



# BHW

Bushey Hall Winchmaster

[www.bhwgroup.com](http://www.bhwgroup.com)



## OPERATING AND MAINTENANCE MANUAL



### COMPACT CWL WINCH

CWL200 / CWL200L / CWL301 / CWL301L

110V or 240V x 1ph

**CWL200:** #9094 (110V), #9095 (240V) / **CWL200L:** #9096 (110V), #9097 (240V)

**CWL301:** #10667 (240V only) / **CWL301L:** #9909 (240V only)

CONFORMING TO

BS EN14492 Cranes – Power Driven Winches and Hoists – Part 2: Power Driven Hoists

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## INTRODUCTION

### PLEASE READ THIS MANUAL CAREFULLY BEFORE INSTALLATION OR OPERATION OF THE WINCH

Those responsible for the installation and the operation of this winch must read and understand this manual. The first section deals with the installation requirements and the second section is for the user and provides information to ensure safe use of the winch.

These winches are of the highest quality and have been designed to give a robust and efficient service for many years if care and attention are given at all times to correct installation, operation and maintenance.

### PLEASE KEEP THIS MANUAL WITH THE WINCH

**NOTE: Hire companies should make the hirer fully aware of the safety issues and correct operation of this winch as detailed in this manual and ensure that the proposed operator is suitably trained.**

## STANDARDS & BHW GROUP LTD

The British Standard: BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and the essential Health & Safety at Work Act 1974.

Selecting the correct hoist for the application is very important not only from the health and safety aspect, but also to maximise product life and ensure the best value for money.

BHW Group Ltd products are fully compliant and carry a UKCA and CE mark. A Declaration of Conformity is also supplied with each product. BHW Group Ltd aim to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.



## PRE OPERATION CHECK

- Check for any transit damage.
- Check that all fixings and joints are tight and secure (if using the hanging bracket)
- Check the capacity of the hoist versus intended loads and ensure it is adequate for the task.
- Check that all external wiring is in good order.
- Check the wire rope to ensure that there is no damage (see notes on Wire Ropes and Hooks, page 13).
- Check that the suspension point is fully capable of taking the proposed load bearing during operation.
- Check that the hooks (top and bottom), are in good order, the top hooks are fully secured on the suspension point (if the suspension hooks are installed to the winch mounting feet positions), and that potential travel on the load hook is unimpeded.

## SETTING UP THE WINCH PRIOR TO USE

1. Check that all components of the winch are sound and in good working order.
2. Install and check the winch in accordance with instructions, ensuring that the hoist is suited to the task.
3. The winch is supplied with the wire rope already fitted to the drum. Remove the cotter pin and pin from the load hook. Pass the 'EYE' of the rope through the top plate and secure in place with the pin. Insert cotter pin and splay ends. Check that all fittings are secure. (See section on Features – page 7 or Wire Ropes & Hooks on page 13).
4. Hooks must have a safety latch and a minimum rated capacity of 300kg.  
Use only high tensile grade 80 or 100 to comply with EN14492-2 standards.  
(Hooks supplied as standard from BHW Group Ltd are rated and stamped for lifting and have a safety factor of 4:1). Hook capacity for this machine is selected to ensure it is large enough to take a webbing strap).
5. Fully test and check all wanderlead operations including Emergency Stop.
6. Ensure that hoist has suitable circuit breaker or fuse as part of the power supply and suitable earthing.
7. When installing on site, test the hoist, check the integrity of the selected mounting.
8. Check that the wire rope is evenly wound on to the drum and generally fit for use, replace if damaged or worn (see section on wire ropes).
10. You are also advised that adherence to the directive ISO4309:2004/2010 regarding care, installation and disposal of wire ropes also applies to this range of winch. (See section on Wire Ropes & Hooks on page 13).

## WINCH INFORMATION

### WINCH SPECIFICATIONS

#### Models

**Compact CWL WINCH**  
**200kg / 300kg**  
**110V or 240V x 1ph (300kg = 240V x 1ph only)**  
**BS EN 14492-2 Compliant**

#### Typical Uses

Vertical hoisting and lowering of loads.

#### Construction

Steel gears running in oil, in alloy housing.

#### Motor

110V or 240V x 1ph AC (300kg = 240V) Rated IP44 (see ratings below).

SPECIFICATIONS		CWL200		CWL200L		CWL301	CWL301L
Voltage options		110V	240V	110V	240V	240V only	240V only
Lifting:	Capacity	200kg		200kg		300kg	300kg
	Height	45m		69m		29m	53m
Weight:	Hoist only	30kg		33kg		38kg	40kg
	Total kit (average)	32kg		35kg		40kg	42kg
Line speed:	1st layer	11m/min		11m/min		16m/min	16m/min
	Last layer	16m/min		16m/min		25m/min	25m/min
Duty cycle:		All CWL hoists have a duty cycle of 25%, with a maximum of 60 starts per hour					
Wire rope:	Diameter Ø	5mm		5mm		6mm	6mm
	Length	46m		71m		30m	55m
	Rope construction	6 x 19 wire core, galvanised for longer rope life. Factor of safety = 5:1 (for lifting)					
Motor type:		Induction motor					
Motor outputs:	Kilowatts	1.2kW		1.2kW		2.3kW	2.3kW
	Amperes	12A	6A	12A	6A	11A	11A
Braking:		Motor: Electronic via resistor      Gears: Mechanical ratchet brake					
Drum:	Length	97mm		147mm		97mm	147mm
	Diameter Ø	95mm		95mm		95mm	95mm
	Flange Diameter Ø	190mm		190mm		190mm	190mm
Rope ø to mean drum ø ratio:		20:1		20:1		17:1	

\* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

#### Wanderlead

Tough, 2 button hand held control and Emergency Stop with 10m lead. IP65 (see below). Other lead lengths are available on request.

#### Hooks (as supplied with CWL winch)

300kg rated with safety latch and top plate. High tensile grade 80 or 100 in compliance with EN14492-2 standards.

#### IP (Ingress Protection) Ratings

**Motor = IP44** - Protection from entry by solid objects with a diameter or thickness greater than 1mm. Protection against water splashed from any direction – limited ingress permitted.  
**Wanderlead Control = IP65** – Totally protected against dust. Protection against strong jets of water – limited ingress permitted.

#### Machine Insulation Class

**F** - Maximum operation temperature of 155° C (311° F).  
Allowable temperature rise at full load 1.0 service factor motor = 105°  
and at full load 1.15 service factor motor = 115°.

#### Lubrication and Recommended Oils

Gear Box: EP80/140 or equivalent

#### Noise Level

80db

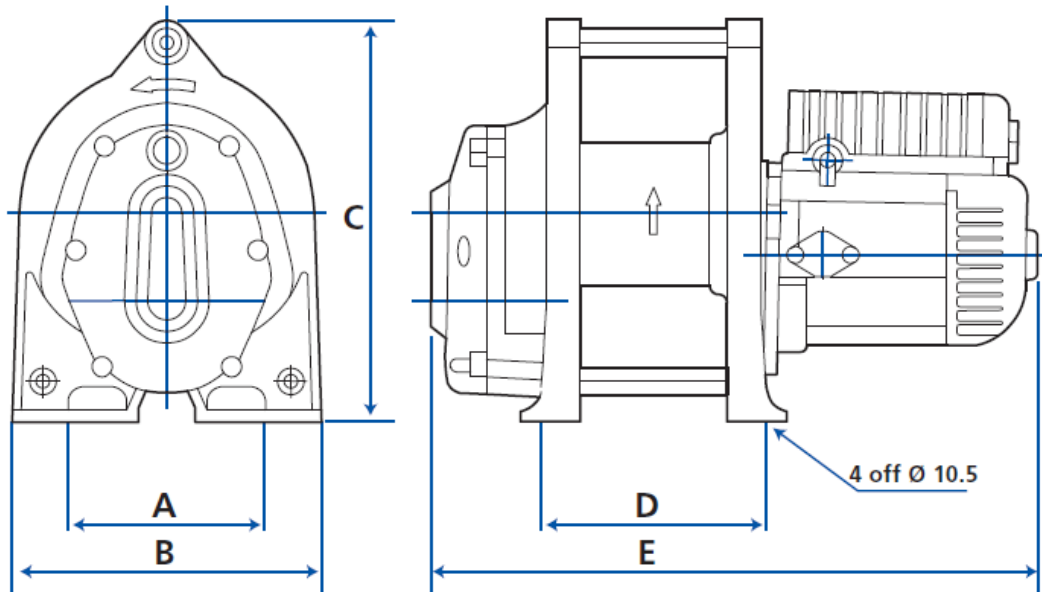
#### Ambient Temperature. Operating Range

