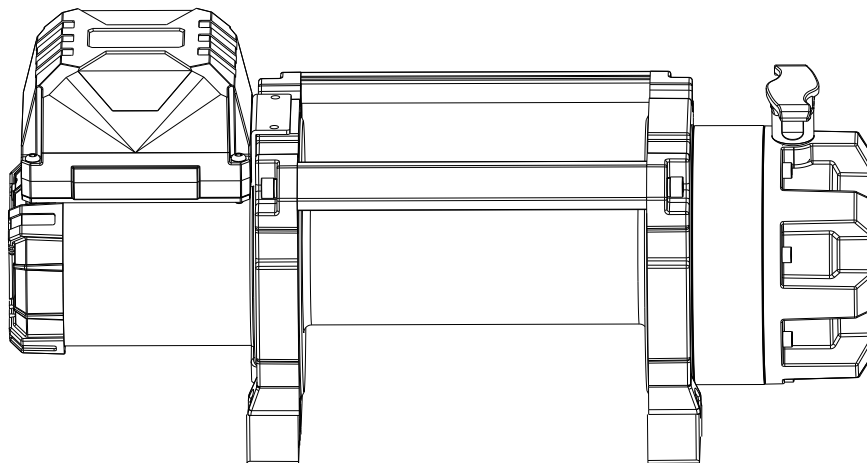
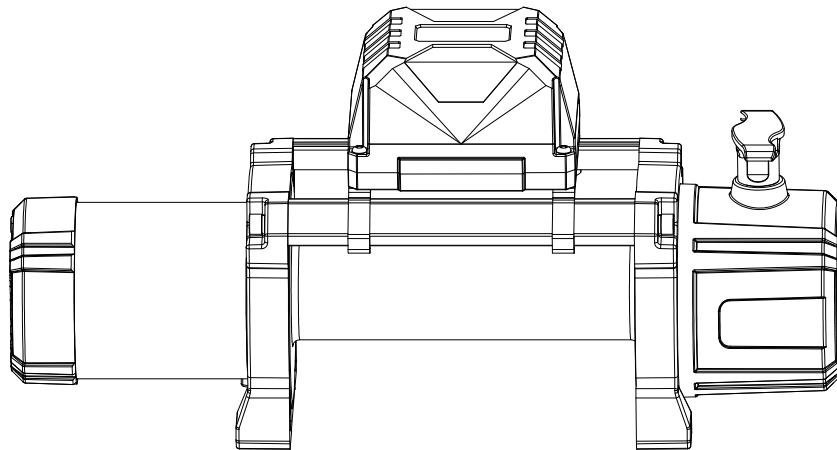


Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures.
Keep this manual and the receipt in a safe and dry place for future reference.

PRESKO



When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, contact our seller as soon as possible.

PRESKO
RELIABLE WINCHING

⚠ WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

MULTIFUNCTIONAL REMOTE CONTROL

TO ACTIVE THE WIRELESS REMOTE

To pair:

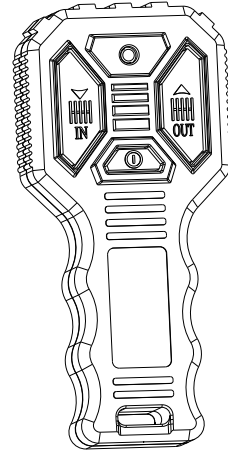
1. Press the "IN" and "OUT" keys on the transmitter at the same time on state, and the indicator light will flash slowly.
2. Power on the receiver when the indicator light of the transmitter is flashing, and starts the pairing operation. If the receiver moves once, it means that the pairing is successful;
3. Power on the receiver again, and use the transmitter to control the receiver to work to verify whether the pairing is successful. If it cannot be operated, the pairing process can be repeated.

Caution:

The remote will power off automatically after 2 minutes of inactivity.

BATTERY:

1 X LR03(AAA) 1.5V battery



Safety and precautions in use of remote control

1. The remote control should be turned off when the winch is installed and adjusted, especially when arranging the winch rope.
2. Make sure to press or release the buttons of the remote control reliably during operation.
3. The control handle (signal transmitter) of the remote control and the receiver are paired for use.
4. Two 3A batteries are used in the control handle of the remote control. Long-term use or storage for too long will reduce the power of the battery and affect the working distance of the remote control. In severe cases, the remote control will not work. Replace the battery. If the remote control is not used for a long time, the battery should be removed. It is recommended to replace the battery of the remote control regularly.

Note:

The winch remote control is a wireless product. When using it, the receiver antenna should be kept away from interference sources such as metal, so as to improve the operating distance of the remote control.

The handheld remote switch activates a solenoid that activates power to the winch motor.

To connect the pendant control, remove the cover on the plug receptacle and insert the plug end of remote switch.

The plug on the remote control cord is keyed and will fit into the socket only one way.

The switch trigger returns to the "Off" position when released.

To change direction, move the toggle in the other direction.

CAUTION: The switch assembly must be kept free of dirt and moisture to ensure safe operation

CAUTION: To prevent unauthorised use of the winch, remove remote control and store in a clean dry area such as the glove box

INTERMITTENT DUTY

An electric winch is like any other motor driven power tool such as an electric drill or saw. The electric motor should not be allowed to become excessively hot. Normal precautions will extend the life of your motor. Keep the duration of pulls as short as possible. If the end of the motor becomes uncomfortably hot to touch, stop winching and allow the motor to cool down.

RECOMMENDED WINCH ACCESSORIES (NOT INCLUDED):

GLOVES: Protect hands when handling Synthetic Rope.

PULLEY/SNATCH BLOCK: Doubles pulling power of Winch or changes pulling direction without damaging Synthetic Rope. When pulling over 70% of rated line pull, it is recommended to use double line and snatch block.

