



ELECTRIC WINCH

NVT2500 NVT2500i

NVT3500 NVT3500i

NVT4500 NVT4500i

PLEASE READ CAREFULLY BEFORE OPERATE THE WINCH



1689 Xianyuan Road, Jinhua, Zhejiang, China
Tel:0086-579-82262697
Fax:0086-579-82262706
<http://www.nowwinch.net>
E-mail: info@nowvow.net



Nowvow mechanical & electrical Corp., Ltd (Novawinch brand owner) offers a limited lifetime warranty on the mechanical components to authorised distributor & dealer of the winch subject to the following:

Novawinch Limited Lifetime Warranty:

The winch is used for permitted application use only.(expect design for it)

The limited lifetime warranty covers the purchaser of the winch against manufacturing defects in workmanship and materials on all mechanical components.

Mechanical components and associated parts have a lifetime warranty.

Electrical components consisting of solenoids, wiring, remotes, wire connectors and associated parts have a limited two (2) year warranty. Control Box and associated parts have a limited two (2) year warranty. Motor and associated parts have a limited two (2) year warranty

The warranty does not apply to the finish of the winch or components.

The owner will be responsible for removing the winch and returning it to an approved Novawinch authorised distributor or dealer within the warranty period.

All freight or delivery charges from the authorised distributor or dealer must be paid for by the owner of the winch unless specified by an authorised distributor or dealer.

Novawinch will not be liable for any fees, costs or charges associated from the removal or installation of the winch, whether or not the winch is under warranty.

Novawinch will repair or replace any or all of the faulty winch components, after an inspection by an authorised distributor or dealer has determined that some or all parts of the winch are defective hence are deemed to be replaced or fixed under warranty.

Novawinch Warranty Exclusions:

There are certain conditions that make the winch not eligible for warranty claims. The warranty is void if, but not limited to the following:

The winch is used inappropriate applications.

The steel rope and synthetic rope are excluded from this warranty, unless specified otherwise by Novawinch, at the discretion of Novawinch.

The winch is damaged in any way from corrosion or water ingress.

The winch is returned in pieces.

The winch has been modified or disassembled resulting in failure.

Any winch component shows signs of normal wear and tear, damage from an accident, abuse, misuse, collision, overloading, modification, misapplication, improper installation or improper service or maintenance.

The winch was not purchased through the Novawinch Authorised Dealer Network.

****The warranty set forth above is the only warranty. Novawinch reserves the right to change the product design at any time without notice. Where this has happened, Novawinch shall have no obligation to upgrade or otherwise modify any previously manufactured products.***

INTRODUCTION

Thank you for purchasing winches from our company. Please read and understand this Owner's Manual before installing and operating your winch.

The responsibility for safe operation of this winch ultimately rests with you, the operator. Read and understand all safety precautions and operating instructions before installing and operation the winch. Careless operation can result in serious injury and/or property damage.

GENERAL DESCRIPTION

This winch is equipped with a permanent magnet motor and is designed for intermittent duty general use. The winch is used neither in industrial nor for lifting, never can it use for moving people. Improper operating could damage your winch and void your warranty.

Free spool clutch is operated by a pull and turn, which can disengage the gearbox, and wire rope will be pulled out by hand with Hand saver bar.

SAFETY PRECAUTIONS

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 optional supplied to double line the wire rope. (See Fig. 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.

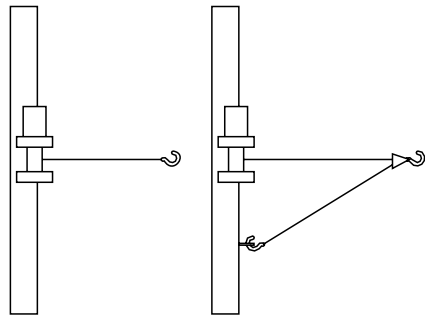


Fig. 1

3. Do not attempt to prolonged pulls at heavy loads. The electric winch is designed for intermittent use only, and should not used in a constant duty application. Never pull for more than one minute or near the rated load. If the winch motor becomes very hot to the touch, stop the winch and let it cool down for several minutes.
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 Fig. 2) and damage the wire rope.

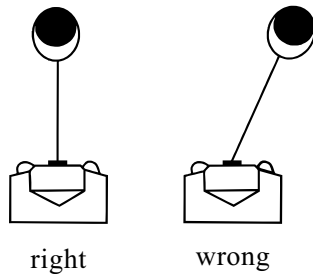


Fig. 2

6. Aware the winch's line pull capacity is the max line pull of the first layer. That is only can reach by first layer. Never operate winch pulling a load reach or even over the capacity.
7. Never hook the wire rope back to itself because it could damage the wire rope. Use tree trunk savers (See fig. 7)

