

User Manual

X1 Plus



Dynamic Range X1™

Table of Contents

Introduction	2
Safety Information	2
General Safety	2
Setup Safety	4
Operation Safety	4
Battery Safety	4
Repair and Replacement Safety	5
Product Overview	6
Setup Instructions	8
Step 1: Unpacking the Product	8
Step 2A: Installing the Paracord and Line Tensioning System (If Ordered)	8
Step 2B Installing the Cable (if ordered)	11
Step 3: Setting Up the Target Carriage	13
Step 4: Setting Up the Remote	21
Operation Instructions	23
Pre-Operational Testing	23
Powering On	23
Remote Operation	25
Target Modes	26
Troubleshooting	29
Maintenance and Care	30
Repair Diagrams	31
Warranty and Service Information	32

Introduction

Dynamic Range X1 is a breakthrough in shooting training technology. This versatile system offers three main functionalities to enhance your practice:

Target Retrieval System: Say goodbye to manually resetting targets. Adjust and retrieve targets quickly, maximizing your training time.

Shooting Moving Targets: Improve your accuracy with our dynamic moving targets, simulating real-life scenarios for both beginners and seasoned shooters.

Customizable Shooting Range Scenarios: Design diverse training sessions with our customizable shooting range scenarios.

With industry-first features such as a patent-pending line tensioning system and target carriage, easy-to-replace modular parts, and the only transportable dynamic range system - the Dynamic Range X1 is a game changer. Assembly is fast and replacing damaged parts is easy, ensuring a seamless experience.

Proudly made in Canada by a veteran-owned business, we commit to top-notch quality and unmatched product support.

Safety Information

Before using your Dynamic Range X1, please read and understand all safety precautions and instructions. Your safety is important to us.

General Safety

1. Always adhere to the safety rules and guidelines of your shooting range or area. This includes, but is not limited to,

handling firearms safely, keeping the muzzle pointed in a safe direction, and ensuring that the firing range is clear before commencing shooting.

2. **Unauthorized Modifications:** Do not modify or tamper with the product's components. Unauthorized modifications not only compromise the structural integrity and performance of the Dynamic Range X1 but may also lead to potential injuries and will void the warranty.
3. **Compatible Parts:** Only use approved and compatible parts and accessories. Use of non-standard or incompatible parts can damage the product, compromise its performance, and pose a safety risk. Always refer to the product manual or consult our customer service to confirm compatibility before using any third-party parts or accessories.
4. **Personal Protective Equipment (PPE):** Always wear proper PPE when operating the Dynamic Range X1. This includes, but is not limited to, ear and eye protection. Wearing appropriate PPE can significantly reduce the risk of injury from noise, debris, or potential ricochets.
5. **Ricochet Risks:** The Dynamic Range X1, like any shooting target system, presents a risk of ricocheting bullets. Always ensure adequate standoff distance from the target to reduce the risk of ricochet. Refer to local range guidelines or professional advice for appropriate standoff distances.
6. **Punctured Li-ion Batteries:** Lithium-ion batteries, such as those used in the Dynamic Range X1, can be extremely dangerous when damaged or punctured. Risks include thermal runaway, fire, and harmful chemical exposure. Immediately stop using the product and disconnect the

battery if it is suspected to be damaged or punctured. Follow the provided instructions for safe handling and disposal of damaged batteries and consult with our customer service for replacement options.

Remember, a thorough understanding and adherence to these safety guidelines is paramount in ensuring a safe and enjoyable shooting experience with the Dynamic Range X1. For any further inquiries or assistance, our customer service is ready to assist.

Setup Safety

1. Do not attempt to assemble or disassemble the product if you are not familiar with its parts and assembly process. Misassembly can lead to product failure or accidents.
2. Before use, ensure all parts are securely fastened and that the line is properly tensioned.
3. When setting up the system, make sure you are not within the potential trajectory of any stray bullets.

Operation Safety

1. Operate the remote control responsibly and make sure that all spectators are aware of the moving target's path before activation.
2. Always switch off the system and unplug the batteries before doing any maintenance or part replacement.
3. Keep clear of the moving parts during operation. Loose clothing, hair, or fingers may get caught in the mechanism, leading to injury.

Battery Safety

1. Always use the provided Li-ion battery for operation.
2. Do not expose the battery to high temperatures, open flame, or water.

