



# **ELECTRIC SYNTHETIC WINCH**

## **Manual and Safety Instructions**

**MODELS:  
M10000S and M12500S**



**PLEASE READ CAREFULLY BEFORE OPERATING THE WINCH**

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## 1. Package Contents

1. Winch
2. Winch Control Box
3. Ground Wire
4. Wireless Remote Controller
5. Wired Remote Controller
6. Wire Connector
7. Hawse Fairlead
8. Clevis Hook (Including Lanyard)
9. Mounting Screw Bolts

## 2. Safety Warnings & Precautions

**⚠ DANGER**



- Vehicle batteries contain gases that are flammable and can explode violently

### **Dress properly**

- Do not wear loose clothing or jewelry. They can be caught in moving parts
- Non-skid footwear is recommended
- Protective hair covering or tie back long hair

### **Battery**

- Always check and ensure your battery is in good condition. Avoid contact with battery acid or other contaminants
- Always wear eye protection when working around a battery
- Always follow wiring diagrams
- To avoid flattening the battery have the engine running when using the winch

**⚠ DANGER**



- Improper wiring can result in electrical shock or explosion
- Always insulate and protect all exposed wiring and electrical terminals
- Always place supplied terminal boots on wires and terminals as directed by installation instructions
- Never connect DC Powered winches to AC current
- Never operate a DC winch in the presence of flammables or fumes
- Never route electrical cables across sharp edges; near parts that get hot, nor through or around moving parts
- Always verify the area is clear of fuel lines, fuel tanks, brake lines, electrical wires, etc., when drilling
- Always consult the operator's manual for proper wiring details

## ⚠ DANGER



- Improper use or overloading of the winch can result in a release of load or rope failure  
**Before winching a load, be sure the clutch is fully in the engaged position**
- **Always** properly seat load in hook
- **Always** use a shackle or strap when attaching the hook to an anchor point
- **Always** use a hook with a latch and insure hook latch is closed and not supporting load
- **Always** keep hands clear of the rope, hook loop, hook and fairlead opening during installation, operation and when spooling in or out
- **Always** use the supplied hook strap whenever spooling rope in or out during installation and operation
- **Never** touch rope or hook while in tension or under load
- **Never** hook the rope back onto itself
- **Never** use the winch to lift or move persons
- **Never** use the winch as a hoist or to suspend a load

## ⚠ WARNING

### Moving Parts Entanglement Hazard

- Keep the duration of your pulls as short as possible
- Do not step over the synthetic rope, or near the rope when it is under load
- **Never** engage or disengage the clutch if the winch is under load, the rope is in tension or the drum is moving
- **Always** keep hands clear of the rope, hook loop, hook and hawse fairlead opening during installation, operation or when spooling in or out
- **Always** keep the wired remote control lead clear of the drum, rope and rigging. Inspect for cracks, pinches, frayed wires or loose connections. Replace remote control if damaged
- **Always** pass the wired remote control through a window to avoid pinching the lead in the door, when using remote inside a vehicle
- **Never** leave the remote control where it can be activated during free spooling, rigging, or when the winch is not being used
- If the motor becomes uncomfortably hot to the touch, stop and let it cool for a few minutes. Do not pull more than one minute at or near the rated load. Do not maintain power to the winch if the motor stalls

### General Safety



- **Always** know your winch. Take the time to fully read the Installation Guide and the Basic Guide to Winching Techniques in order to understand your winch and its operation
- Electric winches are for intermittent usage and should not be used in constant duty applications
- Modification or alteration to the winch should only be made by qualified personnel and may void warranty
- **Never** operate the winch if you are under 16 years of age
- **Never** operate the winch when under the influence of drugs, alcohol or medication
- **Never** exceed the winch or rope capacity listed on product data sheet. To reduce winch load use a double line and snatch block
- Always be aware of your vehicles stability of vehicle and load during winching. Alert all bystanders of an unstable condition if it arises
- Keep a **safe distance**, proper footing and balance at all times

**WARNING**

**Installation Safety**

- **Always** inspect rope, hook, and slings before operating winch. Frayed, kinked or damaged rope must be replaced immediately. Damaged components must be replaced before operation. If a cable pulls loose or breaks under load it can lash back and cause serious personal injury or death



(Figure 2-1)

