

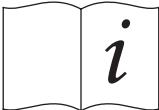
Operation Manual for the



**PERFECT
DESCENT**

CLIMBING SYSTEMS

**Model 230 Auto Belay
Speed Drive
Direct Drive**



ALWAYS READ INSTRUCTIONS BEFORE USE

THIS MANUAL CONTAINS INFORMATION ABOUT THE SAFE USE OF THE PERFECT DESCENT AUTO BELAY AS WELL AS REGISTRATION AND WARRANTY INFORMATION. ENSURE THAT THIS OPERATION MANUAL IS READILY AVAILABLE TO OPERATORS AT ALL TIMES.

IT IS THE RESPONSIBILITY OF THE OPERATOR TO READ, UNDERSTAND AND FOLLOW ALL INSTRUCTIONS IN THIS OPERATION MANUAL REGARDING THE CORRECT INSTALLATION AND OPERATION OF THE PERFECT DESCENT AUTO BELAY PRIOR TO USE.

USE OF THE PERFECT DESCENT AUTO BELAY FOR ANY PURPOSES OTHER THAN THOSE INTENDED BY THE MANUFACTURER IS NOT PERMITTED.

THIS AUTO BELAY SHOULD ONLY BE USED BY PERSONS TRAINED ON ITS USE OR UNDER THE SUPERVISION OF A COMPETENT PERSON.

FAILURE TO FOLLOW ALL OF THESE INSTRUCTIONS AND HEED ALL WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH.

The following symbols are used throughout this manual to highlight potential dangers or important information. Failure to adhere to any of these precautions can result in death, serious injury, or equipment damage. Ensure that you read and understand all safety procedures related to the working environment and the task you are performing.

-  **Danger** - Indicates a hazardous situation that, if not avoided, will result in serious injury or death.
-  **Warning** - Indicates a potentially hazardous situation that, if not avoided, may result in serious injury or death.
-  Indicates an unacceptable situation or condition.
-  Indicates an acceptable situation or condition.
-  Indicates important information regarding health and safety or care of equipment.

-  **EMERGENCY RESCUE PLAN.**
Operators should have an emergency rescue plan for any climber in distress at all sites operating the Perfect Descent Auto Belay.
-  **HEALTH AND SAFETY.**
Operators should abide by all International, Federal, State, and Provincial laws, standards and any specific health and safety regulations pertaining to the installation and use of this product at the location of installation.



SERIOUS INJURY OR DEATH MAY RESULT FROM THE IMPROPER USE OF THIS PRODUCT

- **DO NOT OPERATE THE AUTO BELAY WITHOUT PERFORMING THE REQUIRED INSPECTIONS.**
- **DO NOT OPERATE THE AUTO BELAY IF THE AUTO BELAY FAILS ANY INSPECTION**
- **FAILURE TO PROPERLY CONNECT CAN RESULT IN SERIOUS INJURY OR DEATH**
- **A FALL ON A SLACK LANYARD CAN CAUSE SEVERE INJURY OR DEATH**
- **DO NOT ALLOW THE LANYARD TO PASS OVER SHARP EDGES OR DRAG ON THE WALL OR OTHER OBSTRUCTIONS.**
- **DO NOT USE LANYARDS WITH DAMAGE OR EXCESSIVE WEAR AND/OR AGE.**
- **DO NOT CLIMB NEXT TO OR ABOVE THE AUTO BELAY.**
- **DO NOT INSTALL THE AUTO BELAY WHERE THE HOUSING OR LANYARD CAN ENCOUNTER ELECTRICAL HAZARDS.**
- **DO NOT EXCEED THE WEIGHT RANGE OF THE AUTO BELAY.**
- **DO NOT CLIMB IN A MANNER THAT WILL PRODUCE A SWING FALL.**
- **DO NOT ALLOW THE LINE TO BECOME WRAPPED AROUND ARMS, LEGS, OR NECK OF THE USER.**
- **DO NOT START DESCENT FROM ABOVE THE AUTO BELAY.**
- **DO NOT PULL THE LANYARD OUT FROM THE AUTO BELAY PRIOR TO INITIATING DESCENT.**
- **DO NOT CLIMB OFF-ROUTE OR IN THE PATH OF ANOTHER CLIMBER.**

SPEED CLIMBING

The Perfect Descent Model 230 Speed Drive Auto Belay may be used for Speed Climbing. Speed climbers can gain height very rapidly and may not notice slack developing in the lanyard. For this reason, speed climbers should be monitored at all times. The climber and the person monitoring, should monitor the Lanyard for proper retraction during the ascent, and a system to alert the climber in the event of slack developing in the Lanyard should be in place. The climber should be instructed to stop climbing immediately upon being alerted. If the device fails to retract or fails to keep pace with the climber, the device must be removed from service immediately and sent to the nearest Authorized Service Center for inspection and repair.

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1. OWNER REGISTRATION

Before using this auto belay, owner/Operators should first read this manual and register this auto belay. Product registration is important for life-critical auto-belay's, synchronizing unit-specific information with manufacturing, testing, and quality control records. You will also be the first to receive important product updates, advisories, and technical bulletins and may elect to receive news, events, and exclusive offers.

The following information is needed when registering your device at www.PerfectDescent.com/product-registration.

- Auto belay serial number (See to Figure 1 for location).
- Purchase date.
- Primary contact name.
- Business/organization name, phone, email, and address (be sure to enter the permanent address and telephone number of the owner).

2. CERTIFICATION

If the Perfect Descent Auto Belay is resold outside of the USA, the reseller should provide these Instructions for use, service, maintenance, and repair in the language of the country of use.

The Perfect Descent Auto Belay can be used as an auto belay device only in combination with other components such as an Anchor point, Anchor Connector and climbing harness. It shall be deemed unsuitable for use until it is ensured that the entire system complies with the requirements of all standards, directives, and regulations in effect at the location of installation.

The Perfect Descent Auto Belay conforms to regulation (EU) 2016/425 and complies with the following prevailing safety regulations:

- AS/NZS 1891: Industrial fall-arrest systems and devices - Part 3: Fall arrest devices.
- CSA Z259.2.3:99: Descent control devices
- ANSI/ASSE Z359.4: Safety requirements for assisted-rescue and self-rescue systems, subsystems, and components
- EN 341: 2011-1A: Personal protection equipment against falls from height-descender devices, RFU PPE-R/11.128 V3
- EN 360: 2023: Personal protective equipment against falls from a height - Retractable type fall arresters

Notified body for CE type examination:

TÜV SÜD Product Service GmbH

Ridlerstraße 65 80339

München, Germany

Body controlling the manufacture of this PPE:

TÜV SÜD Product Service GmbH

Ridlerstraße 65 80339

München, Germany

Declaration of Conformity: EU Declaration of Conformity can be downloaded at:

www.PerfectDescent.com/certifications/

Manufacture Information

C3 Manufacturing LLC

3809 Norwood Drive Unit 1

Littleton, CO 80125 USA

EU importers may apply their name and address on the device next to the specification label, and into this Operation Manual to comply with government regulations.

3. DEFINITIONS

The following are definitions for terms used throughout this Operation Manual.

