



PORTABLE ELECTRICAL WINCH

Warrior Trojan Portable Utility Winch



Assembly & Operating Instructions

CONTENTS

INTRODUCTION.....	1
GETTING TO KNOW YOUR WINCH	2
SAFETY PRECAUTIONS.....	3
WINCH ASSEMBLY AND MOUNTING.....	4
WIRING DRAWING	6
WINCH WORKING DEMONSTRATION.....	7
REPLACING THE WIRE ROPE	8
MAINTENANCE.....	9
TROUBLE SHOOTING.....	9
WINCH ASSEMBLY DRAWING	10
WINCH PARTS LIST.....	11
SPECIFICATION.....	12

INTRODUCTION

Congratulations on your purchase of a high quality 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 read these instructions may result in personal injury and/or damage to equipment.

Your winch can develop tremendous pulling forces and if used unsafely or incorrectly could result in damage to property, serious injury or death. Throughout this manual you will find the following symbols for caution, warning and danger. Pay attention to these notes preceded by these symbols as they are written for your safety. Ultimately, safe operation of this device rests with you, the operator/user.



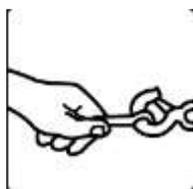
This indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. This notice is also used to alert you against unsafe practices.



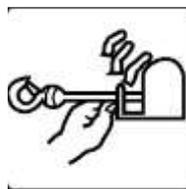
This indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.



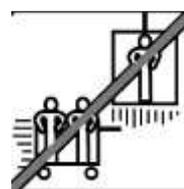
Read the owners Manual.



Always use a Hand Saver.



Keep clear of Winch Wire Rope And Hook while Operating.



Never use winch to lift or move people.



Never use winch to hold Load in place.

GETTING TO KNOW YOUR WINCH

A Portable winch is a complete winching solution in a convenient kit that features a 4000lb rated line pull winch on a unique powder coated winch platform, all in a compact, easy to carry composite plastic box. The kit is easy to store, use, and repack. Complete portable utility winch requires no installation and does not require a winch mount; however, it can be permanently mounted on a trailer or other vehicles if needed.



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.

! WARNING – Do not substitute any strength grade weaker than ISO grade 8.8

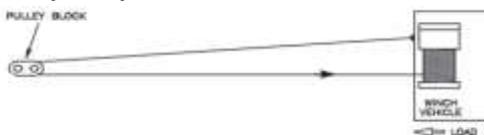
! WARNING – Be sure that both the mounting plate and winch hardware have been securely tightened.

! CAUTION – No part of the vehicle (skid plates, wiring, auxiliary light, tires, etc.) should impede the operation of your winch. When mounting, check all vehicle and winch parts free of obstructions. Be sure that the winch mounting location does not significantly reduce ground clearance.

! WARNING – This winch **MUST** be mounted with the lid opening at the top. Improper mounting could damage your winch and void your warranty.

SAFETY PRECAUTIONS

- 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 required to do so..
- ALWAYS STAND CLEAR OF THE WIRE ROPE, HOOK AND WINCH. IN THE UNLIKELY EVENT OF ANY COMPONENT FAILURE IT'S BEST TO BE OUT OF HARM'S WAY.
- INSPECT ROPE AND EQUIPMENT FREQUENTLY. A FRAYED ROPE WITH BROKEN STRANDS SHOULD BE REPLACED IMMEDIATELY.
- 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.
- ALWAYS USE HEAVY LEATHER GLOVES when handling rope. DO NOT LET ROPE SLIDE THROUGH YOUR HANDS.
- NEVER WINCH WITH LESS THAN 5 TURNS OF WIRE, 8 TURNS OF SYNTHETIC ROPE AROUND THE WINCH DRUM since the rope end fastener may NOT withstand full load.
- KEEP CLEAR OF WINCH, ROPE AND HOOK WHEN OPERATING WINCH. Never put your finger through the hook. If your finger should become trapped in the hook isolate winch otherwise you could lose your finger(s). ALWAYS USE THE HANDSAVER when guiding the wire rope in or out.
- NEVER use the winch for lifting people or animals.
- Your winch is not intended for overhead hoisting operations.
- Maximum working load capacity is on the rope layer closest to the drum. DO NOT OVERLOAD. DO NOT ATTEMPT PROLONGED PULLS AT HEAVY LOADS. Overloads can damage the winch and/or the 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. This reduces the load on the winch and the strain on the 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.



