

# EW8020 WINCH



# Assembly & Operating Instructions

## **INTRODUCTION**

Congratulations on your purchase of winch. We design and build winches to strict specifications and with proper use and maintenance should bring you years of satisfying service.

** WARNING - Read, study and follow all instructions before operating this device. Failure to heed these instructions may result in personal injury and/or property damage.**

Your winch can develop tremendous pulling forces and if used unsafely or improperly could result in property damage, serious injury or death. Throughout this manual you will find the following symbols for caution, warning and danger. Pay particular attention to the notes preceded by these symbols as they are

written for your safety. Ultimately, safe operation of this device rests with you, the operator.



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.



Indicates a potentially hazardous situation which, if not avoided could result in death or serious injury.

### **INCLUDED WITH YOUR WINCH**

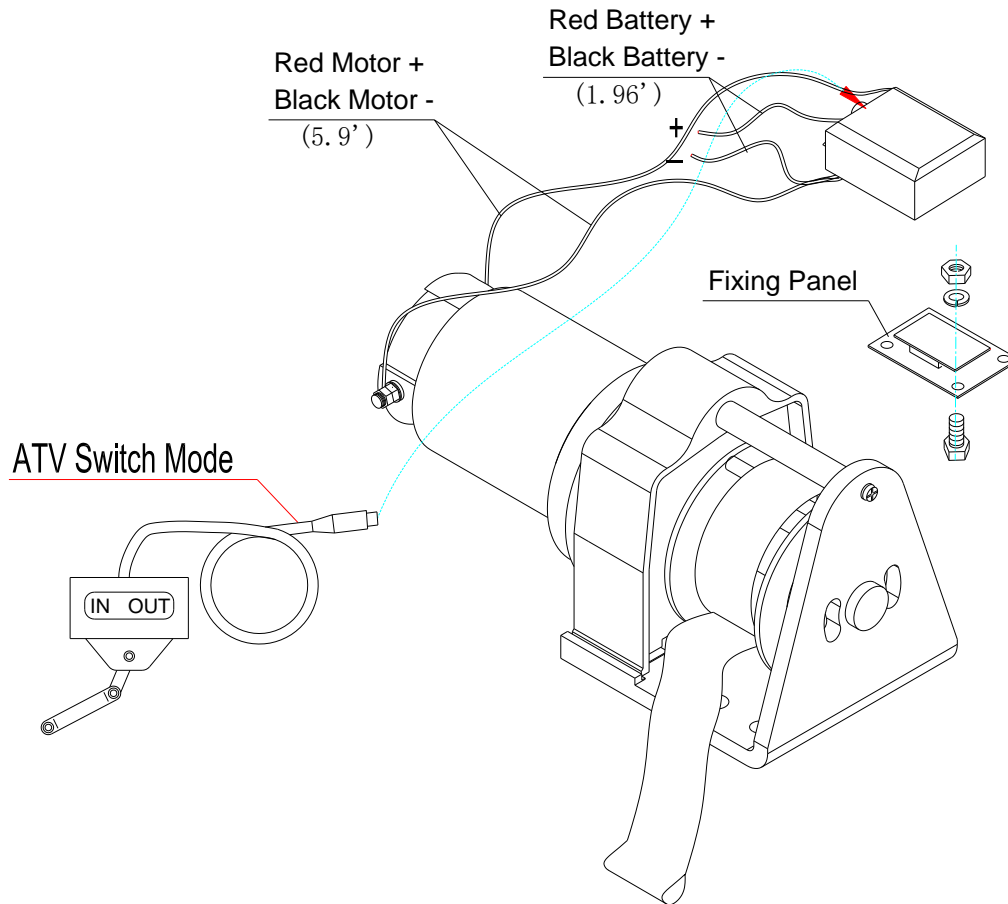
DESCRIPTION	QUANTITY
1. Winch Assembly with pulling strap	1
2. Power Cord/Switch Assembly (Supplied for prototype)	1
3. Control box	1
4. ATV Handlebar Switch	1
5. Mounting bolt kit	2

### **GETTING TO KNOW YOUR WINCH**

Your winch is a powerful piece of machinery. It is important that you understand the basics of its operation and specifications so that when you need to use it, you can use it with confidence and safety. Below is a list of the components of your winch and their use. Practices using your winch before you are in a situation to need to use it.