	29	Free spool handle	1	
	30	Spring washer 6	1	
	31	Pan head screws with cross recessed M6×16	1	
Accessories	32	Cable 5.4×17m	1	
		Synthetic rope ϕ 6×15m	1	optional
	33	Hook 1/4"	1	
	34	Hand saver	1	
	35	Pan head screws with cross recessed M5×25	2	NVT4500
	36	Washer 5	2	NVT4500
	37	Female connector harness	1	NVT4500
	38	Water-proof cover	1	NVT4500
	39	Locking nut M5	2	NVT4500
	40	Motor wire set (yellow)	1	NVT4500
	41	Motor wire set (blue)	1	NVT4500
	42	Motor wire set (red)	1	NVT4500
	43	Motor wire set (black)	1	NVT4500
	44	Contactactor	1	NVT4500
	45	Mount plate	1	
	46	Roller fairlead	1	
		Aluminum hawse	1	optional
	47	Remote controller	1	optional
	50	Rocker switch	1	NVT4500
	51	Hardware kit	1	
52	Control box	1	NVT4500i	

NVT4500/4500i-Parts list

	No.	Description	Qty	Remark
Electric Motor Assembly	1	Motor assembly	1	
	3	Drum barrel	1	
	4	X- ring	1	
	5	Coupling I	1	
Coupling Assembly	6	Rectangular spring	1	
	7	Coupling	1	
	11	Spring	1	
	12	Hexagonal drive shaft	1	
Drum Assembly	8	Welded drum	1	
	9	Wire rope connector	1	
Tie Bar Assembly	2	Hexagon socket cap screws M5×16	4	
	10	Tie bar	2	
	48	Hexagon tie bar	1	
	49	Hexagon socket cap screws M4×10	1	
	53	Hexagon socket cap screws M4×16	1	
Gearbox Assembly	3	Drum barrel	1	
	4	X- ring	1	
	13	Plate	1	
	14	Gear ring	1	
	15	O-ring 100×1.9	1	
	16	3rd stage planetary gear assembly	1	
	17	2nd stage planetary gear assembly	1	
	18	1st stage planetary gear assembly	1	
	19	1st stage sun gear	1	
	20	1st & 2nd stage gear ring	1	
	21	Bearing 606-2Z	1	
	22	Clutch cam	1	
	23	O-ring 18×1.9	1	
	24	Clutch gear	1	
	25	Clutch spring	1	
26	Gear housing	1		
27	Retaining ring 15	1		
28	Bearing 6802Z	1		

8. To be sure the winch 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. Loosen wire rope must be properly tensioned under a load about 100 ld.
10. It is important that lay a blanket or jacket over the wire rope near the hook end when puling a loads (See fig. 3). This will slow the snap back of a broken wire rope and help to prevent serious injure and damage.

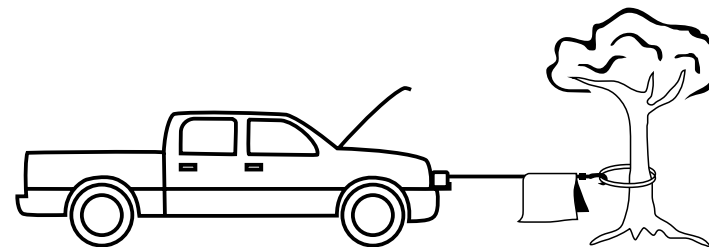


Fig. 3

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 the 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 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 battery has full electricity. Never use the winch under circumstance of lacking voltage.
15. Never disconnect frees pool clutch when there is a load on the winch.
16. After operation, please release the load immediately. Do not tallow the cable tight any more.
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 immediately. Use heavy leather gloves when handling wire rope. Do not let wire rope slide through your hands. Inspect wire rope before use. Mashed, pinched, frayed or kinked areas severely reduce the load-carrying capability. You should replace damaged wire rope. And the replacement ropes must be re-spooled under a load about 100 lb.
19. You should disconnect the clutch first then use the Hand-saver bar to hitch hook to pull wire rope. Never pull wire rope use your finger direct through the hook.
20. To keep stated tensile to re-spool the cable around the drum tightly after operating.
21. Do not operate winch when under the influence of drugs, alcohol or medication. Always stay alert during operation. 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 proofing shoes, work cap, thick leather gloves. Foist all your hair into the work cap, furthermore, you should remove all jewelry.
23. Do not machine or meld any part of the winch.
24. Take good care of your winch when it is out of use.

