W400B Universal Belt Winch

installation and users manual for
W400B3 and W400B1
Universal Belt Winch

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Safety Symbol and Signal Word review

This W400B has been designed and tested to offer safe service provided it is installed, operated, maintained and tested in strict accordance with the instructions and warnings contained in this manual.

MECHANICAL

ELECTRICAL

Be aware of these important safety warning symbols, and the relevance to either mechanical or electrical hazards.

DANGER

The use of the word DANGER calls attention to high risks associated with this product.

SAFETY WARNINGS

The winch must be installed in accordance with the installation codes and regulations applicable in the country where it is installed- for Australia and New Zealand electrical installations must comply with AS/NZS 3000.

An adequate and safe power supply is essential for safety. A competent and qualified electrician must undertake all electrical wiring. A main isolator should be installed with the winch and is essential for safety.

Before you do any repair, or maintenance works, always disconnect the electricity supply.

Installation, maintenance and repairs should be conducted by technically trained and competent persons only.

Intended Use: This winch is designed solely for use inside livestock buildings to hoist feeder lines and other similar systems. Use of the winch in any other way is a misuse of the product and may endanger safety and health.

DANGER! Structural Safety: The weight of this winch and the raising and lowering of the associated feeding system in a livestock building imposes additional load on the building. A structural engineer should verify the building's load capacity prior to installation of this winch.

Practice Safe Maintenance: Keep your winch in proper working condition by maintaining it in accordance with these instructions. Unauthorized modifications to the winch may impair the function and/or safety and affect its life.

Ensure you wear personal protection equipment (gloves, dust masks). Never use your hands at dangerous locations (eg drive units) before you have completely switched off the electricity supply and made sure that nobody can switch it on without your knowledge.

DANGER: A lifting belt under tension can cause very serious injuries when released or if it snaps. The belt used in this installation may break if misused or not maintained, so appropriate precautions should be followed.

DANGER:
- Never allow unauthorised persons to enter the area of winch operation in your absence or during servicing of the equipment.
- Be careful when lowering or winching up the feeding lines/circuits :
  i. stop operation immediately at the slightest abnormality in behaviour.
  ii. never stay underneath the winch or load when lowering or winching up the lines/circuits.
- If the drive stalls : immediately switch off the system. Carefully read the trouble shooting guide and strictly follow instructions. Contact a technically trained person.

WARNING! Important safety instructions. It is important for the safety of persons to follow all instructions as incorrect installation, use or maintenance can lead to severe injury or

SPECIFICATIONS

W400B General Specification	
Rated Load (double belt) Rated Load (single belt)	2 x 200Kg 1 x 250Kg
Max Travel	2.8m
Lifting Belt*	50mm x 1.6mm Polyester
Lift Speed	2.6-4.8m/min
Drum RPM	14
Limits	2 x N/C Micro Switch
Unit Weight	28Kg
Protection	IP55
Working Life	20yr / 5000 cycles

* Only Grifco lifting belts may be used with this product

W400B3 Power Specification	
KW	0.75
Full Load Current	2.3A
Volts (AC)	415
Phase	3

W400B1 Power Specification	
KW	0.75
Full Load Current	4.5A
Volts (AC)	240
Phase	1

CEILING MOUNT CONFIGURATION—Double pull belt (standard, as supplied)

SPECIFICATIONS

<u>FLAG MOUNT</u> CONFIGURATION—Single pull belt (optional)

INTRODUCTION

Congratulations on your purchase of the Grifco® Universal Belt Winch W400B. This winch stands alone in the market as the fastest and most robust winch of its kind. The installation of a Grifco Universal Belt Winch ensures extreme longevity and trouble free operation.

PLANNING

The W400B is designed to be installed inside or outside livestock buildings to hoist drinker lines, ventilation curtains or shutters and many other similar applications.

You will find that throughout this manual, there are two mounting configurations referred to, i.e. Ceiling Mount, and Flag Mount. Refer to "Configuration" below to demonstrate the difference. The winch is supplied standard as Ceiling Mount.

The W400B features a single or three phase motor coupled to a drive system comprising two cam activated limit switches to allow stopping at the fully lowered and raised positions.

Suitable controls will be required for the W400B to switch the motor direction and accept the limits switch inputs. Grifco manufactures both single and multi-line control stations for the W400B.

