



INSTRUCTIONS AND OPERATOR'S GUIDE

ELECTRIC WINCH

FLEX5000

FLEX8000

PLEASE READ CAREFULLY BEFORE OPERATE THE WINCH



202405



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TROUBLE SHOOTING

Symptom	Possible Cause	Remedy
Winch will not operate	Cut circuit	Check battery lead
	Weak battery	Recharge or replace battery (at least 650CCA)
	Bad connection of wirings	Reconnect tightly
	Damaged contactor	Replace contactor
	Cut circuit on switch	Replace switch
	Damaged motor or worn brushes	Replace motor or brushes
	Faulty motor wirings	Replace wirings
Motor runs in only one direction	Broken wirings or bad connections	Reconnect or replace wirings
	Damaged or stuck contactor	Replace contactor
	Switch inoperative	Replace switch
	Faulty wiring	Replace wiring
Drum will not free spool	Clutch does not disengage	Engage clutch
	Damaged 1st stage shaft	Replace 1st stage shaft
	Damaged brake	Replace brake
	Damaged motor output shaft	Replace motor output shaft
Brake fails to operate	The gear train is mechanically binding up	Check to insure the winch is mounted on a flat, rigid surface
	Damaged brake	Replace brake
	Damaged gear box	Replace gear box
Brake jam	Proportional mechanism is damaged or worn	Replace
Damaged gear box	Hit by certain exterior force	Replace the damaged components
	Damaged gear train	Replace the damaged components
	Over load operation	Stop the winch operation and reduce a load
Motor runs extremely hot	Long period of operation	Allow to cool
	Damaged motor	Replace or repair motor
	Damaged or inoperative brake	Replace or repair brake

Accessories- Control Box	2	Control Box	1
Accessories	36	Wire rope	1
	37	Hook	1
	38	Hand Saver	1
	39	Roller Fairlead	1
	44	Aluminum hawse	1
	40	Switch	1
	39	Hardware	1
44	Hardware	1	

INTRODUCTION

Thank you for purchasing from Novawinch. It is designed and manufacture to provid years of trouble-free operation. We hope you are pleased with it is performance

SAFETY PRECAUTIONS

The responsibility for safe installation and operation of this winch ultimately rests with you, the operator . Read and understand all safety precautions and operating instruc-tion before installing and operating the winch. Careless winch operating can result in serous injury and/or property damage. Never obscure or remove the warning or instruction labels.

Throughout this manual, you will find notations with the following headings:



DANGER *Indicates an Imminently hazardous situation which, if not avolded, will result in death or serious Injury.*



WARNING *Indicates a potentially hazardous situation which, if not avolded, could result in death or serious Injury.*



CAUTION *Indicates a potentially hazardous situation which, if not avolded, may result in minor or moderate Injury. This notation is also used to alert agalnst unsafe practices.*

Note: Indicates additional information in the installation and operation procedures of your winch

The following symbols on the product and in the Owners manual are used:



Read Owner's Manual



Always Use Handsaver



Keep clear of winch, wire rope and hook while operating



Never Use winch to lift or move people



Never Use winch to hold loads in place

Correct installation your winch is a requirement for proper operation.

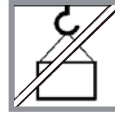
Please Note: Winch is designed primarily for intermittent applications. This winch is not designed to be use in industrial or hoisting application and Novawinch does not warrant it to be suitable for such use. Novawinch manufactures a separate line of winches for industrial commercial use.

Congratulations on you choice!

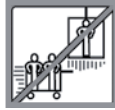
FLEX5000

APPLICATION INFORMATION

This winch is designed to move a load at ground level or up an incline. It is neither designs nor intended for hoisting.



This winch is not to be used to lift or move people.



This winch is for intermittent use due to heat build up characteristics of various components.

SAFETY PRECAUTIONS

1. Operator must be alert. Do not operate the winch under the influence of drugs, alcohol or medication.

2. The best way to get acquainted with how the winch operates is to make practice runs before you need it in an emergency situation.

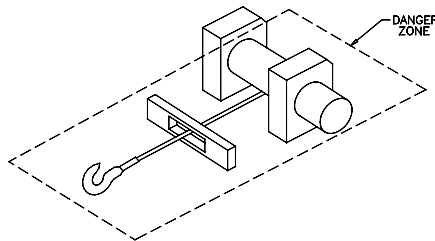
⚠ DANGER *Never connect DC powered winches to AC current. Motor damage or fatal shock may occur.*

⚠ WARNING *Stand clear of wire and load during winching. Keep helpers and spectators at a safe distance. If a wire rope pulls loose or breaks underload, it can lash back with dangerous force.*



3. Beware of the danger zone. The danger zone is the area of the rotating rope drum, the fairlead (if fitted), the rope, the hook, and motor (see Fig 1.) First relieve tension on load then disconnect the control switch before putting hands in or around the danger zone. Disconnect power leads to battery before working in or around drum.

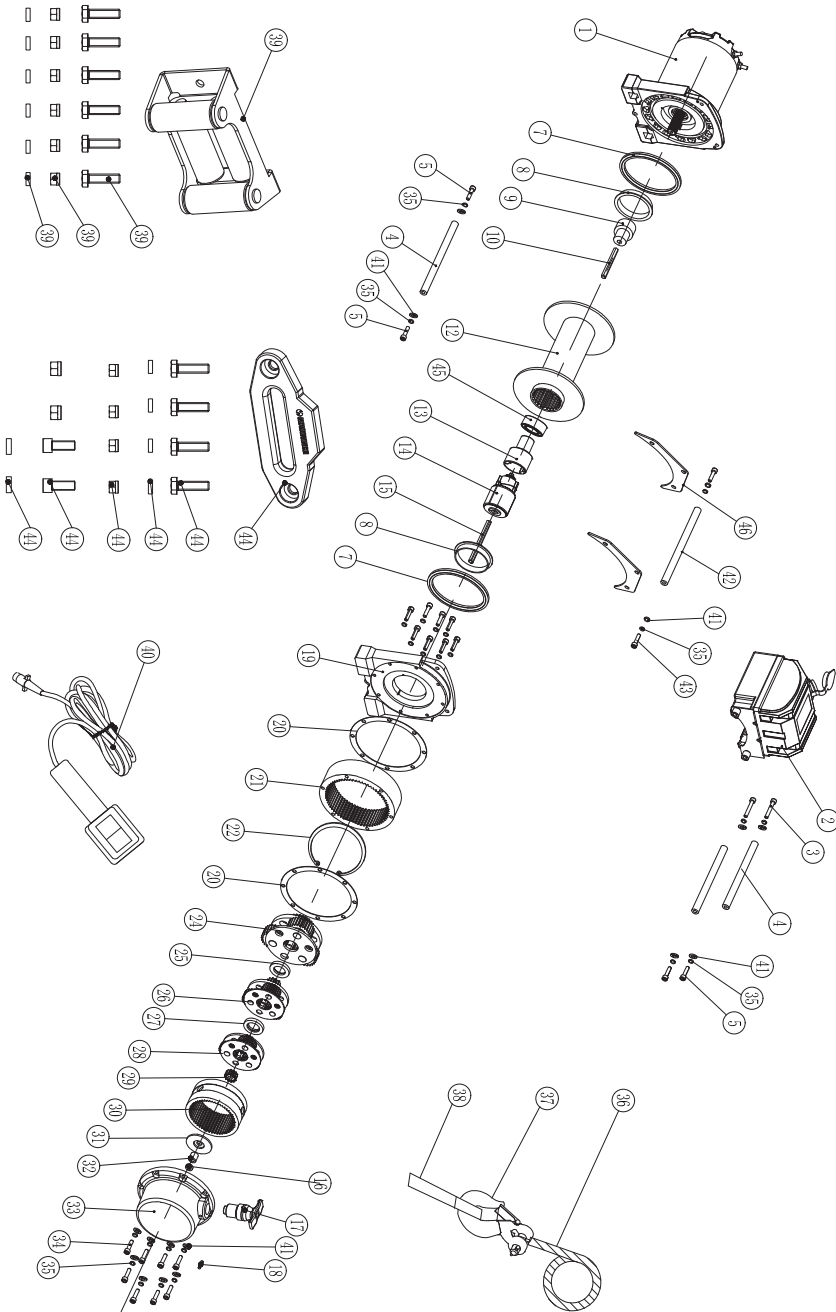
Fig. 1



4. It is recommended that if you are within four feet of the winch, do not hold rope and remote (if equipped) at the same time.

