RANGE SYSTEMS™

Model: Pro-Touch Gen 1
Electric Target Retrieval System
Installation Manual

5121 Winnetka Avenue North
Suite 225
New Hope, MN 55428

Tech Support:
Toll Free: 888.999.1217
Main Office: 763.533.9200
service@range-systems.com



Copyright 2026 Range Systems
All rights reserved. No part of this document may be reproduced or transmitted in any form or by any means without permission in writing from the publisher.

Part Number: YD5033 Revision 2.2 11/1/26

TABLE OF CONTENTS

Introduction..... PAGE 3

Safety Information..... PAGE 3

Tools & Materials Required..... PAGE 3

Component Overview..... PAGE 3

Product Installation..... PAGE 4

Setting Limits & Testing..... PAGE 10

System Test & Verification..... PAGE 12

Pro-Touch Base To Pro-Touch+ Upgrade Installation..... PAGE 13

Pro-Touch+ Upgrade Local Controller Settings..... PAGE 16

Troubleshooting..... PAGE 17



Introduction

The Pro-Touch Target Retrieval System is designed for simple, intuitive operation. It features the industry's first hybrid Drive Unit, combining advanced technology with durability for optimal performance.

To operate the system, the user interacts with the large touchscreen located in the shooting stall. From this interface, users can access multiple menu options that allow them to move the target to standard, predetermined distances using feet, yards, or meters. The target can also be moved to a custom distance along the track using the arrow controls, providing complete control over positioning.

The touchscreen also allows the user to control the lane lighting, including white, red, and blue options.

Attaching a target to the carrier is simple—press up on the spring-loaded clamp and insert the target backer. The use of optional clamp extenders is recommended to help prevent errant rounds from striking the target carrier.

Thank you for choosing the Range Systems Pro-Touch Target Retrieval System.

Safety Information

Only qualified personnel should install this system. Power must be disconnected before performing any service or adjustments to mechanical components. Installers should use appropriate personal protective equipment (PPE) throughout the installation process. All mounting surfaces must be inspected and verified to support the required loads, ensuring a safe and reliable installation.

Tools & Materials Required

Installation requires a 1 1/8" socket (included), along with standard hand tools such as wrenches, screwdrivers, a 3/8 drive socket set including 7/16 and 7mm sockets, and power tools. A ladder or lift may be necessary, depending on the mounting height. Ensure access to a suitable power source, such as a 120/240 VAC outlet, to complete the setup.

Basic Components of the System



Drive Unit

Mounted near the firing line. Houses the drive motor, lane lighting, lane numbering as well as the control functions for the main systems and the touchscreen.



Target Carrier

Mounted on the track designed to hold the target and move back and forth on the track. Moving your target to selected distances away from the shooter.

Touchscreen

Primary interface for the user to control the multiple functions of the target system. The Touchscreen allows the user to move the Target Carrier to different locations on the track, as well as to control the lights mounted on the drive unit. When paired with a Master Controller, it also allows the user to request assistance without leaving the shooting stall.



Track

The structure that the Target Carrier rides on when going back and forth. This multiple section track allows for easy installation and is suspended from the ceiling by easy to install track hangers.



Product Installation

General Note:

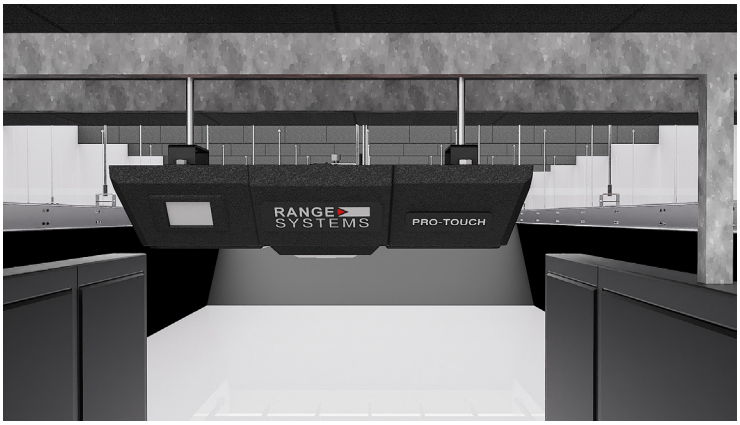
Unpack one lane at a time. Each box will be numbered to match its corresponding lane. Verify that all components are included, and contact us immediately if anything is missing.

The top-of-track height is typically set at 7’ 8” above the floor. Some dimensions referenced below may vary based on this height. Please add or subtract as needed to match your range’s specific top-of-track height.

Please do not hesitate to contact Range Systems for assistance during installation.

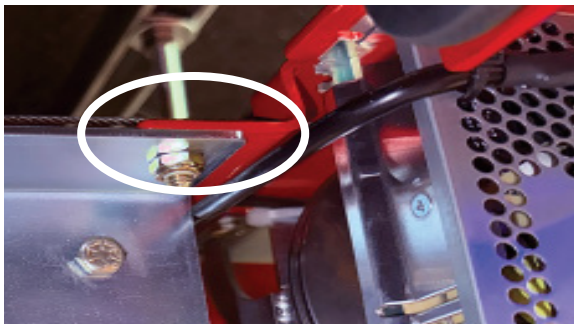
Step 1: Hang The Drive Unit

Begin by installing two threaded rods, **spaced 17” apart,** from the ceiling. These will be used to mount the Drive Unit. Typically, the threaded rods are secured into a Unistrut channel that runs across the range. This allows for final left-to-right adjustments to ensure the Drive Unit is properly centered within the shooting lane and that both rods are correctly aligned.