Double line



Single line

- Always operate winch with an unobstructed view of the winching operation.
- NEVER OBSCURE THE WARNING INSTRUCTION LABELS.
- Equipment such as hooks, pulley blocks, straps, etc, should be sized to the winching task and should be periodically inspected for damage that could reduce their strength.
- NEVER RELEASE FREESPOOL CLUTCH WHEN THERE IS A LOAD ON THE WINCH.
- NEVER WORK ON OR AROUND THE WINCH DRUM WHEN WINCH IS UNDER LOAD.

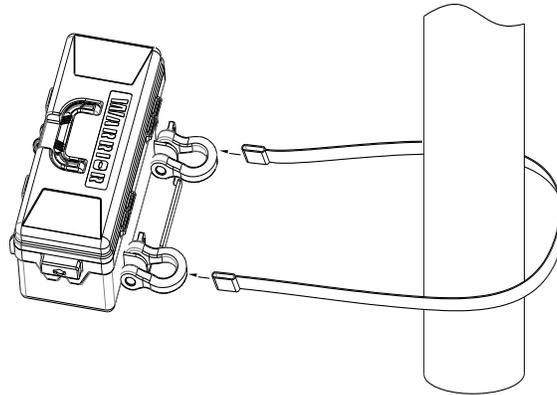
-
- It is a good idea to use a heavy blanket or winch sail over the wire rope near the hook end pulling heavy loads. If a rope failure should occur, the cloth will act as a dampener and help prevent the rope from whipping.
 - NEVER OPERATE WINCH WHEN UNDER THE INFLUENCE OF DRUGS, ALCOHOL OR MEDICATION.
 - ALWAYS DISCONNECT WINCH POWER LEADS TO BATTERY BEFORE WORKING IN OR AROUND THE WINCH DRUM so that the winch cannot be turned on accidentally.
 - Winch should be ISOLATED at all times when not in use.
 - 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.
 - When using your winch to move a load, if a vehicle is to be used as an anchor point place the vehicle transmission in neutral, set vehicle handbrake, and chock all wheels.
 - NEVER USE THE WINCH TO HOLD LOADS IN PLACE. Use other means of securing loads such as tie down straps.
 - ALWAYS USE ONLY FACTORY APPROVED SWITCHES, REMOTE CONTROLS AND ACCESSORIES.
 - NEVER MACHINE OR WELD ANY PARTS OF THE WINCH. Such alterations may weaken the structural integrity of the winch and will void your warranty.
 - NEVER CONNECT WINCH TO AC supplies as it is dangerous to the winch and people. DC winches CANNOT be used on mains voltages.
 - NEVER shock load winch rope otherwise damage will occur internally.
 - 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.
 - NEVER USE handle on outside of box as a winching anchor.
 - NEVER hold onto the box handles when winching.

WINCH ASSEMBLY AND MOUNTING

PORTABLE USE

Utility winch can be used in a portable fashion by using the supplied straps and shackles.

Wrap the rear strap around a tree or secure to an anchor point, secure the two loops to the two rear shackles on the portable baseplate. ALWAYS be sure that straps do not contact sharp edges or hot surfaces.