WINCH DAMPER: Reduced risk of injury. If the winch rope or strap fails, winch dampers help reduce the risk of injury due to recoil, meeting the requirements of shock absorbers for four-wheel drive racing cars.

INTRODUCTION:

Congratulations on your purchase of a high quality Winch designed and built to strict specifications. Proper use and maintenance will ensure years of reliable, satisfying service.



WARNING: Read, study, and follow all instructions before operating winch. Failure to heed these instructions may result in personal injury, death, and/or property damage.

A winch can develop tremendous pulling forces. If winch is used improperly, or in an unsafe manner, personal injury, death, and/or property damage can occur. Throughout this operating manual CAUTION, WARNING, and DANGER symbols are present. Pay particular attention to notes preceded by these symbols as they are written for your safety. User is responsible for safe operation of this device.



















Indicates a potentially hazardous situation, which if not avoided, User is responsible for safe operation of this device. to alert user against unsafe practices.





Indicates a potentially hazardous situation, which if not avoided, may result in death or serious injury.

WARNING SYMBOLS AND DEFINITIONS

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
	Addresses practices not related to personal injury.

Symbol	Property or Statement
	Wear heavy-duty, cut- and abrasion-resistant leather gloves.
	Wear ANSI-approved safety glasses.
	Cut or sever hazard.
	Roller entanglement hazard.
	Hot surface burn hazard.
	Fire hazard.
	Caustic chemical (acid) hazard.
	Explosion hazard.
	Do not loop the wire rope around object and hook onto itself.
	Do not place finger(s) through hook. Fingers may be caught and get pulled into fairlead or drum.
	Pull hook using strap only.

Symbol	Property or Statement
	Do not use winch in overwind orientation. (Wire rope enters/exits at the top.)
	Use winch only in underwind orientation. (Wire rope enters/exits at the bottom.)
VDC	Volts Direct Current
A	Amperes
CCA	Cold Cranking Amperes
HP	Horsepower
fpm	Feet Per Minute
mpm	Meters Per Minute
RPM	Revolutions Per Minute
IP	International Protection rating Classifies the degrees of protection provided against the intrusion of solid objects, dust, accidental contact, and water.
G8	Grade 8 A fastener strength rating.

RAPTOR 13.5
Rated Line Pull: 13500lbs(6130 kg) single-line
Motor: 6.0 hp/4.5 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:265:1
Clutch: Lift and Turn 90
Steel cable: 9.5 mmx24m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 540x165x187 mm
Gross Weight 37 kgs
Fairlead: 4-way Roller
MountingBolt Pattern: 254x114.3 mm
Remote Control: Included
Wireless Remote Control: Included

RAPTOR 13.5S
Rated Line Pull: 13500lbs(6130 kg) single-line
Motor: 6.0 hp/4.5 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:265:1
Clutch: Lift and Turn 90
Synthetic Rope: 10mmx24m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 540x165x187 mm
Gross Weight 28 kgs
Fairlead: Aluminum Hawse
MountingBolt Pattern: 254x114.3 mm
Remote Control: Included
Wireless Remote Control: Included

Line speed and motor current 12V							
Line pull		lbs	0	3000	6000	10000	13500
		kgs	0	1360	2725	4540	6130
RAPTOR 13.5	Line speed	M/min	8.0	4.3	3.1	1.9	1.1
	Motor current	AMP	65	140	230	330	410

Line speed and motor current 24V							
Line pull		lbs	0	3000	6000	10000	13500
		kgs	0	1360	2725	4540	6130
RAPTOR 13.5	Line speed	M/min	7.9	4.4	3.4	2.3	1.2
	Motor current	AMP	35	80	130	180	220

RAPTOR 13.5F
Rated Line Pull: 13500lbs(6130 kg) single-line
Motor: 8.0 hp/6.0 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:153:1
Clutch: Lift and Turn 90
Steel cable: 9.5 mmx24m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 575x165x187 mm
Gross Weight 39 kgs
Fairlead: 4-way Roller
MountingBolt Pattern: 254x114.3 mm
Remote Control: Included
Wireless Remote Control: Included

RAPTOR 13.5 FS
Rated Line Pull: 13500lbs(6130 kg) single-line
Motor: 8.0 hp/6.0 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:153:1
Clutch: Lift and Turn 90
Synthetic Rope: 10mmx24m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 575x165x187 mm
Gross Weight 31 kgs
Fairlead: Aluminum Hawse
MountingBolt Pattern: 254x114.3 mm
Remote Control: Included
Wireless Remote Control: Included

Line speed and motor current 12V							
Line pull		lbs	0	3000	6000	10000	13500
		kgs	0	1360	2725	4540	6130
RAPTOR 13.5S	Line speed	M/min	16.5	5.1	3.9	2.8	1.7
	Motor current	AMP	60	170	270	370	450

Line speed and motor current 24V							
Line pull		lbs	0	3000	6000	10000	13500
		kgs	0	1360	2725	4540	6130
RAPTOR 13.5S	Line speed	M/min	16.2	4.9	3.7	2.6	1.5
	Motor current	AMP	30	110	160	210	250

MAMMOTH 17.0
Rated Line Pull: 17000lbs(7720 kg) single-line
Motor: 6.0 hp/4.5 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:354:1
Clutch: Lift and Turn 90
Steel cable: 12mmx30m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 575x165x187 mm
Gross Weight 53 kgs
Fairlead: 4-way Roller
MountingBolt Pattern: 254x114.3 mm 254x165.1 mm
Remote Control: Included
Wireless Remote Control: Included

