

SUPERWINCH®

TECHNICAL INSTALLATION MANUAL

S SERIES™

S5500 / S5500SR / S7500 / S7500SR

5,500 lb (2494 kg) / 7,500 lb (3401 kg) 12/24 VDC Electric Winch

CAUTION

READ AND UNDERSTAND THIS GUIDE BEFORE INSTALLATION AND OPERATION.



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

- DANGER** Indicates an imminently hazardous situation which, if not avoided will result in death or serious injury.
- WARNING** Indicates a potentially hazardous situation which, if not avoided could result in death or serious injury.
- CAUTION** Indicates a potentially hazardous situation or unsafe practice, which if not avoided could result in injury.
- NOTICE** Indicates an unsafe practice, which if not avoided, could result in property damage.

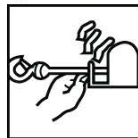
The following symbols on the product and in the owners manual are used:



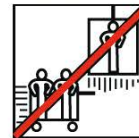
Read the Owners Manual.



Always use a Hand Saver.



Keep clear of Winch Rope and Hook while operating.



Never use Winch to Lift or Move People.



Never use Winch to Hold Load in Place.

Read the Winch Users Guide for additional safety symbols



Your winch is a very powerful machine. If used unsafely or improperly there is a possibility that property damage or personal injury could result.

Note; all safety references in this manual that refer to use of WIRE ROPE, also apply to the use of SYNTHETIC ROPE.

⚠ WARNING The responsibility for safe installation and operation of the winch and the prevention of personal injury and property damage ultimately rests with you, the operator. There is no substitute for the use of good judgement and caution in operating a winch.

⚠ WARNING The wire rope may break before the winch stalls. For heavy loads, use a pulley block to reduce the load on the wire rope.

1. Maximum working load capacity is on the rope layer closest to the drum. **DO NOT OVER LOAD.** DO NOT ATTEMPT PROLONGED PULLS AT HEAVY LOADS. Overloads can damage the winch and or the wire rope and create unsafe operating conditions. FOR LOADS OVER 1,000 lbs. (454 kg), WE RECOMMEND THE USE OF THE OPTIONAL PULLEY BLOCK TO DOUBLE LINE THE ROPE. (Figure 1.) This reduces the load on the winch and the strain on the wire rope by approximately 50%. Attach hook to load bearing part. The vehicle engine should be running during winch operation. If considerable winching is performed with the engine off, the battery may be too weak to restart the engine.

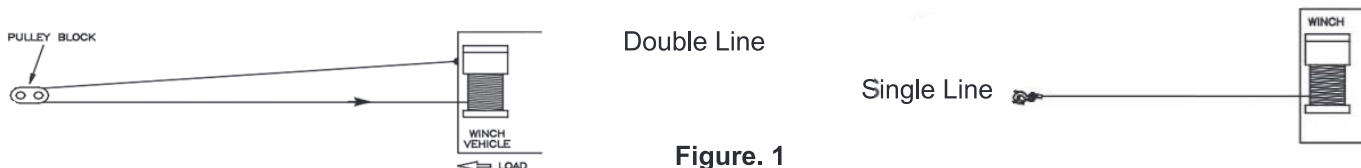


Figure. 1

2. AFTER READING AND UNDERSTANDING THIS MANUAL, LEARN TO USE YOUR WINCH. After installing the winch, practice using it so you will be familiar with it when the need arises.



3. NEVER “move” your vehicle to assist the winch in pulling the load. The combination of the winch and vehicle pulling together could overload the wire rope and the winch.

4. ALWAYS STAND CLEAR OF THE ROPE, HOOK AND WINCH. IN THE UNLIKELY EVENT OF ANY COMPONENT FAILURE IT’S BEST TO BE OUT OF HARM’S WAY.

5. INSPECT ROPE AND EQUIPMENT FREQUENTLY. A FRAYED ROPE WITH BROKEN STRANDS SHOULD BE REPLACED IMMEDIATELY. Always replace the rope with the manufacture’s identical replacement part (see Replacement Parts List). Periodically check the winch installation to ensure that all bolts are tight.

6. ALWAYS USE HEAVY LEATHER GLOVES when handling rope. DO NOT LET ROPE SLIDE THROUGH YOUR HANDS.



7. NEVER WINCH WITH LESS THAN 5 TURNS OF WIRE ROPE OR 8 TURNS OF SYNTHETIC ROPE AROUND THE WINCH DRUM, since the rope end fastener may NOT withstand full load.

8. KEEP CLEAR OF WINCH, TAUT WIRE ROPE AND HOOK WHEN OPERATING WINCH. Never put your finger through the hook. If your finger should become trapped in the hook, you could lose your finger. ALWAYS USE THE HANDSAVER when guiding the wire rope in or out. (Figure 2.)



Figure. 2



9. NEVER HOOK THE ROPE BACK ONTO ITSELF because you could damage the rope. Use a nylon strap, (Figure 3.)

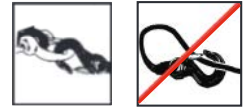


Figure. 3



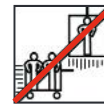
10. It is a good idea to lay a heavy blanket or jacket over the rope near the hook end when pulling heavy loads. (Figure 4.) If a wire rope failure should occur, the cloth will act as a damper and help prevent the rope from whipping.