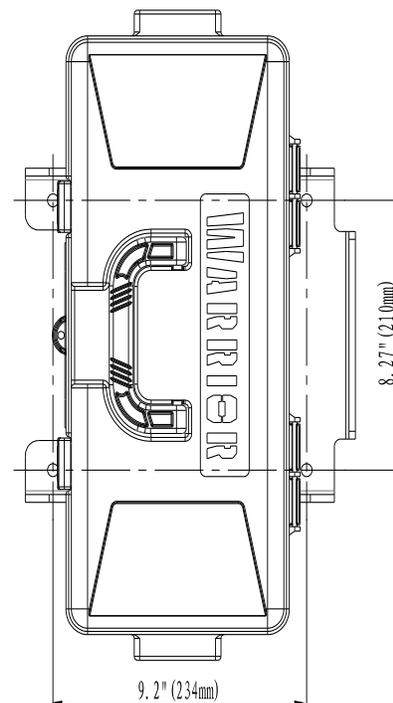
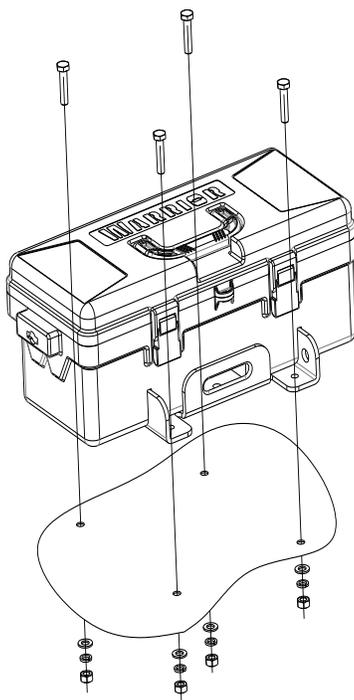


PERMANENT MOUNTED USE

The preferred mounting arrangement is to use the four (4) outer bolt holes in the mounting plate to mount the unit to a surface. To resist the winching loads a minimum of 1/4" (6mm) mounting plate thickness should be used. Be certain that the structure used for mounting will resist the winching loads. When using the four (4) bolt mounting arrangement, the winch's wire rope may be secured back to the front shackle for double lining.

Using the supplied M10 mounting bolts, washers, and nuts, tighten the mounting hardware.

4 - Hole Mounting Pattern dimensions



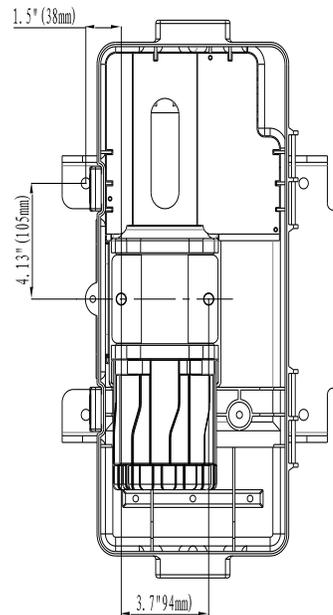
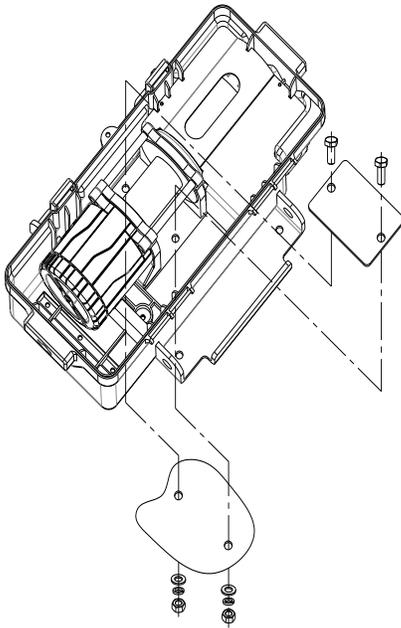
(OPTIONAL) PERMANENT MOUNT

For this option, place the winch Freespool in Disengaged, and spool off enough rope from the winch drum to insert the steel stiffening plate underneath the winch drum, if it was not inserted during winch assembly. To resist the winching loads a minimum of 1/4" (6mm) mounting plate thickness should be used. Be certain that the structure used for mounting will resist the winching loads. Once mounting and wiring is complete, the winch rope may be powered back onto the drum.

