



# Electric Vehicle / Boat Winch

## User Manual

[Revision 3.0 August 2018]




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READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

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# Safety





















Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:


















 <p>You <b>WILL</b> be KILLED or SERIOUSLY INJURED if you do not follow instructions.</p>	 <p>You <b>CAN</b> be KILLED or SERIOUSLY INJURED if you do not follow instructions.</p>	 <p>You <b>CAN</b> be INJURED if you do not follow instructions or equipment damage may occur.</p>
<p>It is vital that you read and understand this user manual before using the product, including safety warnings, and any assembly and operating instructions. Keep the manual for future reference.</p> <p>Safety precautions and recommendations detailed here must be fully understood and followed to reduce the risk of injury, fire, explosion, electrical hazard, and/or property damage.</p> <p>Safety information presented here is generic in nature – some advice may not be applicable to every product. The term "equipment" refers to the product, be it electrical mains powered, battery powered or combustion engine powered.</p> <ul style="list-style-type: none"> <li>• <b>Before Use</b> - If you are not familiar with the safe operation/handling of the equipment, or are in any way unsure of any aspect of suitability or correct use for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.</li> <li>• Do NOT operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases or dust. The equipment may create sparks or heat that may ignite flammable substances.</li> <li>• Keep clear of moving parts.</li> <li>• Equipment may be a potential source of electric shock or injury if misused.</li> <li>• Do NOT operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.</li> <li>• Do NOT allow others to use the equipment unless they have read this manual and are adequately trained.</li> <li>• Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.</li> </ul>	<p><b>General Personal Safety</b></p> <ul style="list-style-type: none"> <li>• Wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from eye and ear injury, poisoning, burns, cutting and crush injuries. Protective equipment such as safety goggles, respirators, non-slip safety footwear, hard hat, hearing protection etc should be used for appropriate equipment / conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.</li> <li>• Stay alert and use common sense when operating the equipment. Do not over-reach. Always maintain secure footing and balance.</li> <li>• Do not use the equipment if tired or under the influence of drugs, alcohol or medication.</li> <li>• This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities.</li> </ul> <p><b>General Fuel Safety</b></p> <ul style="list-style-type: none"> <li>• Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.</li> <li>• Do not spill fuel. If you spill fuel, wipe it off the equipment immediately – if fuel gets on your clothing, change clothing.</li> <li>• Do NOT smoke near fuel or when refuelling.</li> <li>• Always shut off the engine before refuelling.</li> <li>• Do NOT refuel a hot engine.</li> <li>• Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly.</li> <li>• Always refuel in well ventilated areas.</li> <li>• Always check for fuel leakage. If fuel leakage is found, do not start or run the engine until all leaks are fixed.</li> </ul> <p><b>General Carbon-Monoxide Safety</b></p> <ul style="list-style-type: none"> <li>• Using a combustion engine indoors <b>CAN KILL IN MINUTES</b>. Engine exhaust contains carbon-monoxide – a poison you cannot smell or see.</li> <li>• Use combustion engines OUTSIDE only, and far away from windows, doors and vents.</li> </ul>	<p><b>General Equipment Use and Care</b></p> <ul style="list-style-type: none"> <li>• The equipment is designed for domestic use only.</li> <li>• Handle the equipment safely and carefully.</li> <li>• Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorised service centre or technician before use.</li> <li>• Prevent unintentional starting of the equipment - ensure equipment and power switches are in the OFF position before connecting or moving equipment. Do not carry equipment with hands or fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.</li> <li>• Do not force the equipment. Use the correct equipment for your application. Equipment will perform better and be safer when used within its design and usage parameters.</li> <li>• Use the equipment and accessories etc. in accordance with these instructions, considering working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.</li> <li>• Always keep equipment components (engines, hoses, handles, controls, frames, housings, guards etc) and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment clean and, where applicable, properly lubricated.</li> <li>• Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place or store the equipment near flammable materials, combustible gases or liquids etc.</li> </ul>
<p><b>General Work Area Safety</b></p> <ul style="list-style-type: none"> <li>• Work areas should be clean and well lit.</li> <li>• Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.</li> <li>• If devices are provided for connecting dust extraction / collection facilities, ensure these are connected and used properly. Dust collection can reduce dust-related hazards.</li> </ul>		<ul style="list-style-type: none"> <li>• The equipment is not weather-proof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or humid.</li> <li>• Do not clean equipment with solvents, flammable liquids or harsh abrasives.</li> <li>• For specific equipment safety use and care, see <a href="#">Equipment Safety</a>.</li> </ul>

General Electrical Safety	General Electrical Safety	General Service Information
<ul style="list-style-type: none"> <li>Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.</li> <li>Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment.</li> <li>When wiring electrically powered equipment, follow all electrical and safety codes.</li> <li>Wherever possible, use a residual current device (RCD).</li> <li>High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.</li> </ul>	<ul style="list-style-type: none"> <li>Electrically grounded equipment must have an approved cord and plug and be connected to a grounded electrical outlet.</li> <li>Do NOT bypass the ON/OFF switch and operate equipment by connecting and disconnecting the electrical cord.</li> <li>Do NOT use equipment that has exposed wiring, damaged switches, covers or guards.</li> <li>Do NOT use electrical equipment in wet conditions or in damp locations.</li> <li>Do NOT use electrical cords to lift, move or carry equipment.</li> <li>Do NOT coil or knot electrical cords, and ensure electrical cords are not trip hazards.</li> </ul>	<ul style="list-style-type: none"> <li>The equipment must be serviced or repaired at authorised service centres by qualified personnel only.</li> <li>Replacement parts must be original equipment manufacturer (OEM) to ensure equipment safety is maintained.</li> <li>Do NOT attempt any maintenance or repair work not described in this manual.</li> <li>After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before making adjustments, changing accessories or performing repair or maintenance.</li> <li>Do NOT make adjustments while the equipment is running.</li> <li>Perform service related activities in suitable conditions, such as a workshop.</li> <li>Replace worn, damaged or missing warning/safety labels immediately.</li> </ul>

## Safety Symbols

The product may have safety warning labels attached to it, explained below. Understand the symbols on your product and their meanings. If any stickers become unreadable, unattached etc, replace them.

