

SUPERWINCH®



OWNER'S MANUAL

INSTALLATION • OPERATION • MAINTENANCE
SAFETY PRECAUTIONS • REPAIR PARTS

X9
12 & 24 Volt DC Electric Winch
Models 1901, 1902

⚠ CAUTION

**READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION
AND OPERATION OF YOUR SUPERWINCH PRODUCT.**

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INTRODUCTION

Thank you for purchasing an X9 winch from Superwinch. It has been designed and manufactured to provide years of trouble-free operation. We hope you will be pleased with its performance. If you are not, for any reason, please contact our Customer Service Department: (860) 928-7787 USA; +44 (0) 1822 614101 England.

When requesting information or ordering replacement parts; always give the following information:

1. Winch Part Number (1901, 1902)
2. Serial Number (found on motor adapter casting)
3. Part Number (found in Replacement Parts List section)
4. Part Description

Please read and understand this Owner's Manual prior to installing and using your winch. Pay particular attention to the General Safety Information. Your winch is a very powerful machine. If used unsafely or improperly, there is a possibility that property damage or personal injury can result. We have included several features in this winch to minimize this possibility; however, your safety ultimately depends on your caution when using this product.

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 which, if not avoided, may result in minor or moderate injury. This notation is also used to alert against unsafe practices.

The following symbols on the product and in the Owner's manual are used:



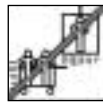
Read Owner's Manual



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

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

Correct installation of your X9 winch is a requirement for proper operation. If you install your X9 winch on the front end of your vehicle, **use the X9 mounting (fitting) kit** which has been designed and manufactured by Superwinch to accommodate your winch and fit your vehicle.

Please Note: The Superwinch model X9 winch is designed primarily for front mount vehicle use and for other intermittent applications. This winch is not designed to be used in hoisting applications and Superwinch does not warrant it to be suitable for such use. Please contact our Customer Service Department for further information. Note the electrical requirements of the X9 winch you have purchased:
Part No. 1901 12-volt DC system Only
Part No. 1902 24-volt DC system Only
Congratulations on your choice!

European Union



Noise The noise level for this winch in operation is below 92 dB(A).

Wire Rope Winches that conform to Machinery Directive 89/392/EEC, are fitted with a 3/8" x 75 ft. wire rope (p/n 90-20136-03), in lieu of standard 5/16" x 100 ft. wire rope.

Emergency Stop In order to conform to Machinery Directive 89/392/EEC, each machine installation must be fitted with an Isolator switch (p/n 1562) whereby the machine can be brought safely to a complete stop.

Superwinch is not responsible for printing errors inadvertently made in the production of this manual.

ROLLING LOAD CAPACITIES*

Grade**	10% (6°)	20% (11°)	30% (17°)	60% (31°)	100% (45°)
Lbs.	45,225	30,600	23,500	15,000	11,575
kg	20514	13880	10659	6804	5250

* Ratings assume a 10% coefficient of friction.

** A 10% grade is a rise of one foot in ten feet. Slope in approximate degrees is also shown.

UNPACKING

This carton contains the following items. Please unpack carefully.

Read instructions before beginning.

Description	Quantity
Winch assembly with wire rope	1
Solenoid assembly	1
Solenoid mounting bracket	1
1/4-20 Hex head bolts	4
1/4-20 Hex nuts	2
1/4 External tooth lock washer	4
Terminal boots	3
3/8-16 Square nuts	4
3/8 Lock washers	4
3/8-16 x 1 Hex head bolts, grade 8	4
Hand saver	1
7" Wire ties	6
Long lead wire assembly (color coded black)	1
Remote pendant	1
Clevis hook	1
Owner's manual	1

FEATURES

Electric Motor – 4.2 peak hp (3.1 kw) 12V Series Wound or 3.5 peak hp (2.6 kw) 24V Series Wound.

Braking – A one way drag brake will hold a 4,500 lb. (2041 kg) load on the first wrap.

Drum – Fabricated steel running in copolymer maintenance free bearings.

Freespool Clutch – Operated by an easy action lever which disengages the gearbox to allow the wire rope to be pulled out without using electric power. A spring-loaded drag mechanism reduces backlash and snarling when pulling out the wire rope.

Remote Switch – 15' (4.5m) hand held pendant switch assembly.

Mounting – Optional custom-engineered mounting kits are available for vehicle frame attachment.

INTERMITTENT DUTY

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 duration of pulls as short as possible. **If the end of the**

motor becomes uncomfortably hot to touch, stop winching and allow the motor to cool down.

CAUTION *If the winch motor stalls, do not continue to apply power to the winch.*

PERFORMANCE

Wire Rope Layer	Max. Pulling Capacity lbs	kg
1	9,000	4082
2	7,365	3340
3	6,230	2825
4	5,400	2450
5	4,765	2161

Load lbs	kg	Speed* 12V		Speed* 24V		Motor Current (Amps)*	
		ft/min	m/min	ft/min	m/min	12V	24V
0	0	38.2	11.6	38.0	11.6	73	42
1,000	454	18.0	5.5	21.7	6.6	130	72
2,000	907	13.8	4.2	17.1	5.2	165	90
4,000	1814	9.0	2.7	12.0	3.6	240	133
6,000	2722	6.0	1.8	8.3	2.5	316	181
9,000	4082	2.5	0.8	3.5	1.0	420	252

SPECIFICATIONS

Working Load* . . . 9,000 lbs. (4082 kg)
 Stall Load 12V*, 24V*12,700 lbs.
 (5760 kg)
 Wire Rope 5/16" x 100'

12V Motor . . . 4.2 hp (3.1 kw) peak
 24V Motor . . . 3.5 hp (2.6 kw) peak
 Gear Ratio 253:1

*Based on first layer performance

GENERAL SAFETY INFORMATION

Your X9 winch is a very powerful machine. Treat it with respect, use it with caution and always follow these safety guidelines.

