



2500-LB. 12 Volt DC Electric ATV Winch

Owner's Manual



⚠ WARNING: Read carefully and understand all ASSEMBLY AND OPERATION INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.







SAVE THESE INSTRUCTIONS


Intended Use

This Zeak 2500-Lb. 12 Volt DC Electric ATV Winch has a permanent magnet motor which draws less current, making it ideal for ATV use. The single-stage planetary gear system allows for fast line speed while the automatic load-holding brake provides maximum safety. It has free spooling for a fast line-out and roller fairlead with nylon bushing Aircraft grade wire rope

Technical Specifications

Property	Specification
Rated Single Line Pull	2,500 lb. (1134 kg)
Application	Utility/Shop/ATV
Motor	12V DC 1 1/10 HP Permanent Magnet
Power In & Power Out	Yes
Duty Cycle Rating	5% (45 Sec at Max Rated Load;14 min, 15 Sec Rest)
Gear Train	Single-Stage Planetary
Gear Ratio	153:1
Free Spool	Pull and turn
Brake	Auto. Load Holding Dynamic
Drum (Dia. X L)	1.25" X 2.8" (32mm x 71 mm)
Hook	1/4" Eye Hook
Fairlead	Hawse Fairlead
Wire Rope Size /Type	3/16" x 50' Nominal Strength = 2,800 lbs. 1500DX 6/12 strand Material: UHMWPE
Battery	12V DC Minimum 12 Ah
Battery Cables	10 Gauge, 5.8' long
Mounting Pattern	3.15" (80 mm)
Mounting Hardware	Winch: 2 x G8, M8-1.25mm X 35mm (0.05" X 1.38") Fairlead: 2 x G8.M8-1.25 X 19mm (0.05" X 0.75")
Overload Protection	In Line Circuit Breaker
Sound Rating	85 dB
Overall Dimensions (L X D X H)	11.7" X 3.97" X 4.13".
Weight	13.55 lb.
IP Rating	IP 65 - Winch and Controls (Resistant to Water Jets)

Layer	Rated Line Pull	Wire Rope Capacity
 1	2500 lb. (1134 kg.)	6' (1.8m)
 2	2045 lb. (928 kg.)	13.3' (4.0m)
 3	1731 lb. (785 kg.)	21.9' (6.7m)
 4	1500 lb. (680 kg.)	31.8' (9.7m)
 5	1324 lb. (600 kg.)	43.1' (13.1m)
 6	1184 lb. (537 kg.)	50' (15.2m)

First Layer of Wire Rope Performance			
 1	Line Pull lb. (kg.)	Line Speed fpm (mpm)	Amp Draw (@ 12V)
	0 (0)	13.3 (4.1)	10
	1000 (454)	8.3 (2.5)	55
	2000 (907)	4.1 (1.2)	106
	2500 (1134)	2.7 (0.8)	132

Important Safety Information

⚠WARNING

- Read and understand all instructions. Failure to follow all instructions may result in fire, serious injury and /or DEATH.
- The warnings, cautions, and instructions in this manual cannot cover all possible conditions or situations that could occur. Exercise common sense and caution when using this electric winch. Always be aware of the environment and ensure that the electric winch is used in a safe and responsible manner.
- Do not allow persons to operate or assemble the electric winch until they have read this manual and have developed a thorough understanding of how it works.
- Do not modify this electric winch in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the electric winch. There are specific applications for which the electric winch was designed.
- Use the right tool for the job. DO NOT attempt to force small equipment to do the work of larger industrial equipment. There are certain applications for which this electric winch was designed. The tool will be a safer and do the job better at the capacity for which it was intended. DO NOT use this equipment for a purpose for which it was not intended.
- Industrial or commercial applications must follow OSHA requirements.

⚠WARNING

This product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Wash hands after handling.

⚠WARNING

WORK AREA SAFETY

- Inspect the work area before each use. Keep work area clean, dry, free of clutter, and well-lit. Cluttered, wet, or dark work areas can result in injury. Using the electric winch in confined work areas may put you dangerously close to other cutting tools and rotating parts.
- Keep children and bystanders away from the work area while operating the tool. Do not allow children to handle the electric winch.