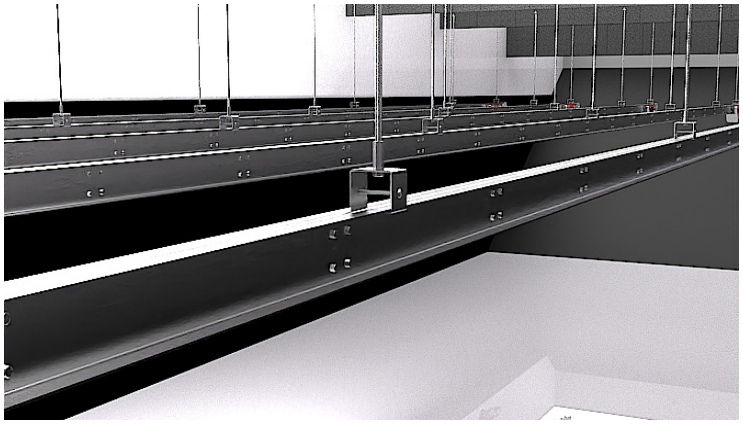


The threaded rods should be positioned approximately 28” behind the firing line. This placement ensures the integrated lighting in the Drive Unit is located above the shooter and that the Target Carrier stops in the correct position in front of the user. At this distance, the Target Carrier will dock tightly to the Drive Unit, and the target will hang at the firing line.

Set the bottom of the threaded rods 1.5” above the top of the track. Once the Drive Unit is secured to the bottom of the threaded rods, the top surface of the Drive Unit plate should be positioned 1” above the top of the track. Adjust the nuts and washers as needed to ensure the Drive Unit is level and the mounting tab at the front of the Drive Unit sits flush with the top of the track.

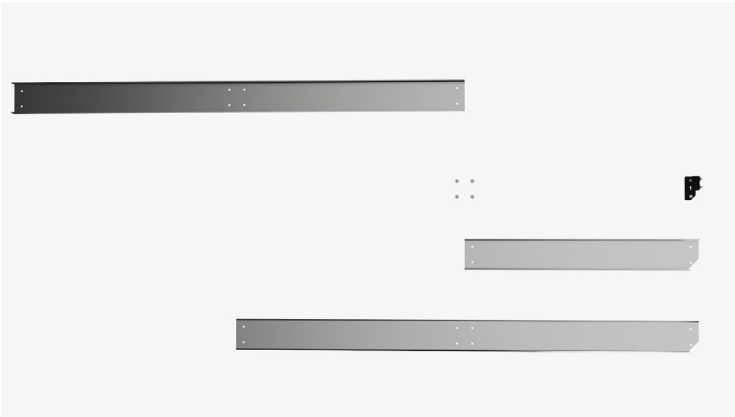


Confirm that the drive unit housing is properly aligned, level and that all mounting hardware is tight.



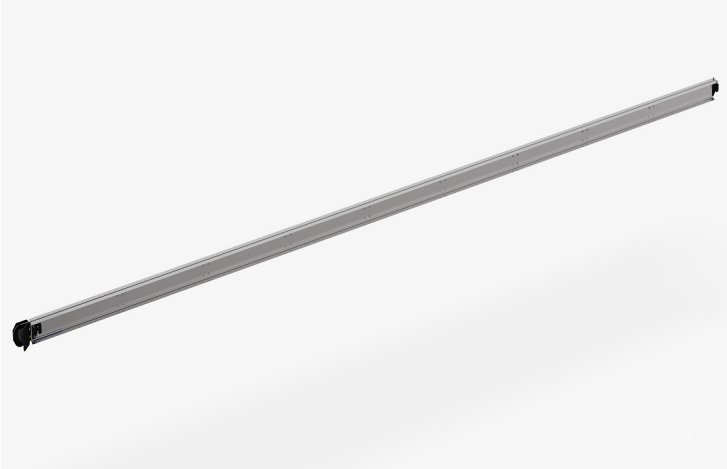
Step 2: Hang Track

The track is supported by threaded rods suspended from the ceiling. These are typically mounted using Unistrut, baffles, or other available hanging points within the range. All hanging points must be aligned with the center of the Drive Unit in the shooting lane. The bottom of the threaded rods should be set at +3” above the top-of-track height. Track hanger support points should not be spaced more than 15 feet apart.

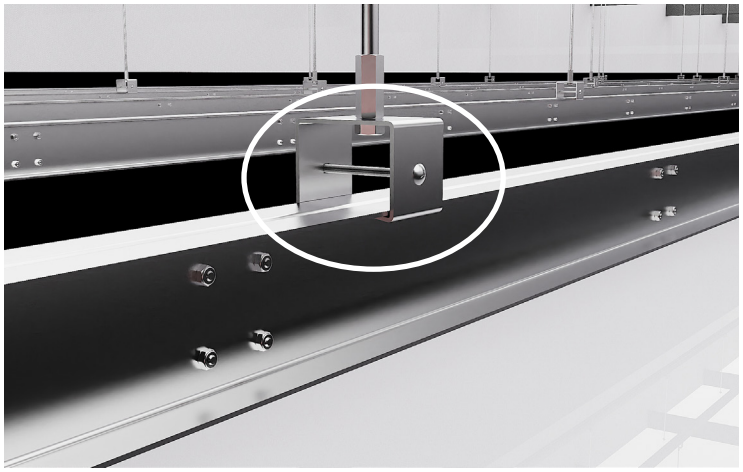


Next, attach the formed track hanger supports to the threaded rods using the coupling nut and bolt.

Once the track hangers are in place, begin assembling the track sections. It is typically easiest to pre-assemble one or more sections at ground level (depending on team size), then lift the assembled sections into the track hanger brackets.

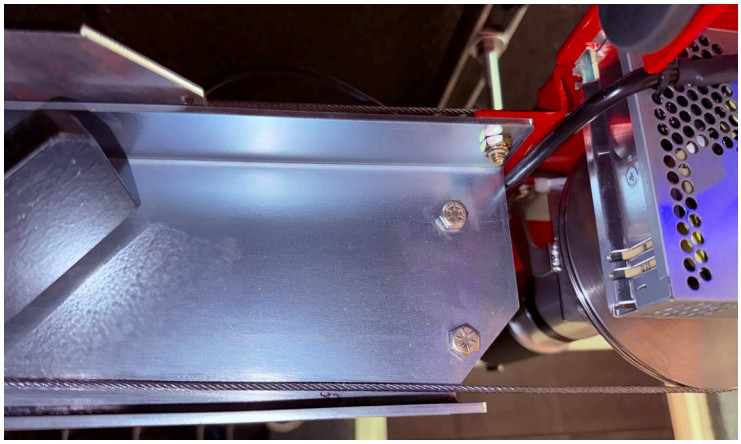


Track sections are installed with staggered seams. As sections are placed into the track hanger brackets, secure them by inserting and tightening the carriage bolt in each bracket. Note that each lane includes two shorter, half-length track sections used to offset the longer sections. These pieces are specific to either the Drive Unit end or the terminal end of the track.



