



# OFF-ROAD RECOVERY BASICS



V1.0

In the untamed realm of off-road exploration, where the call of the wilderness meets the thrill of adventure, BUNKER INDUST stands as a disruptive force, committed to empowering off-road enthusiasts in their pursuit of passion. With a fusion of rugged aesthetics and unwavering commitment to safety, we elevate recovery experience.

At BUNKER INDUST, we regularly spend time outdoors to understand your desire to have an optimal recovery gear. But that move is challenging and time-consuming. But it's what sets us apart. Because we are driven by enthusiasm, not commission, and share the same passion for impeccable safety as you do.

When you decide to hit the trails, BUNKER INDUST is here to prepare it with virtually all the off-road recovery accessories required to keep you safe, and make sure it looks and performs as you want it to.

BUNKER INDUST: Tough Trails, Tougher Tools.

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## RECOVERY GEARS & ACCESSORIES

Individually, a winch might seem like a straightforward tool, but when paired with specific accessories and enhancements, your BUNKER INDUST winch transforms into a versatile and efficient asset. This section will explore several of these components, some crucial for ensuring the safe operation of your winch, while others provide additional flexibility and convenience.



- Gloves** After being used, winch rope can develop "barbs" capable of causing skin injuries. It is imperative to wear protective gloves while operating the winch or handling the rope. Avoid loose-fitting clothing or any items that could potentially become entangled in the winch rope and other moving components.



- Hook Strap** When spooling in the winch

rope, it's essential to use a hook strap to secure the hook and keep fingers away from the hawse. The powerful pulling forces generated by winches pose a significant risk, easily causing harm to fingers and limbs in pinch points. To mitigate this risk, insert the hook into the loop and securely hold the strap between the thumb and forefingers.



- Snatch Block** When used correctly, the snatch block serves a dual purpose:
  - (1) increase your winch's pulling power; and
  - (2) alter your pulling direction without causing damage to the winch rope. Detailed guidance on the proper use of the snatch block is provided in the "Enhancing Winching Efficiency" section.



- Bow Shackle** The bow shackle presents a secure method for connecting looped ends of cables, straps, and snatch blocks. Its threaded pin facilitates easy removal, ensuring a practical and safe connection for various applications.



- **Soft Shackle** The soft shackles are designed for enhanced safety, superior strength, and effortless 4WD use. Originally inspired by fishing tech, these shackles are lighter with superb durability.



- **Snatch Strap** The snatch strap serves as a secure attachment point for the winch rope to various anchor points and objects. It not only offers versatility but also safeguards living trees.



- **Recovery Rope** Use the recovery strap to "snatch" out a stuck vehicle and a kinetic recovery rope can perform the task even more effectively. It transforms the kinetic energy generated by a towing vehicle into elastic potential energy, providing a powerful and efficient means for rescuing a

stranded vehicle—eliminating the necessity for a winch.

**Notice:** When using the Kinetic Rope, ensure proper attachment to a vehicle recovery point or device that is specifically rated to accommodate the strength and capabilities of the rope. This guarantees a secure and reliable connection, ensuring a safe and effective vehicle recovery process.



- **Winch Damper** The BUNKER INDUST Winch Damper is a precautionary measure to prevent rope recoil in the rare event of a rope failure. Placed midway between the winch and the anchor point, it ensures the safe descent of the rope if such an incident were to occur. Apply the damper before putting the winch rope under tension. Avoid approaching or moving the damper once tension is applied, and prevent it from getting pulled into the hawse. This proactive approach enhances safety during winching operations.



- **Recovery track** The recovery tracks are designed as a device for assisting in the process of recovering your vehicle from muddy and sandy grounds. Contoured to fit most tyres, the ramps are designed for an easier entering and drive up. Additionally, BUNKER INDUST recovery tracks can also be used as shovels.



- **Farm Jack** A farm jack, different from a standard car jack, earned its name due to its primary application with farming equipment like tractors and jeeps. Notably larger than

conventional jacks, it excels in lifting exceptionally heavy loads to considerable heights. Ideal for vehicles with large wheels or elevated chassis.

- **Shovels & Hand Tools** In the course of winching, additional assistance often becomes essential. Equip yourself with tools such as a shovel, axe, and a Hi-Lift jack to ensure readiness for any unforeseen challenges.



# HOW TO USE RECOVERY TRACKS

Placing the recovery tracks over soft terrain before attempting to traverse can save you time and effort.

**Notice:**

- BEWARE of hot components when clearing debris from the underside of a vehicle.
- Avoid damaging your recovery tracks and the risk of personal injury or property damage—DO NOT SPIN YOUR WHEELS.
- DO NOT USE the recovery tracks on hard and rocky surfaces, like a bridge or a ramp.