MAMMOTH 20.0
Rated Line Pull: 20000lbs(9080 kg) single-line
Motor: 7.0 hp/5.2 kw series wound motor
Gear Train: 3-stage planetary
Gear Reduction Ratio:354:1
Clutch: Lift and Turn 90
Synthetic Rope: 12mmx30m
Drum Size: 64mmx224 mm
Overall Dimensions: LxWxH 575x165x187 mm
Gross Weight 54 kgs
Fairlead: 4-way Roller
MountingBolt Pattern: 254x114.3 mm 254x165.1 mm
Remote Control: Included
Wireless Remote Control: Included

Line speed and motor current 12V							
Line pull		lbs	0	4000	8000	12000	17000
		kgs	0	1815	3630	5450	7720
MAMMOTH17.0	Line speed	M/min	7.9	3.6	3.0	2.3	1.2
	Motor current	AMP	70	160	240	330	420

Line speed and motor current 24V							
Line pull		lbs	0	4000	8000	12000	17000
		kgs	0	2270	4540	5450	7720
MAMMOTH17.0	Line speed	M/min	7.7	3.3	2.3	1.6	1.1
	Motor current	AMP	40	90	140	200	230

Line speed and motor current 12V							
Line pull		lbs	0	5000	10000	15000	20000
		kgs	0	2270	4540	6810	9080
MAMMOTH20.0	Line speed	M/min	8.0	3.2	2.2	1.5	1.0
	Motor current	AMP	70	170	280	370	460

Line speed and motor current 24V							
Line pull		lbs	0	5000	10000	15000	20000
		kgs	0	2270	4540	6810	9080
MAMMOTH20.0	Line speed	M/min	7.8	3.3	2.3	1.6	1.1
	Motor current	AMP	40	90	140	200	260

SOLENOID TO WINCH MOUNTING:

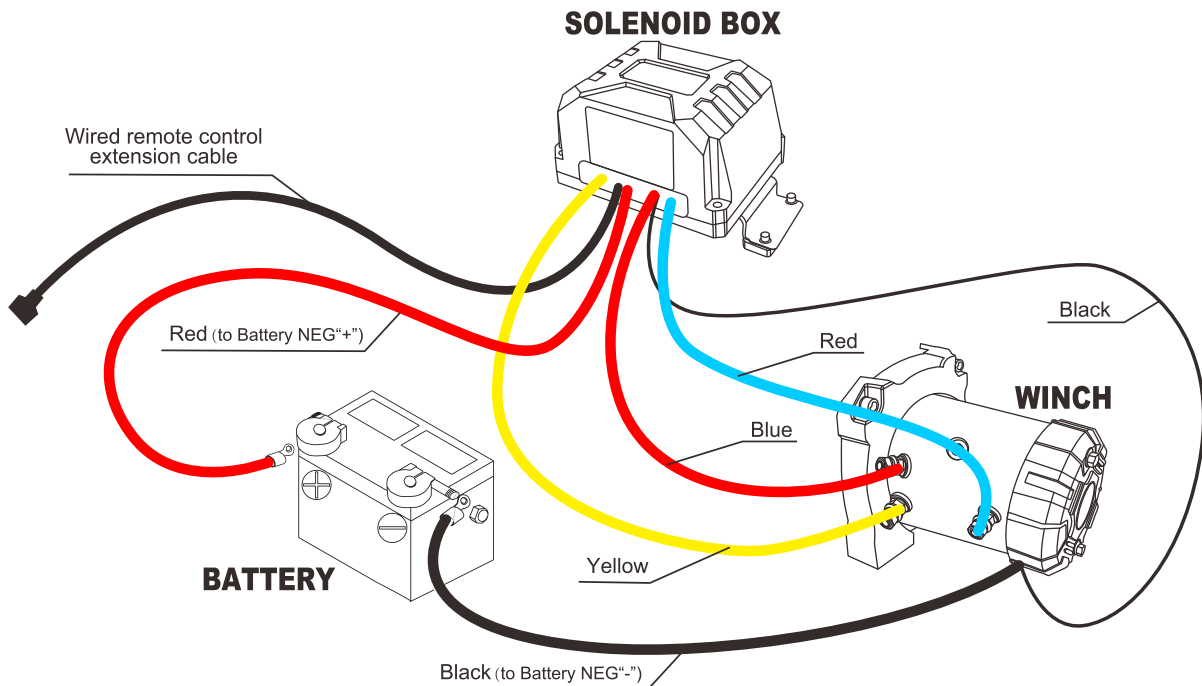
- Solenoid is designed to install directly to Tie Bars on Winch; We preferred mounting method.
- Place Solenoid onto Tie Bars and tighten screws in Clamps.
- User may install to an optional location.

ROUTE THE CABLES FROM THE SOLENOID TO THE BATTERY AND FROM THE SOLENOID TO THE WINCH , FOLLOWING THE PRECAUTIONS DISCUSSED BELOW.

SOLENOID TO WINCH BATTERY

Attach the red Battery Cable to the Positive terminal on the battery.

Attach the black Battery Cable directly to the negative terminal of the battery.



**Black Battery NEG "-" wire and Black Solenoid Ground wire will share same Terminal Post.

SOLENOID TO WINCH WIRING:

- Connect wires from Solenoid to Terminal Posts on Winch.
- Match colors and secure.

Attach the Red, Black and Yellow Cables to the terminals on the Winch. The Winch terminals are color-coded.



- use (2) wrenches, one on each Nut, when tightening Terminal Posts; use hand tools only and do not overtighten
- torque all wiring connections to a maximum 35 in/lbs

CONTROL BOX MOUNTING

Winch is equipped with Control Box for best protection and safety operation.

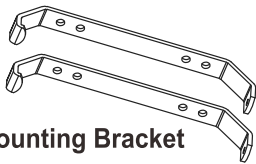
Control box can either be mounted to winch or in a remote location, according to vehicle and/or personal preference. Winch recommends direct mount to winch following instructions below.