- **ANCHOR POINT** – The point of the load bearing structure to which the auto belay is mounted.
- **AUTHORIZED SERVICE CENTER** – Facility that has been trained and certified by C3 Manufacturing LLC to inspect, maintain, repair, and re-certify the Perfect Descent Auto Belay. Visit www.PerfectDescent.com for a list of Authorized Service Centers
- **COMPETENT PERSON** – A person who through training, experience, or sufficient knowledge, is able to understand this manual, can identify hazards related to the operation of the device, and has authority to render the device inoperable until such a time as it can be inspected by C3 Manufacturing LLC or an Authorized Service Center.
- **CORROSIVE ENVIRONMENT** – Any environment known to cause rust or other corrosive degradation of metals and/or nylon webbing.
- **EXTREME USE** – Any use greater than 100 descents per day.
- **LANYARD** – Webbing line used to connect the user to the auto belay.
- **MAJOR MAINTENANCE** – Any service or maintenance that requires disassembly of the auto belay.
- **MOUNTING POINT** - Component of the auto belay device which is used to connect the auto belay to the Anchor Point of the load bearing structure.
- **NOZZLE** – Metallic component of the Lanyard used to guide the Lanyard properly into the auto belay.
- **OPERATOR** – Person or entity that is responsible for the supervision and inspection of the auto belay and the safety of its users.
- **QUALIFIED ENGINEER** – A professional engineer certified to practice in the location where the device is to be installed and who has the requisite knowledge, training, and experience to evaluate and design any component or system used in conjunction with Perfect Descent Auto Belays.
- **ROUTINE MAINTENANCE** – Maintenance that is performed by the Operator.
- **SECONDARY CONNECTOR** – Any connector used for installation that is not supplied with the Perfect Descent Auto Belay.
- **SPEED CLIMBING** – Ascending at a rate greater than 0.6 meters (2ft) per second.
- **TAG LINE** – A lightweight secondary line or leash used to retract and retrieve the Lanyard of the auto belay when it is mounted.
- **USER** – Any person climbing using the Perfect Descent Auto Belay.

4. DESCRIPTION

The Perfect Descent Auto Belay is a controlled descent device for recreational climbing and aerial adventure activities. It is installed in place of a top rope, thus eliminating the need for a belayer by providing a hands-free belay for the climber. As the climber ascends, the Lanyard retracts automatically. Once the climber lets go of the wall, they are automatically lowered to the ground at a controlled rate. The Perfect Descent Auto Belay is NOT designed for lead climbing.

4.1 MODEL TYPES

- **Direct Drive** - The Perfect Descent Direct Drive Auto Belay models have a controlled retraction rate of approximately 0.6m/s (2ft/s). The Direct Drive is suitable for installations where the rate of ascent will not exceed 0.5m/s (1.6ft/s).
- **Speed Drive** - The Perfect Descent Speed Drive Auto Belay models have a retraction rate greater than 4.6m/s (15ft/s) and are recommended for use on advanced routes, training routes, for Speed Climbing training, and where the expected rate of ascent may exceed .6m/s (2ft/s).
 - The 53ft Model 230 Speed Pro is approved for official *World Climbing* (formerly *IFSC*) competition and World Record events.

4.2 PERFECT DESCENT AUTO BELAY HOUSING ELEMENTS (See Figure 1)

- INSTALLATION HANDLE
 - Mounting Point for anchoring the Perfect Descent Auto Belay. Also serves as a carrying handle.
- BRAKE HOUSING
 - The metal housing that contains the brake mechanism.
- NOZZLE
 - Helps seal the device, prevents contaminants from entering the housing, prevents Lanyard twisting.
- LANYARD
 - Standard models
 - 26mm (1.02") PA/UHMWPE wear-indicating webbing.
 - SPEED PRO
 - 26mm (1.02") UHMWPE wear-indicating webbing.
- SWIVEL CARABINER (optional)
 - Provides a self-locking attachment means to the climber's harness (swivel and carabiner may be separate items).

4.3 PERFECT DESCENT AUTO BELAY LABELS AND MARKINGS (See Figure 1,4 and 5)

- FRONT LABELS
 - Displays product logo and product drive type.
- INSTRUCTION LABEL
 - Explains inspection before use and installation instructions. Reading the back label is not a substitute for reading and understanding these Operator Instructions.
- SERVICE DATE LABEL
 - Completed by the manufacturer. Provides information vital to the inspection and factory service procedures explained in Section 14.
- DATE OF MFG / SPECIFICATION LABEL
 - Contains model specific information.
- SPEED DRIVE WARNING LABEL (Speed Drive Model Only)
 - Contains speed drive warnings and specifications.
- SPEED PRO LABEL
 - Indicates the auto belay is the SPEED PRO model

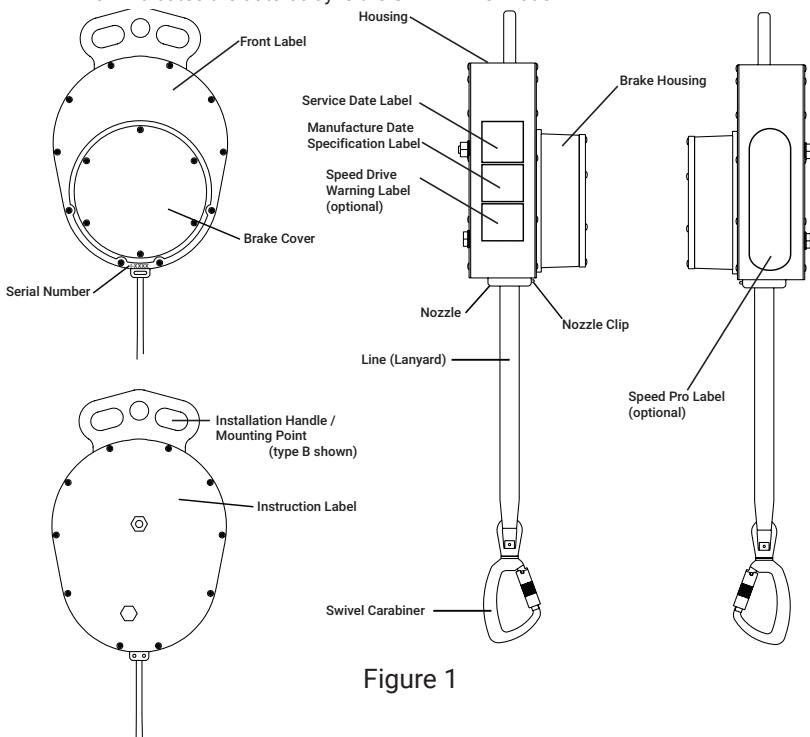


Figure 1

5. PERFECT DESCENT AUTO BELAY SPECIFICATION

- Maximum weight of climber: 140kg (310lbs)
- Minimum weight of climber: 11.5kg (25lbs)
- Operating temperature: 0°-60°C (32°-140°F)
- Descent rate: <2m/s (6.6ft/s)
- Retraction Rate Speed Drive > 4.6m/s (15ft/s)
- Retraction Rate Direct Drive ≈ 6.1m/s (2ft/s)
- Case Dimensions: 40x24x19 cm (16x9.5x7.5 in)
- Net Weight: 13.1-14kg (29-31lbs)
- Lanyard Length 8.5, 12.2, or 16.1m (28, 40, or 53ft.)
- Materials
 - Casing: stainless steel and aluminum
 - Internal parts: stainless steel and/or aluminum
 - Lanyard
 - 26mm (1.02") PA/UHMWPE, Minimum breaking strength 15.6kN (3,500lbs)
 - Speed Pro 26mm (1.02") UHMWPE Minimum breaking strength 22.2kN (5,000lbs)

6. UNPACKING, STORAGE, AND TRANSPORTATION

6.1 CONTENTS IN PACKAGE

- Perfect Descent Auto Belay
- Lanyard, either 8.5, 12.2, or 16.1 meters (28, 40, or 53ft) (installed).
- Operation Manual

6.2 UNBOXING THE PERFECT DESCENT AUTO BELAY

- Inspect auto belay for signs of shipping damage or other contamination. If damage or contamination is suspected, repackage the device, and contact your Perfect Descent reseller to return for repair or replacement.
- Confirm that all labels are affixed to the Perfect Descent Auto Belay and are legible (See Figure 1, 4 and 5)
- Check the Date of Manufacture and Service Date Labels for the "Next Recertification Due" date (see figures 1 and 5). Make a note of the next recertification due date on your calendar. If the date shown has passed or the label is missing or illegible, contact your Perfect Descent reseller.
- Log on to www.PerfectDescent.com/product-registration/ to register your product.
- Read the Operation Manual and familiarize yourself with all aspects of installation, operation, care, and maintenance. Go to www.perfectdescent.com for additional information and updates.



Do not dispose of the packaging.

