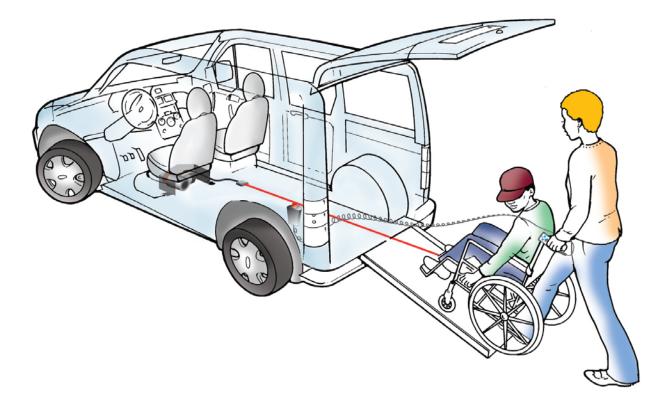


www.bhwgroup.com

FITTING & OPERATING INSTRUCTIONS



BHW WINCH•ASSIST MOBILITY VEHICLE SYSTEMS

for Wheelchair Access Vehicles Motability & TUV Approved



Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

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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.

BHW Winch-Assist 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.

INSTALLER RESPONSIBILITY FOR CE COMPLIANCE

- **1.** Mount winch in accordance with instructions.
- 2. Install an emergency stop switch in accordance with instructions included in this manual.
- **3.** Install a suitable fuse or circuit breaker to the wiring to reduce the possibility of overload. Circuit breakers or fuses are available as optional extras from the BHW Group (See Page 9).
- **4..** Load test the winch following installation to check the integrity of the mounting and correct operation of the winch under load.

CENTRALLY MOUNTED WINCHES

Centrally Mounted winches generally use webbing straps to connect the winch to the wheelchair fittings.

CONCEALED WINCHES

Concealed winches use a soft rope fed through a tube to connect the winch and the wheelchair.

BHW Winch-Assist systems must be installed correctly in accordance with the fitting instructions (Pages 6-10) and subsequently the installer and user must also adopt the correct procedures for operation (See Operating Instructions Pages 11-13).

It is important that with the winch installation adequate provision is made so that the load is transmitted into the floor pan of the vehicle. Strengthening plates should be used to spread the load where necessary.



WINCH INFORMATION

WINCH•ASSIST MOTORS FOR MOBILITY VEHICLES





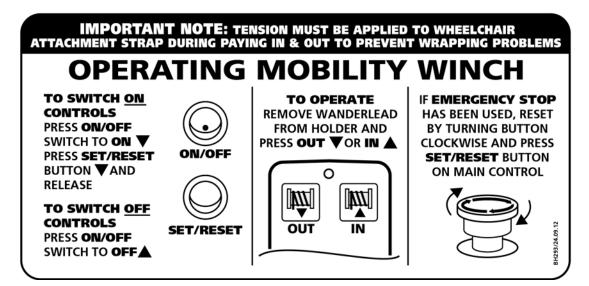






WINCH INFORMATION

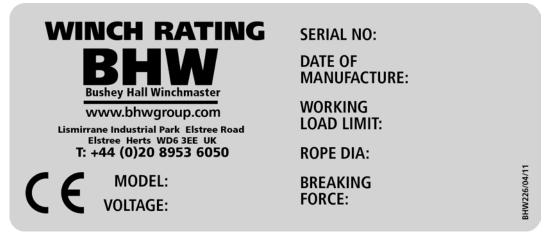
WINCH CONTROL LABELS



OPERATING INFORMATION



ROPE TENSION INFORMATION



WINCH MODEL INFORMATION



FITTING A WINCH•ASSIST SYSTEM - GENERAL

Mobility vehicles from different manufacturers all vary in layout. The fitting instructions below are a general guide to best practice.

BHW Group can supply complete wiring looms. If BHW wiring looms are not being used, please ensure that electrical cables are the correct size. Winches may suffer voltage drop or be subject to slow running if cable specification is too small.

PLEASE FOLLOW THESE INSTRUCTIONS CAREFULLY AND CONTACT BHW GROUP IF ASSISTANCE IS REQUIRED.

