

[Manuals.plus](#) /

› [Nilight](#) /

› Nilight 3500 lbs ATV Winch Instruction Manual

Nilight 3500lb Electric Winch w Synthetic Rope

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Model: 3500lb Electric Winch w Synthetic Rope

1. PRODUCT OVERVIEW

The Nilight 3500 lbs ATV Winch is a 12V DC heavy-duty electric winch designed for towing and recovery operations. It features a 1.44kw/1.93HP pure copper permanent magnet motor, providing a rated single line pull of 3,500 lbs. This winch is equipped with a synthetic rope, offering a lighter and stronger alternative to traditional steel cables. Its robust construction ensures reliable performance in various outdoor conditions.

The winch is suitable for a wide range of small vehicles including ATVs, UTVs, trailers, cars, trucks, Jeeps, and other off-road applications.



Image 1.1: Nilight 3500 lbs ATV Winch with synthetic rope and fairlead.

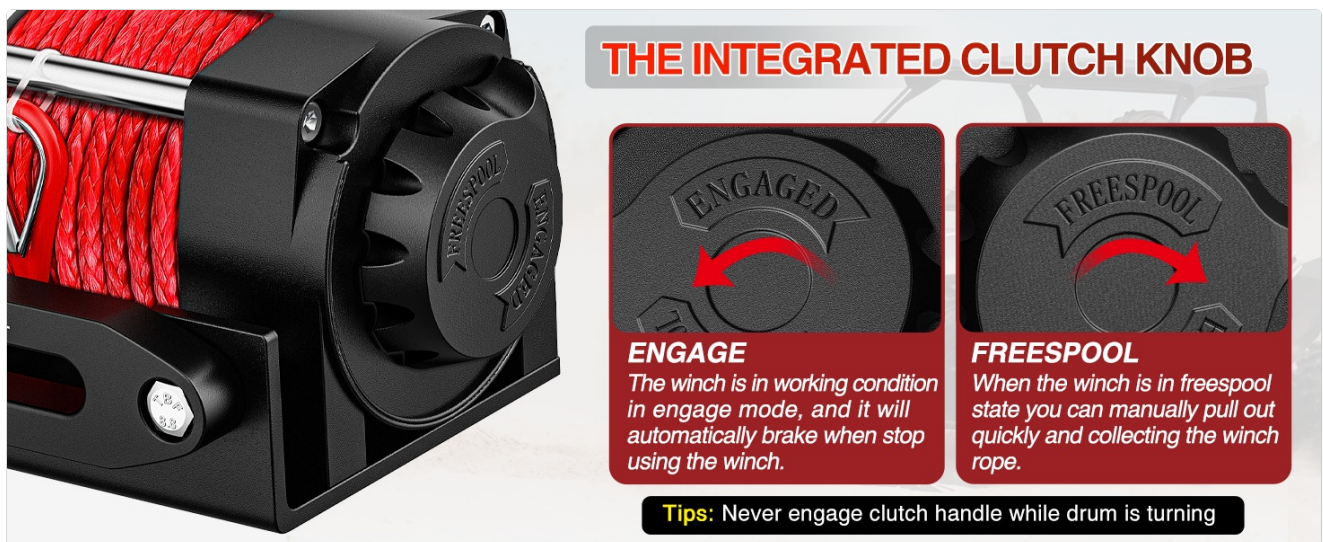


Image 1.2: The Nilight 3500 lbs Electric Winch is designed for various off-road and daily towing needs, including ATVs, UTVs, trucks, and boats.

2. PACKAGE CONTENTS

Please verify that all items listed below are included in your package:

- 1x 3500 lbs Electric Winch with Synthetic Rope
- 1x Universal Mounting Plate (6.3" x 4.7" L x W)
- 1x Wireless Remote Control
- 1x Wired Remote Switch (10 FT)
- 1x Winch Cover
- 1x Control Box
- 1x Aluminum Fairlead
- 1x 1/4 U Hook (Clevis Hook)
- Mounting Bolts and Hardware
- 1x Operation Manual
- 1x Brand Strap



Image 2.1: Visual representation of all components included in the Nilight 3500 lbs ATV Winch package.