- The cardboard box and internal packing materials will be required for the return of the device for factory maintenance and inspection. Please keep the packaging in a safe, dry place until required.
- Store this Operation Manual in a safe and accessible place for future reference.

6.3 STORAGE

- When not in operation, store the device with the Lanyard completely retracted. When devices mounted to an anchorage are not in use, a Tag Line can be connected to the carabiner to assist with the retraction and retrieval of the Lanyard.
- Store the Perfect Descent Auto Belay in a cool, dry, and clean place. Avoid areas where heat, moisture, oil and chemicals or their vapors, or other degrading elements may be present. Heavily soiled, wet, or otherwise contaminated equipment must be properly cleaned and dried.
- Prior to using equipment which has been stored or inactive for an extended period, a Formal Inspection (section 13.3.2) must be performed by a Competent Person.

7. SPARE PARTS AND ACCESSORIES

7.1 SPARE PARTS

- The Perfect Descent Auto Belay is fitted with a User-replaceable Lanyard that may be refitted without the need to return the device to an Authorized Service Center. Always follow the instructions as detailed in this Operation Manual and the instructions supplied with the replacement Lanyard. (see 13.1.1, 13.1.4, APPENDIX B, and APPENDIX C)

7.2 ACCESSORIES

The following are accessories that can be ordered from your Perfect Descent Reseller:

- Belay Gate (warning flag)
 - This product serves as an anchor for the Perfect Descent Auto Belay when in normal use.
 - Displays warning graphics reminding climbers to connect to the Perfect Descent Auto Belay before climbing.
- Belay Bar Mounting Kit
 - Allows for proper single point mounting of the Perfect Descent Auto Belay on walls with existing belay bars.
 - Will not damage the belay bar.
- Lanyard Guard
 - A protective sleeve that covers the fabric of the Lanyard that is commonly touched by the climber to allow easy disinfection.

8. INSTALLATION

8.1 PRIOR CONSIDERATIONS

8.1.1 MOUNTING HEIGHT - LANYARD LENGTH

Mounting height (maximum extension) is measured from the center hole in the installation handle to the connection point (see figure 1). Perfect Descent Auto Belays are available in three different Lanyard lengths.

- The Lanyard must always be equivalent to or greater in length than the anticipated mounting height.

Lanyard Length	Mounting height Minimum	Maximum
8.5m (28')	4.25m (14')	8.5m (28')
12.2m (40')	7.9m (26')	12.2m (40')
16.1m (53')	10.5m (34.5')	16.1m (53')



Devices with excessive Lanyard length may experience improper Lanyard spooling that can result in a jerky or rapid descent.



Always select the Lanyard that most closely matches the mounting height and avoid using long Lanyards on short walls. Please contact C3 Manufacturing LLC if you have questions.

8.1.2 OUTDOOR USE

The brake mechanism of the Perfect Descent Model 230 Auto Belay is sealed for use outdoors. Moisture can, however, still enter the device through the Lanyard Nozzle, and if allowed to remain in contact with the other components, may reduce the useful life of the device. When the Perfect Descent Auto Belay is installed correctly with the Nozzle facing straight down, moisture will flow primarily over the protective housing, or drain out through the Nozzle opening.

- If the brake mechanism remains wet, a climber may experience an increased rate of descent or a jerky descent.



Ensure that the brake mechanism is dry prior to operation (see section 12.1.2).



Any device used outdoors must be inspected for proper function after any exposure to precipitation.



Every effort must be made to protect the Perfect Descent Auto Belay from direct and/or extreme weather conditions.



Prolonged exposure to UV light, moisture and wind will decrease the life of the Lanyard.



Lanyards that become wet should be allowed to air dry before retracting and storing.

8.1.3 PLACEMENT

- It is recommended to install the Perfect Descent Auto Belay with sufficient clearance to permit freedom for the device to rotate several inches back-and-forth and side-to-side.
- Install the Perfect Descent Auto Belay over the intended descent path with the housing oriented vertically and Nozzle facing down. Install where the Lanyard can hang unobstructed by the climbing wall, climbing holds or other objects.
- Consider all possible paths of climber movement and all factors that could affect User safety while climbing and descending anywhere along these paths. Consider the location of the entire length of Lanyard as the prospective climber moves around.



The Lanyard must not pass over, under or around the path of another climber or obstacle.



Avoid installation where the Lanyard can become lodged behind hand holds or other obstructions.



Install the device directly over the climbing route/descent path to minimize swing falls.

8.1.4 HANDLING

- Take care when lifting the Perfect Descent Auto Belay as it is a heavy item: ≈13.6kg (30lbs).
- Take precautions to avoid dropping the Perfect Descent Auto Belay when it has been detached from the climbing wall. Damage can occur if the Perfect Descent Auto Belay is dropped. This damage may not be evident upon inspection of the external housing and may result in interference with normal Lanyard retraction. If you suspect that a Perfect Descent Auto Belay has been dropped, resulting in damage to the internal mechanisms, remove the device from use immediately and return to C3 Manufacturing LLC or an Authorized Service Center for repair and/or maintenance.
- When not in use, the Lanyard of the Perfect Descent Auto Belay should be retracted completely into the housing. This will prolong the life of the retraction springs. A Tag Line can be connected to the carabiner for retrieving and returning the Lanyard into the housing. While in use, it is recommended to keep the carabiner clipped to a Belay Gate or similar device at the base of the climb for easy access by Users and Operators.



Tag Lines should be removed during operation to avoid the possibility of an improper connection or possible entanglement by a User.

8.2 ANCHORING THE PERFECT DESCENT AUTO BELAY

- All Anchor Points and connectors used with the Perfect Descent Auto Belay must conform to any Federal, State or Local requirements for such devices at the location of installation.
- In the absence of clear directive from Federal, State or Local regulations, Anchor Points should be approved by a Qualified Engineer. Guidance may also be derived from industry sources such as
 - Climbing Wall Association (CWA) publication General Specifications for the Design and Engineering of Artificial Climbing Structures
 - Association for Challenge Course Technology (ACCT) publication Challenge Courses and Canopy / Zip Line Tours Standards
 - Professional Ropes Course Association (PRCA) standard PRCA 1.0-3-2014
- Anchor Points are not to be shared by other devices or as attachments for hardware not associated with the Perfect Descent Auto Belay installation.
- Anchor Points must be a suitable size to correctly install any mounting hardware.
- Connecting hardware must be compatible in size, shape, and strength.
- All Secondary Connectors and hardware used in the installation of the Perfect Descent Auto Belay must conform to the requirements of EN 362: Types of connectors for personal protection, and/or EN 12275 - Types of connectors for mountaineering.

8.2.1 MOUNTING POINTS AND ORIENTATION

- The Perfect Descent Auto Belay must only be mounted using the Mounting Points at the top of the device. The Auto Belay must be mounted upright, with the nozzle pointing straight down, using one of the two methods in shown in figure 2.
 - For single point mounting, a connector is attached to the primary Mounting Point with an unloaded secondary anchor.
 - For double point mounting, connectors are attached to the secondary Mounting Points, one on either side.



Double point mounting may cause accelerated wear on the Lanyard and Nozzle.



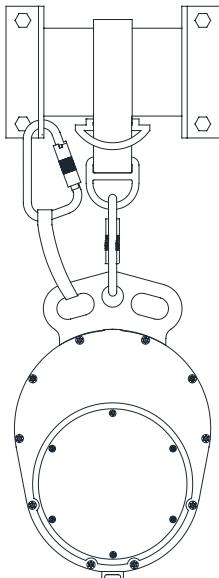
The Lanyard must not pass over a pulley or sheave.



Do not rigidly mount the Perfect Descent Auto Belay to the climbing wall.

- Mounting the Perfect Descent Auto Belay rigidly will result in premature wear of the Lanyard and may impede retraction.