⚠WARNING

PERSONAL SAFETY

- Stay alert, watch what you are doing, and use common sense when operating the electric winch. Do not use the electric winch while you are tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the tool may result in serious personal injury.
- Dress properly. Do not wear loose clothing, dangling objects, or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Air vents on the tool often cover moving parts and should be avoided.
- Wear the proper personal protective equipment when necessary. Use ANSI Z87.1 compliant safety goggles (not safety glasses) with side shields, or when needed, a face shield. Use a dust mask in dusty work conditions. Also use non-skid safety shoes, hardhat, gloves, dust collection systems, and hearing protection when appropriate. This applies to all persons in the work area.
- Do not overreach. Keep proper footing and balance at all times.

⚠CAUTION

ELECTRIC WINCH USE AND CARE

- Inspect before every use, do not use if damaged or parts loose. Examine the winch for structural cracks, bends, damage, frayed or kinked wire rope, and any other conditions that may affect the safe operate of the winch. Do not use the winch even if minor damage appears. A kink permanently weakens the wire rope, even after it is straightened out; kinked wire rope can fail suddenly and must not be used.
- Do not force the electric winch. Products are safer and do a better job when used in the manner for which they are designed. Plan your work, and use the correct electric winch for the job.
- Store the electric winch when it is not in use. Store it in a dry, secure place out of the reach of children. Inspect the electric winch for good working condition prior to storage and before re-use.
- Use only accessories that are recommended by the manufacturer for use with your electric winch. Accessories that may be suitable for one product may create a risk of injury when used with another tool. Never use an accessory that has a lower operating speed or operating pressure than

the tool itself.

Specific Operation Warnings

⚠ WARNING

GENERAL SAFETY

- To prevent injury or property damage, read and understand all instructions before operating winch.
- Wear ANSI Z87.1 compliant safety goggles and heavy duty leather work gloves during operation.
- Do not exceed the rated load capacity. Be aware of dynamic loading! Sudden load movement may briefly create excess load causing product failure.

INSTALLATION SAFETY

- Choose a mounting location that can support the winch and rated load capacity.
- Do not weld mounting bolts
- Use supplied power cords and wire rope listed in manual only. Do not use thinner/longer cables or link multiple cables together.
- Keep hands clear of winch rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.
- Wrap the wire rope under 500 lbs. of tension before use. Otherwise, the wire rope may bind during operation.
- Do not route electrical cables near sharp edges or parts that will move or become hot.
- Ventilate area well before and while working on battery. Explosive hydrogen gas can accumulate and explode when ignited by a spark or open flame.
- Only connect to a clean, corrosion free battery.
- Remove all jewelry and metallic objects before working near battery.

WINCHING SAFETY

- 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.
- Do not maintain power to the winch if the motor stalls. Verify the load is within the rated capacity for the wire rope layer. Make sure the battery is fully charged. Use double line rigging whenever possible.
- Do not engage or disengage clutch while under load.
- 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 top is bent or twisted.
- Keep clear of fairlead when operating. Do not try to guide wire rope.
- Do not place any fingers through the hook. Fingers may be caught and get pulled into the fairlead or drum. Use the included strap to hold the hook instead.
- Stay out of the direct line that the wire rope is pulling. If it slips or breaks, it will create a whiplash effect. Utilize a winch dampener to help absorb the force released if the wire rope breaks.

- Do not use for overhead hoisting. This winch is intended to be used for pulling only.
- Use a spotter to assist you in ensuring that it is safe to operate the winch. Make sure the spotter is out of the way of the vehicle and the wire rope before activating the winch.
- Do not use the hand crank, if equipped, to assist the winch.
- Do not use vehicle to pull on the wire rope and “assist” the winch.
- Do not use to transport people or animals.
- Disconnect battery cables before working near the wire rope, drum, fairlead or load, to prevent accidental starting.
- Keep wire rope straight to avoid kinking the wire rope.
- Keep children and bystanders away while operating.
- Hook onto the object using a pulling point, tow strap or chain. Do not wrap the wire rope around the object and hook onto the wire rope itself.
- Do not use a recovery strap while winching.
- Secure the load after moving. Do not lock the mechanism.
- Keep at least 5 full turns of wire rope on the drum.
- Keep clear of the wire rope, hook, and load while winching. Do not step over the wire rope. Do not push sideways against the wire rope under tension; wire rope might break under this load and recoil back, striking the person pushing against it or a bystander.
- If the wire rope begins to get entangled, stop the winch immediately and release the wire rope using the switch.
- Only winch with the winching vehicle’s transmission placed in neutral. Winching with a vehicle’s transmission in gear or park may damage the transmission. A vehicle’s transmission is not designed to handle this type of load.
- Do not operate the winch on extreme slopes. Do not exceed the angles for a roller fairlead. For a hawse fairlead, the angle should be as close to 180 degrees as possible.
- People with pacemakers should consult their physicians before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
- Remove any element or obstacle that may interfere with safe operation of the winch.
- Always use supplied hook strap whenever spooling winch rope in or out, during installation and during operation.
- Always take time to use appropriate rigging techniques for winch pull.

