

TOP GEAR

**Model: DW-1500i
DW-3000i**



**● INSTRUCTION
MANUAL**

**Electric
Trailer
Winch**



TOP GEAR

Electric Trailer Winch

Thank you for purchasing a **TOP GEAR** Winch. This manual covers operation and maintenance of the winch. All information in this publication is based on the latest production information available at the time of printing.

General Safety Precautions

Every **TOP GEAR** Winch is designed to give safe and dependable service if operated according to the instructions. Read and understand this manual before installation and operation of winch.

Follow these general safety precautions:

- Confirm that the winch is suitable for the operation and conditions
- Ensure that the winch is securely mounted and the rope wound correctly.
- Don't use unsuitable pulleys or accessories.
- Genuine replacement parts should only be used.
- Check the winch for smooth operation without load prior to any recovery.
- Make sure the wire rope is wound evenly on the first layer on the drum, rewind it if not evenly wound.

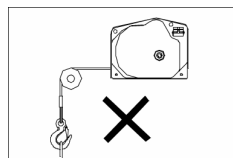


1. The winch is designed as a vehicle self-recovery unit and only rated for intermittent-periodic duty.
2. The winch is not to be used to lift, support or otherwise transport personnel.
3. A minimum of five (5) wraps of rope must remain on the drum at all times to support the rated load.
4. When choosing a winch, you need to consider the size and weight for boat or vehicle. As a general guide, you will need a winch with a maximum load rating of at least one to one and a half times greater than the gross boat or vehicle weight.
5. The rated line pull of the winch must be powerful enough to overcome the added resistance caused by whatever the vehicle is stuck in.

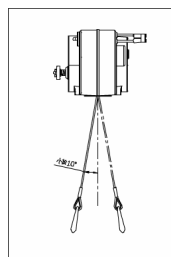
I. Safety Precautions

Please read and understand this Instruction Manual before installing and using your winch.

- ⚠ Prior to use, carry out the daily checks without fail.
- ⚠ Do not use winch as a lifting device or a hoist for vertical lifting (fig1)
- ⚠ Do not use winch to move people
- ⚠ Do not exceed maximum line pull ratings shown. Do not impose a shock load.
- ⚠ Keep hands, clothing and hair clear of wire rope.
- ⚠ Pull from an angle below 10 degree to straighten up the vehicle or boat. (fig2)
- ⚠ Run the engine during winching operations to keep battery charged
- ⚠ Use leather gloves or a heavy rag when handling the wire cable.
- ⚠ Disconnect the remote switch from the winch when not in use
- ⚠ When winching a heavy load, lay a heavy blanket over the wire cable near the hook end.



(Fig1)



(Fig2)

II. Specifications

► Specification

Model		DW-3000i		DW-1500i	
Rolling Weight	kg	11,340		5,443	
	lb	25,000		12,000	
Rated Line Pull	kg	1,361		680	
	lb	3,000		1,500	
Voltage		12v or 24v		12v	
Motor		300w / 0.4hp		120w / 0.16hp	
Gear Train		Spur Gear			
Gear Ratio		480 : 1		466 : 1	
Wire Rope	m	5.5mm × 15.2m		5.5mm × 9.1m	
	ft	7/32" × 50'		7/32" × 30'	
Control		Solenoid/Indirect			