- **Always** pre-stretch the rope and re-spool under load before use. Tightly wound rope reduces the chances of “binding”, which can damage the rope
- **Always** spool the rope onto the drum in the direction specified by the winch warning label on the winch and/or documentation. This is required for the automatic brake (if so equipped) to function properly
- **Always** choose a mounting location that is sufficiently strong enough to withstand the maximum pulling capacity of your winch
- **Always** use factory approved mounting hardware, components, and accessories
- **Always** use grade 5 (grade 8.8 metric) or better mounting hardware
- **Never** weld mounting bolts
- **Always** use caution when using longer bolts than those supplied from factory. Bolts that are too long can damage the base and/or prevent the winch from being mounted securely
- **Always** mount the winch and attach the hook to the rope’s end loop before connecting the electrical wiring
- **Always** position fairlead with WARNING label on top
- **Never** obscure the warning and instruction labels. Slowly take up the rope slack until taut
- **Never** leave the remote control plugged into winch when free spooling, rigging, or when the winch is not being used
- **Always** use a choker chain, choker rope, or tree trunk protector on the anchor
- **Always** be certain that the anchor you select will withstand the load and the strap or chain will not slip
- **Always** select an anchor point as far away as possible. This will provide the winch with its greatest pulling power
- **Never** operate the winch with less than 8 turns of synthetic rope around the winch drum. The rope could come loose from the drum
- **Never** expose the rope to heat sources or chemicals
- **Never** pull the rope around non-rotating sheaves or rollers
- **Never** allow the rope to tangle or jam while winching. The rope could break before the winch stalls
- **Never** knot or tie the rope to secure a load or repair a broken rope
- **Never** use a hook whose throat opening has increased, or whose tip is bent or twisted
- **Never** use to raise, suspend, lower or secure horizontally hinged doors or ramps without additional counter balance springs, centrifugal locking devices, or other secondary means of supporting the moving ramp or door
- **Always** store the remote control in a protected, clean, dry area
- **Always** double line or pick a distant anchor point when rigging. This maximizes pulling power and avoids overloading
- Place recovery blanket on rope if possible before operating winch, it will make vehicle and operator safer if the rope should become damaged

**CAUTION**

**Avoid Winch and Equipment Damage**

- **Always** avoid side pulls which can pile up the rope on one end of the drum. This can damage the rope or winch

- Winching should always be done in a straight line from the winch to the object being winched. This prevents the winch from being damaged
- Do **not** operate the winch at extreme angles. The hawse fairlead angle should be as close to straight as possible
- **Never** use a winch to tow other vehicles or objects. Shock loads can momentarily exceed the capacity of rope and winch
- **Always** avoid “powering out” for extended distances. This causes excess heat and wear on the winch motor/brake
- **Always** use care to not damage the vehicle frame when anchoring to a vehicle during a winching operation
- **Never** “jog” rope under load. Shock loads can momentarily exceed the capacity of the rope and winch
- **Never** use the winch to secure a load during transport
- **Never** submerge the winch in water
- **Always** store the wired and wireless remote controls in a protected, clean, dry area

## NOTICE

### GENERAL TIPS FOR SAFE OPERATION

- To prevent battery drain and maximize power and speed of the winch, the vehicle engine should be kept running during operation. If the winch is used for a considerable amount of time with the engine off, the battery may drain and be too weak to restart the engine
- Inspect the winch installation, check bolts to ensure that all bolts are tightened before each operation
- Any winch that appears to be damaged in any way, is found to be worn, or operates abnormally **SHOULD BE REMOVED FROM SERVICE UNTIL REPAIRED**. It is recommended that the necessary repairs be made by a manufacturer’s authorized repair facility
- The rope may break before the motor stalls, for heavy loads at or near rated capacity, use a pulley block/snatch block to reduce the load on the rope
- Do not move the vehicle to pull a load (Towing) on the winch rope, this could result in rope breakage
- Rewind the rope on to the drum under a load of 500lbs (230kg) or more

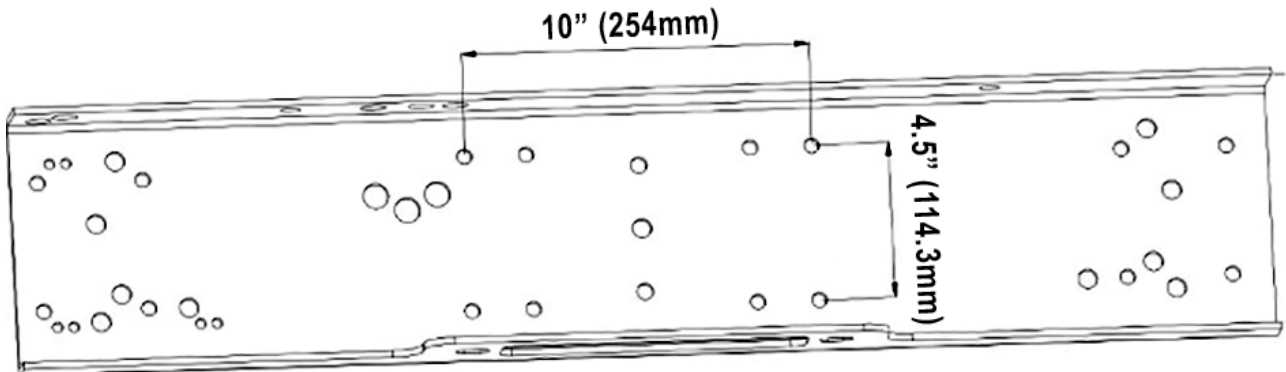
## 3. Electric Winch Installation

### Unpack Your Winch

Unpack your new winch and ensure that all of the parts are included. Refer to the Parts List and Diagram View Drawing provided in this manual. If you find any parts missing or broken, please contact the store you purchased the winch from as soon as possible.