**Step 1:** When your vehicle stalls, STOP, and retrieve your recovery tracks. Spinning your wheels, especially in soft sand, will only bury your vehicle deeper.

**Step 2:** Clear debris and obstructions around tires and underbody components. The recovery tracks can double as a shovel. Ensure the wheels bear the vehicle's weight, not spinning freely and a long-handled shovel may be needed for thorough clearance.

**Step 3:** WEDGE the recovery tracks FIRMLY against the tire tread, in front of front tires for forward motion or behind rear tires for

reversing. Ensure the recovery tracks points in the intended travel direction, not lying flat but angled. Lowering tire pressures now improves traction. Use telltale leashes for easy retrieval.

**Step 4:** Clear the area of personnel before returning to your vehicle. Double-check for safety before starting the engine.

**Step 5:** Engage low ratio, first gear, and GENTLY accelerate. NO WHEEL SPIN! Slow rotation lets tires grip the teeth on the top of recovery tracks. Wheel spin damages recovery tracks and is not covered under warranty.

**Step 6:** If tires don't grip immediately, STOP, reposition recovery tracks FIRMLY against tire treads, and try again. NO WHEEL SPIN! Clear more debris if needed to ensure wheels bear the vehicle's weight.

**Step 7:** Once tires gain traction, maintain momentum until reaching firm ground. Repeat if necessary.

**Step 8:** Retrieve recovery tracks. Bright color telltale leashes ease finding, even if completely buried.



## HOW TO USE A KINETIC RECOVERY ROPE

Engineered to stretch when linked to a stuck vehicle and towed by a four-wheel-drive recovery vehicle with precise traction and momentum, this rope boasts exceptional elasticity. As it elongates, it absorbs a substantial amount of elastic potential energy. In a kinetic energy recovery pull, watch as the rope's stored energy conquers the resistance of the stuck vehicle, transforming potential energy into kinetic energy for a remarkably effective, efficient, and smooth extraction.



**Step 1:** When your vehicle is stuck, stop, assess the situation and develop a thoughtful recovery plan.

**Notice:** A rope exhibiting fraying, cutting, or discoloration must be deemed unfit for use.

**Step 2:** Discuss pull and communication details between drivers, whether through hand signals or radio communication. Place a visible mark on the ground to guide the stuck vehicle's endpoint, ensuring it remains

unstuck. The driver should have a clear view of this mark outside their window. After freeing the vehicle, the driver must avoid running over the kinetic recovery rope.

**Step 3:** If practical, use a shovel or trail tools to clear mud, sand, or snow around the stuck vehicle's tires and underbody in the intended pull direction. Flatten small terrain "hills" around spinning tires. Identify and remove large obstacles (rocks, logs, etc.). Pay extra attention in deep snow or water. Consider placing recovery tracks or bridging ladders under at least two wheels if the vehicle is severely stuck, combining both techniques for an easier recovery.

**Step 4:** Pull the stuck vehicle from the rear whenever possible. Avoid getting the recovery vehicle stuck while assisting, ensuring alignment for a straight pull without exceeding 10 degrees left/right.



**Step 5:** Use only frame-mounted recovery points. Choose a top-condition kinetic recovery rope with the correct Maximum Breaking Strength for the stuck vehicle. Employ quality anchor or soft shackles for the connection.

**Step 6:** Ensure bystanders stand at least 1.5 times the total stretched length away during the pull; no one between the vehicles. Avoid passengers riding in either vehicle. Consider using winch damper(s).



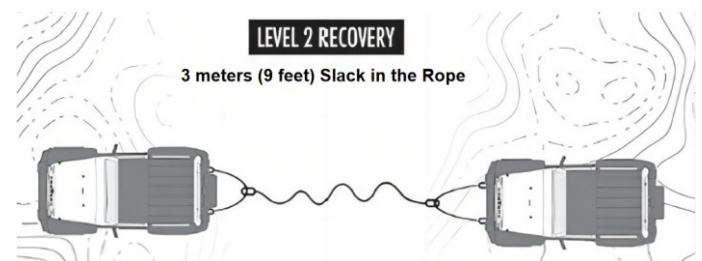
**Step 7:** Place approximately 2 meters (6 feet) of slack between vehicles. Arrange the slack in an "S" shape on the ground, ensuring no twists, kinks, or overlaps in the rope. The stuck vehicle should have its brakes off and the engine running. If the stuck vehicle's engine is non-functional, it should have its transfer case and transmission in neutral with all brakes disengaged. Place the recovery vehicle in 4WD-Low, with the transmission in 1st gear (or reverse). Drivers must communicate and confirm their readiness for the pull. The recovery vehicle driver initiates the pull, informing the other driver beforehand. Begin the pull, maintaining a speed of

approximately 12 kph (8 mph) and avoid excessive acceleration.