FLEX8000-Parts list

	ITEM	DESCRIPTION	QTY
Electric Motor Assembly	1	Motor Assembly	1
	7	Seal Ring (Φ90×102×11)	1
	8	Slid Bearing (PA25/Φ63×Φ75×12.7)	1
Tie Bar Assembly	4	Tie Bar	1
	42	Tie Bar	3
	43	Hexagon Socket Cap Screws M6×20	2
	46	Support Plate	2
	3	Hexagon Socket Cap Screws M6×40	2
	5	Hexagon Socket Cap Screws M6×25	4
	35	Washer Φ6, Locking	8
	41	Washer Φ6, Flat	8
Coupling Assembly	9	Shaft-connector	1
	10	Hexagon Shaft I	1
Drum Assembly	12	Drum	1
	13	Brake Coupling	1
	14	Brake Assembly	1
Gearbox Assembly	7	Seal Ring	1
	8	Slid Bearing	1
	15	Hexagon Shaft II	1
	16	Rub Reduce Washer II (65Mn/Φ14×2)	1
	17	Clutch	1
	18	Hexagon Socket Set Screws With Cone Point M4×8	1
	19	Gear Box Frame	1
	20	Seal I	2
	21	3rd Stage Gear Ring	1
	22	Retaining Ring 105	1
	24	3rd Stage Planetary Gear Assembly	1
	25	Rub Reduce Washer I (PA25/Φ26.5×Φ40×6)	1
	26	2 nd Stage Planetary Gear Assembly	1
	27	Rub Reduce Washer II (PA25/Φ23×Φ38×6)	1
	28	1 st Stage Planetary Gear Assembly	1
	29	1 st Stage Sun Gear	1
	30	1,2 st Gear Ring	1
	31	Rub Reduce Washer I (PA25/Φ21×50×6)	1
	32	Slide Bearing (Φ8×14×8)	1
	33	Gear Box Body	1
	34	Hexagon Socket Cap Screws M6×25	16
35	Washer Φ6, Locking	16	
41	Washer Φ6, Flat	8	
45	Bearing housing	1	

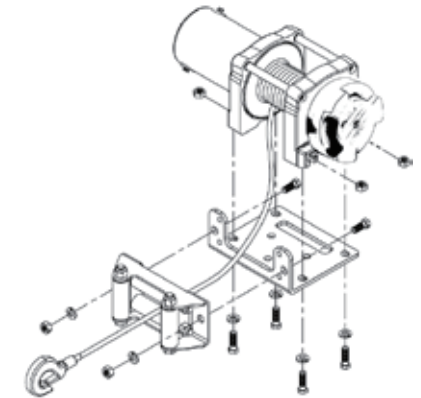


5. USE ONLY FACTORY APPROVED SWITCHES, REMOTE CONTROLS AND ACCESSORIES. Use of non-factory approved components may cause injury or property damage and could void your warranty.

WINCH INSTALLATION

Step (3)
Secure winch (Fig. 2) to mounting kit or structural support using bolts, lock washers and square nuts supplied with winch.

Fig. 2 - Winch mounting



Step (4)
Secure roller fairlead or hawse (Fig. 2) to mounting plate or structural support using hardware supplied

- ▲ WARNING** *Be sure that both the mounting plate and winch hardware have been properly tightened.*
- ▲ CAUTION** *No part of the vehicle (skid plates, wiring, auxiliary lights, tires, etc.) should impede the operation of your Novawinch. When mounting, check all vehicle and winch parts for free operation. Be sure that the winch mounting location does not significantly reduce ground clearance.*

SOLENOID MOUNTING

1. Electric wire-connections for the winch control box: Connect the red power wire with terminal from the control box to battery's positive stud, Connect the black power wire with terminal to battery's negative stud, then plug the rocker switch to the socket on the control box.
(See Fig.3)

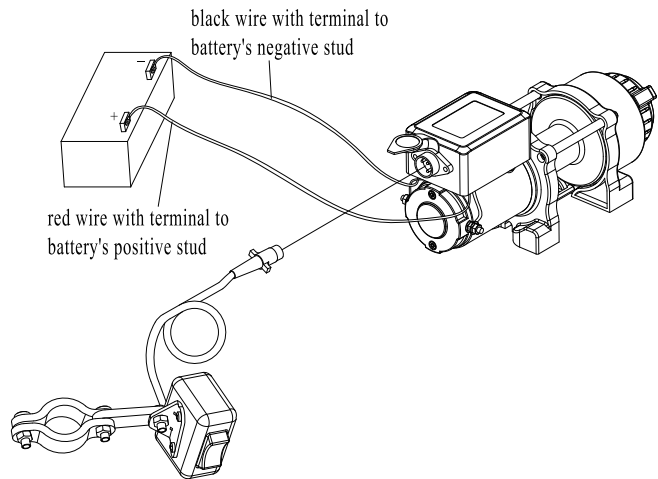


Fig. 3



WARNING Before testing winch operation, be sure to reel off approximately two feet of rope.

TEST DRIVE

1. Double check that all wiring is correct and that there are no exposed terminals that can short to the vehicle frame.
2. Turn the ignition key to the ON position. Check winch for

REMOTE SOCKET MOUNTING - optional

1. Determine the mounting location for the remote socket.
2. Drill three holes using the included dimensions as a guide.
3. Once the remote socket is mounted, route the jacketed green and black leads back to where the solenoid is mounted. Splice the red lead to a key controlled electrical wire on the ATV.

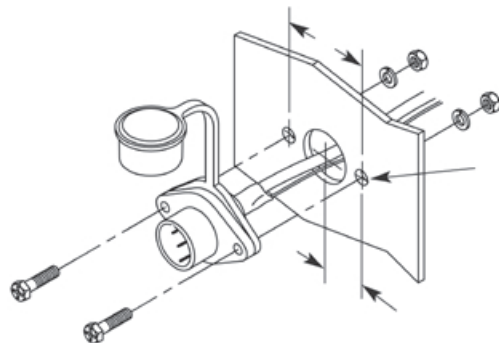


Fig. 4 - Socket Assembly mounts from the outside, inward.