 <p><b>Flammable Material Hazard</b> Flammable liquids, gases or substances etc may present. Avoid ignition sources and open flames. Danger of fire.</p>	 <p><b>Read User Manual</b> Read and fully understand product safety warnings, operation, procedures etc before using the product.</p>	 <p><b>Use Hand Protection</b> Wear appropriate hand protection and take due care as the product or use of the product may present hand hazards.</p>	 <p><b>Carbon-Monoxide Hazard</b> Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.</p>
 <p><b>Electrocution / Electrical Shock Hazard</b> High voltage or high current electricity may be present or required by the product. Take due care when handling electrical products, cables, plugs and leads. Electrical shock can be fatal.</p>	 <p><b>Toxic Fumes / Dust Hazard</b> Using the product or by-products from use may produce fumes, smoke or particles that could be harmful if inhaled. Wear appropriate breathing protection and have adequate ventilation.</p>	 <p><b>Explosive Material Hazard</b> Combustible liquids, gases or substances etc may be present. Avoid ignition sources and open flames. Danger of explosion.</p>	 <p><b>Cutting / Amputation Hazard</b> The product may have blades, edges or mechanical devices that can cause severe cut injury to fingers, limbs etc. Take due care when handling and using the product.</p>
 <p><b>Crush Hazard</b> The product may have blades, edges or mechanical devices that can cause severe crush injury to fingers, limbs etc. Take due care when handling and using the product.</p>	 <p><b>Single Operator Only</b> The product must be operated by a single person only. More than one person operating the product may introduce additional hazards.</p>	 <p><b>Use Face Protection</b> Wear appropriate full-face protection and take due care as the product or use of the product may present face and eye hazards.</p>	 <p><b>Use Foot Protection</b> Wear appropriate foot protection and take due care as the product or use of the product may present foot hazards.</p>
 <p><b>Use Eye / Ear / Head Protection</b> Wear appropriate eye and / or ear and / or head protection and take due care as the product or use of the product may present eye, hearing and head hazards.</p>	 <p><b>Running Hazard</b> Do not run on or near the product as doing so may present a fall hazard.</p>	 <p><b>Diving Hazard</b> Do not dive into the product as doing so may present a neck / head injury hazard.</p>	 <p><b>Adult Supervision Required</b> Always supervise children and other users of a product to prevent drowning or injury.</p>
 <p><b>Skin Penetration / Puncture Hazard</b> The product may produce pressure, emit liquids or objects that can cause severe injury to fingers, limbs, blood etc. Take due care when handling and using the product.</p>	 <p><b>Hot Surface Hazard</b> Be aware that the product may produce high temperatures and hot surfaces that can cause burn injuries.</p>	 <p><b>Flying Debris Hazard</b> Be aware that the product or use of the product may present hazards produced by flying debris. Wear appropriate clothing and protective devices.</p>	 <p><b>Moving Parts Hazard</b> Be aware that the product contains or uses mechanical devices that move or rotate. Always wait for moving parts to stop fully before handling the product, adjusting, maintenance etc.</p>

 <p><b>Carbon-Monoxide Hazard</b> Do not use the product in confined areas or without adequate ventilation. Carbon-monoxide poisoning can be fatal.</p>	 <p><b>Pull Hazard</b> Be aware that the product contains or uses mechanical devices that can pull in objects and can cause severe injury to fingers, limbs etc. Take due care when handling and using the product.</p>	 <p><b>Slope / Fall Injury Hazard</b> Be aware that using the product on sloping surfaces or in slippery conditions may present additional dangers from falls and contact with blades, moving parts, hot surfaces etc.</p>	 <p><b>"Slam Dunk" Warning</b> Do NOT attempt "slam dunk" manoeuvres as this may result in severe injury due to falling, product breakage or collapse etc.</p>
 <p><b>Electrocution / Electrical Shock Hazard - Outdoor</b> High voltage or high current electricity may be present or required by the product. Do NOT use in rain, damp or wet conditions. Electrical shock can be fatal.</p>	 <p><b>Electrocution / Electrical Shock Hazard - Disconnect</b> High voltage or high current electricity may be present or required by the product. Always disconnect the product from the electrical supply before handling the product, adjusting, maintenance etc.</p>	 <p><b>Power Line Electrocution Hazard</b> High voltage / high current power lines may be present. Use extreme caution to avoid contact or interference with power lines. Electrical shock can be fatal.</p>	 <p><b>"Kick-Back" Hazard</b> High level of "kick-back" hazard that can cause the machine to suddenly rotate towards operator. Kick-back injury can be fatal.</p>
 <p><b>Winch Operator Position Hazard</b> Do NOT stand between winch and load. Do NOT use winch to move people.</p>	 <p><b>Winch Lift Hazard</b> Do NOT LIFT load vertically. Use machine to PULL only.</p>	 <p><b>Cable Hazard</b> Ensure that load bearing cable is not kinked or knotted.</p>	 <p><b>Winch Cable Hazard</b> Ensure that there is a minimum number of cable coils on winching mechanism.</p>
 <p><b>Winch Hook Hazard</b> Carry hook to load – do NOT throw or run.</p>	 <p><b>Flash / Blinding Hazard</b> Wear appropriate eye protection for welding. Direct exposure to weld arcs may cause permanent eye injury.</p>	 <p><b>Laser Hazard</b> Laser may be in use – do NOT look directly at laser, or allow others to.</p>	 <p><b>Corrosive Substance Hazard</b> The product may contain corrosive substances that can harm or otherwise cause damage. Take due care when handling and using the product.</p>
 <p><b>Explosion Hazard</b> The product may contain substances that can explode under certain conditions or misuse. Take due care when handling and using the product.</p>			