### Mount Your Winch

Choose a suitable location to mount the winch that is strong enough to withstand the loads (A mounting plate is recommended for winch installation). Check that your mounting plate or bumper has suitable screw holes, if not drill four mounting holes according to the bolt pattern mentioned in the winch specifications. (See Figure 3-1)



(Figure 3-1) (Pictures above for reference only)

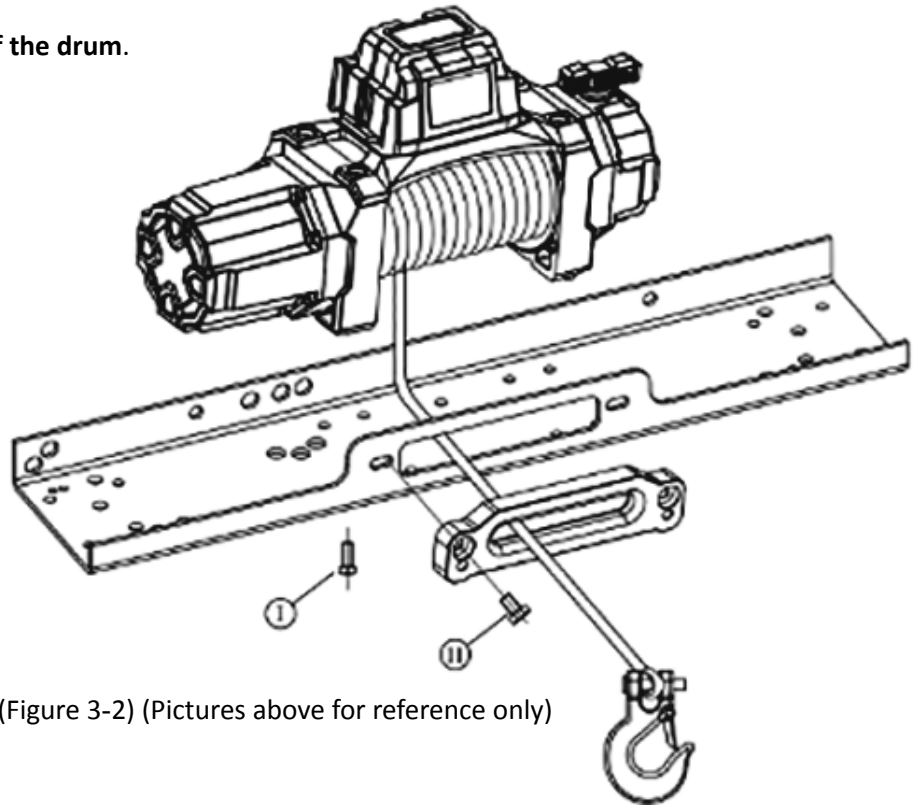
### Attach Your Winch

Install your winch on the mounting plate or bumper, using supplied fasteners and tighten.

### Install Your Winch Fairlead

Fix the fairlead on the mounting plate or bumper. If you use any other mounting platforms, drill two holes for the fairlead installation. Position the holes such that the fairlead opening hole stretches from the circumference of the drum to the end of the maximum permissible layers on the drum in the direction cable is being. Note the winch direction after installation, the rope runs through the bottom of the drum. (See Figure 3-2)

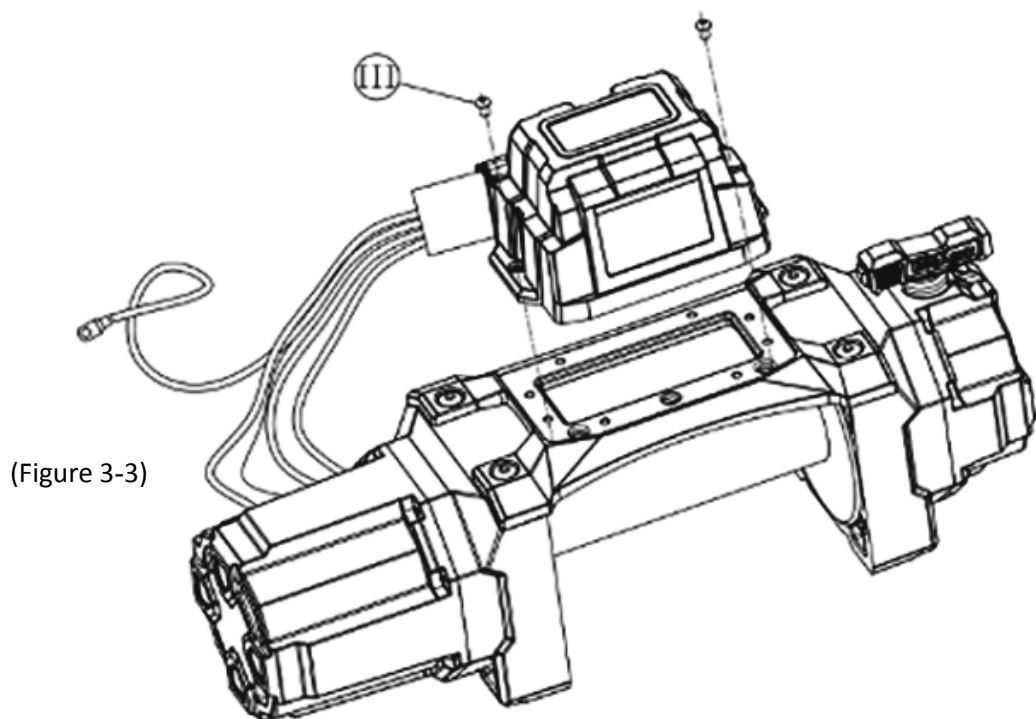
The rope runs through the bottom of the drum.