WARNING *The responsibility for safe installation and operation of the winch and 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. The X9 winch is rated at 9,000 pounds (4082 kg) (single line) capacity on the wire rope layer closest to the drum. **DO NOT OVERLOAD. DO NOT ATTEMPT PROLONGED PULLS AT HEAVY LOADS.** Do not maintain power to the winch if the motor stalls. Overloads can damage the winch and/or the wire rope and create unsafe operating conditions. **FOR LOADS OVER 6,000 POUNDS (2721 KG), WE RECOMMEND THE USE OF THE OPTIONAL PULLEY BLOCK TO DOUBLE LINE THE WIRE ROPE** (Figures 1 & 14). This reduces the load on the winch and the strain on the wire rope by approximately 50%. If attaching back to vehicle, attach to the frame or other load bearing part. **The vehicle engine should be running during winch**

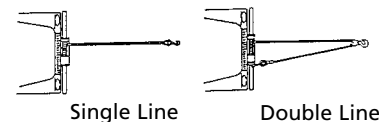


Figure 1

operation to minimize battery drain and maximize winch power and speed. If considerable winching is performed with the engine off, the battery may be too weak to restart the engine.

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.



- DO NOT "move" your vehicle to assist the winch in pulling a load. The combination of the winch and vehicle pulling together could overload the wire rope and the winch itself.
- KEEP WINCHING AREA CLEAR. Do not allow people to remain in the area during winching operations. ALWAYS STAND CLEAR OF WIRE ROPE/HOOK AND WINCH. IN THE UNLIKELY EVENT OF ANY COMPONENT FAILURE IT'S BEST TO BE OUT OF HARM'S WAY.
- INSPECT WIRE ROPE AND EQUIPMENT FREQUENTLY. **A FRAYED WIRE ROPE WITH BROKEN STRANDS SHOULD BE REPLACED IMMEDIATELY.** Always replace wire rope with the manufacturer's identical replacement part (see Replacement Parts List). Periodically check the winch installation to ensure that all bolts are tight.
- USE HEAVY LEATHER GLOVES when handling wire rope. **DO NOT LET WIRE ROPE SLIDE THROUGH YOUR HANDS EVEN WHEN WEARING GLOVES.**

GENERAL SAFETY INFORMATION (CONT.)

7. NEVER WINCH WITH LESS THAN 5 TURNS of wire rope AROUND THE WINCH DRUM since the wire rope end fastener will NOT withstand a load. Your X9 winch wire rope has a ten-foot red "warning indicator" on each end. The "warning indicator" at the winch end warns you that the wire rope is near or less than 5 turns. The "warning indicator" at the hook end of the wire rope warns you that the hook is approaching the winch. ALWAYS USE THE HANDSAVER when guiding the wire rope in or out (see Figure 2). As you use your winch, the red paint will wear off due to normal use. When this happens, renew the red paint as it is a **safety feature of the winch.**



Figure 2

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 be injured. **Never guide a wire rope onto the drum with your hand.**
9. NEVER HOOK THE WIRE ROPE BACK ONTO ITSELF. You could damage the wire rope. Use a nylon sling (Figure 3).

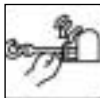


Figure 3

10. Lay a heavy blanket or jacket over the wire rope near the hook end when pulling heavy loads (Figure 4). Should a wire rope failure occur, the cloth will act as a damper and help prevent the rope from whipping. Raise the hood of the vehicle for added protection.

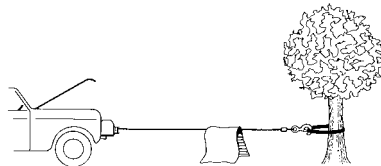


Figure 4

11. NEVER USE YOUR WINCH FOR LIFTING PEOPLE 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 wire rope to pile up at one end of the drum (Figure 5). This can jam the wire rope in the winch, causing damage to the wire rope or winch itself.

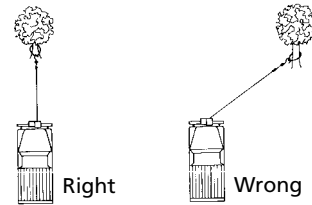
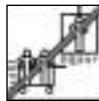


Figure 5

GENERAL SAFETY INFORMATION (CONT.)

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, etc. 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. STORE THE REMOTE PENDANT ASSEMBLY IN A SAFE PLACE when not in use to prevent use by children or other unauthorized persons who could injure themselves or others.
19. DO NOT OPERATE WINCH WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.
20. ALWAYS UNPLUG THE REMOTE PENDANT BEFORE WORKING IN OR AROUND THE FAIRLEAD OR WINCH DRUM (THE DANGER ZONE) so that the winch cannot be turned on accidentally.
21. When moving a load, slowly take up the wire rope slack until it becomes taut. Stop, recheck all winching connections. Be sure the hook is properly seated. If a nylon sling 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 parking brake, and chock all wheels.

