

GEARS AND WINCHES

G&W Series Winch Manual

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NOT FOR MOVEMENT OF HUMANS

**ORIGINAL THOMAS WINCH MANUFACTURER ESTABLISHED 1968
PROUDLY AUSTRALIAN AND FAMILY OWNED**



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CHAPTER 1 | SYSTEM OVERVIEW

Introduction

The very first thing we would like to do is welcome you to our huge family of happy winch owners, also thank you for purchasing from our G&W Series Winch Range.

We are an Australian family company based in Brisbane, and so proud of our products, we offer a full 2-year warranty. We are able to modify these winches to suit your special requirements, i.e. stainless steel or Dyneema ropes. The motor can be mounted horizontally if that is your requirement, we are happy to help, just ask.

We trust you will be very happy with the performance and reliability of this product. However, we do ask that you take a few minutes to read and thoroughly understand this booklet. If you have new operators assigned to the winch, make sure that they read and understand it also.

These winches are specially designed for a fast and economical load recovery. They are built very robust, heavy duty, but compact to ensure for an extended life. The motors fitted to these winches are specifically designed and built for electric winching operation and should not be restricted from reasonable ventilation. The G&W and Blue Series winches are also fitted with a fail-safe electro-magnetic brake. This ensures strong and safe operation. In the event of power outages, the brake is automatically engaged.

The G&W Range use a worm and wheel gear box which is very high in accuracy and precision. The worms are case hardened and finely ground the wheels are forged in high wearing aluminium bronze. These boxes are then sealed for life using the best lubricants available. The support bearing is also sealed for life, making these units all but maintenance free.

Installation Instructions

The initial installation or mounting of this Winch is critically important for proper operation and performance. If the winch is mounted unevenly the centre line of the unit can be distorted to a point where the winch will not operate in either direction. It is therefore very important that the following instructions are observed when this Winch is installed. Please spend a bit of quality time on this – it will pay off in the long run.

1. Make certain that the mounting platform is sufficiently strong (at least twice the rated load of the winch) in order to avoid deflection when the load is hauled.
2. These units are very versatile they may be mounted on the wall, directly to the floor, on a removable post mounted in the floor or any flat surface as long as the structure is strong enough. It is imperative that whatever these winches are bolted to is robust, safe and strong.
3. Set the winch in/on mounting platform and make sure good surface contact is made on all mounting pads of the winch. We suggest that a bitumen or tar-based coating be placed on the base of the winch to minimise rusting and deterioration of the frame. We also suggest the winch be mounted on galvanised or stainless-steel washers this will minimise twisting of the frame on uneven surfaces.
4. Install mounting bolts and tighten firmly.
5. We advise the entire winch should be sprayed with a film of de-watering fluid i.e. WD40, Inox etc, and the winch rope should be sprayed with de-watering fluid regularly to avoid oxidization.

Please Note

The G&W 3500 AND 4500 are of a small footprint. They are however quite tall and at 80 plus kilos quite heavy. Being so tall and heavy makes shipment a little difficult- so we have separated the bottom section, drum and gear box from the motor and controller. This also makes installation easier as well.

Once the bottom section has been bolted into position, simply line up the keyway in the gearbox and slide home. Fit the 4 bolts around the motor and away you go.

Photos of Installation



Break In

To familiarize yourself with the winch, run it for a few minutes to understand the controls and “feel” of the winch. Pay particular attention to the controls and how they operate.

Winches, like any other kind of machinery, require a “break in” to perform well and to maximize their life. The following guidelines should be used in the break-in of G&W winches.

- Use extreme care when first spooling cable onto the winch.
- Do NOT run the winch under heavy loads when performing this operation.
- Make sure that the cable is unrolled in a line (to prevent kinks) a light load is best for bedding in the rope while in hauling the cable.

This will ensure that the drive system will have an opportunity to wear properly and if there is any kind of problem it may be found and rectified before serious damage can occur. Periodically, check for leaks and wear and tear on the rope—this must be done manually. Planetary gear winches are designed and intended for longer duty applications; they should generate very little heat. You must however keep an eye on the gear box temperature, this is usually the first indicator that there may be a problem.

Do not let the oil in the winch “BURN” it is totally useless as a lubricant once it has reached this heat.

Winch Operation Instructions

Our winches are designed and manufactured for ease of use; hence the operational use of this winch is very easy and straight forward.

- Make sure of current output i.e. 10 amps.
- Ensure Earth Leakage Circuit Breaker (ELCB) has been fitted to the Power circuit.
- Plug control pendant into control enclosure.
- Plug into power outlet and switch on.
- Make sure the area around the winch is safe i.e. no authorised people and material.

Please identify whether or not your winch is fitted with an “Emergency Stop” Button. Your winch will not work if it is depressed. Check and Re-check this, if your winch does not work. This is the most common cause of in-operation.