(Figure 3-2) (Pictures above for reference only)

### Control Box Assembly Installation

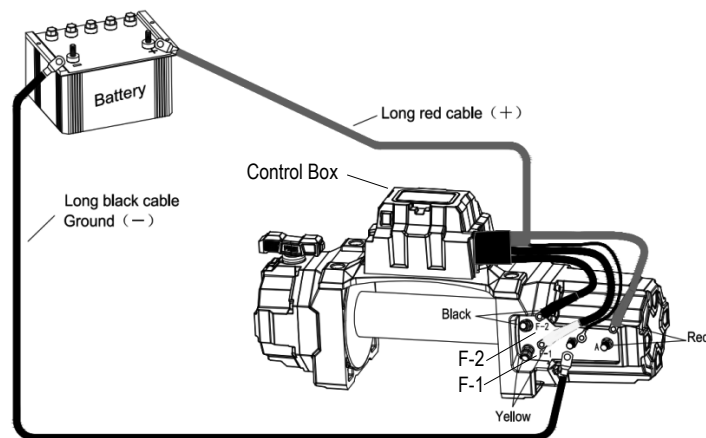
The control box can be mounted to the center of the winch or separately from the winch. ( See Figure 3-3)



(Figure 3-3)

## Connect Electric Cables

Route the Cables from the control box to the battery and from the control box to the Winch, following the precautions discussed above. (See Figure 3-4)



(Figure 3-4)

Short red cable connects to the red terminal (A) of the motor.

Short black cable with yellow jacket connects to the yellow terminal (F-1) of the motor.

Short black cable with black jacket connects to the black terminal (F-2) of the motor.

Thin black cable connects to the ground terminal of the motor.

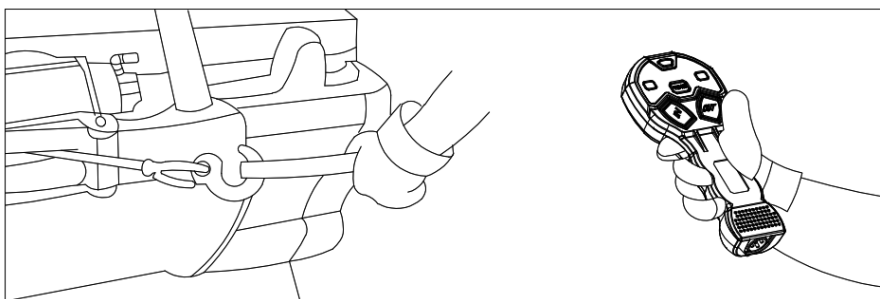
Long black cable connects to the ground terminal of the motor.

**Long Red** cable connects to the **Positive (+)** of battery.

**Long Black** cable connects to the **Negative (-)** of battery.

## Test Your Winch

After proper installation and connection, place the clutch in the “Disengaged” position, pull out the winch rope to 6.5 feet and turn the clutch to the “Engaged” position. Use the remote control to test if the winch works properly. If the winch doesn’t work, please check if all the things are in proper condition, such as, if the cable connection is correct and tight or the vehicle battery is sufficient. If the winch still does not work after a thorough check, please contact the supplier. (See Figure 3-5)



(Figure 3-5)

## Practice Using

After the winch has been installed, take some time and practice using it so you will be familiar with all of its operations. Periodically check the winch installation to ensure that all of the bolts are tight.



## 4. Electric Winch Operation

**NOTE:** For optimal winch performance, it is recommended that you use a fully charged 12V battery with at least 650 CCA. It is advised to keep the engine running during the winch operation, so that the battery is being charged continuously.

**All** winches are equipped with a clutch lever that engages/disengages the clutch. Clutch when engaged, winch can pull rope in; Clutch when disengaged, winch can pull rope out.

**CAUTION:** When using your winch, always have at least 8 turns of synthetic rope on the drum before winching, Ensure the clutch is fully engaged or fully disengaged to avoid any injuries or damages.

**CAUTION: All Winches are for intermittent use only.** Wait until the motor cools down before resuming operation.

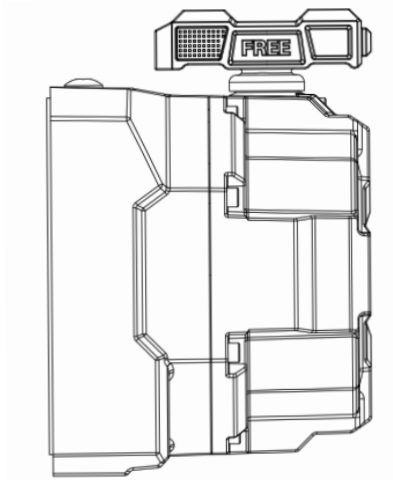
**Potential causes of motor damage:**

- Long-duration pulls.
- Low battery.
- Overloading winch pulling capacity.
- If there is a large rock right in front of your axle, frame, or skid plate, you can winch horizontally and the only thing you'll accomplish is bending something, or burning out your winch motor.