Figure. 4

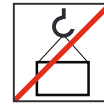


We recommend the Superwinch® Rope Dampener p/n 2570

11. NEVER USE YOUR WINCH FOR LIFTING OR MOVING PEOPLE.

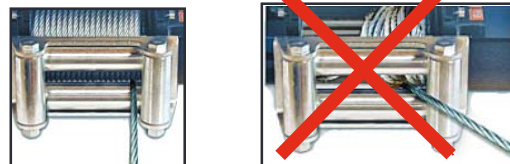


12. Your winch is not intended for overhead hoisting operations



13. AVOID CONTINUOUS PULLS FROM EXTREME ANGLES as this will cause the rope to pile up on one end of the drum. (Figure 5.) This can jam the rope in the winch, causing damage to the rope or the winch.

Figure. 5



14. NEVER OBSCURE THE WARNING INSTRUCTION LABELS.

15. Always operate winch with an unobstructed view of the winching operation.

16. Equipment such as tackle, hooks, pulley blocks, straps, should be sized to the winching task and should be periodically inspected for damage that could reduce their strength.

17. NEVER RELEASE FREESPOOL CLUTCH WHEN THERE IS A LOAD ON THE WINCH.

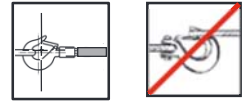
18. NEVER WORK ON OR AROUND THE WINCH DRUM WHEN WINCH IS UNDER LOAD.



19. NEVER OPERATE WINCH WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.

20. ALWAYS DISCONNECT WINCH POWER LEADS TO BATTERY BEFORE WORKING IN OR AROUND THE WINCH DRUM so that the winch cannot be turned on accidentally.

21. When moving a load, slowly take up the rope slack until it becomes taut. Stop, recheck all winching connections. Be sure the hook is properly seated. If a nylon strap is used, check the attachment to the load.



22. When using your winch to move a load, place the vehicle transmission in neutral, set vehicle brake, and chock all wheels.

23. NEVER USE THE WINCH TO HOLD LOADS IN PLACE. Use other means of securing loads such as tie down straps.



24. ALWAYS 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.

25. NEVER MACHINE OR WELD ANY PART OF THE WINCH. Such alterations may weaken the structural integrity of the winch and will void your warranty.

26. NEVER CONNECT WINCH TO EITHER 110V AC HOUSE CURRENT OR 220V AC SERVICE MAINS AS WINCH BURNOUT OR FATAL SHOCK MAY OCCUR.



27. NEVER allow shock loads to be applied to winch or rope.

28. ALWAYS USE caution when pulling or lowering a load up or down a ramp or incline. Keep people, pets and property clear of the path of the load.

INSTALLATION



Correct installation of your winch is required for proper operation.

⚠ WARNING Do not substitute any strength grade weaker than ISO grade 8.8

⚠ 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 light, tires,) should impede the operation of your Superwinch®. When mounting, check that all vehicle and winch parts are free of obstructions. Be sure that the winch mounting location does not significantly reduce ground clearance.

⚠ WARNING This winch MUST be mounted with the wire rope in the underwind direction. Improper mounting could damage your winch and void your warranty.



Specifications 12 V and 24 V S5500, S5500 SR

Working Load: 5,500 lbs (2495 kg)
Motor: 3.6 hp (2.7 kW)
Gear Ratio: 185:1
Freespool Clutch: Lever Action
Drum Barrel Diameter: 2.5" (63.5 mm)
Drum Length: 4.87" (123.7 mm)
Wire Rope: 9/32" X 60' (7.1 mm X 18.3 m)
Synthetic Rope: 1/4" X 60' (6.4 mm X 18.3 m)
Installed Weight with Wire Rope: 51 lbs. (23.1 kg)
Installed Weight with Synthetic Rope: 42 lbs. (19.0 kg)
Switching Method: Sealed Handheld Rocker Switch
Fairlead: Roller Hawse™

Specifications 12 V and 24 V S7500, S7500 SR

Working Load: 7,500 (3402 kg)
Motor: 3.6 hp (2.7 kW)
Gear Ratio: 249:1
Freespool Clutch: Lever Action
Drum Barrel Diameter: 2.5" (63.5 mm)
Drum Length: 4.87" (123.7 mm)
Wire Rope: 5/16" X 55' (7.9 mm X 16.8 m)
Synthetic Rope: 5/16" X 55' (7.9 mm X 16.8 m)
Installed Weight with Wire Rope: 55 lb (24.9 kg)
Installed Weight with Synthetic Rope: 46 lbs (20.9 kg)
Switching Method: Sealed Handheld Rocker Switch
Fairlead: Roller Hawse™

MOUNTING



S5500 Winch:

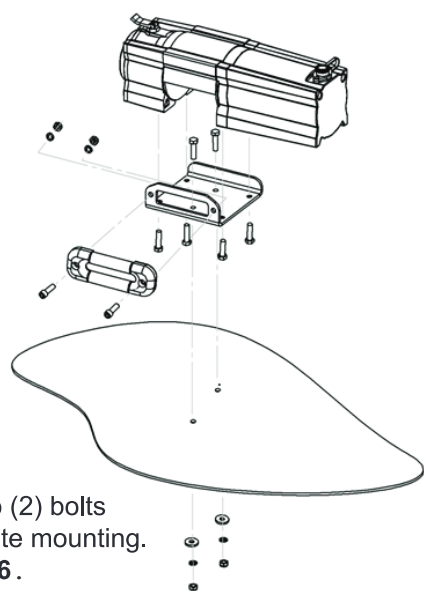
The S5500 may be mounted in 2 ways. The most common method is to use the 2 bolts in the center of the baseplate to mount the unit to a flat surface. (See Figure 6.) Some rope may need to be freespooled off the winch drum to access the baseplate mounting holes and for wrench access. To resist the winching loads a minimum of 1/4" (6mm) mounting surface thickness should be used.