3. SPECIFICATIONS

Feature	Specification
Rated Line Pull	3,500 lbs (1588 kg)
Motor	12V DC, 1.44kw / 1.93HP Permanent Magnet
Gear Reduction Ratio	153:1
Gear Train	Single-Stage Planetary
Braking Action	Automatic (Two-way braking in the drum)
Synthetic Rope Size	3/16" x 39.4' (5mm x 12m)
Fairlead	Aluminum Hawse Fairlead
Winch Body Dimensions (L x W x H)	12.6" x 4" x 4.1" (320mm x 102mm x 104mm)

Fairlead Mounting Pattern	4 1/2" (124mm)
Mounting Plate 2-Hole Pattern	3.15" (80mm) / 3.10" (76mm)
Wireless Remote Range	82 ft
Wired Remote Cable Length	10 ft
Item Weight	16.52 pounds



Image 3.1: Detailed dimensions of the winch, mounting plate, and fairlead. Please confirm these dimensions are suitable for your installation.

Winch Line Pull Capacity

Line Pull (lbs/kgs)	Line Speed (FT/min, M/min)	Motor Current (Amps)	Pull by layer (lbs/kgs)
0	9.5 (2.9)	11	1/3500 (1590)
500 (227)	9.2 (2.8)	30	2/2640 (1198)
1000 (454)	8.5 (2.6)	40	3/2320 (1052)
1500 (681)	7.9 (2.4)	60	4/2040 (925)
2000 (909)	7.2 (2.2)	70	-
2500 (1136)	6.6 (2.0)	80	-
3000 (1363)	5.2 (1.6)	95	-
3500 (1590)	4.6 (1.4)	180	-

Note: It is recommended that you begin any line pull with a minimum of 5 wraps and a maximum of 2 layers of rope on the drum.

4. SAFETY PRECAUTIONS

- Always wear gloves and eye protection when operating the winch.
- Never exceed the rated line pull capacity of the winch.
- Ensure the vehicle is securely anchored before winching.

- Keep hands and clothing clear of the winch rope, hook, and fairlead during operation.
- Do not operate the winch if the rope is frayed, kinked, or damaged.
- Avoid prolonged continuous winching to prevent motor overheating. Allow the motor to cool down between pulls.
- Never engage or disengage the clutch while the winch drum is turning or under load.
- Always ensure at least 5 wraps of rope remain on the drum when extending the rope.
- Disconnect the winch from the power source when not in use or during maintenance.

5. SETUP AND INSTALLATION

Mounting the Winch

The winch comes with a universal mounting plate. This plate may require modification to fit your specific ATV/UTV or vehicle. Ensure the mounting surface is strong enough to support the winch's maximum pulling force.

1. Position the mounting plate on your vehicle's desired location.
2. Mark and drill any necessary holes if the universal plate does not align with existing mounting points.
3. Secure the mounting plate using appropriate bolts and hardware.
4. Attach the winch to the mounting plate using the provided mounting bolts.
5. Install the aluminum fairlead to the front of the mounting plate, ensuring the rope can pass through freely.



Image 5.1: Assembled dimensions of the winch with its mounting plate and fairlead.

Wiring the Winch

All wires and connections are color-coded for ease of installation. A minimum 665 CCA battery is recommended for optimal performance.

1. Connect the **long red wire** from the control box to the positive (+) terminal of your vehicle's 12V battery.
2. Connect the **long black wire** from the control box to the negative (-) terminal of your vehicle's 12V battery.
3. Connect the **short red wire** from the control box to the positive (+) terminal of the winch motor.
4. Connect the **short black wire** from the control box to the negative (-) terminal of the winch motor.
5. For the wired remote control, connect its thin red wire to the battery or the ATV's key switch for power.

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Video 5.1: This video demonstrates the wiring process for the Nilight 12V 3500LBS ATV UTV Electric Winch, showing how to connect the control box and remote switches to the winch and battery.