Stuck vehicle moved? **YES? NO?**

**YES:** Attempt the same pull again if not completely unstuck. Continue using this level of pull up to four or five times, as long as the recovery vehicle maintains traction and the stuck vehicle progresses toward traction. After this number of pulls, allow your kinetic recovery rope to rest.

**NO:** Try a Level-Two Recovery.



**Step 8:** Double-check for obstructive objects beneath the stuck vehicle and its tires. Verify connection points and rigging for structural reliability. Between vehicles, introduce approximately 3 meters (9 feet) of slack in your rope. Arrange the slack rope in an "S" shape between vehicles on the ground, ensuring no twists, kinks, or overlaps. Place the recovery vehicle in 4WD-Low, with the transmission in 2nd gear. If feasible, the stuck vehicle should once again contribute to the recovery effort with a powered assist, aligning with the recovery vehicle's gearing. Initiate the pull, maintain a speed of approximately 32 kph (20 mph)



and avoid excessive acceleration. Upon achieving full rope stretch (some jerk will be felt), consider disengaging the recovery vehicle's clutch (manual transmission) or shifting the gearing to neutral (automatic transmission). This technique, while requiring practice, reduces strain on the recovery vehicle's driveline. Even without continuous driveline power, the moving recovery vehicle's momentum and the kinetic energy produced by the rope recoil should extract the stuck vehicle.

Stuck vehicle moved? **YES? NO?**

**YES:** Attempt the same pull again if not completely unstuck. Continue using this level of pull up to four or five times, provided the recovery vehicle maintains traction and the stuck vehicle continues to make progress toward traction. After this number of pulls, allow your rope to rest.

**NO:** Reevaluate the entire recovery plan; consider exploring alternative recovery methods.



# HOW TO USE ELECTRIC WINCH

## KNOW YOUR WINCH



To begin, acquaint yourself with your BUNKER INDUST winch and its key components. Prior to trail use, practice operating the winch.

**1. Motor:** The winch motor, typically powered by the vehicle's battery, drives the gear mechanism. This mechanism turns the winch drum, winding the winch rope.

**2. Braking System:** The braking system automatically applies the brake to the winch drum when the motor stops with a load on the rope. This prevents line payout, securing the vehicle in place.

**3. Winch Rope:** Diameter and length are determined by the winch's capacity and design. Wrapped around the drum and fed through the hawse, it forms a loop for the hook's clevis pin.

**4. Protective Sleeve:** The protective sleeve cover parts of the rope that might come into contact with abrasive surfaces or jagged edges, lengthening the rope's lifespan.

**5. Winch Drum:** The cylinder onto which the winch rope feeds. Driven by the motor and drive train, its direction is controlled by the remote controller.

**6. Gear Train:** The gear train converts motor power into a substantial pulling force, allowing a lighter and more compact winch design.

**7. Clutch:** The clutch allows disengagement from the gear train, enabling free rotation ("freespooling"). Engaging the clutch locks the drum back onto the gear train.

**8. Hawse:** The hawse guides the winch rope onto the spooling drum, reducing damage during angled pulls. Especially useful when passing through the winch mount or bumper.

**9. Control Box:** Using electrical power from the vehicle's battery to switch power to the motor, the control box enables the operator to change the winch drum's rotation direction.

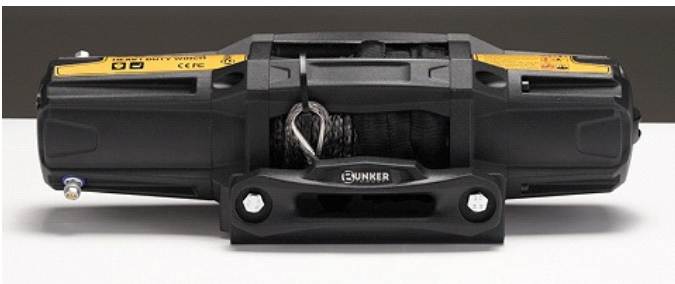
**10. Remote Controller:** The remote controller allows the operator to control winch direction while standing clear of the rope.



## HOW THE WINCH WORKS

### Winch Mechanics

Now that you've acquainted yourself with your BUNKER INDUST winch and its components, let's begin reviewing its operation. An electric-powered winch offers a significant advantage by providing reliable service during intermittent utility and recreational use, even when the vehicle's engine is stalled—assuming sufficient battery current is available. The winch can handle high current loads, and to ensure safe operation, the control box uses a high current control system.