⚠ WARNING Be certain that the structure used for mounting will resist the winching loads.

⚠ WARNING Use the hardware provided and do not substitute hardware of a weaker grade.

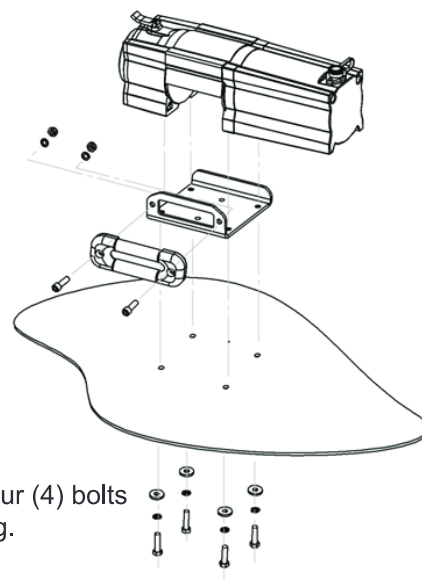
The second option is to use the 4-bolt pattern of the winch (See Figure 7.) For this method, the baseplate is removed from the winch. The 4 bolts go through the mounting surface, then through the baseplate, and into the winch housings. Again a minimum of 1/4" (6mm) mounting surface thickness should be used. Be certain that the structure used for mounting will resist the winching loads.

⚠ WARNING Use the hardware provided and do not substitute hardware of a weaker grade.



The two (2) bolts
baseplate mounting.
Figure 6.

Using the supplied M10
mounting bolts, washers,
and nuts, tighten the
mounting and
Roller-Hawse fairlead
hardware
to 32 ft-lb (43 N-m).



The OPTIONAL, four (4) bolts
baseplate mounting.
Figure 7.

(continued)

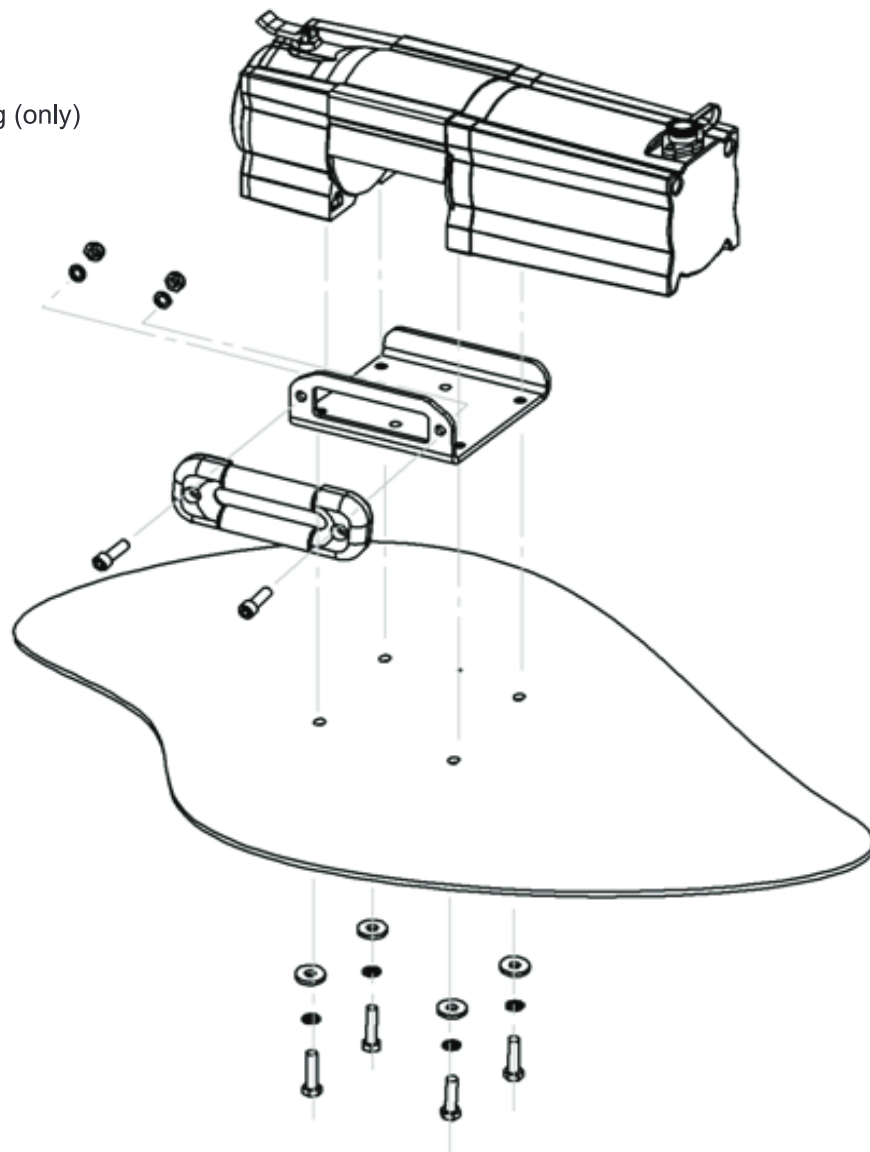
S7500 Winch:

The S7500, may be mounted **ONLY** with the 4-bolt pattern of the winch. (See Figure 8.) For this method, the baseplate is removed from the winch. The 4 bolts go through the mounting surface, then through the baseplate, and into the winch housings. To resist the winching loads a minimum of 1/4" (6mm) mounting surface thickness should be used.