-10°C to 40°C (humidity must be below 90%)

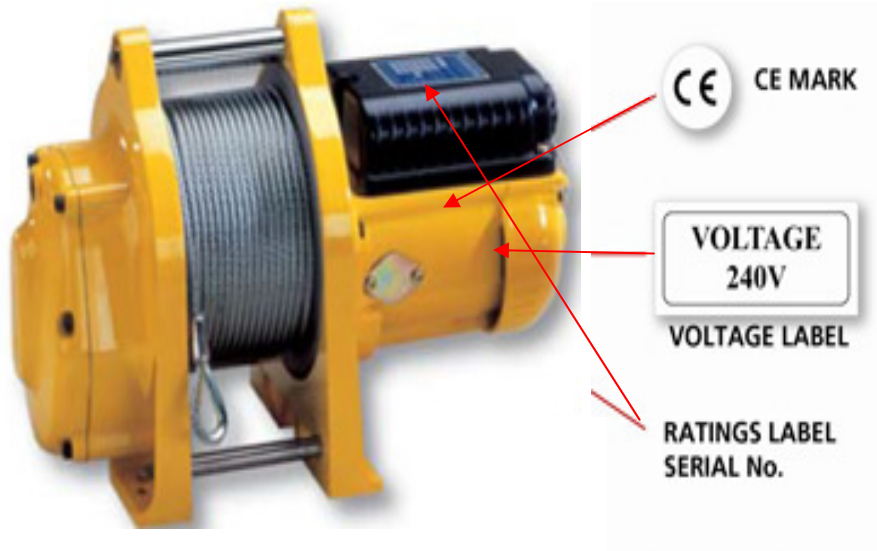


## WINCH INFORMATION

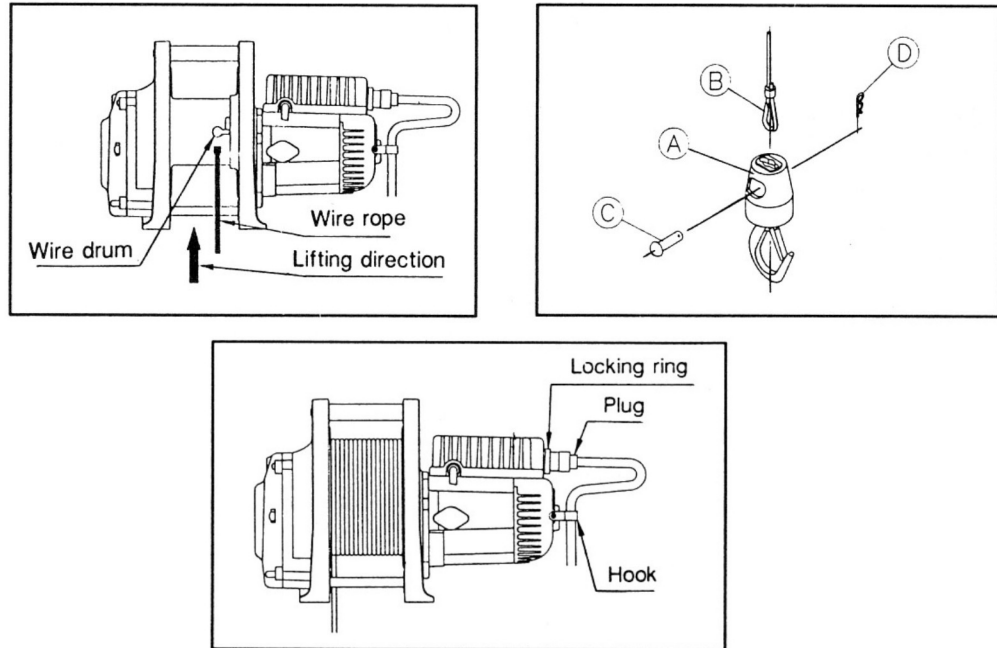
### CWL WINCH DIMENSIONS



WINCH DIMENSIONS mm						
MODEL	A	B	C	D	E	Fixing holes
CWL200 / 301	135	210	270	152	415	4 off Ø 10.5
CWL200L / 301L	135	210	270	207	470	4 off Ø 10.5



## CWL WINCH - FEATURES

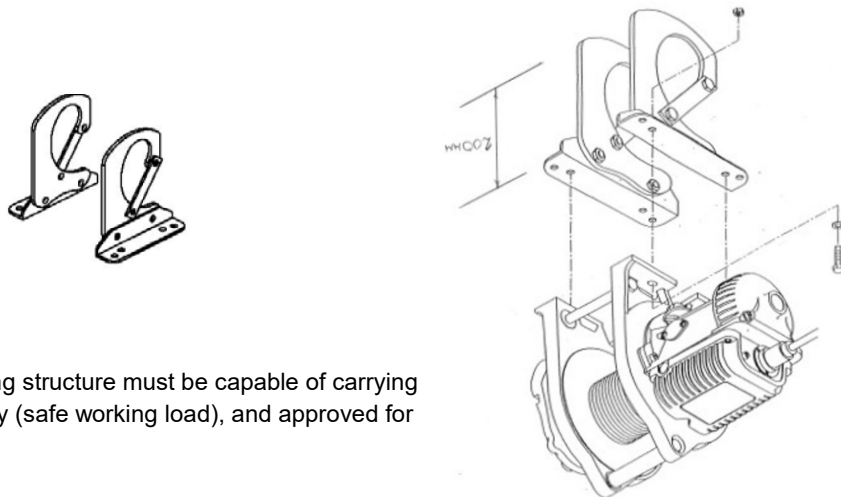


### MOUNTING AND SAFETY

It is generally envisaged that a secure, load tested surface will be the main support for the winch. All surfaces and bolts used must be capable of holding a load of 25% above the rated load of the winch used.

### HANGER BRACKET AND SAFETY LOCK

An alternative to the foot mounting position is to use the hanger bracket kit secured to a load tested scaffold or bar. The suspension point should be of a correct size (60mm Ø maximum), to admit the top hanger of the winch and allow it to rest properly on the scaffold bar with the safety catch locked. If the suspension bar is open ended, suitable measures should be taken to 'close' it (i.e. a scaffold bracket), to ensure that the hoist will not fall off.



The support bar and its supporting structure must be capable of carrying 125% of the hoist's rated capacity (safe working load), and approved for safe operation.

The hanger kit can be bought as a separate item from the BHW Group Ltd. Item number 10690.