It's crucial to recognize that, similar to a hot plate, the longer the winch pull, the more heat is generated. Continuous winching without allowing the winch motor to cool can lead to motor damage. Additionally, if the engine is idling during winching, the battery may deplete faster than it charges. Therefore, monitor your voltage gauge closely to prevent draining the battery too low for vehicle starting.

### Control of Your Winch:

The winch is operated using the remote controller, enabling the operator to stand clear during the winching process. The remote controller facilitates control of the forward or reverse rotation of the spooling drum.



### How the Winch Reacts to Load:

BUNKER INDUST winches are rated by pulling capacity, with the maximum occurring on the first layer of winch rope on the drum. As layers increase, pulling power decreases—a fundamental aspect of winching mathematics. Exceeding the winch capacity risks failure or winch rope breakage. Strategically considering your winch usage now can prevent significant issues later.

Moreover, ensure that your winch's mounting system and your vehicle's frame can accommodate the rated load.

Analyze your situation, exercise judgment to calculate the intended weight to pull, multiply by 1.5, and never exceed your winch or winch rope rating. This prudent approach safeguards against potential complications and ensures optimal winching performance.

## SETTING UP A NEW WINCH ROPE



Before using a new winch rope on the trail, it is crucial to spool it onto the drum under a load. Ignoring to do this will cause the outer layers of winch rope to get pulled down in between the lower layers. This can damage the winch rope. Follow the instructions below for the proper stretching and installation of the winch rope onto the winch drum:

**Step 1:** Pass the rope through the hawse and attach it to the threaded hole on the drum with a bolt.

**Step 2:** Use Allen Key to fixate the bolt.

**Step 3:** Keeping your hands clear of the winch, and make sure that the coils are neat and even.

Now you can test it.

1. Choose a **FLAT AND LEVEL** location with ample space to run out almost the entire length of the winch rope.

2. Disengage the clutch.

**Notice:** Refer to your product's specific

operation guide for detailed clutch operation.

3. Grasp the 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 the clutch.

5. Attach the hook end of the rope to a suitable anchor point.

6. Return to your vehicle.

7. Back away from the anchor point until there is minimal slack in the winch rope.

8. Set the parking brake, place the vehicle in gear or park, and turn off the engine.

9. Exit the vehicle. Power in the winch until all slack is wound onto the drum, standing approximately 8 ft. (2.44 m) away from the winch.

10. With gloves on, hold tension on the winch rope with one hand, carefully pushing the rope to the side of the drum it is attached to, ensuring no gaps between each coil.

11. For safety, if attempting to tension the winch rope alone, always set the parking brake, place the transmission in gear or park, and turn the vehicle off each time you exit.

12. The driver operates the winch, while an assistant stands to the side and away from



the winch rope.

13. Start the vehicle, place the transmission in neutral, release the parking brake while applying moderate brake pressure.

14. Power in the winch rope to start winching in.

15. After winching in approximately 6 ft. (2m), pause winching.

16. Slowly release the brake pedal and apply the parking brake to ensure no load on the winch rope.

17. After winching in approximately 6 ft. (2m), pause winching.

18. Slowly release the brake pedal and apply the parking brake to ensure no load on the winch rope.

19. Place the transmission in park or in gear, and turn off the vehicle.

20. Exit the vehicle, inspect the winch rope to ensure even winding onto the drum without sinking into lower layers. If sinking occurs, power out the winch rope and repeat the process with more brake pedal pressure.

21. If convinced the winch rope is winding properly, repeat steps until the vehicle is within 6 ft. (2 m) of the winch anchor. Slowly release the brake pedal, apply the parking

brake, and place the transmission in park or in gear. Turn off the vehicle.

22. Exit the vehicle and disconnect the hook from the anchor.

23. While holding the supplied hook strap, maintain tension on the winch rope. Slowly power in the winch by "pulsing" the winch in button on your remote control until the hook is within 3 ft. (1 m) of the hawse.

24. Stop winching in and attach the hook to a suitable anchor point on the vehicle.

25. Once the hook is securely attached to the vehicle, power in the remaining slack in the winch rope by "pulsing" the winch in button on your remote controller until there is minimal slack.

**Notice:** Avoid powering the hook into the hawse to prevent damage.



## BEFORE PULLING



Learn the essential steps for efficiently recovering your vehicle through the process of rigging a single-line pull. If opting for double or multiple line rigging techniques, rest assured that the fundamental steps remain consistent, with the incorporation of a snatch block to enhance the overall operation.

**Step 1:** PUT ON GLOVES.

**Step 2:** RELEASE THE CLUTCH. Enable the winch drum to spin freely for smooth operation. This not only facilitates free spooling but also helps conserve battery power.