Ensure each track hanger makes full contact on both sides of the track before clamping it down. It is recommended to wait until all sections are installed before fully tightening the track hardware. This allows for proper leveling of the entire assembly using a string line or digital laser (see reference image).

Track installation should begin at the Drive Unit. There are specific track sections used to attach the track to the Drive Unit: a half-length track (XA2228) with a notched corner, and a full-length track (XA2227) with a similar notch. Both sections include an additional hole on the top side, which is used to connect the track to the flange on the Drive Unit.



Before fastening, ensure proper alignment of all components. The Drive Unit housing should be positioned on top, the track in the middle, and the brass shield on the bottom. Verify alignment as shown in the reference image before installing bolts.



Once these initial track sections are secured to the Drive Unit, continue assembling and hanging track sections until the desired track length is reached. To complete the run, install the final half-length track section (XA2226), which should end flush with the last full-length section.

As you build, position the track assembly so it aligns with the motor assembly, ensuring it remains straight and level. Use a laser level to maintain proper alignment, and confirm that the joints along the bottom of each track section are perfectly aligned—this is critical for proper system operation.



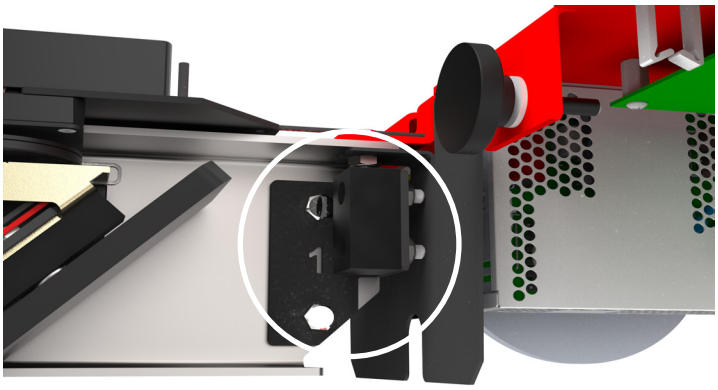
Tip: When assembling the track, lightly tighten all nuts and bolts initially. For proper trolley operation, it is critical that the lower track section flanges are flush and straight so the Target Carrier travels smoothly over the track. Using C-clamps during installation helps maintain this alignment.

Before installing the end stops, place the Target Carrier onto the track.



End Stop Installation:

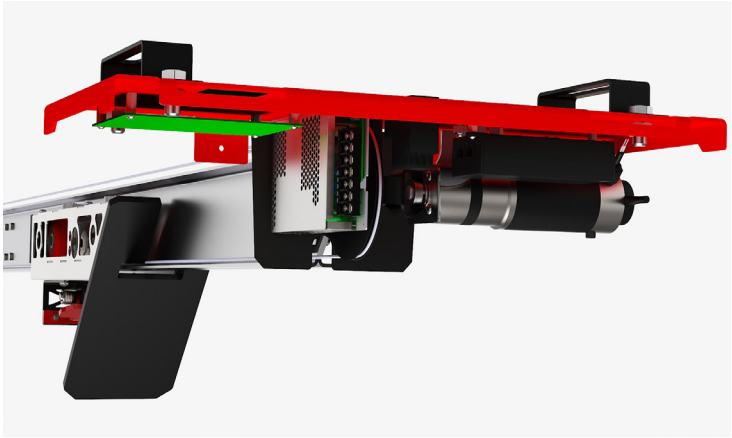
Install the (XA5329) End Stop Assembly at the Drive Unit end of the track. This End Stop is identified by a “1” cut into the bracket. Install the (XA5217) Idler Assembly along with the (XA5332) End Stop assembly at the opposite end of the track. This End Stop is identified by a “2” cut into the bracet.





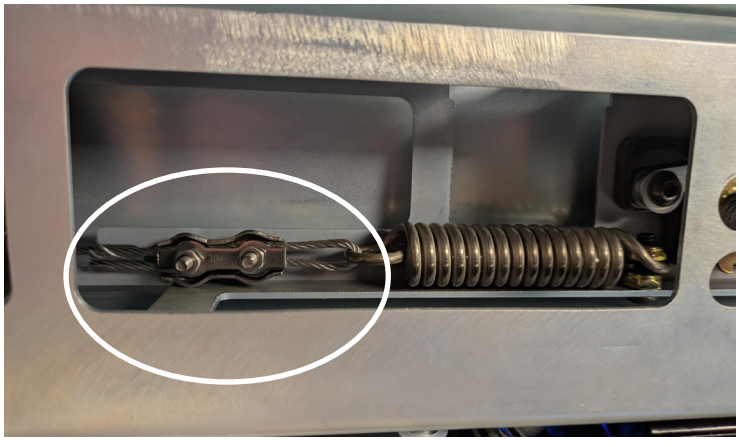
Step 3: Install the Drive Cable & Apply Tension

Begin routing the cable from the Drive Unit toward the bullet trap, allowing it to rest on top of the track. Loop the cable around the tail pulley, then route it back toward the trolley so it rests along the lower portion of the track where the wheels travel.