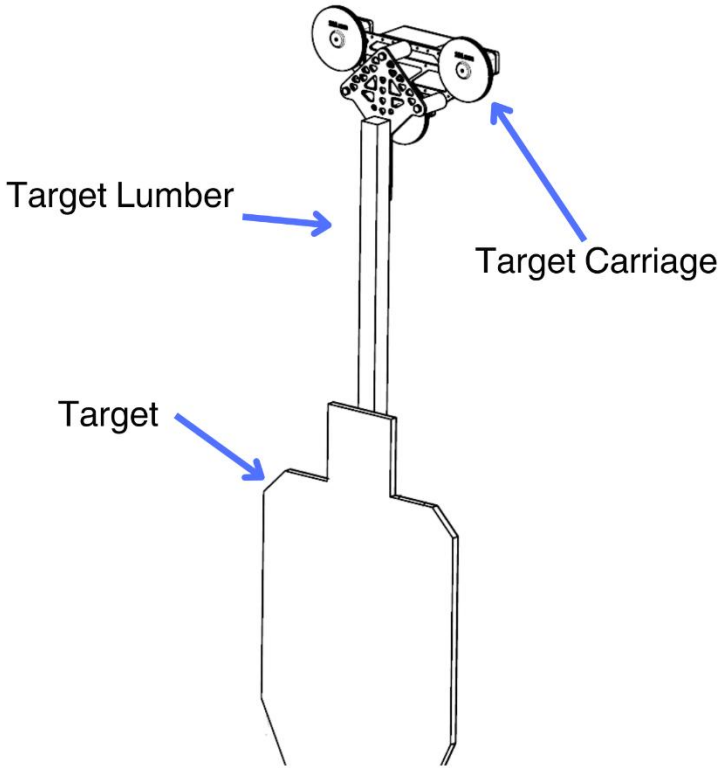
3. If you suspect that the battery has been punctured or damaged:
 - a. Stop using the product immediately and disconnect the battery from the system.
 - b. Handle the battery with care and avoid touching any leaked electrolyte or internal materials.
 - c. Place the battery in a fireproof container.
 - d. Do not attempt to charge or use the battery again.
 - e. Contact us for assistance on safely disposing of the damaged battery and replacing it with a new one.
4. Do not leave the battery unattended while charging. Overcharging may lead to overheating or battery failure.
5. Store the battery in a cool and dry place when not in use.

Repair and Replacement Safety

If the Dynamic Range X1 or any of its parts have been damaged by bullets or any other means, stop using it immediately. Continued use may lead to injury or further damage.

Remember, safety is paramount. Always treat the Dynamic Range X1 with the same respect and caution you would treat a firearm. For any safety-related queries or concerns, please contact our customer support.

Product Overview



The Dynamic Range X1 is a versatile shooting practice system designed to elevate your training experience with these key features:

- **Shooting Target Retrieval System:** Adjust and retrieve targets swiftly, eliminating the need for manual resetting or downrange trips.
- **Shooting Moving Targets:** Set targets in motion to simulate real-world scenarios and enhance your shooting skills.

- **Customizable Shooting Range Scenarios:** Mix and match target types and movement patterns to create personalized training sessions.

Key Product Specifications:

- **Patent-pending line tensioning system and target carriage** for stable and reliable target movement.
- **Easy-to-replace modular parts and low-cost replacement parts** ensure a budget-friendly and easy-to-maintain system.
- **Transportability** as the industry's only portable dynamic range system.
- **Quick assembly** in less than 15 minutes.
- **Stand-alone remote control with an LCD screen** for simple and intuitive operation.
- **Li-ion battery-powered**, with all necessary batteries included.
- **Default maximum range of 450 m**
- **Top speed of 10 fps**
- **Weight of 5.75 lb.**
- **Battery life of 1 hour 30 minutes under continuous movement;** 9 hours under regular use in target retrieval mode.

The Dynamic Range X1 is designed with a commitment to safety, quality, and innovation, providing an outstanding shooting practice experience.

Setup Instructions

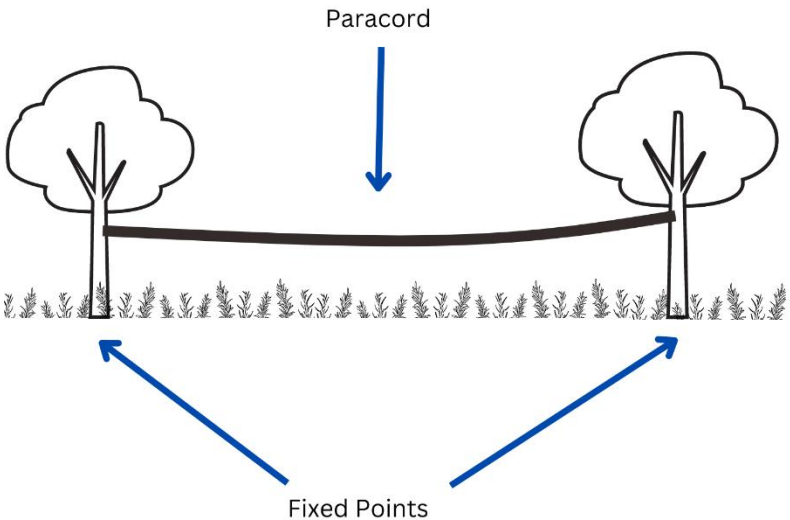
For an optimal setup process and a safe installation, please thoroughly read through these instructions before you begin.

Step 1: Unpacking the Product

- Open the packaging carefully, taking care not to damage any enclosed parts. If possible, keep the packaging for future transport or storage needs.

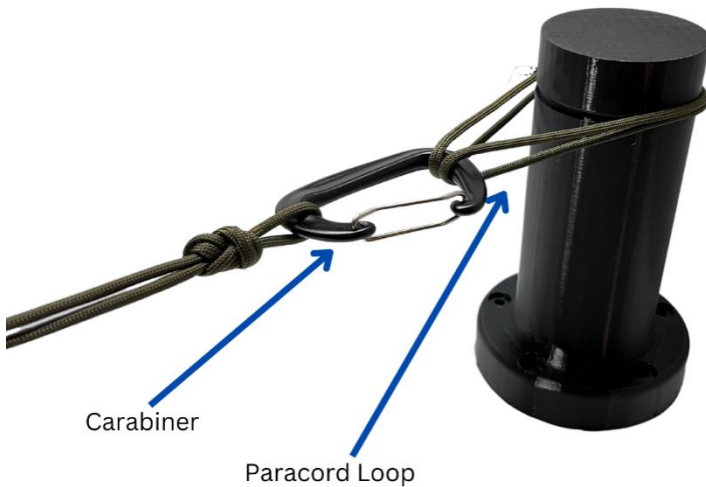
Step 2A: Installing the Paracord and Line Tensioning System (If Ordered)

- Begin by identifying two fixed points that will define the path of your moving target. These points should be high enough to prevent the target from contacting the ground when in motion, considering the inevitable sag in the line. You may use ground topography to your advantage.



