



Synthetic Winch Rope Installation Guide

Standard Duty, Heavyweight, Premium, Ultra Performance Series & Zeon Winch Lines

In this kit you will find the following pieces of literature:

- **Winch Installation Guide,**
- **Synthetic Rope Installation Guide**
- **Product Warranty**

SAVE THIS MANUAL and other product literature for future reference and review frequently for continuing safe operation. Instruct all users of this product to review this manual before operating this product.

Additional Product Literature Available Online:

- **Basic Guide to Winching Techniques**
 - Provides a basic understanding of the winch and teaches basics of proper winching techniques. It is a valuable resource to help winch safely and efficiently.
- **Product Specification and Performance Data**
 - Provides product specifications, performance data and replacement parts information.
- **Other product literature specific to some products**

Go to www.warn.com for additional or replacement product literature available to view/download.

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Warn Industries Inc.
12900 SE Capps Road
Clackamas, OR 97015
USA

Customer Service: (800) 543-9276
Fax: (503) 722-3000
www.warn.com

SYMBOL INDEX

| SYMBOL | EXPLANATION |
|--|---------------------------------|
|  | Read All Product Literature |
|  | Wind Rope on Bottom of Drum |
|  | Finger/Fairlead Crushing Hazard |
|  | Hand Piercing/Cutting Hazard |
|  | Never Hook Back on Rope |

| SYMBOL | EXPLANATION |
|---|---------------------------------------|
|  | Always Wear Leather Gloves |
|  | Always Use Supplied Hook Strap |
|  | Never Apply Load to Hook Tip or Latch |
|  | Never Wind Rope Over Top of Drum |
|  | Fairlead Pinch Point |

Warnings and Cautions








As you read these instructions, you will see WARNINGS, CAUTIONS, NOTICES and NOTES. Each message has a specific purpose. WARNINGS are safety messages that indicate a potentially hazardous situation, which, if not avoided could result in serious injury or death. CAUTIONS are safety messages that indicate a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. A CAUTION may also be used to alert against unsafe practice. CAUTIONS and WARNINGS identify the hazard, indicate how to avoid the hazard, and advise of the probable consequence of not avoiding the hazard. NOTICES are messages to avoid property damage. NOTES are additional information to help you complete a procedure. **PLEASE WORK SAFELY!**

|  WARNING | | |
|--|---|---|
|  |  |  |
| <p>MOVING PARTS ENTANGLEMENT HAZARD</p> <p>Failure to observe these instructions could lead to serious injury or death.</p> <ul style="list-style-type: none"> • Always know the Working Load Limit (WLL) of your winch rope. • Never Exceed the WLL or shock load of winch rope. • Always determine the suitability of a winch rope for a specific application. • Never use a winch rope if rope or heat sleeve is worn, damaged, abused, overloaded or improperly maintained. • Never use winch rope over a rough surface without abrasion protection. • Never bend winch rope around unprotected, sharp corners. • Always use WARN hawse fairlead. • Always replace the WARN hawse fairlead if damaged or abused. | | |




|  WARNING | |
|--|---|
|  |  |
|  |  |
| <p>MOVING PARTS ENTANGLEMENT HAZARD</p> <p>Failure to observe these instructions could lead to serious injury or death.</p> <p>General Safety:</p> <ul style="list-style-type: none"> • Always Know Your Winch. Take time to fully read the Instructions and/or Operations Guide, and/or Basic Guide to Winching Techniques, in order to understand your winch and its operations, found online at http://www.warn.com. • Never exceed winch or winch rope rated capacity. Double line using a snatch block to reduce winch load. • Always wear heavy leather gloves when handling winch rope. • Never use winch or winch rope for towing. Shock loads can damage, overload and break winch rope. <p>Installation Safety:</p> <ul style="list-style-type: none"> • Always keep hands clear of winch rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out. • Always position fairlead with warning readily visible on top. • Always prestretch winch rope and respool under load before use. Tightly wound rope reduces chances of "binding", which can damage the rope. <p>Winching Safety:</p> <ul style="list-style-type: none"> • Always inspect winch rope, heat sleeve, abrasion sleeve, hook and slings before operating winch. Frayed, kinked or damaged winch rope must be replaced immediately. Damaged components must be replaced before operation. Protect parts from damage. • Always use supplied hook strap whenever spooling winch rope in or out, during installation and during operation. • Never touch winch rope or hook while under tension or under load. • Always stand clear of winch rope and load and keep others away while winching. | |