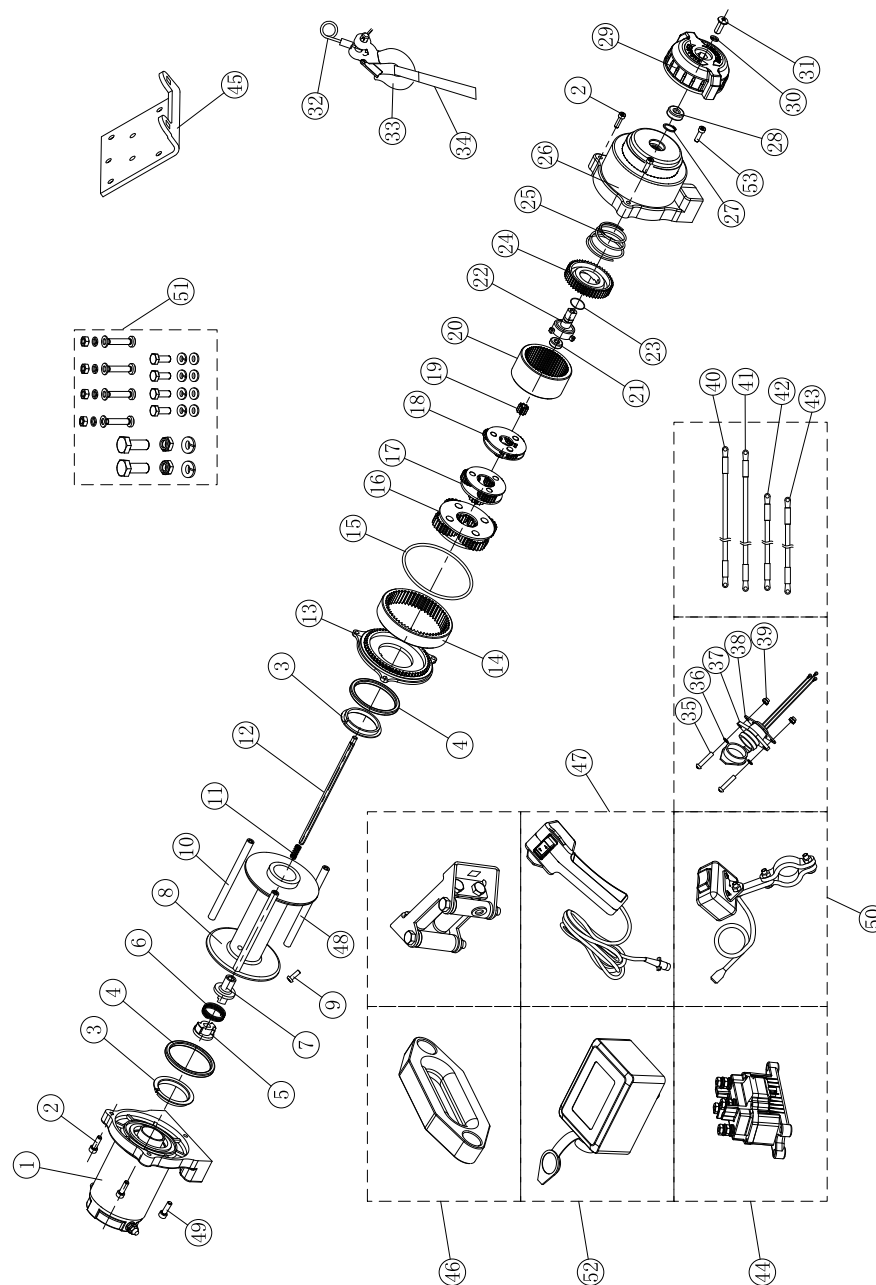
INSTALLATION

Correct installation of your winch is required for proper operation.

1. Mount the winch on the vehicle or other fixed installation by using screw (M8 x 1.25 x 30mm), M8 nut, ϕ 8 flat washer and ϕ 8 spring washer (two sets).

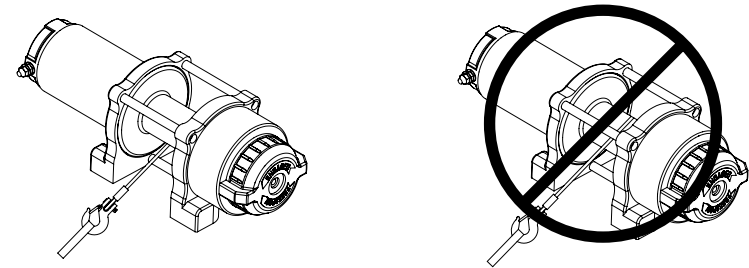
WARNING: This winch must be mounted with the wire rope in an underwind direction. Improper mounting could damage your winch and

NVT4500/4500i Winch Assembly Drawing



	29	Free spool handle	1	
	30	Spring washer 6	1	
	31	Pan head screws with cross recessed M6×16	1	
Accessories	32	Cable 5.0×13.7m	1	
		Synthetic rope ϕ 4.8×15m	1	optional
	33	Hook 1/4"	1	
	34	Hand saver	1	
	35	Pan head screws with cross recessed M5×25	2	NVT3500
	36	Washer 5	2	NVT3500
	37	Female connector harness	1	NVT3500
	38	Water-proof cover	1	NVT3500
	39	Locking nut M5	2	NVT3500
	40	Motor wire set (yellow)	1	NVT3500
	41	Motor wire set (blue)	1	NVT3500
	42	Motor wire set (red)	1	NVT3500
	43	Motor wire set (black)	1	NVT3500
	44	Contactator	1	NVT3500
	45	Mount plate	1	
	46	Roller fairlead	1	
		Aluminum hawse	1	optional
	47	Remote controller	1	optional
	50	Rocker switch	1	NVT3500
	51	Hardware kit	1	
52	Control box	1	NVT3500i	

void your warranty. (See Fig. 4)



Underwind

Overwind

Fig. 4

- Electric wire-connections for the winch without control box :
Route the two couple of lines from the switch to the motor and battery respectively. Connect the red line to the positive (1) terminal and the green (or black) line to the negative (2) terminal of the battery. (See Fig. 5)