WINCH MOUNTING - CENTRAL MOUNTING

To centrally mount a Winch-Assist, it is recommended that a backing plate (not supplied) is fitted below the floor, of a suitable size, to ensure that the load is spread sufficiently across the floor pan. Where floors are corrugated, it may also be necessary to fit an additional plate to provide an even surface for mounting the winch.

Centrally mounted winches should not be positioned on top of transmission tunnels.

A centrally mounted winch should be positioned so that the winch <u>drum</u> is directly in line with the direction of pull. It is the installers' responsibility to ensure that the unit is positioned so that the possibility of entanglement with the rotating drum is avoided.

Securely mount the winch by bolting down through the floor pan and any additional strengthening plates into fixing holes using $4 \times M6$ high tensile bolts (min. grade 8.8) of a suitable length.

A suitable soft rope or a webbing strap can now be secured to the winch drum. Centrally mounted winches generally use a webbing strap which is clamped on to the drum spindle.

WINCH MOUNTING CONCEALED MOUNTING KITS

NOTE: Ensure that the BHW WincheAssist kit is the correct specification for the intended mobility vehicle. There are differences between brackets and tubes for each vehicle product. If in any doubt, contact the BHW Group who will advise.

INSTALLING THE WINCH & MOUNTING BRACKET

With concealed mounting kits, Winch-Assist is supplied with the winch, a mounting bracket and a suitable rope tube with nylon entry and exit blocks for the specified vehicle model.

The assembly is designed to fit under the seat (this will be either the passenger seat or the driver's seat depending on the vehicle type (see listings on Page 9).

For mounting under the seat, the whole kit is positioned into the void between the seat slider rails.

The mounting bracket assembly with the winch is designed to 'sandwich' between the underside of the seat slider rails and the floor pan below using the mounting holes. The rope tube faces towards the rear with the nylon exit block centrally mounted, in line with the direction of pull.

Note that the winch drum faces the entry block of the rope tube.

It is important that the rope tube is orientated the correct way so that the rope tube exit and the larger nylon clamp will face towards the rear of the vehicle.

Kits vary, so sometimes the bracket is uppermost, and other times the winch is on top. This becomes evident when offering up the assembly to the void between the rails. Schematics of mounting brackets for the most popular vehicles are listed on page 9.



WINCH MOUNTING CONCEALED MOUNTING KITS - Continued

PRE-ASSEMBLY - ATTACHING THE WINCH TO THE MOUNTING BRACKET

Attach the winch to the mounting bracket with the four M6 x 25mm bolts supplied. The winch will always sit 'inside' the mounting bracket, whether the winch or the bracket is installed uppermost (dependent on vehicle and kit type).

The winch drum should centrally face the anchor point for the beginning of the rope tube. Secure the beginning of the rope tube to the mounting bracket, using the M8 x 45mm bolts supplied.

PRE-ASSEMBLY – ATTACHING THE ROPE

Temporarily connect the winch to a 12v power supply and determine 'winch in' rotation direction. Disconnect the power supply.

Feed the supplied soft rope through the larger nylon exit clamp and the rope tube, allowing enough slack to easily attach it to the winch.

Make sure that the rope tube is orientated the right way, so that the exit and the nylon exit clamp will eventually face to the rear of the vehicle.

Slacken off the retainer nuts on the rope clamp situated on the side of the drum and pass the end of the rope through the clamp inside the drum allowing 15mm of excess beyond the clamp.

Tighten rope clamp to secure. Do not wind the rope on to drum until winch and mounting plate is fixed in position, as doing so will restrict ease of installation.

FIXING THE WINCH & BRACKET IN PLACE

Remove the appropriate vehicle seat and seat slider rails.

Locate the assembly into the void between the slider rails. Replace slider rails and bolt into place.

SECURING THE ROPE TUBE

The rope tube and the larger nylon exit clamp should now be central in the vehicle and facing towards the rear. Secure the nylon clamp in position using the M8 x 45mm bolts provided, fixing it to the floor pan.

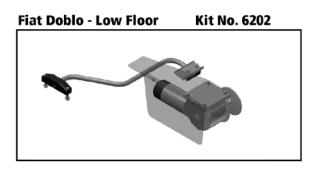
Floor pan may need reinforcement to affix the clamp, use a steel plate of suitable size to spread loading stress.