23. DO NOT USE THE WINCH TO HOLD LOADS IN PLACE. Use other means of securing loads such as tie down straps. Superwinch offers a wide variety of tie downs. Contact your local Superwinch dealer.



24. 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. DO NOT MACHINE OR WELD ANY PART OF THE WINCH. Such alterations may weaken the structural integrity of the winch and will void your warranty.
26. To avoid overheating the motor, do not power the winch out longer than 2 minutes.

⚠ DANGER *The drum and wire rope will get very hot (Figure 6).*

27. DO NOT CONNECT WINCH TO EITHER 110 VOLT AC HOUSE CURRENT OR 220V MAINS AS WINCH BURNOUT OR FATAL SHOCK MAY OCCUR.
28. Never allow shock loads to be applied to winch or wire rope.

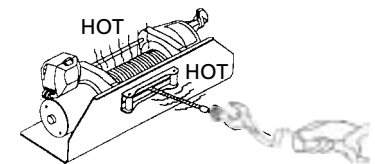
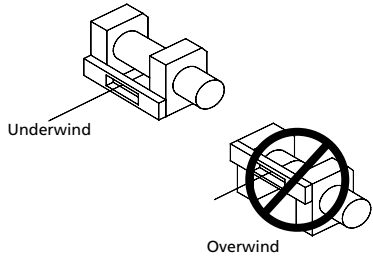


Figure 6

29. Always operate your winch in an underwind orientation only.



INSTALLATION

MOUNTING YOUR WINCH

Superwinch mounting (fitting) kits are available for most popular vehicles. If you can't locate a kit locally, contact Superwinch at the address listed on the front of this manual for the name of a Superwinch dealer near you.

Detailed mounting instructions are provided with each mounting kit. Read and install carefully to ensure proper winch alignment and trouble-free operation.

If a Superwinch mounting plate is not used, refer to Figure 7 for a guide to construct a mounting system.

Note: The winch can be mounted foot down or foot forward. See page 11 for details. The preferred mounting position is feet forward. This winch **MUST** be mounted with the wire rope in the underwind direction.

⚠ WARNING Improper mounting could damage your winch, void the warranty, and cause personal injury.

NOTES:

- All dimensions are in inches (millimeters).
- Winch is mounted with 3/8-16 (M 10) hardware. Using 1/4 inch (6.4) thick steel baseplate, bolt length to be 1 inch (25.4). Bolts to be SAE Grade 8 (ISO 10.9) or stronger.
- Use only square nuts in casting for mounting. (See Figure 8.)

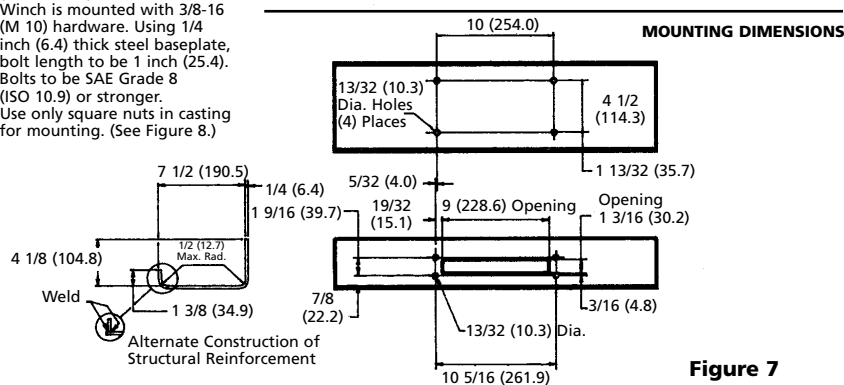


Figure 7

MINIMUM ELECTRICAL REQUIREMENTS

For 12 Volt winches, a 60 amp alternator and battery with 440 cold-cranking amperes capacity are the minimum recommended power sources. If the winch is in heavy use, an auxiliary battery and heavy duty alternator with battery isolator are recommended.

TOOLS REQUIRED

Open End Wrenches (Spanners):
 *(2) 3/8", *(2) 1/2", *(2) 7/16",
 *(2) 9/16"

(1) 1/4 inch Hex socket wrench or straight blade screwdriver

*Adjustable (Crescent) Wrenches may be substituted.

- Install mounting kit or structural support for winch.
- Change the foot orientation (if required) see page 11.
- Attach the long black color coded wire and the ground wire from solenoid pack to the motor case. Mount the winch to the mounting kit base plate or to the mount that you designed (see Figure 7).

The 3/8-16 mounting bolts supplied are the correct length for use with a 1/4" thick Superwinch mounting plate.

⚠ CAUTION The end of the mounting bolts must not contact the opposite side of the support casting's mounting pocket (see Figure 8).

Such contact could lead to a damaged casting, catastrophic failure of the winch and void the warranty. Adjust bolt length accordingly if a thicker plate is used. The bolt threads must engage all the nut threads.