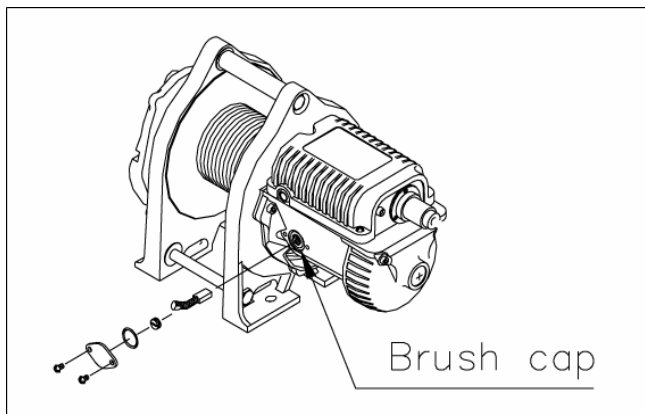
## CWL WINCH - FEATURES

### CARBON BRUSH HOLDERS

There are two apertures for the motor carbon brushes located on either side of the motor housing.

Access to either of the carbon brushes is made by unscrewing each cover plate and then unscrewing the black plastic grub screw inside. As the brushes are on springs, they will pop out easily from the housing for inspection or replacement. Brushes should be replaced if worn to less than 7.5mm, or are damaged in any way. When replacing the brushes please ensure that the red rubber 'O' ring is still in place around the aperture, as this seals each cover. Brushes should be replaced in pairs, not singly.

These are available from BHW Group Ltd, part no. 2303.

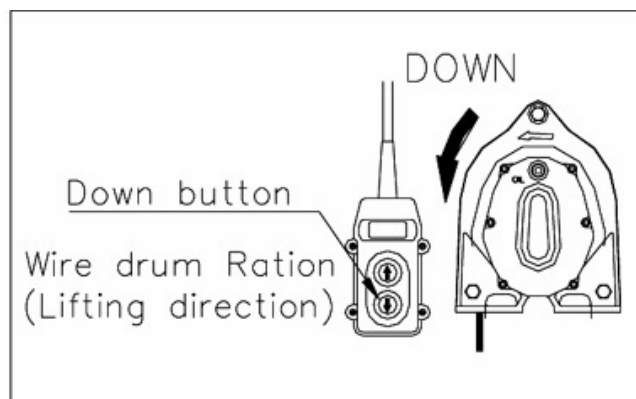
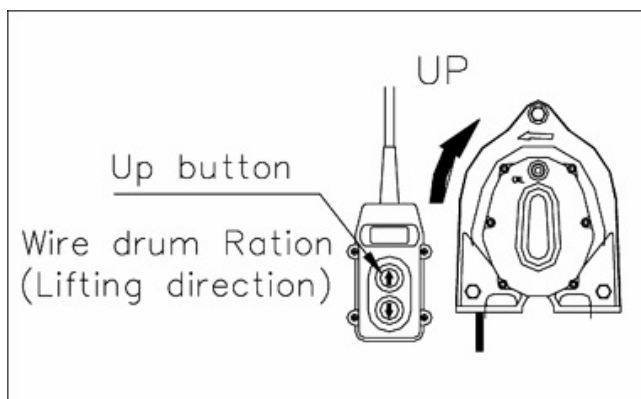


**BRUSHES ARE NOT COVERED UNDER WARRANTY.**

### OPERATING THE CWL

To operate the CWL winch

- Twist and release the Emergency Stop button
- Press the 'UP' button to raise the load
- Press the 'DOWN' button to lower the load
- Press the 'EMERGENCY STOP' button to isolate the control



## CWL WINCH - FEATURES (continued)

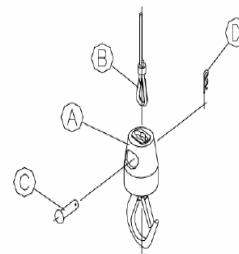
### SWIVEL LOAD HOOK & SPIN RESISTANT WIRE ROPE

The appropriate wire rope and load hook are both supplied with a new CWL winch, with the wire rope already installed. Ropes and hooks for CWL winches are specifically calibrated for the safe working load of each model. The wire rope is passed through the top plate of the hook and secured with the pin and cotter pin provided.

Hooks are weighted swivel type with a safety catch.

Ropes should be spin resistant, galvanised 7 x 18 wire core.

Replacement ropes and hooks should be of the same relevant calibration and are available from BHW Group Ltd sales. Please refer to the section on Parts (pages 16-21).



**WIRE ROPES ARE NOT COVERED UNDER WARRANTY.**

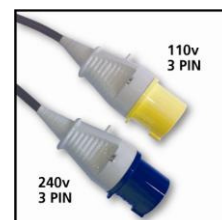
### POWER AND WANDERLEAD SOCKETS

The power socket and wanderlead socket are protected with screw in dust covers which should be replaced when the ports are not in use.

#### WINCH POWER SOCKET

The power lead provided with the hoist has a 5 metre lead to a 3 pin socket for either 110V or 240V depending on the voltage model.

It is not recommended to extend the power lead to above 20 metres as there will be voltage drop which will affect performance of the winch.



### WANDERLEAD POWER CONTROL WITH EMERGENCY STOP

The wanderlead provided with the hoist uses a 7 pin bayonet / screw tight plug on a 10 metre lead to a 2 button hand held control and Emergency Stop. Press the 'UP' and 'DOWN' buttons to activate the winch, activity will stop once either of these buttons is released.

**EMERGENCY STOP** If the Emergency Stop button is used, hoist operation will immediately cease. Once the operator is sure that any potential problem with operations has been solved, the hoist can be put back into use. To do this, the Emergency Stop needs to be reset by a small turn clockwise to release the button. 'UP' and 'DOWN' control can then be resumed.



**NOTE:** Cables should be kept away from the area of operation. Both cables should be attached to the hanging clip on the side of the motor housing. It is a good idea to also attach the cables to a hook above the winch or place the wires over the suspension bar where possible to ensure cables do not obstruct the operation of the hoist.

## OPERATIONAL SAFETY

### ENVIRONMENTAL CONSIDERATIONS

Protect the hoist from unsuitable environmental conditions. The motor is IP44 rated, the wanderlead control is IP65 rated.

Avoid temperatures under -10° C or above 40° C. Conditions with humidity above 90% may also affect hoist performance.

Avoid heavy acidic or salt environments. Protect the winch and controls from excessive exposure to rain or snow or other moisture ingress.

As with all electrical equipment, general exposure to excessive dust pollution, gas emissions or flammable / corrosive liquids, or any potentially explosive environment should also be avoided.

### THE WINCH OPERATOR

The winch should be operated by designated and fully trained operators only. Operators should wear suitable work wear for onsite operations including safety gloves, helmets, steel reinforced footwear and protective clothing.

The operator should not engage in any activity which will divert attention from operating the winch.

Operators are advised to check that the top hook is safely attached to the suspension point, that the safety catch on the hook is fully closed and the suspension point is fully capable of supporting lifting operations. The winch should be further secured or bracketed to the suspension arm to prevent it coming off of the suspension point. Open ended suspension bars should have an additional bracket or suitable fixture at the end point.

The power supply lead should be firmly screwed into the socket and the wanderlead screwed tight to its socket and both clipped to the housing before use. Both are supplied with a retaining plate attached to the cable, and the winch is supplied with a side clip for this purpose (see previous page). Extensions attached to the 3 pin power socket should use the approved 3 pin plug (for either 240V or 110V as appropriate), and should not exceed an additional 15 metres, to avoid voltage drop.

Prior to use, the operator should check each operation mode (lift / descend / Emergency Stop) to ensure that all hoist activities are fully operational. Operators should also make sure that loads are safe to move and that the working area is clear of personnel and obstructions.