If mounting on to a transmission tunnel, care should be taken that neither the drilling of holes or the subsequent fixing of the nylon tube clamp interferes with any other moving parts of the vehicle. Ensure that bolt holes are sealed to prevent any water ingress.

The following pages show layouts of mounting brackets for the most popular vehicle kits available from BHW Group.

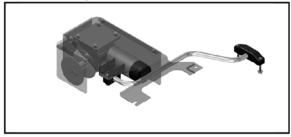


LAYOUTS OF MOUNTING BRACKETS & WINCHES

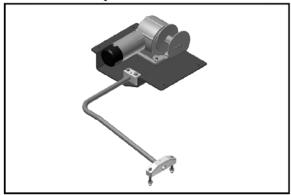


Renault Kangoo

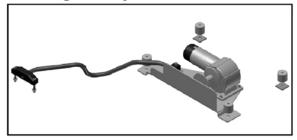
Kit No. 6203

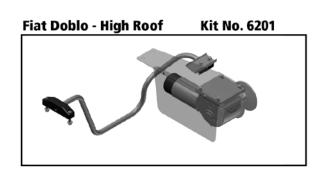


Fiat Scudo & Peugeot Expert Kit No. 8252 and Citroën Dispatch



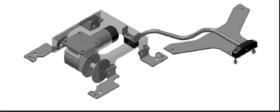
Volkswagen Caddy L/Hand Drive No.13137



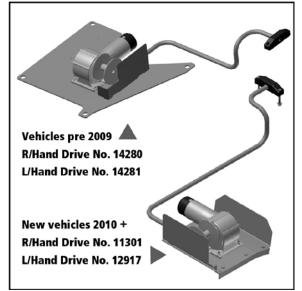




Citroën Berlingo XTR Kit No. 14279



Ford Tourneo Connect Kit Nos. - see below





KIT PARTS

UNDERSEAT MOUNTING BRACKETS & ROPE TUBES

These are designed specifically for each concealed Winch+Assist system and are supplied with ancillary fittings and end clamps - see Page 8 for references.

Installers must fit either a 16amp circuit breaker / reset switch, or a 30amp fuse as shown below.

The automatic buffer switch for a soft rope shown below will cut out the winch once the rope is fully wound in. The pressure switch for webbing straps performs the same function. Both are reset by winching out.

Relay Pack



Control & Emergency Stop



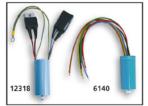
Wanderlead



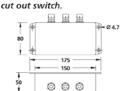
16a Circuit Breaker / Reset



Motor Filter



Part No. 6198 12v relay box with thermal



Part No. 14074 Mobility Vehicle Control Unit.

Emergency Stop, On / Off and Reset buttons.

Includes jack plug socket and resting bay for Wanderlead.

Part No. 13939

Part No. 7432

OPTIONAL EXTRA

the dashboard.

Part No. 6140

Part No. 12318

Winch Model: 6

Winch Models: 1,2 & 4.

with the EMC Directive.

Motor filters for EU compliance

Wanderlead control with 3m flexible cable and jack plug.

16amp circuit breaker and reset switch, normally fitted under

Relay with Data Cable Link Part No. 14007



12v relay box with thermal cut

out switch, includes data cable link for simple Cat5 cable link for wiring to control panel (Part No. 14205).

Control & Emergency Stop with Data Cable link



Rope & Webbing Straps



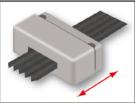
Fuse & Fuse Holder



Automatic Buffer Stop



Webbing Strap Stop



Part No. 14205

Mobility Vehicle Control Unit. Emergency Stop, On / Off and Reset buttons.

Includes locking jack plug socket and Cat 5 cable link for wiring to relay box (Part No. 14007).

Part No. 7356

5m polyester rope and webbing strap with MCF buckles to fit straps to wheelchair.

This is supplied as standard. other options for web straps are shown on the Web Strapping page.

Fuse = Part No. 2408 Holder = Part No. 2412

OPTIONAL EXTRA

30 amp fuse and fuse holder to protect the BHW Winch•Assist system.