Low Voltage Pendant Control

- Press the "Down" button to unwind rope, (make sure the rope is under Tension). The load will travel backwards/lower.
- Press the "Up" button on the pendant control for retrieval/Raising of the Load.
- E Stop button is for emergency stop function if applicable. The E-stop is a good safety feature for once the load is in position to prevent inadvertent operation. To re-set the emergency stop for a winch control, release the button from the down position, twist the button clockwise.

Note: When using the pendant control – buttons must be fully depressed.



Remote Control Models

- Press the button marked "B" on the remote controller to unwind the rope making sure the rope has tension all the time. This will allow the load to travel backwards.
- Press the button marked "A" on the remote controller for retrieval of the load.
- In case of a remote controller fault - forward and reverse switch is fitted to the main control box along with an emergency shut off switch.
- At the end of each winching operation or If there is a problem and all else fails, immediately turn off the power at the mains.
- Last but not least, ensure the load is secure.



Your winch comes with a low voltage removable pendant control. You may upgrade to a wireless remote control at any stage.

CHAPTER 2 | SAFETY

FAILURE TO READ THE FOLLOWING WARNINGS MAY RESULT IN SERIOUS INJURY OR DEATH.

ANY AND ALL MODIFICATIONS MUST BE APPROVED BY GEARS AND WINCHES IN WRITING AND SHALL BE CARRIED OUT BY A QUALIFIED PERSON.

- This winch is supplied with a low voltage removable pendant control. You may upgrade to a wireless remote at any stage.
- It is imperative that the winch rope is kept taut at all times. If for some reason it has unravelled on the winch drum you must ensure that it is wound back on correctly before you start winching. It is possible under rare circumstances for the rope to be caught between itself and can damage the rope irreparably. If damage occurs under these circumstances it is not covered under warranty.
- Please note G&W winch gearboxes are filled with oil for life at the factory.
- Avoid shock loads. This type of load imposes a strain on a winch many times the actual load rating of the winch and can cause severe damage to the winch and or the cable.
- If your winch is supplied/fitted with a dog clutch it is possible to use it for lifting subject to the following the winch is rated for lifting and a dog clutch locking device is fitted.
- To help keep you winch running correctly you may have to spray the unit and surrounding area with a surface spray as geckos, spiders etc. like to make their home in our expensive machines.
- Also, to help preserve this unit and to help the rope lay better a light oiling is recommended
- Cable anchors on G&W Winches are not designed to hold the rated load of the winch. You must keep at least 5 wraps of cable on the drum to ensure that the cable doesn't come loose
- Stay clear of suspended loads and of cable under tension. A broken cable or dropped load can cause serious injury or death.

Safety Instructions

Before operating the winch, read and follow the instructions.

- This winch is designed for hauling only. Under no circumstances, should it be used for the movement of humans.
- The winch should be mounted on a flat, solid surface as level as possible. This will ensure that the steel rope will arrange neatly on the drum. This will avoid any irregular damage to the steel rope and will eliminate distortion of frame.
- Do not exceed the rating lifting capacity of the winch. Allowable weight is indicated on the attached plate.
- The winch should be operated by a skilled operator.
- Before operating the winch check again to ensure all screws are tightened securely without loosening.
- Before operating the winch check to see if the steel rope drum runs to the correction direction and the brake works normally.
- Prior to initiating winching operations be sure any element which can interfere with the safe winching operations is removed.
- Stand clear of wire and load during operation. Never touch wire rope or hook while in tension.
- Keep hands clear of wire rope, hook and fairlead opening during operation and when spooling.

For a full Risk Management, please go to our website: www.winch.com.au

WARNING

Please note some of our winches may be fitted with the following:

- This winch maybe fitted with a spring-loaded flex plate or roller tensioner, this plate or roller tensioner are designed to help layer the rope tidily and to hold the rope on the drum when the end of the rope goes loose – i.e. when your boat is inside your shed, parking station etc. or any flat ground or if for some reason your rope is not connected to the tailer and the rope becomes loose, it will not ball up on the drum. The plate also prevents loose rope being caught in the gear mechanisms on the winch.
- “Caution” this flex plate is designed to hold the rope on the drum in both directions. It is necessary that you make sure there is weight on the rope when launching over the same flat area, or the plate may hold the top layer and the under layers may begin to ball up.
- Simply stated don’t launch slower than the winch.

Inspection and Maintenance

Check Wire Rope Periodically:

- Replace when signs of excessive wear, serious deformation and corrosion exist.
- Lubricate wire rope regularly.