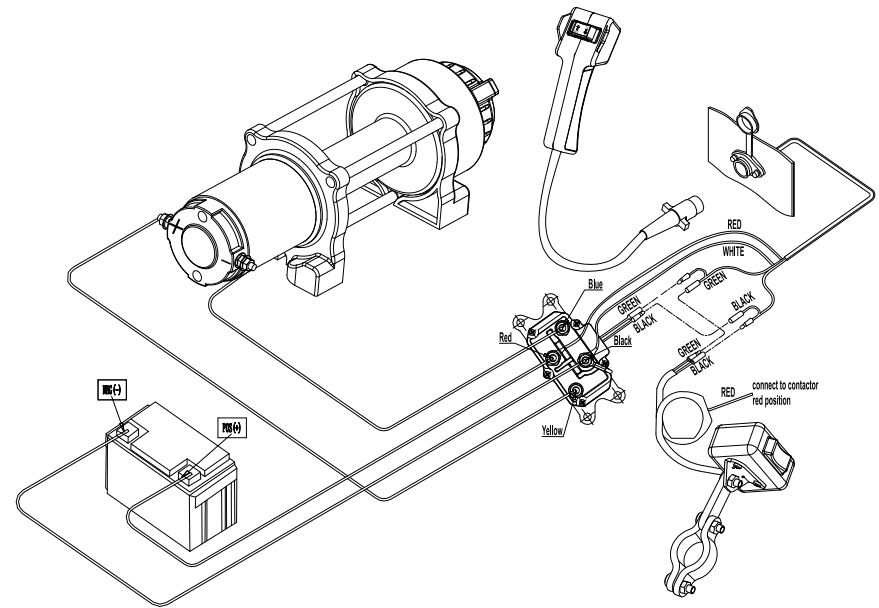


Fig. 5

3. 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. 6)