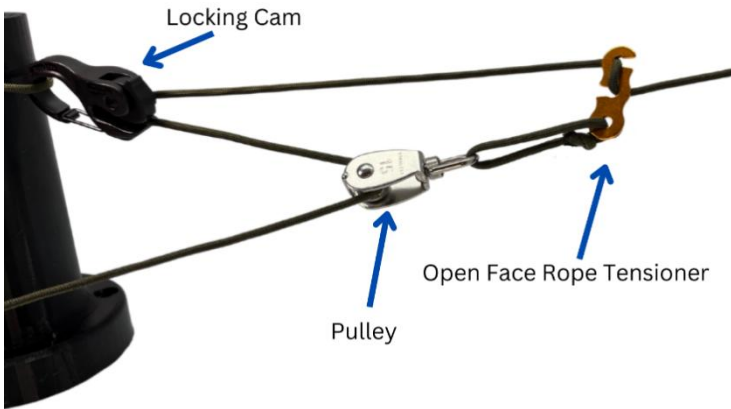
- Unwind the paracord, placing it on the ground between the two points.

- Attach the downrange end of the paracord to the designated fixed point using the provided paracord loop and carabiner.



- On the up-range side, feed the paracord through the tensioner system, following the diagram provided. This system provides mechanical advantage and allows for high tension to be applied to the cord. If the cord spans a short distance, the locking cam may provide sufficient tension on its own.

Line Tensioning System (used for long spans)



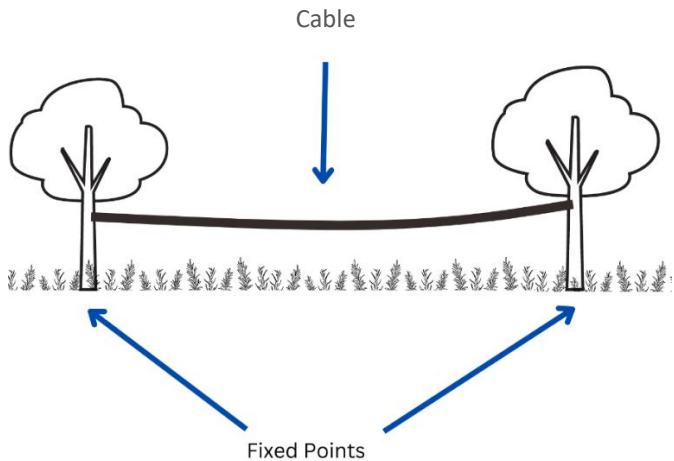
Locking Cam Only (used for short spans)



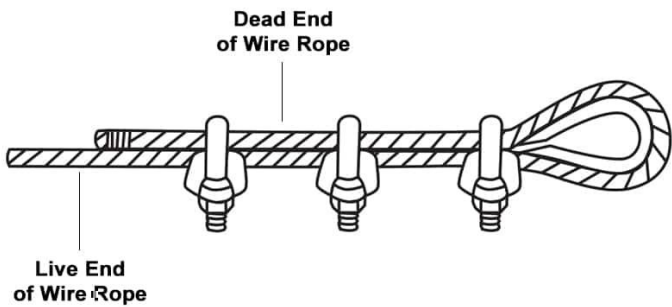
- Please note: The line tensioning system can generate significant mechanical advantage. It is critical not to overtighten the line. During this process, always wear eye protection and gloves for safety. The high tension in the line could potentially project objects or parts of the tensioning system if the line were to snap.

Step 2B Installing the Cable (if ordered)

- Begin by identifying two fixed points that will define the path of your moving target. These points should be high enough to prevent the target from contacting the ground when in motion, considering the inevitable sag in the line. You may use ground topography to your advantage.



- Unwind the cable, placing it on the ground between the two points.



- On the up-range side, secure the hand winch to a fixed point using the provided hex cap timber screws. Thread the cable through, and carefully wind until the wire is tight with no visible sag.

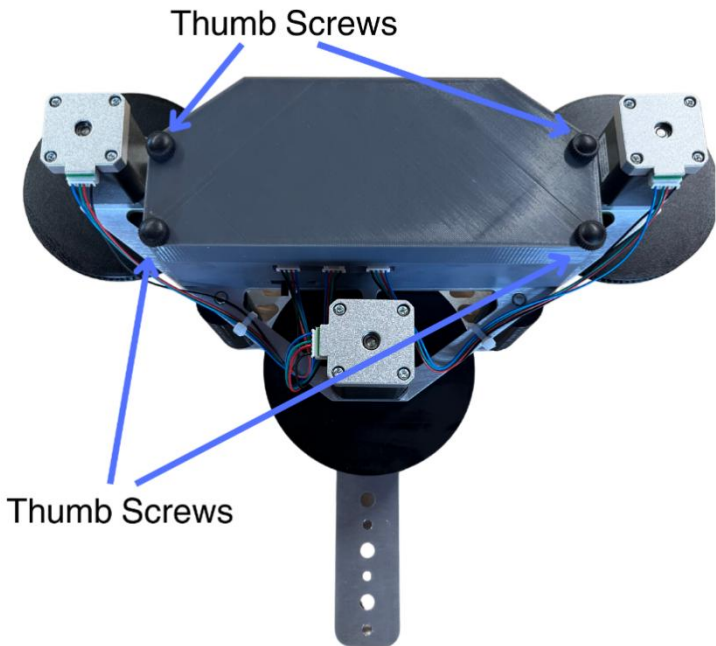


- This system provides mechanical advantage and allows for high tension to be applied to the cord.
- Please note: The line tensioning system can generate significant mechanical advantage. During this process,