Assembly Instructions

WARNING

Read the entire Important Safety Information section at the beginning of this manual including all text under subheadings before set up or use of this electric winch.

Mounting the Winch

1. The plate must be rated to at least the winch’s capacity.
2. Align the winch perpendicular to the center line of the vehicle at the desired location, and mark the locations of the winch base holes. Compare the dimensions of the marked holes to Figure D.

3. Before drilling verify that the installation surface has no hidden components or structural pieces that will be damaged.

Note: This winch can generate extreme forces. Select a location that can withstand the rated capacity without damage or weakening. Steel reinforcement plates may be needed or a certified welder may need to weld on additional bracing, depending on the mounting location.

4. Drill holes appropriate for the hardware at the marked locations.
5. Install the winch using hardware described in the specifications table.

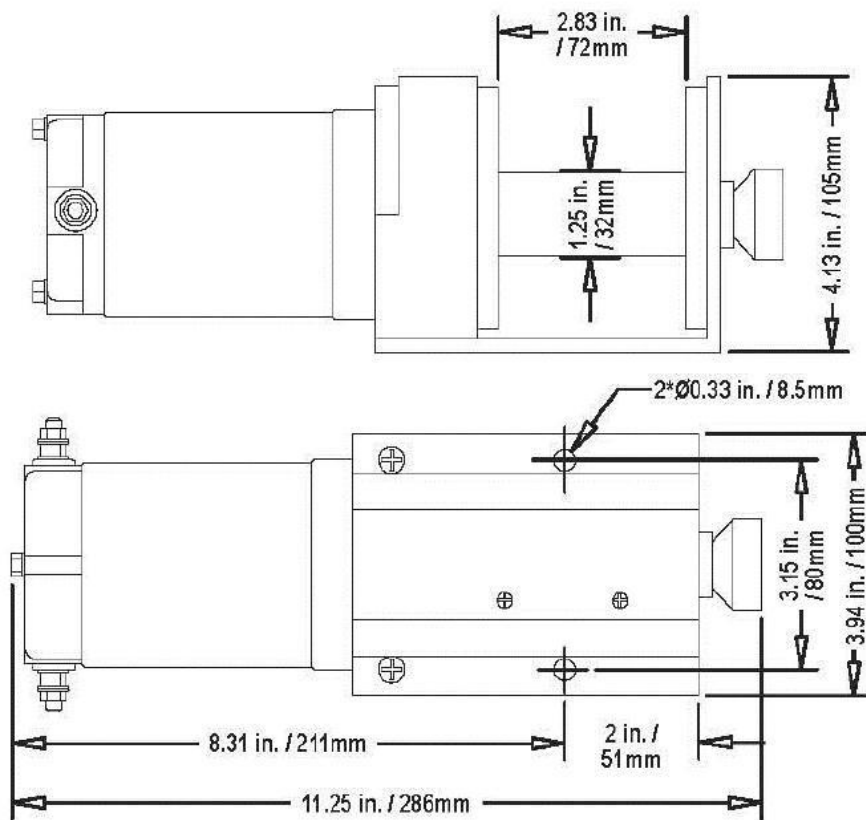


Figure D: Winch Dimensions

Mounting Winch Components

1. Mount the solenoid box in the proper location so that:
 - a) Winch components are close enough to each other to allow wires to be routed properly.
 - b) Vehicle component operation is not interfered with Vehicle components are not damaged by drilling or driving screws.
 - c) Winch components will not be damaged by stresses caused by vehicle operation.
2. Mark the locations where the screw holes will be.
3. Verify that the installation surface has no hidden components or structural pieces that will be damaged before drilling.
4. Drill pilot holes for the mounting screws.
5. Secure in place with mounting screws.

Wiring

To prevent serious injury from explosion, due to sparking at the battery connection, disconnect the battery cables before making other wiring connections.

To prevent serious injury from leaking battery acid, do not use a dirty, corroded or leaking battery. Only use a 12V automotive (or equivalent) battery, in good condition.