Check Daily:

- External visual inspection of winch including brake, gear reduction, wire rope and electrical connections.
- Test winch hoisting/lowering functions for smooth operation via push button control.
- Test E Stop
- Ensure wire rope is wound in the correct manner

Check Monthly:

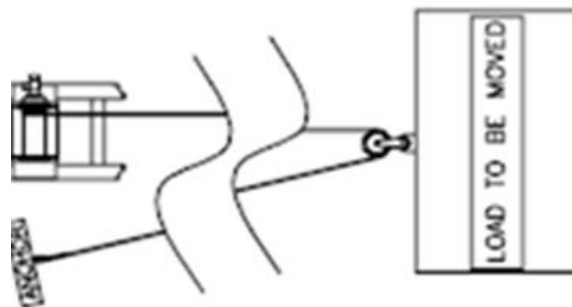
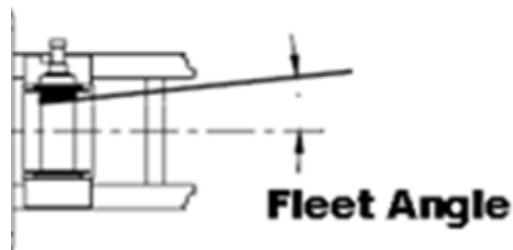
- Inspect entire wire rope assembly.
- View control/motor wiring for damage.
- Check mounting bolts.
- Keep motor and controls from water
- Should the motor be shielded, care should be taken not to choke motor heat dissipation vents.

Importance of Using a Proper Fleet Angle

Maintaining the proper fleet angle is important to the success of your winching operation, the life of your winch and the life of the cable you are using. The fleet angle can best be described by the following illustration.

The fleet angle should be kept as small as possible to ensure proper spooling and to maximise cable and winch life. To promote even cable spooling, keep the fleet angle below three degrees. Never pull directly against the flange of the winch cable drum as this may cause the cable or the winch to break.

By using a snatch block you have effectively cut the load on the winch in half. A snatch block should be used any time you have a concern about the ability of the winch or cable to move a load. The following illustration shows one way to rig such a block.



CHAPTER 3 | TROUBLESHOOTING

BRAKE FAILED?

PROBLEM CAUSE	CORRECTION
Incorrect wiring	Check wiring
Brake oily or burnt out coil	Replace- see manufacturer
Rectifier damaged	Replace- see manufacturer

POOR BRAKE PERFORMANCE?

PROBLEM CAUSE	CORRECTION
Oil or dust	Clean brake lining
Too much gap between brake lining	Adjust gap properly
Brake lining worn out	Replace- see manufacturer

ABNORMAL NOISE?

PROBLEM CAUSE	CORRECTION
Continuous loud noise – bearing damaged or gear worn out	Repair – see manufacturer
Occasional loud noise – bearing damaged or dirty	Repair- see manufacturer

POOR START?

PROBLEM CAUSE	CORRECTION
Starting capacitor damaged	Replace- see manufacturer

CAPACITOR DAMAGED?

PROBLEM CAUSE	CORRECTION
Eccentric switch connection point damaged	See manufacturer

WINCH WILL NOT RUN?

PROBLEM CAUSE	CORRECTION
NO power at the winch - If your winch is fitted with an E stop button is it pressed in- this is the most common problem with electrical supply.	1. Check power supply 2. Check ELCB 3. Check overload switch on winch Check power point by plugging in another appliance.
Brake system failed	Brake coil or recitifier damaged. May need to be replaced – see manufacturer
Poor contact on switch	May need to be repaired or replace – see manufacturer
Voltage too low	Check if power wires are too long or their diameter is too small
Overloaded	Reduce load
Capacitor damaged	Replace capacitor- see manufacturer
Damage to gears, bearings, motor shaft or coil.	Return to manufacturer for repair

MOTOR RUNS BUT STEEL ROPE DRUM DOES NOT?

PROBLEM CAUSE	CORRECTION
Coupling between motor and the first shaft mat not be mounted properly	You may need a replacment or it may not be fitted properly
Motor shaft broken	Replace- see manufacturer
Gear damage	Return to manufactuer for repair

Prohibited Environment

Please ensure your winch is stored in the correct environment, this will cause a longer life span for your winch.

Prohibited environment includes the following:

1. Temperature below -10°C or higher than 45°C
2. High humidity over 90%
3. Any location contained with organic solvents, flammable or explosive products.
4. Very dusty locations
5. Directly exposed to rain or snow.