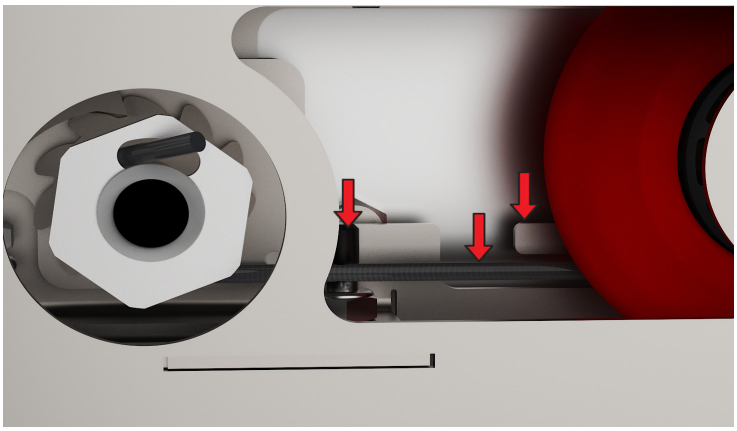


Once the cable is in place, use vise grips to secure the trolley so it cannot move forward or backward.

Route the downrange end of the cable through the cable clamp, forming a loop toward the trolley. Trim the end of the cable leaving a 3/4” tail. Connect the cable loop to the spring inside the trolley as shown (see reference image).



Next, route the opposite end of the cable around the Drive Unit pulley. Run the cable along the inside of the trolley, ensuring it passes through the slot in the frame and inside the bolt (see reference image).



Pass the cable through the slot in the tensioner spool (see reference image), then cut the cable approximately 2–3” past the spool face. Tie a knot to prevent the cable from pulling back through the spool slot, and trim the excess to approximately 1/2”–1” beyond the knot.

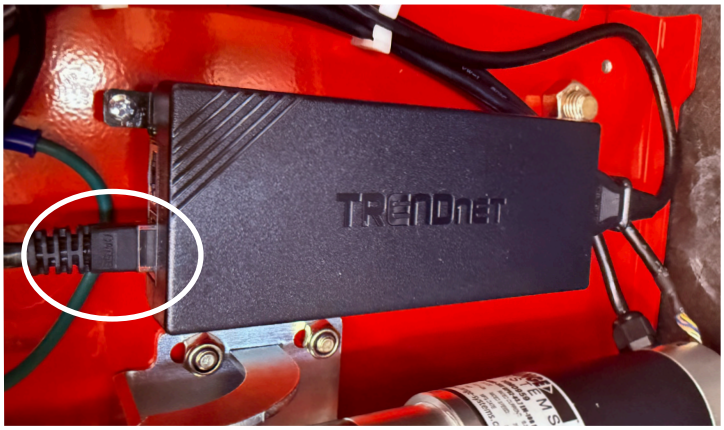
Begin tensioning the cable by turning the tensioner spool using the provided 1-1/8” socket. As tension is applied, verify that the cable is properly seated on both the drive pulley and end pulleys. When properly tensioned, the spring should be stretched approximately 3/8”, with the body of the spring sitting about 1/8” short of the edge of the frame support.



Note: Correct cable tension is critical for proper system operation. If you have any questions during this step, please contact support.

Step 4: Connect ethernet to Touchscreen & Mount Touchscreen

Run the ethernet cable to the rear port of the touchscreen. Mount the touchscreen in an accessible and visible location on the left side of the shooting lane.

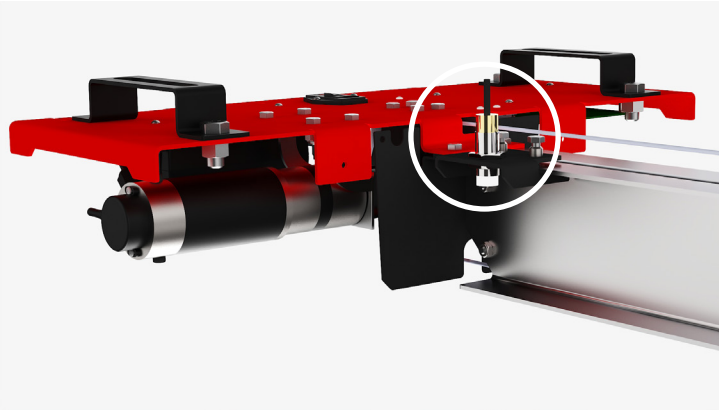


Step 5: Connect Touchscreen to Drive Unit

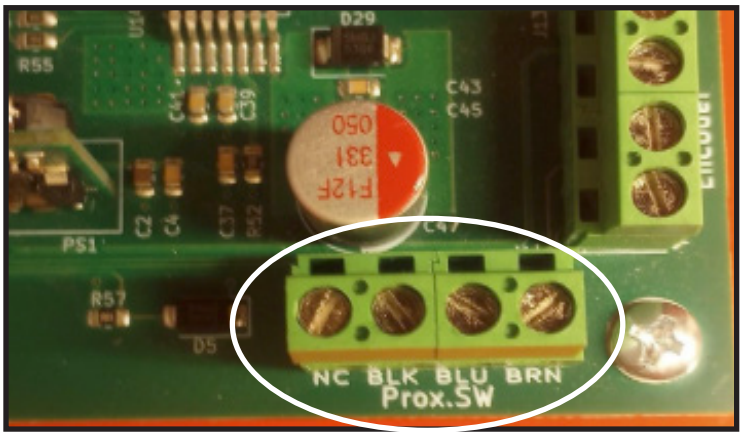
Use the ethernet cable to connect the touchscreen interface to the Drive Unit. Route the cable to the Drive Unit and plug it into the PoE converter located under the cowling next to the drive motor (see reference image). Confirm the connection is secure.

Step 6: Install Proximity Sensor

Mount the proximity sensor to the track, ensuring that sensor sees the top edge of the front shield of the Target Carrier without being hit by the Target Carrier. Secure it by tightening the two mounting bolts.