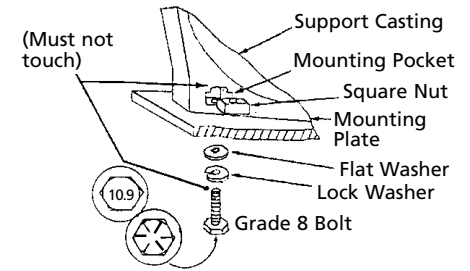


Figure 8

Always place the square nuts (provided) in the casting pockets when mounting your winch.

⚠ WARNING Do not substitute any strength grade weaker than SAE Grade 8 (ISO 10.9). Grade marking is found on the bolt head and is pictured in Figure 8.

- Mount the solenoid pack to the solenoid pack bracket with the 1/4-20 bolts provided (see Figure 22). Do not mount the bracket to the mounting plate at this time.
- Recheck all wire connections that you just made to be sure they are correct. If you are using a Superwinch mounting plate, bolt the solenoid bracket to the mount plate with the bolts, external tooth lock washers, and nuts provided. **Note:** If a Superwinch mounting plate is not used, the solenoid pack must be mounted in a way that will provide an electrical ground path from the solenoid case to the battery negative terminal. Without this ground path the winch will not work.

If you choose to relocate the solenoid pack or the winch at a greater distance than wires provided will permit, it may be necessary to purchase a larger gauge

wire to get the best performance from the winch. If the total length added exceeds 10 ft. (3m), use a larger wire gauge size.

6. Disconnect the vehicle battery leads.

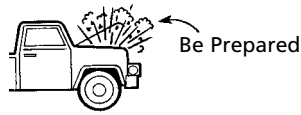


Figure 9

⚠ DANGER *Automobile 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.*

7. Route the long red and long black color coded wires to the battery. To ensure against insulation abrasion and/or cutting, apply several layers of electrical tape where wiring may come in contact with sharp parts on the vehicle. Attach the red color coded wire to the battery positive terminal, and reattach the terminal to the battery.

If your vehicle is equipped with side pole terminals, it may be necessary to obtain auxiliary side terminal bolts from your local auto parts dealer to make these connections.

Connect the long black color coded wire to the battery negative terminal, then connect the terminal to the battery.

8. Turn the freespool clutch lever to the "free" position. Pull several feet of wire rope off the drum. Return the clutch lever back to the "Engage" position. Plug in remote pendant control. Slide the lever to "Rope Out" position to check the wire rope drum rotation direction. If drum rotates

in the wrong direction, recheck your wiring.

⚠ CAUTION *To prevent unauthorized use of the winch, remove pendant control and store in a clean dry area such as the glove box.*

Under some circumstances it may be appropriate to install additional circuit protection devices (circuit breakers). If in doubt, seek appropriate expert advice. Superwinch recommends that all winch electrical systems can be readily and quickly isolated from their electrical supply in the event of an emergency. The winch electrical system should always be isolated when the winch is not in use.

PENDANT OPERATION

The handheld pendant switch activates a solenoid that activates power to the winch motor.

To connect the pendant control, remove the cover on the plug receptacle and insert the plug end of remote switch. The plug on the pendant 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, move the toggle in the other direction.

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

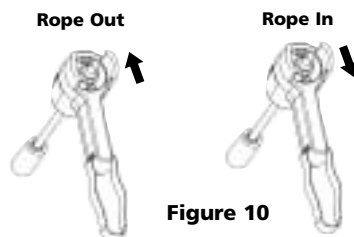


Figure 10

PULLING OUT THE WIRE ROPE

The wire rope has been installed on your winch under minimal load at the factory. The wire rope must be respooled onto the drum under load so that the outer layers will not draw down into the inner ones thereby damaging the wire rope.

Rotate the clutch lever to the "Free" position as shown in Figure 11. 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. Pull out the wire rope and secure to anchor or load. Check that there are at least five (5) turns of wire rope left on the drum. Re-engage the drum by rotating the clutch lever to the "Engaged" position (see Figure 11).

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

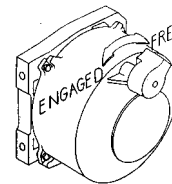


Figure 11

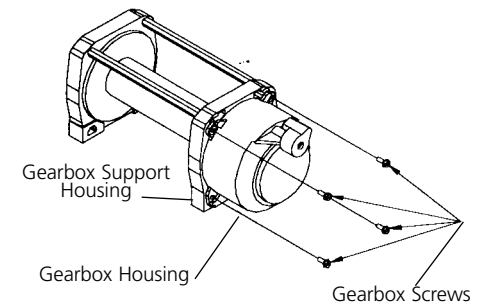
INSTRUCTIONS FOR CHANGING WINCH CONFIGURATION

The X9 winch may be used in either the foot down or foot forward configuration. For convenience of oper-

ation, the Gearbox Housing can be rotated to position the Clutch Lever to the top of the winch.

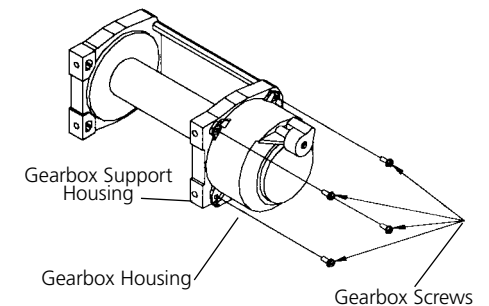
To reposition, remove the (4) screws holding the Gearbox Housing to the Gearbox Support Housing. Rotate the Gearbox Housing to the position that you would like the Clutch Lever. Replace all (4) screws.