1. Plan a route for the wiring from the point of the vehicle where the winch will be mounted, or used, to the battery. This route must be secure out of the way of moving parts, road debris, or any possibility of being damaged by operation or maintenance of the vehicle. For example, you may wish to route the wires under the vehicle, attaching it to the frame using suitable fasteners. Do not attach the wires to the exhaust system, drive shaft, emergency brake cable, fuel line, or any other components which may create damage of the wiring through heat or motion, or create a fire hazard.
2. If you drill through the bumper or any part of the body to route the wires, be sure to install a rubber grommet in the hole to prevent fraying of the wires at that point.
3. Route the cables from the solenoid to the battery and from the solenoid to the winch, following the precautions discussed earlier. See Figure E.
4. Attach the wire from the solenoid to the terminals on the winch.
5. Attach the circuit breaker to the positive terminal on the battery.
6. Attach the red battery cable to the circuit breaker.
7. Attach the black battery cable directly to the negative terminal of the battery.

Note:

The attachment of the motor cables determines the operation of the remote's button. After the unit is mounted and powered, check the direction of the Power In and Power Out on the remote button. If you wish to change the direction on the remote, disconnect the battery cables from the battery, switch the motor cable connections on the motor assembly, then reconnect the battery cables.

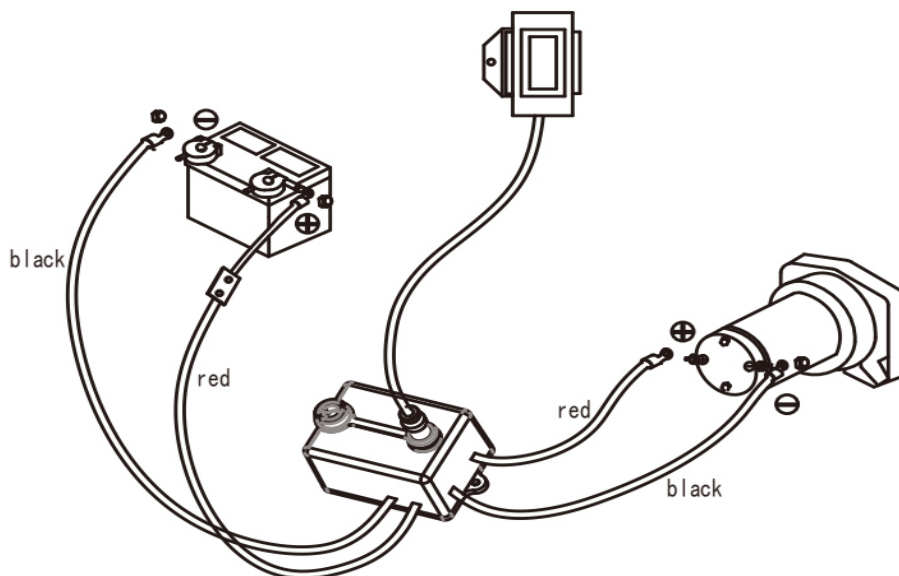


Figure E: Wiring Connection

Preparing the Wire Rope

1. The wire rope must be properly coiled under tension, to be able to support a load without damage.
2. Uncoil the wire rope, expect 5 full warps.
3. Recoil the rope back into the winch under at least 500 lb. of tension.

Before Each Use

⚠WARNING

- 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.
- Wrap the wire rope under 500 lbs. of tension before use. Otherwise, the wire rope may bind during operation.
- Ventilate area well before and while working on battery. Explosive hydrogen gas can accumulate and explode when ignited by a spark or open flame.
- Remove all jewelry and metallic objects before working near battery.

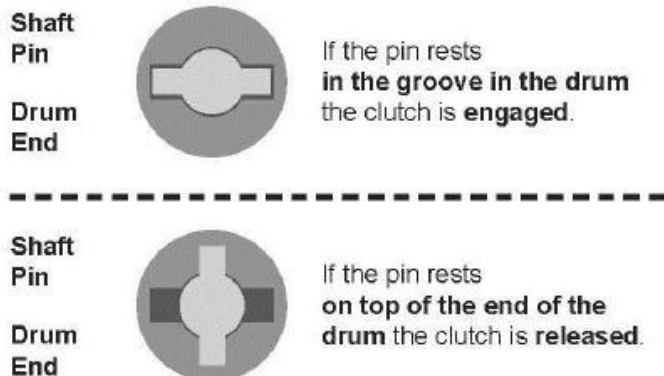
Operating Instructions

⚠WARNING

- Read the entire Important Safety Information section at the beginning of this manual, including all text under subheadings before set up or use of this electric winch.
- The instructions that follow are basic guidelines only and cannot cover all situations encountered during use. The operator and assistants must carefully plan usage to prevent accidents.