1. Motor: Your 0.8 hp motor is powered by a 12 volt battery and provides power to the gear mechanism which turns the drum and winds the strap;
2. Winch Drum: The winch drum is the cylinder on which the pulling strap is stored. It can feed or wind the strap depending on the remote winch switch.
3. Pulling strap: Your winch has a 1.6'(w) X2.4'(L) nylon strap designed specifically for load capacity of 600lbs.
4. Mechanical Gear System: The reduction gears convert the winch motor power into extreme pulling forces.
5. Braking System: Braking action is automatically applied to the winch drum when the winch motor is stopped and there is a load on the strap. The braking action is applied by a separate mechanical brake.
6. Control System: your winch is controled through a solenoid control box by press button of the ATV power switch.
7. Solenoid: Power from the vehicle battery flows through the weather sealed switch before being directed to the winch motor.

## **WINCH ASSEMBLY AND MOUNTING**



1. Your winch is designed with a bolt pattern that is special in this case use of the winch. Proper alignment of the winch will allow even distribution of the full rated load.
2. Connect the battery and motor leads as the drawing above every type of winch is different each other.

**!** **CAUTION** – Batteries contain gases which are flammable and explosive. Wear eye protection during installation and remove all jewelry. Do not lean over battery while making connections.

3. Check for proper drum rotation. Press the cable out button on the power switch. If the drum is turning and releasing more strap then your connections are accurate. If the drum is turning and collecting more strap then reverse the leads on the motor. Repeat and check rotation.

## **SAFETY PRECAUTIONS**

**⚠️ WARNING ⚠️**

**⚠️ WARNING – DO NOT EXCEED RATED CAPACITY.**

**⚠️ WARNING – Intermittent use only.**

**⚠️ WARNING - Do not use winch in lifting or moving or persons.**

**⚠️ WARNING-Disconnect the remote control and battery leads when not in use.**

**⚠️ WARNING- Do not exceed maximum pull rating. Avoid “shock loads” by using the control switch intermittently to take up the slack in the strap. “Shock loads” can far exceed the rate capacity for the strap and drum.**

**⚠️ WARNING- Do not exceeds maximum line pull ratings shown on the tables.**

**⚠️ Do not use as a hoist. Do not use for overhead lifting.**

**⚠️ Failure to heed these warnings may result in personal injury and/or property damage.**

**⚠️ CAUTION - If the motor stalls do not maintain power to the winch. Electric winches are designed and made of intermittent use and should not be used in constant duty applications.**

**⚠️ CAUTION - Never release the free-spool clutch when there is a load on the winch.**

**GENERAL TIPS FOR SAFE OPERATION**

- The vehicle engine should be kept running during operation of the winch to minimize battery drain and maximize power and speed of the winch. If the winch is used for a considerable time with the engine off the battery may be drained and too weak to restart the engine
- Get to know your winch before you actually need to use it. We recommend that you set up a few test runs to familiarize yourself with rigging techniques, the sounds your winch makes under various loads, the way the strap spools on the drum, etc.

- Inspect the strap and equipment before each use. A frayed or damaged strap shall be replaced immediately. Use only manufacturer's identical replacement strap with the exact specifications.
- Inspect the winch installation and bolts to ensure that all bolts are tight before each operation.
- Store the remote control inside your vehicle in a place that it will not be damaged.
- Any winch that appears to be damaged in any way, is found to be worn, or operates abnormally SHALL BE REMOVED FROM SERVICE UNTIL REPAIRED. It is recommended that the necessary repairs be made by a manufacturer's authorized repair facility.
- Only attachments and/or adapters supplied by the manufacturer shall be used.