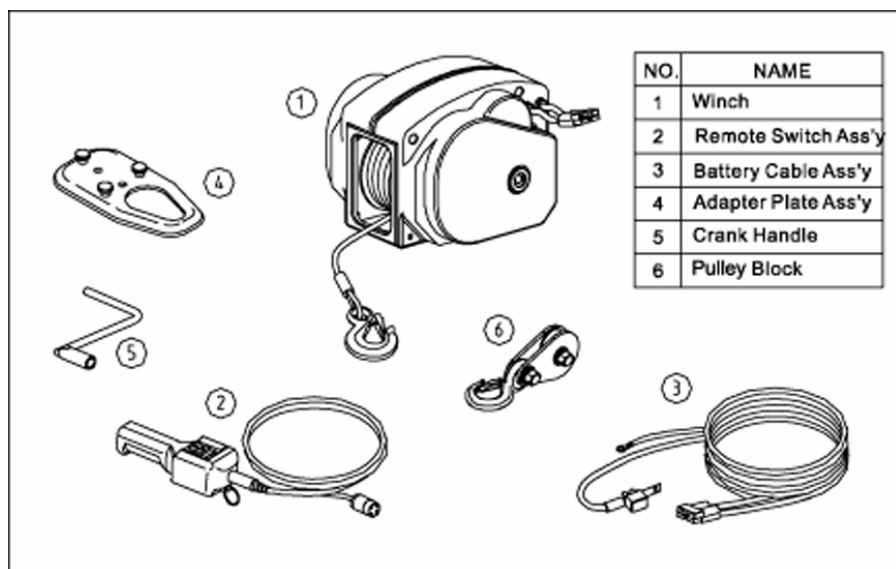
► Load capacity and line speed

Load capacity and line speed vary according to how much wire rope is on the drum.

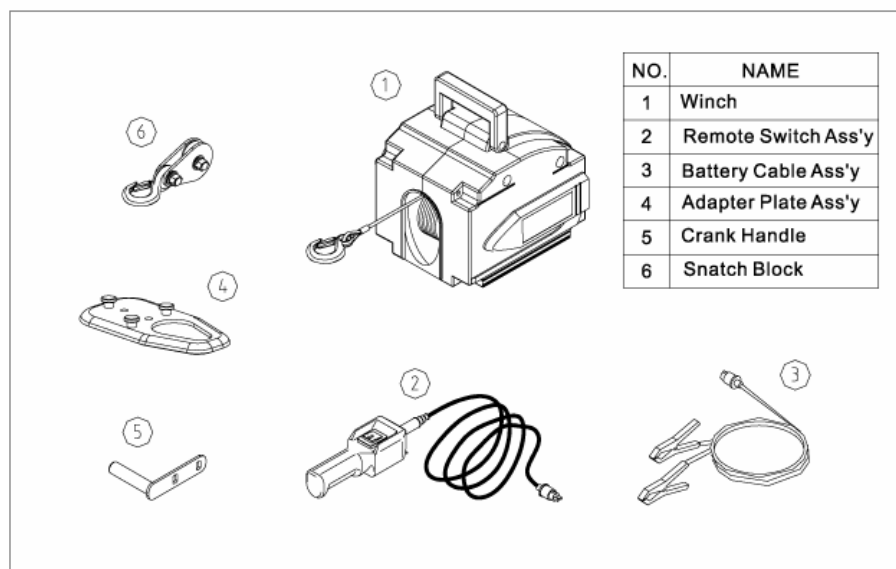
Winches are rated at their first layer of the wire rope on the drum. The max. line pull force will be reduced as the rope layers increase on the drum.

Model	DW-3000i		DW-1500i	
	kg	lb	kg	lb
Layer of wire rope				
1	1,361	3,000	680	1,500
2	1,060	2,335	502	1,345
3	870	1,915	398	1,066
4	735	1,615	330	884
5	635	1,400	281	753
6	560	1,230		

►Major parts of DW-3000i



►Major parts of DW-1500i



III. Performances

►The first layer performance

MODEL	DW-3000i				DW-1500i	
	Line Pull kg / lb	Line Speed	Amp. Draw		Line Speed	Amp. Draw
		mpm / fpm	12V	24V	mpm / fpm	12V
No Load	1.3 / 4.0	4 A	2 A	1.8 / 6	2.5 A	
454 / 1,000	1.1 / 3.5	19 A	13 A	0.43 / 1.4	7 A	
680 / 1,500	1.0 / 3.4	23 A	14 A	0.37 / 1.2	14 A	
907 / 2,000	1.0 / 3.3	27 A	15 A			
1,361 / 3,000	0.9 / 3.1	34 A	17 A			

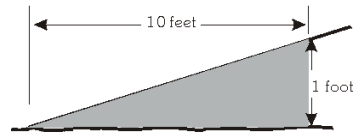
►Rolling load capacity in different angle

Model	Grade				
	0° (0%)	6° (10%)	11° (20%)	17° (30%)	45° (100%)
DW-3000i	11,340 kg	5,559 kg	3,924 kg	2,922 kg	1,457 kg
	25,000 lb	12,256 lb	8,651 lb	6,443 lb	3,214 lb
DW-1500i	2,443 kg	2,670 kg	1,882 kg	1,400 kg	700 kg
	12,000 lb	5,880 lb	4,150 lb	3,090 lb	1,540 lb

*Rolling weight performance shown includes a 12% rolling friction factor

*Rolling weight performance shown is based upon a hard level smooth surface

*A 10% incline means rise one foot in 10 feet.