CHAPTER 4 | GENERAL

General Specifications

Characteristics	Description	Single phase	Three Phase
Motor	Powersource	240v	415v
	Frequency	50hz	50hz
	Cooling method	Fan cooling	Fan cooling
	Starting method	Start & run capacitors	Full volt direct start
Speed Reducer	Gear	Satellite gear drive. Long service life manufactured from special alloy steel, precision machined and carbonisation heat treated	
	Gearbox material	Aluminium alloy die cast	
	Lubrication Oil	This unit has been filled with high quality lubrication. No further filling or lubrication oil is required.	
Brake	Actuation Method	Magnetic energised brake	
	Volt	DC 110v or 220v	
Ambient Conditions	Temprature	0 -40 degrees	
	Humidity	Under 90%	
	Location	Indoor: Dry , well ventilated enviroment	

INDICATIVE AMPS DRAW AT FULL LOAD

For all 240-volt models 10 AMP maximum. If you have any queries on fitting, operating or information in general, please don't hesitate to contact us as we are happy to answer any and all of your queries.

Boat Ramp Applications Guide

OUR BOAT RAMP WINCH MODELS	LIFTING CAPACITY	HAULING CAPACITY SLOPE RAMP GRADIENT				
		ROPE LENGTH	5° BOAT RAMP 1m FALL OVER 12m DISTANCE (KG)	12.5° STANDARD BOAT RAMP 1m FALL OVER 4.5m DISTANCE (KG)	15° BOAT RAMP 1m FALL OVER 3.75m DISTANCE (KG)	27° BOAT RAMP 1m FALL OVER 2m DISTANCE (KG)
TIGER SERIES	SIZE (KG)					
PLANETARY GEAR DRIVE						
JV-1025-13D03	250	6mm x 30m	2,750	1,100	950	500
JC-1025-16D05		6mm x 50m				
JC-1025-17D12		6mm x 120m				
JV-1030-13D03	300	6mm x 30m	3,250	1,300	1,100	650
JC-1030-16D05		6mm x 50m				
JC-1050-16F03	500	8mm x 30m	5,000	2,100	1,800	1,100
JC-1050-21F05		8mm x 50m				
RC-1050-21F10		8mm x 100m				
PU-1070-09G07	700	9mm x 70m	7,000	3,000	2,500	1,500
PU-1100-05H06	1000	10mm x 60m	10,000	4,200	3,600	2,200
PU-1120-10I05	1200	12mm x 50m	12,000	5,000	4,300	2,650
PU-1200-07J07	2000	14mm x 70m	20,000	8,400	7,200	4,400
BLUE SERIES						
SPUR GEAR DESIGN						
AM1026B SS	N/A	8mm x 30m	8,000	3,600	3,000	1,800
AM2026B	N/A	10mm x 30m	15,000	7,000	5,750	3,600
G&W SERIES						
STAINLESS STEEL						
G&W 2500	N/A	8mm x 30m	6,250	2,500	2,300	1,350
G&W 3500	N/A	8mm x 30m	7,800	3,500	2,900	1,700
G&W 4500	N/A	9mm x 30m	11,000	4,500	3,900	2,500
G&W 5500	N/A	10mm x 30m	13,000	5,500	4,750	2,850

Warranty Terms and Conditions

Winch Industries Pty. Ltd. warrants parts and labour, directly to the first purchaser of each winch against defects in material and workmanship appearing under normal use and service only for a period of one (1) year from the date of purchase. If you discover a covered defect, Winch Industries will, at its option, repair, replace or refund the purchase price of this winch or winch parts at no charge to you, provided you return it during the applicable warranty period, transportation charges prepaid, to Winch Industries Service Department or Factory Authorized Servicing Distributor. (You can obtain additional information from Winch Industries directly at the address below). Please attach your name, address, telephone number, a description of the problem and a copy of a bill of sale bearing the appropriate proof of original retail purchase, to each product returned for warranty service. To obtain any warranty coverage, it is absolutely necessary that your present proof of purchase acceptable to Winch Industries, such as a copy of the purchase receipt.

This warranty applies only to winches sold and/or manufactured by Winch Industries, which can be identified by the "Winch Industries" trademark, trade name or logo affixed to them. This warranty does not apply if the product has been damaged by accident, abuse, misuse, collision, overloading, exhaust, or misapplication, or has been improperly installed, has been improperly used, has been improperly serviced, or has been modified without the written permission of Winch Industries. This warranty does not apply if any Winch Industries serial number has been removed or defaced. The finish and wire rope on the product are excluded from this warranty.

Except as expressly stated herein, there are no warranties, express or implied, including implied warranties of merchantability and fitness for a particular purpose. Any implied warranty of merchantability or fitness for a particular purpose which by law may not be excluded is

Limited in duration of one (1) year from the date of original retail purchase of this product.

The warranty and the remedies set forth above are exclusive and in lieu of all others, oral or written, express or implied. No winch industries dealer, agent or employee is authorised to make any modification, extension or addition to this warranty.

In no event is winch industries responsible for special, incidental or consequential damages resulting from any breach of warranty, or under any other legal theory, including, but not limited to lost profits, down time, goodwill, damage to or replacement of equipment and property, loss of use of the product or of any associated equipment, or cost of substituted products.

Warranty enquiries should be directed to:

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