⚠ WARNING Be certain that the structure used for mounting will resist the winching loads. Use the hardware provided and do not substitute hardware of a weaker grade.

⚠ WARNING DO NOT MOUNT THE S7500 WINCH, USING THE 2-BOLT PATTERN IN THE BASEPLATE.

Figure 8. S7500, 4-BOLT Mounting (only)



Using the supplied M10 mounting bolts, washers, and nuts, tighten the mounting and Roller-Hawse fairlead hardware to 32 ft-lb (43 N-m).

WIRING



The S5500 and 7500, comes pre-wired internally, and with the circuit breaker pre-installed onto the positive battery cable.

The only connections that are required are from the winch to the battery. **(See Figure 9.)**

ALWAYS obey the wiring cautions in the GENERAL SAFETY section. Route wires away from sharp edges, hot or moving objects. Apply several layers of electrical tape where wiring goes over edges to prevent insulation abrasion. Use the ties supplied with the winch to secure the wiring.

Check the operation of the unit after installation and wiring. Put the winch in Freespool, and pull out a few feet of rope. Activate the winch in “Cable Out” momentarily to check drum rotation direction. If the drum rotates in the wrong direction, recheck your wiring. Refer to the Troubleshooting guide in this manual or your User’s Guide if the winch does not operate properly.

See the remainder of this manual and also the Superwinch® User’s Guide for additional information and Safety Precautions.