### Step 1: Disengage the Clutch

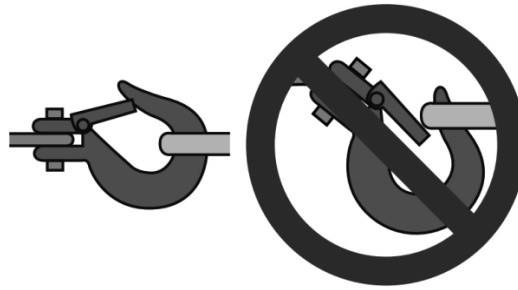
Disengage your winch by lifting and turning the clutch to the **FREE-SPOOL** position. (See Figure 4-1)



(Figure 4-1) (Pictures above for reference only)

## Step 2: Pull Rope to Anchor Point

Slide the loop of the Hook Strap over the hook, then pull on the Hook Strap to pull out the synthetic rope. Pull out enough rope to reach your anchor point. Be sure to keep a certain amount of tension in the rope. It can become twisted and overwrap when slackened, leading to rope damage. For safety, always hold the hook strap when handling the winch line. (See Figure 4-2)



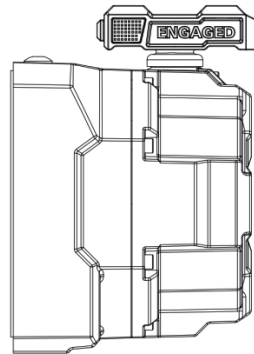
(Figure 4-2)

### WARNING

Leave at least 8 full turns of synthetic wire rope on the drum.

## Step 3: Engage the Clutch

Engage your winch by lifting and turning the clutch to the **ENGAGED** position (See Figure 4-3)



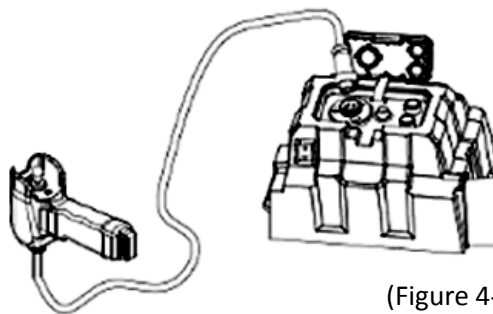
(Figure 4-3) (Pictures above for reference only)

### NOTICE

If necessary, pull the rope out slightly until the clutch is seated correctly.

## Step 4: Attach the Wired Controller

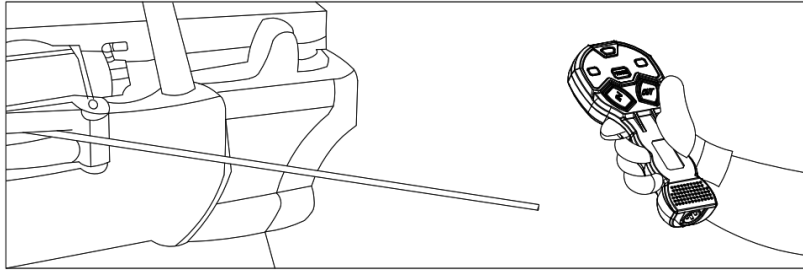
Attach the wired controller to the socket on the control box. (See Figure 4-4)



(Figure 4-4)

## Step 5: Winching

Test the wired controller to ensure it works. (See Figure 4-5) Keep a safe distance from winch and rope, press the IN button to begin winching. If you are using the wireless remote control, press IN button to begin winching.



(Figure 4-5) (Pictures above for reference only)

## NOTICE

Always disconnect the remote control when not in use.

### Step 6: For Vehicle Recovery

Continue pulling the vehicle until it is on stable ground. If you are able to drive the vehicle, the winching operation is complete. Once recovery of the vehicle is complete, be sure to secure the vehicle's brakes and put the Transmission in "park". Release the tension in the rope.

Disconnect the rope from the anchor, and then rewind the rope. The person handling the rope should walk the rope in and not let it slide through the hands. Control the winch at all times.

### Step 7: Disconnect Remote Control

Disconnect the remote control cord and store it in a clean and dry place. Winching operations are now complete. Put the cap on the socket.

## WARNING

- **Always** be aware of your vehicles stability and load during winching. Alert all bystanders of an unstable condition if it arises.
- **Always** keep a **safe distance**, proper footing and balance at all times.
- **Always** disconnect the cable to the vehicle battery after winching.
- Be sure the cables are not drawn taught across any surface, which could possibly damage them.
- Connect to the battery and screw the nut on to all terminals to avoid any connection loss.
- Use the wired or wireless remote controllers, after installation, to make the winch work in both directions.
- Never hook the rope back onto itself. This could damage the rope. A tree saver is recommended. (See Figure 4-6)

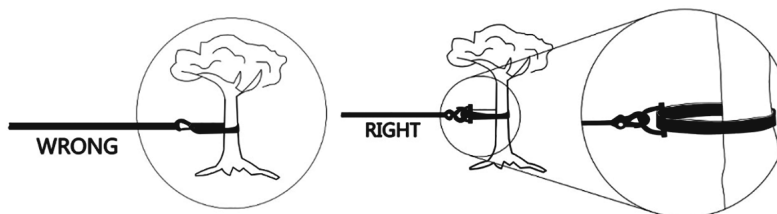


Figure 4-6

- Never allow the rope to tangle or jam while winching. The rope could break before the winch stalls
- Never exceed the winch or rope capacity listed on product data sheet. To reduce winch load, use a double line and snatch block
- Do not reverse the operation immediately, wait for drum to stop. Relay can be easily damaged in this way
- Avoid continuous pulls from extreme angles. The angle should be as close to straight as possible for a hawse fairlead. (See Figure 4-7)

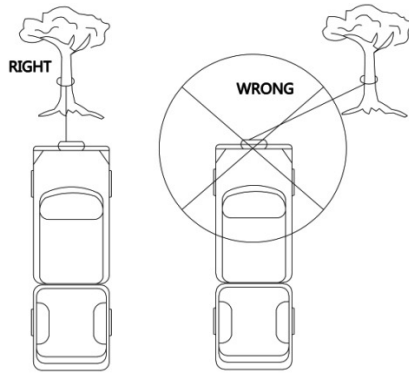


Figure 4-7

### Winch Accessories You May Need During Winching

In order to be prepared for all recovery scenarios it is recommended to be equipped with a full recovery kit or winch accessories.