# Equipment Safety



Winches are high-load pulling equipment with exposed cables, rollers etc that can cause serious injury if not used correctly or without taking proper safety precautions. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment.** • People with pacemakers should consult their physician before using this product. Operation of electrical equipment in close proximity to a pacemaker could cause interference or failure of the pacemaker. • **The responsibility for safe installation and operation of the winch and prevention of personal injury and/or property damage rests with you, the operator. There is no substitute for the use of good judgement and caution in operating a winch.**

## Operator

- If you are untrained in the use of a winch, it is highly recommended that you be trained/instructed by a suitably qualified or experienced user before using the machine.
- The responsibility for safe installation and operation of the winch, and the prevention of personal injury and property damage ultimately rests with you, the operator. There is no substitute for the use of good judgement and caution when operating a winch.
- Always keep hands and fingers away from moving parts of the winch when applying or releasing a load. Remain clear of the cable and hook when pulling a load. Do not stand in line of the cable, as it could whip violently should it break. Always use the "hand saver" bar, if applicable, when guiding the cable in or out.
- Be sure to read and understand all instructions and safety precautions in the user manual for the object you will winch. Make sure to attach the hook to the manufacturer's recommended pulling point.

## Clothing and Protective Equipment – All Operators and Assistants

- Always wear impact-resistant safety goggles, protective gloves and steel cap boots. A full face shield is recommended.

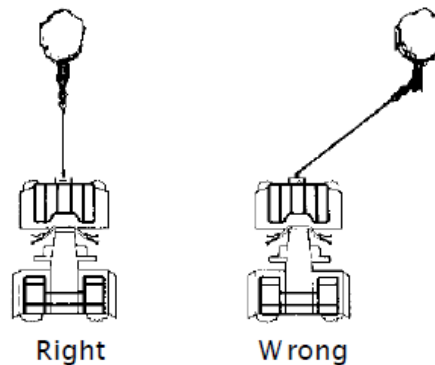
## Work Area Safety

- Always examine the winch for cracks, deformation, damage and the cable for fraying, corrosion, broken strands and any other condition that may affect the safe operation of the winch. Do not use the winch even if minor damage is seen. A frayed or damaged cable should be replaced immediately. Use only factory-approved cables of the same load capacity, diameter and length.
- Never lift people or hoist loads over people. Do not lift items vertically. The winch is design for horizontal movement only.
- Keep children away from work area. Do not allow children to handle or use the winch.
- Never allow any person to be close to the winch when it is being loaded. keep away from the winch at least 2m during the winching operation, and always stand to the side during winching – NEVER behind the winch.
- It recommended to lay a heavy blanket over the winch cable near the hook end when pulling loads. If cable failure occurs, the cloth will act as a damper and help prevent the rope from lashing out.
- Be sure the winch is mounted on a vehicle or other suitable object before operation.
- When mounting the winch on a vehicle or trailer, make sure to allow sufficient space for the winch hand crank (if equipped) to be turned a full 360 degrees.
- The winch is designed for mounting on flat surfaces only. Do not mount the winch on a curved surface.
- Do not alter or weld any part of the winch. Such alterations may weaken the structural integrity of the winch and will void warranty.

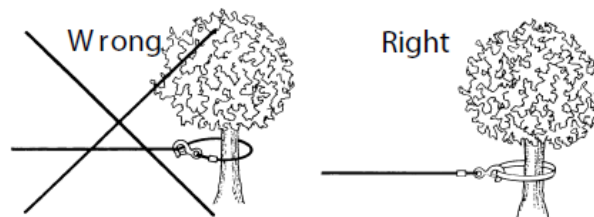
## Operational Safety

- Do NOT exceed the maximum rated load capacity for the winch.

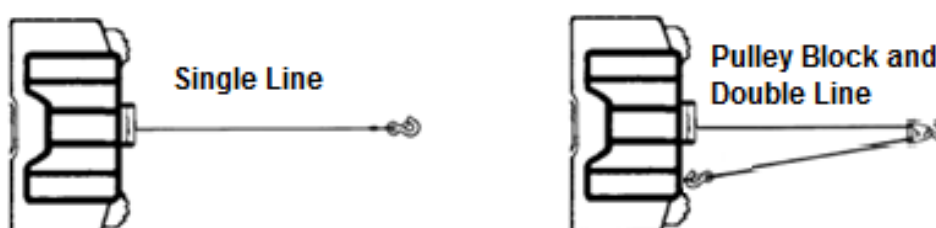
- Do not attempt to prolonged pulls at heavy loads. This winch is designed for intermittent use only, and should not be used in a constant duty application. The duration of the pulling job should be kept as short as possible. If the winch motor gets very hot, stop the winching operation and let it cool down for several minutes. Never pull for more than one minute continuously at or near the rated load.
- Do not cross over or under the cable when the winch is being loaded.
- When winching from a vehicle, ensure that all applicable vehicle brakes are engaged (parking brake etc) and that the wheels are chocked. The vehicle engine should be running during winch operation. If considerable winching is being performed with the engine turned off, the battery may be too depleted to restart the engine.
- Avoid continuous pulling from extreme angles as this will cause the winch cable to gather on one end of the drum. Uneven layering of the cable on the drum when pulling it will cause serious damage to the winch and cable. It can be corrected by securing the load, releasing tension in the cable, spooling out cable, then repositioning the cable to the opposite end of the drum and the pulling in again.