GENERAL SAFETY PRECAUTIONS

|  WARNING | |
|---|---|
|  |  |
|  |  |
| <p>FALLING OR CRUSHING HAZARD Failure to observe these instructions could lead to serious injury or death.</p> <ul style="list-style-type: none"> • Never operate winch with less than 10 wraps of synthetic winch rope around the drum. Rope could come loose from the drum, as the rope attachment to the drum is not designed to hold a load. • Always be certain anchor will withstand load, use appropriate rigging and take time to rig correctly. • Always wind the winch rope on bottom (mount side) of drum. • Never wind winch rope over top of drum. • Always spool the winch rope onto the drum in the direction specified by the drum rotation labels on the winch and/or in the documentation. This is required for the automatic brake (if so equipped) to function properly. | |

|  WARNING | |
|--|---|
|  |  |
| <p>MOVING PARTS ENTANGLEMENT HAZARD Failure to observe these instructions could lead to serious injury or death.</p> <ul style="list-style-type: none"> • Always ensure hook latch is closed and not supporting load. • Never apply load to hook tip or latch. Apply load only to the center of hook. • Never use a hook whose throat opening has increased, or whose tip is bent or twisted. • Always use a hook with a latch. | |

|  WARNING |
|---|
|  |
| <p>MOVING PARTS ENTANGLEMENT HAZARD Failure to observe these instructions could lead to serious injury or death.</p> <ul style="list-style-type: none"> • Never hook back on rope. • Never winch with less than 10 wraps of synthetic winch rope around the drum, the rope could come loose from the drum. |

|  CAUTION | |
|---|---|
|  |  |
| <p>CUT AND BURN HAZARD Failure to observe these instructions could lead to minor or moderate injury.</p> <ul style="list-style-type: none"> • Never let winch rope slip through your hands. • Always wear heavy leather gloves when handling winch rope. | |

| NOTICE |
|--|
| <p>Avoid Winch And Equipment Damage</p> <ul style="list-style-type: none"> • Always avoid continuous "Power Out". Heat build up from continuous power out may damage the winch rope. • Never expose the winch rope to harsh detergents, fuels, oils, or Anti-freeze. • Always use an abrasion sleeve on all sharp edges to protect winch rope. • Never allow the winch rope to contact sharp objects. Severe damage may result. • Always respool winch rope in even wraps following any angled winching activities. • Always avoid continuous side pulls which can pile up winch rope at one end of the drum. This can damage your rope or winch. |

REMOVAL INSTRUCTIONS

⚠ WARNING Always Know Your Winch. Take time to fully read the Instructions and/or Operations Guide, and/or Basic Guide to Winching Techniques, in order to understand your winch and its operations.

Standard Duty, Heavyweight, Ultra Performance & Premium Series Synthetic Winch Rope Removal:

NOTE: For Zeon specific winches, skip to Zeon Series Winch Rope Removal section.

THE FOLLOWING STEPS ARE VERY IMPORTANT AND IF NOT PRECISELY FOLLOWED THE LIFE OF THE WINCH AND WINCH ROPE MAY BE COMPROMISED.

Things You Will Need:

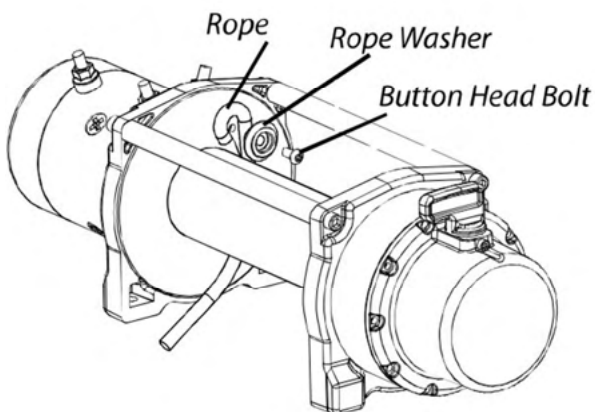
- Gloves
- Standard Hex Wrench Set

⚠ CAUTION Always wear heavy leather gloves when handling winch rope.

1. Disconnect the negative cable from the battery that is used to power the winch.
2. Disengage the clutch.
3. Using gloves, freespool winch rope off drum.