Clutch Operation

1. The position of the pin in the shaft determines whether the clutch is engaged.
2. Change the clutch position. See Figure F.
 - a. Pull the clutch knob out.
 - b. Turn it 90° while it is extended, then release it.



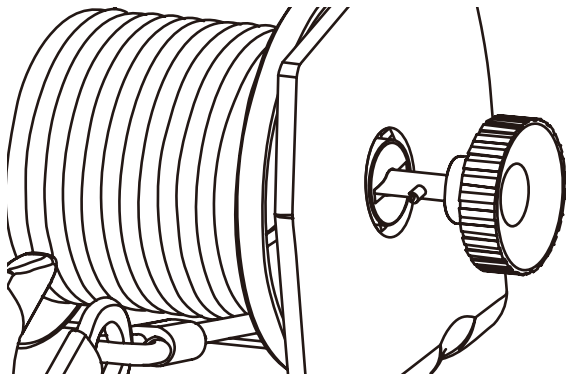


Figure F: Clutch operation

Basic Operation

Note: If a winch is to be used to pull a vehicle, it should optimally be rated to a single line pull at least twice the vehicle's weight.

1. Examine the wire rope. Do not use the winch if the wire rope is frayed, kinked, or damaged.
2. Fully charge the vehicle's battery.
3. Check the Winch's electrical connections. All connections must be tight and clean.
4. Put the vehicle's transmission in Neutral.
5. If the vehicle where the winch is mounted is not supposed to be moved, engaged the emergency brake, and block the wheels using wheel chocks (sold separately).
6. To pull out the wire rope, move the clutch control to the released position, see the instruction for your winch model under clutch operation section, slide the loop of the hook strap over the hook, then pull on the hook strap to pull out the wire rope.
7. Hook onto the object using a pulling point, tow strap, tree strap, or chain. See Figure G.

WARNING

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

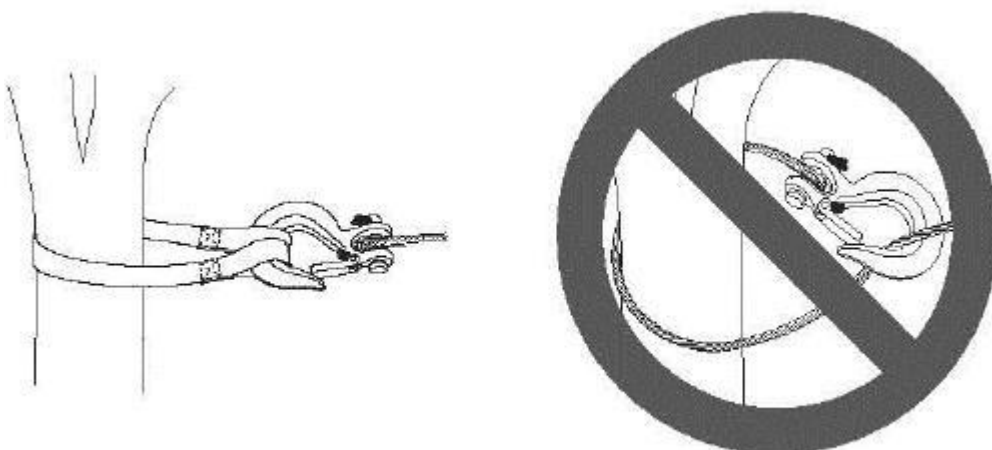


Figure G: Using a strap anchor point



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.

8. Attachment point must be centered in the loop of the hook and the hook's safety clasp must be fully closed. See Figure H.

