

DNSYS X1

DNSYS X1 Carbon Exoskeleton Instruction Manual

1. INTRODUCTION

The DNSYS X1 Carbon Exoskeleton is an AI-powered leg assistance device designed to enhance mobility and reduce physical exertion during various outdoor activities such as hiking, climbing, and running. This manual provides essential information for the safe and effective use of your X1 Carbon Exoskeleton.

2. PRE-PURCHASE NOTICE & SIZING

Before use, please measure your waist and thigh to select the correct size. The X1 Carbon Exoskeleton is available in multiple sizes to ensure a proper fit:

- **Size S:** Waist 27.5–35.4in, Thigh 15.8–24.4in
- **Size M:** Waist 33.5–43.3in, Thigh 15.8–24.4in
- **Size L:** Waist 41.3–49.2in, Thigh 15.8–24.4in

Ensure your body measurements fall within these ranges for optimal performance and comfort. For detailed sizing instructions, refer to the image below.

Fit Any Body



Adjustable Waist Carbon Plate

Carbon plate position and angle can be adjusted to provide stable support and optimal load distribution.



Adjustable Leg Straps

Easily adjustable straps ensure a secure fit while allowing natural leg movement during activity.



Adjustable Waist Strap

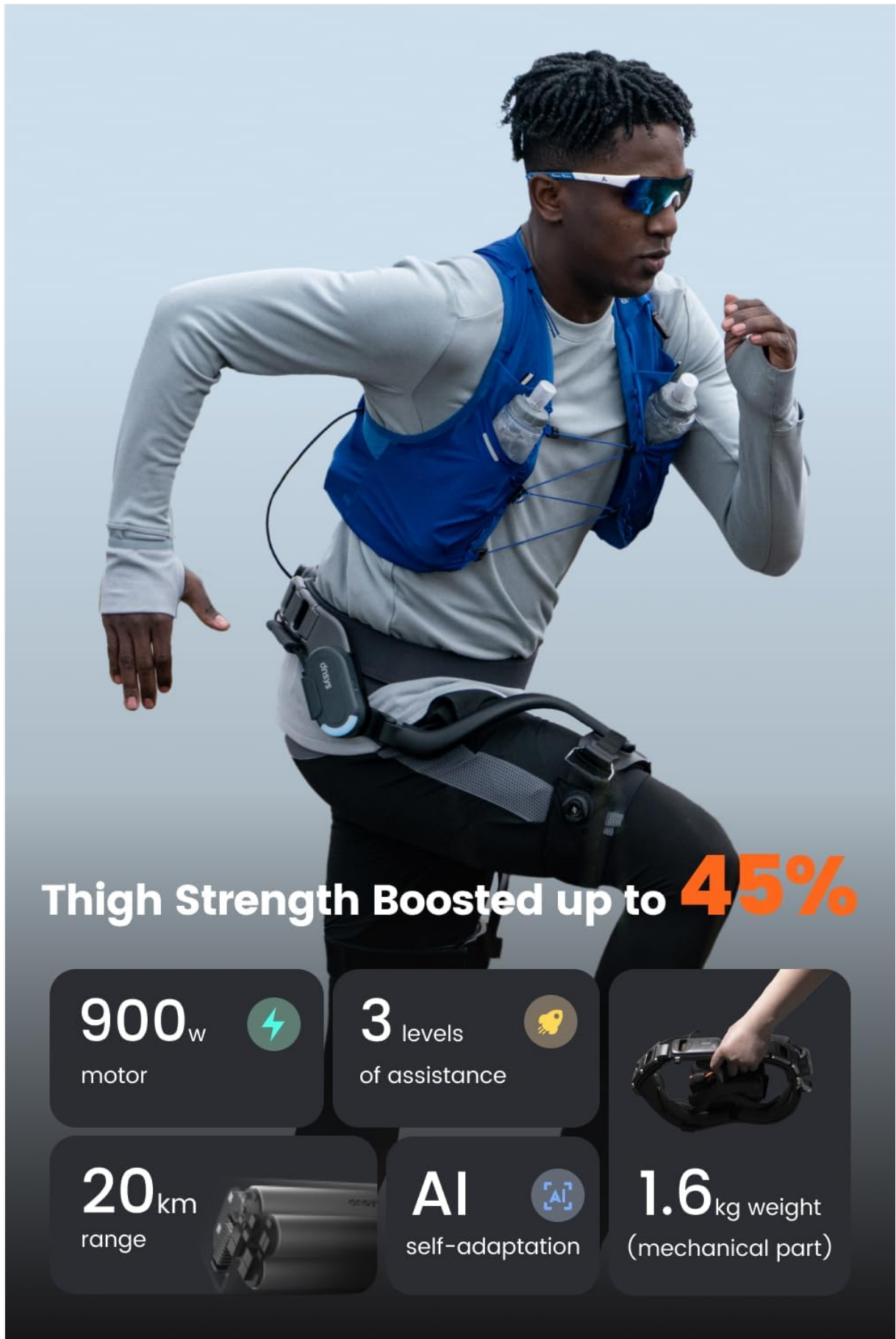
Adjustable straps delivers a comfortable, secure fit across a wide range of body sizes.