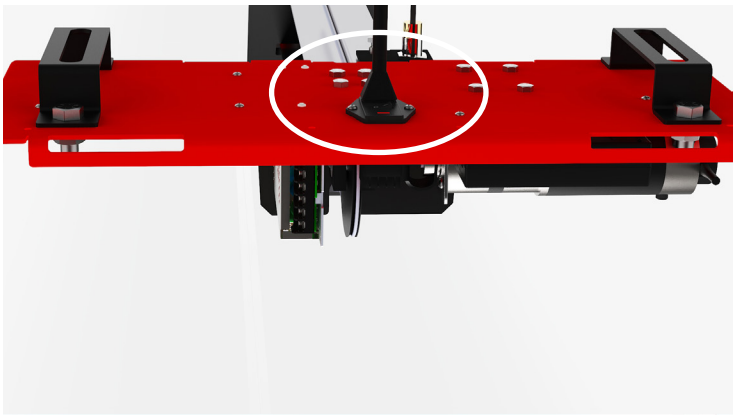


Next, connect the proximity sensor wiring to the control board terminal labeled “PROX SW.” Attach the brown, black, and blue wires to their corresponding terminals as shown in the reference images.



Step 7: Connect to Power

Plug the Drive Unit into a 120/240 VAC outlet, ensuring the outlet is compliant with applicable electrical codes and within reach of the unit. The Drive Unit is rated at 3A @ 120 VAC. **A maximum of four lanes per 20A circuit is recommended.**



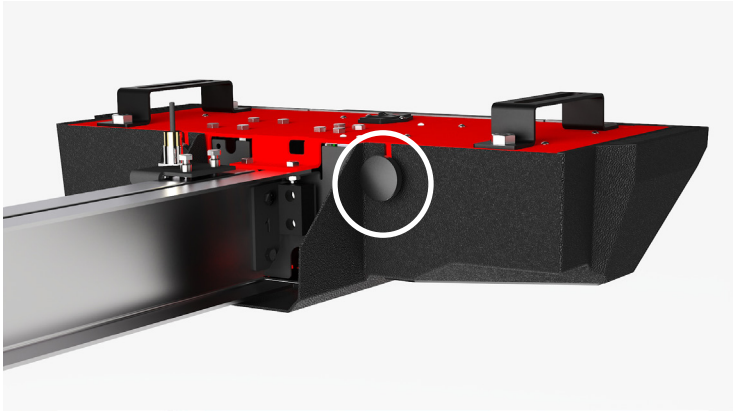
Depending on installation routing, the electrical outlet should be located within 6 feet of the Drive Unit. After plugging in, locate the power switch on top of the Drive Unit plate next to the 120V connection and turn it to the ON position.

Step 8: Install Cowling Assembly

Connect the cowling assembly by attaching the Molex connector and ribbon cable. The ribbon cable is keyed and will only insert in one orientation into the 10-pin black connector on the board. (See reference image for Molex and board connections.)



Place the cowling over the drive components, ensuring there is sufficient clearance and that it is securely fastened. Double-check that no ethernet cable or wire harness is obstructing the cowling before fully closing it and securing with the two hand knobs.



Setting Limits & Testing

Step 1: Power System

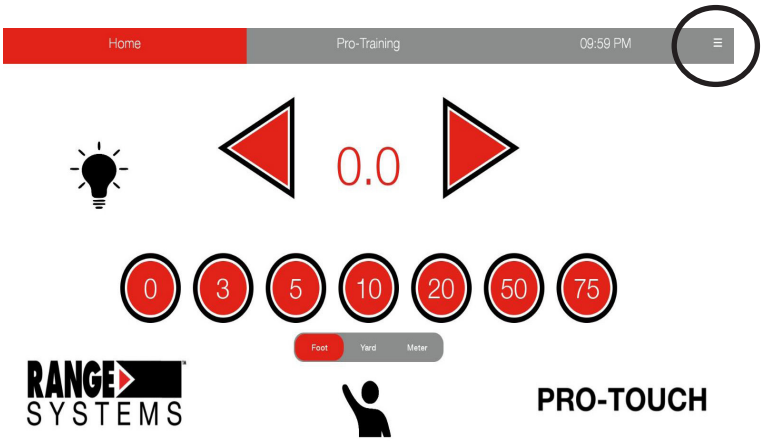
Power on the Drive Unit using the power switch located on top of the unit.

Note: Startup takes approximately 60 seconds after the power switch is turned on.



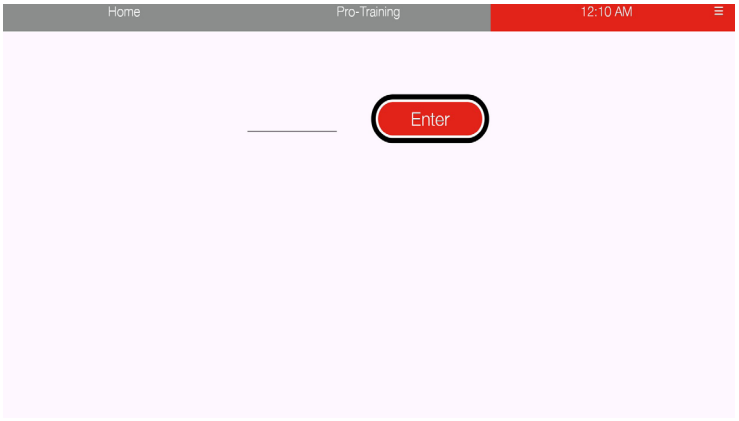
Step 2: Verify Touchscreen Communication

To access setup on the Elo touchscreen, press the hamburger menu located in the top right corner of the screen.



Step 3: Set Range Limits

Enter access code 1911, then press ENTER.



Enter Range Information:

Preset Position Distances:

- Enter up to six preset distances for target positioning.

Maximum Distance:

- Set the maximum travel distance **(in feet)** for the lane. This should typically be set 3 feet shorter than the total track length.

Note: Preset distances cannot exceed the maximum distance setting.



Lane Number:

- Assign the lane number displayed on the screen integrated into the Drive Unit.

Return Time (Use with Caution):

- This feature automatically returns the Target Carrier to the home position at a programmed time without user input.

Warning: This function will move the carrier automatically. Always disable this feature before performing any maintenance or service to prevent injury.