NOTE: For ease of removal, ensure there is no tension on the winch rope prior to attempting removal.

4. Remove the button head fastener and rope washer securing winch rope. Remove winch rope completely and discard.



Zeon Synthetic Series Winch Rope Removal

THE FOLLOWING STEPS ARE VERY IMPORTANT AND IF NOT PRECISELY FOLLOWED THE LIFE OF THE WINCH AND WINCH ROPE MAY BE COMPROMISED.

Things You Will Need:

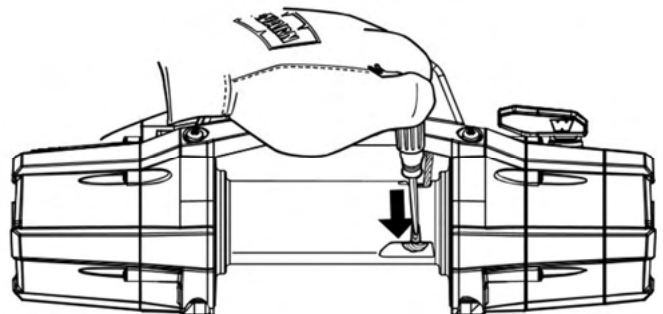
- Gloves
- Standard Flat Head Screwdriver

⚠ CAUTION Always wear heavy leather gloves when handling winch rope.

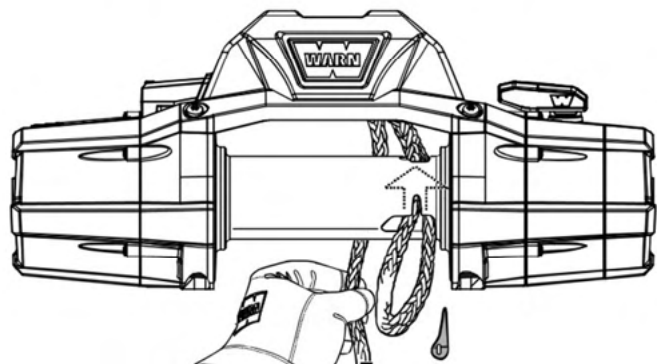
1. Disconnect the negative cables from the battery that are used to power the winch.
2. Disengage the clutch.
3. Using gloves, freespool winch rope off drum.

NOTE: For ease of removal, ensure there is no tension on the winch rope prior to attempting removal.

4. Using a flat head screwdriver, find the oblong hole in the puck. Insert end of flat head screwdriver in the hole of puck and using leverage against the drum, dislodge puck.



5. Remove the puck and pull the winch rope through and out of the rope anchor pocket.



Know Your Synthetic Winch Rope

Before you begin, you should familiarize yourself with your synthetic winch rope.

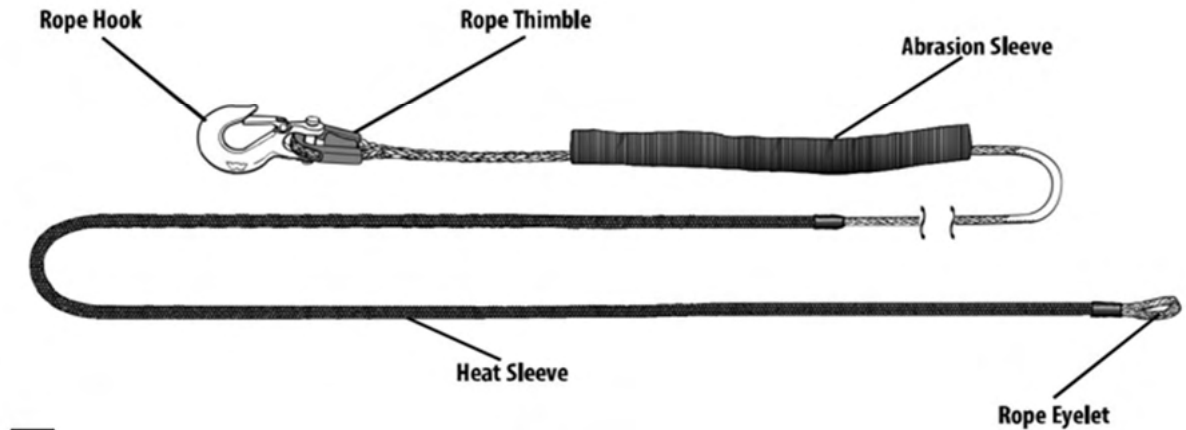


Figure 1

Synthetic Winch Rope: The synthetic winch rope is constructed of a unique ultra high molecular weight polyethylene material and offers tremendous tensile strength. It is coated with a high temperature urethane and equipped with a temperature resistant sleeve on the first layer for added protection. The synthetic rope's high flexibility and low weight make it much easier to handle out in the field.