- Winch Mounting Plate • Farm Jack • Receiver • Shackle • Square Hook
- Heavy duty chain • Tree Saver • Recovery Blanket • Snatch Block • Gloves

### Some Tips for Better Winching

- The use of a snatch block
- Double Line

The use of a snatch block will aid recovery operations by providing a doubling of the winch capacity and a halving of the winching speed, and the means to maintain a direct line pull to the center of the rollers. When double loading during stationary winching, the winch hook should be attached to the chassis of the vehicle. (See Figure 4-8)

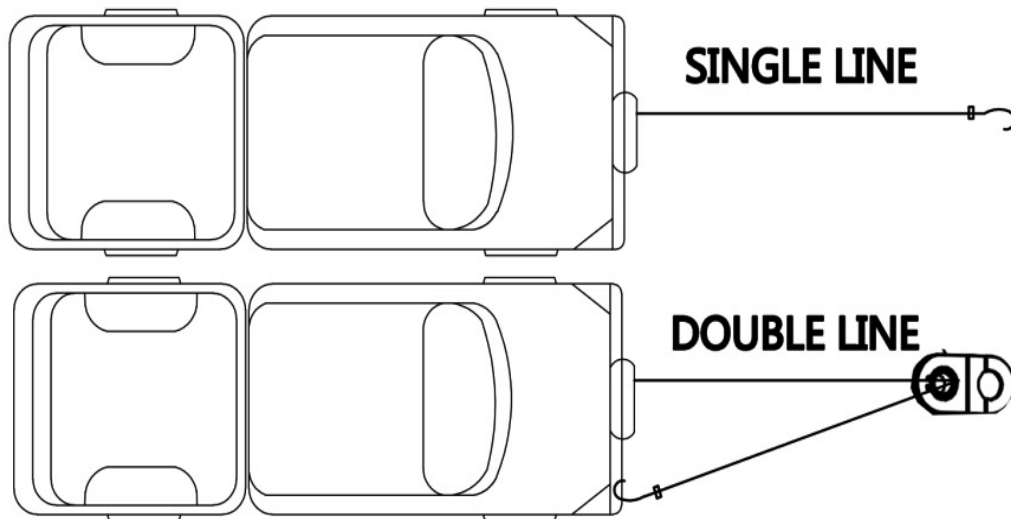


Figure 4-8

- Change the Pulling Direction. (See Figure 4-9)

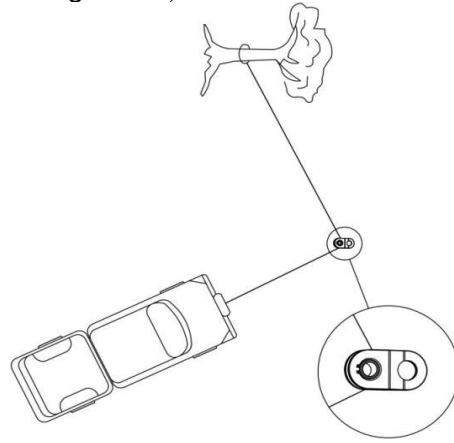


Figure 4-9

- Increasing pulling power and duration  
For loads over 1/2 rated capacity, use a pulley block to double line the rope. This will reduce the load on the winch and up to 50% of the strain on the rope. Attach to the frame or other load bearing part.
- Ground Anchor  
Pull out the winch rope and fix to the anchor point. The anchor point should be a ground anchor or a tree strong enough to recover the vehicle. (See Figure 4-10)

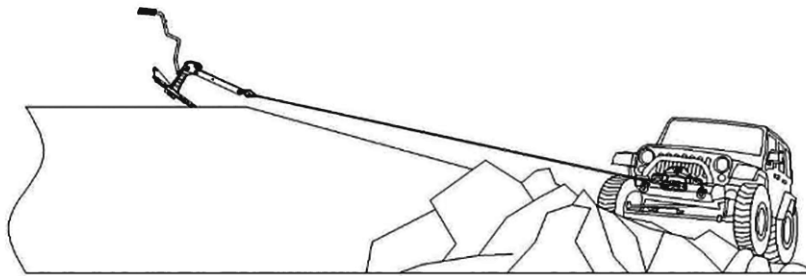


Figure 4-10

- Recovery blanket or other heavy duty material  
The quickest and easiest way to pull the rope out from the drum is to freespool it with the clutch in the disengaged position. When pulling, put a damper, blanket or other heavy duty material over the rope near the hook end. If the rope fails for any reason, there will be a barrier to help prevent the rope from causing injury. (See Figure 4-11)