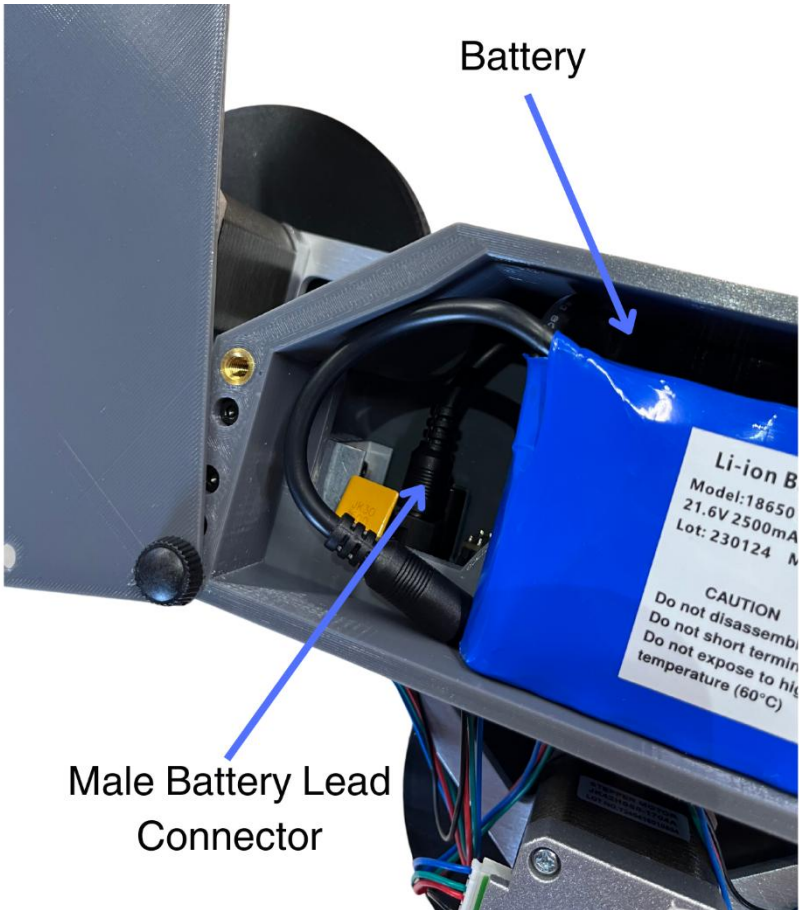
always wear eye protection and gloves for safety. The high tension in the line could potentially project objects or parts of the tensioning system if the line were to snap.

Step 3: Setting Up the Target Carriage

- Before starting the setup process, ensure the battery is fully charged. Connect the battery to the charger and wait for the indicator light to switch from red to green, signifying a complete charge.
- After confirming the battery is charged, remove the battery cover from the target carriage by removing the four thumb screws. Insert the battery, ensuring it is oriented correctly as indicated within the battery compartment.

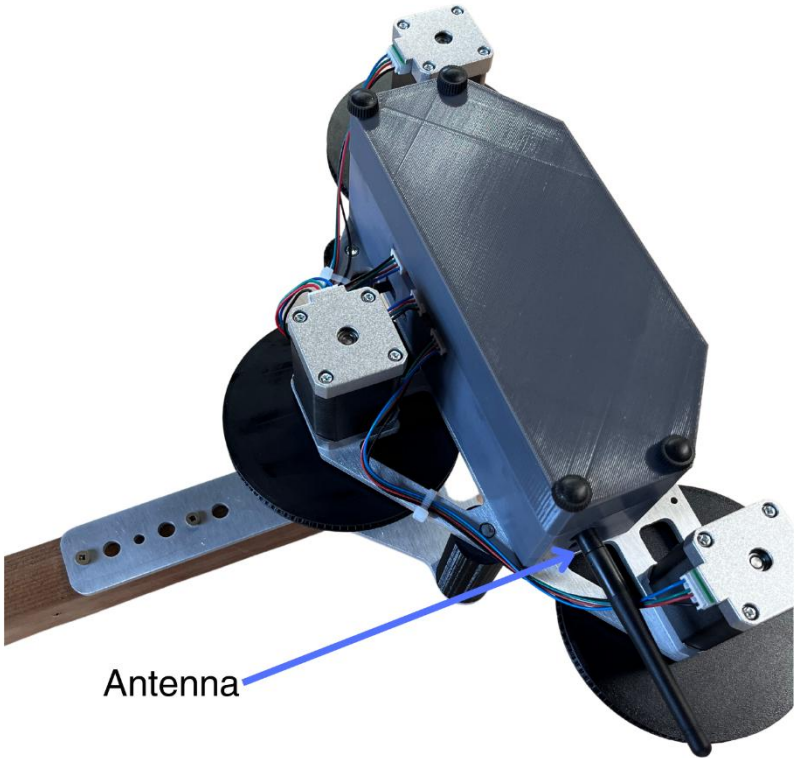


- Locate the male battery lead connection and attach it to the circuit board, which can be found at the back of the target carriage. Make sure the connection is secure.