CONFIGURATION

CEILING MOUNT CONFIGURATION
Double pull belt (as supplied)

FLAG MOUNT CONFIGURATION
Single pull belt (alternate)

The next page demonstrates the process of converting your winch to Flag Mount

CONVERSION

To convert the Ceiling Mount configuration to Flag Mount, follow the steps below:

Step 1: Remove the 4 x M12 bolts, washers and nuts.

Step 2: Remove the “R” clip, nut and drum assembly

Step 3: Fit the mounting plate in a flag orientation as shown, using the 8 x M10 fasteners and washers provided (tighten to 30Nm).

Step 4: Fit the drum over the shaft and key, ensuring it is secured tightly with the nut, and “R” clip in place.

Belt Removal: To remove or change a belt, simply loosen the relevant M8 bolt and nut, and slide out to allow the belt to come free. Reassemble the M8 bolt and nut and tighten firmly.

HANDLING

Ensure you wear personal protection equipment (proper clothing, gloves, dust masks). Never use your hands at dangerous locations (eg sharp edges etc).

In order to safely lift the W400B into the final mounting position, use an approved M10 or M12 lifting eye & nut as shown below:

Ceiling Mount

Flag Mount

When using the above lifting method, be aware that the winch will not hang in a level orientation (as pictured)

MOUNTING

An electrician must disconnect electric power to the winch and control before removing or opening covers.

The W400B is designed to be mounted to a concealed or web truss structure in livestock buildings. The roof truss structure **must be engineered** to ensure mounting of the winch and the relevant applied loads will be adequately supported. Refer to page 4 for mounting bolt hole spacing and size for fabrication of a suitable mounting structure. Refer below for mounting examples.

Concealed Truss Mount

Web Truss Mount

Ensure the winch is mounted so that the belt passes through the web truss openings during travel

MOUNTING (Ceiling Type)

Mount the W400B using 4 x M12 High Tensile (Grade 8.8) bolts and nuts to secure the winch in place as shown below. Ensure spring washers are used and a tightening torque of 40-45Nm. As seen below, by pre-fitting the 4 x M12 x 45 long high tensile hexagon head fasteners, with nuts (to also act as a spacer to clear the **winch mounting plate bolts**) you will have 4 x studs to allow the winch mounting plate to slide over (Note: Fasteners are not supplied). Weld fixing may be suitable if carried out in accordance with proper structural advice and by a suitably qualified person.

When bolt fixing the W400B as shown above, ensure a fastener combination is used as below. Fasteners must be M12 x 45 hexagon head high tensile set screws, including 1 x flat washer, 1 x plain nut, and 1 x lock nut per hole.

Given the universal design of the W400B mounting system, many mounting variations (different to what is shown in this manual) may be utilised in order to meet your installation requirements. Always ensure the mounting structure used is suitably engineered to withstand the various forces applied during operation in all conditions.

MOUNTING (Flag Type)

Mount the W400B flag mount type using at least 2 x M12 High Tensile (Grade 8.8) bolts and locking nuts to secure the winch to a suitably engineered vertical or horizontal structural member as shown below. Tighten to a torque of 40-45Nm. (Note: Fasteners are not supplied). Weld fixing may be suitable if carried out in accordance with proper structural advice and by a suitably qualified person.

⚠ ELECTRICAL CONNECTION

The **W400B must**:

- be connected in accordance with the wiring rules of the country in which it is installed
- not have enclosures left open for extended periods (excess dust will void warranty)

CONTROL PANEL

The W400B is designed to be operated with Grifco reversing starter controls. The internal connection diagram for both single and three phase types are shown below:

Operation of the above control panels is via a simple two position control as shown below. Turn and hold the toggle switch to lift up or lower down as shown:

⚠ ELECTRICAL CONNECTION

The **W400B must**:

- be connected in accordance with the wiring rules of the country in which it is installed
- not have enclosures left open for extended periods (excess dust will void warranty)

MOTOR CONNECTION

W400B3 Motor Connection

Connect with min. 0.75mm^2 wire using conduit or gland to meet minimum IP55

Switched 415Vac from control

W400B1 Motor Connection

Connect with min. 0.75mm^2 wire using conduit or gland to meet minimum IP55

Switched 240Vac from control

Limit Switch Connection

Connect with min. 0.75mm^2 wire using conduit or gland to meet minimum IP55

Limit inputs to control box

SETUP AND ADJUSTMENT

With primary connection of the W400B complete in accordance with relevant control box, it is time to test the operation. Carefully follow the next steps to ensure safe setup:

1) Ensure the winch is properly secured and the lift belts clamped accordingly.