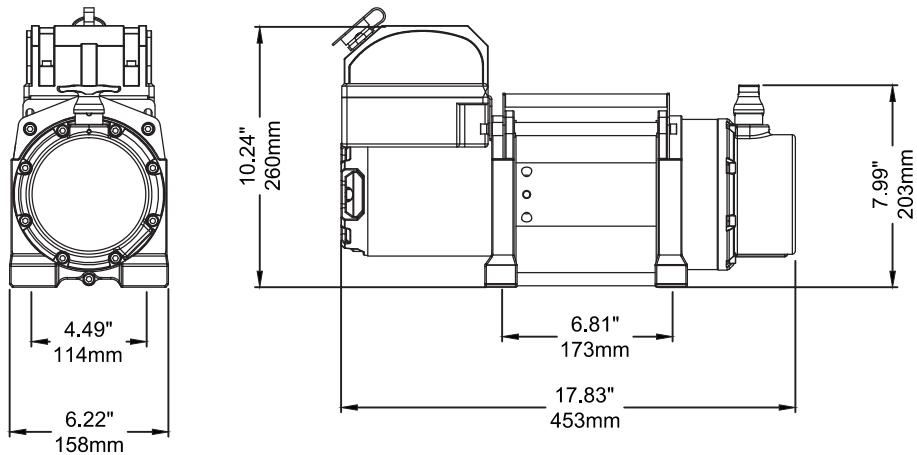
PERFORMANCE SPECIFICATIONS

8000lb Specifications	
Rated line pull	8000lbs(3629kgs)
Motor(Series wound)	DC 12V: 4.3hp/3.3kW
Gear train	3 stage planetary
Gear ratio	196:1
Clutch	Pull and turn
Braking action	Mechanical, Automatic load holding
Fairlead	4-way roller fairlead / Aluminum hawse
Wire rope	5/16"×55.7'(8.1mm×17m)
Synthetic rope	5/16"×55.7'(8.1mm×17m)
Drum size	2.48"×5.5"(63mm×142mm)
Dimensions	17.83"×6.22"×10.24"(453mm×158mm×260mm)
Bolt pattern	6.8"×4.5"(173mm×114.3mm)
Net weight (Wire rope)	70.5lbs(32kgs)
Net weight (Synthetic rope)	66lbs(30kgs)

12V DC Line speed and motor current (first layer)						
Line pull	lbs	0	2000	4000	6000	8000
	kgs	0	908	1816	2721	3629
Line speed	fpm	14.7	9.8	8.5	6.5	5.2
	mpm	3.4	3.0	2.6	2.0	1.9
Motor current	amps	25	80	135	198	260

8000lb Line pull and cable capacity					
Layer of cable		1	2	3	4
Rated line pull per layer	lbs	8000	6515	5496	4752
	kgs	3629	2958	2495	2157
Cable capacity per layer	ft	12.1	27.5	45.6	55.7
	m	3.7	8.4	13.9	17

DIMENSIONS



FLEX8000

DESCRIPTION

QUANTITY

Winch assembly with wire rope	1
Hook and Handsaver	1
Remote Switch	1
Roller Fairlead	1
Mounting Hardware	1

INSTALLING THE WINCH

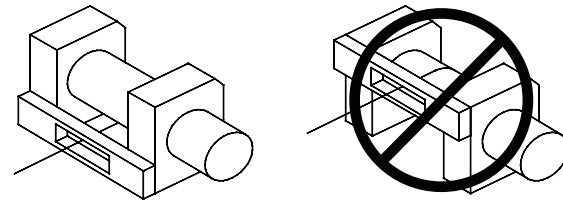
⚠ DANGER *Be aware that vehicle batteries contain gases that are flammable and can explode violently. The following precautions should be taken before making battery connection:*

- * Wear eye protection.
- * Remove all jewelry.
- * Follow wiring diagram included in installation instructions.
- * Keep spectators away.

In the event of a battery explosion, acid should be flushed away immediately. Seek medical help as soon as possible.

1. Mount the winch to a firm base. Be sure that your structural support is strong enough to support the rated pulling forces of the winch.
2. While mounting attitude is at your discretion, always remember that your winch is to be operated with the rope in an under wound orientation on the rope drum. Your winch is designed to ROPE IN and ROPE OUT in one direction. DO NOT attempt to reverse the operation of winch.

Fig. 5



Underwind

Overwind

⚠ CAUTION *Do not weld or machine any part of the winch. Machining or welding may weaken the structural integrity of the winch and will void your warranty.*

⚠ CAUTION *Do not mount the winch inverted (base upward) or put the winch mounting hardware in a direct tension condition. In all installations, the unit must be mounted so that the rope feeds through the hawse or roller fairlead on the front of the winch and does not rub across housings.*

WIRE ROPE

1. The life of the wire rope is directly related to the care it receives. The wire rope on a new winch, and any replacement ropes, should be respooled under a minimum of 100 lb. load before using the winch. Failure to do this will result in wire rope damage. Inspect wire rope before use. Mashed, pinched, frayed or kinked areas severely reduce the load-carrying capability. Replace damaged wire rope.

2. Prevent kinks before they occur.

(a.) This is the start of a kink. At this time, the wire rope should be straightened.

(b.) The wire rope was pulled and the loop has tightened into a kink. The rope is now permanently damaged and should not be used.

(c.) The result of kinking is that each strand pulls a different amount causing the strands under greatest tension to break and reduce load capacity of the wire rope.

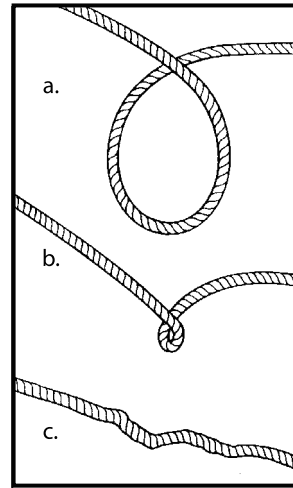


Fig.6

SYNTHETIC ROPE



DANGER *Sharp edges and abrasion will significantly shorten rope life. Inspect entire length of rope and protective sleeve before each use. Any rope that exhibits cut strands, fused or melted fibers, inconsistent stiffness over the length of the rope, chemical contamination, flat areas or lumps that are not eliminated by flexing the rope, or is otherwise visibly damaged must be replaced immediately. Failure to do so can result in rope failure and personal injury.*



- Do not knot or tie the rope to secure to a load, or to repair a broken rope.
- Do not expose the rope to heat sources or chemicals.
- Do not pull the rope over rough surfaces or sharp edges.
- Do not pull the rope around non-rotating sheaves or rollers.

1. Synthetic Winch Rope Installation:

Pull the rope through hole, (enough line so it reached opposite end of drum). Position inserted line lengthwise down the drum as shown. Using duct tape or similar, secure end of line to drum, taping around drum. Setscrew is not used in this installation. You are ready to wind on the line. (Be sure that line is wound on from underneath drum. Line should come off drum on bottom).

- This is the start of a kink. Wire rope should be straightened.
 - Wire rope was pulled and loop has tightened into a kink. wire rope is now permanently damaged and must be replaced.
 - Result of kinking is that each strand pulls a different amount causing strands under greatest tension to break and reduce load capacity of wire rope. The wire rope must be replaced.
8. Equipping winch with a roller fairlead will substantially reduce wear on wire rope during angle pulls, because rollers eliminate heavy rubbing and abrasion to wire rope. (See Figure 9).

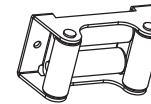


Figure 9

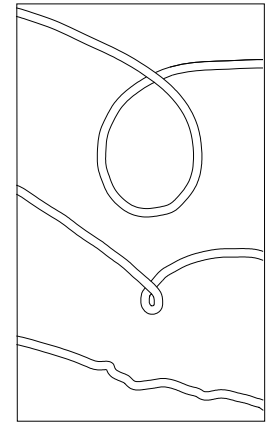


Figure 8

NOTE :

- Never winch with your vehicle in gear or in park, which would damage your vehicle's transmission.
- Never wrap the cable around the object and hook onto the cable itself. This can cause damage to the object being pulled, and kink or fray the cable.
- Keep hands, clothing, hair and jewellery clear of the drum area and cable when winching.
- Never use the winch if the cable is frayed, kinked or damaged.
- Never allow anyone to stand near the cable, or in line with the cable behind the winch while it is under power. If the cable should slip or brake, it can suddenly whip back towards the winch, causing a hazard for anyone in the area. Always stand well to the side while winding.
- Don't leave the switch plugged in when winch is not in use.