Single Point Mounting Preferred



Double Point Mounting

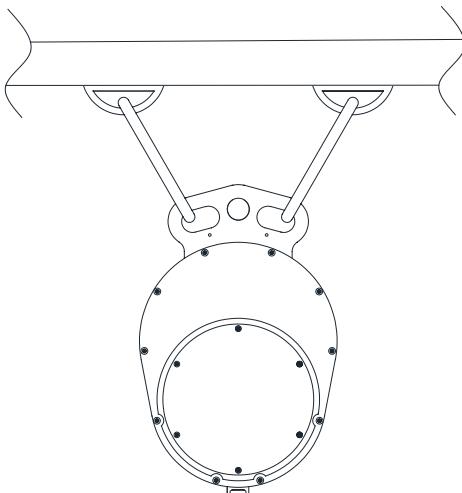


Figure 2

8.3 CUSTOM INSTALLATION

When a device cannot be installed in a traditional manner, it is possible to design and fabricate a custom means of installation. When designing a custom installation, consider and eliminate any potential obstructions that could compromise Lanyard retraction and extraction or the proper function of the auto belay. All custom installations must be designed or approved by a Qualified Engineer.

9. OPERATION

Owner/operators of the Perfect Descent Auto Belay are responsible for the safety and training of any person using this equipment and owners are required by the Manufacturer to read, understand and follow all instructions in this Operator Manual regarding the correct installation and operation of the Auto Belay prior to use.

9.1 OPERATOR TRAINING

It is the responsibility of the Perfect Descent Auto Belay Operator to read, understand, and follow these instructions. Operators should be proficient in the operation of the auto belay, including:

- How to inspect, use, transport, store and maintain the Perfect Descent Auto Belay.
- How to install the Perfect Descent Auto Belay.
- Proper attachment locations and methods, including compatibility of connections.
- Emergency Rescue Planning.
- Storage of the Perfect Descent Auto Belay.

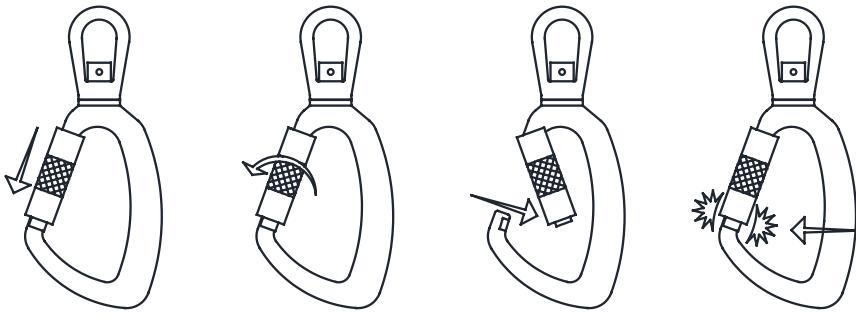
9.2 OPERATION

- Perform the necessary inspections as required in section 13.

9.2.1 CARABINER

Some Perfect Descent Auto Belays are equipped with a triple locking, self-closing carabiner as an integral component of the Lanyard.

- The carabiner is opened by first sliding the barrel until it stops, then twisting the barrel 90°, and then depressing the gate (see Figure 3).
 - o Release the barrel to allow the carabiner to snap shut.
- The carabiner of the Perfect Descent Auto Belay must be properly attached to the climbing harness per harness manufacturer's recommendation.
 - o Some models may be equipped with dual carabiners - both carabiners must be attached to the same point on the harness before climbing.
- The carabiner latch gate must face away from the user. (Single carabiner models)
- If equipped with a dual carabiner connection, the gates of the dual carabiners must face opposite directions.



1 - Slide

2 - Twist

3 - Depress

4 - Release

Figure 3



If the integral carabiner does not freely and fully self-close or is otherwise damaged or unserviceable, the Lanyard assembly must be replaced.

9.2.2 OPERATOR SUPPLIED CONNECTORS

Lanyard connectors other than those supplied and installed by C3 Manufacturing LLC may be used provided the connector(s) meets all the following criteria.

1. Marked EN362 or ANSI Z359.12 on the device.
2. Has a swivel function when used in the single connector configuration or captive bar if used in the dual connector configuration or with a Perfect Descent.
3. Must be compatible with the Perfect Descent Auto Belay Sewn Loop.
4. Carabiners should be self-closing, self-locking and require at least three steps to open.

Follow the instructions provided by the manufacturer of the connector.



The Operator assumes and accepts all liability for the proper selection, installation, compatibility, and use of all connectors not supplied and installed by C3 Manufacturing LLC. C3 Manufacturing LLC makes no warranty on the compatibility, suitability, usability, or safety of any connector not supplied or installed by C3 Manufacturing LLC.

9.2.3 HARNESS

All harnesses used in conjunction with the Perfect Descent Auto Belay should comply with one of the following standards:

- EN 361 – Personal protective equipment for prevention of falls from a height – Full body harness
- UIAA 105 – Mountaineering and Climbing Equipment 'HARNESSES'
- EN 12277 – Type A Full Body Harness
- EN 12277 – Type B Small Full Body Harness
- EN 12277 – Type C Sit Harness



Follow harness manufacturer's warnings and recommendations for fitting, belay attachment and proper threading of buckles.

9.2.4 USE

Prior to climbing, all users should be instructed in the safe use of the Perfect Descent Auto Belay or be supervised by a Competent Person. Operators are to ensure that all users are familiar with the site rescue plan in the event the climber becomes distressed.

- Check Auto Belay for proper retraction by pulling out a short section of lanyard and allowing it to retract.
- Check that the climbing harness is correctly fitted and tightened.
- Check that the carabiner(s) from the Auto Belay Lanyard is connected to the designated attachment point on the climbing harness and ensure the gate(s) is properly closed.
- Ensure the carabiner latch gate is facing away from the climber. (Single carabiner models)
 - o If equipped with a dual carabiner connection, both carabiners must be connected to the same attachment point of the harness. The gates of carabiners must face opposite of each other.
- Descend feet first.



REFER TO THE AUTO BELAY SAFETY INSERT INCLUDED WITH THIS DEVICE FOR DETAILED USER WARNINGS.

10. LABELS AND MARKINGS

The following labels must be present, legible, and securely attached to the Perfect Descent Auto Belay. If not, remove the Perfect Descent Auto Belay from use and mark it as "UNUSABLE" until a Formal Inspection is performed.