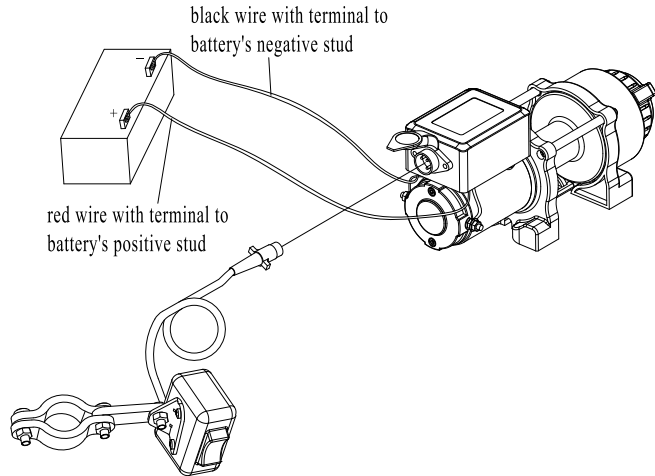


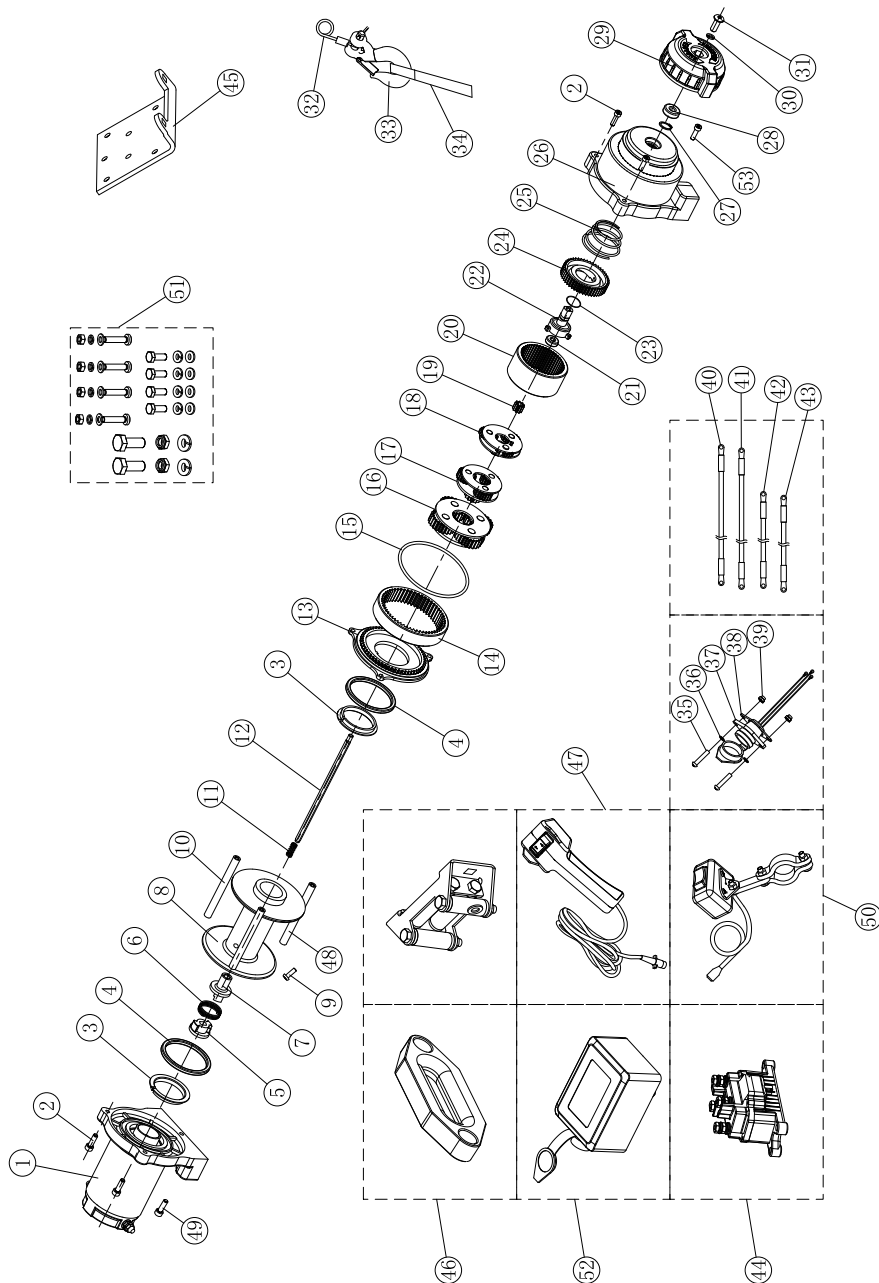
Fig. 6

4. Check rotating direction of the drum. Pull and turn the clutch knob to the “Off” position (drum can be turning free). Pull out some cable from the drum, and then turn the clutch knob to the “In” position. Press the “Cable out” button on the handheld switch, if the cable is releasing then it is right way for connected. Otherwise please change the line connected the motor. You should exchange the two lines, and repeat the above-mentioned operation.

NVT3500/3500i-Parts list

	No.	Description	Qty	Remark
Electric Motor Assembly	1	Motor assembly	1	
	3	Drum barrel	1	
	4	X- ring	1	
	5	Coupling I	1	
Coupling Assembly	6	Rectangular spring	1	
	7	Coupling	1	
	11	Spring	1	
	12	Hexagonal drive shaft	1	
Drum Assembly	8	Welded drum	1	
	9	Wire rope connector	1	
Tie Bar Assembly	2	Hexagon socket cap screws M5×16	4	
	10	Tie bar	2	
	48	Hexagon tie bar	1	
	49	Hexagon socket cap screws M4×10	1	
	53	Hexagon socket cap screws M4×16	1	
Gearbox Assembly	3	Drum barrel	1	
	4	X- ring	1	
	13	Plate	1	
	14	Gear ring	1	
	15	O-ring 100×1.9	1	
	16	3rd stage planetary gear assembly	1	
	17	2nd stage planetary gear assembly	1	
	18	1st stage planetary gear assembly	1	
	19	1st stage sun gear	1	
	20	1st & 2nd stage gear ring	1	
	21	Bearing 606-2Z	1	
	22	Clutch cam	1	
	23	O-ring 18×1.9	1	
	24	Clutch gear	1	
	25	Clutch spring	1	
26	Gear housing	1		
27	Retaining ring 15	1		
28	Bearing 6802Z	1		

NVT3500/3500i Winch Assembly Drawing



OPERATION

1. Pull and turn the clutch knob, so the drum can turn free by hand.
2. Use Hand saver bar to hitch hook of the cable assembly and pull cable to the loads attach to the load.

Warning: Check that there is at least five turns of wire rope remain on the drum before operation.

3. Switch clutch knobs back to the “In” position and drum mesh with gear. At the same time drum can't be turned by hand.

CAUTION: Clutch must be fully engaged before winching. Never operate the clutch while drum is turning. Do not readjust clutch knob as it has been adjusted and permanently locked in place with a thread-locking compound in the factory.

4. Press the “Cable In” button on the handheld and the cable was re-spooled. Press the “Cable Out” button to reverse directions. Wait until the motor stops before reversing directions.
5. Re-spooling cable after finished operation.

RIGGING

Warning: never handle the wire rope or rigging while anyone else is at the control switch.

Always use the drawstring to pull the hook (See Fig. 7). Do not hold the hook with your hand. This is important not only when reeling wire rope in but also when removing wire rope from the winch under power.