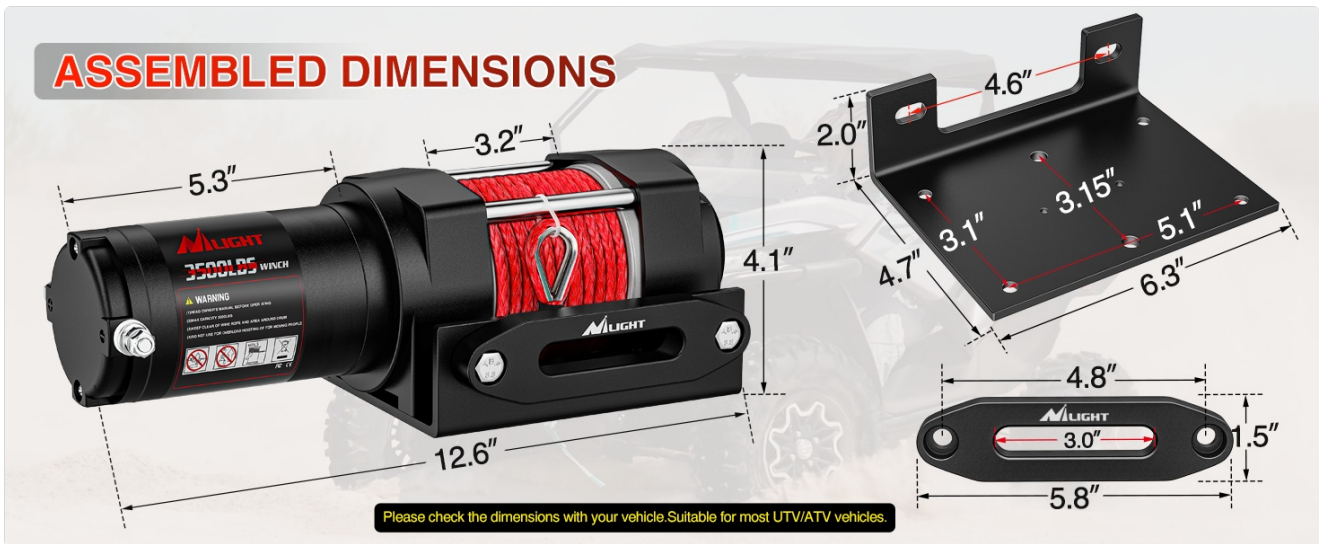


Image 5.2: Diagram illustrating the quick assembly and wiring connections for the winch system.

6. OPERATING INSTRUCTIONS

Clutch Operation

The winch features an integrated clutch knob for engaging and disengaging the drum.

- **Engage:** Turn the clutch knob to the "ENGAGE" position. The winch is now ready for powered operation, and the automatic brake will function when the winch stops.
- **Freespool:** Turn the clutch knob to the "FREESPOOL" position. This allows you to manually pull out the winch rope quickly for deployment or collection.

Warning: Never engage or disengage the clutch handle while the drum is turning or under load.



Image 6.1: Close-up view of the clutch knob, showing the 'Freespool' and 'Engage' positions for manual and powered operation.

Remote Control Operation

The winch can be operated using either the wireless remote control or the wired remote switch.

- **Wireless Remote Control:** To activate, press the on/off button for 3-5 seconds until the LED lights up. The wireless remote has an operating range of up to 82 feet.
- **Wired Remote Switch:** Connect the wired remote to the control box. This provides a direct, reliable control

method with a 10-foot cable.

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Video 6.2: This video demonstrates the operation of the 12V 3500LBS ATV UTV Electric Winch, including the use of its remote controls for pulling and releasing the synthetic rope.



Image 6.3: Illustration of the two operating modes: wired remote switch and wireless remote control, highlighting their connections and range.



Image 6.4: An ATV being recovered using the wireless remote control, demonstrating its 82-foot operating range.

7. MAINTENANCE

- **Regular Inspection:** Periodically inspect the winch rope for signs of wear, fraying, or damage. Replace the rope if any damage is found.
- **Cable Management:** Ensure the synthetic rope is spooled evenly on the drum. Uneven spooling can cause damage to the rope and winch mechanism.
- **Electrical Connections:** Check all electrical connections for corrosion or looseness. Clean and tighten as necessary to ensure proper power flow.
- **Lubrication:** Consult a qualified technician for internal lubrication of gears and motor if needed. Do not attempt to disassemble the winch without proper knowledge.
- **Cleaning:** Keep the winch clean from mud, dirt, and debris. Use a damp cloth to wipe down the exterior.
- **Storage:** When not in use, cover the winch with the provided winch cover to protect it from elements.

8. TROUBLESHOOTING

- **Winch Not Operating:**

- Check battery connections for tightness and corrosion.
- Ensure the battery is fully charged and has sufficient CCA (Cold Cranking Amps).
- Verify all wiring connections are correct and secure.
- Test both wired and wireless remotes to rule out a faulty remote.

- **Winch Operates Slowly or Weakly:**

- Check for low battery voltage.
- Ensure the load is within the winch's rated capacity.
- Inspect the rope for binding or uneven spooling on the drum.
- Check for excessive friction in the fairlead or hook.

- **Remote Control Not Responding:**

- For wireless remote, ensure it is activated (LED lit) and within range.
- Check batteries in the wireless remote, if applicable.
- For wired remote, check its connection to the control box and power source.

- **Motor Overheating:**

- Reduce the load or use a snatch block to decrease strain.
- Allow the motor to cool down between heavy pulls.
- Ensure proper ventilation around the motor.

9. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the contact details provided in your product packaging or visit the official Nilight website. Keep your purchase receipt as proof of purchase for any warranty claims.