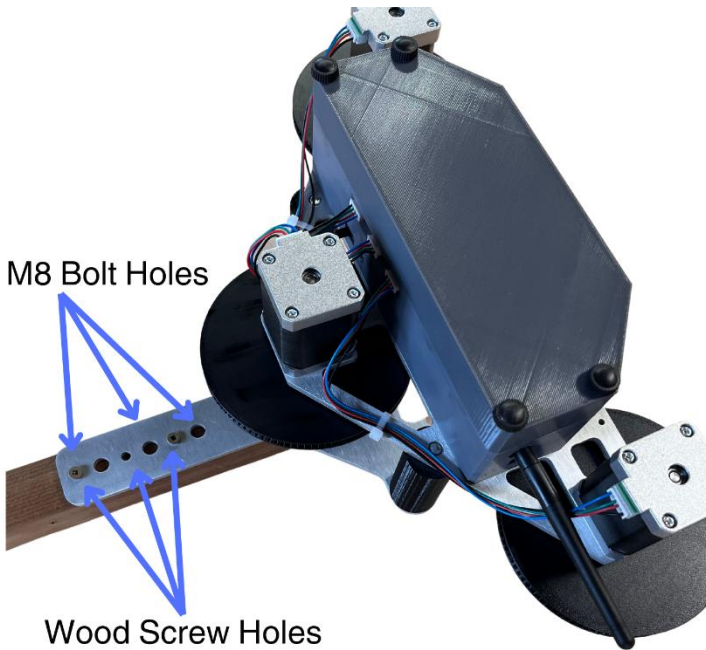
- Once the battery is properly connected, reinstall the battery cover. Ensure the cover is fastened securely to prevent any potential damage or disruption to the battery during operation.

- Install the antenna to the target carriage circuit board through the provided hole.



- Attach the selected lumber to the target front plate using the provided wood screws through the wood screw holes.
- The selected lumbers total weight must be heavier than 1.2kg/2.6lb this is to ensure the weight of the motors is counteracted by the weight of the lumber. In strong wind the weight of the lumber can be increased.

Lumber Type	Required Length (in) - Untreated	Required Length (in) - Pressure Treated
2x2	61.9	54.2
2x3	41.2	36.1
2x4	30.9	27.1



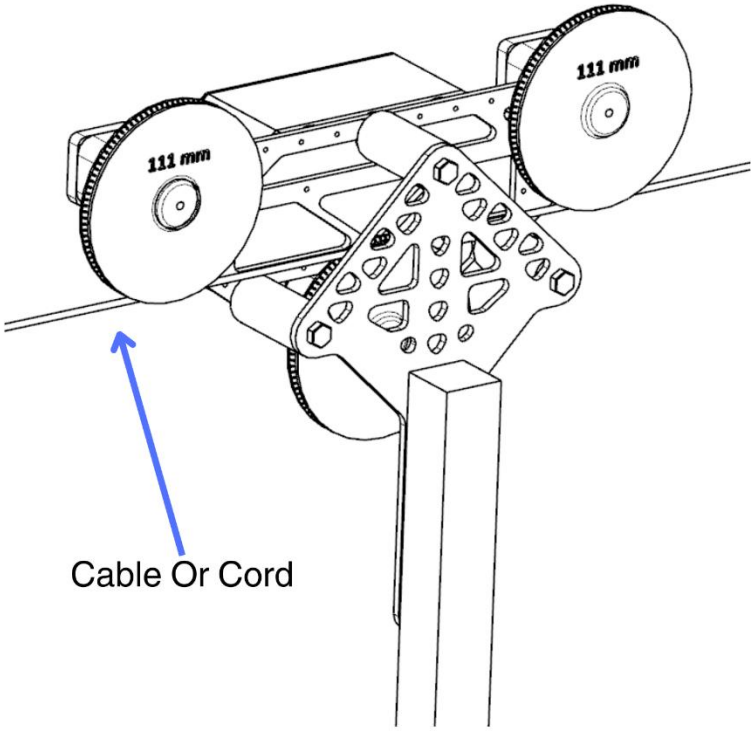
- Attach your selected target to the lumber. A piece of corrugated plastic works well as a backing sheet for paper targets. If you ordered pre-cut corrugated plastic, it will be in the bottom of the box under the foam.
- Affix your selected paper target onto the corrugated plastic sheet. You can do this with the aid of staples, thumbtacks, or tape. We recommend positioning the target as low as feasible while ensuring it is still supported by the plastic sheet. This placement helps mitigate the risk of stray rounds causing inadvertent damage to the target system. We have supplied extra handwheel screws, target mounting brackets, and corrugated plastic sheets as these components are subject to wear and tear and should be considered consumable.



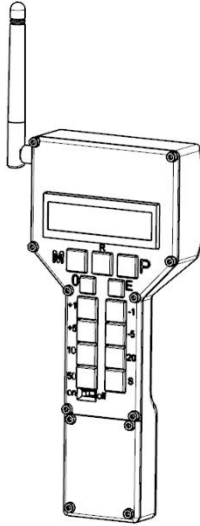
- Remove the top M8 bolt and spacer



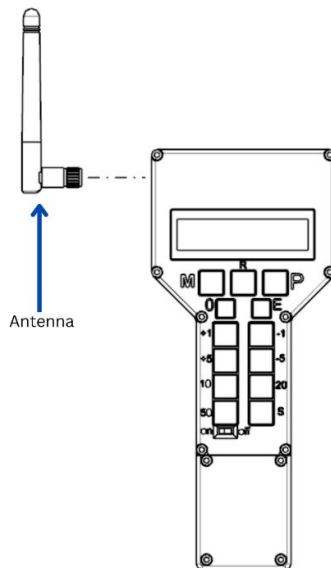
- Feed the paracord or cable through the line and reinstall the M8 bolt and spacer.