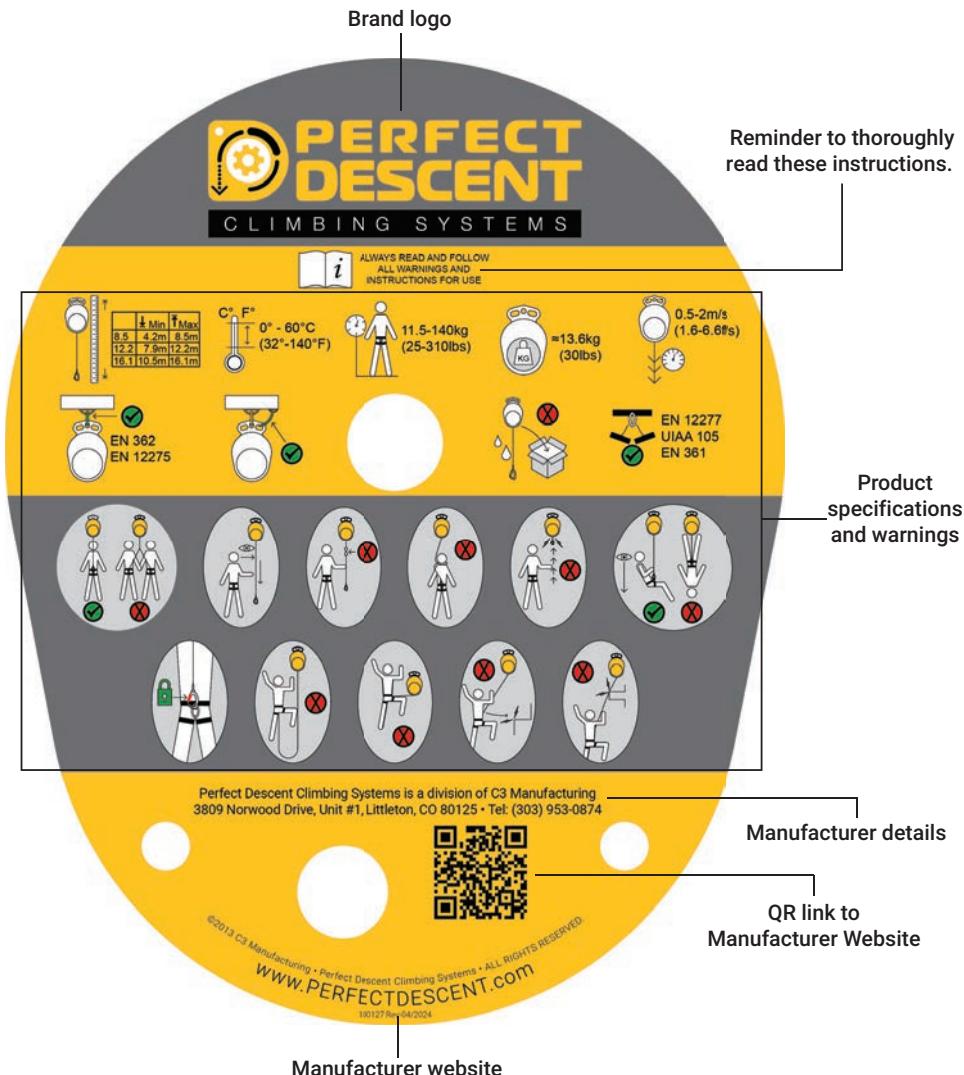


Figure 4



← Drive type

← Product brand



← Date of last Factory Service/
Periodic Examination

← Due date of next Factory
Service/Periodic Examination

Speed Pro models only →



← Model number

← Date of manufacture

← Device/Lanyard length

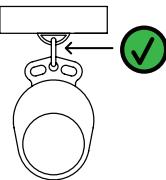
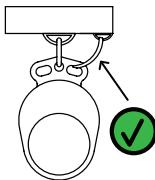
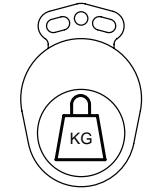
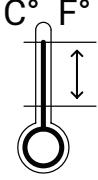
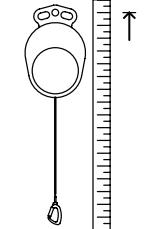
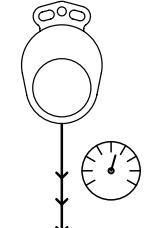
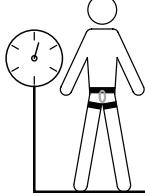
← CE mark and notified body

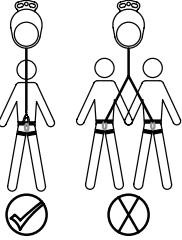
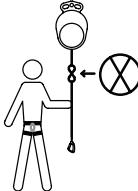
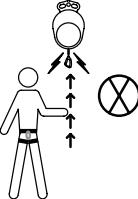
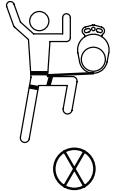
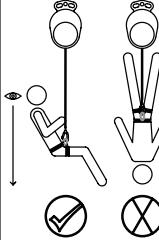
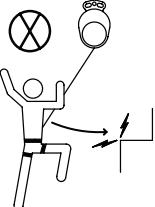
← Country of manufacture

← Speed Drive warnings
(Speed Drive models only)



Figure 5

 <p>EN 362 EN 12275</p>	<p>Mounting hardware Requirements</p>	 <p>Backup connector loose</p>
 <p>KG</p>	<p>Device Weight</p>	 <p>Temperature Range</p>
 <p>↑</p>	<p>Mounting Height</p>	 <p>Do not store the line inside the device when wet</p>
	<p>Descent Rate</p>	 <p>EN 12277 UIAA 105 EN 361</p> <p>Harness standard requirements</p>
	<p>User Weight</p>	 <p>Connect to harness per the harness manufacturer instruction, making sure the carabiner gate is fully closed and locked</p>

	<p>Only one user at a time.</p>		<p>Inspect the line before use.</p>
	<p>Do Not alter the line. Do not clamp, knot or add additional line.</p>		<p>SPEED DRIVE ONLY Do not allow the line to retract in an uncontrolled manner.</p>
	<p>Do not allow the line to become wrapped around the arms, legs or neck.</p>		<p>Do Not allow slack to develop or climb with slack in the line.</p>
	<p>Do not climb alongside or above the device.</p>		<p>Descend in a seated position. Descent path and landing must be clear of obstacles.</p>
	<p>Avoid swing falls and obstacles.</p>		<p>Do Not allow the line to pass over obstacles and edges.</p>

11. CONTROL OF EQUIPMENT

The Operator should establish a policy and procedure whereby any Perfect Descent Auto Belay that is found to be defective, damaged, or in need of maintenance be immediately removed from use, marked as "UNUSABLE" and immediately submitted to custody of the person responsible for Formal Inspection. This has the benefits that:

- Defective equipment is secured from further use until proper action is taken.
- Uniform standards are applied for determining whether the equipment is acceptable or not acceptable for further use.
- Uniform methods of cleaning, Lanyard and carabiner replacement and other maintenance are applied.
- There is a central point for evaluation of conditions that may be recurring and require preventive measures such as coordination with the equipment manufacturer, selection of alternate equipment, additional training of equipment users, or changes to the conditions of use.

12. PERIODIC INSPECTION

Ongoing inspections of this device are required to verify the Auto Belay is in proper working condition. Inspection logs are available for download at: www.PerfectDescent.com



DO NOT OPERATE THE AUTO BELAY WITHOUT PERFORMING THE REQUIRED INSPECTIONS.



DO NOT OPERATE THE AUTO BELAY IF THE AUTO BELAY FAILS ANY OF THESE INSPECTIONS. IF INSPECTION REVEALS IMPROPER FUNCTION, ABNORMALITY, OR UNACCEPTABLE CONDITION REMOVE THE PERFECT DESCENT AUTO BELAY FROM USE IMMEDIATELY AND SUBMIT FOR FACTORY SERVICE.

12.1 DAILY INSPECTIONS

12.1.1 LANYARD INSPECTION

The daily Lanyard inspection must include at least a visual inspection sufficient to evaluate the wear and integrity of the device's Lanyard. Examples of unacceptable Lanyard wear are shown in APPENDIX B, this list is not meant to be all inclusive.



DO NOT USE ANY LANYARD THAT HAS BEEN DAMAGED OR OTHERWISE COMPROMISED



LANYARDS THAT RESEMBLE PICTURES IN APPENDIX B MUST BE TAKEN OUT OF SERVICE AND REPLACED IMMEDIATELY BEFORE CONTINUING USE OF YOUR PERFECT DESCENT AUTO BELAY



DO NOT USE WEBBING WITH WEAR AT OR BEYOND THE STAGES OF UNACCEPTABLE WEAR

12.1.2 FUNCTIONAL INSPECTION

- Verify smooth, even deployment of the Lanyard by pulling the Lanyard out until it stops.
 - If extraction is not smooth or exhibits vibration, remove from use and submit for factory service.
- Return the Lanyard back into the housing in a controlled manner.
- Verify proper function of the retraction system by confirming static retraction strength. Retraction force must be 2kg (4.4lbs) or greater when measured with >65% of the Lanyard extended (see APPENDIX A).
 - From ground level, connect a 2kg test weight to the carabiner of the Perfect Descent Auto Belay.
 - Verify that the test weight stays in place or begins to lift.
 - If the test weight descends, remove the device from use and submit for factory service.
- Check that the carabiner functions properly and confirm that the gate automatically closes and locks when released.
 - Follow the procedures in Section 13.1.3 if a carabiner fails to close or lock automatically.
- Check for proper brake function by making a short descent of 1-1.5m (3-5 feet).
 - If the descent is rapid, jerky or the belay does not descend properly remove from use and submit for factory service.