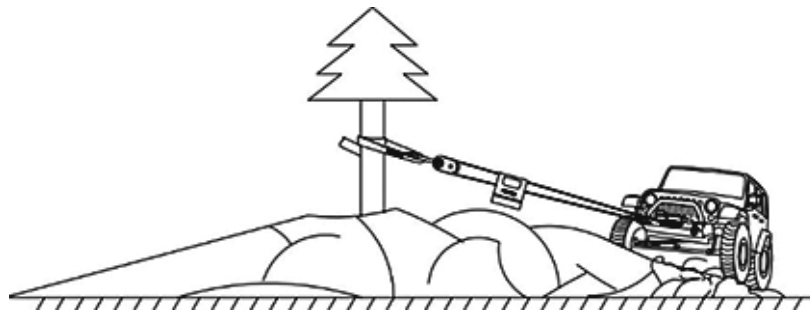


Figure 4-11

## 6. Electric Winch Maintenance and Storage

### General Inspection

- The gear box has been lubricated and is sealed at the factory. No further internal lubrication is required for the life of the winch
- Winches should not be submerged in water for a long time
- Do not attempt to disassemble the gear box. Repairs should be done by an authorized repair center
- Replace the rope or cables as soon as possible if they become damaged.

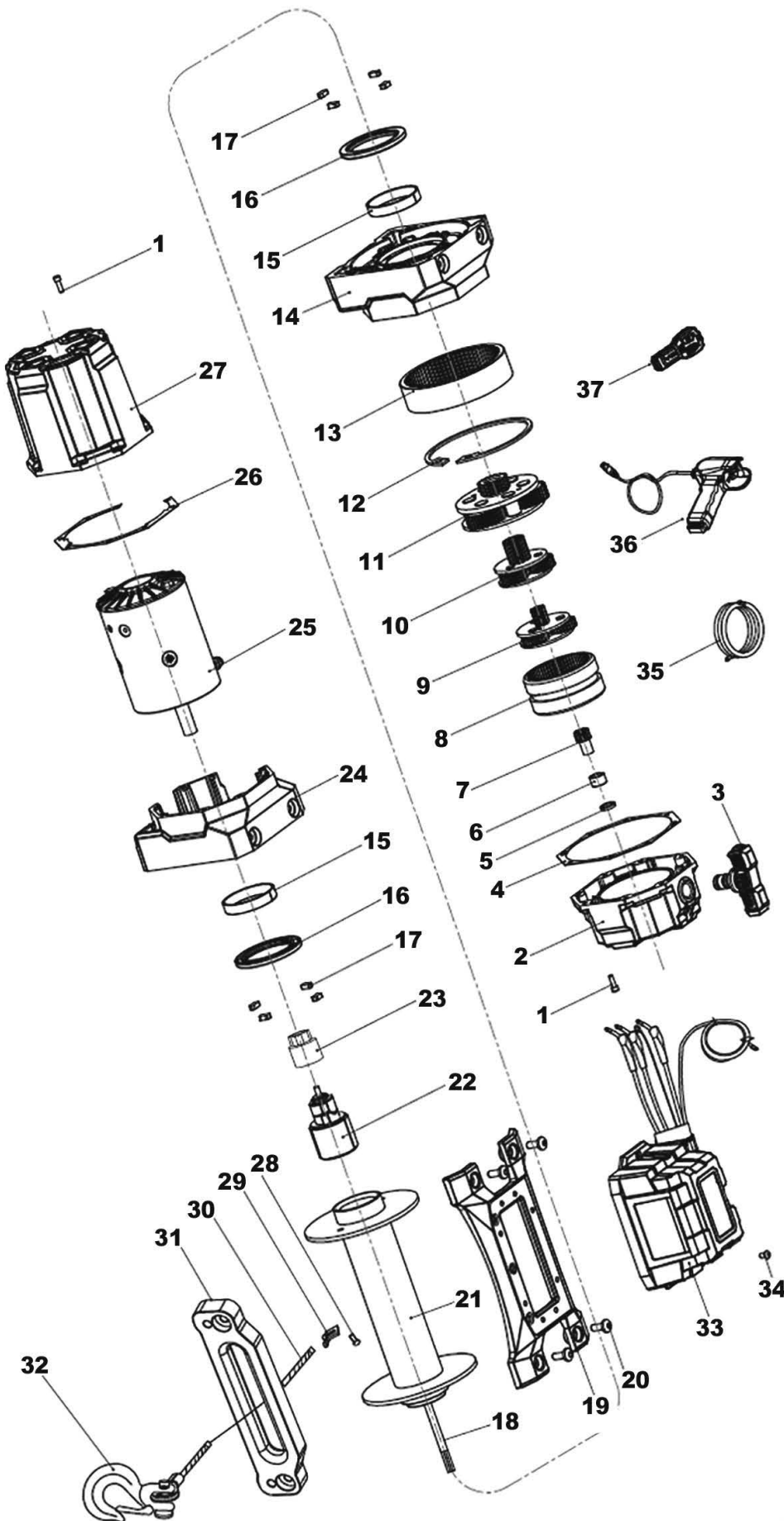
- Periodically check the tightness of the mounting bolts and electrical connections. Remove all dirt or corrosion and always keep clean. (Check battery cables and electrical connections at 90 day intervals to be certain they are clean and tight at all connection points.)
- Check the action of the clutch. Make sure it fully engages and disengages. If the clutch is not fully engaging, inspect the clutch shifter assembly parts. Check for damage or excessive wear and replace as necessary. Corrosion on the electrical connections will reduce performance and may cause a short. Clean all of the connections, especially in the remote control switch and receptacle. In salty environments use a silicone sealer to protect from corrosion.