Image: Detailed sizing chart for DNSYS X1 Carbon Exoskeleton, showing waist and thigh measurements for sizes S, M, and L.

3. WHAT'S IN THE BOX

Your DNSYS X1 Carbon Exoskeleton package includes the following items:

- Dnsys X1 exoskeleton main body
- Dnsys X1 smart battery kit
- User Manual
- Replacement straps



Thigh Strength Boosted up to 45%






- 900_w motor 
- 3 levels of assistance 
- 20 km range 
- AI self-adaptation 
- 1.6 kg weight (mechanical part) 

Image: All components of the DNSYS X1 Carbon Exoskeleton laid out, including the main body, battery, manual, and straps.

4. SETUP

4.1 App Download & Activation

Before initial use, activate your X1 Carbon Exoskeleton via the Dnsys APP. Download and register for the app, then add your X1 device. Keep Bluetooth enabled on your smartphone and follow the on-screen new user tutorial to complete full function activation.



Image: A smartphone displaying the DNSYS APP interface, showing various metrics and control options for the exoskeleton.

4.2 Battery Insertion

Insert the smart battery into the designated slot on the exoskeleton. Ensure it clicks securely into place. The patented blade-style connector allows for quick and easy battery swaps.

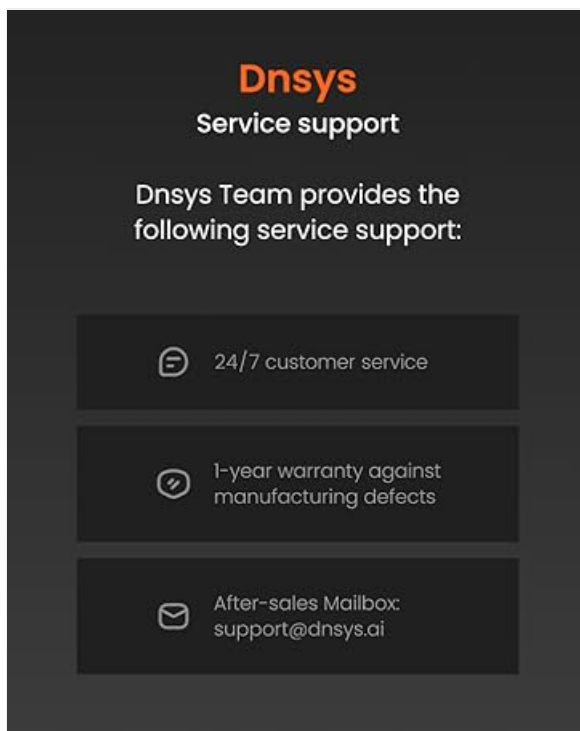


Image: A person's hands inserting a blade-style battery into the hip-mounted unit of the DNSYS X1 Exoskeleton.