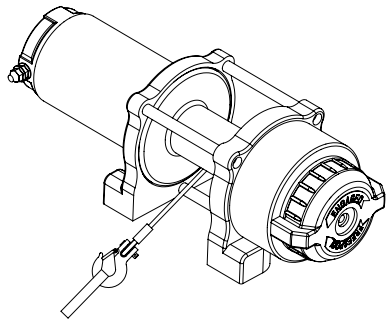


Fig. 7

CAUTION: use a nylon sling when attaching the wire rope to an anchor point. Do not attach the hook back on the wire rope. Doing so can cause the wire rope to break. (See fig. 8)

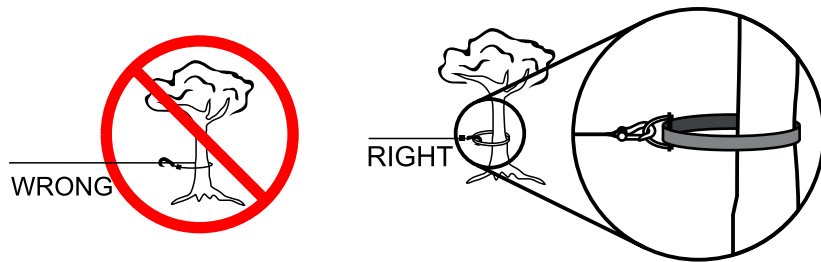


Fig. 8

1. The most commonly used rigging. A nylon sling is used to protect the tree when it is used as an anchor, and the wire rope is attached to use the sling (See fig. 9).

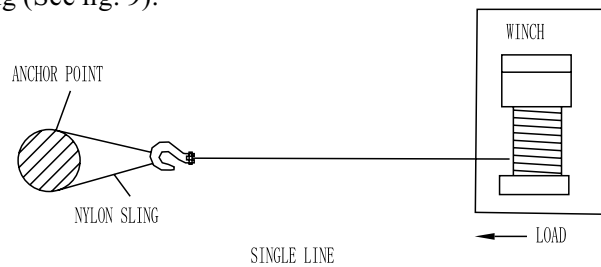


Fig. 9

	29	Spring washer 6	1	
	30	Pan head screws with cross recessed M6×16	1	
Accessories	31	Cable 4.8×14m	1	optional
	32	Synthetic rope ϕ 4.8×15m	1	
		Hook 1/4"	1	
	33	Hand saver	1	
	34	Pan head screws with cross recessed M5×25	2	NVT2500
	35	Washer 5	2	NVT2500
	36	Female connector harness	1	NVT2500
	37	Water-proof cover	1	NVT2500
	38	Locking nut M5	2	NVT2500
	39	Motor wire set (yellow)	1	NVT2500
	40	Motor wire set (blue)	1	NVT2500
	41	Motor wire set (red)	1	NVT2500
	42	Motor wire set (black)	1	NVT2500
	43	Contactora	1	NVT2500
	44	Mount plate	1	
	45	Roller fairlead	1	
		Aluminum hawse	1	optional
	46	Remote controller	1	optional
49	Rocker switch	1	NVT2500	
50	Hardware kit	1		
51	Control box	1	NVT2500i	

NVT2500/2500i-Parts list

	No.	Description	Qty	Remark
Electric Motor Assembly	1	Motor assembly	1	
	3	Drum barrel	1	
	4	X- ring	1	
	5	Coupling I	1	
Coupling Assembly	6	Rectangular spring	1	
	7	Coupling	1	
	11	Spring	1	
	12	Hexagonal drive shaft	1	
Drum Assembly	8	Welded drum	1	
	9	Wire rope connector	1	
Tie Bar Assembly	2	Hexagon socket cap screws M5×16	4	
	10	Tie bar	2	
	47	Hexagon tie bar	1	
	48	Hexagon socket cap screws M4×10	1	
	52	Hexagon socket cap screws M4×16	1	
Gearbox Assembly	3	Drum barrel	1	
	4	X- ring	1	
	13	Plate	1	
	14	O-ring 100×1.9	1	
	15	3rd stage planetary gear assembly	1	
	16	2nd stage planetary gear assembly	1	
	17	1st stage planetary gear assembly	1	
	18	1st stage sun gear	1	
	19	1st & 2nd stage gear ring	1	
	20	Bearing 606-2Z	1	
	21	Clutch cam	1	
	22	O-ring 18×1.9	1	
	23	Clutch gear	1	
	24	Clutch spring	1	
25	Gear housing	1		
26	Retaining ring 15	1		
27	Bearing 6802Z	1		
28	Free spool handle	1		

- A method of rigging used to obtain a mechanical advantage. The use of a pulley block as a traveling block will almost double the winch pulling capacity. (See fig. 10)

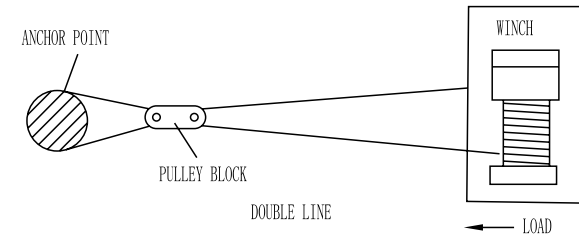


Fig. 10

- 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. (See fig. 11)

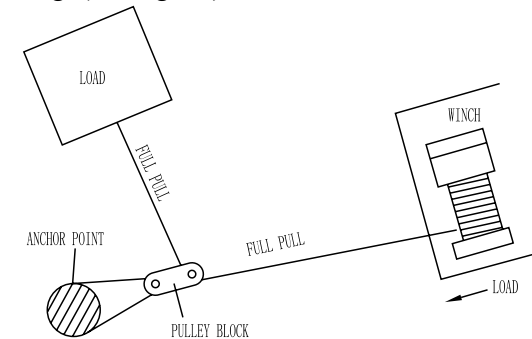


Fig. 11

MAINTENANCE

- Periodically check tightness of mounting bolts and electrical connections. Remove all the dirt of corrosion in time and always keep clean.
- Do not attempt to disassembly the gearbox. Repairs should be done by manufacturer or authorized repaired center.
- The gearbox having been lubricated using high temperature lithium

grease in the factory. No internal lubrication is required except being repaired.