### **WINCHING TECHNIQUES A-X**

- a. Take time to assess your situation and plan your pull.
- b. Put on gloves to protect your hands.
- c. Disengage the clutch to allow free-spooling and also save battery power.
- d. Attach the hand saver hook to the clevis hook.
- e. Pull out the strap to your desired anchor point using the hand saver hook.
- f. Secure the clevis hook to the anchor point: Sling, chain or snatch block. Do not attach the hook back onto the strap.
- g. Engage the clutch.
- h. Connect the remote control to the winch.
- i. Start your engine to ensure power is being replenished to the battery.
- j. Power in the strap guiding the strap under tension to draw up the slack in the strap. Once the strap is under tension stand well clear. Never step over the strap.
- k. Double check your anchors and make sure all connections are secure.
- l. Clear the area. Make sure all spectators all well back and that no one is directly in front or behind the vehicle or anchor point.
- m. Begin winching. Be sure that the strap is winding evenly and tightly around the drum. The vehicle that is being winched can be slowly driven to add assistance to the winching process. Avoid shock loads; keep the strap under tension.

- n. The vehicle to be winched should be placed in neutral and the emergency brake released. Only release the brake pedal when under full tension. Avoid shock loads to the winch. This can damage the winch, rope and vehicle.
- o. The winch is meant for intermittent use. Under full load with a single line rig do not power in for more than a minute without letting the motor cool down for a few minutes and then resume the winching operation.
- p. The winching operation is complete once the vehicle is on stable ground and is able to drive under its own power.
- q. Secure the vehicle. Be sure to set the brakes and place the vehicle in park.
- r. Release the tension on the strap. The winch is not meant to hold the vehicle for long periods of time.
- s. Disconnect the strap from the anchor.
- t. Rewind the strap. Make sure that any strap already on the drum has spooled tightly and neatly. If not, draw out the strap and re-spool from the point where the strap is tight.
- u. Keep your hands clear of the winch drum and fairlead as the strap is being drawn in.
- v. Secure the hook and hook strap.
- w. Disconnect the remote control and store in a clean, dry place.
- x. Clean and inspect connections and mounting hardware for next winching operation.


## **MAINTENANCE**

1. Periodically check the tightness of mounting bolts and electrical connections. Remove all dirt or corrosion and always keep clean.
2. Do not attempt to disassemble the gear box. Repairs should be done by the manufacturer or an authorized repair center.
3. The gear box has been lubricated using a high temperature lithium grease and is sealed at the factory. No internal lubrication is required.