Part No. 6195

OPTIONAL EXTRA

Foam rubber buffer creates pressure sensitive switch with rope feed block, to cut off winch power when soft rope is fully winched in.

Part No. 11033

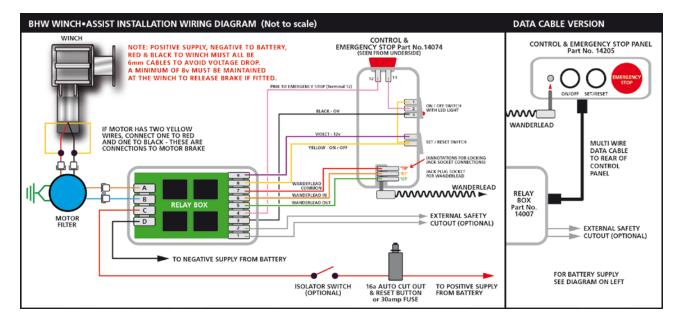
OPTIONAL EXTRA Spring loaded electric pressure switch, to cut off winch control when webbing strap is fully winched in.







WIRING - USING BHW KITS



This diagram shows the circuitry from the winch, through the motor filter and relay box to the emergency stop / control box (which is normally mounted at the rear of the vehicle).

PLEASE NOTE: The positive and negative supply from the battery and the red and black cables to the winch must be a minimum of 6mm² cross section to avoid any voltage drop. A minimum of 8v through the system must be maintained at the winch to the release the brake (if fitted).

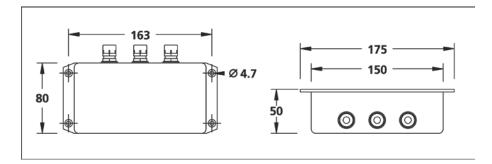
The motor filter must be fitted to comply with the EMC Machinery Directive, and suitably earthed to the chassis of the vehicle. The filter and the relay box should be located as close to the winch as space can allow.

The 16 amp auto cut out / reset button linked into the positive supply from the battery is recommended by BHW Group for these systems, although a 30 amp fuse can be used instead. Either the auto cut out or the fuse is normally mounted under the dashboard, or inside the bonnet, close to the battery for ease of access.

BHW Winch-Assist systems should always have a circuit breaker / reset or a fuse in the wiring loom. Additional external safety cut outs, wired from the relay box are optional. If you require more information, please contact our sales engineers at BHW Group (0208 953 6050) who will be pleased to advise.

Inside the Emergency Stop / Control unit, the terminals are numbered on the plastic fittings, excepting the wanderlead jack plug fitting. Wiring to the jack plug with individual coloured wires should be connected as shown above.

The wiring shown to and from the relay box is shown as a diagram above. The actual wiring should be threaded through the three apertures on the top of the box.





OPERATING INSTRUCTIONS

GENERAL NOTES

Once the BHW Winch-Assist has been installed and the circuitry has been checked, the installer should test load the winch to ensure that all aspects of the system are working correctly.

PLEASE NOTE: As with any other electrical device fitted to a vehicle, the BHW Winch-Assist will use additional amounts of vehicle battery power. It is important therefore that the battery is of a suitable strength and regularly charged to eliminate possible power drop. Where possible we recommend that the engine is kept running during operation of the winch.

BHW Winch-Assist winches should be operated by a competent person fully capable of navigating wheelchairs and their occupants. We strongly advise that all operators should read the supplied operating instructions carefully and thoroughly so that the operating of this Winch-Assist system is fully understood.

The operator(s) should undergo training in the use of this equipment without an occupant. It is advisable to apply a nominal weight on a stretcher or wheelchair to build confidence and skill with winch operation and wheelchair control.

Both the operator and the wheelchair occupant (where possible) should be fully aware of the position of the Emergency Stop control – which must be sited adjacent to the loading area – i.e. in the rear of the vehicle.

This equipment should only be used with an operator in charge of the task. Wheelchair occupants must not self operate this system.

BHW Winch-Assist is designed to aid the loading and unloading of free rolling wheelchairs and their occupants and shall not be used for any other purposes. The soft rope should not be reeved around or attached to any other equipment – only the wheelchair at a suitable, balanced anchor point.

The winch control shall be in the possession of the operator at all times during winch operations for loading or unloading.