Abrasion Sleeve: The abrasion sleeve is provided with the synthetic rope and must be used with the synthetic rope at all times to protect the rope from potential abrasion wear. The sleeve has a loose fit so it can easily be positioned along the synthetic rope to protect from rough surfaces and sharp corners.

Heat Sleeve: The heat sleeve is made of with a high temperature material. It offers the outer layers of the synthetic rope protection from brake heat generated during normal use of the winch.

Rope Eyelet: The rope eyelet is the attachment point of the rope to the winch drum.

Rope Hook: The rope hook is attached to the rope thimble at the end of the winch rope. The rope hook is used to secure the rope to the load/vehicle or anchor point and is rated based on the capacity of the rope and the winch.

Rope Thimble: The rope thimble protects the synthetic rope from pinching and abrading where it comes in contact with the hook.

INSTALLATION INSTRUCTIONS

⚠ WARNING When upgrading from wire to synthetic winch rope, a WARN Hawse Fairlead is necessary.

NOTICE Any wire rope damage on drum may be smoothed with fine emery paper.

Standard Duty, Heavyweight, Ultra Performance & Premium Series Synthetic Winch Rope Installation:

THE FOLLOWING STEPS ARE VERY IMPORTANT AND IF NOT PRECISELY FOLLOWED THE LIFE OF THE WINCH AND WINCH ROPE MAY BE COMPROMISED.

Things You Will Need:

- WARN® Synthetic Winch Rope
- Abrasion Sleeve
- Rope Washer
- Button Head Bolt
- Gloves
- Loctite 271 or equivalent
- WARN® Hawse Fairlead (if replacing wire rope)

⚠ WARNING MOVING PARTS ENTANGLEMENT HAZARD. Failure to observe these instructions could lead to serious injury or death.

⚠ WARNING Always position fairlead with warning readily visible on top.

⚠ CAUTION Always wear heavy leather gloves when handling winch rope.

⚠ WARNING Always replace the WARN Fairlead if damaged or abused.

⚠ WARNING Always keep hands clear of winch rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.

For synthetic winch rope applications, you must have a Hawse Fairlead mounted to your winch. For optimal performance, a WARN Hawse Fairlead is strongly recommended. If you need to purchase a new WARN Hawse Fairlead, contact your WARN product dealer.

1. Disconnect the negative cable from the battery that is used to power the winch.

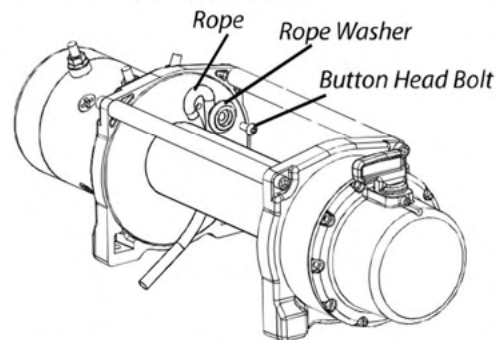
⚠ WARNING Never bend rope around unprotected, sharp corners.

⚠ WARNING Never use rope over a rough surface without abrasion protection.

2. Slide the black abrasion sleeve over the rope from the end opposite of the hook. Slide the sleeve towards the hook end of the rope.
3. Insert the synthetic rope through the fairlead and around the winch drum from the bottom.



4. Apply Loctite 271 or equivalent product to the supplied button head fastener.
5. Insert the button head fastener supplied and the machined rope washer. Before tightening the bolt, install the rope eyelet on the machined rope washer. Tighten button head bolt.
6. Reconnect negative cable to the battery that is used to power the winch.