►Double line pull and boat size

Single Line Pull	Double Line Pull		Approximate Boat Weight		Approximate Boat	
	kg	lb	kg	lb	m	ft
DW-3000i	2,494 kg	5,500 lb	4,082 kg	9,000 lb	7.62 m	25 ft
DW-1500i	1,225 kg	2,700 lb	2,040 kg	4,500 lb	4.35 m	12 ft

Use of a pulley block for double line operation increases operational line pull by approximately 85%, but the speed will be decreased by 50%.

Boat length and weight are approximate value; it will be influenced by boat type or model.

When calculating boat weight the total should include the engine(s), fuel, batteries and all accessories.

IV. Installation

Before using the winch, make sure all electrical parts have no corrosion or are amaged, relative environment should keep be clean and dry.

The voltage drop should not exceed 10% of the nominal voltage under normal operating conditions.

►Mounting

The winch can be mounted on the trailer hitch by using a ball adapter plate supplied.

- 1). Use M10 bolts, nuts and spring washers and tighten them on the ball adapter plate (fig.5)
- 2). Prepare one set of M10, bolts, nut and washers and tighten them at the bottom of the winch closely (fig.6)
- 3). When in use, lay the winch on the trailer hitch (fig.7)

►Battery cable connection

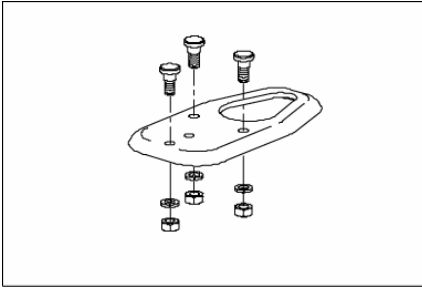
- 1). Battery cable specification is as follows

Volt	12V	8AWG × 7.5m(25')(red) 8AWG × 3m(10')(black)	14AWG × 3m(10')(red) 14AWG × 3m(10')(black)
	24V	10AWG × 7.5m(25')(red) 10AWG × 3m(10')(black)	X

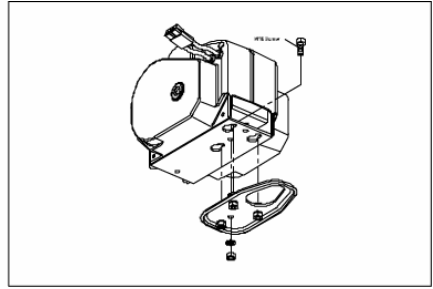
- 2). Use a 5/16” bolt, nut and washer to attach the black cable (negative -) firmly to the chassis of the vehicle (fig.8) for grounding purpose.
- 3). Attach the red cable (positive +) tightly to the circuit breaker marked AUX, meanwhile, connect copper plate to the other end of the circuit breaker, marked BAT (fig.9).
- 4). Connect the copper plate to the positive connector of battery (fig.9).
- 5). Insert the plug of quick connector into it’s socket (fig.10) for DW-3000i.
- 6). Insert the switch socket into the plug of the winch (fig.11) for DW-1500i.

►Control switch connection:

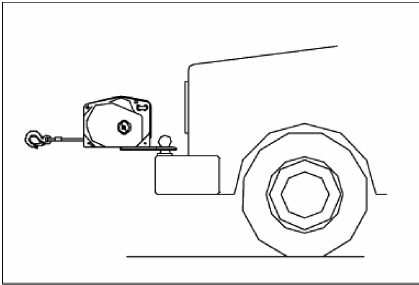
- 1). A remote switch with 16AWG × 3C × 3m (10') cord supplied for DW-3000i.
- 2). A remote switch with 14AWG × 2C × 3m (10') cord supplied for DW-1500i.