⚠ CAUTION *Be careful to keep the Gearbox Housing against the Gearbox Support Housing during the time the (4) screws are loose or removed. This will prevent parts inside the Gearbox Housing from becoming disengaged.*



Foot Down Configuration

Figure 12



Foot Forward Configuration

Figure 13

TIPS FOR EXTENDING THE LIFE OF THE WINCH

1. KEEP A TIGHTLY WOUND WIRE ROPE DRUM. Do not allow the wire rope to become loosely wound. A loosely-wound drum allows a wire rope under load to work its way down into the layers of wire rope on the drum. When this happens, the wire rope may become wedged within the body of the windings damaging the wire rope. To prevent this problem, keep the wire rope tightly and evenly wound on the drum at all times. A good practice is to rewind the wire rope under tension after each use. One way to do this is to attach the hook to a stationary object at the top of a gradual incline and winch your vehicle up the incline.
2. DO NOT ALLOW WINCH MOTOR TO OVERHEAT. Remember, the winch is for intermittent use only. During long or heavy pulls the motor will get hot. The internal parts will be hotter than the case. To check the motor temperature, stop winching and carefully touch the motor case, if the motor is uncomfortable to touch, allow the motor to cool before continuing. KEEP THE ENGINE RUNNING TO RECHARGE THE BATTERY during this break.
3. To maximize winch and wire rope life, use a pulley block to double line heavier loads (Figure 14).

4. The pull required to start a load moving is often much greater than the pull required to keep it moving. AVOID FREQUENT STOPPING AND STARTING during pull.
5. PREVENT KINKS BEFORE THEY OCCUR.

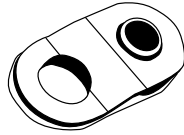


Figure 14

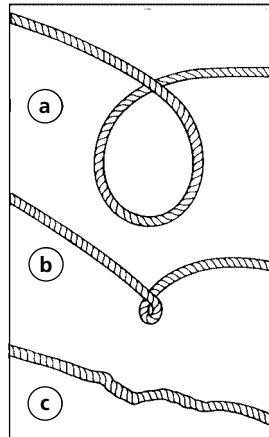


Figure 15

- a. This is the start of a kink. Wire rope should be straightened.
- b. Wire rope was pulled and loop has tightened into a kink. Wire rope is now permanently damaged and must be replaced.
- c. 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.

6. EQUIPPING THE WINCH WITH A ROLLER FAIRLEAD will substantially reduce wear on the wire rope during angle pulls (Figure 16). The rollers eliminate heavy rubbing and abrasion to the wire rope.

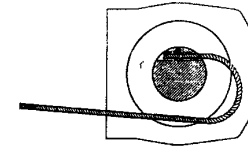


Figure 17



Figure 16

MAINTENANCE

Periodically check tightness of mounting bolts and electrical connections. Remove any dirt or corrosion that may have accumulated on the electrical connections.

Repairs should be done by Authorized Superwinch Repair Centers ONLY. Do not attempt to disassemble the gearbox. Disassembly will void warranty.

LUBRICATION

The gearbox and drum bearing are permanently lubricated with a high performance gear lube. If relubrication is necessary (after repair or disassembly) only use factory approved grease (Superwinch Part No. 90-15020).

REPLACING THE WIRE ROPE

Never substitute a heavier or lighter wire rope. Never use rope made of any other material other than wire.

Always replace damaged wire rope with manufacturer's identical replacement part (see Replacement Parts list). Pass attaching end of wire rope through the fairlead (if equipped) and attach it to the drum. When inserting the wire rope into the drum, insert it into the correct end of the hole provided (Figure 17). Tighten the set screw securely.

It is important that the wire rope be wound tightly onto the drum. A good way to do this is to attach the wire rope hook to a fixed object at the top of a slight incline, then winch the vehicle up the incline.