If remote location chosen, ensure:

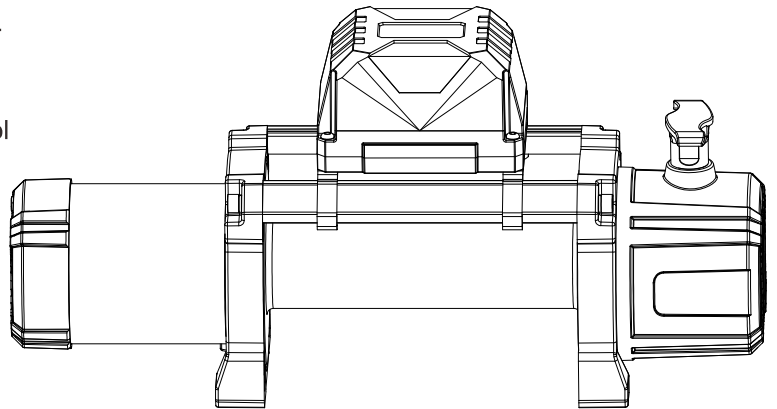
*Location does not interfere with any vehicle's moving/functioning parts.

*Use of electrical cables with similar or better specifications as that provided .

- 1.** Control Box can be mounted in various ways depending on application.(Recommended before installing winch to vehicle)
- 2.** Find a location for solenoid. It is recommended that solenoid be mounted close to battery in a clean dry location. Make sure location allows sufficient clearance from all metal components. Drill mounting holes if required. Consult Control Box Wiring before securing control box to vehicle battery wiring.
- 3.** Configure and attach brackets for mounting of control box over drum.
- 4.** Attach control box to tie bars over spool by hooking mounting bracket around front tie bar and securing at rear with 2 screws provided. Ensure all cables are located between control box and tie bar.
- 5.** Consult Switch Wiring Diagram before securing control box to vehicle battery wiring.

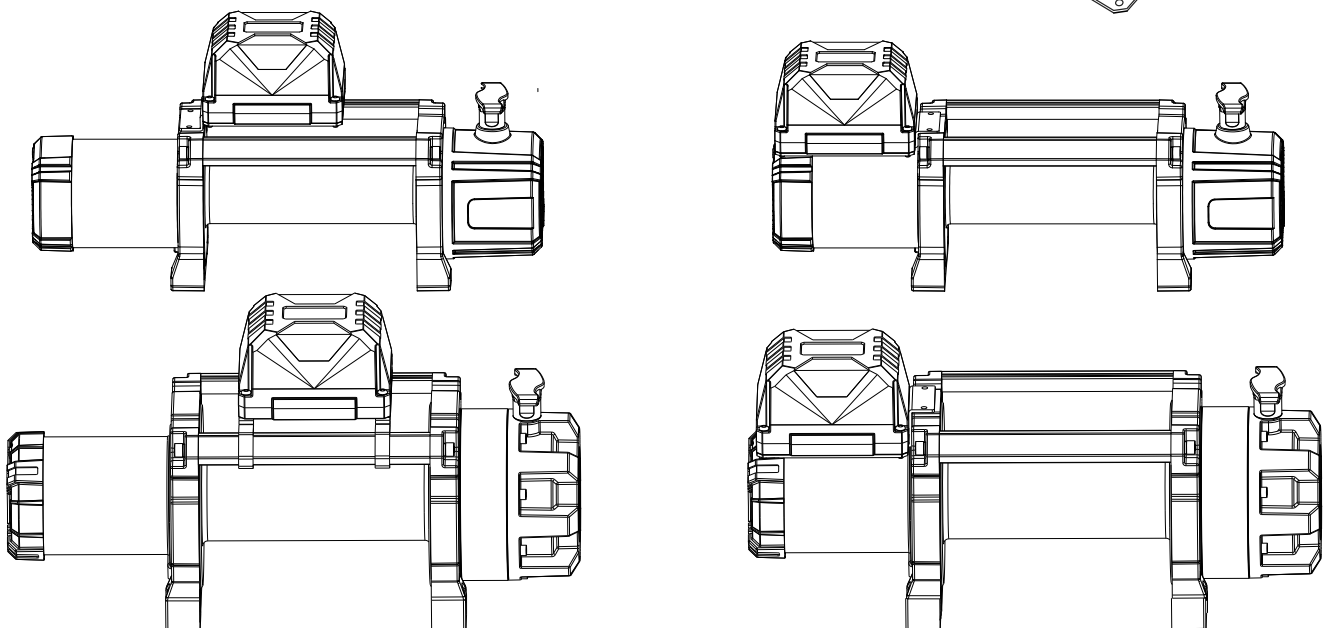
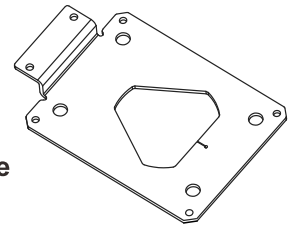


Control Box Mounting Bracket



Extra Control Box Mounting Plate

Control Box Mounting Plate



1. Align the control box with the bolt holes on the black mounting bracket plate and secure it with the attached hardware.
2. Align the black mounting bracket plate vertically with the two holes on the motor side and secure it.