- Ensure that the input voltage between the motor terminals is 12VDC in order to reach the rated pull capacity. Note that maximum rated pull capacity is achieved by the first layer of cable around the drum.
- Never hook the winch cable back to itself as it may damage the cable. Take your time when rigging and include a reasonable factor for safety. Improper rigging can result in damage to vehicle and equipment. It can also cause injury. It is better to use a sling or strap around the object to be tied to.



- When moving a load, take up any slack in the cable before winching and always ensure that the load is properly and safely hooked up to the winch.
- Do not move the vehicle to assist the winch, as it could overload both the cable and winch.
- Never release the free spool clutch (if equipped) when there is a load on the winch.
- After use, release the load.
- For loads OVER 50% rated load capacity, it is recommended to use a pulley block and double line configuration (see image below). This reduces the load on the winch and the strain on the cable by approximately 50%.



- Never use the hand crank (if equipped) to assist the winch. Overloading the winch could cause serious personal injury or property damage.
- Use extreme caution when applying or releasing a load. Never allow the load to suddenly release. Slowly and carefully apply and release the load.
- Never winch a boat or other object with anyone in or on it. Use a spotter to assist you in assuring you that it is safe to operate the winch. Make sure that this position is out of the way of the vehicle and the steel cable before activating the winch.
- Never guide a tensioned cable onto the drum with your hands
- Always leave at least 5 turns of cable on the drum to prevent the cable unreeling.
- Do not leave the winch unattended while it is under load.
- Always operate the winch with an unobstructed view of the winching operation.
- Equipment such as straps, hooks, pulley blocks, etc. should be sized to the winching task and should be periodically inspected for damage that could reduce their strength.
- Always DISCONNECT winch power leads to battery before working in or around the winch drum so that the winch cannot be turned on accidentally.
- Do NOT use the winch to hold loads in place. Use other means of securing loads such as tie down straps.
- Only use factory approved switches, remote controls and accessories.
- Do NOT connect winch to a 240VAC mains electrical supply.

## Estimating Pull Capacity

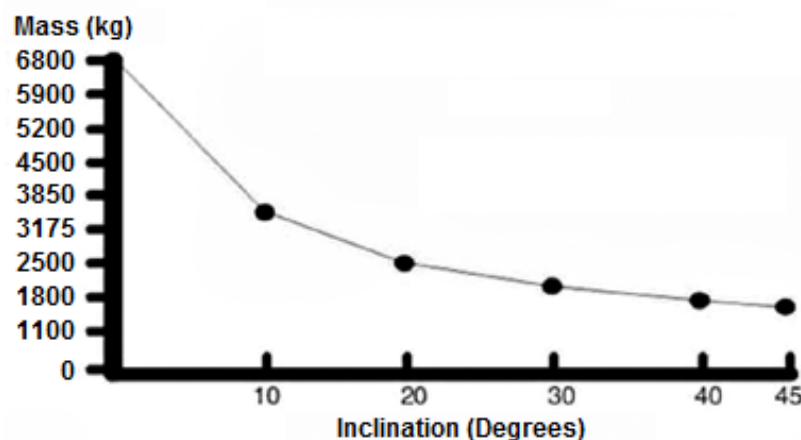
Each winch has a rated pull capacity. The pull capacity is affected by the angle of inclination of the load and friction between the load and the surface it is on or in. Generally, a winch can move the following:

- Move a load of up to 40% of the rated pull capacity from stand-still, on level ground.
- Move a load of up to 80% of the rated pull capacity from a stand-still, in water.
- Maintain movement of a wheeled vehicle of up to 100% of the rated pull capacity, on level ground.



The winch pulling capacity reduces as the angle of inclination increases. For example, pull capacity on level ground reduces by approximately 60% at a 30° inclination. Refer to the chart for estimated pulling capacity (rolling weight) on various inclines below.