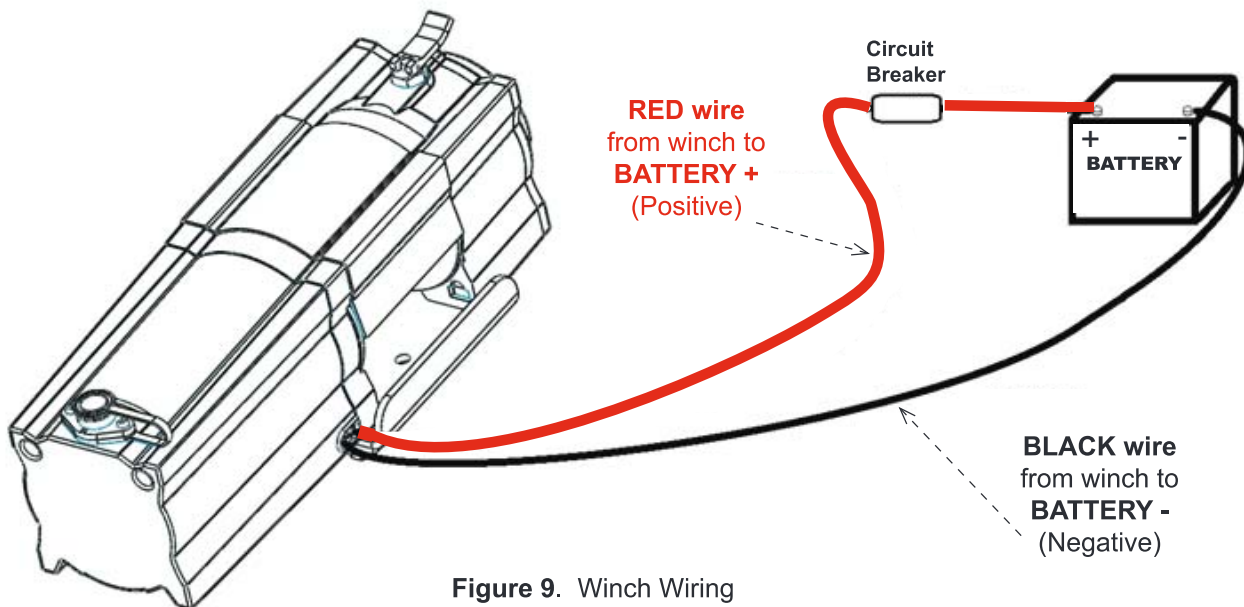


Figure 9. Winch Wiring

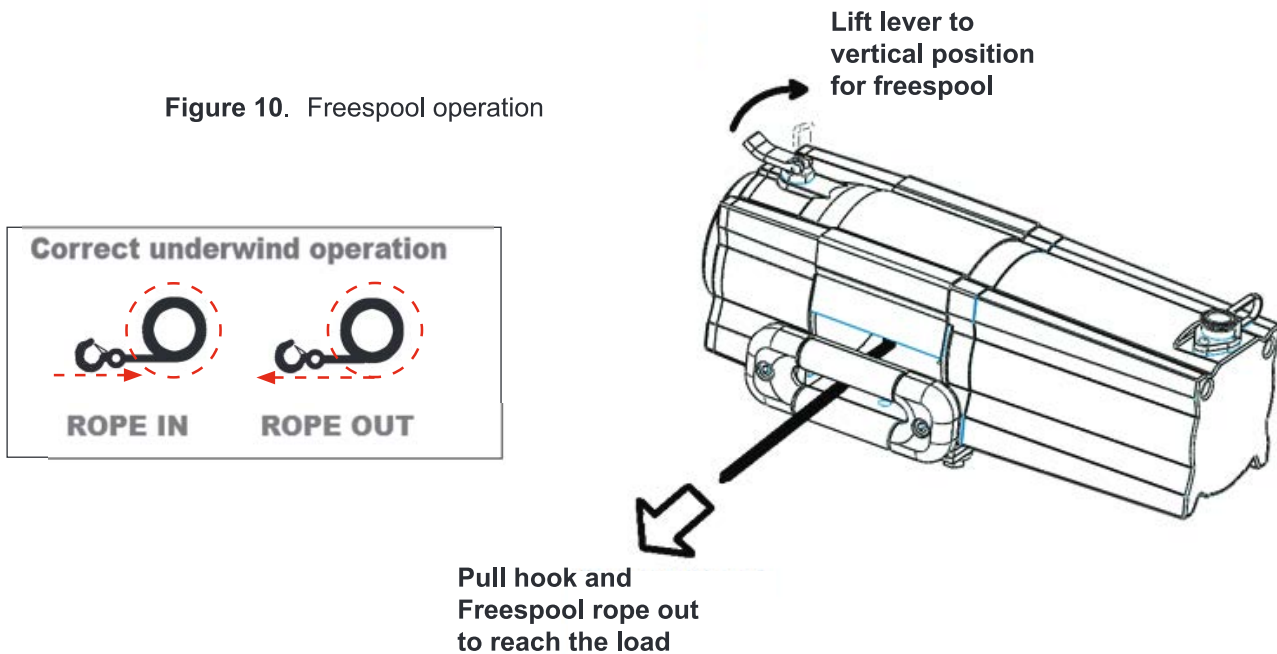
⚠ DANGER

Automotive batteries contain gasses which are flammable and explosive. **Wear eye protection during installation and remove all metal jewelry. Do not lean over battery while making connections.**



Freespool the hook and winch rope out to the load and secure using the second supplied strap.
(See Figure 10.)

Figure 10. Freespool operation



ALWAYS use a strap around the load to be winched. NEVER wrap the rope around the load and place the hook back onto the rope. When rigging, ALWAYS be sure that the hook latch closes around the strap loop. (see Figure 11.)

Figure 11.

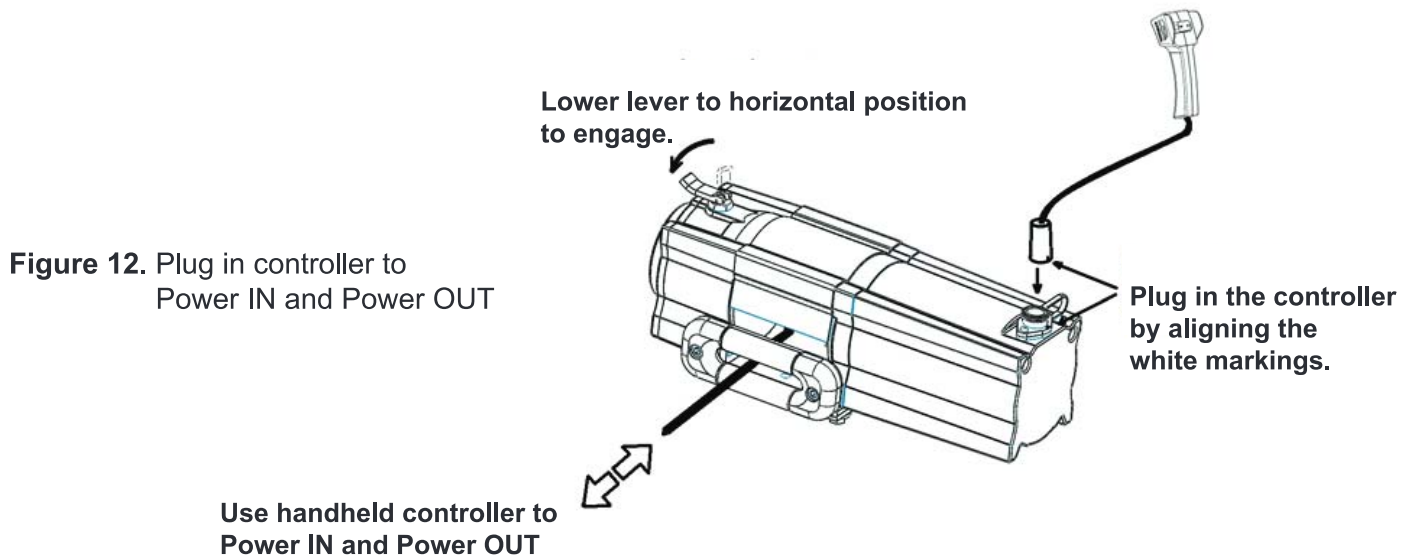


Latch closed with strap loops inserted in hook.

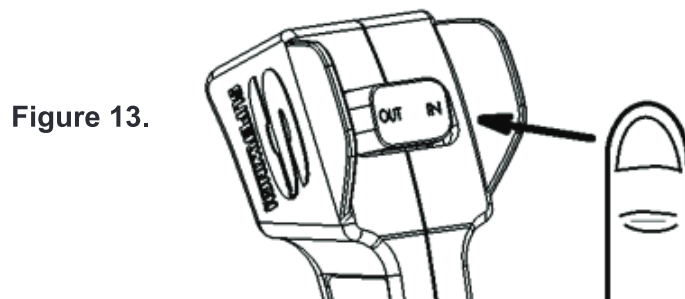
See the remainder of this manual and also the Superwinch® User's Guide for additional Rigging Techniques and Safety Precautions.

Lower the Freespool Lever to the ENGAGED position.