4.3 Wearing & Adjustments

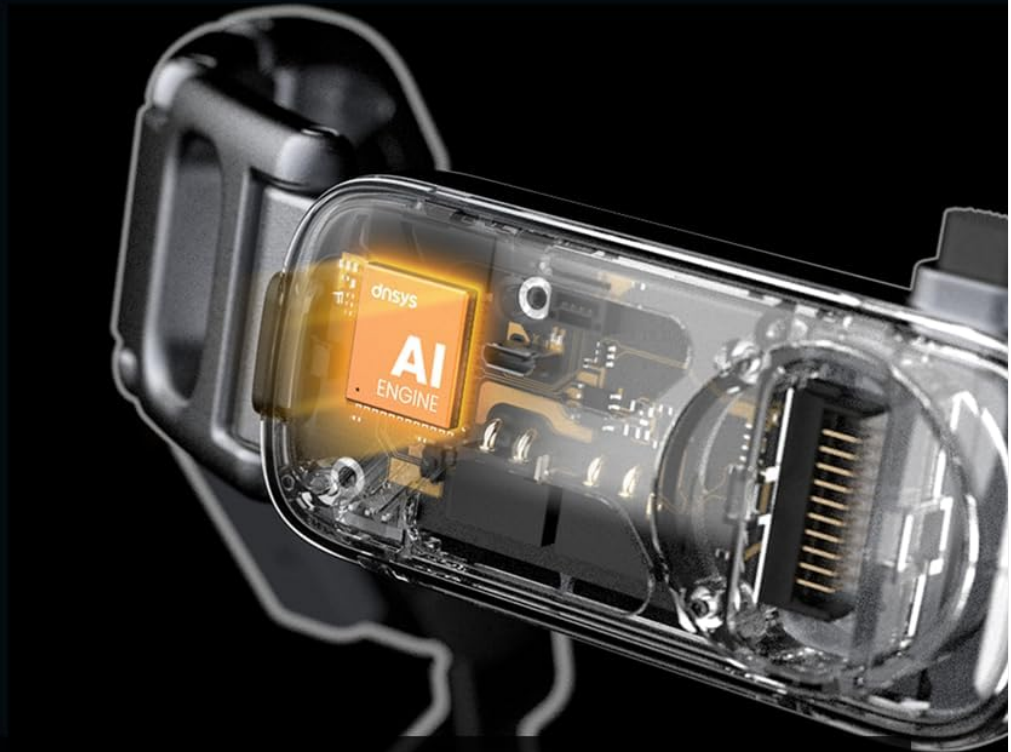
The X1 Carbon Exoskeleton is designed for all-day wear without burden. It features soft, elastic nylon fabric and an adjustable chain-clasp belt. The innovative hip-support structure reduces lower-body joint stress, while the

ultra-lightweight 1.6 kg balanced frame ensures natural, unrestricted movement.

Adjust the waist carbon plate position and angle for stable support. Easily adjustable leg straps ensure a secure fit while allowing natural leg movement. The adjustable waist strap delivers a comfortable, secure fit across a wide range of body sizes.

Dnsys Innovative AI

learns and predicts your next steps



Adapts Any Terrain

Automatically adjusts to terrain and posture changes for uninterrupted support.

Instant Prediction

0.05ms Reaction Effortless Assistance. Fast prediction ensures assistance arrives exactly when you need it.

Understands You Better

Learns your habits and feels Like Second Nature. Learns your unique movement patterns and adapts intuitively in every mode.

Image: A person wearing the DNSYS X1 Carbon Exoskeleton, demonstrating its fit around the waist and thighs.

Your browser does not support the video tag.

Video: Demonstrates the correct procedure for wearing the DNSYS X1 Exoskeleton, including strap adjustments and securing the device.

5. OPERATING MODES

5.1 AI-Powered Assistance

The X1 Carbon Exoskeleton seamlessly adapts to various scenarios and terrains. It predicts your movement intent in real-time, continuously learns your usage habits, and delivers precise, personalized motor torque output for a natural and efficient experience. It adapts to any terrain, provides instant prediction with 0.05ms reaction time, and understands your unique movement patterns.