12.2 WEEKLY INSPECTION

To be performed at least once weekly unless device is in storage.

12.2.1 LANYARD INSPECTION

- Complete all steps outlined in the Daily Inspection (section 12.1). See to APPENDIX B for visual examples of unacceptable Lanyard wear, this list is not meant to be all inclusive.
- Complete a hands-on inspection of the full length of the Lanyard paying specific attention for the following:
 - Inspect the sewn stitching at the end of the Lanyard for broken, frayed, or missing threads.
 - Inspect the Lanyard along its entire length, checking for excessive wear, burns, cuts, UV damage, damage/wear from climbing chalk, chemical or other damage.
 - Inspect the black wear indicating edges. Verify that they are not worn through or frayed.
 - Inspect the nozzle for damage or wear.



IF ANY OF THESE CONDITIONS EXIST, REMOVE THE DEVICE FROM USE UNTIL THE LANYARD IS REPLACED.

12.2.2 HOUSING INSPECTION

- Inspect all fasteners to be sure that they are not loose, missing, damaged, or have been improperly substituted or altered in any way.
- Inspect all metallic parts, including the carabiner and installation hardware, for deformation, fractures, cracks, corrosion, cuts, deep nicks, and evidence of excessive heat or chemical exposure.
- Inspect for excessive wear on the installation handle.
- Check anchorage hardware for excessive wear, loose, missing components, or damage.



IF ANY OF THESE CONDITIONS EXIST, REMOVE THE PERFECT DESCENT AUTO BELAY FROM USE IMMEDIATELY AND SUBMIT FOR FACTORY SERVICE.

12.3 FORMAL INSPECTION

The Perfect Descent Auto Belay must be formally inspected by a Competent Person at least once every six months. The frequency of inspection must be established by the Operator based on such factors as the nature and severity of conditions, frequency of use of the equipment. The inspector shall perform a methodical and thorough visual and tactile inspection by following the inspection procedures in sections 12.1, 12.2 and 12.3.1.



IF THE PERFECT DESCENT AUTO BELAY IS EXPOSED TO SEVERE CONDITIONS OR EXTREME USE, MORE FREQUENT FORMAL INSPECTIONS MAY BE REQUIRED.

12.3.1 FORMAL INSPECTION PROCEDURE

- Remove the auto belay from its anchorage and secure to a table or work bench with the backside facing down.
- Remove the Nozzle Pin, this will allow the Nozzle to separate from the housing.
- Slowly, pull the entire Lanyard out of the Auto Belay housing.
 - Look, listen and feel for any sticking, hesitation, or other hindrances to the smooth deployment of the Lanyard.
- Pull the Lanyard out until you reach the shackle and internal leader. There is an opening behind the arrow that is stitched on the internal leader. Insert the Lanyard's carabiner through this opening to prohibit the Lanyard from retracting.
- Inspect the stitching on the internal leader and end of the Lanyard - stitching must be intact and free from breaks, cuts, fraying, or other damage.
- Inspect the Nozzle for nicks, dings or wear that could impede retraction or damage the Lanyard.
- Inspect the shackle that connects the Lanyard to the internal leader to confirm that it is free from damage and deformity and that the shackle screw is tightened to 2.0-2.5Nm (18-22in-lbs). DO NOT OVER-TIGHTEN.
- Keeping a firm grip on the Lanyard, remove the carabiner from the internal leader and allow the Lanyard to slowly retract into the Auto Belay.
 - Look, listen and feel for constant retraction that does not snag or catch and that no grinding or clattering noises are present.

- Reinstall the Nozzle and pin.
- Complete and file the Formal Inspection Log.



REPLACE THE LANYARD IF ANY SIGN OF DAMAGE OR DETERIORATION ARE PRESENT. IF INSPECTION REVEALS IMPROPER FUNCTION, ABNORMALITY, OR UNACCEPTABLE CONDITION REMOVE THE PERFECT DESCENT AUTO BELAY FROM USE IMMEDIATELY AND SUBMIT FOR FACTORY SERVICE.

13. CARE AND MAINTENANCE

13.1 PROPER CARE

- Inspect the Perfect Descent Auto Belay by following the guidelines laid out in section 12 of this manual.
- The useful life of the Perfect Descent Auto Belay is dependent upon the Operator's proper care of the device, including maintenance and storage. If the Perfect Descent Auto Belay is used on a portable climbing wall, always remove the Perfect Descent Auto Belay, or seal the device from water, salt, and contaminants before transport. Factory maintenance is required every 12 months to keep the product in safe working condition and ensure its integrity. Proper care and maintenance of the product by the Operator is essential to prolong the life of the product.
- For planning purposes, we recommend a planned lifespan of 15 years. The useful life may be affected/reduced by intensity of use. Extreme Use or environmental conditions will require more frequent factory maintenance.



Prevent denting or deformation of the housing.



Never drop the device from any height, and always set it down carefully in a secure location where the device cannot roll or fall.



When in use, protect the Lanyard from contacting sharp corners and edges.



DO NOT allow foreign matter to enter the housing.



Heed all caution labels and instructions as these are intended to prevent damage to the product as well as guide the Operator in correctly operating the Perfect Descent Auto Belay.



Do not store in a wet condition.

- After exposure to water or damp conditions, thoroughly clean and dry the Perfect Descent Auto Belay.
- Ensure that the device is not stored with a wet Lanyard retracted inside the Housing. Always store the auto belay in a clean, dry environment.

13.1.1 MAINTENANCE AND SERVICE

The only maintenance that may be performed by the Operator is cleaning, carabiner lubrication, and Lanyard replacement. All other maintenance must be performed by C3 Manufacturing LLC or an Authorized Service Center. The Operator must never attempt to repair or alter the device. There are no internal parts which are serviceable or replaceable by the Operator, and any attempt **will void the warranty**.

- Proper maintenance is both preventive and corrective in nature.
- Major Maintenance can only be performed at the factory or an Authorized Service Center.
- Routine Maintenance, specified herein is permissible for the Operator to perform.

13.1.2 CLEANING INSTRUCTIONS

Proper maintenance of the Perfect Descent Auto Belay includes regular cleaning of the device housing to remove dust and chalk.

- To clean the housing, use a clean, damp cloth to remove chalk, dirt or other contamination which may cause corrosion or hamper readability of labels. Wipe off any moisture before returning the Perfect Descent Auto Belay to service. The frequency of cleaning shall be determined by inspection and by severity of the environment. In highly Corrosive Environments, cleaning will be required more frequently.

- If water gets into the housing, hang the device, and slowly extract the entire Lanyard allowing the water to run out of the Nozzle opening. Use a clean, dry cloth to wipe the Lanyard dry as it is slowly re-reeled back into the device. Leave the device hanging in a warm, dry room with the Lanyard extracted. A Formal Inspection must be performed before returning the auto belay back to use.



Never use solvents to clean the housing as they may break down the label adhesive.



DO NOT use abrasives to scour the housing as they may damage the plating and the labels.



Never immerse the auto belay in water or other liquid.

13.1.3 CARABINER

Proper maintenance of the carabiner includes cleaning and lubricating the gate hinge, swivel and locking collar.

- Remove all loose dirt and chalk, lubricate the carabiner with a light machine oil or dry PTFE between all moving parts, and activate the locking gate and swivel several times to assist lubricant penetration.



Do not allow lubricant to contact the Lanyard as this may weaken the Lanyard.

- Wipe off any excess lubricant and allow to dry. If the gate is ever observed to stick open or unlocked, remove the Perfect Descent Auto Belay from service immediately until it is properly lubricated and it is verified that the connector will close and lock automatically. If lubrication does not correct the problem, immediately remove the Perfect Descent Auto Belay from use until the Lanyard has been replaced.
- Equipment which is damaged or in need of maintenance must be tagged as "UNUSABLE" and removed from use. Corrective maintenance (other than cleaning) and repair, such as replacement of components, (other than the Lanyard with integral Nozzle and attachment element), must be performed only by C3 Manufacturing LLC or an Authorized Service Center. Do not attempt field repairs.