⚠ WARNING Be sure battery connections are tight. Plug in the handheld controller. ALWAYS be sure that power and controller cables do not interfere with the winching operation or tangle the winch operator. ALWAYS keep safety a top priority. (See Figure 12.)



ALWAYS watch for pinch points and keep hands away from the winch during operation. Using the handheld controller, depress IN or OUT to power the winch. (See Figure 13.)



ALWAYS be sure that power and controller cables do not interfere with the winching operation or the winch operator. ALWAYS keep safety a top priority.

When taking up the slack in the rope, be observant and watch for binding or obstructions as the slack is removed from the rigging, and during winching.

During use, avoid long durations of winching. Stop winching occasionally, or if the winch changes its sound or appears to struggle, allow the winch motor to cool.

⚠ CAUTION If the motor stalls, do not continue to apply power. If the end of the motor becomes hot, **stop winching and allow the motor to cool.**

An electric winch is like any other motor driven power tool such as an electric drill or saw. The electric motor should not be allowed to become excessively hot. Normal precautions will extend the life of your motor. Keep the durations of pulls as short as possible.

A Pulley Block is recommended for heavy loads. Run the rope through the Pulley Block, and connect the hook back to a secure position near the winch.

⚠ WARNING NEVER attach the hook back to the winch. ALWAYS use a secure point on the mounting structure.

AFTER USE:

After use, repack the rigging neatly. Check all straps, shackles, pulley block, cables and the controller cord for damage. ALWAYS review ALL components after winching, and before the next winching operation.

⚠ WARNING NEVER operate a winch with damaged components, and ALWAYS use genuine Superwinch® replacement parts to ensure safety. Use of parts other than genuine Superwinch® replacement parts can be unsafe and will void your warranty.

MAINTENANCE - ROPE REPLACEMENT

Winch rope, either Wire or Synthetic, is a wear item in your winch. Any frayed, kinked, or visibly damaged rope must be replaced immediately.

When replacing your rope, or any other component on your winch, always use only Superwinch® recommended replacement parts. Use of any other replacement parts is not recommended and will void your warranty.

To replace your rope, first completely remove the old rope. For Wire Rope, (see **Figure 14**) this is done by loosening the drum setscrew holding the rope in the drum hole, and unwrapping all of the rope from the drum. Wear thick leather work gloves to protect your hands.

For Synthetic Rope, unwrap all of the rope from the drum, and remove the taped section and remove the rope from the drum holes.

Once the old rope is removed, review the winch drum, fairlead, and mount for damage, sharp edges, or any other conditions that may damage the new rope. Replace any worn or damaged components.

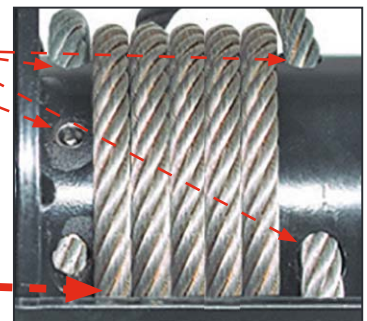
Unwrap and unroll your new rope. Feed the new rope through the fairlead opening and under the winch drum. Pull the rope up behind the drum, and insert the rope into the multiple rope holes in the winch. Wraps of rope around the drum should be pulled tight between the two drum holes.

For Wire Rope, tighten the setscrew securely. For Synthetic Rope, the rope is fed through the second hole, the free end is then positioned along the drum, and taped to the drum. The rope is then tightly wound onto the drum. (see additional information in, **Winch Users Guide pn 90-14530**)

Install through the holes & with set screw or plug.

Figure 14.

Never operate with less than five (5) wraps of rope around the drum.



PERFORMANCE



12 VDC motors

S5500 12V

# of Rope Layers	Max. Pulling Capacity	
	lbs	kg
1	5500	2495
2	4575	2075
3	3916	1776
4	3423	1553
5	3040	1379

Load		Speed		Motor Current
lbs	kg	fpm	mpm	Amps
0	0	24	7.3	50
5500	2495	5	1.5	340

S7500 12V

# of Rope Layers	Max. Pulling Capacity	
	lbs	kg
1	7500	3402
2	6136	2783
3	5192	2355
4	4668	2117

Load		Speed		Motor Current
lbs	kg	fpm	mpm	Amps
0	0	16.5	5	40
7500	3402	3.5	1.1	335