Operators should not attempt to use the hoist if any aspect of the lifting operation or its surrounding environment is deemed unsafe.

### WORKING ON SITE



Winch should **NEVER** be used for the transport or lifting of personnel. Loads should **NEVER** pass over the heads of personnel or in any way compromise on site safety.

Using the wanderlead, stand away from the load and use the lift or descend buttons according to need. Use suitable chains or strops to engage the load on to the lifting hook. Make sure that the load and its route is not obstructed in any way.



The wire rope must form a straight line from the load hook to the suspension point. All loads should be securely hitched, PROPERLY BALANCED and central to the lift, with the load hook safety latch closed, before any lift is made.

If the load is not balanced and centred correctly the wire rope will bunch to one side of the drum, impede operation and damage the wire rope and drum flange. An unbalanced or off centre load is also dangerous.



**WATCH WHAT YOU ARE DOING.** Do not get distracted from the task. Always keep an eye on the winch **and** the load to ensure safe operation.

**NEVER WRAP THE WIRE ROPE AROUND A LOAD TO ENGAGE THE HOOK.**  
**NEVER STAND UNDERNEATH, OR CLOSE TO THE LOAD.**  
**WEAR PROTECTIVE CLOTHING – ESPECIALLY GLOVES.**



Make sure that the hoist is fully capable of lifting the intended load.

**DO NOT** attempt to lift loads that are beyond the hoist capacity (see specifications, page 4).

**NEVER** use the hoist beyond the rated duty cycles shown in specifications.

The efficiency and life of a CWS hoist is dependent on weights of loads and working frequency.

All CWS hoists are rated at a 25% duty cycle, with a maximum of 60 starts per hour – this includes lifting and lowering. Exceeding the duty cycle or overloading the hoist will cause unnecessary stress to component parts and shorten the life of the machine or may cause it to fail.

## OPERATIONAL SAFETY

### PRE OPERATIONAL CHECKS

**CHECK ALL EQUIPMENT:** The winch, power lead, wanderlead, wire rope - and any chains, ropes and slings used for lifting should be continually inspected for damage or obvious wear that could make them unsafe to work with. Damaged accessory items should be replaced not repaired (see notes on Routine Inspection and Maintenance on page 14).

**MAKE SURE THE WINCH IS SAFE WHEN UNATTENDED:** Before leaving a winch unattended, the operator should lower any load onto the floor or on to an appropriate support and disconnect the winch. The unloaded hook should be raised clear of all passing personnel and traffic. The winch should be fully switched OFF when not in use. Wanderleads, power leads, strops and slings etc., should be neatly stowed away to avoid any trip hazard.

### OPERATION

**Gearbox –** The winch has been supplied from new with the gearbox pre-filled with Castrol Alpha Series SP-220. The viscosity (cSt) is 226.14/19.5 at 40°C. Gear lubrication is very important to ensure the long life of the winch.

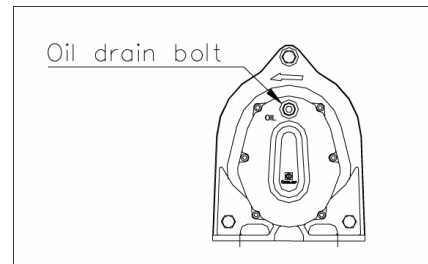
When replacing oil, please take note of the following advice:

For ambient temperature of approx. -10° to +40°C, a gear oil of mm<sup>2</sup>/S at 40°C with mild high-pressure additives should be used.

*Examples: Din 51502 Clp 220, E.G. BP Energol Gr-Xp 20, Esso Spartan*

***Ep 220, Shell Omala Oil 220, Mobilgear 630 or Aral Degol Bg 220.***

Under higher or lower than ambient temperatures, the type of oil used for the gearbox should be adapted to the specific conditions.



**DO NOT USE GREASE OR OIL ON THE WIRE ROPE. USE A PROPRIETARY WIRE ROPE LUBRICANT.**

### CONNECTION TO THE ELECTRICAL SUPPLY – 110V or 230V / 240V?

An AC x 1ph supply is required at the appropriate voltage for the winch. The supply voltage and frequency at which the winch operates is marked on the motor rating plate as **either 110V or 240V x 1ph.**

**IT IS IMPERATIVE TO CHECK THAT YOU ARE USING THE CORRECT VOLTAGE.**

Cables supplying the winch with power should be kept clear of the operating area and not impede the winch. A suitable circuit breaker or fuse should be installed in the power supply to the winch, and checked regularly.

### COMMISSIONING THE WINCH

On completion of pre operation, but before the winch is put into regular service, the following procedures should be carried out.

- Isolate the power supply.
- Check that all mechanical and electrical joints and connections are tight and secure.
- Connect the wanderlead control to the side of the winch, screw the threaded fitting home and attach cable to the retention clip on the side of the winch.
- Connect power cable to supply.
- Switch on power supply.
- Run the full extent of winch without a load and check that the operation is smooth at all times. A slight tension on the wire rope is advised to ensure smooth running to and from the drum.
- Check operation of winch Emergency Stop, under both light load and full load conditions

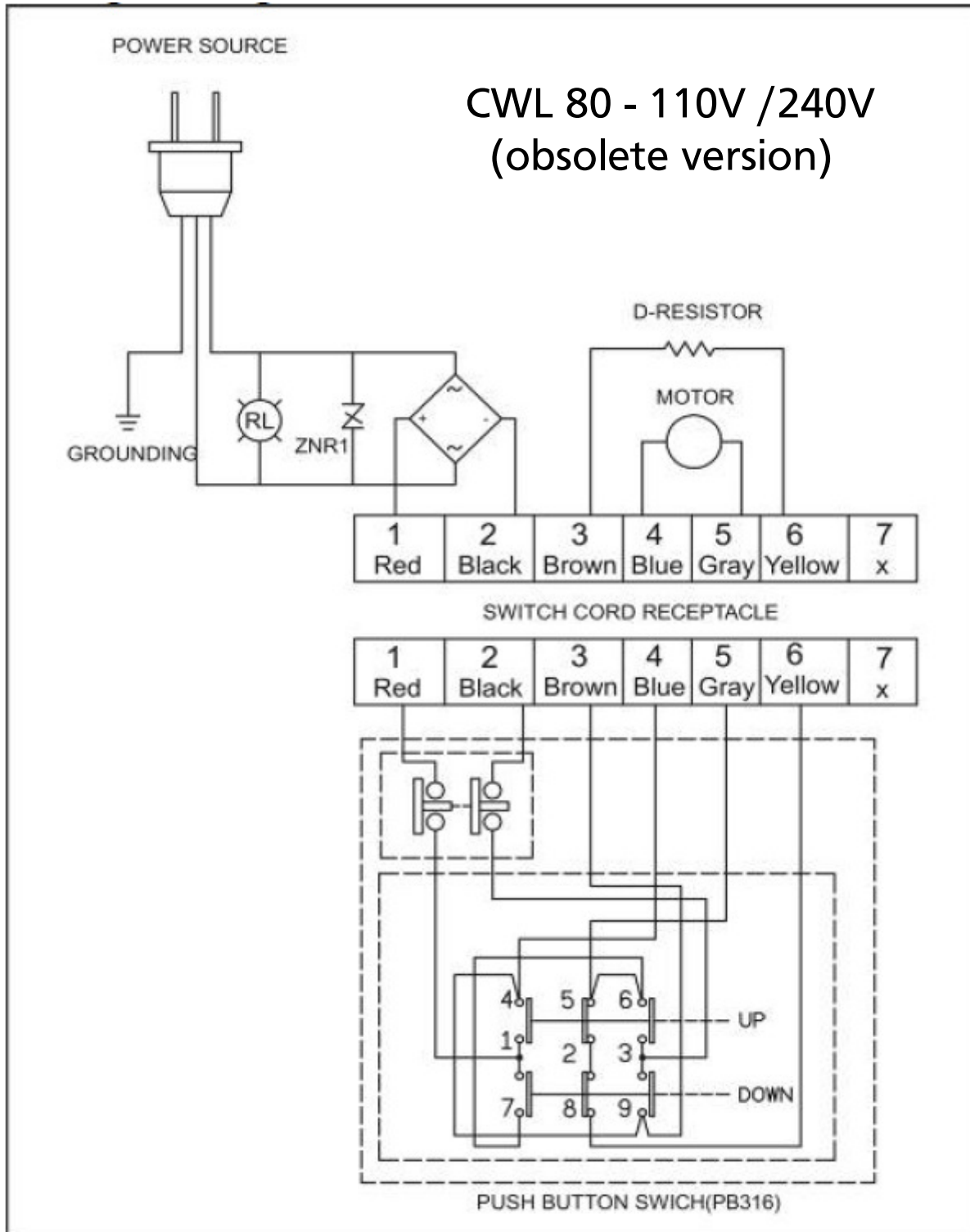
**NOTE:** If the winch is not being used on a regular basis it should be powered in and out from time to time to minimise corrosion of the internal motor components that may occur due to condensation. Energising the motor will generate heat, which will help dissipate any moisture.