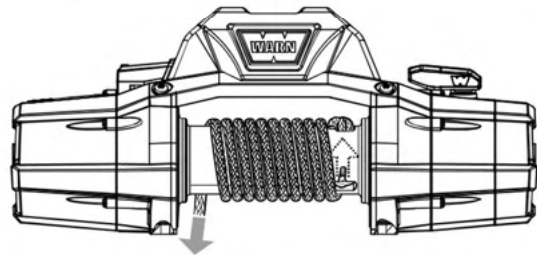


⚠ WARNING Always wind the winch rope on bottom (mount side) of drum.

⚠ WARNING Never operate winch with less than 10 wraps of winch rope around the drum. Rope could come loose from the drum, as the winch rope attachment to the drum is not designed to hold a load.

⚠ WARNING Never touch winch rope or hook while someone else is at the control switch or during winching operation.

7. Turn the clutch lever on the winch to the "Engaged" position. *NOTE: If you own a Zeon Platinum Winch, you will use your wireless remote control to engage your winch.*
8. Power in and wind 10 wraps of winch rope onto the drum while applying tension on the winch rope.



Proceed to the 'Rope Spooling Instructions' section of this document.

INSTALLATION INSTRUCTIONS

⚠ WARNING When upgrading from wire to synthetic winch rope, a WARN Hawse Fairlead is necessary and you must use the 5/16" anchor puck supplied in your synthetic rope kit (sizes vary).

NOTICE Any wire rope damage on drum may be smoothed with fine emery paper.

Zeon Synthetic Series Rope Installation:

THE FOLLOWING STEPS ARE VERY IMPORTANT AND IF NOT PRECISELY FOLLOWED THE LIFE OF THE WINCH AND WINCH ROPE MAY BE COMPROMISED.

Things You Will Need:

- WARN® Synthetic Winch Rope
- Abrasion Sleeve
- Installation wire
- 5/16" Anchor Puck
- Gloves
- WARN® Hawse Fairlead (if replacing wire rope)

⚠ WARNING MOVING PARTS ENTANGLEMENT HAZARD. Failure to observe these instructions could lead to serious injury or death.

⚠ WARNING Always Know Your Winch. Take time to fully read the Instructions and/or Operations Guide, and/or Basic Guide to Winching Techniques, in order to understand your winch and its operations.

⚠ WARNING Always position fairlead with warning readily visible on top.

⚠ CAUTION Always wear heavy leather gloves when handling winch rope.

⚠ WARNING Always replace the WARN Fairlead if damaged or abused.

For synthetic winch rope applications, you must have a Hawse Fairlead mounted to your winch. For optimal performance, a WARN Hawse Fairlead is strongly recommended. If you need to purchase a new WARN Hawse Fairlead, contact your WARN product dealer.

1. Disconnect the negative cable from the battery that is used to power the winch.

⚠ WARNING Never bend rope around unprotected, sharp corners.

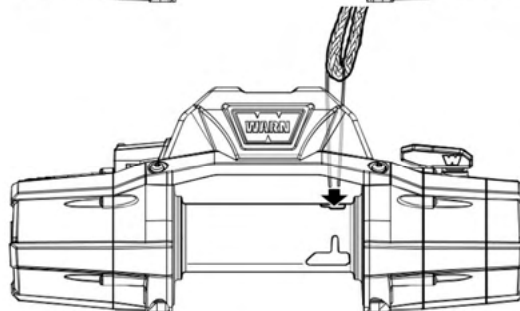
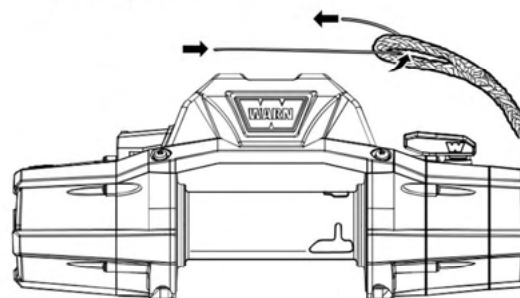
⚠ WARNING Never use rope over a rough surface without abrasion protection.

2. Slide the abrasion sleeve over the rope from the end opposite the hook. Slide the sleeve back to the hook end of the rope.