WARNING



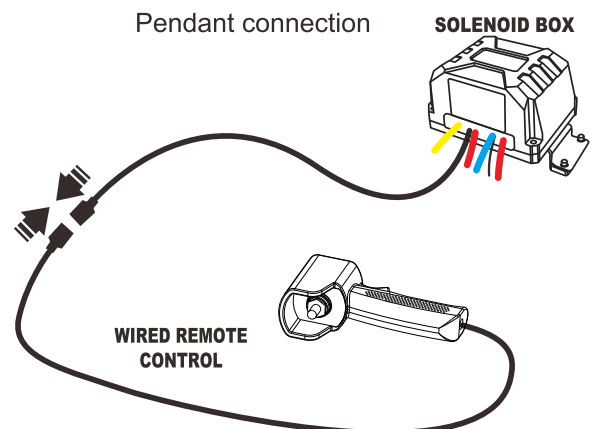
It's very important that the winch be mounted on a flat surface so that the three sections (motor, rope drum and gear housing) are properly aligned.

NOTE:

The attachment of the Motor Cables determines the direction of the Pendant Controller's button. After the unit is mounted and powered, check the direction of the Power In and Power Out on the Pendant Controller button. If you wish to change the direction on the Pendant Controller, disconnect the Battery Cables from the battery, switch the Motor Cable connections on the Motor Assembly, then reconnect the Battery Cables. Disconnect the Pendant Controller when not in use.

WIRED REMOTE CONNECTING:

- Open Protective Boot on Solenoid and connect Wired Remote.
- Close Protective Boot when Wired Remote is not connected.



DUTY CYCLE:

Avoid damage to the Winch by not winching for more than the prescribed duty cycle time. The Duty Cycle defines the amount of time, within a 15 minute period, during which a Winch can operate at its maximum capacity without overheating. Failure to carefully observe duty cycle limitations can easily over-stress a Winch contributing to premature Winch failure.

SUGGESTION:

The best way to get acquainted with how your winch operates is to make a few test runs before you actually need to use it. Plan your test in advance. Remember you can hear your winch as well as you can see it operate. Get to recognize the sound of a light steady pull, a heavy pull, and sounds caused by load jerking or shifting. Soon you will gain confidence in operating your winch and its use will become second nature to you.

NOTE:

1. Your battery must be kept in good condition.
2. Be sure battery cables are not drawn taught across any surfaces, which could possibly damage them.
3. Corrosion on electrical connections will reduce performance or may cause a short.
4. Clean all connections especially in remote control switch and receptacle.
5. In salty environments use a silicone sealer to protect from corrosion.
6. Index the heads of the plate studs into the keyhole slots on the back of the winch.

TO FREESPOOL:

To freespool the cable off the winch:

1. Ensure there is no tension on the clutch.
2. Lift and Turn 90 degrees. See Figure F
3. Pull out cable as needed.
4. Turn 90 degrees again to engage the winch.

WARNING! Leave at least five full turns of wire rope on the drum.

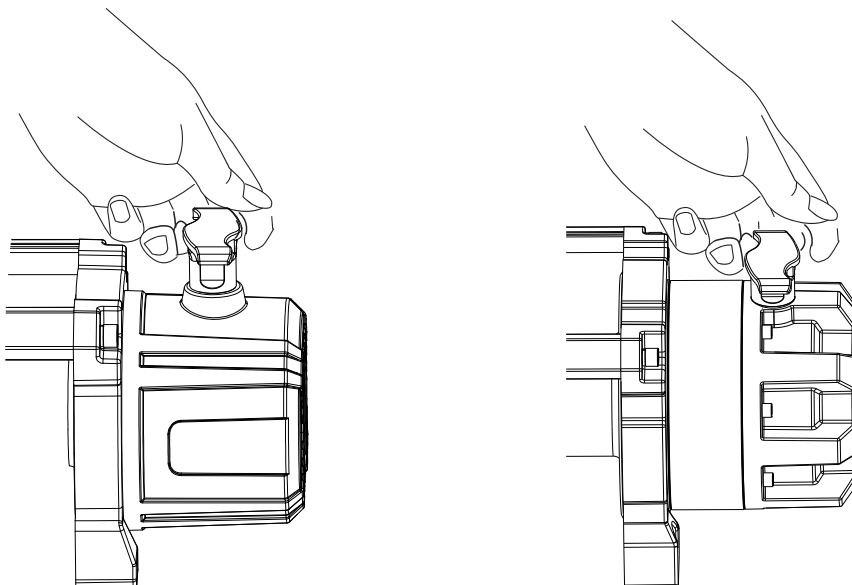


Figure F

GETTING TO KNOW YOUR WINCH:

A winch is a powerful piece of machinery. For safe and confident operation, it is important to understand basic winch operations and specifications. See below for details on winch components and usage. Practice using winch before an actual situation occurs. Winch has been engineered with several patented technologies.

Motor: Motor is powered by a 12 volt battery. Motor provides power to Mechanical Gear Mechanism which turns Winch Drum and winds Synthetic Rope.

Winch Drum: Cylinder on which Synthetic Rope is stored. Winch Drum feeds or winds Synthetic Rope depending on Winch switch direction.

Synthetic Rope: Designed specifically for Winches load capacity and is looped at end to accept clevis hook pin. Synthetic Rope feeds onto Winch Drum, through Fairlead, when in “under wind” position.

Fairlead: When operating Winch at an angle, Fairlead guides Synthetic Rope onto Winch Drum and minimizes damage/abrasion from winch mount or bumper.

Mechanical Gear System: Converts Motor power into extreme pulling forces.

Braking System: Braking action is automatically applied to Winch Drum when Motor is stopped and there is load on Synthetic Rope. A separate mechanical brake applies braking action.

Control System: Winch can be controlled by using Power Cord/Switch Assembly or through Remote Control.

Free Spooling Clutch: Allows user to manually disengage (“DISENGAGED”) Winch Drum from Mechanical Gear System; free spool. Engaging clutch locks Winch into Mechanical Gear System.

Solenoid: Power from vehicle battery flows through a weather-sealed switch before being directed to Motor.