CHECK THE WINCH CAREFULLY AND THOROUGHLY BEFORE OPERATING!

Maintenance

It is highly recommended and that the winch be used regularly (once a month). Simply power the cable out 10m, free spool 5m and then power back in. This will keep all components in good working condition so that the winch can be relied on when needed. Contact your authorized outlet for technical assistance and repairs.

NOTE:

The safety precautions and instructions discussed in this manual can't cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors, which cannot be built into this product, but must be applied by the operator.

NOTICE:

- Do not use winch as a hoist, do not use for transportation of people.
- Do not operate and spool under full load over one minute continuously.
- While motor is over heating, please stop for a while to cool down.
- Limited lifetime warranty.

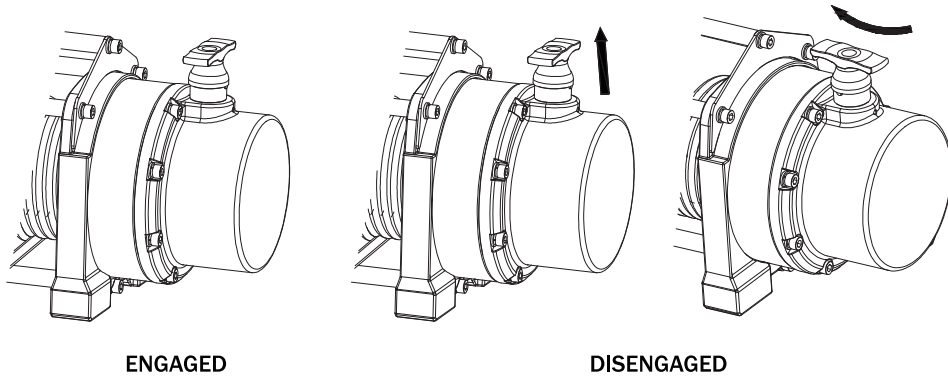


Figure 7

CAUTION Lever must be in the engaged position and locked before winching.

3. Your winch incorporates a proportional friction-type brake. After winching in a load, this mechanism holds the load, up to the rated capacity of the winch. While powering out the load, the winch controls the rate of speed by applying the brake in proportion to the amount of the load in the winch cable. This results in heavier loads powering-out more slowly than lighter loads. Similar to the friction-type brakes in your automobile which can generate heat if used for a long period of time, the winch brake can generate heat if used to power-out a load for a long period of time. To ensure optimum winch performance. Always limit powering out a load for 1 minute and allow the brake to cool for 15 minutes before continuing to winch. Under normal use, the brake mechanism should not require any adjustment. Should the brake fail to hold a load or maintain a constant rate of speed during power-out operation, the brake pad may be worn and require replacement.
4. Keep a tightly wound wire rope drum. Do not allow windings on drum to become loosely wound. A loosely wound drum allows wire rope under load to work its way down into layers of wire rope on drum. When this occurs, wire rope may become wedged within body of windings causing damage to wire rope. To prevent this, keep wire rope tightly and evenly wound on drum at all times. Rewind rope under tension after each use. One method is to attach the hook to a stationary object at top of a small hill or incline and winch your vehicle up incline.
5. Do not allow motor to overheat. Winch is designed for intermittent use only. During long or heavy pulls motor will get hot, with internal parts hotter than case. To check motor temperature, stop winching and carefully touch end of motor. If uncomfortably warm, allow motor to cool before continuing. Keep engine running to recharge battery during this break.
6. The pull required to start a load moving is often much greater than pull to keep it moving. Avoid stopping and starting during a pull except when required by motor temperature.
7. Prevent kinks before they occur. (see Figure 8).



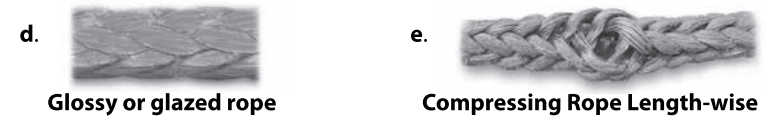
Fig.7

2. Synthetic Winch Rope Inspection:

When rope is new, it has a smooth finish (a.). When the rope is first used, the outer filaments of the rope will roughen and give the rope a slightly, "fuzzy" appearance (b.). This condition of the outer filaments creates a rougher rope surface and actually helps to protect the fibers underneath. Rope must be replaced when approximately 25% of the visible outer fibers exhibit abrasion (c.).



Examine both inner and outer fibers. Open the strands of the rope by compressing the rope length-wise (e.) and look for powdered fiber and abrasion - this is a sign of internal wear of the rope. Estimate internal fiber loss to include in your determination of overall abrasion fiber loss of the rope.



Glossy or glazed areas in the rope (d.) can be the result of 2 different conditions. The most common form of glossing or glazing is caused by compression, which can occur when the rope is wound on the winch drum, or through a pulley block. Compressing the rope length-wise (e.) will generally make the rope more pliable and begin to resemble normal rope. If the glazed section remains hardened, this can be a sign of heat damage, and the rope must be replaced.

Tips for prolonging the life of your synthetic rope:

It is your responsibility to exercise proper care to prolong the life of your synthetic winch rope.

- 1.) **Minimize rope abrasion.** Use the movable abrasion sleeve whenever the rope comes in contact with rocks or other objects. Slide the sleeve up and down the rope as required. Abrasion will reduce rope life.
- 2.) **Keep the rope clean.** Allowing dirt and debris to enter the rope will lead to abrasion of the rope.
- 3.) **Avoid sharp bends.** A sharp bend in the rope decreases its strength substantially under load and may cause rope damage or failure.

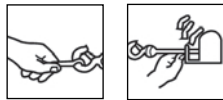
3. When it is necessary to respool the rope under no load after use, hold the remote switch lead in one hand and the rope in the other. Start from as far from the vehicle as the remote switch will allow, activate the switch, walk in several feet of rope and release switch. Repeat the process. Always release the switch before your hand comes within four feet from the fairlead (the physical opening through which the rope passes).

4. Be sure the rope is distributed evenly and tightly on the drum. A loosely wound drum allows the rope to work its way down into the layers of rope on the drum and become wedged.

5. It is not advisable to grease or oil the wire rope due to dirt contamination that will reduce the wire rope life.

PREPARING THE WINCH

⚠ DANGER *Wear heavy leather gloves when handling rope. Do not let the rope slip through your hands, even with gloves on. When handling the hook, always use handsaver. Never put your fingers into the hook. (Fig.8) Placing finger(s) in hook could result in injury.*



WRONG

Fig. 8

1. When anchoring the pulling vehicle, set the parking brake and block or chock the wheels. Keep the vehicle's foot brake depressed and place the automatic or manual transmission in neutral.

⚠ WARNING *Inspect switch and wiring for cracks, pinched spots, frayed, or loose connections. A damaged, shorted lead could cause the winch to run as soon as it is plugged in.*

2. When using the remote switch inside a vehicle, always pass it through a window to avoid pinching the wire in the door.

ELECTIC ALL END WIRE ATTACHMENT

1. Disconnect vehicle battery.
2. The battery lead wires should be routed to the battery. To ensure against insulation abrasion and/or cutting, apply several layers of electric tape where wiring may come in contact with sharp metal parts of vehicle. All connections to motor, solenoids and battery ground require good, clean, tight connections. Connect the red lead to the battery (+) and the black lead to the battery (-).
3. The relay may be mounted remotely as space requires. If assembly is located more than 27' (.7m) from winch, use a larger diameter wire.
4. Reconnect the battery positive then negative terminal. Rotate the clutch lever to the "disengaged" position. Pull several feet of cable off the drum. Return the clutch lever back to the "Engaged" position. Plug in remote switch assembly. Switch the hand control to "Rope-out" position. Pull trigger momentarily to check cable drum rotation direction. If drum rotates in the wrong direction, recheck your wiring.