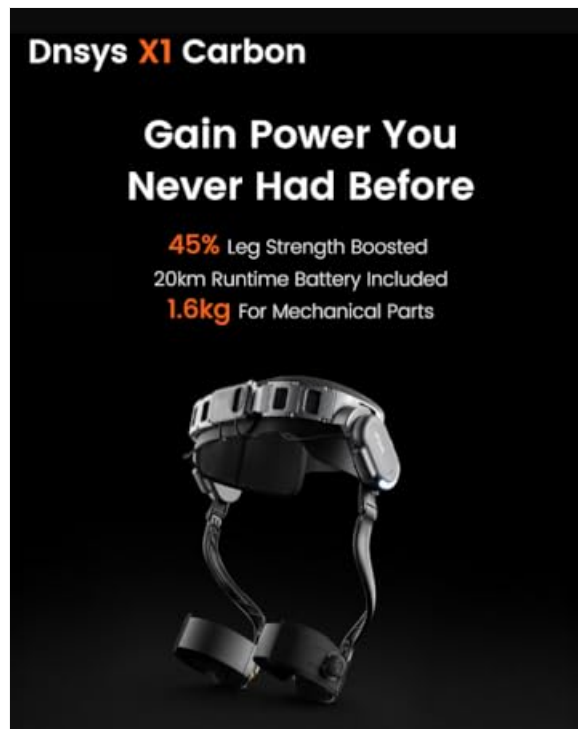


Image: Close-up view of the DNSYS AI Engine within the exoskeleton, highlighting its adaptive terrain, instant prediction, and personalized learning capabilities.

5.2 Mode Selection

The X1 Carbon Exoskeleton offers multiple modes to suit your activity:

- **Eco Mode:** Provides adaptable power for moderate activities.
- **Sport Mode:** Offers dynamic power for intense activities like running or mountaineering.
- **Aqua Mode:** Reduces knee impact during downhill descents and helps burn more calories.
- **Fitness Mode:** Dynamic resistance adapts to workout needs.
- **Transparent Mode:** Pauses assistance for unassisted movement.



Image: Two individuals demonstrating the DNSYS X1 in Assistance Mode (uphill) and AQUA Mode (downhill), illustrating seamless mode switching.

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Video: A tutorial demonstrating how to use the DNSYS X1 Exoskeleton, including mode selection and basic operation.

6. FEATURES & BENEFITS

6.1 High-Power Output

The X1 Carbon Exoskeleton is equipped with a 1.2HP (900W) DNA-1 motor, boasting a high torque density of 50 Nm/kg, delivering powerful support for enhanced performance.



Image: Visual representation of the DNA-1 motor and its specifications, including 3x performance, 47% lighter, 0.76 power-to-ratio, and 50Nm/kg torque density.

6.2 Long Battery Life & Quick Swap

Enjoy up to 20 km of range on a single charge. The innovative Kinetic Energy Recovery System (KERS) recycles energy to extend battery life. The patented blade-style connector allows you to swap batteries in just 3 seconds for continuous, uninterrupted power on the go.

