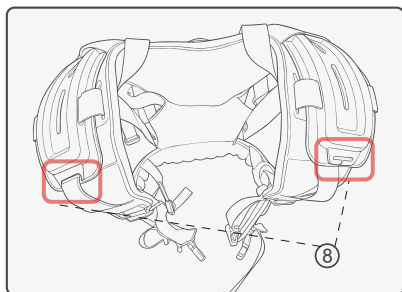


Figure 23 Removing the webbing strap

⦿ On both sides, pull the webbing at position ⑨ out from the shoulder strap assembly, then thread it through the holes in the shoulder support (Figure 24).

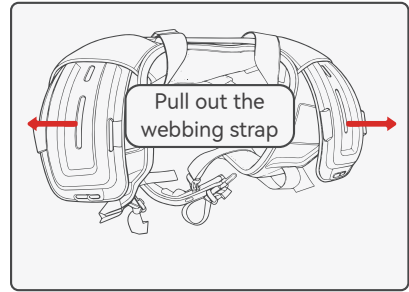
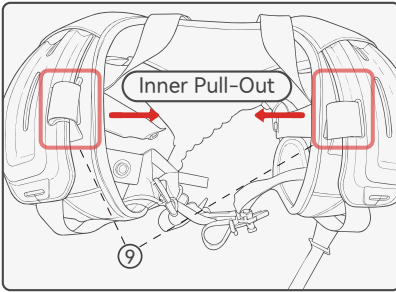


Figure 24 Pulling out the webbing strap

⦿ As shown in the figure 25, remove the webbing of the shoulder strap assembly from the shoulder support one piece at a time, then detach the shoulder straps to remove the shoulder strap assembly.

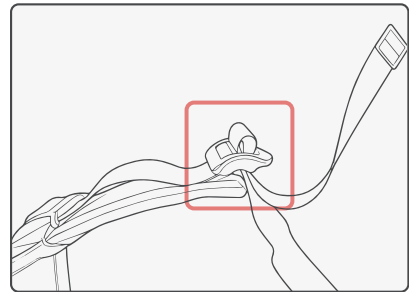
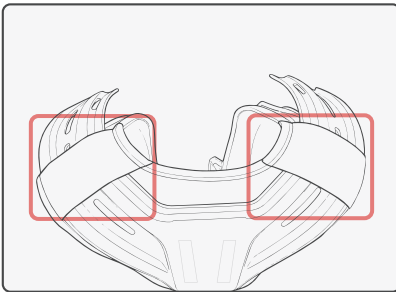


Figure 25 Removing the shoulder harness

Replacing the Back Fabric

⦿ As shown in the figure 26, remove each piece of webbing from the open slots one by one to detach the back fabric.

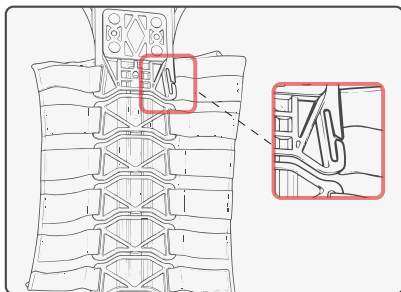


Figure 26 Back harness

Replacing the Waist Fabric

⦿ The waist soft fabric is secured with hook-and-loop fasteners. As shown in the figure 27, slowly peel it off from one end.

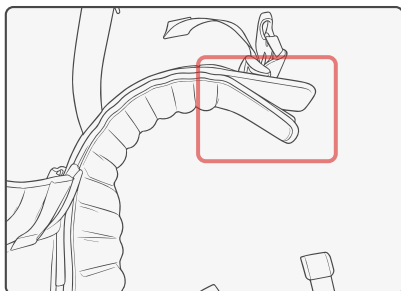


Figure 27 Waist harness

Storage and Transportation

Storage

- ⦿ Store the device in a clean, dry, and well-ventilated indoor environment.
- ⦿ Do not store the device outdoors, in direct sunlight, in rain, in dusty conditions, or in humid environments.
- ⦿ Keep away from extreme temperatures, open flames, and heat sources to prevent material aging.
- ⦿ Do not stack heavy objects on top of the device, to avoid deformation or mechanical damage.
- ⦿ For long-term storage, cover the device with a protective cover to prevent dust accumulation or accidental impact.