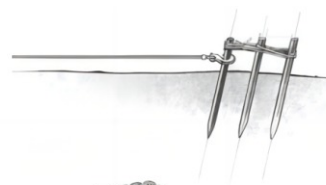
**Step 3:** RELEASE THE WINCH HOOK AND SECURE WITH A STRAP. Detach the winch hook from its anchor point and, if not already attached, secure it with a hook strap.

**Step 4:** EXTEND WINCH ROPE TO ANCHOR POINT. Unwind sufficient winch rope to reach your selected anchor point. Maintain tension in the line to prevent twisting and overwrapping, which could lead to damage. As a precaution, hold the winch hook in the hook strap while working to avoid losing the end.

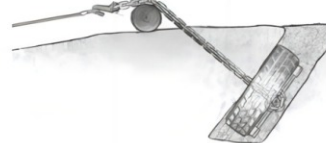
### Selecting an Anchor Point:

The choice of an anchor point is crucial for the success of winching operations. Ensure the selected anchor is robust enough to withstand the force exerted during winching. Natural anchors such as trees, stumps, and rocks are suitable options. Hook the cable as low as possible for enhanced stability. In the absence of natural anchors, when recovering another vehicle, your own vehicle becomes the anchor point. In such cases, engage neutral, apply the handbrake, and secure the wheels to prevent unintended movement.

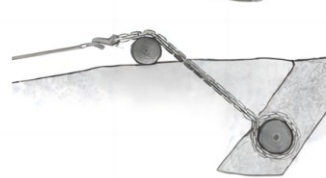
Ideally, opt for an anchor point that allows a straight pull in the direction of vehicle movement, ensuring even winding onto the spooling drum. The farther the anchor point, the greater the pulling power of the winch.



**Angled stakes or axles firmly driven into the ground and interconnected.**



**Bury the spare tire and rim deeply, securing the chain through the rim.**



**Embed a log in the ground, ensuring the chain is securely fastened around it.**

**Step 5:** SECURE TO THE ANCHOR POINT. After identifying the anchor point, secure the snatch strap around the chosen object.



**Step 6:** ATTACH BOW SHACKLE AND HOOK STRAP. Connect the shackle to both ends of the strap or chain and thread it through the hook loop, taking care not to overtighten (tighten and back off by 1/2 turn).

**Step 7:** LOCK THE CLUTCH. Secure the winch drum by activating the clutch lever on the winch.

**Step 8:** CONTROLLER CONNECTION. Start by supplying power to the control box. Next, follow the user manual for your winch to correctly connect your controller.

**Step 9:** APPLY TENSION TO THE WINCH ROPE. Use the winch switch to gradually wind the winch rope until all slack is eliminated. Once the winch rope is under tension, maintain a safe distance and refrain from stepping over it.

**Step 10:** VERIFY YOUR ANCHOR. Prior to proceeding with the winching process, ensure all connections are securely fastened and devoid of any debris.

## GUIDELINES FOR WINCHING

1. Take time to assess and plan your pull carefully.
2. Approach winching with patience for precision and safety.
3. Choose equipment tailored to your specific situation for effectiveness.
4. Handle the winch rope and operate the remote controller switch yourself.
5. Maintain a constant focus on safety throughout the winching process.
6. Practice the steps regularly for confidence and proficiency.

## PULLING

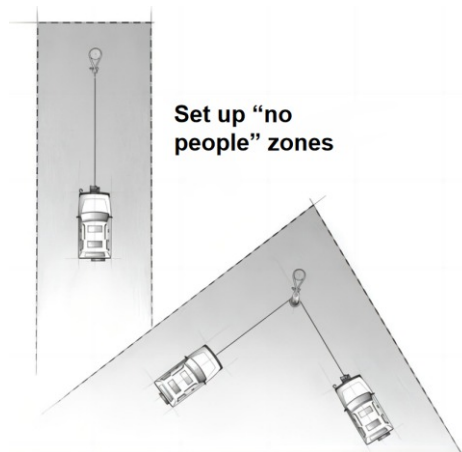
As evident, there are crucial considerations before initiating the pulling process. Thoroughly analyze your actions to ensure your safety and the safety of those around you.

Operating the winch correctly is paramount. It is advisable to practice these techniques beforehand to familiarize yourself with the procedures and mitigate distractions and stress during a real winching situation.

**Step 11:** INSPECT WINCH ROPE. Check that the winch rope is neatly wound around the spooling drum to prevent damage caused by improper winding.

**Step 12:** LAY SOMETHING OVER THE WINCH

ROPE. If deemed necessary, place an object midway between the winch and the anchor point to absorb energy in case the winch rope snaps loose. Items such as tree limbs, heavy jackets, chains, backpacks, or similar objects can be used for this purpose.