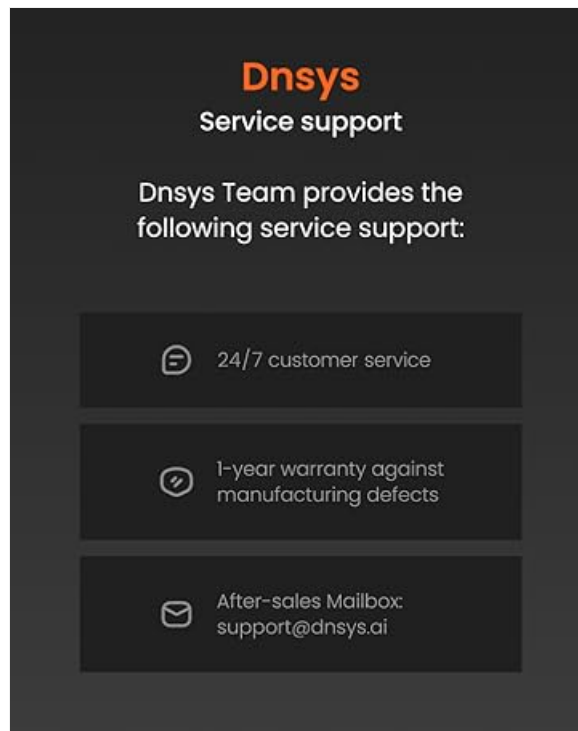


Image: A person's hands inserting a blade-style battery into the hip-mounted unit of the DNSYS X1 Exoskeleton.

6.3 Advanced Safety Modules

The X1 Carbon Exoskeleton incorporates 9 advanced safety modules that constantly monitor wearing conditions and system parts, providing dependable protection in all usage scenarios. These include automatic wear check, abnormal motion detection, fall shutdown protection, motion compliance protection, firmware reinforcement protection, battery safety protection, hardware fault self-diagnosis, industry-grade anti-interference communication, and rigorous component durability testing.



Image: Icons representing the nine advanced safety modules of the DNSYS X1 Exoskeleton, ensuring user protection.

6.4 Terrain Adaptability

Designed for versatility, the X1 delivers stable support whether you're hiking steep trails, commuting, walking the dog, working out, or strolling with family. Its unique chain-clasp belt and hip support system enhance stability and comfort on any terrain, while the motor provides corresponding assistance based on your mode selection to reduce workload.

Long-Lasting Power

One battery delivers up to +20 km of use.

- Type-C charging
 - 3s quick battery swap
 - Regenerative downhill charging
- Stay powered, non-stop.