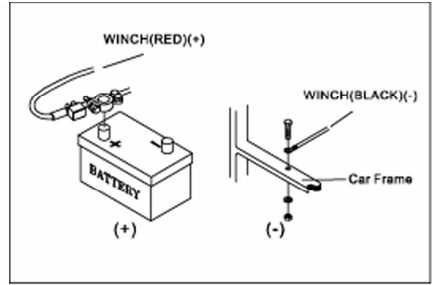
(Fig 5)



(Fig 6)

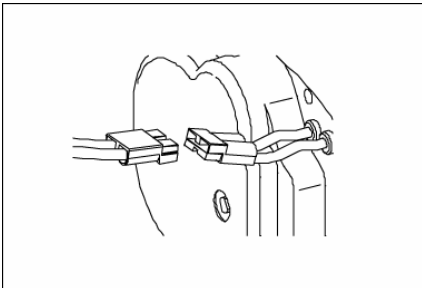


(Fig 7)

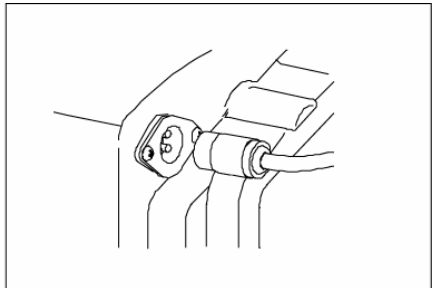


(Fig 9)

(Fig 8)



(Fig 10)



(Fig 11)

V. Operation

►Precaution

- △ Check all safety and environmental conditions prior and during use.
- △ A wire rope should be replaced if it shows signs of excessive wear, broken wires, corrosion or any other defects.
- △ The operator must remain with the winch when is being operated.
- △ The winches duty rating is S 3 (intermittent-periodic)
- △ If the winch fails in pulling a load under normal conditions, stop the operation within 30 seconds otherwise motor damage may occur.
- △ Ensure that remote switch is connected to the correct voltage. (ie. 12VDC or 24DVC)
- △ Check that the clutch lever is in the “Engaged” position during and after use.
- △ Remove the remote switch from the winch when not in use.
- △ Do not wrap the wire rope around load and hook to it.
- △ Keep hands and clothes away from the winch, wire rope, and fairlead.
- △ Never unplug the remote switch when winching a load.
- △ Before use, ensure that you are familiar with all winch operations (winch speeds & direction).
- △ To avoid insufficient power when winching a load, the vehicle should be running and in neutral.
- △ Keep the switch cord clear of the wire rope at all times.
- △ If noise or vibration occurs when running, stop the winch immediately and return it for repair.

►Cable-in/ Cable-out Operation

- 1). To determine “Cable - Out”, depress ↑ button (Fig. 12a) (Only DW-3000i)
- 2). To determine “Cable - In” depress ↓ button (Fig.13 a for DW-3000i ; Fig. 12 b for DW-1500i)
- 3). To stop winching, release the button

► **Use of Emergency Crank Handle**

Make sure the winch is disconnected from power supply.

Do not try to help the operation of the winch by using the crank handle because this will damage the winch and result in personal injury.

It can only be used when power supply is set off.

- 1). Turn the clutch knob clockwise until tight (Fig.14). Do not over tighten it; otherwise the clutch will be damaged and may malfunction.
- 2). Put it into the shaft of the winch; turn the handle counter clockwise to pull the load (Fig.15).

► **Free Wheel (Clutch) Function**

The clutch allows rapid unspooling of the wire cable for hooking onto the load or anchor points. Wear leather gloves and use the handsaver bar when guiding the wire rope off the drum.

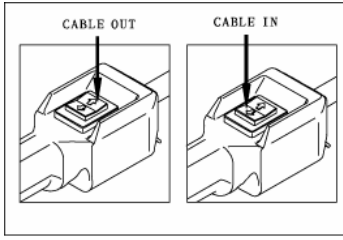
- 1). To disengage the clutch, rotate a clutch knob counter-clockwise to an adequate position. (Fig16)
- 2). The wire rope can now be free spooled from the drum.
- 3). Wear leather gloves and use the handsaver bar when guiding the wire rope out of the drum.

► **Use of Pulley Block**

The winch is equipped with a pulley block. Proper use of a pulley block will increase line pull by approximately 85%, but the speed will decrease by 50%.

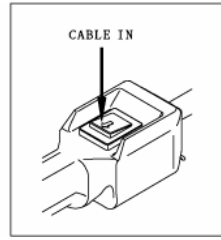
It is recommended to use pulley block for outside loading likely over the rated load.

When using a pulley block, the anchor point of the hook to be capable of supporting, double the line pull of the winch (Fig.17).