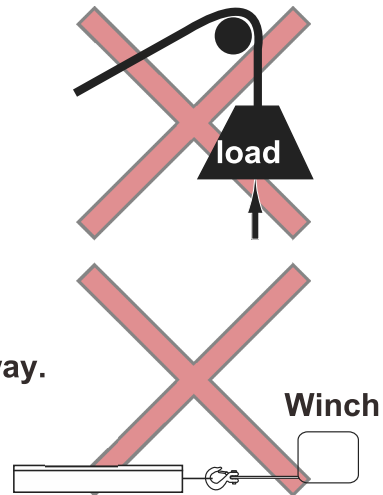
Remote: Multifunctional Remote Control. Both Wired and Wireless Control. Allows user to operate Winch from 50’ away, have been Integrated into this Multifunctional Controller with a built-in Magnet.

WARNING

SAFETY PRECAUTIONS:

Failure to heed these warnings and cautions may result in personal injury and/or property damage.

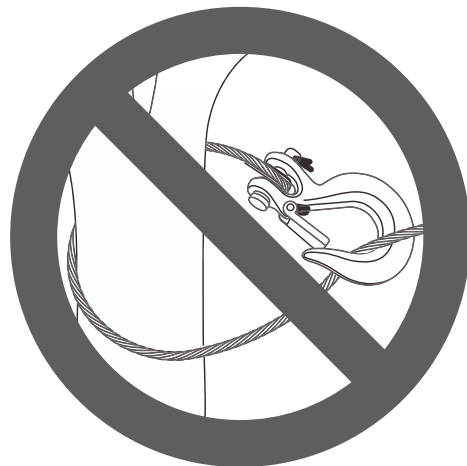
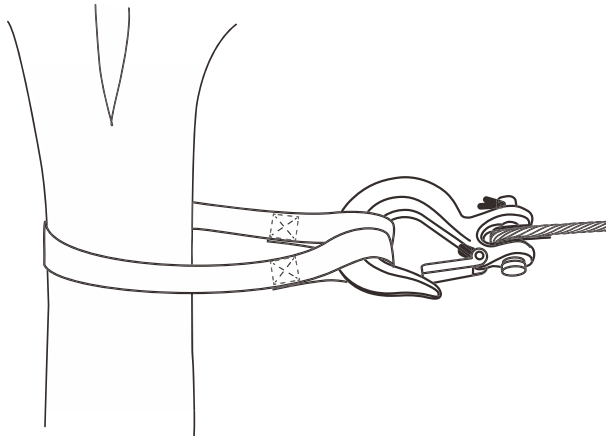
- Do not exceed rated capacity.
- Do not use Winch to lift vertically or as a hoist.
- Do not use Winch to pull or move people in any way.



- Never cut, weld, or modify any part of Winch or Synthetic Rope.
- A minimum of (5) wraps of Synthetic Rope around Winch Drum is necessary for pulling and holding rated load.
- Keep yourself and others a safe distance and to a side when Synthetic Rope is under tension.
- Synthetic Rope may break before Motor stalls. For heavy loads at or near rated capacity, use a pulley block/snatch block to reduce load on Synthetic Rope.
- When under load, never step over or go near Synthetic Rope.
- Don't move vehicle to pull a load (towing) on Synthetic Rope. This can result in Synthetic Rope breakage.
- Avoid "shock loads" by using control switch intermittently to take up slack in Synthetic Rope. "Shock loads" can exceed rated capacity for Synthetic Rope and Winch Drum.
- Apply blocks to wheels of vehicle when on an incline.

SAFETY PRECAUTIONS (CONTINUED):

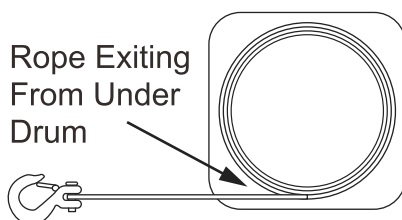
⚠ WARNING - Never connect Synthetic Rope back onto itself.



Do not wrap the wire rope around the object and hook onto the wire rope itself. This can damage the object being pulled, and kink or fray the wire rope.

⚠ CAUTION - Use Hand Strap when handling Clevis Hook. Use gloves to protect hands when handling Synthetic Rope. Never let Synthetic Rope slide through bare hands.

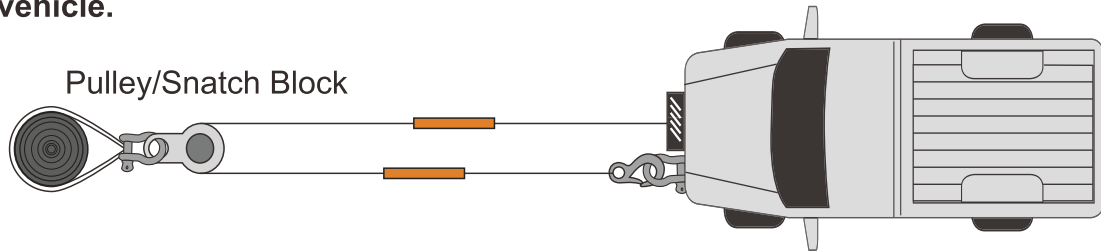
⚠ WARNING - When re-spooling, ensure that Synthetic Rope spools in “under wind” position with Synthetic Rope entering Winch Drum from bottom, not top. To spool correctly, keep a slight load on Synthetic Rope while pushing remote button to draw in Synthetic Rope. Walk toward Winch while not allowing Synthetic Rope to slide through hands. Do not let hands get within 12" of Winch while re-spooling. Turn off Winch and repeat procedure until only a few feet of Synthetic Rope remain. Disconnect. Remote Control and finish spooling by hand: rotate Winch Drum by hand with Clutch disengaged. Keep hands clear of Fairlead and Winch Drum while Winch is under power.