⚠ CAUTION Double check wiring. Incorrect wiring could result in motor burnout and/or personal injury.

OPERATION

⚠ CAUTION Switch assembly must be kept free of dirt and moisture to ensure safe operation.

1. The handheld switch activates power to the winch motor. To connect the control, remove the cover on the receptacle and insert the plug end of remote switch. The plug on the 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, press the rocker in the other direction. (see Figure 6)

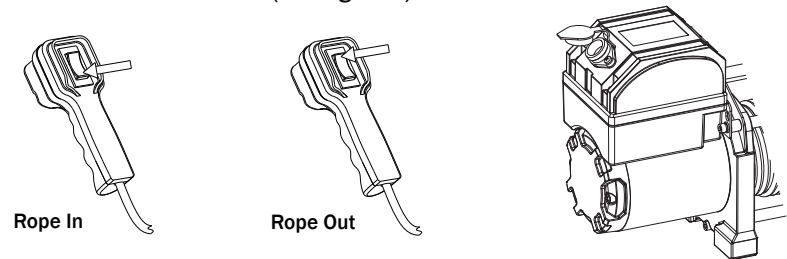


Figure 6

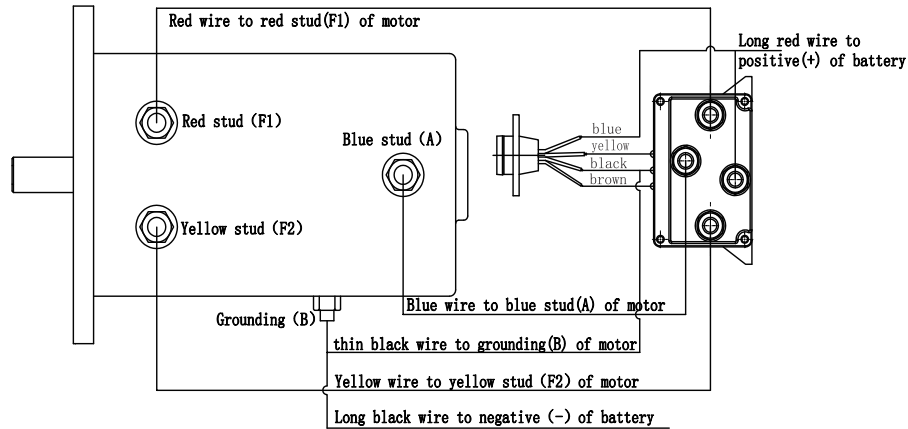
2. PULLING OUT THE WIRE ROPE

The wire rope has been installed on winch under minimal load at factory. It must be re-spooled onto the drum under load so the outer layers will not draw down into the inner layers, causing damage to cable.

- a) Pull and rotate the clutch lever to the, "Disengaged" position as shown in Figure 7. If there is a load on the wire rope, the clutch lever may not turn easily. **DO NOT FORCE THE CLUTCH LEVER.** Release tension on the wire rope by jogging out some of the wire rope, then try releasing the clutch.
- b) Pull out the wire rope and secure it to anchor or load.
- c) Check that there are at least five(5) turns of wire rope or eight(8) turns of synthetic rope left on the drum.
- d) Re-engage the drum by rotating the clutch lever to the, "Engaged" position(see Figure 7)

For normal self-recovery work, your existing electrical system is adequate. A full charged battery and proper connections are essential. Run the vehicle engine during winching operation to keep battery charged. Pay close attention to proper electrical connection as follows:

NOTE: For best operation, battery with 440 cold cranking ampere capacity and a 60 amp alternator are the minimum recommended power source. Have the engine running when using the winch to avoid flattening the battery. If winch is in heavy use, an auxiliary battery and heavy duty alternator with battery isolator are recommended.



1. Red wire to connect the red stud(F1) of the motor and terminal of the relay.
2. Yellow wire to connect the yellow stud(F2) of the motor and terminal of the relay..
3. Blue wire to connect the blue stud(A) of the motor and terminal of the relay.
4. Thin black wire connecting to grounding (B) of the motor.
5. Long black wire, one terminal connecting to the grounding (B) of the motor, and the other terminal connecting to negative (-) terminal of battery.
6. Long red wire connecting to positive (+) terminal of battery.

NOTE:

1. Your battery must be kept in good condition.
2. Be sure battery cables are not drawn across any surfaces, which could possibly damage them.
3. Corrosion on electrical connections will reduce performance or may cause a short-circuit.
4. Clean all connections especially in remote control switch and receptacle.
5. In salty environments use a silicone sealer to protect from corrosion.

WINCHING



DANGER Never touch the rope or hook while they are in tension or under load. Even at rest, the winch may have the rope in tension. Never guide a rope under tension onto the drum with your hands (see Fig.9).

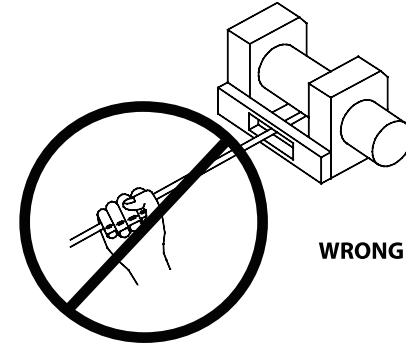
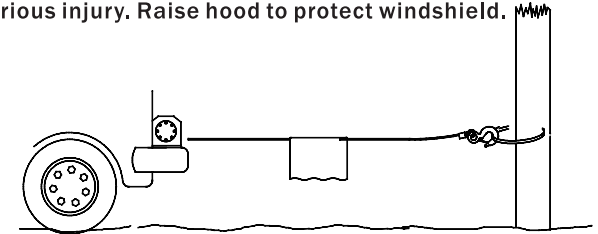


Fig.9

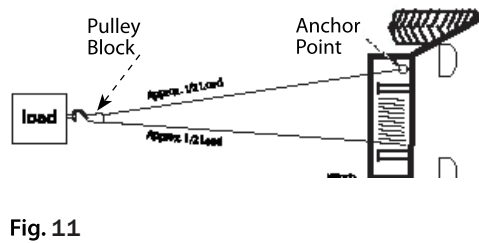
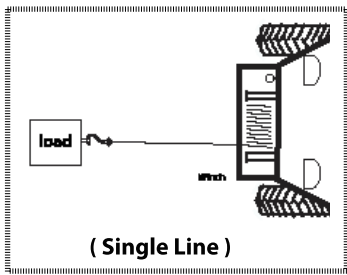
1. Winch with at least five wraps of wire rope or at least eight wraps of synthetic rope around the winch drum. With fewer wraps the rope could pull loose from the drum under load.
2. When pulling a load, place a blanket, jacket or tarpaulin over the wire rope near the hook end (see Fig.10). This will slow the snap back of a broken wire rope and help to prevent serious injury. Raise hood to protect windshield.

Fig.10



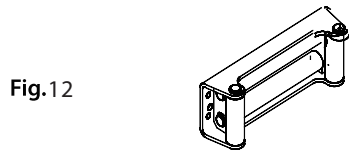
WARNING Note the winch's rated capacity and do not exceed it.