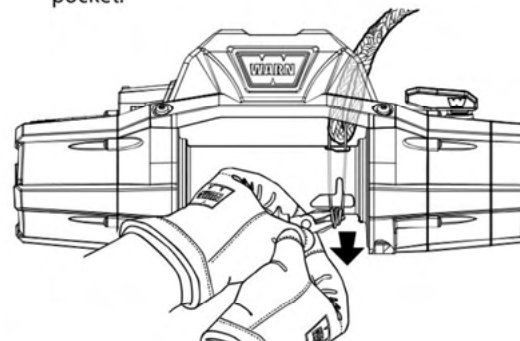
3. Insert the synthetic rope through the fairlead and around the winch drum from the bottom.



4. Before installing the synthetic rope, thread the installation wire through the loop of the rope and ease the rope loop through the rope anchor pocket.

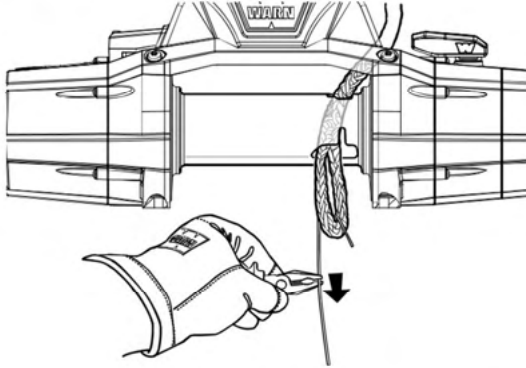


5. Once the rope has been partially pulled through pocket, wrap the wire ends around the head of pliers to complete pulling rope loop through pocket.

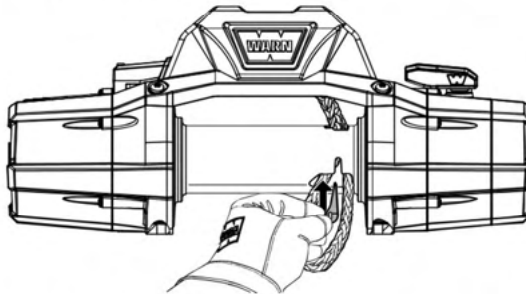


INSTALLATION INSTRUCTIONS

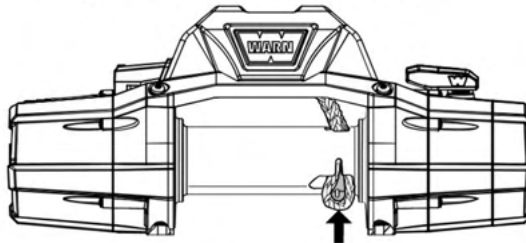
- Once rope loop is pulled through pocket, unwind installation wire and remove completely. Be careful not to harm the rope.



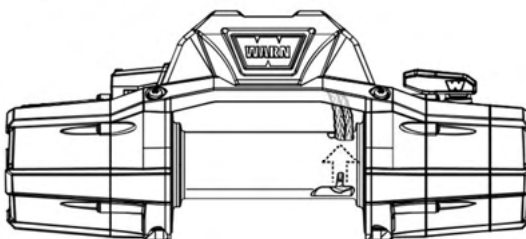
- Install the 5/16" rope puck in the center of the rope eyelet.



- Keep the puck in place while slowly pulling the rope away from the drum. Once the puck is seated against the rope on all sides, pull the rope way from the drum until the puck lodges with the rope into position.



- Ensure the loop does not protrude from the drum surface and that the rope is held into place tightly.



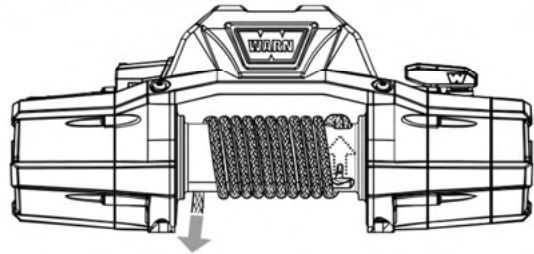
- Reconnect negative cable to the battery that is used to power the winch.

⚠ WARNING Always wind the winch rope on bottom (mount side) of drum.

⚠ WARNING Never operate winch with less than 10 wraps of winch rope around the drum. Rope could come loose from the drum, as the winch rope attachment to the drum is not designed to hold a load.

⚠ WARNING Never touch winch rope or hook while someone else is at the control switch or during winching operation.

- Turn the clutch lever on the winch to the "Engaged" position.
- Wind 10 wraps of rope onto the drum while applying light tension on the rope.



System Check

Once you have performed a system check, you are ready to confirm winch function. Proceed to First Time Operation Instructions and Final Analysis and Maintenance sections in this booklet.