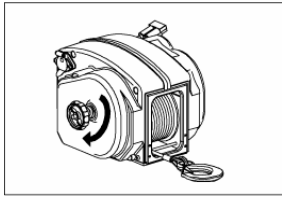


(Fig12 a)

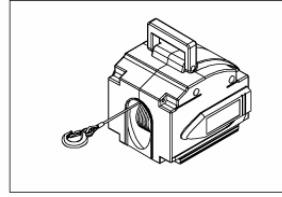
(Fig13 a)



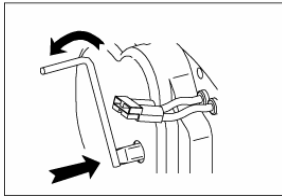
(Fig12 b)



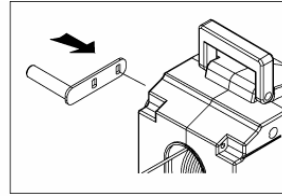
(Fig14 a)



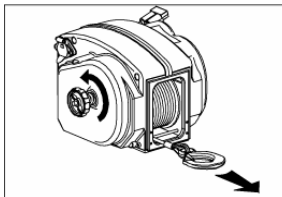
(Fig14 b)



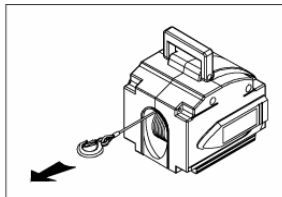
(Fig15 a)



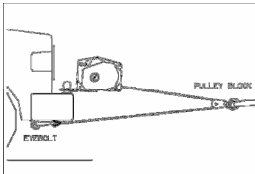
(Fig15 b)



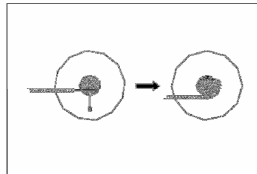
(Fig16 a)



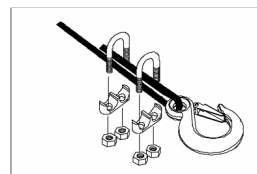
(Fig16 b)



(Fig17)



(Fig18)



(Fig19)

VI. Maintenance

► Lubrication

All moving parts in the winch are permanently lubricated at the time of assembly. Under normal conditions factory lubrication will suffice. If re-lubrication is necessary after repair or disassembly only use a marine type grease.

► Wire Rope Replacement

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

- 1). Spool the entire wire rope out, then remove it out from the drum.
- 2). Put the replacement wire rope through the fairlead opening, pass it below the drum, and insert it into the hole on the drum core (fig18).
- 3). Tighten the screw downwards to secure the wire rope.
- 4). Secure the wire rope to the hook with 2 sets of cable clip, tighten the screw completely (fig19).

► Maintenance Schedule

The operator or a specified person performs the winch inspections as per schedule. Divide the checks into daily and periodical checking

► Classification of checks

Classification of check			Checking item	Checking method	Checking reference	
Daily	Periodical					
	One month	Three month				
○			Installation	Loosening and centre run-out of foundation	Checking of installation bolts	Existence of abnormalities
○			Operation switch	Working	Manual	Reasonable actuation
		○		Wearing of contact point	Decomposition checking	To be free from remarkable wearing and damage
○			Wire rope	Breaking of base wire	Visual	Less than 10%
○	○			Decreasing of diameter	Visual, measuring (one month)	7% of normal diameter max
○				Deforming or corrosion	Visual	To be not remarkable
○				Fastening condition of end	Visual	To be sufficient for hanging up of load
		○	Clutch	Wearing of spring	Decomposition checking	To be free from remarkable wearing and damage
		○	Motor	Staining, damage	Decomposition checking	Existence of abnormalities
		○	Brake	Wearing of lining	Decomposition checking	To be free from remarkable wearing and damage
○				Performance	Visual	Reasonable actuation
		○	Gear	Damage, wearing	Decomposition checking	To be free from remarkable wearing and damage