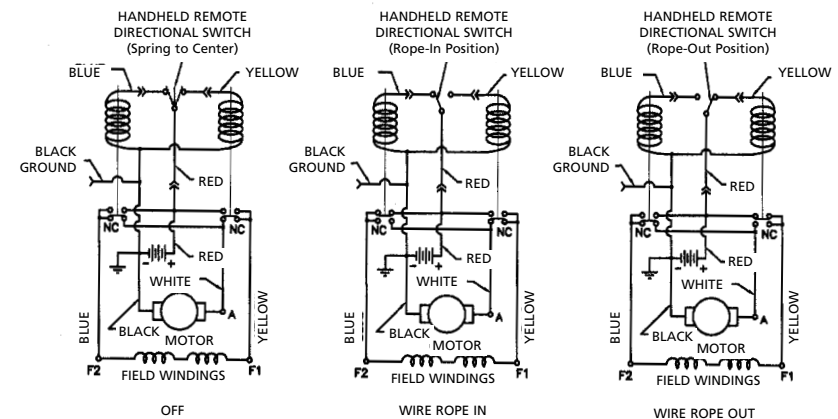


Figure 18

WINCH ASSEMBLY

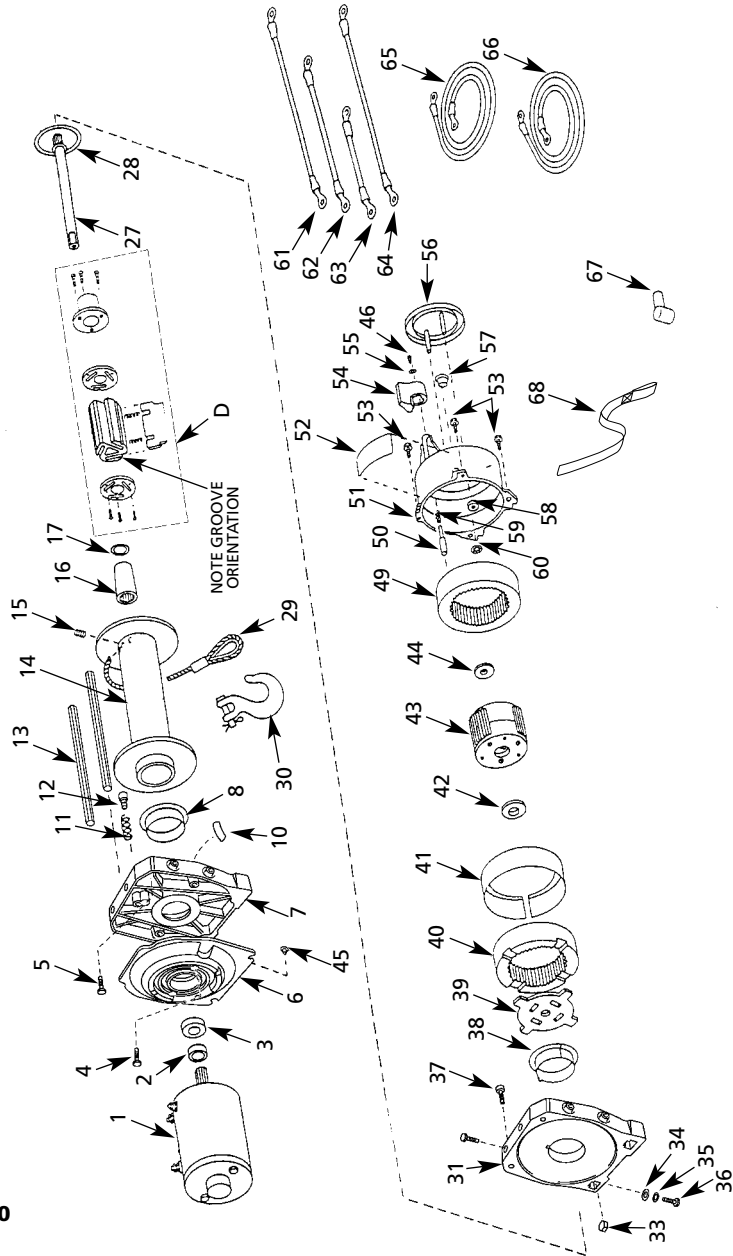


Figure 20

REPLACEMENT PARTS LIST

Reference Number	Description	Part Number	Qty
1	12 VDC Motor (inc. thru bolts)	90-33333	1
	24 VDC Motor (inc. thru bolts)	90-33334	1
2	Motor Spacer	90-10354	1
3	Ball Bearing	94-23079-05	1
4	1/4-20 x 5/8 Self tapping hex head screw	90-23039-10	3
5	1/4-20 x 3/4 Socket Head Cap Screw	90-23055-06	2
6	Motor Adapter	90-32165	1
7	Outboard Drum Support w/ 10	90-32255	1
8	Drum Bearing	90-12575	1
9	Not applicable this model	—	—
10	Winding Direction Label	92-10211	1
11	Drag Button Spring	90-23152-08	1
12	Drag Button	90-22612	1
13	Tie Rod	90-20033	2
14	Drum	90-31069-04	1
15	M8 x 10 Socket Set Screw	94-23164-09	1
16	Drive Shaft Coupling	90-22110	1
17	Washer	90-23120-08	2
D	Brake Assembly	90-25036	1
18	Not applicable this model	—	—
19	Not applicable this model	—	—
20	Not applicable this model	—	—
21	Not applicable this model	—	—
22	Not applicable this model	—	—
23	Not applicable this model	—	—
24	Not applicable this model	—	—
25	Not applicable this model	—	—
26	Not applicable this model	—	—
27	Drive Shaft Assembly	90-22254	1
28	Thrust Washer	90-12574	1
29	5/16 x 100 ft. Wire Rope w/o Hook	1580	1
30	Clevis Hook Assembly	94-20116	1
31	Inboard Drum Support	90-32168	1
32	Not applicable this model	—	—
33	3/8-16 Square Nut	90-23084-04	4
34	3/8 Flat Washer	92-23027-05	4
35	3/8 Lock Washer	92-23057-01	4
36	3/8-16 x 1 Hex Head Bolt, Grade 8	90-23226-01	4
37	1/4-20 x 3/4 Socket Head Cap Screw	90-23055-06	2
38	Drum Bearing	90-12575	1
39	Drum Driving Plate	90-22183	1
40	Output Ring Gear	90-32232-01	1