## **REPLACING THE STRAP**

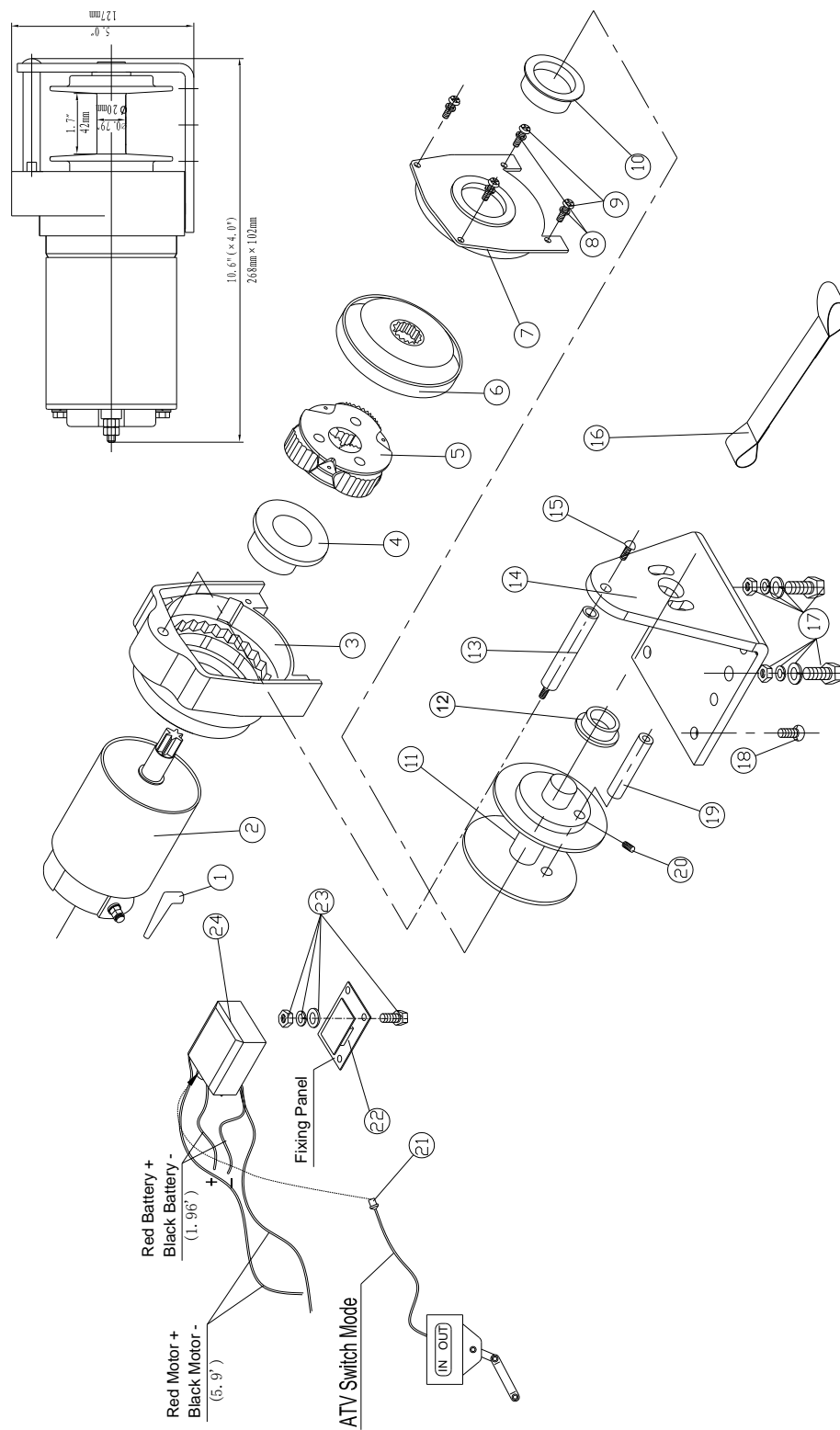
1. If the strap has become worn or is beginning to show signs of strands breaking, it must be replaced before being used again. To do this, remove the defective strap by free spooling. Remove the screw M4x6 (Part# NWB300015) on the drum and take out the winch drum; disassemble the pin (Part# NWB300014)release the strap.
2. Replace the new strap and assemble the winch.
3. Ensure that the strap is re-spooling in the under wind position.
- 4.