Side cutaway view of Winch

GENERAL TIPS FOR SAFE OPERATION:

- Winch is at rated capacity when spooling first Synthetic Rope layer onto Winch Drum. Overloading can damage components. For loads over 70% of rated line pull, it is recommend to use a pulley block/snatch block to double rope line. When doubling line, number of layers on Winch Drum is reduced and load on Synthetic Rope is reduced by as much as 50%. Attach to frame or other load bearing component when doubling line back to vehicle.



- To minimize battery drain and maximize power and speed of Winch, keep vehicle engine running during winching. Battery may be drained if winch is used for a considerable amount of time with engine off.
- Know all features before actual use. Become familiar with rigging techniques, sounds made under various loads, way Synthetic Rope spools onto Winch Drum, etc. by performing several test runs.
- Inspect all components, hardware, and electrical connections before each use. If Synthetic Rope is frayed or damaged, replace immediately. Use only manufacturers replacement rope. Replace or remove any component that appears to be damaged, worn, or operating abnormally.
- Never connect Synthetic Rope back onto itself. Always use a snatch block, sling, or chain of suitable strength.
- Pull only on parts of vehicle as specified by vehicle manufacturer.
- Use only attachments and/or adapters supplied by manufacturer.
- Test run Winch in (2) directions before winching.



CAUTION

- If Motor stalls, stop winching immediately. Electric winches Pull only on parts of vehicle as specified by vehicle manufacturer. applications. Keep duration of winching pulls as short as possible: Do not use for more than (1) minute when at or near rated load. If Motor becomes hot to touch, stop winching immediately. Allow Motor to cool before resuming.



CAUTION

- Never disengage Free Spooling Clutch when a load is on Winch.

WINCH ASSEMBLY AND MOUNTING:

Winch is designed with a standard bolt pattern for its class.

When installing, ensure that Winch installs to a flat surface so Motor, Winch Drum, and Gear Housing are properly aligned. Proper alignment allows for even distribution of full rated loads.

1. Install Fairlead with supplied hardware.

2. Secure Winch with supplied hardware:

- Set Free Spooling Clutch to “DISENGAGED” and pull out a few inches of Synthetic Rope.
- Feed Synthetic Rope through opening in Fairlead.

3. Make electrical and component connections per See instructions.



CAUTION - Remove all jewelry and wear eye protection when making battery connections. Batteries contain flammable and explosive gases. Avoid leaning over battery.

4. Assemble Clevis Hook to Synthetic Rope.

- Remove Pin from Clevis Hook and connect Clevis Hook to Synthetic Rope.
- Reinstall Pin to Clevis Hook.

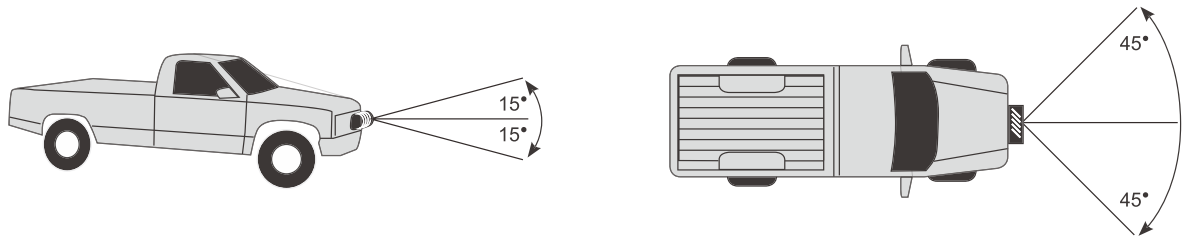
5. Install Stopper to Synthetic Rope with supplied hardware.

6. Install Hand Strap to Clevis Hook.

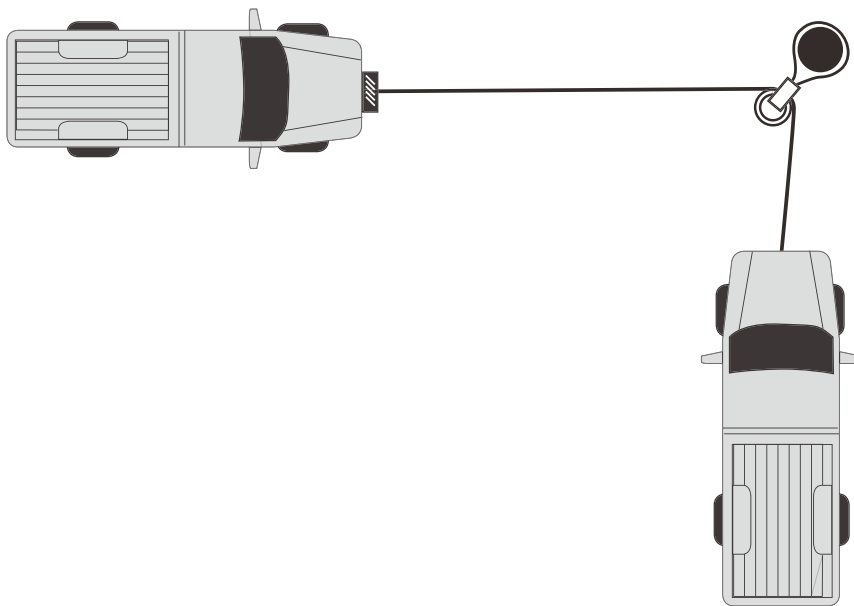
7. Check Winch Drum for proper rotation:

- Set Free Spooling Clutch to “DISENGAGED” and pull out some Synthetic Rope.
- Set Free Spooling Clutch to “ENGAGED” and press “OUT” button on remote. If properly installed, Winch Drum should be turning and releasing Synthetic Rope. If Winch Drum is turning and collecting more Synthetic Rope, check and reverse leads on Motor. Repeat steps and check rotation.