13.1.4 REPLACING THE LANYARD (AND CARABINER)

The Perfect Descent Auto Belay comes equipped with a Lanyard that may be replaced in the field by the Operator. A Lanyard must be replaced immediately if it or the carabiner(s) fail any inspection or becomes damaged.

It is recommended to keep a replacement Lanyard and the appropriate tools on hand in the event a Lanyard requires immediate replacement. Frequency of replacement will vary depending upon use, however, it is recommended that Lanyards be replaced annually or after 24 months of use regardless of condition. See APPENDIX C for replacement instructions.

14. FACTORY RECERTIFICATION



THE PERFECT DESCENT MODEL 230 AUTO BELAY MUST BE INSPECTED, MAINTAINED AND RE-CERTIFIED FOR USE BY AN AUTHORIZED SERVICE CENTER AT LEAST ONCE EVERY 12 MONTHS.

14.1 FACTORY SERVICE AND RECERTIFICATION

Proper maintenance of the Perfect Descent Model 230 Auto Belay requires return of the belay to an Authorized Service Center every twelve (12) months for inspection and recertification, or more frequently as determined by the Operator's inspection of the device. No internal parts of this device are serviceable or replaceable by the Operator, and any attempt will void the warranty and may render the belay inoperable. The only serviceable component of this device is the replacement Lanyard. All other service must be completed by an Authorized Service Center.

- Unless marked otherwise, the first factory recertification is required 12 months from the latter of the date of manufacture as marked on the Manufacture Date Label or date of delivery as marked on the Importer label (see Figures 1 and 5).
- The Operator can determine when the next Factory Recertification is required by referring to the Recertification Date Label located on the side of the device. This label contains the date of the last factory recertification and the date that the next factory recertification is due.
- Each time the device receives factory recertification, a new Recertification Date Label is applied. The new label will show the date of the recertification and the next recertification due date.
- The Recertification Date Label must always be present and legible. If it is not, remove the product from use and contact C3 Manufacturing LLC or an Authorized Service Center.



Do not operate beyond the next service due date indicated on the Service Date Label.

- Refer to the Recertification Date Label (See Figure 1 and 5).



No unauthorized servicing or repairs allowed.

- Do not attempt to carry out any maintenance or repairs not detailed in this Operations Manual. Any unauthorized maintenance, repair or modifications to the Auto Belay will void the warranty.



Extreme Use may require more frequent inspection and maintenance.

14.2 HOW TO OBTAIN FACTORY SERVICE

- **Step 1:** Contact Manufacturer or Authorized Service Center

Manufacturer:

C3 Manufacturing LLC
3809 Norwood Drive - Unit #1
Littleton, Colorado 80125 USA
Tel: 303-953-0874
service@PerfectDescent.com

Visit www.PerfectDescent.com/ for an Authorized Service Center near you.

- **Step 2:** Have the following information available:

- o Owner's (company) name, address, phone number and e-mail address.
- o Name of person who can be contacted to authorize repair charges.
- o Perfect Descent Auto Belay serial number, model number and last factory service date.
- o Brief explanation of service and known repairs to be performed (e.g., damaged Lanyard, broken carabiner, annual recertification, etc.).
- o Billing address.
- o Return shipment address.

Please note that any device sent to C3 Manufacturing LLC or an Authorized Service Center for service must be disassembled, inspected, reassembled, and retested by C3 Manufacturing LLC or the Authorized Service Center to determine if service beyond normal maintenance is required. Therefore, a minimum service charge will always be made.

- **Step 3:** Ship the device in the original packaging, freight prepaid and insured, to C3 Manufacturing LLC or an Authorized Service Center.

15. APPENDIX A - DUAL RETRACTION SPRING TEST

This auto belay includes a Dual Spring retraction system. This test will determine if both retraction springs are operating properly.

Please follow these instructions in addition to all other inspection criteria specified in section 12.1. Inspection should be done daily with the auto belay mounted to the wall and the lanyard extended.

The amount of lanyard extended must be greater than 65% of the stated lanyard length of the device.

At this point, the retraction force (amount of upward pull) must be greater than 2kg(4.5lb).

TEST METHOD

Working approximately 1m (3ft) above ground, connect a small weight of 2kg(4.5lb) to the carabiner. With this weight attached the lanyard must either stay in place or begin to retract. Use caution not to lose control of the lanyard allowing it to retract beyond your reach. If the additional weight descends, the belay must be removed from use and returned to a Perfect Descent Factory Authorized Service Center for repair.



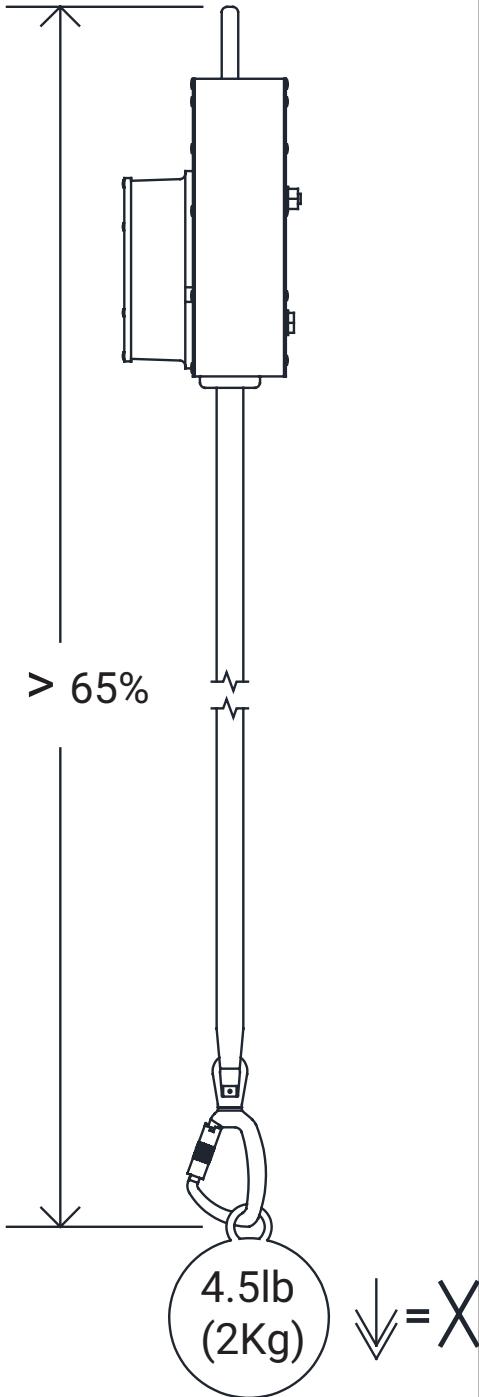
Weight begins to rise.



Weight hovers in place.



Weight descends.



16. APPENDIX B - LANYARD WEAR EXAMPLES

This list is not meant to be all inclusive.



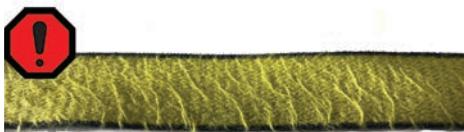
Heavy wear throughout, wavy edges

Lanyard edges wavy, fabric breaking down, becoming dry and/or fading. Heavy use Dragging over an edge.



Edge wear, curving

Dragging over an edge or improper mounting.



Face wear

Lanyard fabric breaking down, becoming dry and fading.
Excessive contact with climbing surface.



Edge wear, curving

Dragging over an edge or improper mounting.



Face wear, becoming fuzzy

Lanyard fabric breaking down, becoming dry and fading.
Heavy chalk use. Excessive contact with climbing surface.



Edge wear and fraying

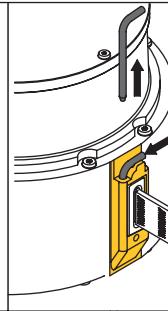
Being dragged over an edge, improper mounting or
accidental damage.