## OPERATIONAL SAFETY

### ELECTRICAL CIRCUITS

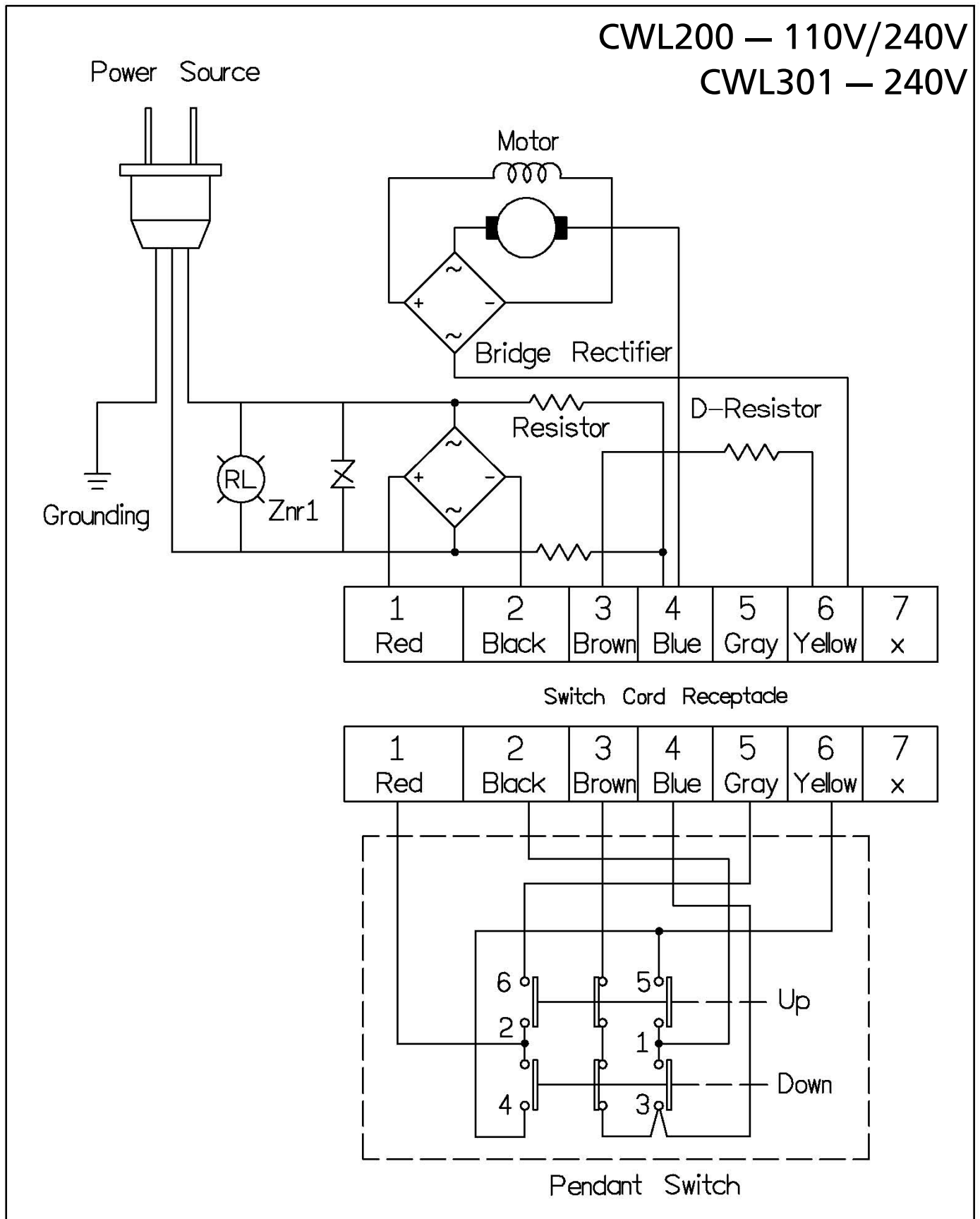
The basic circuit details for 110V and 240V are shown below:



## OPERATIONAL SAFETY

### ELECTRICAL CIRCUITS

The basic circuit details for 110V and 240V are shown below:



## WIRE ROPES AND HOOKS

### **NOTE: ISO 4309:2004/2010 – WIRE ROPES DIRECTIVE**

ISO 4309:2004 / 2010 details guidelines for the care, installation, maintenance and examination of wire rope in service on winches, hoists and cranes, and enumerates the discard criteria to be applied to promote the safe use of the machinery.

It is important that these guidelines - for safe care, installation and ultimately disposal of wire ropes is strictly adhered to according to this directive.

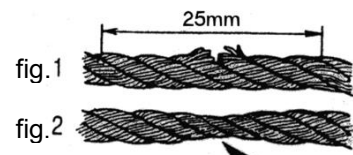
For hoisting applications the minimum breaking force (MBF) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter\* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

### **CARE OF THE WIRE ROPE**

It is most important that the wire rope is inspected on a regular basis, for kinks, flat spots, broken strands and other damage caused by wear and tear or possible misuse.

Check both the rope and the hook and replace under any of the following circumstances:

- 10 strands of rope or more broken with a space of 25mm (see 1).
- Rope shows visible signs of wasting (see fig.2).
- Deformed or excessively corroded rope.
- Twisted rope.
- Bent rope.
- Broken or faulty safety catch on hook
- Damage or distortion to steel plate above hook



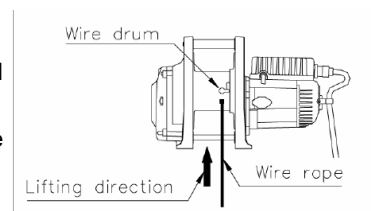
The wire rope or load hook should be replaced if damaged or worn.

After using the hoist always check to ensure that the wire rope is layered evenly on the drum. If this is not the case, power out the wire rope and rewind it to ensure even layers. This will significantly extend wire rope life. Normally the tension can be applied by hand – wear gloves.

Under no circumstances wrap the wire rope around the load being recovered and then attach the hook back on to the rope. This will result in serious rope damage or breakage. Always employ a chain or webbing strap from the hook to the load.