**Step 13: CLARIFY YOUR INTENTIONS.** Ensure that everyone in the immediate vicinity of the winching operation comprehends your intentions before starting the pull. Clearly communicate designated areas where onlookers should not position themselves-never behind or in front of the vehicle, and always maintain a safe distance from the winch rope or snatch block. Identify and communicate any other “no people” zones.

**Step 14: START WINCHING.** With the winching vehicle's engine running and light tension applied to the winch rope, commence winching at a slow and steady pace. Confirm that the winch rope is winding uniformly and tightly around the spooling

drum. If additional assistance is needed, the winched vehicle can be slowly driven while being pulled by the winch.

**Step 15:** For vehicle recovery, continue pulling until the vehicle is on stable ground. If the vehicle can be driven, consider the winching operation complete.

**Notice:** Prevent overheating of the winch motor. During extended winching, take breaks at reasonable intervals to allow the winch motor to cool down.

**Step 16: SECURE THE VEHICLE.** After completing the vehicle recovery, secure the vehicle by engaging the brakes and placing the transmission in "park" (automatic) or "low" gear (manual). Release tension in the winch rope.

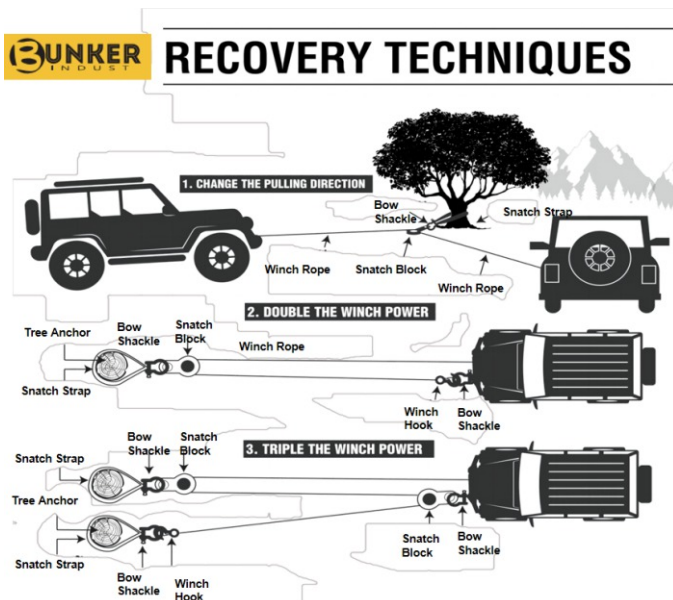
**Step 17: DISCONNECT WINCH ROPE.** Disconnect the winch rope from the anchor point.

**Step 18: REWIND WINCH ROPE.** The person handling the winch rope should carefully walk it in, avoiding letting it slide through the hand, and maintain control of the winch at all times.

**Step 19: TURN OFF REMOTE CONTROLLER.** Make sure the controller is shut off and now the winching operations are complete.



# ENHANCING WINCHING EFFICIENCY



Diverse winching scenarios demand the application of corresponding winching techniques. Whether it's overcoming limited distance for optimal pull with straight-line rigging, enhancing pulling power, or ensuring a straightforward pulling alignment, your approach may vary. Assessing the correct technique for your specific situation is imperative. Prioritize safety at all times—keeping this principle in mind is paramount.

## Changing Pulling Direction

For optimal winching, ensure a straight line from the winch to the object being pulled. To prevent winch rope from collecting unevenly on the drum, potentially causing damage and reducing efficiency, use a snatch block

secured directly in front of the vehicle. This allows you to alter the pulling direction while maintaining a 90° angle for proper winding onto the spooling drum.

## Increasing Pulling Power

When more pulling power is required, employ snatch blocks to enhance mechanical advantage:

### Double Line

To decrease the number of layers on the winch drum and increase pulling power, feed out enough winch rope to free the hook. Attach the hook to your vehicle's frame/tow hook and run the rope through a snatch block. Secure the rope to the anchor point.

### Triple Line

Follow the same principles as the double line. Establish a robust mounting location for the snatch block and screw-pin shackle on your vehicle. Maintain a 90° angle between the winch and run the rope to the first anchor point through the snatch block. Secure the rope back to the vehicle and through the snatch block again, attaching it to the final anchor point. Carefully tighten the connections and verify the anchor points before proceeding with the winching operation.