3. Double line with a pulley block (see Fig.11) to reduce the load on the winch, rope and battery. Double lining will also reduce winch line speed. Be sure all equipment used meets the winch's maximum line pull rating. When double-lining, pulley blocks should be rated to a minimum of two times the winch's line pull rating.

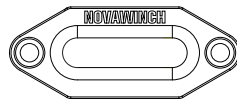


4. If you install a tow hook for double lining, it should be attached to the vehicle frame.

5. Equipping the winch with a fairlead will reduce wear on the rope during angle pulls (see Fig.12).The rollers reduce rubbing and abrasion to the rope.



Roller Fairlead



Hawse Fairlead

6. Pull as straight as possible to reduce the buildup of rope on one end of the drum.

7. The vehicle's engine should be running during winching operation. If considerable winching is performed with the engine off, the battery may be too weak to restart the engine.

CAUTION Use a pulley block to avoid winching at sharp angles. Uneven layering will cause serious damage to the winch and rope. It can be corrected by securing load, spooling out the rope and repositioning it to the opposite end of the drum.

DANGER Do not disengage clutch under load. If your winch is equipped with a free spool clutch, be certain that there is no tension on the rope when you disengage the clutch. Before winching a load, be sure the clutch is fully engaged.

CAUTION Use the winch to move the load. Do not attempt to assist the winch by moving the vehicle. The combination of the winch and vehicle pulling could overload the rope and the load could break the winch.

INSTALLATION

WINCH INSTALLATION

- a) The winch is to be mounted into a steel mounting frame using the 4 point foot mounting system in either a horizontal or vertical plane.

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

c) Before commencing installation ensure the mounting facility being used is capable of withstanding the winches rated capacity.
- Should you wish to manufacture your own mounting plate the dimensions below will assist. A steel mount plate 6mm thick is recommended. Fasteners should be steel high tensile grade 5 or better. A poorly designed mount may void warranty.
- The winch should be secured to the mounting with Grade 8.8 M10 bolts and spring washers provided (see Figure 4).

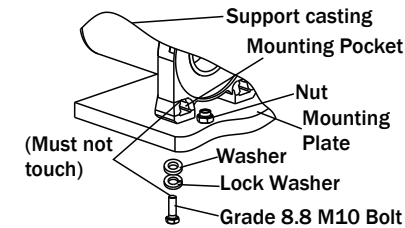


Figure 4

CAUTION Do not substitute any strength weaker than Grade 8.8 Grade marking is found on the bolt head and is pictured in Figure 5.

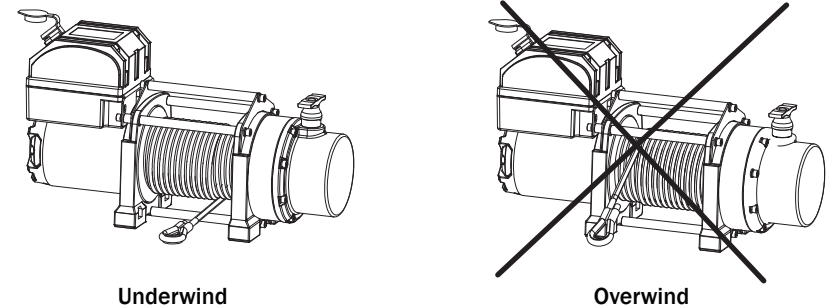


Figure 5

ELECTRICAL INSTALLATION

Winch operates on standard automotive 12VDC or 24VDC only.

CAUTION Never connect winch to 110V AC house current or 220V mains as solenoid burnout or fatal shock may occur.

16. After operation, release the load immediately. Do not allow the cable to tighten anymore.
17. Always stand clear of wire rope, hook and winch.
18. Inspect winch, wire rope, hooks and other accessories frequently. A frayed wire rope with broken strands should be replaced at once. Use heavy leather gloves when handling wire rope. Do not let wire rope slide through your hand. Inspect wire rope before use. Mashed, pinched, frayed or kinked areas severely reduce the load carrying capability. You should replace damaged wire rope. The replacement ropes must be re-spooled under a load of about 100lbs.
19. You should disconnect the clutch first, then use hand-saver strap to hitch the hook to pull the wire rope. Never pull wire rope using your finger and do not put your finger through the hook.
20. Keep tension on cable to re-spool the cable on the drum tightly after operating.
21. Do not operate winch when under the influence of drugs, alcohol, or medication. If there is something wrong, you should cut the battery at once, then check it carefully.
22. Wear eye protection and insulated work clothes, slip-proof shoes, work cap (to keep hair away from winch), and thick leather gloves. You should remove all jewelry.
23. Do not machine or alter any part of the winch.
24. Take good care of the winch when it is not in use.

▲ WARNING Unplug remote control before working in or around fairlead or wire rope drum (danger zone). Never tuck hand control under arm or allow anyone to hold it when in danger zone so that hand control cannot be accidentally activated.

▲ WARNING Never work on or around fairlead or winch when drum is under load.

▲ CAUTION Do not use winch to hold loads in place. Use other means of securing loads such as tie down straps.



25. It is recommended that if you are within four feet of the winch, do not hold the wire rope and the remote controller at the same time.
26. Mount the winch to a firm base. Be sure that your structural support is strong enough to withstand the rated pulling strength of the winch.
27. While mounting orientation is at your discretion, always remember that your winch is to be operated with the wire rope in an under-wound orientation on the wire rope drum. Your winch is designed to rope in and rope out in one direction. Do not attempt to reverse the operation of winch.

▲ CAUTION Do not weld or machine any part of the winch. Machining or welding may weaken the structural integrity of the winch and will void your warranty.

▲ DANGER Be aware that vehicle batteries contain gases that are flammable and can explode violently. The following precautions should be taken before making battery connection:

- Wear eye protection;
 - Remove all jewelry;
 - Follow wiring diagram included in installation instruction;
 - Keep Spectators away.
- In the event of a battery explosion acid should be flushed away immediately. Seek Medical help as soon as possible.

▲ CAUTION Use of any other accessories or attachment other than those recommended in the instruction manual may result in personal injury or property damage and could void warranty. Do not machine alterations may or weld any part of winch. Such weaken structural integrity of winch.

▲ DANGER *Never rely on the winch to hold a load in place. None of our winches are designed for load-holding applications and may unwind or fall due to shock loading as the load is being transported. The load should be secured by other means, and the winch hook detached from the load.*

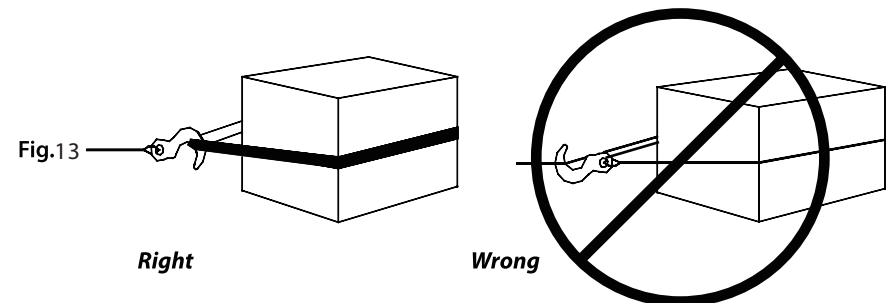


RIGGING

▲ WARNING *Take your time when rigging and include a reasonable factor for safety. Improper rigging can result in damage to vehicle and equipment. It can also cause injury.*

1. Never handle the rope or rigging while anyone else is at the control switch.

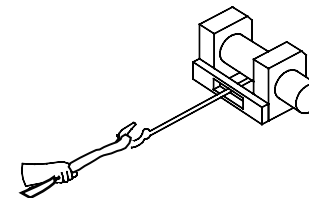
▲ CAUTION *Use a nylon sling when attaching the rope to an anchor point. Do not attach the hook back on to the rope. Doing so can cause the rope to break.*



▲ WARNING *Always use the handsaver (see Fig. 14). Do not hold the hook with your hand. This is important not only when reeling rope in but also when removing rope from the winch under power.*



Fig. 14



2. Run the winch intermittently to take up rope slack. When using a pulley block, be sure the rope is running properly in all pulley rollers before applying a load.