2) Check and make sure both limit cams are positioned away from their relevant micro switches.

3) Secure all covers, and supply mains power.

Checking Operational Direction

4) Operate the winch momentarily in one direction to check that the UP switch will lift the load.

5) If incorrect, isolate mains power and proceed as follows: (ref page 13)
- Swap any two phases on the 3 phase model W400B3
- Swap AN and NA on the single phase model W400B1

6) Secure covers, supply power to the system, and check for correct operational direction.

Setting Limits

WARNING: Limits are sensitive; a small cam movement may correspond to a large amount winch travel.

- Position one cam to depress a switch (the other should be well clear of the switch)
  - Note the switch that you have activated

- Supply power and activate in up direction momentarily
  - If the winch hoists up then the limit switch noted above is the lower limit
  - If the winch doesn't move it is the upper limit (momentarily activate in the close direction to confirm this)

- Proceed to adjust each friction held cam and operate the winch to achieve the required set positions.

MANUAL OPERATION

Isolate mains power before using the manual crank feature as shown below. Use a 13mm hex socket with a suitable drive bit (not included) to operate the winch manually. Rotation of the socket will operate the winch in either direction.

NOTE: 13mm hex socket and drive bit are NOT SUPPLIED with the winch

ELECTRICAL OPERATION

In operation the W400B will require the user to hold the controlling switch to raise or lower the load. During operation the belt must lay neatly into drum.

The winch should operate quietly with only the hum of the motor, and perhaps some pulley noise depending on the condition and/or lubrication of the various pulleys connected to the load.

If the winch produces any abnormal noises such as grinding, rattling or squeaking, cease use immediately and isolate the power. Refer to Troubleshooting on page 16, and/or contact a suitably qualified technician to inspect and/or repair.

MAINTENANCE

DANGER! Power MUST be turned off before servicing or adjusting the winch. Isolate the supply when cleaning! Any works requiring access to electrical connections or junction boxes must be carried out by a qualified electrician!

The **W400B** is built for extreme service life and does not need any internal maintenance. Only trained and competent persons should carry out maintenance.

Certain mechanical aspects of the installation should be routinely checked and rectified by a **qualified fitter or electrician** as below:

Monthly
Inspect for signs of wear or damage to lifting belts
Check proper operation of the winch (lift/lower)
Quarterly
Check tightness of fixing bolts and tighten if needed (ref page 7)
Check mounting structure, including welds / fasteners etc
Check for any abnormal noises
Brush down and wipe over the winch with a damp cloth

Refer to page 17 for a suitable maintenance log form

Any works requiring access to electrical connections or junction boxes must be carried out by a qualified electrician!

If the winch has exceeded the stated working life, replacement is recommended. All inspections must be monthly beyond the working life.

Disposal

If disposal is required, it should be done using the most up-to-date recycling technology according to local regulations and laws.
Drain oil via the plug provided on the gearbox, and contain it for safe disposal at a suitable recycling yard.
It is recommended that the winch be taken to a scrap metal recycling yard.

TROUBLESHOOTING

Problem	**Possible Cause**	**Action**
Winch does not raise or lower	No power	Restore power supply
	Both limit cams activated	Check / adjust limit switches
	Excess load - thermal overload tripped	Reduce load, reset / adjust overload in control
	Excess use - motor overheated	Allow to cool
	Electrical fault	Check all electrical connections
Winch does not raise	Upper limit activated	Check / adjust limit switch
	Electrical fault	Check all electrical connections
Winch does not lower	Lower limit activated	Check / adjust limit switch
	Electrical fault	Check all electrical connections
Winch makes noise	Belt misalignment	Check/adjust belt alignment as it lays on to the drum
	Motor to gearbox coupling loose	Remove winch and return to Grifco for inspection
	Internal gearbox noise	Remove winch and return to Grifco for inspection

MAINTENANCE LOG (Copy multiples of this blank form for future record keeping)

Winch Description: (e.g. model/location)

Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Quarterly		
Check tightness of fixing bolts and tighten if needed (ref pg 9-11)		
Check mounting structure, including welds / fasteners etc		
Check for any abnormal noises		
Brush down and wipe over the winch with a damp cloth		
Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Monthly	**Date**	**Checked / Complete (Sign)**
Inspect for signs of wear or damage to lifting belts		
Check proper operation of the winch (lift/lower)		
Quarterly		
Check tightness of fixing bolts and tighten if needed (ref pg 9-11)		
Check mounting structure, including welds / fasteners etc		
Check for any abnormal noises		
Brush down and wipe over the winch with a damp cloth		

NOTES

NOTES

CHAMBERLAIN LIMITED WARRANTY
Grifco Products

Chamberlain Australia Pty Limited / Chamberlain New Zealand Limited (**Chamberlain**) is committed to manufacturing and supplying high quality goods. As part of this commitment, we seek to provide reliable service and support for our goods and are pleased to provide you, the original purchaser, with this Chamberlain Limited Warranty.