**Approximate Maximum (Rolling) Mass on an Incline**





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## TB75 Boat Winch

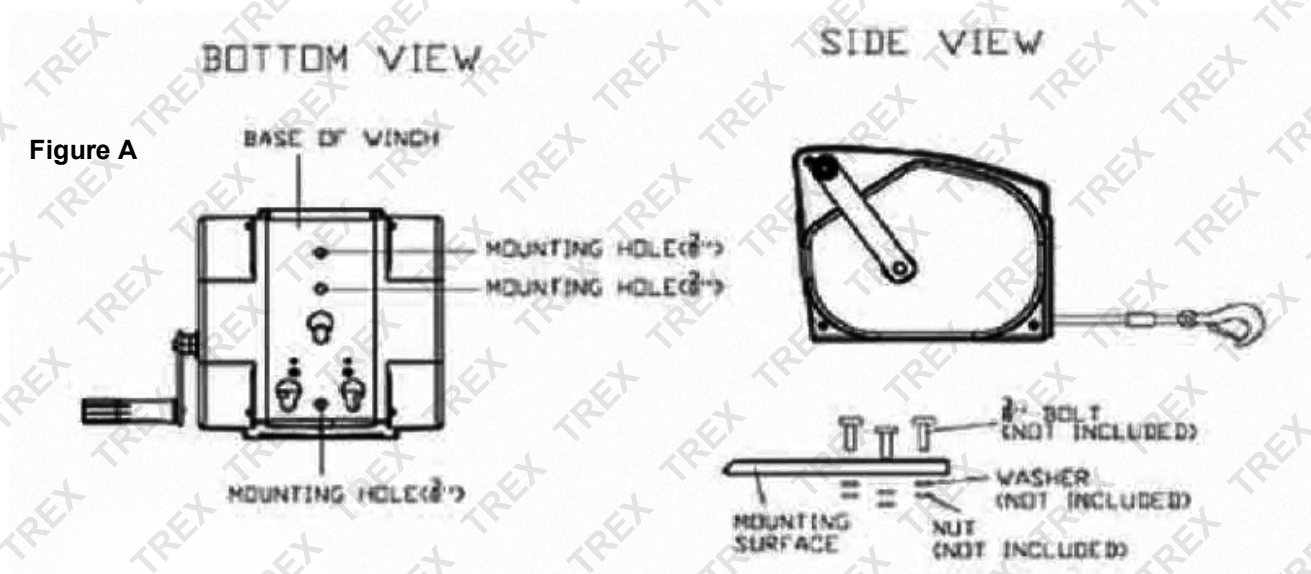
## Installation

### Permanent Mounting



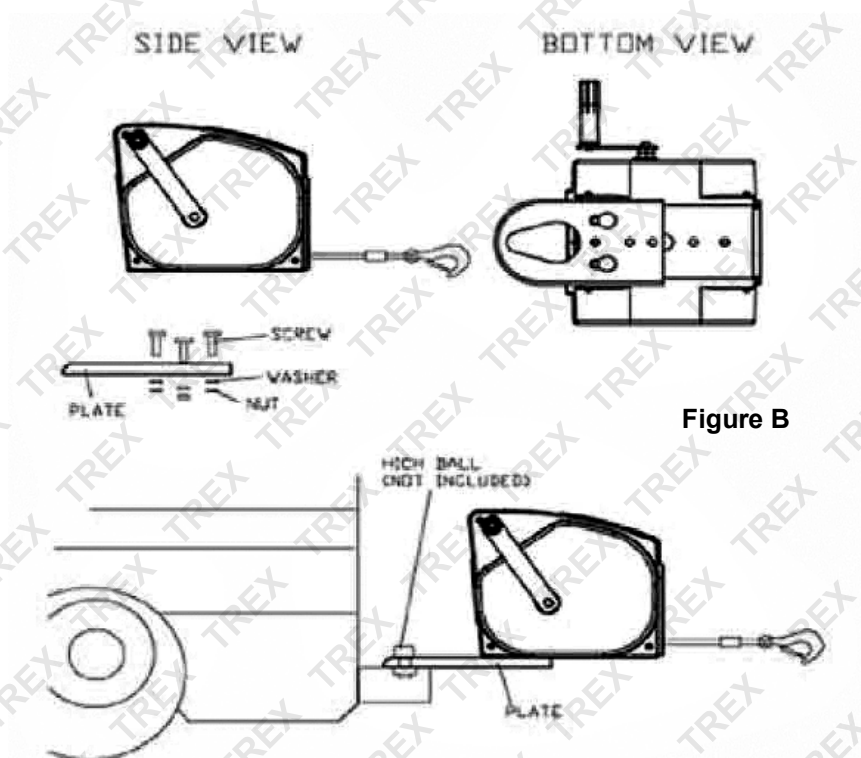
It is **ESSENTIAL** that the winch mounting location can withstand the forces generated by the winch. It may be necessary to use a steel reinforcement plate (not included), and/or to weld additional bracing (not included) to the mounting location. • Ensure that mounting the winch does not reduce vehicle ground clearance or affect normal vehicle operation in any way.

1. Select a mounting location on the vehicle, or other suitable location.
2. Place the winch in the required location, and mark out the 3 mounting holes. Drill the mounting holes through the mounting surface (Figure A).
3. Use 3 hardened steel bolts at least 10mm (3/8") diameter, three lock washers, and three nuts (all not included), to secure the winch (Figure A).



### Temporary Mounting

1. Insert 3 screws into the mounting holes in the adapter plate, and secure the screws to the adapter plate using 3 washers, and nuts (Figure B).
2. Insert the heads of the 3 screws into the keyhole slots in the base of the winch.
3. Attach the winch with its plate to the vehicle hitch ball (not included) by inserting the hitch ball through the teardrop-shaped hole in the adapter plate.



## Connecting the Electrical Wiring



Depending on your level of electrical wiring knowledge, you may wish to have this procedure performed by a qualified technician. Prior to performing this procedure, make sure that the vehicle engine is OFF, and that the engine, transmission, and exhaust systems are cool to the touch. • Plan a route for the wiring harness from the point of where the winch is mounted to the vehicle battery. The route should be secure, out of the way of moving parts, road debris, or any possibility of being damaged by operation or maintenance of the vehicle. For example, the wiring may be routed under the vehicle and attached to it using suitable fasteners (not included). Do not attach the wiring to the exhaust system, drive shaft, brake lines or cables, fuel lines or any other components which may damage the wiring through heat or motion, or create a fire hazard. If a hole is drilled through the bumper or any other part of the vehicle, be sure to install a rubber grommet (not included) in the hole to prevent fraying of the wires at that point.