WARNING Do not re-engage clutch while winch is running.

WARNING Always operate winch with an unobstructed view of the winching operation. Never obscure warning and instruction labels.

3. Figure (15) illustrates the most commonly used rigging. A nylon sling is used to protect the tree when it is used as an anchor, and the rope is attached to the sling. The use of a chain or rope is not recommended due to the damage it could cause to the tree.



Fig. 15

4. Figure (16) illustrates a method of rigging used to obtain a mechanical advantage. The use of a pulley block will almost double pulling capacity.

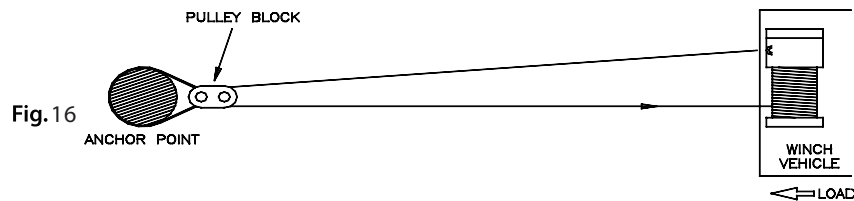


Fig. 16

5. Figure (17) illustrates the use of a pulley block to change the direction of the pull. Mechanical advantage can be obtained by attaching a pulley block to the nylon sling with a shackle and running the rope to the anchor point.

FLEX8000

WARNING Never connect DC powered winches to AC current. Motor damage or fatal shock may occur.

1. Never lift people or hoist loads over people. Do not lift items vertically. The winch was designed for ground use only.
2. Never overload. Be sure all equipment used meets the winch's maximum line pull rating. We recommend using the pulley block option supplied to double line the wire rope (see Figure 1). Double line with a pulley block to reduce the load on the winch, wire rope and battery. When double-lining, pulley blocks should be rated to a minimum of two times the winch's line pull rating.

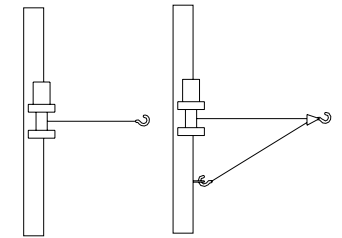


Figure 1

3. The cable may break before the winch stalls. For heavy loads, use a pulley block to reduce the load on the cable.
4. Never operate winch less than 5 turns of wire rope around the winch drum since the wire rope end may not withstand full load.
5. Avoid continuous pulls from extreme angles because this will cause the wire rope to pile up on one end of the drum (see figure 2) and damage the wire rope.
6. Be aware that the winch's line pull capacity is the maximum line pull of the first layer. That can only be reached by first layer cable on the winch. Never operate a winch pulling a load that is at or over the rated capacity.

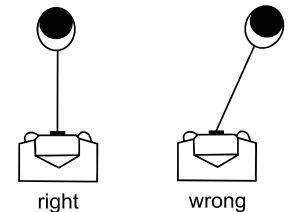


Figure 2

7. Never hook the wire rope back to itself because it could damage the wire rope. Use tree trunk saver (see Figure 3)
8. Be sure the winch is mounted hard on the vehicle or bracket before operation.
9. Before moving a load, inspect wire rope. Prevent kinks and uneven wire layer before they occur. Loosened wire rope must be properly tensioned under a load of about 100lbs.

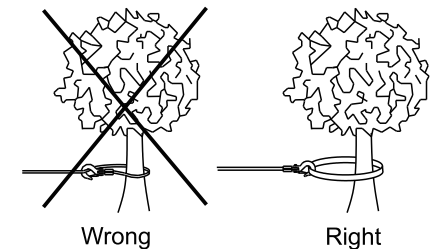


Figure 3

10. It is important to lay a blanket or jacket over the wire rope near the hook end when pulling a load (see figure 3). This will slow the snap back of a broken wire rope and help to prevent serious injury and damage.
11. Do not move your vehicle to assist the winch in pulling the load. It will be easy to overload and cause wire rope damage.
12. Beware of the danger zone. Keep away from the danger zone during operation. The danger zone is the area of the winch drum, the fairlead (if fitted), the wire rope, the pulley block (if used), the hook and the motor.
13. Never approach or span the wire rope when the winch is under load.
14. When using your winch to move a load, place the vehicle transmission in neutral, set vehicle brake, and chock all wheels. The vehicle engine should be running during winch operation so that the battery has full electricity. Never use winch under circumstance of lacking voltage.
15. Never disconnect free spool clutch when there is a load on the winch.

TROUBLE SHOOTING

Symptom	Possible Cause	Remedy
Winch will not operate	Cut circuit	Check battery lead
	Weak battery	Recharge or replace battery (at least 650CCA)
	Bad connection of wirings	Reconnect tightly
	Damaged contactor	Replace contactor
	Cut circuit on switch	Replace switch
	Damaged motor or worn brushes	Replace motor or brushes
	Faulty motor wirings	Replace wirings
Motor runs in only one direction	Broken wirings or bad connections	Reconnect or replace wirings
	Damaged or stuck contactor	Replace contactor
	Switch inoperative	Replace switch
	Faulty wiring	Replace wiring
Drum will not free spool	Clutch does not disengage	Engage clutch
	Damaged 1st stage shaft	Replace 1st stage shaft
	Damaged brake	Replace brake
	Damaged motor output shaft	Replace motor output shaft
Brake fails to operate	The gear train is mechanically binding up	Check to insure the winch is mounted on a flat, rigid surface
	Damaged brake	Replace brake
	Damaged gear box	Replace gear box
Brake jam	Proportional mechanism is damaged or worn	Replace
Damaged gear box	Hit by certain exterior force	Replace the damaged components
	Damaged gear train	Replace the damaged components
	Over load operation	Stop the winch operation and reduce a load
Motor runs extremely hot	Long period of operation	Allow to cool
	Damaged motor	Replace or repair motor
	Damaged or inoperative brake	Replace or repair brake

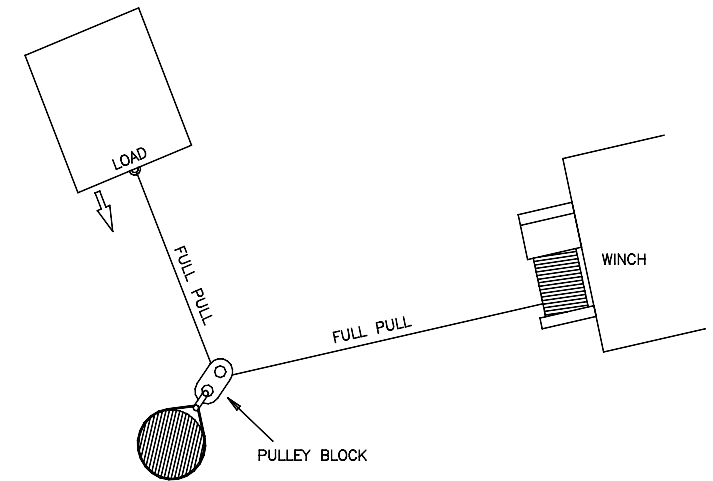


Fig. 17

CAUTION *Equipment such as tackle, hooks pulley blocks, straps, etc., should be properly sized and rated and should be inspected periodically for damage that could reduce their strength.*

MOUNTING YOUR WINCH

MOUNTING KITS

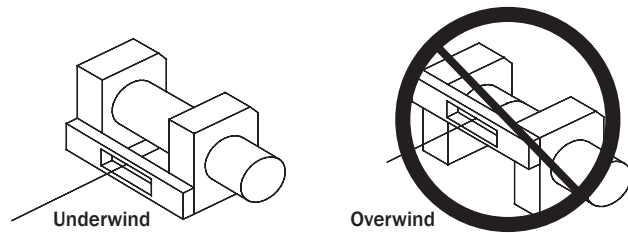
NOVAWINCH RECOMMENDS THE USE OF A MOUNT KIT FOR SECURE MOUNTING TO YOUR VEHICLE. ATV Winch mounting kits are available from your Novawinch dealer for nearly all ATV applications. For information on available kits, contact your Novawinch product dealer, or go to www.Novawinch.net for the most current list of kits.