17. APPENDIX C - LANYARD REPLACEMENT

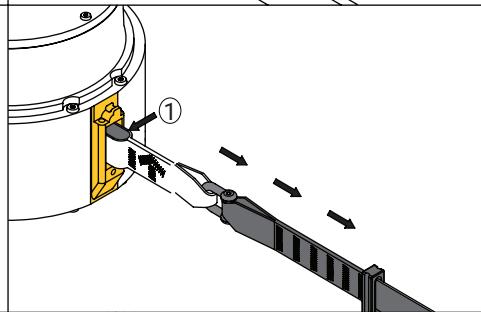
Tools Required:

- 3.5mm (9/64) Hex Key

Remove the pin by pulling upward.
Set the pin aside.

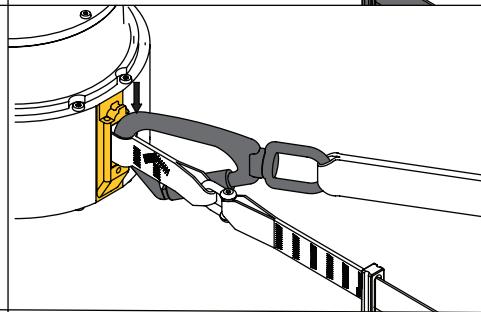


Pull the lanyard out until you reach the shackle and internal leader. Locate the opening behind the arrow that is stitched on the leader.①

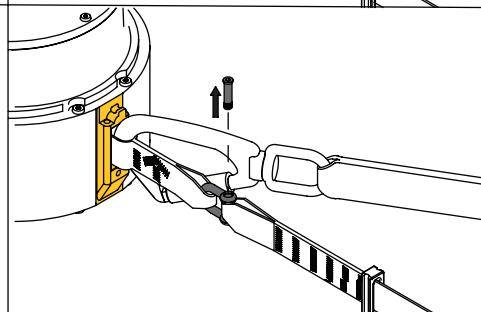


Connect the carabiner from the old lanyard through the opening of the leader. This will prevent the lanyard from retracting during the next steps.

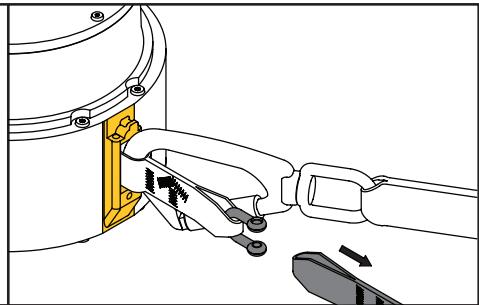
DO NOT remove the carabiner before connecting the new lanyard, damage will occur requiring factory repair.



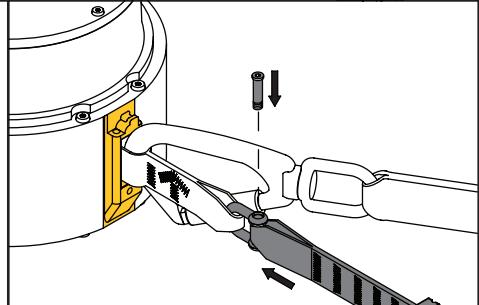
Remove the shackle screw using a 3.5mm (9/64) hex key.
Set the screw aside.



Remove the old lanyard.



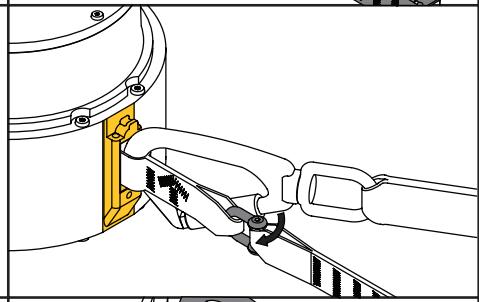
Install the new lanyard into the shackle and reinstall the shackle screw



Tighten the shackle screw to 2.0-2.5Nm (19-22 in/lbs)



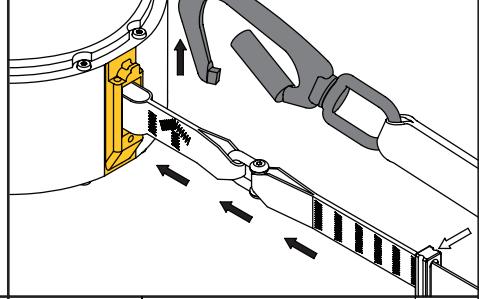
DO NOT overtighten



Pull out slightly on the new lanyard to release pressure from the carabiner. Keep a firm grip on the lanyard and remove the carabiner from the leader. Retract the lanyard into the auto belay slowly. Do not allow the lanyard to twist.

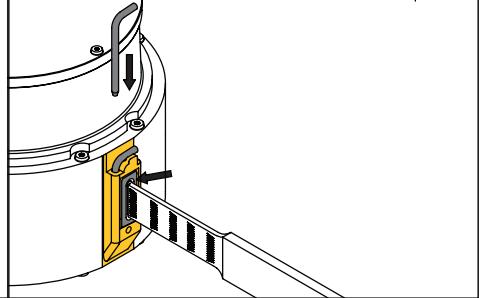


A twisted lanyard can cause retraction problems and damage the lanyard.



Confirm that the nozzle has fully seated into the housing. Reinstall the pin to lock the nozzle into place. Seat the pin as far as possible

Test the belay and tighten the lanyard by making several short controlled descents of 1-1.5m (3-5 feet)



Warranty

C3 Manufacturing LLC warrants that the product furnished is free from mechanical defects or faulty workmanship for a period of two (2) years from date of purchase, provided it is maintained and used in accordance with C3 Manufacturing LLC instructions and/or recommendations. Replacement parts and repairs are warrantied for ninety (90) days from the date of repair of the product or sale of the replacement part, whichever occurs first. This warranty applies only to the original Purchaser. C3 Manufacturing LLC shall be released from all obligations under this warranty in the event repairs or modifications are made by persons other than its own authorized service personnel or if the claim results from misuse of the product. No agent, employee or representative of C3 Manufacturing LLC may bind C3 Manufacturing LLC to any affirmation, representation or modification of the warranty concerning goods sold under this contract. C3 Manufacturing LLC makes no warranty concerning components or accessories not manufactured by C3 Manufacturing LLC but will pass on to the Purchaser all warranties of manufacturers of such components. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO THE TERMS HEREOF. C3 MANUFACTURING LLC SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Exclusive Remedy - It is expressly agreed that the Purchaser's sole and exclusive remedy for breach of the above warranty, for any tortious conduct of C3 Manufacturing LLC, or for any other cause of action, shall be repair and/or replacement, at C3 Manufacturing LLC option, of any equipment or parts thereof, that after examination by C3 Manufacturing LLC are proven to be defective. Replacement equipment and/or parts will be provided at no cost to the Purchaser, F.O.B. Purchaser's named place of destination. Failure of C3 Manufacturing LLC, to successfully repair any nonconforming product shall not cause the remedy established hereby to fail of its essential purpose.

Exclusion of Consequential Damages – Purchaser specifically understands and agrees that under no circumstances will C3 Manufacturing LLC be liable to the Purchaser for economic, special, incidental, or consequential damages or losses of any kind whatsoever, including but not limited to, loss of anticipated profits and any other loss caused by reason of the non-operation of the goods. This exclusion is applicable to claims for breach of warranty, tortious conduct or any other cause of action against C3 Manufacturing LLC.

Customer Responsibility - These items are considered to be the responsibility of the customer and are therefore non-reimbursable under the terms of this warranty. They include routine maintenance and inspection; normal replacement of service items; normal deterioration due to use and exposure; wearing parts such as the lanyard, carabiner, nozzle and brakes; replacements required because of abuse, misuse or improper operational habits of the operator.

Additional sources of information for utilizing your auto belays in your facility.

USA

- Climbing Wall Association - <https://www.cwapro.org/>

Europe

- Association of British Climbing Walls - <https://www.abcwalls.co.uk/>
- The German Alpine Club - <http://alpenverein.de/verband>

Check here for updates and translations.



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