 **WARNING - Only replace the strap with the identical replacement part recommended by the manufacturer.**

## **TROUBLE SHOOTING**

<b>SYMPTOM</b>	<b>POSSIBLE CAUSE</b>	<b>SUGGESTED ACTION</b>
Motor does not turn on	<ul style="list-style-type: none"> <li>-Switch Assembly not connected properly</li> <li>-Loose battery cable connections</li>   <li>-Defective Switch Assembly</li>   <li>-Defective motor</li>   <li>-Water has entered motor</li> </ul>	<ul style="list-style-type: none"> <li>-Insert Switch Assembly all the way into the connector.</li> <li>-Tighten nuts on all cable connections.</li>   <li>-Replace Switch Assembly.</li>   <li>-Check for voltage at armature port with Switch pressed. If voltage is present, replace motor.</li>   <li>-Allow to drain and dry. Run in short bursts without load until completely dry.</li> </ul>
Motor runs but cable drum does not turn	<ul style="list-style-type: none"> <li>-Clutch not engaged</li> </ul>	<ul style="list-style-type: none"> <li>-Turn clutch to the "In" position. If problem persists, a qualified technician needs to check and repair.</li> </ul>
Motor runs slowly or without normal power	<ul style="list-style-type: none"> <li>-Insufficient current or voltage</li> </ul>	<ul style="list-style-type: none"> <li>-Battery weak, recharge. Run winch with vehicle motor running.</li> <li>-Loose or corroded battery cable connections. Clean, tighten, or replace.</li> </ul>
Motor overheating	<ul style="list-style-type: none"> <li>-Winch running time too long</li> </ul>	<ul style="list-style-type: none"> <li>-Allow winch to cool down periodically.</li> </ul>
Motor runs in one direction only	<ul style="list-style-type: none"> <li>-Defective Switch Assembly</li> </ul>	<ul style="list-style-type: none"> <li>-Loose or corroded battery cable or motor cable connections. Clean and tighten.</li> <li>-Repair or replace switch assembly.</li> </ul>

# WINCH ASSEMBLY DRAWING



## WINCH PARTS LIST (SP3000)

No.	Part #	Qty	Description	Remark
1	SP300001	2	Terminal Protector	
2	SP300100	1	Motor Assembly	
3	SP300200	1	Gear-Box Assembly	
4	SP300002	1	Support Ring ( I )	
5	SP300300	1	Planetary Gear Assembly	
6	SP300400	1	Output Gear Ring Assembly	
7	SP300003	1	Drum Holder Plate	
8	SP300004	4	Spring Washerø4	
9	SP300005	4	Phillip Screw M4 x 12	
10	SP300006	1	Bush ( I )	
11	SP300007	1	Drum	
12	SP300008	1	Bush	
13	SP300009	1	Tie Bar	
14	SP300010	1	Base Plate	
15	SP300011	1	Screw M8 x 20	
16	SP300012	1	Nylon Strap	
17	SP300500	2	Mounting Screw Assembly (M8 x 35)	
18	SP300013	2	Screw M6 x 16	
19	SP300014	1	Pin	
20	SP300015	1	Screw M4 x 6	
21	SP300600	1	ATV Handlebar Switch	
22	SP300700	1	ATV Control Box Fixing Panel	
23	SP300800	4	ATV Control Box Mountings	
24	SP300900	1	A Type Control Box	

## **SPECIFICATION**

Maximum line pulls:	600 lbs (2.67 kN) ;
Gear reduction ratio:	153:1;
Motor:	Permanent magnet motor; 0.7hp/540 W (600 lbs) 0.4 hp / 300 W (DC 12V) (Max Output Power) ;
Overall dimensions:	10.6" (L) x 4.0" (W) x 5.0" (H) ; 268(L) mm X 102 (W) mm X 127 (H) mm ;
Drum size:	Ø 0.79" (D) x 1.7" (L) ; Ø 20 (D) mm x 42 (L) mm ;
Nylon strip:	1.6" (W) x 2.4' (L) ; 40 mm (W) x 0.73 m (L) ;
Weight (winch):	13.2 lbs ( 6.0kgs ) ;
Total Weight:	16.1 lbs ( 7.3 kgs ) ;

### **Line speed and motor current (First layer)**

Line pull	Line speed ft/min (m/min)	Motor current Amps (Max)
lbs (kN)	12V DC	12V DC
0	14 (4.5)	10
250 (1.1)	11.5 (3.5)	30
600 (2.67)	10.5 (3.2)	45

#### **Using in Special case:**

250 lbs with 8 inches high Lifting: lifting time 5 second while ampere is 30A.

Minimum 5000 times cycles without failure.

Lifting 600 lbs with 8 inches high, lifting time 7 second while ampere is 45A.

Minimum 1500 times cycles without failure.

Start / stop of operating ampere 65 A maximum.