When using the equipment at night, adequate lighting must be provided to enable the operator to clearly see to operate the loading and unloading task.

All other personnel should be kept clear of the operation at all times.

The operator is advised to wear gloves during the operation of the winch.

TO OPERATE THE WINCH - TESTING

The installer should test the winch operation unloaded and then loaded with a weighted wheelchair (no occupant) by following the winching instructions detailed in 'Loading' on the following page. This will test the system response and performance.

From the Emergency Stop / Control box, usually positioned at the rear of the vehicle (typically on the plastic wheel arch casing), the wanderlead is connected using the jack plug socket underneath the control unit.

The winch is operated by pressing the 'IN' or OUT' buttons on the handset.

The rope should be winched out and in under tension, applied by hand. Failure to do so may result in rope tangling on the drum.

It is recommended that the winch is tested to a load rating of at least 110% of the rated capacity to prove the integrity of the installation.

The wanderlead can be clipped on to the control unit when not in use.



OPERATING INSTRUCTIONS

TO OPERATE THE WINCH - LOADING

Check that the vehicle handbrake is fully engaged.

Position the wheelchair centrally in line with the ramp.

Connect the straps from the yoke assembly to the wheelchair. Every wheelchair brand is different in terms of manufacture, so trials should be undertaken with the wheelchair empty to ascertain the best fixing points to ensure that the complete load of wheelchair and occupant is stable and balanced during the winching operation.



Press the ON/OFF button on the winch control unit once. Press the SET button on the winch control unit.

Remove the wanderlead from the control unit clip and holding the rope gently under tension press the 'OUT' button on the wanderlead.

NEVER POWER OUT WITHOUT APPLYING TENSION TO THE ROPE, OR IT WILL TANGLE.

Power OUT the rope until of a suitable length to attach to the wheelchair. A minimum of 4 wraps should be left remaining on the drum at all times.

NEVER ALLOW THE ROPE TO FULLY UNWIND OFF OF THE DRUM – IF THIS HAPPENS, THE WINCH WILL WIND THE ROPE BACK ON THE DRUM THE WRONG WAY.

Attach the webbing straps to suitable anchor points on the wheelchair. The anchor points for the individual wheelchair concerned should have been ascertained before use.

Operate the wanderlead 'IN' button to initially take up any slack rope and apply a slight tension. Disengage the wheelchair brakes and operate the wanderlead 'IN' button to fully load the wheelchair and its occupant.

For normal loads (up to 85kg) the operator should stand behind the wheelchair and guide its direction into the vehicle. For loads over 85kg, more than one carer / operator should be present to safely guide and load the wheelchair from either side, rather than from behind.

When the wheelchair is fully loaded, apply the wheelchair brakes. Affix the wheelchair travel restraints. Power out the soft rope slightly and remove the webbing straps.

UNDER NO CIRCUMSTANCES SHOULD THE WINCH BE USED AS A WHEELCHAIR RESTRAINT DURING A JOURNEY.

Maintaining a slight tension on the rope, power 'IN' any remaining rope length to safely store. Press the ON/OFF switch and clip the wanderlead on to the control unit. Turn off the isolator switch (if installed).

DO NOT DRIVE THE VEHICLE WITH THE WINCH ASSIST TURNED ON.



OPERATING INSTRUCTIONS

TO OPERATE THE WINCH - UNLOADING

After the vehicle has stopped and the handbrake is fully engaged, turn on the isolator switch (if fitted) and press the ON/OFF button on the winch control unit.

Unclip the wanderlead and press the SET control button to activate the system. With the rope under tension, winch 'OUT' enough slack to allow connection to the wheelchair.

With the wheelchair still locked in position by its travel restraints, reconnect the webbing straps to the wheelchair.

Take up any slack in the rope by carefully winching 'IN'.

Remove the travel restraints from the wheelchair and disengage the wheelchair brakes.

Ensure that the wheelchair is centrally positioned at the top of the ramp, ready for descent.

Press the wanderlead 'OUT' control and guide the wheelchair from the vehicle, down the ramp.

SAFETY

EMERGENCY STOP

In the event of an emergency press the EMERGENCY STOP button located on the top of the winch control unit. This will immediately stop the winch.