If you choose not to purchase a mounting kit, your Novawinch needs to be attached to a secure and flat mounting location. Note that your winch may not be able to be operated safely without some equipment included in the kit. If you choose not to purchase a mounting kit, contact Novawinch for recommended accessories and the name of a dealer near you.

Detailed mounting instructions for your specific vehicle are provided with each mounting kit. Read and follow directions carefully.

CAUTION *This winch must be mounted with the rope in the under wound direction (Fig. 18) Improper mounting could damage your winch and void your warranty.*

Fig. 18



NOTE: It is possible and not uncommon or discouraged to mount your Novawinch in attitudes other than those shown in this installation manual. While mounting attitude is at your discretion, always remember that your winch is to be operated with the rope in an under wound orientation on the rope drum (Fig. 22) Your winch is designed to ROPE IN and ROPE OUT in one direction. Do not attempt to reverse the operation of your winch.

CAUTION Do not mount winch inverted, (base upward) or put the winch mounting hardware in direct tension condition. In all installations, the unit must be mounted so that the rope feeds through the hawse or roller fairlead on the front of the winch and does not rub across housings.

For winch capacities, a complete parts list and an exploded diagram of your specific Novawinch, refer to the Technical Data Sheet included in this package.

For instructions on safe winch operation and tips for prolonging the life of your winch, refer to the Safety precautions included in this package.

Note: When installing a winch, your installation may vary slightly from the instructions and diagrams that follow, depending upon your vehicle, winch, mounting kit or structural support.

WARNING Before you start your Novawinch installation, disconnect the vehicle ground and positive leads from the battery.

MINIMUM ELECTRICAL REQUIREMENTS

Refer to specifications for your winch model in the Technical Data Manual in this age. Be sure to select the appropriate battery or power supply to handle this winch. If the winch is in heavy use, an auxiliary battery and heavy duty alternator are recommended.

INSTALLATION PROCEDURE

Step(1)

Install mounting kit or prepare a flat, secure mounting location for winch to make sure the motor, drum, and gearbox are aligned correctly. Carefully follow the instructions included with the mounting kit.

WARNING Be sure structural support is strong enough to support rated capacity of the winch.

Rope	35	Steel rope (Synthetic rope)	1
	36	Hook	1
	37	Hand saver	1
Fairlead	38	Roller Fairlead	1
	(49)	(Hawse Fairlead)	1
Mounting plate	39	Mounting plate	1
The thumb switch	41	Thumb switch	1
The triangle plug	42	Triangle plug	1
cables	43	Cable set	1
Remote control	44	Remote control	1
Circuit breaker	45	Circuit breaker	1
	46	Circuit breaker cover	1
Hardware set	47	Screws and nuts	1
Control box	40	Solenoid	1
	48	Control box cover	1

FLEX 5000-Parts list

	No.	Description	Qty
Motor Assembly	1	Motor Assembly	1
	2	"Hexagon socket cap screws M5×20"	3
	3	Drum barrel (Φ70×Φ62×6.9)	2
	4	X-ring (PA25/Φ65×73×4)	2
	5	Coupling I	1
	6	"Rectangular spring"	1
	7	Coupling	1
	8	Spring Φ 4.8×18×0.8	1
Drum Assembly	9	Hexagonal drive shaft	1
	10	Welded drum	3
	11	Tie bar	1
Gearbox Assembly	12	Gear box cap	1
	13	O ring (Φ100×1.9)	1
	14	anti-wear gasket III	1
	15	3rd stage planetary gear assembly	1
	16	2nd stage gear ring	1
	17	2nd stage planetary gear assembly	1
	18	1st stage planetary gear assembly	1
	19	1st stage sun gear	1
	20	Deep groove ball bearing	1
	21	Gear box	1
	22	hexagon socket head cap screws M5×25	3
	23	Cross recessed countersunk head tapping screws ST3.5×12	1
	24	"Clutch cam"	1
	25	Clutch lever	1
	26	O shape sealing ring Φ 4.5×Φ 1.5	3
	27	Clutch soulplate	1
	28	Clutch spring	1
	29	Clutch handle	1
	30	Clutch spring	1
	31	Φ 5/flat washer	1
	32	Cross recess pan head screw M5×10	1
	33	Elastic cylindrical pin	4
34	Square nut	4	

NOTE: If you choose not to use a mounting kit, you will need to drill holes in the structural support. Be sure that your structural support is at least 3/16" (5mm) thick.

▲ WARNING *If different length bolts, nuts, washers and other hardware are required for your installation, always use hardware that equals or exceeds the strength grade of the supplied hardware. In no circumstances should the end of the mounting bolts touch the inside surface of the casting mount pockets.*

Step(2)

Position the winch over the holes in the mounting kit or structural support.

▲ WARNING *As you position the winch, make sure that the rope winds in the proper rotation on the drum. Your winch is intended to operate in one direction only. Failure to operate the winch in the proper direction can cause the winch brake (if equipped) to operate improperly, and/or cause the winch to fall.*

▲ CAUTION *Do not weld or machine any part of the winch. Machining or welding may weaken the structural integrity of the winch and will void your warranty.*

Technical Data Sheet

5000lb Specifications	
Rated line pull	5000lbs(2268kgs)
Motor(Series wound)	DC 12V: 3.86hp/2.9kW
	DC 24V: 3.4hp/2.6kW
Gearing Ratio	191:1
Gearing Train	3 stage planetary gear
Clutch	Sliding ring gear
Braking Action	Mechanical, Automatic load holding
Fairlead	4-way roller fairlead
Wire Rope	15/64" x 55.7' (φ 6.0mm x 1.7m)
Drum Size	2.0"×4.9"(50mm×122mm)
Dimensions	(DC 12V) 15.9"×4.53"×6.34"(404mm×115mm×161mm)
	(DC 24V) 15.82"×4.53"×6.41"(402mm×115mm×163mm)
Bolt Pattern	6.6"×3"(168mm×76mm)

12V DC Line speed and motor current (first layer)

Line pull		Line speed		Motor current
Lbs	Kgs	FPM	MPM	Amps
0	0	15.0	4.6	32
5000	2268	4.2	1.3	225

24V DC Line speed and motor current (first layer)

Line pull		Line speed		Motor current
Lbs	Kgs	FPM	MPM	Amps
0	0	12.4	3.8	10
5000	2268	4.2	1.3	110

Line pull and cable capacity

Layer of cable	Rated line pull per layer		Cable capacity per layer	
	Lbs	Kgs	Ft	M
1	5000	2268	11.5	3.5
2	4118	1869	25.2	7.7
3	3500	1589	41.9	12.8
4	3043	1382	55.7	17.0

Explosion Drawing with 5000