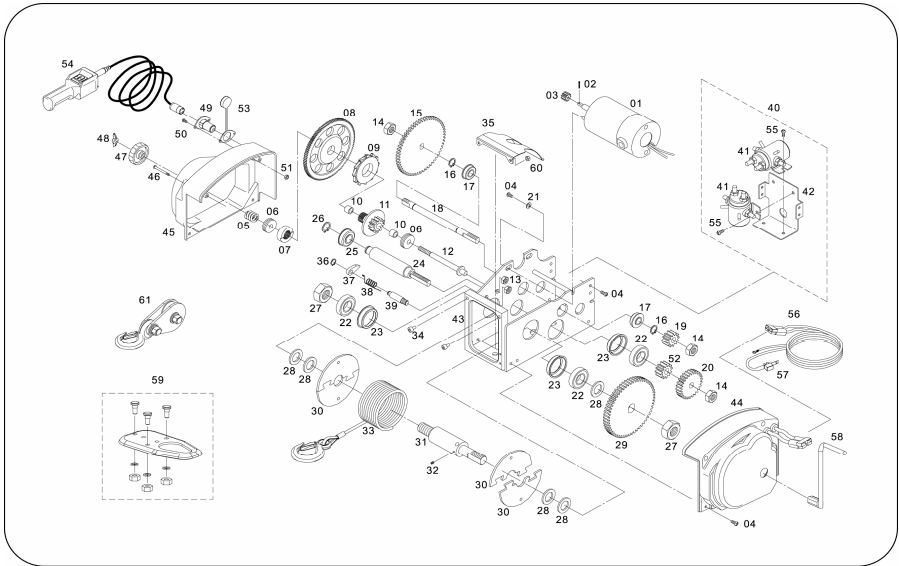
VII. Trouble Shooting

When winch fails to operate or there are any other defects refer to the following.

Symptom	Possible Cause	Remedy
Fails to start	Disconnection of power supply	Check the connection
	Bad connection	Reconnect power source
	Bad circuit breaker	Check if a overload has happened
		Restart after 60 seconds
Poor performance	Bad motor or solenoid or break switch cord	Return winch to distributor for repair
	Wrong connection between positive and negative poles	Change positive and negative poles
	Bad wirings at battery	Check the wiring insulation for worn or bare spot
	Low voltage	Clean and tighten the contacts at the battery
	Overload	Recharge the battery
		Reduce load
Clutch does not hold	Loosing of clutch knob	Retighten clutch knob
	Damaged transmission system	Return winch to distributor for repair
Fails to stop immediately after power switched off	Worn brake lining	Return winch to distributor for repair
	Faulty ratchet pawl	Return winch to distributor for repair