1. Route the wiring harness, following the precautions mentioned above. Once the wiring harness is routed to the battery, attach the **RED** lead to the battery POSITIVE (+) terminal (Figure C).
2. Attach the **BLACK** lead to the battery NEGATIVE (-) terminal (Figure C).

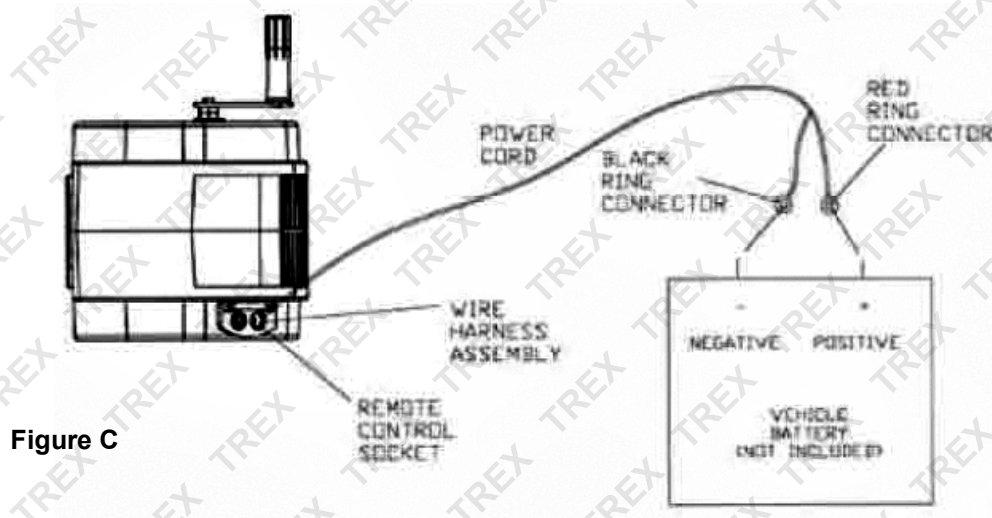
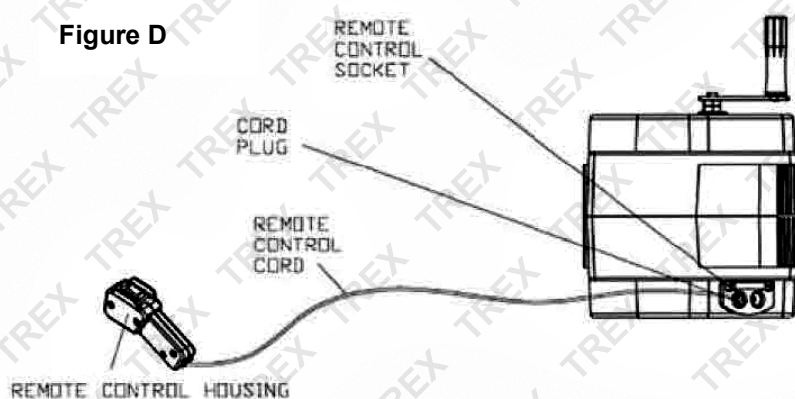


Figure C

## Connecting the Remote Control

1. Lift up the rubber cover on the left side of the winch, then insert the remote control connector into the socket (Figure D).

Figure D



## Attaching the Hand Crank

Insert the mounting hole of the hand crank onto the shaft. Then secure the hand crank to the shaft, using the nut (Figure E).

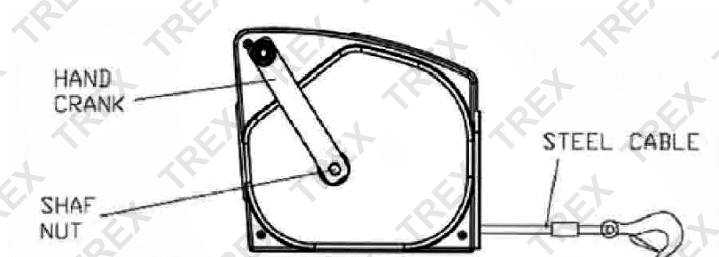


Figure E



## Operation



Winches are high-load pulling equipment with exposed cables, rollers etc that can cause serious injury if not used correctly or without taking proper safety precautions. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment.** • Do not use the hand crank to assist a powered winch. This will damage the winch, and may cause personal injury. • It is recommended to keep the vehicle engine running while using the winch to keep the battery charged. However, use extreme caution when working around a vehicle with its engine running.

1. Place the vehicle hand brake on, and chock the wheels using suitable chocks (not included). It is recommended to NOT use the transmission "park" function or leave the vehicle in gear when winching.
2. Pull out the cable the required distance using the "out" function. Always leave at least 4 turns of cable on the drum to prevent the cable completely unreeling.
3. Hook the object using a pull point, tow strap, or chain (all not included). Never wrap the cable around the object or hook to the object itself. This can damage the object being pulled and kink or fray the cable.
4. When it is safe to do so, use the "in" function to retract the cable and winch the object. To operate the hand crank, rotate it right (clockwise) retract the cable.

## Double Line Configuration

For loads OVER 50% rated load capacity, it is recommended to use a pulley block (may be supplied) and double line configuration (Figure F). This reduces the load on the winch and the strain on the cable by approximately 50%. In double line configuration, the speed of winching is also reduced by 50%.