REPLACEMENT PARTS LIST

Reference Number	Description	Part Number	Qty
41	Ring Gear Bearing	90-22607	1
42	Carrier Bushing	90-10417	1
43	Planet Carrier Assembly	90-32238	1
44	Gearbox Bushing	90-10418	1
45	Plastic Closure	90-23171-05	2
46	8/32 x 3/8 Pan Head Screw	90-23032-17	1
47	Not applicable this model	—	—
48	Not applicable this model	—	—
49	Fixed Ring Gear	90-32233-01	1
50	Lock Pin	90-22252-01	1
51	Gearbox Housing (w/ 52, 56–58, 60 specify model no. when ordering)	90-32256	1
52	Warning/Clutch Operation Label (specify model no.)	90-22263	1
53	1/4-20 x 5/8 Self Tapping Hex Head Screw	90-23039-10	4
54	Clutch Lever	90-32248	1
55	#8 Int. Tooth Lock Washer	90-23048-03	1
56	Dust Cover	90-22103	1
57	Plug	90-23171-07	1
58	Rubber Washer	92-10194	2
59	Clutch Spring	90-23152-07	1
60	Push-On Retainer	90-23213-04	2
61	2 AWG x 16" Lead Wire Assembly (yellow)	90-22695-26	1
62	2 AWG x 13" Lead Wire Assembly (blue)	90-22695-25	1
63	2 AWG x 10" Lead Wire Assembly (white)	90-22695-27	1
64	10 AWG x 24" Lead Wire Assembly	90-22635-33	1
65	2 AWG x 8' Lead Wire Assembly (black)	90-22635-47	1
66	2 AWG x 8' Lead Wire Assembly (red)	90-22695-46	1
67	2 AWG Boot Terminal	90-23247-04	3
68	Handsaver nylon cord	87-31120	1
NS	7" Long Wire Tie	94-23058-04	6
NS	Grease (for one relube)	90-15020	1
NS	Motor Brush Repair Kit	90-10414-05	1
ACC	Roller Fairlead	2539	1
ACC	Pulley Block, 20,000 lbs.	7750A	1
ACC	Circuit Breaker Kit - 12 V	2232	1
ACC	Circuit Breaker Kit - 24 V	2232A	1

NS Not Shown
ACC Accessory

SOLENOID ASSEMBLY

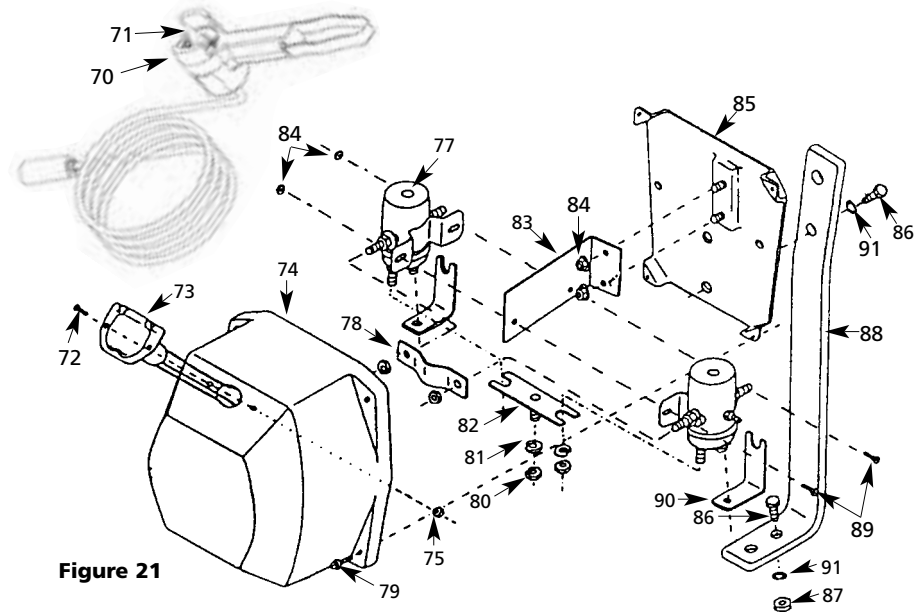


Figure 21

Reference Number	Description	Part Number	Qty
70	Remote Switch Pendant (15')	90-33450-01	1
71	Toggle Switch	90-14141	1
72	#8-32 x 3/4 Screw	90-23032-22	2
73	Connector Assembly w/ Wires	90-14140	1
74	Solenoid Cover (w/ Logo)	90-32187	1
75	#8-32 Hex Flanged Nut	90-23149-06	2
77	12VDC Solenoid	90-20329	2
	24VDC Solenoid	90-20331	2
78	Top Bus Bar	92-12383	1
79	8-32 x 1/2 Self Tapping Screw	92-23039-01	4
80	5/16-18 Hex Nut	92-23034-04	1
81	5/16 Lock Washer	92-23057-03	1
82	Front Buss Bar w/ Stud	92-12384	1
83	Solenoid Bracket	94-20118	1
84	10-32 Flange Nut	90-23149-01	4
85	Solenoid Base Plate w/ Studs	90-22627-02	1
86	1/4-20 x 3/4 Hex Head Bolt	90-23226-10	4
87	1/4-20 Hex Flange Nut	90-23149-02	4
88	Solenoid Pack Bracket	90-31027-02	1
89	10-32 x 1/2 Machine Screw	92-23125-01	2
90	Buss Bar #1	92-20126	1
91	1/4 External Tooth Lock Washer	90-23227-02	2
NS	X9 Logo	90-20065	1
NS	Control Pack, X9 12V (includes 72-85, 89, 90)	90-32271	1
NS	Control Pack, X9 24V (includes 72-85, 89, 90)	90-32272	1

TROUBLESHOOTING CHART

If a problem arises, contact your nearest Superwinch dealer or repair center.