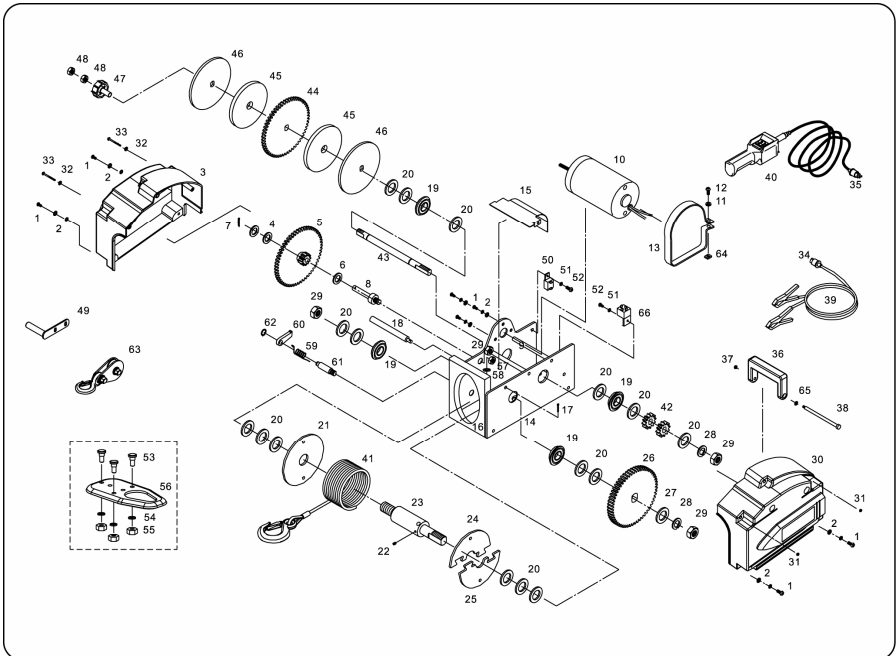
VIII. Replacement Parts List

►DW-3000i



No.	Description	Q'ty	No.	Description	Q'ty	No.	Description	Q'ty
1	Motor	1	22	Bearing	3	43	U type base	1
2	Split pin	1	23	Bearing sleeve	3	44	Right size cover	1
3	1st pinion	1	24	4th shaft	1	45	Left size cover	1
4	bolt	10	25	Bearing	1	46	Cross screw	2
5	Compression spring	1	26	C-ring	1	47	Rotating handle	1
6	Thrust bearing	2	27	Anti-loose nut	2	48	Wing nut	1
7	Thrust block	1	28	Plain washer	5	49	Remote switch socket	1
8	1st gear	1	29	4th gear	1	50	Bolt	2
9	Ratchet pawl	1	30	Drum disk	4	51	Nut	2
10	Needle bearing	2	31	Output shaft	1	52	4th pinion	1
11	2nd pinion	1	32	Hexagon screw	1	53	Rubber clamp	1
12	2nd shaft	1	33	Wire rope ass'y	1	54	Remote switch ass'y	1
13	Anti-loose nut	2	34	Bolt	2	55	Bolt	4
14	Anti-loose nut	3	35	Cable tensioner	1	56	Battery cable ass'y	1
15	2nd gear	1	36	E-ring	1	57	Circuit breaker	1
16	C-ring	2	37	Ratchet stopping pawl	1	58	Handle crank	1
17	Bearing	2	38	Return spring	1	59	Adapter plate ass'y	1
18	3rd shaft	1	39	Fixed shaft	1	60	Anti-loose nut	2
19	3rd pinion	1	40	Solenoid pack	1	61	Pulley block	1
20	3rd gear	1	41	Solenoid	2			
21	Plain washer	2	42	Door plate	1			

►DW-1500i



No.	Description	Q'ty	No.	Description	Q'ty	No.	Description	Q'ty
1	Bolt	7	23	Output shaft	1	45	Brake disk	2
2	Washer	14	24	Drum disk B-1	1	46	Brake disk	2
3	Left size cover	1	25	Drum disk B-2	1	47	Rotating handle	1
4	Washer	2	26	Gear # 3	1	48	Hex. nut	2
5	Gear # 1	1	27	Plain washer	1	49	Handle crank	1
6	Washer	1	28	Spring washer	2	50	Circuit breaker	1
7	Pin	1	29	Nut	4	51	Spring washer	2
8	Shaft	1	30	Right size cover	1	52	Bolt	2
9	Fixed shaft	2	31	Nut	2	53	Screw	3
10	Motor	1	32	Washer	2	54	Spring washer	3
11	Plain washer	1	33	Bolt	2	55	Hex. nut	3
12	Bolt	1	34	Battery cable plug	1	56	Adapter plate ass'y	1
13	Fix clip	1	35	Remote switch plug	1	57	Hex. nut	1
14	U type base	1	36	Handle	1	58	Spring washer	1
15	Cable tensioner	1	37	Hex. nut	1	59	Return spring	1
16	Frame	1	38	Handle shaft	1	60	Ratchet stopping pawl	1
17	Split pin	1	39	Power cable ass'y	1	61	Fixed shaft	1
18	Tensioner shaft	1	40	Remote switch ass'y	1	62	C-ring	1
19	Bearing	4	41	Wire rope ass'y	1	63	Pulley block	1
20	Plain washer	16	42	Gear # 4	2	64	Nut	1
21	Drum disk	1	43	2nd shaft	1	65	Spring washer	1
22	Hexagon screw	1	44	Gear # 5	1	66	Solenoid	1

Limited Warranty

This Limited Warranty is given by the Chuan Phang Ent. Co., Ltd. (the “Seller”) to the original purchaser (the “Purchaser”) of a **TOP GEAR** Winch specified in this manual. This Limited Warranty is not transferable to any other party.

The Seller takes the responsibility for all parts and components, with the exception of the wire rope, motor and electric parts to be free from defects in materials and workmanship appearing under normal use for as long as the said Purchaser owns the vehicle that the winch was originally mounted on. Electrical components are warranted for 1 Year from date of purchase under the same conditions. Any **TOP GEAR** Winch, which is defective, will be repaired or replaced without charge to the Purchaser.

Upon discovering any defect, the Purchaser under this Limited Warranty is requested to return the complete winch and inform the seller or their authorised distributors of any claims. The Purchaser must provide a copy of the proof of purchase bearing the winch serial number, date of purchase, owners name and address, vehicle details and registration number.

The Limited Warranty does not cover any failure that results from improper installation, operation or the Purchaser’s modification in design. The winch is designed for vehicle self-recovery use only and should not be used in industrial applications or for moving people. The Seller does not warrant them to be suitable for such use.