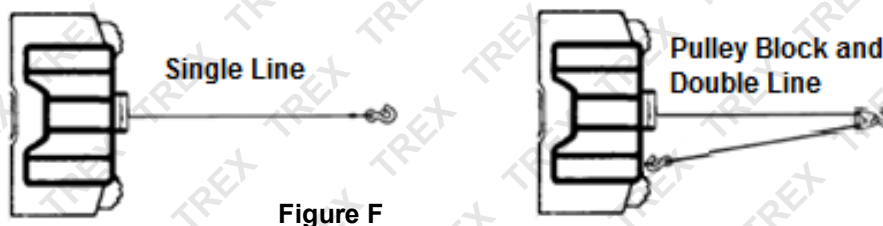


Figure F

To attach a typical pulley block to the cable and set up the double line:

1. Extend the winch cable sufficiently, then attach the winch hook to a suitable point on the vehicle, creating a loop.
2. Disassemble the pulley block by removing a side plate (may be attached with fasteners or R-clips and pins etc).
3. Place the pulley block over the bottom of the loop in the winch cable. Then, reattach the side plate.
4. Rig-up to the pulley block hook, then winch as normal.





## TW145 / TW145D / TW200D Vehicle Winch



## Installation



It is **ESSENTIAL** that the winch mounting location can withstand the forces generated by the winch. It may be necessary to use a steel reinforcement plate (not included), and/or to weld additional bracing (not included) to the mounting location. • The winch is to be installed with the cable in an under-wound orientation on the cable drum. The winch is designed to ROPE IN and ROPE OUT in one direction. Do NOT attempt to reverse the operation of winch. • Ensure that mounting the winch does not reduce vehicle ground clearance or affect normal vehicle operation in any way.

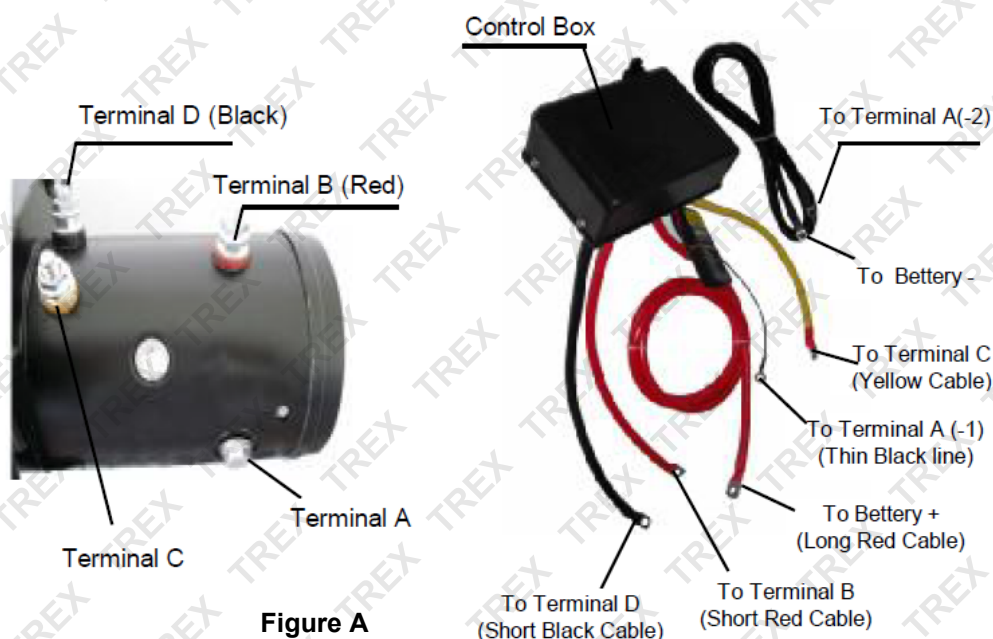
1. Select a mounting location on the vehicle, or other suitable location.
2. Place the winch in the required location, and mark out the 4 mounting holes. Drill the mounting holes through the mounting surface.
3. Use the 4 supplied bolts, washers, lock washers and nuts to secure the winch.
4. Attach the fairlead (the plate that the winch cable runs through) to the mounting surface with the 2 supplied cap screws, washers, lock washers and nuts.

## Connecting the Electrical Wiring



Depending on your level of electrical wiring knowledge, you may wish to have this procedure performed by a qualified technician. Prior to performing this procedure, make sure that the vehicle engine is OFF, and that the engine, transmission, and exhaust systems are cool to the touch. • Plan a route for the wiring harness from the point of where the winch is mounted to the vehicle battery. The route should be secure, out of the way of moving parts, road debris, or any possibility of being damaged by operation or maintenance of the vehicle. For example, the wiring may be routed under the vehicle and attached to it using suitable fasteners (not included). Do not attach the wiring to the exhaust system, drive shaft, brake lines or cables, fuel lines or any other components which may damage the wiring through heat or motion, or create a fire hazard. If a hole is drilled through the bumper or any other part of the vehicle, be sure to install a rubber grommet (not included) in the hole to prevent fraying of the wires at that point.

1. Route the wiring harness, following the precautions mentioned above. Once the wiring harness is routed to the battery, attach the **RED** lead to the battery POSITIVE (+) terminal (Figure A).
2. Attach the **BLACK** lead to the battery NEGATIVE (–) terminal (Figure A).



**Figure A**

## Connecting the Remote Control

Lift up the rubber cover on the left side of the winch control box, then insert the remote control connector into the socket.