! WARNING – WHEN USING THE 2 BOLT MOUNTING OPTION, DO NOT USE THE FRONT SHACKLE HOLE TO DOUBLE-LINE THE PULL BACK TO THE WINCH BASEPLATE. IF DOUBLE-LINING WITH THE PULLEY BLOCK, ALWAYS SECURE THE WINCH HOOK TO A NEARBY STRUCTURE, AND NOT THE WINCH BASEPLATE.

Using the supplied M10 mounting bolts, washers, and nuts, tighten the mounting hardware.

WINCH2GO
2-Hole Mounting
Pattern dimensions



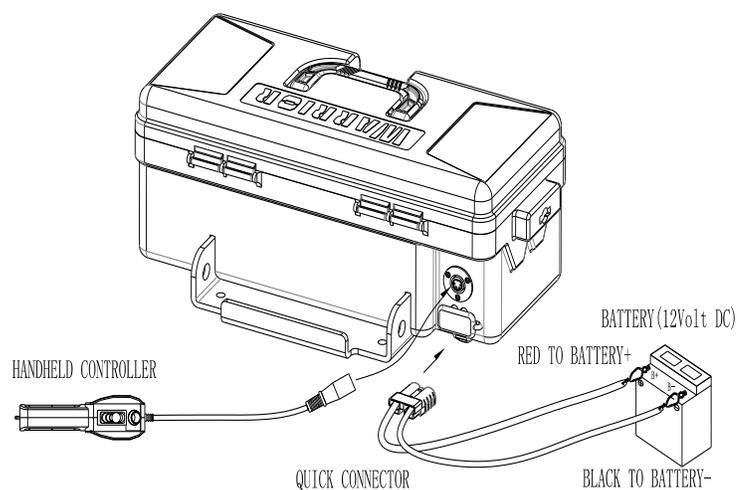
WIRING DRAWING

! WARNING – The location of the Switch MUST NOT Interfere with safe operation of the vehicle and winch. Wiring MUST NOT come in contact with any moving parts or sharp edges, such as engine, winch drum, wire rope, straps, suspension, brakes, exhaust or steering.

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

Apply several layers of electrical tape where wiring may come into contact with sharp metal parts of the vehicle to prevent insulation abrasion or cutting.

⚠ WARNING – 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.



WINCH WORKING DEMONSTRATION

1. Disengage the clutch by turning the clutch to the “CLUTCH OUT” position.
2. Using the hand saver tool Grab the cable assembly and pull the cable to the desired length, then attach to item being pulled.
 - ⚠ **Caution:** Always leave at least five turns of cable on the drum;
 - ⚠ Reengage the clutch by turn the clutch handle to the “CLUTCH IN” position, as you need.
3. Insert the switch assembly connector onto the control box.
4. Test-run winch in two directions, each direction for one or two seconds.
5. While standing aside of the tow path, hold and operate the switch assembly supplied by your choice. To reverse directions. Wait until the motor stops before reversing directions.

-
6. When the pulling is complete, remove the switch assembly from the female control socket of the directional valve and replace the female control box socket cover.

REPLACING THE WIRE ROPE

If the wire rope has become worn or is beginning to show signs of strands breaking, it must be replaced before being used again.

1. Turning clutch to the “CLUTCH OUT” position.
2. Extend cable assembly to its full length. Note how the existing cable is connected to the drum.
3. Remove old cable assembly and attach new one as the old cable connected to the drum. Insert the end of the new rope and secure the screw M6x8.
4. Ensure that the new cable wraps in the same rotation direction as the old one. The cable should leave the drum from the bottom, under the drum.
5. Turning clutch to the “CLUTCH IN” position.
6. Retract Cable Assembly onto drum, first five wraps being careful not to allow kinking, then winch cable must be wound onto the drum under a load of at least 10% rated line pull.

! WARNING - Only replace the wire rope with the identical replacement part recommended by the manufacturer.