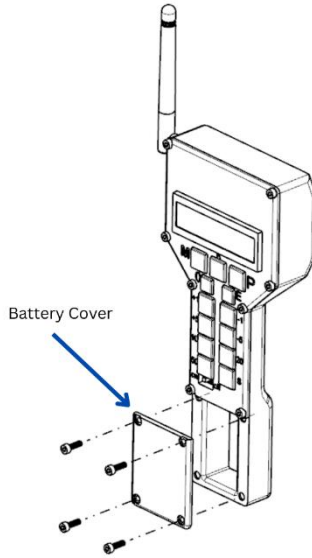
Step 4: Setting Up the Remote



- Attach the antenna to the remote for enhanced signal reception.



- Using the provided Allen key, take off the remote battery cover and insert the supplied 9V battery. Ensure the wire is neatly tucked in before reattaching the battery cover. This prevents the wire from obstructing the cover's reinstallation. (Battery pre-installed)



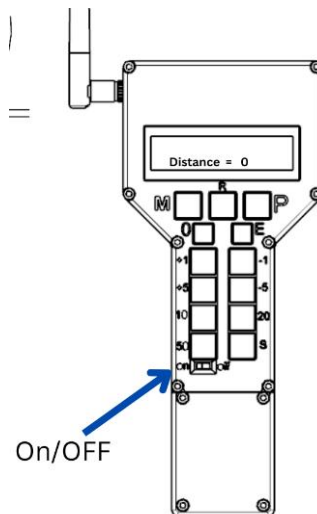
Operation Instructions

Pre-Operational Testing

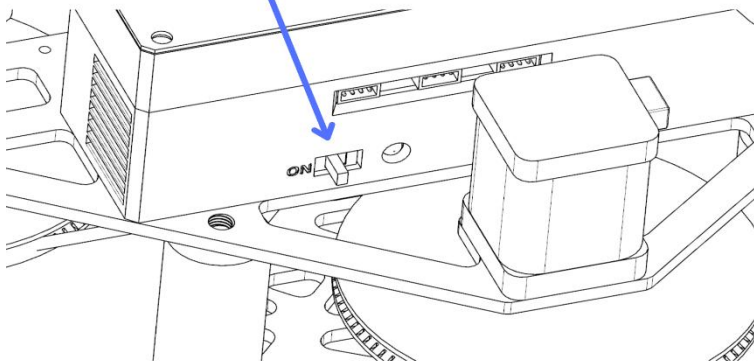
Prior to operating the Dynamic Range X1 for the first time, we **highly recommend conducting a control test on the target carriage without attaching it to the paracord**. This allows you to familiarize yourself with the controls, reducing the risk of **potential system damage caused by impacts**. Once pre-operational testing is completed, attach the target carriage to the paracord for the remaining instructions.

Powering On

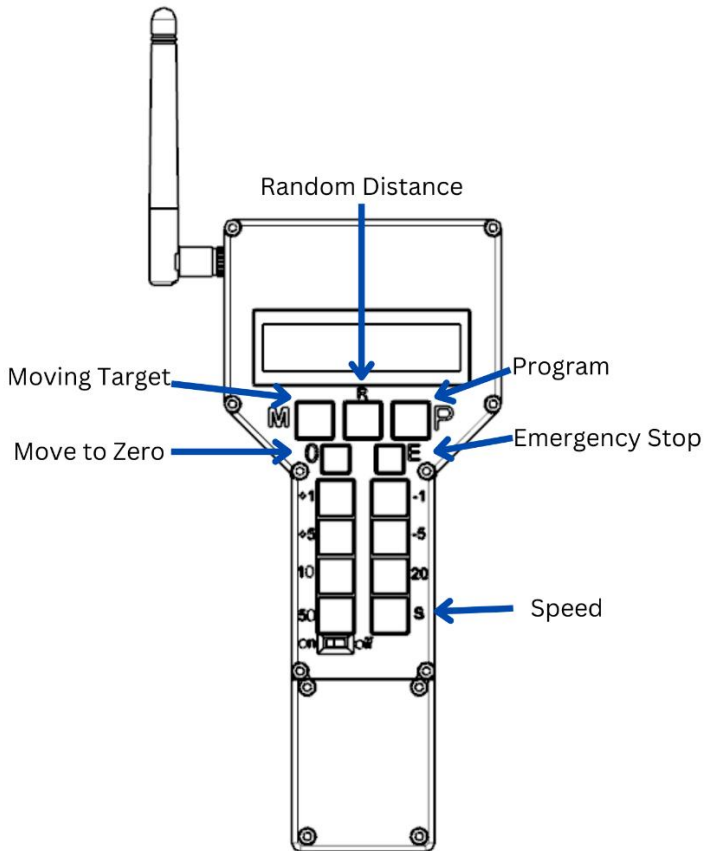
To power up the Dynamic Range X1, ensure the batteries have been installed in both the target carriage and the remote. Flick both on/off switches to the "on" position. Upon activation, the target carriage LED should flash dimly, and the LCD display on the remote should illuminate, displaying "Distance = 0". The position of the target carriage upon activation on the paracord represents the zero position, which will serve as a reference point for future positional changes enacted by the remote.