First Time Operating Instructions

In this section, we'll show you the first time operating instructions for effective basic winching. For complete winch operation and techniques read the Basic Guide to Winching Techniques found online at <http://www.warn.com>.

Remote Control

The winch is controlled by the hand held remote control. The remote control provides control of the power-out (forward) or power-in (reverse) rotation of the spooling drum.

Do not leave the remote plugged into the winch when not in use. Leaving the remote plugged in, may result in a dangerous condition and/or battery drain.

Clutch Operation:

⚠ WARNING Never engage or disengage clutch if winch is under load, winch rope is in tension or drum is moving.

When the clutch is engaged, the gear train is coupled to the winch drum and power can be transferred from the winch motor. When the clutch is

SPOOLING INSTRUCTIONS

disengaged the drum is in the freespool position and the gear train and winch rope drum are uncoupled allowing the drum to rotate freely.

The clutch lever, located on the winch housing opposite the motor, controls the clutch position. To prevent damage, always fully engage or fully disengage the clutch lever.

Rope Spooling Instructions:

THE FOLLOWING STEPS ARE VERY IMPORTANT AND IF NOT PRECISELY FOLLOWED THE LIFE OF THE WINCH AND ROPE MAY BE COMPROMISED.

1. Choose a **FLAT AND LEVEL** location that is large enough to run out almost the entire length of winch rope.
2. Disengage clutch. **NOTE: See your product's specific operation manual for detailed clutch operation.**

⚠ WARNING Always keep hands clear of winch rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.

3. Grasp hook strap and spool out the winch rope to the last 5 wraps on the drum (10 wraps if synthetic rope).
4. Once the winch rope is spooled out, engage clutch. **NOTE: See your product's specific operation manual for detailed clutch operation instructions.**
5. Attach the hook end of the rope to a suitable anchor point.

⚠ WARNING Always be certain the anchor you select will withstand the load and the strap or chain will not slip.

6. Return to your vehicle.
7. Back the vehicle away from the anchor point until there is very little slack in the winch rope.
8. Set the parking brake, place the vehicle in gear or park and turn the vehicle off.

⚠ WARNING Always stand clear of winch rope and load and keep others away while winching.

9. Exit vehicle. **WARNING! Never exit the vehicle with a load on the winch rope.** While standing approximately 8 ft. (2.44 m) away from the winch, power-in the winch until all of the slack is wound onto the winch drum.

⚠ WARNING Never touch winch rope or hook while someone else is at the control switch or during winching operation.

⚠ WARNING Never touch winch rope or hook while under tension or under load.

10. With gloves on, hold tension on the winch rope

with one hand; carefully push the winch rope to the side of the drum the winch rope is attached to so there are no gaps between each coil on the drum.

⚠ WARNING Always wind the winch rope on bottom (mountside) of drum.

11. Be sure to check that the winch rope is winding off of the bottom of the drum or the automatic load holding brake will not function properly. **NOTE: If the winch rope is winding off the top of the drum, you have powered the winch "out" instead of "in" on the remote control. Be sure you are powering in.**

12. The following steps should be done using two people for proper safety. If you attempt to tension your winch rope alone be sure to always set the parking brake, place the transmission in gear or park and turn the vehicle off every time you exit the vehicle to inspect the winch rope.

NOTICE Use care to evenly wrap each layer to prevent damage to the rope.

⚠ WARNING Never use remote when vehicle is not in line of sight of operator.

13. The driver of the vehicle should operate the winch.
14. Instruct your assistant to stand to the side of the vehicle and away from the winch rope. **NOTE: Your assistant should signal you if the winch rope is winding correctly or incorrectly by watching it move across the fairlead as the winch rope is powered in.**
15. Start the vehicle and place the transmission in neutral. Then release the parking brake while applying moderate brake pedal pressure.
16. Power-in the winch rope to start winching in.
17. After winching in for approximately 6 ft. (2m), stop winching.
18. Slowly let up off of the brake pedal and then apply the parking brake. This will ensure that there is no load on the winch rope.
19. Place the transmission in park or in gear and turn the vehicle off.
20. Exit the vehicle and inspect the winch to make sure that the winch rope is being evenly wound onto the winch drum and not sinking into the lower layer. If the winch rope is sinking, power-out the winch rope by pushing the power-out button on the remote control and repeat this step from the beginning with more brake pedal pressure.
21. When you are convinced the winch rope is

SPOOLING INSTRUCTIONS

winding onto the winch drum properly, repeat steps until the vehicle is within 6 ft. (2 m) of the winch anchor. Once within 6 ft. (2 m), slowly let up off of the brake pedal and then apply the parking brake. This will ensure that there is no load on the winch rope. Then place the transmission in park or in gear and turn the vehicle off.