Transportation

- ⦿ Before transport, ensure the device is properly packed and correctly placed in its case.
- ⦿ The exoskeleton complies with air transport standards and may be carried on board. It is recommended that you consult the airline in advance regarding specific transport regulations.
- ⦿ During transport, ensure the device and its accessories are not subjected to impact, vibration, or excessive compression.
- ⦿ If the packaging shows signs of damage, inspect the device before use to ensure safety.

Troubleshooting

Common Issue 1: The hip joint or ankle joint cannot be inserted into the thigh or calf support.

Possible cause: The cam adjustment is locked, which prevents insertion.

Solution: Open the cam adjustment.

Common Issue 2: The hip joint cannot be secured to the waist belt.

Possible cause: The adjustment switch is locked, so it cannot engage with the waist belt.

Solution: Open the adjustment.

Common Issue 3: When putting on the exoskeleton, the foot cannot be inserted into the ankle joint shoe cover.

Possible cause: The left and right ankle joints were installed on the wrong sides during assembly.

Solution: Check the L/R markings on the ankle joints and reinstall them on the correct sides.

Warranty Policy

This Warranty Policy (hereinafter referred to as "this Warranty") applies only to AlpWalk U1 purchased through official AlpWalk channels or authorized dealers.

What Is Covered

AlpWalk provides a limited warranty against defects in materials or workmanship that arise during normal use of the exoskeleton product.

This warranty policy covers malfunctions caused by quality issues during normal use, and defective parts will be repaired or replaced free of charge. However, it does not cover normal wear and tear. Consumables such as straps, elastic bands, and similar parts (i.e., components that experience natural wear or aging during normal use) are not covered under warranty.

The warranty period is one year commencing from the day after you sign for receipt of the product. When applying for warranty service, you must provide a valid proof of purchase (such as a sales invoice, electronic receipt, or official order screenshot) issued by AlpWalk or its authorized dealers.

What Is Not Covered

This warranty does not cover the following situations:

- × Malfunctions or damage caused by improper use, not attributable to product defects;
- × Damage resulting from modification, disassembly, or opening of the housing that is not performed in accordance with this manual;
- × Damage caused by incorrect installation, use, or operation not in accordance with this manual;
- × Damage caused by self-repair of components without official manual guidance;
- × Damage resulting from continued operation with worn or damaged components;

- × Damage caused by the use of third-party accessories not certified by AlpWalk, leading to compatibility or reliability issues;
- × Damage caused by high-temperature exposure, negligence, fire, liquid ingress, or corrosion;
- × Damage resulting from use outside the product's intended operating conditions, including but not limited to prolonged exposure to harmful environments (e.g., extreme temperature/humidity, heavy dust, or corrosive gases);
- × Damage caused by force majeure events (such as fire, earthquake, flood);
- × Products and components whose identification labels have been altered, removed, or defaced without authorization;
- × Products for which a valid proof of purchase cannot be provided or which have exceeded the warranty period.
- × Other circumstances not expressly listed in this Warranty Policy for which AlpWalk has reasonable grounds to refuse warranty service.

What Will Void This Warranty

This Warranty shall automatically become void under any of the following circumstances:

- × Unauthorized repair or modification of the product or its components;
- × The product is used in combination with non-AlpWalk original parts or third-party accessories;
- × The product's warranty label, serial number, or anti-counterfeiting mark has been altered, removed, or damaged;
- × The product has been misused, improperly stored, or used for illegal purposes.

How To Obtain Warranty Service

You may contact AlpWalk official customer service to request warranty service through the following methods:

- Official Website: www.alpwalk.com
- Email: service@alpwalk.com

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