On/Off



Remote Operation



The remote comes equipped with 13 buttons. Pressing a button labeled with a positive number instructs the target to move outward by that distance in meters (e.g., +1 will move the target one meter). Each subsequent press adds to the previous distance, which is displayed on the screen. The target will then move to this new total distance. The buttons labeled with negative numbers subtract from this total. If you wish to return the target to the home position, press the "0" button and the target will retreat to its starting point.

Target Modes

Check out our YouTube at www.youtube.com/@DynamicRangeX1 to get detailed videos on the remote features.

- **Moving Target Mode (M):** Initiate this mode by pressing the button marked "M". The remote's LCD screen will prompt you to select a maximum distance, defining the target's oscillation range from its current position. Only distances available on the remote may be selected. To exit this mode, press any other button.
- **Random Distance Mode (R):** Trigger this mode by pressing the "R" button. The screen will prompt you to set a maximum distance, defining the furthest possible point the target will travel to. The on-board computer will randomly select any distance within this specified range. Once the target arrives at the distance a new random distance will be selected. This mode is ideal for training scenarios where the shooter's awareness of the target's location should be minimized.

- **Program Button (P):**

Recording a Target Movement Pattern with Your Remote

To record the movement patterns of a target using your remote, follow these simple steps:

1. **Enter Recording Mode:** Hold down the **“P” button** on the remote for two seconds. You will enter recording mode, indicated by a message on the LCD screen.
2. **Selecting Positions:** Use the **positive (+) and negative (-) numbered buttons** on the remote to select the position you wish to save. The selected position will be displayed on the LCD screen.
3. **Saving a Position:** To save the currently displayed position, press the **50 button** on your remote. You can save up to 9 positions to be played back later.
4. **Exiting Recording Mode:** Once you have finished saving all your desired positions, tap the **P button** again. This will exit recording mode and save your settings.

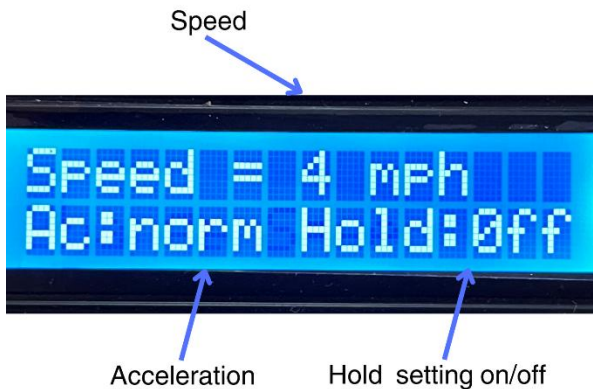
Playing Back Recorded Movement Patterns:

- To play back a recorded movement pattern, simply tap the **P button** for less than 2 seconds.

Overwriting a Recorded Movement Pattern:

- If you wish to record a new movement pattern and overwrite the previous one, hold down the **P button** for more than 2 seconds. This will clear the old pattern and allow you to record a new one.

- **Emergency Stop Button (E):** Pressing this enables immediate cessation of the target's motion, followed by the system waiting for further commands. This feature is crucial in situations where there is a risk that the target will contact the paracord attachment points or if something obstructs the target's path.
- **Speed Button (S):** Use this to adjust the target's speed. Initially, the target moves at a default speed of 3 mph when activated. Pressing the Speed Button will incrementally change its speed. The speed value shown on the screen is in mph. The speed button also lets you control acceleration and motor hold settings. When motor hold is on, the target stays in its current position by not turning off the motors, which can be useful when operating on a slope. However, it uses more power, so only activate it when necessary.



Troubleshooting

Target Carriage Stopping Short of Destination

If the target carriage stops before reaching its desired destination but responds to new input from the remote, it is likely due to a low battery. The low voltage protection circuit might be intermittently activating and deactivating. *Solution:* Charge the target carriage battery.

Target Carriage Not Responding to Remote

If the target carriage fails to move when signaled by the remote, it might be an issue with antenna connectivity. *Solution:* Detach and reattach the antenna on both the target carriage and the remote. Subsequently, turn both the remote and carriage off and back on.

LED Not Blinking and Target Carriage Not Functioning

If the LED does not blink when the target carriage is turned on, and the carriage is not functioning, the issue may be related to the battery connection. *Solution:* Ensure the battery is properly connected to the circuit board and fully seated. Turn the remote off and on, making sure the on/off switch audibly clicks into the "on" position.

Target Continues Moving After Reaching Destination

If the target still moves once it reaches its destination, the paracord's angle with the ground might be too steep, or the wind might be too strong. *Solution:* Adjust the paracord angle. See **“Target Moving Due to Wind, Affecting Accuracy”** for troubleshooting due to strong winds.

Mismatch Between Target Carriage Position and LCD Display

If the target carriage position does not match the reading on the LCD screen of the remote, the stepper motor might have lost its step count. *Solution:* Bring the target carriage back to the zero

position and restart both the stepper motor and the remote. This will reset the zero position.

Target Moving Due to Wind, Affecting Accuracy

If wind causes the target to move, making it difficult to shoot accurately, it might be due to the paracord's height. *Solution:* Lower the paracord on the downrange end so that the bottom of the corrugated plastic sheet contacts the ground at the desired shooting distance.