REPLACE THE WIRE ROPE

1. Engaged the clutch by turning the clutch knob to the “In” position.
2. When inserting the wire rope into the drum, insert it into the correct end of the hole provided. (See fig. 12) Tighten the setscrew tightly.

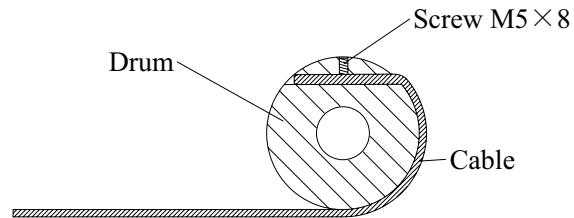
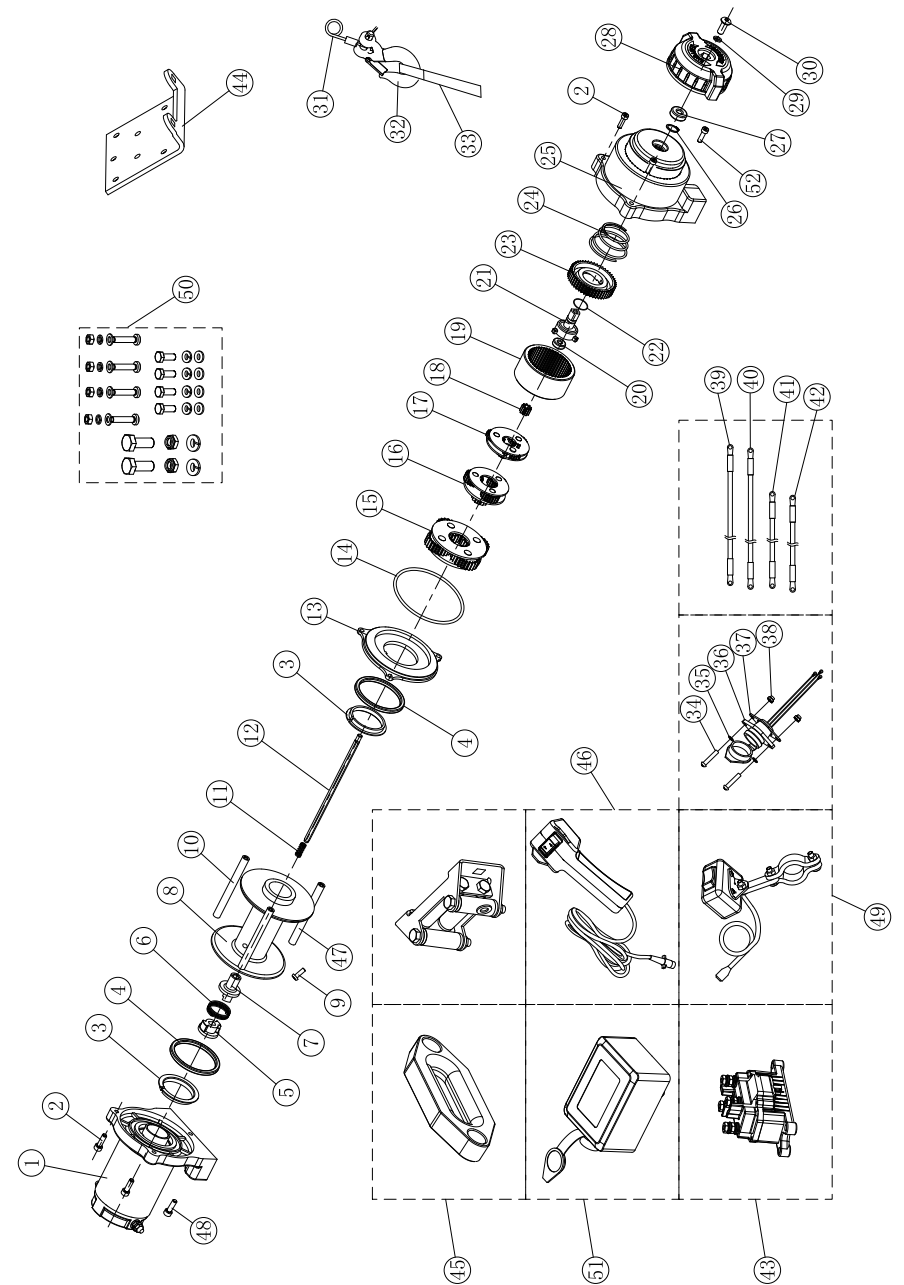


Fig. 12

3. Operate the winch and re-spool the wire rope around the drum tightly.
CAUTION: To keep stated tensile to ensure the wire rope can be rolled on the drum tightly.
WARN: Always replace damaged wire rope with manufacturer's identical replacement part.