24 VDC motors

S5500 24V

# of Rope Layers	Max. Pulling Capacity	
	lbs	kg
1	5500	2495
2	4575	2075
3	3916	1776
4	3423	1553
5	3040	1379

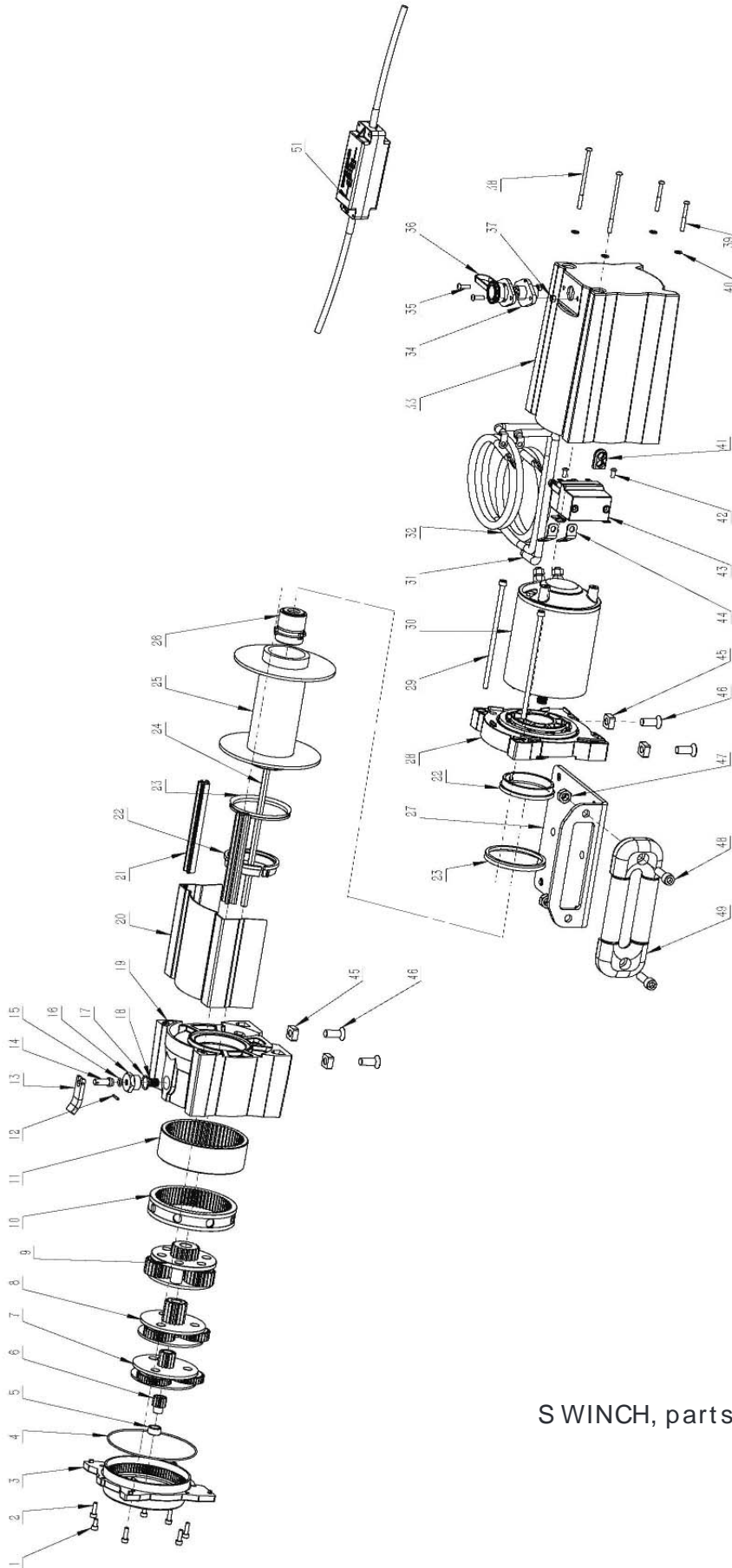
Load		Speed		Motor Current
lbs	kg	fpm	mpm	Amps
0	0	22	6.7	22
5500	2495	10	3.1	150

S7500 24V

# of Rope Layers	Max. Pulling Capacity	
	lbs	kg
1	7500	3402
2	6136	2783
3	5192	2355
4	4668	2117

Load		Speed		Motor Current
lbs	kg	fpm	mpm	Amps
0	0	15.5	4.7	23
7500	3402	7	2.1	155