Symptom	Possible Cause(s)	Corrective Action
Motor will not operate or runs in one direction only	<ol style="list-style-type: none"> 1. Damaged or stuck solenoid; most likely caused by not holding the inner nut to keep the stud from turning when attaching wire to solenoid 2. Switch inoperative 3. Broken wires or bad connection 4. Damaged motor 5. Solenoids not grounded 	<ol style="list-style-type: none"> 1. CAUTION: Disengage clutch before performing this test to prevent powering the wire rope drum. If a solenoid sticks once, it is likely to stick again and must be replaced immediately. Tap solenoid to free stuck contacts. Check by applying voltage to the small solenoid terminal. Be sure solenoid is grounded back to source. A solenoid that is not stuck will make an audible "click" when first energized 2. Replace Switch 3. Check for poor connections. CAUTION: Always use two wrenches (spanners). (See Figure 10) 4. Replace or repair motor 5. Check the ground path between battery negative and solenoid base
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. Clutch not engaged 	<ol style="list-style-type: none"> 1. Engage clutch
Winch runs backwards	<ol style="list-style-type: none"> 1. Motor wires reversed 2. Solenoids 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

SUPERWINCH®

WARRANTY REPAIR CENTERS

USA

Superwinch Inc.
Winch Drive
Putnam, CT 06260
phone: 860-928-7787
repair@superwinch.com

Electric Motor Repair
2010 North 4th Street
Minneapolis, MN 55411
phone: 612-588-4693

Berens & Associates
124 Hegenberger Loop
Oakland, CA 94621
phone: 800-540-2858
berens94621@yahoo.com

Zorko's Alternator Service
241 Wells Road
Home, PA 15747
phone: 800-468-5055
zasapw@microserve.net

Electric Motors of Iowa City
50 Commercial Court
Iowa City, IA 52246
phone: 319-354-4040
emic4040@aol.com

CANADA

Demand Electric
228-39th St. N.E.
Calgary, AB T2E 2M5
403-230-2709

Harold Supply
3 Southerland Ave.
Sudbury, Ont. P3C 3A7
705-761-4455

Explora Industries Ltd.
9605-5th Ave.
Edmonton, AB T6E 0B2
780-430-8591

Dayworth Sales
1 Saunders Rd. Unit 2
Barrie, Ont. 9A7 9A7
705-726-7778

Les Equipment Twin
10401 Parkway Blvd.
Ville D'Anjou, PQ H1J 1R4
514-353-1190

Buffalo Industries
251-253 Princess Street
Winnipeg, Manitoba R2C 1M1
204-942-1951

Power Plus Tool Repair
57 Millenium Ave.
Moncton, NB E1E 2G2
560-855-8665

Muskoka Auto Parts
11 King William St.
Huntsville, Ont. P1H 2K8
705-789-2321

Lou Dennis Auto
Hiway 11 South
Sundridge, Ont. P0A 1Z0
705-384-5345

Outdoors Plus
128 Regional St.
P.O. Box 1349
Port Aux Basques, NF A0M 1C0
709-695-7533

Bobcaygeon Auto and Marine
91 Main St.
Bobcaygeon, Ont. K0M 1A0
705-738-2317

MAP Bracebridge
19 Taylor Rd.
Bracebridge, Ont. P1L 1W3
705-645-8785

MAP Fenelon Falls
165 Lindsay St.
Fenelon Falls, Ont. K0M 1N0
705-887-6232

Central Electric Motor Rewind
#1-1960 Windsor Rd.
Kelowna, BC V1Y 2Y3
250-860-4415
jnelsoncentral@netscape.net

Delta Tool Repair Limited
114-7533, 135th St.
Surrey, BC V3W 0N6
604-591-3230

Ted's Power Tool Repair
426-44th St. East
Saskatoon, SK S7K 0W1
306-934-6155

Bob's Electric Truck Service
845-B Macdonald Ave.
Regina, SK S4N 2X5
306-721-4148

Off Road Canada
251-12th St. "B" North
Lethbridge, AB T1H 2K8
403-327-7722

Gary's Starter & Alternator
P.O.Box 7 Site 4
RR 1 Mount Uniacke B0N 1Z0
Contact: Gary Thorne
902-757-2388

Power Blitz Mftg. & Maintenance
577 Edgeley Blvd. Unit 6
Concord, Ont. L4K 4B2
905-669-8209
ali@powerblitz.com

Bruce's Recreation
92 Balbo Dr.
Shoal Harbour Nfld A5A 4A8
709-466-3355

Atlantic Recreation & Marine
5 School St.
Sydney, Nova Scotia
B1S 3G1
902-567-1697
sbidart@thearm.ca

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