- Enter time using a 24-hour format (no colons or periods).
- Example: Enter 2200 and press SAVE to return the carrier at 10:00 PM.
- Maximum allowable time is 2359. The system will not recognize 2400 (12:00 AM).

Note: The system is shipped with a default setting of 1911, which disables the return-to-home function.

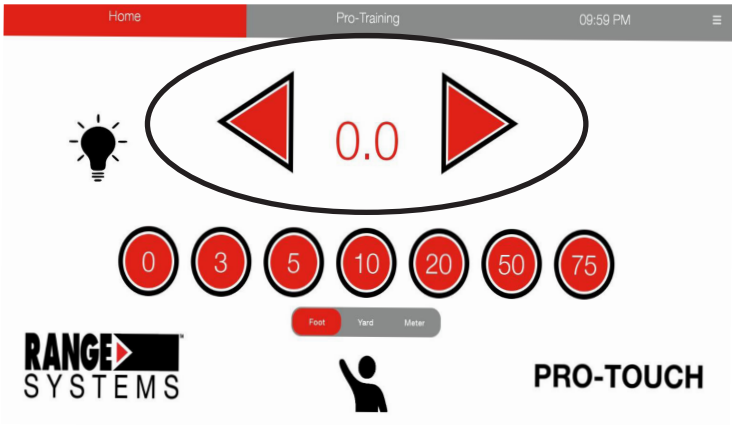
Note: Clicks per foot are viewable but not editable by the user. This information is intended for technician reference during service.

Once all settings are entered and saved:

- Verify all preset distances display correctly.
- Double-check that the maximum distance is properly set for the lane length.

Warning: Setting the maximum distance beyond the physical track length may cause the system to travel past the end stops, resulting in equipment damage.

Verify Maximum Distance:



Use the manual forward control to move the carrier downrange. As it approaches the end of travel, slow down and “jog” the carrier to confirm it stops at least 3 feet before the end stop.

This process can also be used to help determine and fine-tune the correct maximum distance. Once verified, return the carrier to the home position and test all preset distances.

Step 4: Verify Limits & Functionality

Run a full manual test cycle:
- Jog the carrier downrange
- Return it to the home position
- Test all preset distances

If operation is smooth and the track is confirmed to be straight and level:
- Recheck and fully tighten all nuts and bolts
- Verify cable tension
- Confirm the cable is not slipping
- Ensure the Target Carrier moves smoothly along the track

Repeat this process for all remaining lanes.

Pro-Touch Base to + Upgrade Installation

The following instructions describe the process for upgrading a Pro-Touch Base Model to a Pro-Touch+ system. If your target retrieval system was ordered as a Pro-Touch+ model, this upgrade procedure is not required.



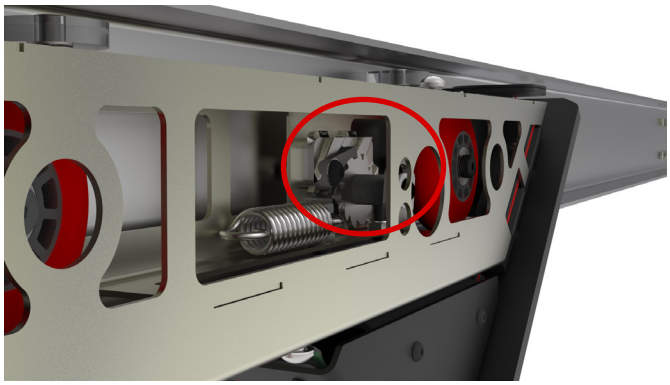
Required Tools
- Socket (included with base model)
- Screwdrivers (included with base model)
- Zip ties (included)
- Rivet Nut Installation Tool (HM1195 is included in XA5383)
- Ratchet

Step 1: Prepare the Trolley Assembly



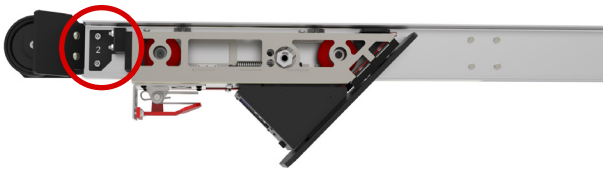
1. Disconnect the Pro-Touch system from the power source.
2. Move the carrier to the end of the track.
3. Remove both the left and right side panel from the trolley assembly.

Step 2: Release Cable Tension



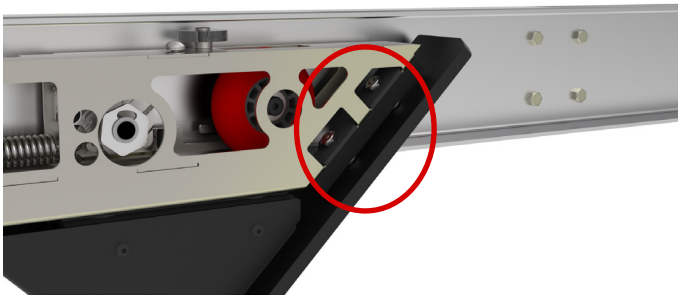
1. Turn the cable tension adjustment clockwise to relieve tension on the locking pawl.
2. Lift the pawl.
3. Rotate the cable spool counterclockwise until all cable tension has been released.
4. Remove the cable from the spool.

Step 3: Remove the Carrier



1. Remove the two bolts securing the end pulley assembly to the track.
2. Remove the end pulley assembly.
3. Slide the carrier off the end of the track.