REPLACEMENT PARTS



SWINCH, parts diagram

REPLACEMENT PARTS LIST

REFERENCE	DESCRIPTION	PART NUMBER	QTY REQUIRED
1	GEARBOX SCREW - SHORT	89-23258-13	1
2	GEARBOX SCREW - LONG	89-23258-14	6
3	COVER-GEARBOX	89-42674	1
4	ORING - GEARBOX	89-23320-15	1
5	BEARING - SUNGEAR	SEE ITEM #3	1
6	SUN GEAR	89-24629	1
7	PLANETARY ASSEMBLY, FIRST STAGE	89-30161 (\$5500) 89-30162 (\$7500)	1 1
8	PLANETARY ASSEMBLY, SECOND STAGE	89-30163 (\$5500) 89-30164 (\$7500)	1 1
9	PLANETARY ASSEMBLY, THIRD STAGE	89-30165 (\$5500 / \$7500)	1
10	RING GEAR - SECOND STAGE	89-30166 (\$5500) 89-30167 (\$7500)	1 1
11	RING GEAR - THIRD STAGE	89-30168 (\$5500 / \$7500)	1
12	FREESPOOL ASSEMBLY	89-30154	1
13			
14			
15			
16			
17			
18			
19	GEARBOX HOUSING	89-42675	1
20	COVER - DRUM	89-30155	1
21	TIE BAR	89-24604	2
22	DRUM BUSHING	89-24605	2
23	UP SEAL	89-24606	2
24	DRIVE SHAFT	89-24607	1
25	DRUM ASSEMBLY	89-42676 (\$5500) 89-42677 (\$7500)	1 1
26	BRAKE ASSEMBLY	89-30160	1
27	BASEPLATE	89-30156	1
28	MOTOR SIDE DRUM SUPPORT	89-42679	1
29	SCREW-HOUSING ASSEMBLY	89-23258-15	2
30	MOTOR ASSEMBLY (INCLUDES BOLTS AND FACE BEARING)	89-30158 (12v) 89-30159 (24v)	1 1
	MOTOR END CAP WITH BRUSH KIT (12V AND 24V)	89-24630	1
31	LEADWIRE SET	89-24609	1
32			
33	MOTOR COVER	89-42680	1
34	SOCKET ASSEMBLY	90-25048-01	1
35			
36			
37			
38	COVER SCREWS - LONG	89-23266-04	2
39	COVER SCREWS - SHORT	89-23266-05	2
40	ORING - COVER	89-23320-16	4
41	GROMMET - LEADWIRES	89-14534	1
42	SCREW - SOLENOID MOUNTING	89-23266-03	2
43	SOLENOID	98-10880 (12V) 89-10917 (24V)	1 1
44	BUSS BAR	89-14533	2
45	SQUARE NUT - MOUNTING	89-23084-03	4
46	WINCH MOUNTING SCREW - FLATHEAD (\$5500)	89-23056-17	4
47	NUT - FAIRLEAD MOUNTING	89-23073-14	2
48	SCREW - FAIRLEAD MOUNTING	89-23258-16	2
49	FAIRLEAD ASSEMBLY	89-42678	1
50	CIRCUIT BREAKER COVER ASSEMBLY	89-30157	1
51	CIRCUIT BREAKER ASSEMBLY	89-24608-01 (12V) 89-24608-02 (24V)	1 1
NS	WIRE ROPE ASSEMBLY - \$5500	89-24639	1
NS	WIRE ROPE ASSEMBLY - \$7500	89-24640	1
NS	SYNTHETIC ROPE ASSEMBLY \$5500SR	89-24641	1
NS	SYNTHETIC ROPE ASSEMBLY \$7500SR	89-24642	1
NS	HOOK - \$5500	89-24613	1
NS	HOOK - \$7500	90-24577	1
NS	HANDHELD CONTROLLER	89-42681	1
NS	PRODUCT LABEL - \$5500	89-24610-01	1
NS	PRODUCT LABEL - \$7500	89-24610-02	1
NS	PRODUCT LABEL - \$5500SR	89-24610-03	1
NS	PRODUCT LABEL - \$5500SR	89-24610-04	1
NS	WARNING LABEL	89-24612	1
NS	LOGO LABEL	89-24611	1



TROUBLESHOOTING CHART



“If a problem arises please contact your nearest Superwinch® dealer or repair shop.”

Symptoms	Possible Cause(s)	Corrective Actions
Motor will not operate or runs in one direction only	<ol style="list-style-type: none"> 1. Bad connections or broken wires. Most often, winch problems can be traced to loose connections, corrosion, or broken wires. 2. Damaged or stuck solenoid. This is most likely caused by not holding the inner nut to keep the stud from turning when attaching wire to solenoid. 3. Handheld switch inoperative. 4. Damaged motor. 5. Solenoid is not grounded. 6. Weak or dead battery. 	<ol style="list-style-type: none"> 1. Check all wiring. Look for loose connections, corrosion, and broken or damaged wires. Any wires that appear damaged must be replaced. Check handheld controller for damaged wiring or damaged or corroded plug and socket connections. CAUTION: Always use two wrenches (spanners) when loosening or tightening motor and solenoid connections. (See Figure.15) Otherwise motor or solenoid damage can occur. 2. CAUTION: <u>Disengage freespool before performing this test to prevent powering the winch drum.</u> If a solenoid sticks once, it is likely to stick again and must be replaced immediately. Tap solenoid to free stuck contacts. For individual single-coil solenoids, check by applying voltage to the small solenoid terminal. Be sure solenoid is grounded back to battery. For multiple-coil block-style solenoids, disconnect existing connections, ground center terminal, and apply voltage to outer terminals one at a time. A solenoid that is not stuck will make an audible “click” when first energized. 3. Replace switch. 4. Replace or repair motor. Review brushes. Brushes may be sticking or worn. Brush kits are available for some models. 5. Check ground path between battery negative and solenoid. 6. Recharge or replace battery. Check charging system.
Winch will not shut off	<ol style="list-style-type: none"> 1. Solenoid stuck “on”. 	<ol style="list-style-type: none"> 1. If solenoid sticks on, reverse direction and hold trigger switch on until the power lead can be disconnected. A safety on-off switch is available as an accessory.
Motor runs extremely hot	<ol style="list-style-type: none"> 1. Long period of operation. 2. Damaged motor. 3. Damaged brake. 	<ol style="list-style-type: none"> 1. Allow to cool. 2. Replace or repair motor. 3. Replace or repair brake.
Motor runs but with insufficient power or line speed	<ol style="list-style-type: none"> 1. Weak battery. 2. Battery to winch wire too long. 3. Poor battery connection. 4. Poor ground. 5. Damaged brake. 	<ol style="list-style-type: none"> 1. Recharge or replace battery. Check charging system. 2. Use larger gauge wire. 3. Check battery terminals for corrosion. Clean as required. 4. Check and clean connections. 5. Repair or replace brake.
Motor runs but drum does not turn	<ol style="list-style-type: none"> 1. Freespool not engaged. 	<ol style="list-style-type: none"> 1. Engage Freespool.
Winch runs backwards	<ol style="list-style-type: none"> 1. Motor wires reversed. 2. Solenoid wired incorrectly. 	<ol style="list-style-type: none"> 1. Recheck wiring. 2. Recheck wiring.
Will not hold load	<ol style="list-style-type: none"> 1. Excessive load. 2. Worn or damaged brake. 	<ol style="list-style-type: none"> 1. Reduce load or double line. 2. Repair or replace brake.

Figure 15.