CABLE IN



CABLE OUT

Note: Steel winch ropes are not covered by any part of this warranty and are the sole responsibility of the user to maintain and replace if necessary.

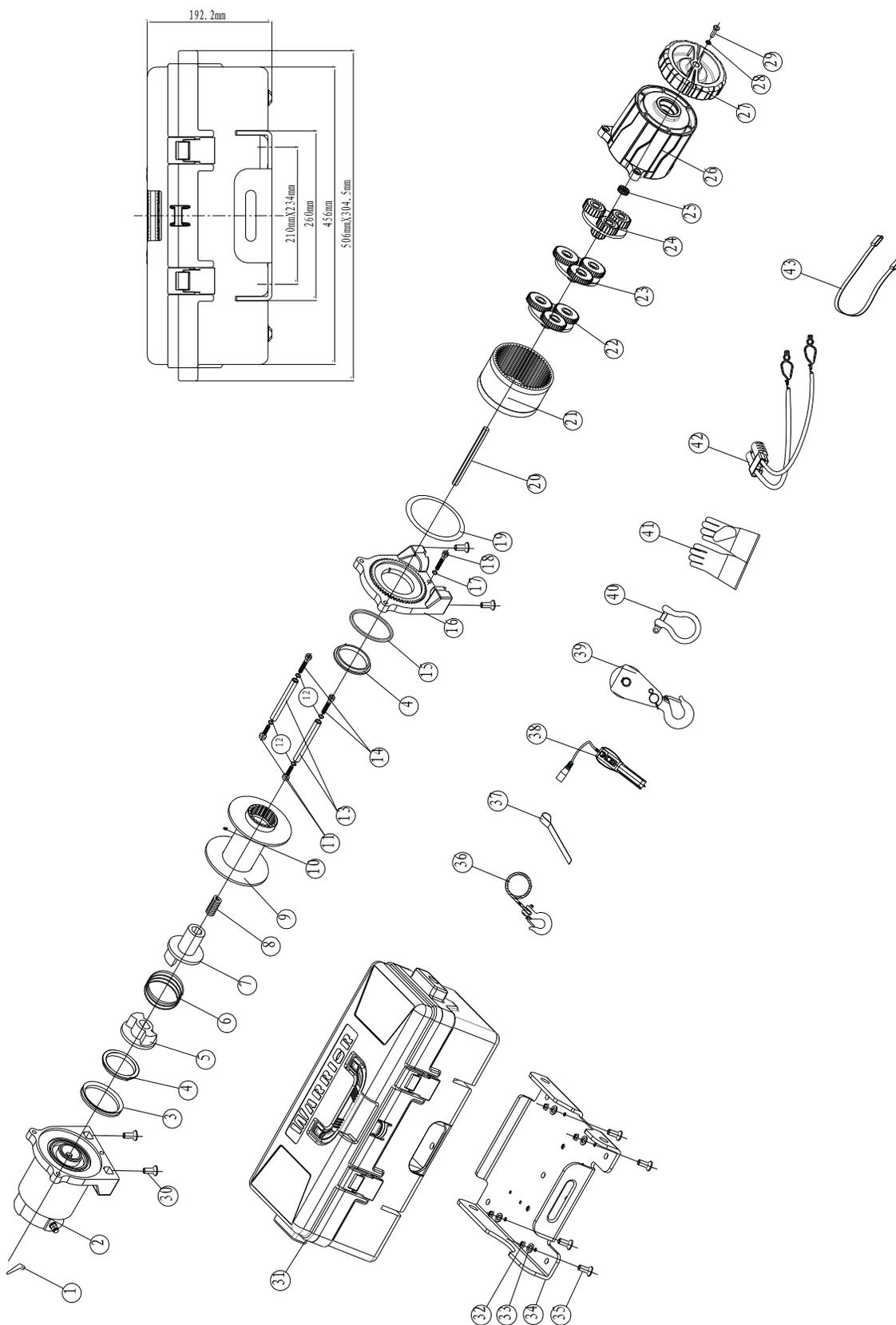
MAINTENANCE

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 gearbox.
3. The gearbox has been lubricated using a high temperature lithium grease and is sealed at the factory. No internal lubrication is required.