## 6. Troubleshooting Guide

SYMPTOM	POSSIBLE CAUSE	SUGGESTED REMEDY
Motor does not turn on	Defective switch assembly Switch assembly not connected properly Loose battery cable	Replace switch assembly Insert switch assembly firmly to the connector Tighten nuts on cable connectors
Motor runs too hot	Long period of operation	Let winch cool down periodically
	Insufficient battery	Check battery terminal voltage under load. If 10V or less, replace or parallel another battery to it.
Motor runs slowly or under powered	Battery discharged Insufficient current or voltage	Recharge battery by running vehicle's engine Clean, tighten or replace the connector
	Bad connection	Check battery cable for corrosion. Clean and grease.
Motor runs but cable drum does not turn	Clutch not engaged	Ensure lever is completely in "Engaged" position
Winch runs in one direction only	Defective or stuck solenoid	Tap solenoid to free contacts. Repair or replace solenoid.
	Defective switch assembly	Replace switch assembly
Motor water damage	Disconnect from battery	Remove ground bolt on bottom of motor and drain.
	Submerged in water or water from high pressure car wash	Allow to drain and dry thoroughly, then run motor without a load in short bursts to dry windings.
Will not hold load	Excessive load	Reduce load or double line
	Worn or damaged brake	Repair or replace brake

## 7. Winch Diagram

## Winch Part List



ITEM	DESCRIPTION	QTY
1	Screw M5*20	16
2	Gear Box	1
3	Clutch Handle	1
4	Gasket	1
5	Washer	1
6	Needle Bearing	1
7	Sun Gear	1
8	Ring Gear	1
9	Carrier Assembly, (Stage 1)	1
10	Carrier Assembly, (Stage 2)	1
11	Carrier Assembly, (Stage 3)	1
12	Washer	1
13	Ring Gear	1
14	Drum Support, Gear Box	1
15	Drum Bushing	2
16	Seal Kit	2
17	Anti-friction Gasket	8
18	Hex Shaft	1
19	Integrated Tie Bar	1
20	Screw M8*20	4
21	Drum Assembly	1
22	Brake Assembly	1
23	Connector	1
24	Drum Support, Motor	1
25	Motor	1
26	Gasket	1
27	Motor Assembly Cover	1
28	Screw M6*10	1
29	Wire Rope Terminal Kit	1
30	Synthetic Rope	1
31	Aluminum Hawse Fairlead	1
32	Clevis Hook	1
33	Control Box Assembly	1
34	Screw M6*16	2
35	Battery Lead (Negative)	1
36	Wire Connector	1
37	Wireless Remote Control	1

## 8. Specifications

### M10000S WINCH

Rated Line Pull	10,000 LBs Single line
Motor	Series wound 6.0 HP / 4.8 KW, 12V DC
Gear Train	3 Stage planetary
Gear Ratio	216 : 1
Clutch	Sliding ring gear
Braking Action:	Automatic in the drum
Fairlead	Aluminum hawse fairlead
Synthetic Rope	3/8" x 85'
Drum Size	2.5" x 9"
Dimensions	22.16" x 6.38" x 7.72"
Bolt Pattern	10" x 4.5"
N.W.	66LBs



### LINE SPEED & MOTOR CURRENT (FIRST LAYER)

Line Pull:	Lbs	0	4000	6000	8000	10000
	Kgs	0	1814	2722	3629	4309
Line Speed:	FPM	29.5	15.1	13.1	11.2	9.5
	MPM	9	4.6	4	3.4	2.9
Motor Current:	Amps	70	210	260	320	380

### LINE PULL & CABLE CAPACITY

Layer of Cable		1	2	3	4
Rated Line Pull Per Layer	Lbs	10000	8070	7250	6600
	Kgs	4536	3660	3289	2994
Cable Capacity Per Layer:	Ft	17.7	40.7	67.9	85
	M	5.4	12.4	20.7	26

### M12500S WINCH

Rated Line Pull	12,500 LBs Single line
Motor	Series wound 6.6 HP / 4.9 KW, 12V DC
Gear Train	3 Stage planetary
Gear Ratio	216 : 1
Clutch	Sliding ring gear
Braking Action:	Automatic in the drum
Fairlead	Aluminum hawse fairlead
Synthetic Rope	7/16" x 85'
Drum Size	2.5" x 9"
Dimensions	22.17" x 6.38" x 7.72"
Bolt Pattern	10" x 4.5"
N.W.	66LBs



### LINE SPEED & MOTOR CURRENT (FIRST LAYER)

Line Pull:	Lbs	0	4000	6000	9500	12500
	Kgs	0	1814	2722	4309	5670
Line Speed:	FPM	32.8	15.1	13.1	10.5	9.2
	MPM	10	4.6	4	3.2	2.8
Motor Current:	Amps	70	210	260	380	420

### LINE PULL & CABLE CAPACITY

Layer of Cable		1	2	3	4
Rated Line Pull Per Layer	Lbs	12500	9919	8220	7019
	Kgs	5670	4499	3729	3183
Cable Capacity Per Layer:	Ft	15.75	35.5	59.4	85
	M	4.8	10.8	18.1	26