Where possible, the wheelchair should be stabilised and secured until operation can safely continue.

To operate the winch again once any problem has been addressed, it is necessary to turn and unlock the EMERGENCY STOP button and press the SET button on the side of the winch control unit.

AUTO CUT OUT / RESET or FUSE

If the winch is overloaded, it will either trip the Auto Cut Out / Reset switch (Part no. 7432), or blow the fuse (one or the other has to be fitted to a Winch Assist system). The Auto Cut Out can be reset by pressing the top button.

If fitted with a fuse, this will have to be replaced. 30amp fuses and fuse holders are available from BHW Group (Part nos. 2408 and 2412 respectively).



16amp Auto Cut Out / Reset Part No.7432



30amp Fuse – Part No.2408 Fuse Holder – Part No. 2412



TROUBLE SHOOTING

WINCH WILL NOT OPERATE	
Has Emergency Stop been activated?	Release Emergency Stop (turn clockwise) and press Reset button.
Has Isolator switch ben turned off?	Turn on Isolator switch.
Has the winch been turned off?	Turn on winch - press ON button. Red LED should illuminate.
Has fuse or circuit breaker blown?	Replace fuse or reset circuit breaker.

If none of above, contact BHW Group on +44 (0)20 8953 6050.

WINCH OPERATES ONLY IN ONE DIRECTION	
Is wanderlead fully plugged in?	Check wanderlead plug on main control.
Has winch automatically shut down because rope or strap has wound in too far?	Power out winch. This should reset system.

If none of above, there may be a problem with the Relay Box. Contact BHW Group .

WINCH OPERATES IN WRONG DIRECTION	
Winch operates in opposite direction to that shown on signs on wanderlead.	The rope or strap is wrapped on to the winch in the wrong direction. Power the rope/strap fully out from the winch and keep power on to wrap in opposite direction.

NOTE: When rewinding, keep slight tension on the rope/strap at all times.

WINCH SHUDDERS OR WORKS INTERMITENTLY	
Winch may not be receiving enough power to disengage the electric brake.	Check condition of vehicle battery.
(Model 4 does not have an electric brake).	Check that supply cables are at least 6mm ² .



MAINTENANCE

REGULAR MONTHLY MAINTENANCE

Externally: The winch and winch area should be kept clean in order to prevent any build up of unwanted material on or around working parts.

- Check that WINCH IN and WINCH OUT are operating the right way round, as fully running out the rope may have reversed the operation. This is important as it may cause safety features to fail if rope direction has been reversed.
- Check the EMERGENCY STOP control to ensure it functions correctly by operating the winch and pushing the STOP button.
- Check winch for external damage.
- Check winch mounting for distortion and re-tighten mounting bolts if necessary.
- All external-moving parts should be lubricated with lightweight oil.
- All electrical connections and wiring should be inspected for loose connections, corrosion or fretting.
- Check the clamps that hold the rope tube in position. Tighten if necessary.
- · Check vehicle battery power levels to ensure optimum operation.

SPARES

If it becomes necessary to obtain replacement parts, referring to the parts page in this manual, call BHW Group sales (0208 953 6050) and quote reference numbers.

CARE OF THE ROPE & WEBBING STRAPS

It is most important that the rope and webbing straps are inspected on a regular basis, for broken strands and other damage. If necessary the rope or the webbing straps should be replaced.

ROPES & WEBBING STRAPS ARE NOT COVERED BY WARRANTY.



WARRANTY

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

The responsibility for removing the winch or ancillary equipment is the owner's, together with its return, transportation prepaid to BHW Group Limited.

BHW Group Limited 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 is 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 Limited the damage or failure occurred from misuse, negligence or accident.

THIS WARRANTY EXCLUDES SOFT ROPE & WEBBING STRAPS

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

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



www.bhwgroup.com

Service Department BHW Group Limited Lismirrane Industrial Park Elstree Road Elstree Herts WD6 3EE

Telephone:	+44 (0)20 8953 6050
Fax:	+44 (0)20 8207 5308
Email:	sales@bhwgroup.com
Website:	www.bhwgroup.com

WINCH•ASSIST – MODEL / KIT
SERIAL NUMBER
DATE OF PURCHASE