Step 4: Remove the Front Shield

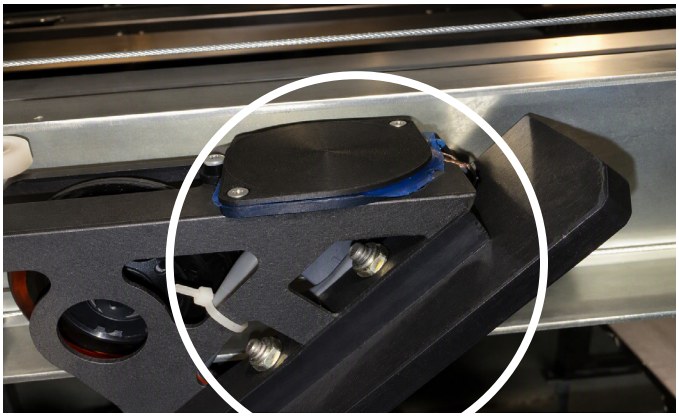


1. Remove the four (4) 1/4”-20 nuts securing the front shield.
2. Remove the shield from the carrier.

Step 5: Install the Charging Receiver

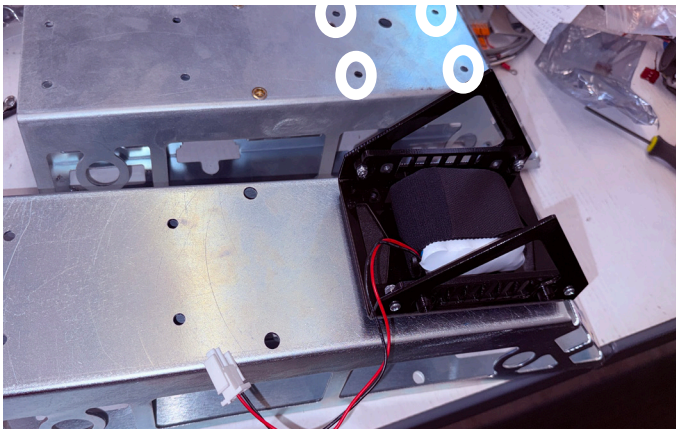
1. Position the charging receiver onto the upper trolley.
2. Insert the mounting bolts in this order:
    1. Charging receiver
    2. Trolley chassis
    3. Board housing
3. Tighten all mounting hardware securely.

Note: Mounting holes are pre-drilled in the trolley.



Step 6: Route the Charging Receiver Cable

1. Route the charging receiver cable along the inside of the trolley frame (reference image).
2. Secure the cable using zip ties.
3. Route the cable through the lower front corner of the trolley.



Step 7: Install Retrofit Kit XA7033

Install Rivet Nuts

1. Install the supplied rivet nuts into the underside of the chassis using the existing mounting holes.

Install Upper Mounting Bracket

1. Install upper mounting bracket XA1655.
2. Tighten all hardware securely.

Install Lower Bracket

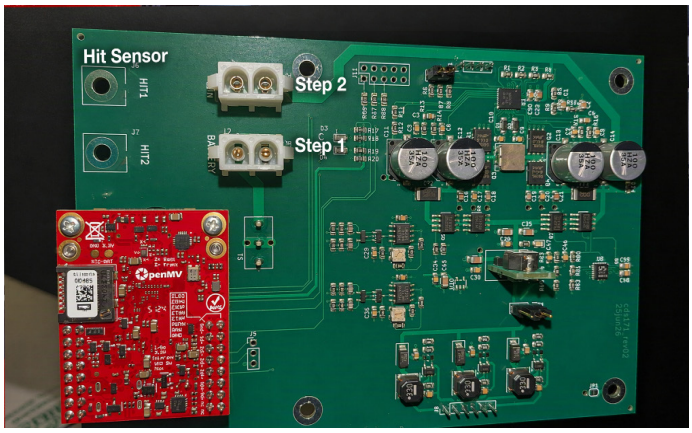
1. Install part XA1654.
2. Verify proper alignment before tightening.





Step 8: Install the Hit Sensor

1. Clean the mounting surface on the back of the front shield.
2. Attach the hit sensor using the supplied adhesive tape.
3. Press firmly to ensure proper adhesion. (refrence image)

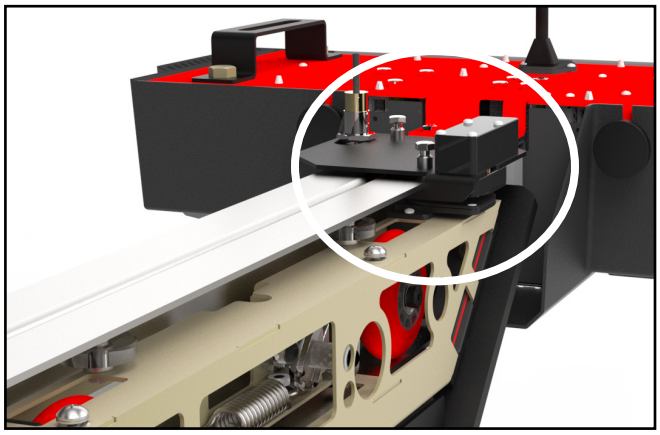


Step 9: Connect Electronics

1. Connect the battery to the Pro-Touch+ control board.
2. Connect the charging receiver to the control board.

Step 10: Reinstall the Trolley

Reinstall the trolley onto the track following the Trolley Installation Instructions (see pages 7 and 8 in this manual)



Step 11: Install the Wireless Charging Transmitter & Proximity Sensor Assembly (XA5366)

1. Lower assembly XA5366 onto the track.
2. Twist the assembly into position.
3. Tighten the mounting set screws securely.

Connect the Proximity Sensor

1. Route the proximity sensor cable through the drive unit brass shield.
2. Route the cable toward the right-side charging coil.
3. Plug the proximity sensor into on the Pro-Touch control board.(see step 6 on page 9)
4. Secure excess cable using the provided clips. (See image.)

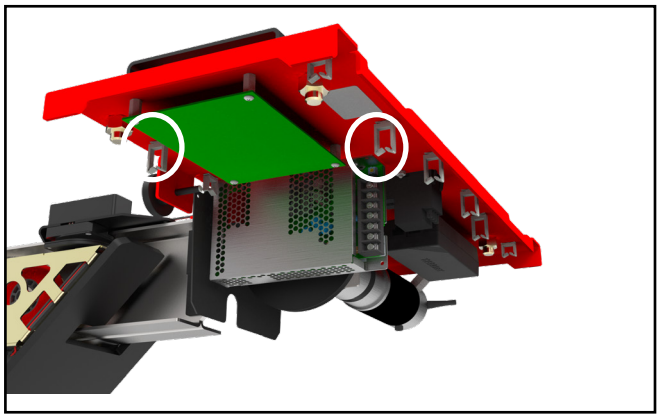


Connect the Charging Transmitter

1. Route the charging transmitter cable toward the left-side power supply.
2. Connect the cable to the power supply. (See image.)