### **REPLACING THE WIRE ROPE**

1. Wearing protective gloves (at all times during the replacement of the wire rope), power out the old wire rope from the hoist until fixtures are visible on the drum.
2. Using a suitable allen key, unscrew and remove the grub screw securing the rope in the drum and set aside.
3. Remove old wire rope by sliding the end sideways into grub screw hole and pulling it out. Set old rope aside for disposal.
4. Uncoil the new wire rope and lay in a line on the ground in such a way that will avoid kinking or tangles when winding on to the drum.
5. Thread the 'PLUG' end of the new wire rope between the tines of the overwind lever. Insert plug end of wire rope into drum casing and slide sideways to clear grub screw hole. Replace grub screw using allen key and tighten into place.
6. Insert the 'EYE' end of the new wire rope through aperture in the steel plate above the hook, pull through and secure rope eye to the load hook, using the pin and cotter pin previously removed (replace cotter pin if unfit for further use).
7. Applying hand tension to the wire rope, wind in the rope on to the drum using the 'UP' button. Ensure even winding throughout this operation, as uneven winding will cause bunching and may damage the rope and shorten its life.
8. Suitably pack and dispose of the old wire rope safely and responsibly.



**WIRE ROPES ARE NOT COVERED BY WARRANTY.**

## TAKING CARE OF THE WINCH

CWL winches are a valuable item of equipment for working on site, but care should be taken to ensure the winch is packed away and stored in a responsible manner to minimise potential damage to external parts. It is recommended that either a suitable storage suspension point is fitted to vehicles or storage areas, or at least that the winch is protected by a suitable storage bag, protective covering or kept in a storage box. CWL winches should be routinely cleaned before taking off site or into storage.

## ROUTINE INSPECTION AND MAINTENANCE

To maintain optimum performance and condition of your CWL winch it is important to carry out periodical checks.

**BRAKING: Check continuously each time the winch is used and following a full service.**

There are two braking systems. One is a ratchet system, which stops the load from back driving the winch only. The second unit is a resistance coil which dissipates the excess current produced when a heavy load is lowered; this stops the motor from over speeding due to the load back driving the motor when lowering over a long distance. Therefore to test correctly, a load would have to be put onto the winch to check that the load stops correctly over a short distance and that the load does not over run over a long distance. All this should be observed during a normal working schedule when it was last used or during a full service.

**CARBON BRUSHES: Check every 1 to 3 months depending on use and loading conditions.**

Brushes can wear rapidly if the hoist is continuously run at its maximum load all the time or especially if there is a voltage drop resulting from overlong extension leads or incorrectly sized cable extension leads.

**MOTOR: Check commutator every 1 to 3 months depending on use and loading conditions.**

The motor can only be checked during a major strip down. When the carbon brushes are removed, the commutator can be seen. If it is badly scored or blued, the motor should be checked by a qualified electrician.

**POWER LEAD AND WANDERLEAD CONTROL: Visual inspection daily.**

The power lead and wanderlead should both be inspected before use to make sure that the outer insulation isn't damaged, that all the plugs are undamaged and the cable connections into the plugs are tight. The wanderlead emergency stop button and control buttons must also be checked for free movement and correct operation.

**WINCH SUPPORT HOOK AND SAFETY LOCK: Visual inspection daily.**

Before use, check that the hook and support fittings are secure and are moving freely. Lubricate if necessary with light oil.

**WIRE ROPE: Visual inspection daily.**

Check the wire rope for damage before use. This should be done before lifting any goods by powering the rope completely out and then back on by keeping tension on the rope while doing so.

NOTE: During this operation protective gloves must be worn. Check for kinks, broken strands and flattening of the rope during this operation.

**MARKING LABELS: Visual inspection at major service.**

Check for wear and damage. Replace if necessary.

## SERVICING

It is recommended that the CWL winch is returned to the supplier for a full service and load tested every 3 years or after 250 hours of use, whichever is sooner.

## TROUBLE SHOOTING

Below are some tips on trouble shooting a CWL winch, further advice is readily available from the BHW Group Ltd.

SYMPTOM	POSSIBLE CAUSES	CORRECTIONS
<b>No power</b>	Faulty wiring on power lead or poor electrical source Burnt out rectifier(s) on power source Burnt out motor Bad installation or wear on carbon brushes Power loss on carbon brushes feed	Check power lead and power source Replace rectifier(s) - note +/- poles Replace motor Check and replace both carbon brushes Check and replace both carbon brush leads
<b>Can lift, but fails to lower</b>	Burnt out diode Burnt out rectifier(s) on motor side Malfunction of 'DOWN' button on wanderlead	Replace diode - note +/- poles Replace rectifier(s) - note +/- poles Replace 'DOWN' switch in wanderlead
<b>Can lower, but fails to lift</b>	Burnt out diode Burnt out rectifier(s) on motor side Malfunction of 'UP' button on wanderlead	Replace diode - note +/- poles Replace rectifier(s) - note +/- poles Replace 'UP' switch in wanderlead
<b>Short circuit</b>	Melted 'B' contact of wanderlead Burnt out diode Short circuit on rectifier on motor side Burnt out 'D' type resistor Too much carbon powder on carbon brushes  Burnt out motor Damaged circuit board due to over wind of wire	Replace wanderlead Replace diode (note +/- poles) Replace rectifier (note +/- poles) Replace 'D' type resistor Dis-assemble the hoist and clean out carbon powder Replace motor Replace circuit board
<b>Failure to lift the rated load</b>	Overloaded Short circuit on the armature winding Incorrect carbon brush specification, or worn out Burnt out parts of armature winding Burnt or deformed carbon brush holder(s)	Reduce load Replace commutator of the armature core Replace carbon brushes Replace armature winding Replace carbon brush holder(s)
<b>Failure to hold rated load after stopping</b>	Gap of ratchet brake is too large Malfunction of pressed spring of ratchet brake Oil dirty or contaminated Too much oil in gearbox	Adjust ratchet brake Replace pressed spring Replace oil Reduce quantity of oil
<b>Brake distance is too long at 'no load'</b>	Malfunction of 'D' type resistor	Check and/or replace 'D' type resistor
<b>Smell of burning or smoke</b>	Malfunction of pressed spring of ratchet brake Burnt out 'D' type resistor Malfunction of 'B' contact of pendant switch Winch has debris inside, impairing operation	Replace pressed spring Replace 'D' type resistor Replace pendant switch Remove debris and clean outer housing (do not use jet sprays)