NVT2500/2500i Winch Assembly Drawing



4500lbs Specifications	
Rated line pull:	4500lbs(2043kgs)single line
Motor(Series wound):	DC 12V: 3.0hp/2.2kW
Gear train:	3 stage planetary gear
Gear ratio	180:1
Clutch:	Sliding ring gear
Braking action:	Mechanical, Automatic load holding
Fairlead:	4-way roller fairlead
Wire rope	7/32"×55.8'(ϕ 5.4mm×17m)
Drum size:	1.73"×4.88"(44mm×124mm)
Dimensions:	15.19"×4.44"×4.76"(386mm×113mm×121mm) 15.67"×4.44"×6.3"(398mm×113mm×160mm)
Bolt pattern:	6.6"×3"(168mm×76.2mm)
Net Weight:	30.6lbs(13.9kgs)

4500lbs Line speed and motor current (first layer)						
Line pull	lbs	0	1500	2500	3500	4500
	kgs	0	680	1135	1589	2043
Line speed	FPM	13.1	9.8	8.2	6.6	4.6
	MPM	4.0	3.0	2.5	2.0	1.4
Motor current	Amps	30	75	105	135	185

4500lbs Line pull and cable capacity					
Layer of cable		1	2	3	4
Rated line pull per layer	lbs	4500	3693	3131	2718
	kgs	2043	1676	1421	1234
Cable capacity per laye	Ft	11.5	24.6	40.6	55.8
	M	3.5	7.5	12.4	17.0

TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Motor will not operate or runs in one direction only	-Switch inoperative -Broken wires or bad connection -Defective motor	-Replace switch -Replace wires, connect correctly and screw down the bolts -Replace or repair motor
Motor runs but drum does not turn	-Clutch not engaged	-Engage clutch
Motor runs but with insufficient power or lower line speed	-Weak battery -Defective motor	-Recharge or replace battery -Keep connection terminals clean, tighten or replace connective device -Repair or replace motor
Motor overheating	-Winch running for a long time -Defective motor	

2500lbs Specifications	
Rated line pull:	2500lbs(1135kgs)single line
Motor(Series wound):	DC 12V: 2.4hp/1.8kW
Gear train:	3 stage planetary gear
Gear ratio	180:1
Clutch:	Sliding ring gear
Braking action:	Mechanical, Automatic load holding
Fairlead:	4-way roller fairlead
Wire rope	3/16"×45.9'(φ 4.8mm×14m)
Drum size:	1.73"×3.15"(44mm×80mm)
Dimensions:	12.95"×4.44"×4.76"(329mm×113mm×121mm) 13.4"×4.44"×6.3"(341mm×113mm×160mm)
Bolt pattern:	4.9"×3"(124mm×76.2mm)
Net Weight:	26lbs(11.8kgs)

3500lbs Specifications	
Rated line pull:	3500lbs(1589kgs)single line
Motor(Series wound):	DC 12V: 2.8hp/2.1kW
Gear train:	3 stage planetary gear
Gear ratio	180:1
Clutch:	Sliding ring gear
Braking action:	Mechanical, Automatic load holding
Fairlead:	4-way roller fairlead
Wire rope	13/64"×45'(φ 5mm×13.7m)
Drum size:	1.73"×3.15"(44mm×80mm)
Dimensions:	13.1"×4.44"×4.76"(334mm×113mm×121mm) 13.6"×4.44"×6.3"(346mm×113mm×160mm)
Bolt pattern:	4.9"×3"(124mm×76.2mm)
Net Weight:	26.4lbs(12kgs)

2500lbs Line speed and motor current (first layer)						
Line pull	lbs	0	1000	1500	2000	2500
	kgs	0	454	680	907	1135
Line speed	FPM	13.1	9.5	8.5	7.5	5.9
	MPM	4.0	2.9	2.6	2.3	1.8
Motor current	Amps	26	60	80	115	150

3500lbs Line speed and motor current (first layer)						
Line pull	lbs	0	1000	1500	2500	3500
	kgs	0	454	680	1135	1589
Line speed	FPM	13.7	10.5	10.1	8.2	5.6
	MPM	4.2	3.2	3.1	2.5	1.7
Motor current	Amps	26	65	95	110	180

2500lbs Line pull and cable capacity						
Layer of cable		1	2	3	4	5
Rated line pull per layer	lbs	2500	2089	1794	1572	1399
	kgs	1135	948	815	714	635
Cable capacity per layer	Ft	7.9	17.4	28.2	40.7	45.9
	M	2.4	5.3	8.6	12.4	14.0

3500lbs Line pull and cable capacity						
Layer of cable		1	2	3	4	5
Rated line pull per layer	lbs	3500	2907	2486	2171	1927
	kgs	1589	1320	1128	986	875
Cable capacity per layer	Ft	7.5	17.0	28.2	41.0	45.0
	M	2.3	5.2	8.6	12.5	13.7