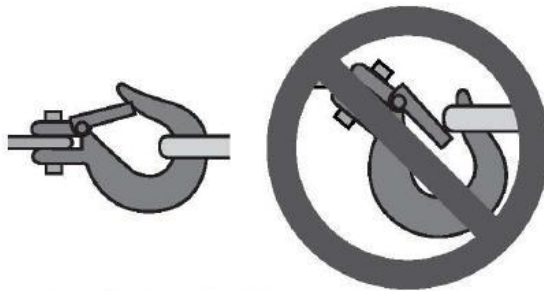
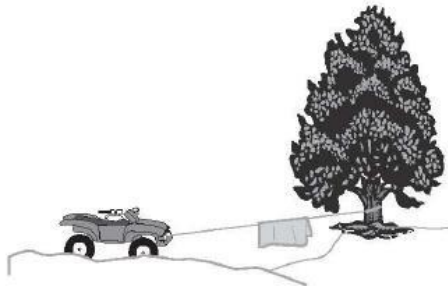


Figure H: Correct and incorrect hook attachment

9. Do not use a recovery strap while winching. They are designed to stretch and can suddenly whip back towards the operator during a winching operation.
10. Place a heavy rag or carpet (sold separately) over the wire rope span, 6 feet from the hook, to help absorb the force released if the wire rope breaks.

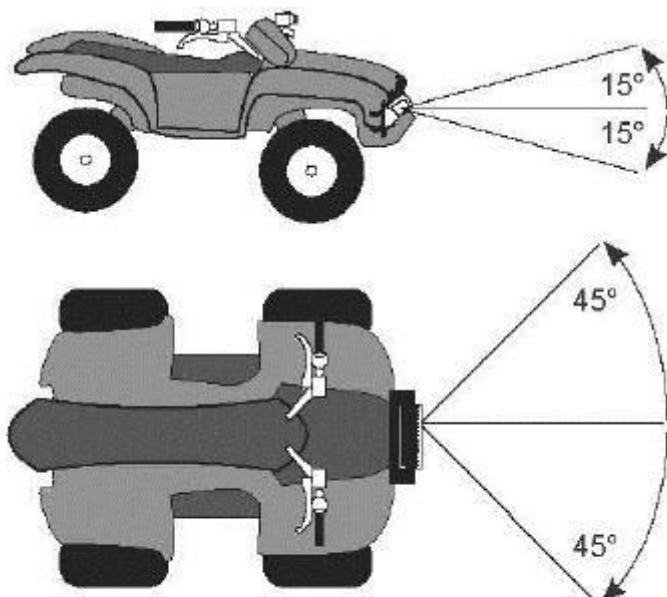


11. Move the clutch control to the Engaged position. See the instruction for your winch model under clutch operation.

⚠ WARNING

Do not allow anyone to stand near the wire rope, or in line with the wire rope behind the winch while it is under power. If the wire rope should slip or break, it can suddenly whip back towards the winch, causing a hazard for anyone in the area. Stand far to the side while winching.

12. Press and hold the on/off button on the remote for 3 seconds to turn the remote on. The indicator light on the remote will illuminate.
13. Operate the controls briefly to ensure they work properly.
 - The retract button should retract the winch cable.
 - The extend button should power out the cable.
 If operation is reversed, the power cables may be connected backwards. Correct any such issue before use.
14. When it is safe to do so, use the power switch on the remote to retract the wire rope, and winch the item as desired. Do not power the hook all the way into the fairlead to prevent damage.
15. Do not operate the winch at extreme angles. Do not exceed the angles shown in Figure B for a roller fairlead. For a hawse fairlead, the angle should be as close to straight as possible.



**FIGURE B: ROLLER FAIRLEAD
MAXIMUM WINCHING ANGLES**

16. 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 C, to keep the wire rope pull straight.

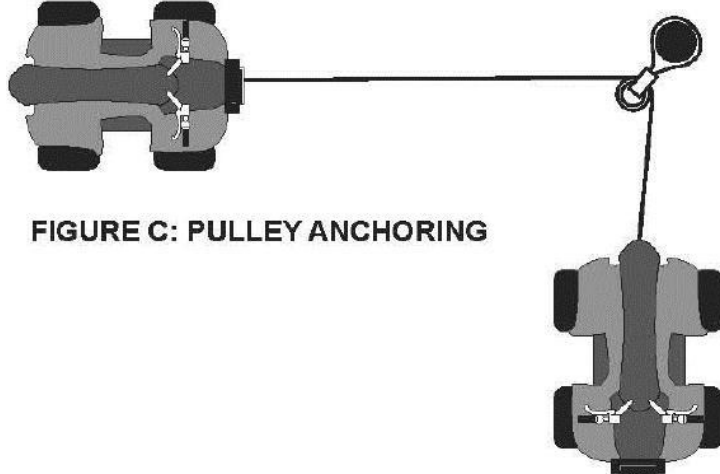


FIGURE C: PULLEY ANCHORING

⚠WARNING

Stop the winch and release tension on the wire rope before moving the rag or carpet placed on it.