## WINCH PHOTOS

### CWL200 - 110V / 240V



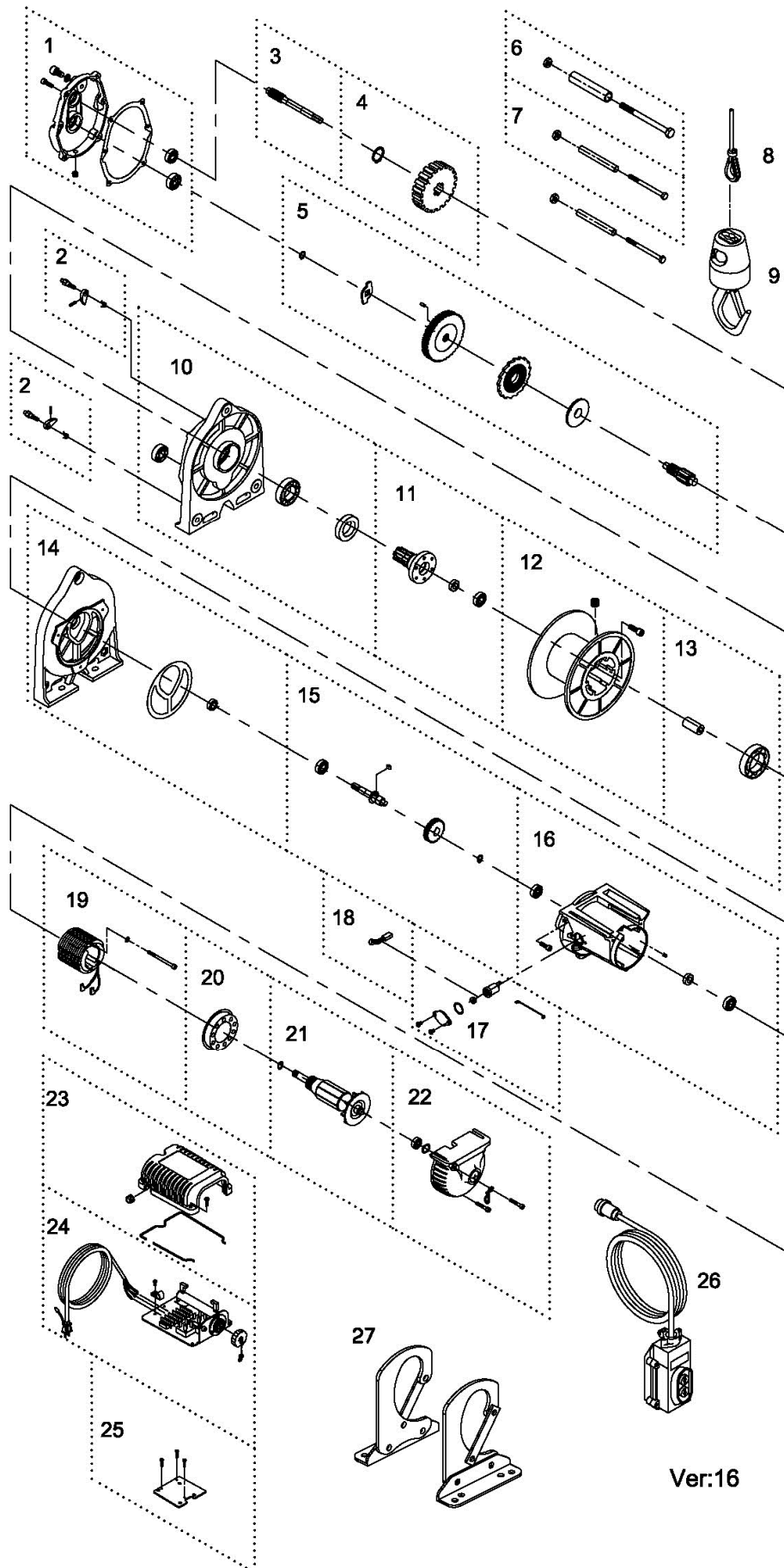
### CWL200L - 110 / 240V





## WINCH DIAGRAM

### Parts diagram CWL200 / 200L - 110V / 240V



Ver:16

## PARTS DIAGRAM

### CWL200 and CWL200L

Parts description - CWL200			
No.	BHW no.	Description	Qty
1	13858	Gearbox rear cover kit - 880546	1
2	13859	Ratchet stopper kit - 880547	2
3	13860	2nd Shaft - 880548	1
4	13861	3rd Gear kit - 880549	1
5	13862	Brake kit - 881516	1
6	13863	Tie bar kit - 880552	1
7	13864	Tie bar kit A - 880553	2
8	8049	Wire rope 5mm x 46m	1
9	7921	Weighted hook - 880384	1
10	13865	Gearbox support rack kit - 880555	1
11	13866	Output shaft kit - 880556	1
12	13867	Drum kit - 881518	1
13	13868	Motor coupling kit - 881515	1
14	13869	Motor support rack kit - 880558	1
15	12225	Torque shaft kit - 881517	1
16	12195	Motor housing kit - 880561	1
17	14216	Carbon brush holder kit - 880472	2
18	2303	Carbon brush 110V~240V - 880473	2
19	2246	Armature core, 110V - 880972	1
19	2247	Armature core, 240V - 880973	1
20	2230	Cooling cover - 880564	1
21	2242	Armature winding, 110V - 880512	1
21	2243	Armature winding - 240V - 880513	1
22	12225	Motor rear cover kit - 880566	1
23	2231	Terminal upper cover - 880535	1
24	14313	Control panel 110V comes with lead - 881231	1
24	14314	Control panel 240V comes with lead - 881232	1
25	14315	Lower plate - 880567	1
26	19366	Remote control assembly, PB-417 - 883145	1
26..a	19427	2 Button control only, PB-417 - 883136	1
27	10690	P Type hanger kit - 881574	1

Parts description - CWL200L			
No.	BHW no.	Description	Qty
1	13858	Gearbox rear cover kit - 880546	1
2	13859	Ratchet stopper kit - 880547	2
3	13860	2nd Shaft - 880548	1
4	13861	3rd Gear kit - 880549	1
5	13862	Brake kit - 881516	1
6	14316	Tie bar kit - 880575	1
7	14317	Tie bar kit A - 880576	2
8	3491	Wire rope 5mm x 71m	1
9	7921	Weighted hook - 880384	1
10	13865	Gearbox support rack kit - 880555	1
11	13866	Output shaft kit - 880556	1
12	14318	Drum kit - 881520	1
13	14319	Motor coupling kit - 881553	1
14	13869	Motor support rack kit - 880558	1
15	12225	Torque shaft kit - 881517	1
16	12195	Motor housing kit - 880561	1
17	14216	Carbon brush holder kit - 880472	2
18	2303	Carbon brush 110V~240V - 880473	2
19	2246	Armature core, 110V - 880972	1
19	2247	Armature core, 240V - 880973	1
20	2230	Cooling cover - 880564	1
21	2242	Armature winding, 110V - 880512	1
21	2243	Armature winding - 240V - 880513	1
22	12225	Motor rear cover kit - 880566	1
23	2231	Terminal upper cover - 880535	1
24	14313	Control panel 110V comes with lead - 881231	1
24	14314	Control panel 240V comes with lead - 881232	1
25	14315	Lower plate - 880567	1
26	19366	Remote control assembly, PB-417 - 883145	1
26..a	19427	2 Button control only, PB-417 - 883136	1
27	10690	P Type hanger kit - 881574	1