22. Exit the vehicle. Disconnect the hook from the anchor.
23. While holding onto the supplied hook strap, hold tension on the winch rope and slowly power-in the winch by "pulsing" the power-in button on your remote control until the hook is within 3 ft. (1 m) of the fairlead.
24. Stop winching in and attach the hook to a suitable anchor point on the vehicle.
25. Once the hook is suitably attached to the vehicle, power-in the remaining slack in the winch rope by "pulsing" the power-in button on your remote control until there is minimal slack in the winch rope. **NOTICE** *Do not power the hook into the fairlead. This could cause damage to the fairlead.*

Rigging

For complete rigging fundamentals, Read the Basic Guide to Winching Techniques, found online at <http://www.warn.com>.

MAINTENANCE AND CARE

Cleaning:

- Use low pressure water to clean synthetic rope. Do not use any chemicals.
- Do not direct high pressure water (pressure washers, car washes, etc.) directly between the drum support and drum flange or clutch lever.
- Use low pressure water and a soapy rag or sponge to clean the winch.
- Avoid using chemicals that may damage the finish.
- Thoroughly clean salt residue from the winch as soon as possible to minimize corrosion.

Rope Inspection:

⚠ WARNING Always inspect winch rope, hook, and slings before operating winch. Frayed, kinked or damaged winch rope must be replaced immediately. Damaged components must be replaced before operation. Protect parts from damage.

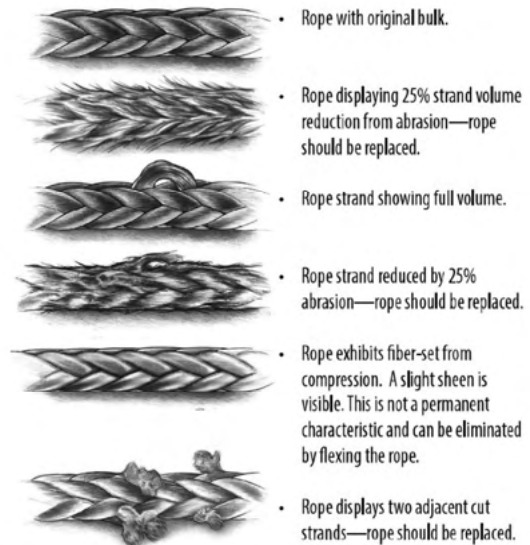
When rope is first used, the outer filaments of the rope will quickly fuzz up. This is the result of these filaments breaking and this roughened surface will actually protect the fibers underneath. The condition should stabilize, not progress. If the surface roughness increases, excessive abrasion is taking place and strength is being lost.

Look closely at both the inner and outer fibers. When either is worn the rope is obviously weakened. Open the strands and look for powdered fiber—this is a sign of internal wear.

Localized discolorations could potentially represent chemical attack by anything from gear oil to battery acid. When doubt exists, replace the rope.

Rope should be replaced when:

- Rope bulk anywhere along the length is reduced by 10% or more by abrasion.
- Two or more adjacent strands are cut.
- Flat areas or lumps are found that are not eliminated by flexing rope.
- Excessive fused or melted fibers are found. Any such areas will be stiff and the rope will have a glazed appearance.



Maintenance:

- Inspect the winch rope and heat sleeve before and after each winching operation. Frayed or damaged rope must be replaced immediately. See rope care and storage.
- The rope must always spool onto the drum as indicated by the drum rotation decal on the winch.

Take time to fully understand your winch and the winching operation by reviewing the Basic Guide to Winching Techniques found online at:

<http://www.warn.com>.

For further information or any questions contact:

WARN INDUSTRIES, INC.

12900 S.E. Capps Road, Clackamas
OR USA 97015-8903, 1-503-722-1200,
Customer Service: 1-800-543-9276
Dealer Locator Service: 1-800-910-1122
or visit www.warn.com.