TROUBLE SHOOTING

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

WINCH ASSEMBLY DRAWING



WINCH PARTS LIST

No.	Part #	Qty	Description	Remark
1	TB400001	2	Terminal Protector	
2	TB400100	1	Motor Assembly	
3	TB400002	1	Ring Seals	
4	TB400003	2	Bushing-Drum	
5	TB400004	1	Coupling I	
6	TB400005	1	Spring	
7	TB400006	1	Coupling II	
8	TB400007	1	Spring	
9	TB400200	1	Drum Assembly	
10	TB400008	1	Screw M6 x 8	
11	TB400009	2	Screw M6 x20	
12	TB400010	4	Locking Washer Φ 6	
13	TB400011	2	Tie Bar	
14	TB400012	2	Screw M6 x35	
15	TB400013	1	Ring Seals	
16	TB400014	1	End Bearing	
17	TB400015	1	Locking Washer Φ 4	
18	TB400016	1	Screw M4 x20	
19	TB400017	1	Gasket	
20	TB400018	1	Hexagonal Shaft	
21	TB400019	1	Gear-Ring	
22	TB400300	1	Gear Carrier Assembly (Output)	
23	TB400400	1	Gear Carrier Assembly (Intermediate)	
24	TB400500	1	Gear Carrier Assembly (Input)	
25	TB400020	1	Gear—Input Sun	
26	TB400600	1	Gear—Housing Assembly	
27	TB400021	1	Clutch Handle	
28	TB400022	1	Lock Washer Φ 5	
29	TB400023	1	Screw M5 x16	
30	TB400024	4	Screw M8 x 25	
31	TB400025	1	Control Section	
32	TB400026	4	Hex Flange Nut M6	
33	TB400027	4	Thick Flat Washer Φ 6	
34	TB400028	1	Mounting Channel	
35	TB400029	4	Screw M6 x 20	
36	TB400700	1	Cable Assembly	
37	TB400030	1	Hand Strap	
38	TB400031	1	Handheld controller	
39	TB400032	1	Pulley block	
40	TB400033	3	Shackle	
41	TB400034	1	Gloves	
42	TB400035	1	Power cord	
43	TB400036	2	Strap	

SPECIFICATION

Rated line pull	4000 lbs (1814 kgs)	
Motor: permanent magnet	12v: Input: 2.4kW / 3.2hp; Output: 1kW / 1.3hp	
Gear reduction ratio	166:1	
Cable (Dia. × L)	Wire rope	Synthetic rope
	Ø7/32" × 42.0 ' (Ø5.4mm × 12.8m)	Ø1/5" × 49.2 ' (Ø5mm × 15m)
Drum size (Dia. × L)	Ø2.0 " × 3.2 " (Ø50.4mm × 82mm)	
Mounting bolt pattern	8.3" × 9.2" (210mm × 234 mm)	
Overall dimensions (L × W × H)	19.9" × 12.0" × 7.6" 506mm × 304.5mm × 192.2mm	
Net weight lbs(kgs)	Wire rope	Synthetic rope
	45.2lbs(20.5kgs)	41.9lbs(19kgs)

Pull, Speed, Amperes, Volts (First layer):

Line Pull	Line Speed ft/min (m/min)	Current (A)
lbs (kgs)	12V DC	12V DC
0	14.4 (4.4)	28
1000(454)	9.8 (3.0)	80
2500(1135)	7.2 (2.2)	150
4000(1814)	4.9 (1.5)	190

Line Pull and Rope Capacity Per Layer

Lay of wire rope	Rated line Pull lbs (kgs)	Total rope on the drum ft (m)
1	4000(1814)	8.5(2.6)
2	3351(1520)	18.7(5.7)
3	2883(1307)	29.8(9.1)
4	2530(1147)	42.0(12.8)