17. When possible, keep the engine running while using this winch, to continually recharge the battery and prevent the battery from being drained so much that the vehicle cannot start. However, exercise extreme caution when working around a running vehicle and **ONLY** operate a vehicle in an outdoor area

Note: Do not use the winch in a constant duty application; it is designed for **INTERMITTENT USE ONLY**. Keep the duration of the pulling job as short as possible. If the motor becomes very hot to touch, stop and let it cool down for several minutes. Do not pull for more than one minute at or near the rated load. Do not maintain power to the winch if the motor stalls. Double line rigging will help prevent overloading and should be used whenever practical.

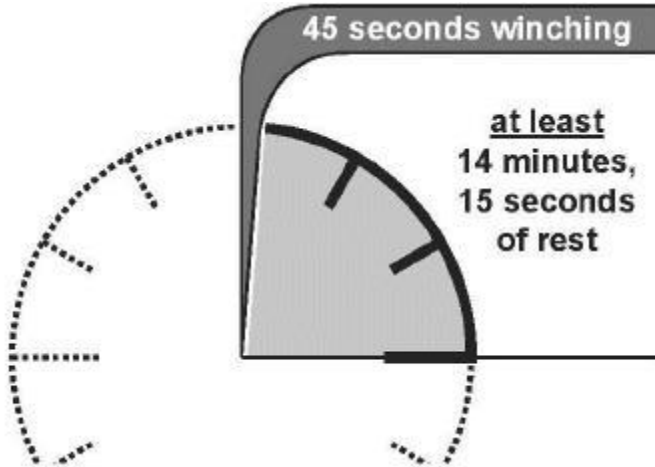
18. When finished pulling the load, reverse the direction of the winch just enough to release tension on the wire rope so that you can unfasten the hook from the load and reel in the wire rope.
19. Press and hold the on/off button on the remote for 3 seconds to turn the remote off. The indicator light on the remote will turn off.

Duty Cycle (Duration of Use)

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.

For example, this winch with a 5% duty cycle at its maximum load must be allowed to rest for at least 14 minutes, 15 seconds after every 45 seconds of continuous operation. Failure to carefully observe duty cycle limitations can easily over-stress a winch contribution to premature winch failure.



After Each Use

⚠WARNING

Wipe external surfaces of the winch with a clean cloth.

Maintenance

⚠WARNING

- To prevent serious injury from accidental operation: disconnect the battery cables before performing any inspection, maintenance, or cleaning procedures.
- To prevent serious injury from winch failure: do not use damaged equipment. If an abnormal noise or vibration occurs, have the problem corrected before further use.
- Lubricate the wire rope occasionally with a light oil.
- The winch's internal mechanism is permanently lubricated. Do not open the housing. However, if the winch is submerged, it should be opened, dried, and re-lubricated by a qualified technician as soon as possible to prevent corrosion.