**WINCH PHOTOS**

**CWL301 - 240V only**

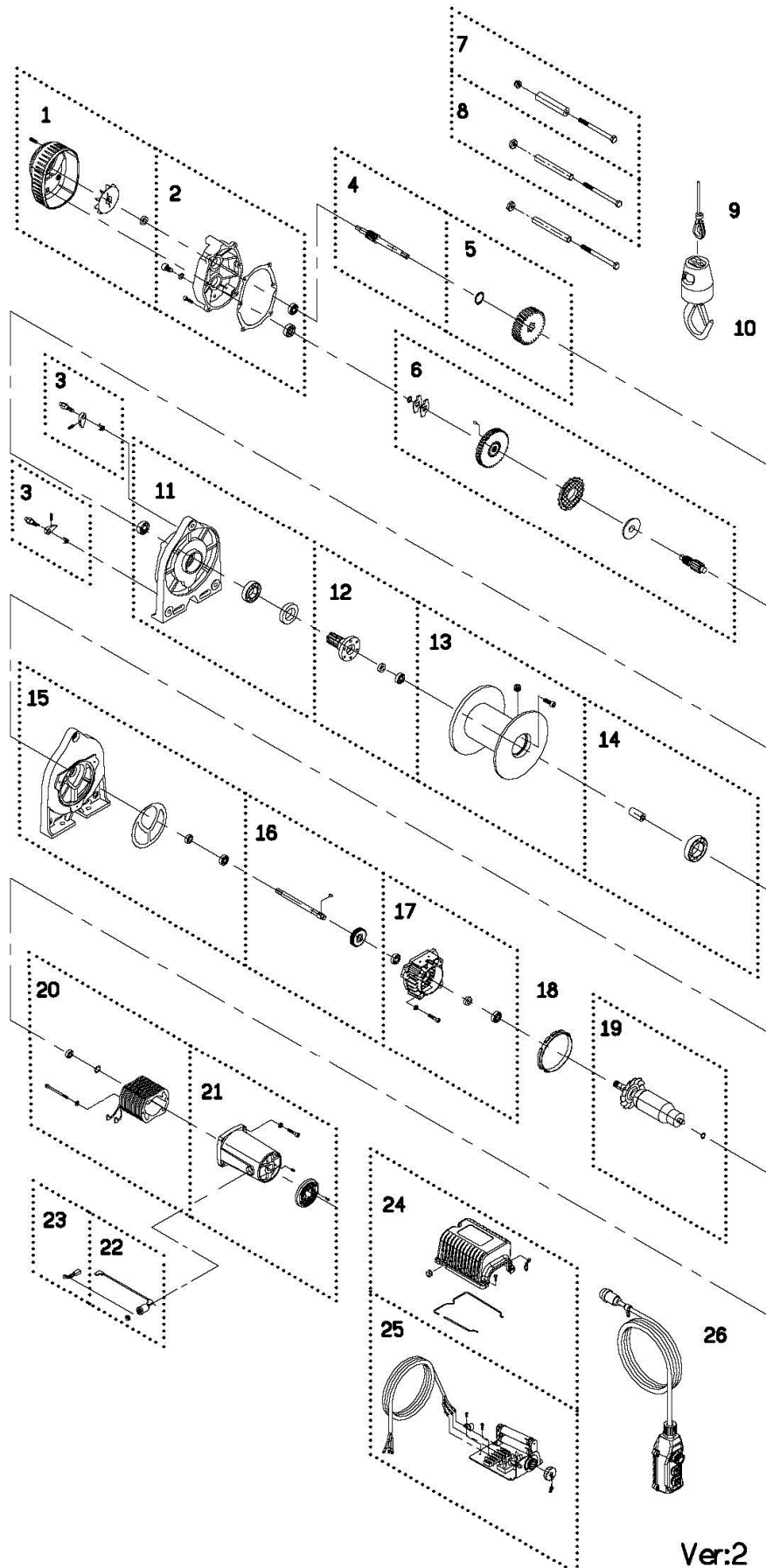


**CWL301L - 240V only**



## WINCH DIAGRAM

### Parts diagram CWL301 / CWL301L - 240V only



Ver:2

## PARTS DIAGRAM

### CWL301 and CWL301L

#### Parts description - CWL301

No.	BHW no.	Description	Qty
1	13870	Protective cover kit - 880581	1
2	13871	Gearbox rear cover kit - 880582	1
3	13872	Ratchet stopper kit - 880494	2
4	13873	2nd Shaft - 880583	1
5	13874	3rd Gear kit - 880584	1
6	13875	Brake kit - 881534	1
7	13876	Tie bar kit - 880552	1
8	13877	Tie bar kit A - 880553	2
9	10627	Wire rope 6mm x 30m	1
10	7921	Weighted hook - 880384	1
11	13878	Gearbox support rack kit - 880590	1
12	13879	Output shaft kit - 880556	1
13	13867	Drum kit - 881518	1
14	13868	Motor coupling kit - 881515	1
15	13869	Motor support rack kit - 880558	1
16	14320	Torque shaft kit - 881535	1
17	14321	Motor bracket kit - 880595	1
18	14322	Cooling ring - 880596	1
19	14323	Armature winding, 240V - 880603	1
20	14324	Armature core, 240V - 880978	1
21	14325	Motor housing kit - 880599	1
22	14326	Carbon brush lead - 880600	2
23	14327	Carbon brush - 880601	2
24	14330	Terminal upper cover - 880535	1
25	14331	Control panel comes with lead - 880602	1
26	19366	Remote control assembly, PB-417 - 883145	1
26..a	19427	2 Button control only, PB-417 - 883136	1
27	10690	P Typr hanger kit - 881574	1

#### Parts description - CWL301L

No.	BHW no.	Description	Qty
1	13870	Protective cover kit - 880581	1
2	13871	Gearbox rear cover kit - 880582	1
3	13872	Ratchet stopper kit - 880494	2
4	13873	2nd Shaft - 880583	1
5	13874	3rd Gear kit - 880584	1
6	13875	Brake kit - 881534	1
7	14316	Tie bar kit - 880575	1
8	14328	Tie bar kit A - 880588	2
9	3499	Wire rope 6mm x 55m	1
10	7921	Weighted hook - 880384	1
11	13878	Gearbox support rack kit - 880590	1
12	13879	Output shaft kit - 880556	1
13	14318	Drum kit - 881520	1
14	13868	Motor coupling kit - 881515	1
15	13869	Motor support rack kit - 880558	1
16	14329	Torque shaft kit - 881536	1
17	14321	Motor bracket kit - 880595	1
18	14322	Cooling ring - 880596	1
19	14323	Armature winding, 240V - 880603	1
20	14324	Armature core, 240V - 880978	1
21	14325	Motor housing kit - 880599	1
22	14326	Carbon brush lead - 880600	2
23	14327	Carbon brush - 880601	2
24	14330	Terminal upper cover - 880535	1
25	14331	Control panel comes with lead - 880602	1
26	19366	Remote control assembly, PB-417 - 883145	1
26..a	19427	2 Button control only, PB-417 - 883136	1
27	10690	P Typr hanger kit - 881574	1



## WARRANTY

BHW Group Ltd warrants each new CWL winch and ancillary equipment supplied against factory defects in material and workmanship for one year from date of purchase.

The responsibility for uninstalling the hoist or ancillary equipment is the owner's, together with its return, transportation prepaid to BHW Group Ltd.

BHW Group Ltd will, under this warranty, without charge repair or replace at its option, parts, which on inspection are deemed to be defective.

The loss of use of the produce, loss of time, inconvenience, commercial loss or consequential damages are not covered.

Warranty does not apply where the product has been tampered with or altered in any way, or where the serial number or date stamp has been defaced, altered or removed, or if in the view of BHW Group Ltd the damage or failure occurred from misuse, negligence or accident.

**NOTE: This is a mechanical product and as such requires regular, routine maintenance (see page 14). Subject to duty cycle, some consumable parts are not likely to be covered by warranty. This would typically apply to items like wire ropes and motor brushes. BHW Group Ltd will always examine any product whilst under warranty and advise accordingly.**

BHW Group Ltd reserves the right to change the design of any product without assuming any obligation to modify any product previously supplied.

Hoists or equipment returned under warranty should be despatched to BHW Group Ltd service department at the address shown below, with full name and address of sender, a statement detailing the defect and proof of purchase.

**BHW**  
**Bushey Hall Winchmaster**  
**www.bhwgroup.com**

Service Department  
BHW Group Ltd  
Unit 6, South Orbital Trading Park  
Hedon Road, Hull, HU9 1NJ

Telephone: +44 (0)1482 223 663  
Email: [sales@bhwgroup.com](mailto:sales@bhwgroup.com)  
Website: [www.bhwgroup.com](http://www.bhwgroup.com)

**CWL WINCH MODEL AND VOLTAGE.....**

**SERIAL NUMBER.....**

**DATE OF PURCHASE.....**

*CWL Winches are manufactured in Taiwan.*