We also provide the following statement as required by the Australian Consumer Law: In Australia, in addition to your rights under this Chamberlain Limited Warranty, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Chamberlain's warranty

Chamberlain warrants to the original purchaser of the Grifco Poultry winch (**Unit**) that:

1 The Unit (excluding the electric motor) is free from defects in materials and workmanship for a period of 24 months from the date of purchase.
2 The electric motor is free from defects in materials and workmanship for a period of 12 months from the date of purchase.

During the applicable Chamberlain Warranty period, if you are concerned that the Unit or electric motor may be defective, call our service centre on the toll free number below before removing the Unit and a Chamberlain technician will diagnose the problem. Once the problem has been diagnosed, subject to your rights under the Australian Consumer Law with respect to major failures, Chamberlain will provide you with:

1 parts for "do-it-yourself" repairs; or
2 shipping instructions for a factory repair or replacement.

If a factory repair or replacement is required, provided the defective part or Unit is returned to Chamberlain well-packaged and in accordance with Chamberlain's shipping instructions, Chamberlain will, subject to your rights under the Australian Consumer Law with respect to major failures:

1 in relation to the Unit (excluding the electric motor), repair or, at its option where permissible, replace any defective part or Unit (excluding the electric mo tor) and return it to you at no cost; and
2 in relation to the electric motor, replace the electric motor and return it to you at no cost.

Where the Unit has been installed by an authorised installer, you must call them for prompt on-site service. Chamberlain will furnish replacement parts free of charge through the authorised installer. A service fee for on-site service may apply.

Repairs and replacement parts provided under this Chamberlain Limited Warranty are provided free of charge and are warranted for the remaining portion of the original warranty period.

This Chamberlain Limited Warranty provides benefits which are in addition to your other rights and remedies as a consumer.

Exclusions

If our service centre determines that a warranty claim has been made in respect of a failure or defect arising under or out of any exclusion detailed below such that the claim is not covered under this Chamberlain Limited Warranty, we may, subject to your other rights and remedies as a consumer, charge you a fee to repair, replace and/or return the Unit to you.

This Chamberlain Limited Warranty does not cover any failure of, or defect in, the Unit due to:

1 non-compliance with the instructions regarding installation, operation, maintenance and testing of the Unit or of any product with which the Unit is used;
2 any attempt by a person other than an authorised installer to change settings, repair, dismantle, reinstall or move the Unit to another location once it has been installed;
3 tampering, neglect, abuse, wear and tear, accident, electrical storm, excessive use or conditions other than normal commercial use;
4 use of the Unit in conjunction with controls which have not been supplied, or pre-approved, by Chamberlain;
5 problems with, or relating to, the commercial door or commercial door hardware, including but not limited to the door springs, door rollers, door alignment, hinges, guides, slats and drums; or
6 problems caused by electrical faults.

If this Chamberlain Limited Warranty does not apply, you may have rights available to you under the Australian Consumer Law.

Liability – Australia only

Except as set out in the Australian Consumer Law (being Schedule 2 of the *Competition and Consumer Act 2010*) (as amended, consolidated or replaced):

1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
2 under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Liability – New Zealand only

Except as set out in the *Fair Trading Act 1986* and the *Consumer Guarantees Act 1993* (as amended, consolidated or replaced):

1 all other guarantees, warranties and representations in relation to the Unit or its supply are excluded to the extent that Chamberlain can lawfully exclude them; and
2 under no circumstances will Chamberlain be liable for consequential, incidental or special damages arising in connection with the use, or inability to use, the Unit, other than those which were reasonably foreseeable as liable to result from the failure.

Note

We request that you retain your sales docket or invoice as proof-of-purchase and attach it to this manual to enable you to establish the date of purchase in the unlikely event of a warranty service being required. Chamberlain reserves the right to change the design and specifications of the Unit without prior notification. Some features or accessories of the Unit may not be available in certain markets or areas. Please check with your distributor.

Chamberlain service centre contact details

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