Troubleshooting

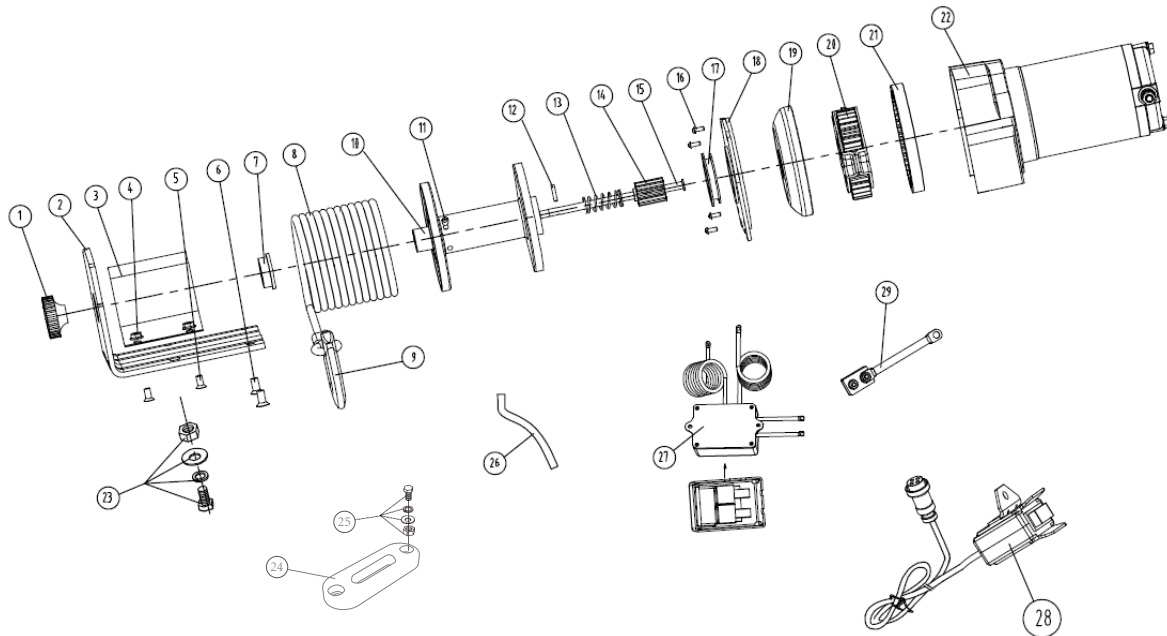
⚠ WARNING

- Follow all safety precautions whenever diagnosing or servicing the tool.
- Disconnect power supply before service.

Use the table below to troubleshoot problems before contacting service personnel or your local dealer. If the problem continues after troubleshooting, call your local dealer for assistance.

Failure	Possible Cause	Corrective Action
Motor overheats	<ol style="list-style-type: none"> 1. Incorrect power cords 2. Winch running time is too long 	<ol style="list-style-type: none"> 1. Use only supplied power cords. 2. Allow winch to cool down periodically.
Motor does not turn on	<ol style="list-style-type: none"> 1. Remote battery dead 2. Loose battery cable connections 3. Vehicle battery needs charging 4. Solenoid malfunctioning 5. Remote damaged 6. Defective motor 7. Water has entered motor 8. Internal damage or wear 	<ol style="list-style-type: none"> 1. Replace remote battery. 2. Tighten nuts on all cable connections. 3. Fully charge battery. 4. Tap solenoid to loosen contacts. Apply 12 volts to coil terminals directly. A clicking indicates proper activation. 5. Replace remote. 6. Check for voltage at armature port with switch pressed. If voltage is present, replace motor. 7. Allow to drain and dry. Run in short bursts without load until completely dry. 8. Have technician service winch.
Motor runs but wire rope drum does not turn	Clutch not engaged	Move the clutch handle to the Engaged position. If problem persists, a qualified technician needs to check and repair.
Motor runs slowly or without normal power	<ol style="list-style-type: none"> 1. Insufficient current or voltage 2. Loose or corroded battery cable connections 3. Incorrect power cords 	<ol style="list-style-type: none"> 1. Battery is weak, recharge. Run winch with vehicle motor running. 2. Clean, tighten, or replace. 3. Use only supplied power cords.
Motor runs in one direction only	<ol style="list-style-type: none"> 1. Defective or stuck solenoid 2. Remote damaged 	<ol style="list-style-type: none"> 1. Tap solenoid to loosen contacts. 2. Repair or replace solenoid. 3. Replace remote.

Parts Diagram



Parts List

Part Number	Description	Quantity
1	Clutch Knob	1
2	Baseplate Assembly	1
3	Tension Plate	1
4	Hex Flange Nut M5	2
5	Screw M5 x 10MM	2
6	Hex Socket Screw M6x 16	2
7	Bushing	1
8	Cable Assembly	1
9	Hook	1
10	Drum Assembly	1
11	Screw M5x8	1
12	Pin 2.5 x 2	1
13	Spring	1
14	Spline	1
15	Clutch Assembly	1
16	Pan Head Screw M4x12	4
17	Drum Support Bushing	1
18	Drum Support Plate	1
19	Rotator Gear	1
20	Planetary Gear Assembly	1
21	Gear Ring	1
22	Motor	1
23	Winch Mounting Hardware	2
24	Hawse Fairlead	1
25	Fairlead Mounting Hardware	2
26	Red Strap	1
27	Control Box	1
28	Pendant Controller	1
29	Circuit Breaker	1

Replacement Parts

- Not all product components are available for replacement. The illustrations provided are a convenient reference to the location and position of parts in the assembly sequence.
- When ordering parts, the following information will be required: item description, item model number, item serial number/item lot date code, and the replacement part number.