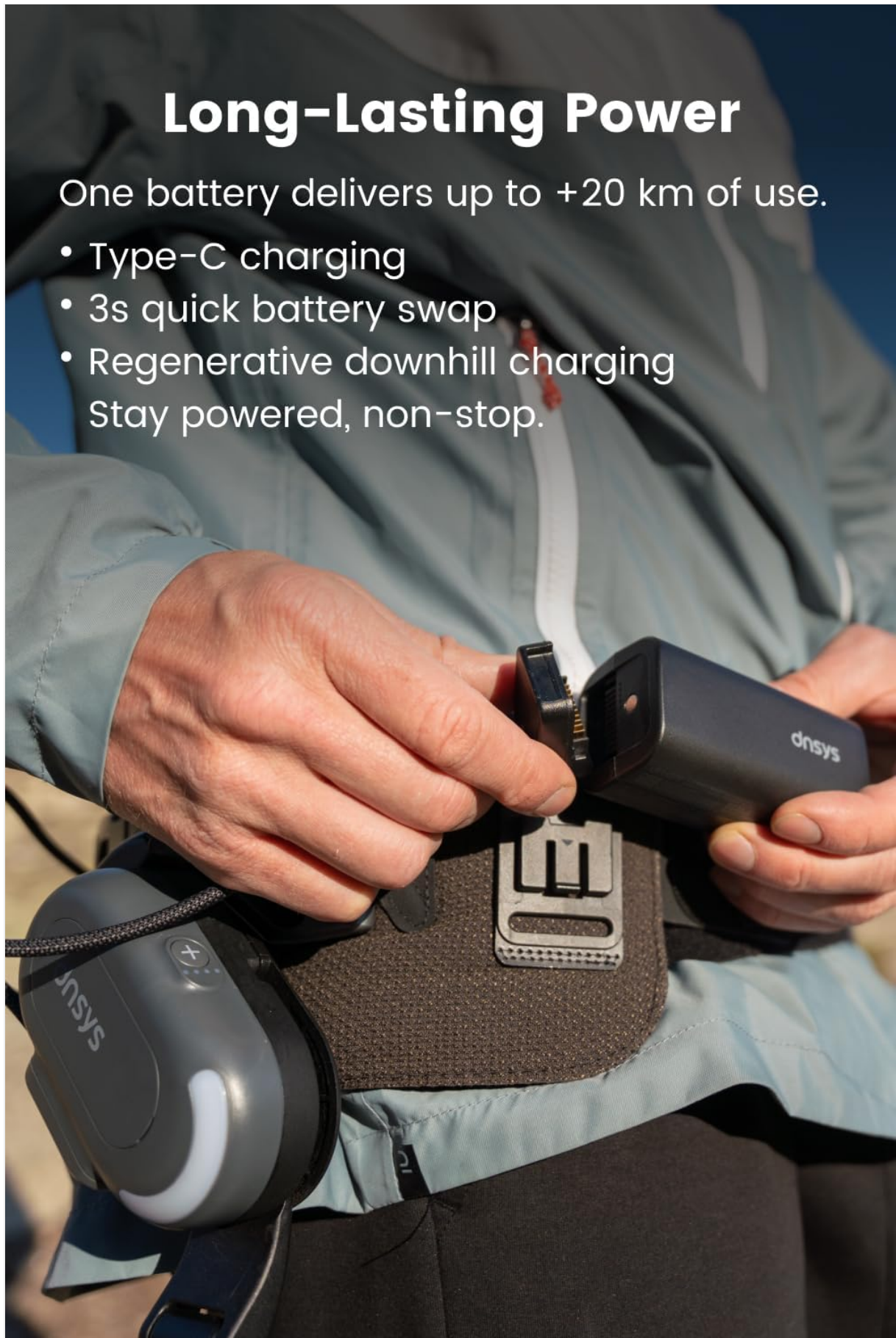


Image: A person hiking uphill on a rocky trail while wearing the DNSYS X1 Carbon Exoskeleton.

7. SPECIFICATIONS

Feature	Detail
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Model Number	X1
Motor Power	1.2HP (900W) DNA-1 motor
Torque Density	50 Nm/kg
Weight (mechanical part)	1.6 kg
Battery Life	Up to 20 km on a single charge
Battery Type	1 Nonstandard Battery (included)
Battery Swap Time	3 seconds
Safety Features	9 Advanced Safety Modules
Package Dimensions	18.33 x 11 x 7.75 inches
Item Weight	8.43 pounds

8. MAINTENANCE

To ensure the longevity and optimal performance of your DNSYS X1 Carbon Exoskeleton, regular maintenance is recommended. Keep the device clean and free from dust and debris. Store it in a dry place away from extreme temperatures. Periodically check all straps and buckles for wear and tear and ensure they are securely fastened before each use. Refer to the DNSYS APP for any specific maintenance alerts or diagnostic information.

9. TROUBLESHOOTING

If you encounter any issues with your DNSYS X1 Carbon Exoskeleton, please refer to the following common troubleshooting tips:

- **Device not powering on:** Ensure the battery is fully charged and correctly inserted. Long-press the power button as instructed in the setup section.
- **No assistance:** Verify that the device is powered on and connected to the DNSYS APP via Bluetooth. Check that you are not in Transparent Mode. Complete the new user tutorial in the app if you haven't already.
- **Discomfort or improper fit:** Re-adjust the hip and leg straps to ensure a snug yet comfortable fit. Refer to the sizing guidelines and wearing instructions.
- **App connectivity issues:** Ensure Bluetooth is enabled on your smartphone and the device is within range. Restart both the app and the exoskeleton if necessary.

For further assistance, please contact customer support.

10. WARRANTY & SUPPORT

The DNSYS X1 Carbon Exoskeleton comes with a **1-year warranty** against manufacturing defects. For any product inquiries, technical support, or warranty claims, please contact DNSYS customer service.

After-sales Mailbox: support@dnsys.ai

Users are responsible for using the product as intended. DNSYS disclaims all liability for damages, injuries, or other consequences resulting from improper use, including medical applications or unintended contexts.