Red to +V Black to -V

3. Secure excess cable with the supplied clips.

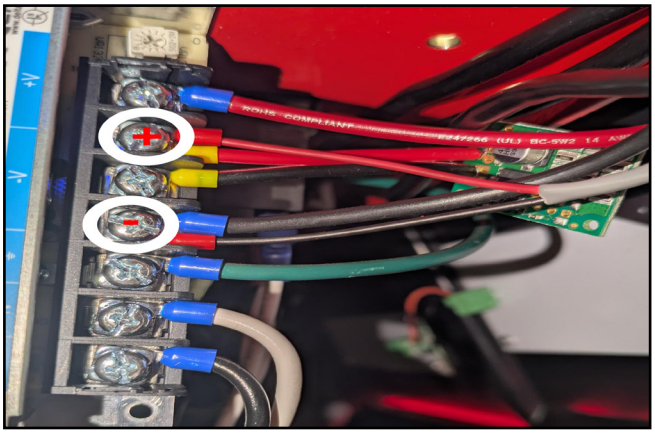


Step 12: Adjust the Home Position

1. Manually move the carrier to the desired home position.
2. Adjust the proximity sensor until the carrier stops in the correct location ensuring front shield doesn't hit the proximity sensor.

Step 13: Final Testing

1. Restore power to the Pro-Touch system.
2. Verify the proximity sensor LED illuminates when the carrier reaches the home position.

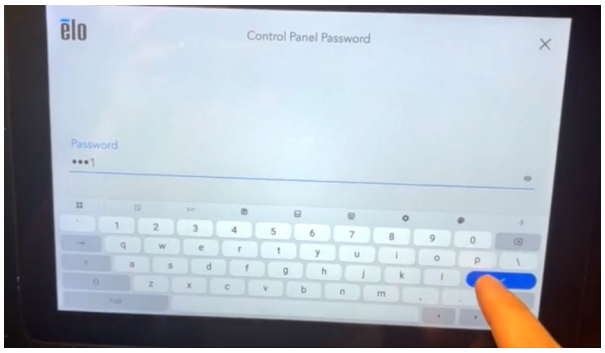


If the LED does not illuminate:

1. Adjust the proximity sensor until there is approximately a 1/8 in. (3 mm) gap between the sensor and the target.
2. Verify the LED turns on.
3. Repeat adjustments as necessary until the carrier consistently returns to the correct home position.

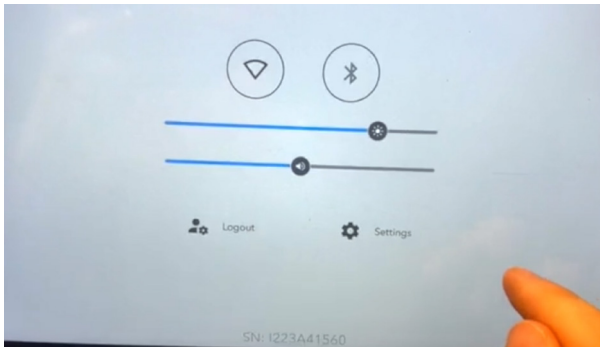
These steps should be taken only after the physical WiFi system and its components have been installed and powered up.

Access Android Settings



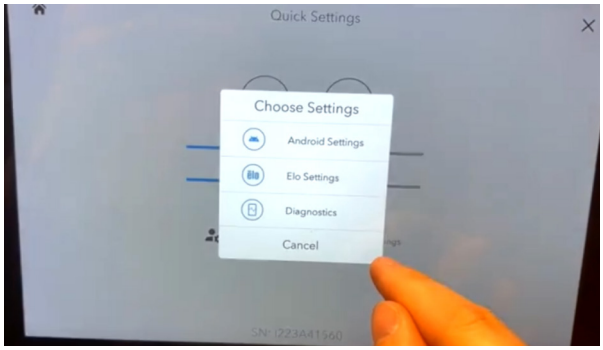
1. Press the Power and Home buttons on the back of the local lane controller at the same time.
2. A setup screen will appear. Tap the screen.
3. When prompted for a password, enter: 1911
4. When the blank screen appears, press the hamburger menu.
5. Select Admin.
6. Enter the password: 1elo
7. Press Settings.
8. Select Android Settings.

Connect to the Range Systems Network



1. Navigate to the Network section which is located in the Android Settings section.
2. Connect to the rangesystems wireless network (all lowercase).
3. Enter the network password: 8332448925

Configure the Static IP Address for the local lane controller



1. Press the pencil icon in the upper-right corner.
2. Under IP Settings, select Static.
3. Enter the appropriate IP address based on the lane number:

Lane Number IP Address
Lane 1 192.168.1.111
Lane 2 192.168.1.112
Lane 3 192.168.1.113
Lane 4 192.168.1.114
Lane 5 192.168.1.115
Etc. Continue sequence based on lane number

Note: The final number in the IP address corresponds to the lane number.

Model Configuration

When upgrading from a Base model to a + model, the installer must also update the model information within the system menu.

Please contact Range Systems Technical Support for assistance with this step.

Troubleshooting:

If the device is not showing online or cameras are not visible:

Refreshing the System

1. Return to the local Pro-Touch app Home Screen.
2. Press the Range Systems logo.

This will refresh the system and reconnect the device.

Please contact Range Systems Technical Support for assistance with this step.

Installation Complete

Verify the following before returning the system to service:

- All hardware is tightened.
- All cables are secured away from moving parts.
- Charging receiver is properly mounted.
- Hit sensor is securely attached.
- Battery and charging receiver are connected.
- Wireless charging transmitter is installed.
- Proximity sensor LED functions correctly.
- Carrier returns to the correct home position.
- Charging system operates correctly.