# SAFETY INSTRUCTIONS



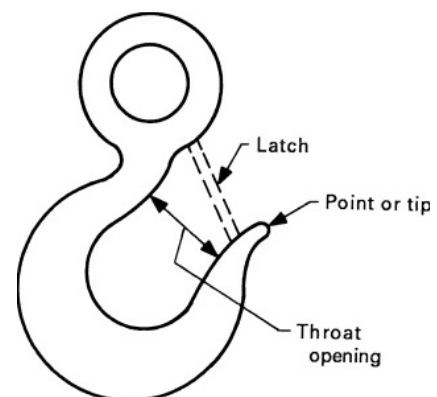
Your safety is our top priority in every recovery scenario. To minimize the risk of personal injury, please take the time to thoroughly review all instructions and warnings before using the equipment. Failure to follow the correct procedures could lead to fire, injury, significant damage, or even loss of life. Please be aware this guide may not cover every recovery situation. We highly recommend using the recovery equipment responsibly and in strict accordance with safety guidelines.

## GENERAL SAFETY

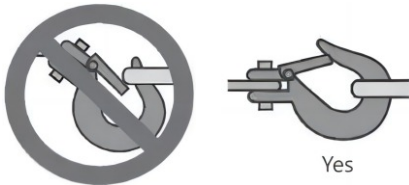
- Before operating the winch, always inspect the winch rope, hook, and slings. Promptly replace any frayed, kinked, or damaged winch rope. Replace damaged components before operation to shield against potential damage.
- Keep your electric winch in a dry and secure location that is inaccessible to children when not in action. And before stashing it away, give your winch a quick once-over to ensure it's in tip-top shape. If accompanied

by regular check-ups, cleaning, and maintenance, your synthetic winch rope can have a longer lifespan.

- Adopt proper posture and lifting techniques, or seek assistance when handling and installing the product.
- Always store the remote controller in a protected, clean, and dry area. Never leave it in a pocket or other places where it can be activated during free spooling, rigging, or when the winch is not in use.
- Adhere to the rated capacity of the winch or winch rope, avoiding any exceeding of limits. Employ a snatch block for a double line setup to reduce winch load.
- Adjust the protective sleeve to shield sections of the rope that might come into contact with abrasive surfaces or jagged edges.
- Always use a hook equipped with a latch. Avoid using a hook with an enlarged throat opening, or one with a bent or twisted tip.



- Do not place any weight on the tip or latch of the hook. Apply load only to the center of the hook and always make sure that the hook latch is fully closed.



- Avoid wrapping the winch rope onto itself. Employ a snatch strap or shackle for anchoring purposes.



- Exercise constant awareness of potential hot surfaces on the winch motor, drum, or rope, both during and after winch operation.



- Avoid using the winch or winch rope for towing, as the introduction of shock loads can cause damage, overload, and potential breakage of the rope.
- Avoid using the winch to secure a load.
- Never operate the winch under the influence of drugs, alcohol or medication.
- Be vigilant about the stability of the vehicle and load during winching and maintain a

safe distance from both of them. Alert all bystanders to any unstable conditions.

- Always remove jewelry, use heavy protective gloves when handling winch rope and never let winch rope slip through your hands. And if possible, wear hearing and eye protection as well.



- Maintain a safe distance when working with batteries; never lean over the battery during connection.
- Avoid routing electrical cables over battery terminals to prevent potential hazards.
- Before drilling, thoroughly check the area for the presence of fuel lines, fuel tanks, brake lines, electrical wires, etc.



- Enhance safety measures by insulating and protecting all exposed wiring and electrical terminals.

## INSTALLTION SAFETY

- Always carefully select a mounting location that is sufficiently strong to withstand the maximum pulling capacity of your winch.
- Avoid welding mounting bolts at all times and verify required bolt length to ensure proper thread engagement.
- Complete the winch installation and hook attachment before the wiring installation.
- Always keep your hands clear of the winch rope, hook loop, hook, and hawse opening during installation, operation, and when spooling in or out.



- Always prestretch the rope and respool it under load before use. Tightly wound rope reduces the risk of “binding,” which can potentially damage the rope.
- Avoid routing electrical cables across sharp edges or hot parts to prevent damage.



- Avoid routing electrical cables through or near moving parts.



- Avoid shorting battery terminals with metal objects to prevent accidents.

## WINCHING SAFETY

- Ensure the selected anchor can endure the load, and the strap or chain will securely hold without slipping.
- Prevent overheating of the winch motor. If you winch for over 1 minute or if the winch stalls during operation, take a break of at least 10 minutes to allow the winch motor to cool down.
- Clear any obstacles or elements that could impede the safe operation of the winch.
- Wind the winch rope on the bottom (mountside) of the drum. This is crucial for the proper functioning of the automatic brake (if so equipped).