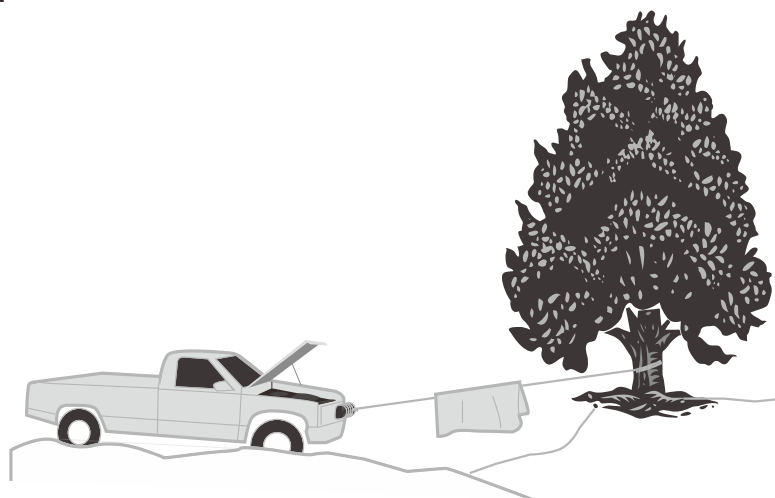
Do not operate the winch at extreme angles. Do not exceed the angles shown in for a roller fairlead. For a hawse fairlead, the angle should be as close to straight as possible.



If the object to be pulled must be pulled at an angle in relation to the winch, use a pulley (sold separately) and an anchor point directly in front of the winch, as shown in figure below to keep the Wire Rope pull straight.




To absorb energy in event of Synthetic Rope failure, place a blanket or jacket over Synthetic Rope approximately 5ft - 6ft from Clevis Hook before pulling a heavy load. Open vehicle hood for more protection.



OPERATING WINCH:

1. Take time to assess situation and thoroughly plan pull.
2. Set Free Spooling Clutch to “DISENGAGED” position.
3. Pull Synthetic Rope and attach to vehicle to be winched. Wear gloves and use Hand Strap.
4. Secure Clevis Hook to anchor point: Sling, chain or snatch block. Do not attach Clevis Hook back onto Synthetic Rope.
5. Set Free Spooling Clutch to “ENGAGED” position.
6. Start vehicle engine so that battery is being charged while winching.
7. Slowly winch in Synthetic Rope just enough to take up slack.
8. Inspect Synthetic Rope. Make sure there are minimum 5 wraps of Synthetic Rope around Winch Drum.
9. To absorb energy in event of Synthetic Rope failure, place a blanket or jacket over Synthetic Rope approximately 5ft - 6ft from Clevis Hook. Open vehicle hood for more protection.
10. Clear area. Make sure all spectators are away and that no one is directly in front, behind vehicle, or anchor point.
11. Vehicle to be winched should be placed in neutral and emergency brake released. Only release brake pedal when Synthetic Rope is under full tension.
12. While standing aside and clear of tow path, use remote to control winching. If required, wait until Motor stops before reversing direction.
 - Be sure Synthetic Rope is winding evenly and tightly around Winch Drum.
 - Vehicle being winched can be slowly driven to add assistance to winching.
 - Avoid shock loads; keep Synthetic Rope under tension. This can damage components and vehicles.
13. Winch is meant for intermittent use. Under full load with a single line rig do not power “in” for more than 1 minute without letting Motor cool down for a few minutes before resuming winching.
14. Once vehicle is on stable ground, set brakes and place vehicle in park. Winching operation is complete.
15. Set Free Spooling Clutch to “ENGAGED” to release tension on Synthetic Rope. Winch is not meant to hold loads for long periods of time.
16. Disconnect Synthetic Rope from vehicle or anchor.
17. Set Free Spooling Clutch to “ENGAGED” position and rewind Synthetic Rope. Keep hands clear of Winch Drum and components. Any material already on Winch Drum should be spooled tightly and neatly. Draw out and re-spool if necessary.
18. Secure Hook Strap and Clevis Hook. Disconnect Wired Remote if applicable

TROUBLE SHOOTING:

SYMPTOM	POSSIBLE CAUSE	SUGGESTED ACTION
Motor does not turn on	Rocker Switch not connected properly.	Insert Rocker Switch completely into Controls Splitter Connector. Connect ignition power source.
	Loose battery cable connections.	Tighten nuts on all cable connections.
	Defective Rocker Switch.	Replace.
	Defective Motor.	Check for voltage at armature port with Rocker Switch pressed. If voltage is present, replace Motor.
	Water has entered Motor.	Allow water to drain and Winch to dry. Without a load, operate Winch in short cycles until completely dry.
	Solenoid sticking.	Tap on Solenoid with handle end of screwdriver.
Motor runs but Winch Drum does not turn.	Free Spooling Clutch not engaged.	Set Free Spooling Clutch to “ENGAGED” position. If problem persist, contact X-BULL.
Motor runs slowly or without normal power.	Insufficient current or voltage.	Battery(s) is weak and may need charging. Always operate Winch with vehicle running. Corroded and/or loose battery cables should be cleaned and tightened.
Motor overheating.	Winch run time too long.	Periodically allow Winch to cool while operating.
Motor runs in one direction only.	Defective Rocker Switch/ Remote Control.	Repair or replace Rocker Switch/Remote Control.
	Loose battery cable connections.	Corroded and/or loose battery or Motor cable connections should be cleaned and tightened.
Motor runs continuously on its own.	Defective Solenoid, Wireless Receiver, or Remote Control.	Unplug ignition power. Remove negative battery cable from Solenoid.
 Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.		