For all other issues, please contact our customer support. We will be more than happy to troubleshoot the problem with you.

Maintenance and Care

Water Exposure

The Dynamic Range X1 is not waterproof. While its design can accommodate limited water exposure, it is vital to ensure the electronic components do not get wet. Please refrain from operating the system in rainy conditions.

Cleaning and Corrosion Prevention

After each use, wipe down the entire system to protect it from corrosion. This will prolong the lifespan of the Dynamic Range X1 and maintain its optimal performance.

Component Wear and Replacement

Given the nature of the Dynamic Range X1, components like the handwheel screws, target mounting brackets, and corrugated plastic sheets might sustain damage or become inoperable during normal operations. We have included replacement parts in the kit for your convenience. Additional replacement parts can be procured from our website.

Modularity and Parts Replacement

The components of the Dynamic Range X1 are designed to be modular and easily replaceable using the provided Allen keys. If you require replacement parts, they can be found on our website. If you need assistance or cannot find the parts you require, please do not hesitate to contact our customer support team.

Storage

Proper storage of your Dynamic Range X1 is essential to maintain its longevity and performance. After usage, it is crucial to remove the Li-ion battery from the device. Store the Dynamic Range X1 in a cool, dry place away from direct sunlight to prevent any damage due to extreme temperatures or moisture. It is also advisable to keep it covered and protected from dust and dirt.

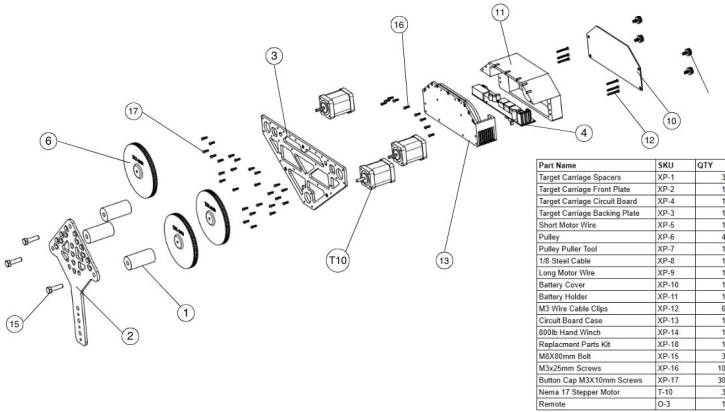
Battery Care

Li-ion batteries require special care due to their delicate nature. Always remove the battery after use and before storing the Dynamic Range X1. Make sure the battery is kept in a cool and dry place. Avoid overcharging the battery and never use or charge it if it appears swollen, punctured, or damaged in any way. Regularly check the battery's health to ensure its functioning optimally and replace it as soon as you notice any signs of wear and tear.

Product Handling

Handle your Dynamic Range X1 with care to avoid unnecessary damage. In particular, the antennae of both the target carriage and remote require gentle handling as they are one of the most delicate components. Avoid exerting too much force while using the antennae or attaching and detaching it. In case of any accidental damage, refrain from using the damaged component and replace it promptly to maintain the system's performance.

Repair Diagrams



Warranty and Service Information

Thank you for choosing our product. Your satisfaction is our priority, and we are here to support you. Please review the following information regarding the warranty, return policy, and other service-related details.

Warranty

Your product comes with a one-year limited manufacturer warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Damage caused by misuse, abuse, or accidents is not covered. For warranty eligibility, provide valid proof of purchase (order confirmation, receipt, or invoice) from our online store.

Returns and Refunds

We offer a 60-day money-back guarantee. If you are unsatisfied with the product for any reason, you may return it within 60 days of purchase for a full refund. The product must be in its original

condition and packaging. Return shipping costs are your responsibility. To initiate a return, provide valid proof of purchase from our online store.

Service and Support

If you encounter issues with your product or need technical assistance, please contact our customer service team. We are here to help. When reaching out, having your valid proof of purchase handy will expedite the process.

Li-Ion Battery Risk

By purchasing our product, you acknowledge the inherent risks associated with Li-ion batteries, such as potential for puncturing, leaking, overheating, or short-circuiting, possibly leading to fire, explosion, or other hazards. Follow the manufacturer's guidelines and all applicable laws and regulations for handling, storing, and disposing of Li-ion batteries.

Dispute Resolution

Should any dispute arise related to your product, the warranty, or service received, the matter will be resolved through arbitration in accordance with the laws of the province of Nova Scotia, Canada.

Limitation of Liability

Our liability to you, whether in contract, tort, or otherwise, shall be limited to the amount paid by you for the product.

Product Availability

We aim to keep all products in stock, but there may be instances where a product is out of stock or on back order. If this occurs, we will notify you and provide an estimated time of availability. You may choose to cancel your order or wait for the product to become available.

Compliance with Laws

You agree to comply with all applicable laws, regulations, and rules in your jurisdiction when using our products or services.

Changes to Warranty and Service Terms

We may modify these terms at any time without prior notice. By continuing to use the product after any modifications are made, you agree to the revised terms.

For any further inquiries or support needs, please do not hesitate to reach out to our customer service team. We appreciate your business and look forward to providing you with high-quality products and exceptional service.

Contact Information

Website: For detailed product information, FAQ, and online purchases, please visit our website at www.DynamicRangeX1.com.

Email: Feel free to send us an email at info@DynamicRangeX1.com. We aim to respond to all inquiries within one business day.