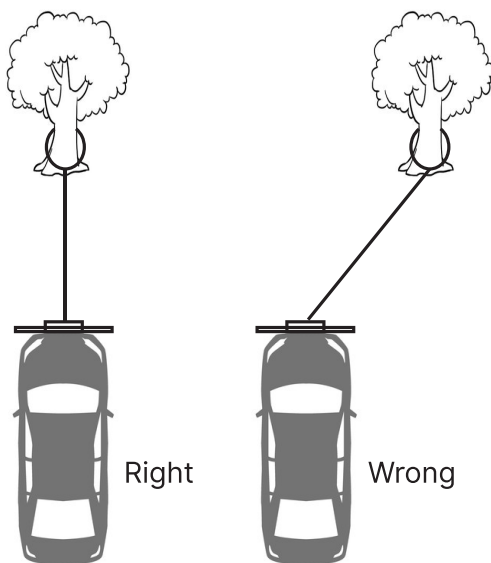




- Be sure to use the provided hook strap when spooling winch rope in or out during installation and throughout operation. And avoid applying excessive effort when freespooling the winch rope.



- Ensure the winch is operated with a minimum of 5 wraps for steel rope or 10 wraps for synthetic rope around the drum to prevent the risk of the rope coming loose. The rope attachment to the drum is not designed to bear a load.
- Avoid side pulls that may cause the winch rope to accumulate at one end of the drum, potentially leading to damage to both the rope and the winch.



- Avoid touching the winch rope or hook when they are under tension or load.

- Always ensure the clutch is fully engaged or disengaged. Avoid engaging or disengaging the clutch if the winch is under load, the winch rope is in tension, or the drum is in motion.

- Avoid using the winch for suspending loads or moving individuals, as it is not intended for such purposes.



- Always confirm that the anchor can support the anticipated load, employ suitable rigging, and take the necessary time to rig the system accurately.
- Never use the remote when the vehicle is out of the operator's line of sight.

# MAINTENANCE

For maintenance, use our simple checklist as part of your regular schedule to keep your recovery equipment in optimal condition. These preventive checks contribute to reliable performance when you need it.

Check	Before First Operation	After Each Use	Every 90 Days
Take the time to thoroughly read the off-road recovery basics to understand your products and their operations.	✓		
Inspect and tighten fasteners to the recommended torque. Replace any damaged fasteners promptly.	✓		✓
Confirm correct and secure wiring connections for all components.	✓		✓
Inspect for exposed or damaged wiring, terminals, and cable insulation; cover any issues with terminal boots and repair or replace damaged electrical cables.	✓		✓
Check the rope and recovery tracks for damage and replace if necessary.	✓	✓	✓
Keep winch, rope, switch control, shackles and farm jack free from contaminants; use a clean rag to remove dirt.		✓	
Follow manufacturer guidelines to inspect battery cables.		✓	
Check and place/replace the battery of wireless remote control	✓		✓
Turn off the power after use		✓	
Always clean the recovery tracks after use by using a hose to remove any debris.		✓	
Allow the recovery tracks to dry completely before storing.		✓	
Allow 24 hours before tightly wrapping the kinetic rope after recovery.		✓	
Clean the kinetic rope using warm, pH-neutral soapy water, and let it air-dry in a shaded area. Avoid storing the Kinetic Rope when it is still wet.		✓	
Clean and lubricate the lifting mechanism of the farm jack.		✓	✓
Store the farm jack in the upright clipped position in a dry location, preferably indoors.		✓	

## WARRANTY

BUNKER INDUST warrants to the original purchaser that its product will be free from defects in material and workmanship during the warranty period specified in the product's user manual. To obtain any warranty service, you must provide BUNKER INDUST with acceptable proof of purchase and the purchase date, such as a copy or screenshot. BUNKER INDUST, at its sole discretion, will undertake repair, replacement, or refund the purchase price of the defective product, as long as you submit your claim within the warranty period.

### Exclusions:

This warranty does not cover:

1. Finish and paint.
2. Damage caused by accidents, abuse, misuse, collision, overloading, modification, misapplication, improper installation, or improper servicing.
3. Normal wear and tear.

This warranty becomes null and void if any BUNKER INDUST serial number is removed or defaced. Commercial or industrial use, hoisting applications, or any misuse of the product renders the warranty void unless specifically agreed to in writing by BUNKER INDUST.

### Claims:

The aforementioned warranty is the only warranty provided. There are no other warranties, whether expressed or implied, including implied warranties of merchantability or fitness for a particular purpose. No BUNKER INDUST dealer, agent, or employee is authorized to modify, extend, or add to this warranty. BUNKER INDUST shall not be held liable for any special, indirect, incidental, or consequential damages (including, but not limited to, lost profits, downtime, or loss of use) under any legal theory, even if BUNKER INDUST was informed of the possibility of such damages.

BUNKER INDUST reserves the right to make changes to the product design without prior notice. In cases where BUNKER INDUST has made changes to a product's design, BUNKER INDUST is not obligated to upgrade or modify previously manufactured products.