## Operation



Winches are high-load pulling equipment with exposed cables, rollers etc that can cause serious injury if not used correctly or without taking proper safety precautions. **It is extremely important that you read and fully understand the information in this section and all other safety warnings / recommendations and usage instructions before using the equipment.** • If the load exceeds the maximum rated pull of the winch, or if the duty-cycle (how long the winch can be used before requiring cooling down time) is exceeded, the internal motor overload protection will automatically shut down the winch. To reset the overload protection, deactivate the winch wind-in function and allow several minutes for the motor to cool sufficiently before using the winch again.

1. Place the vehicle transmission in "Park" mode if applicable, set the hand brake on, and chock the wheels from rolling using suitable chocks (not included).
2. Pull out the cable the required distance using the "out" function. Always leave at least 4 turns of cable on the drum to prevent the cable completely unreeling.
3. Hook the object using a pull point, tow strap, or chain (all not included). Never wrap the cable around the object or hook to the object itself. This can damage the object being pulled and kink or fray the cable.
4. When it is safe to do so, use the "in" function to retract the cable and winch the object.

## Using Free Spool Operation



The winch cable must have NO tension or load on it when using free spool operation. • Free spooling must be deactivated when winching in. • Do NOT activate / deactivate the free spool clutch when the cable drum is moving. • Remove all slack in the cable before loading the cable.

Some winch models may feature a "free spool clutch" that allows the cable drum to disengage from the winch gearbox and motor. When free spooling is used, the cable can be freely pulled from the winch.

- To activate free spooling, rotate the free spool lever (A) to the **DISENGAGED** or **FREE SPOOL** position.
- To deactivate free spooling, rotate the free spool lever (A) to the **ENGAGED** position.



## Double Line Configuration

For loads OVER 50% rated load capacity, it is recommended to use a pulley block (may be supplied) and double line configuration (Figure B). This reduces the load on the winch and the strain on the cable by approximately 50%. In double line configuration, the speed of winching is also reduced by 50%.

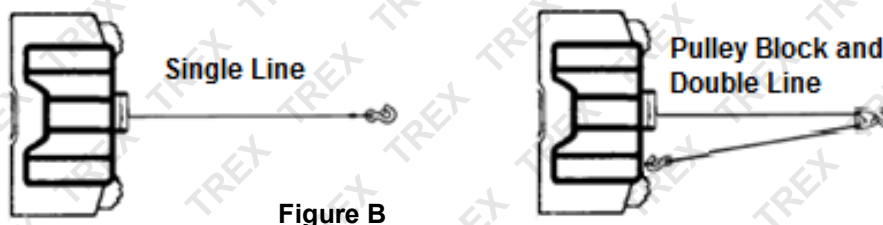


Figure B

To attach a typical pulley block to the cable and set up the double line:

1. Extend the winch cable sufficiently, then attach the winch hook to a suitable point on the vehicle, creating a loop.
2. Disassemble the pulley block by removing a side plate (may be attached with fasteners or R-clips and pins etc).
3. Place the pulley block over the bottom of the loop in the winch cable. Then, reattach the side plate.
4. Rig-up to the pulley block hook, then winch as normal.



# Maintenance

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Always release any load from the winch and disconnect it from the electrical supply before performing any maintenance. • The tool should be cool enough to touch before performing maintenance activities. • Wear suitable gloves when handling cables. • Some maintenance

activities described may be beyond the scope of some users. For procedures that you are not comfortable with or have the knowledge, tools or experience for, have the unit serviced by a service centre or qualified technician.

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- Before using the winch, inspect its general condition. Check for loose screws, misalignment or binding of moving parts, cracked, bent or broken parts, frayed cable and any other condition that may affect its safe operation. Inspect the entire unit for corrosion that may be caused by exposure to saltwater or weather. If abnormal noise or vibration occurs, have the unit inspected and repaired before further use. Do NOT use a damaged or faulty winch.
- For steel winch cables, periodically use a good quality penetrating oil to lubricate the cable.
- Wipe the winch body clean with a soft, damp cloth. If necessary, a mild detergent may be used. Ensure that the entire length of the winch cable is also clean.



# Troubleshooting

Symptom	Possible Cause	Remedy
<i>Winch will not operate</i>	A. Broken wiring or bad connection B. Weak battery or insufficient power C. Faulty overload protection D. Faulty or stuck solenoid E. Faulty remote control F. Motor fault or worn brushes	A. Ensure wiring is correctly connected and all wires and connections are good. B. Recharge or replace battery. C. Replace overload protection. D. Replace solenoid. E. Replace remote control. F. Replace motor or motor brushes.
<i>Motor runs in one direction only</i>	A. Broken wiring or bad connection B. Faulty or stuck solenoid C. Faulty remote control	A. Ensure wiring is correctly connected and all wires and connections are good. B. Replace solenoid. C. Replace remote control.
<i>Drum will not free spool (if equipped)</i>	A. Free spool not activated B. Damaged brake or free spool clutch C. Damaged drum bushing D. Damaged gearbox	A. Activate free spool clutch. B. Replace brake or free spool clutch (if equipped). C. Replace drum bushing. D. Replace gearbox.
<i>No brake</i>	A. Damaged or faulty pressure spring B. Free spool clutch active C. Damaged output shaft D. Damaged brake shaft	A. Replace pressure spring. B. Deactivate free spool clutch (if equipped). C. Replace output shaft. D. Replace brake shaft.
<i>Winch runs opposite direction</i>	A. Motor leads crossed B. Solenoid control crossed C. Remote control or trigger switch crossed	A. Reverse electric connections to motor. B. Reverse black and red wires on solenoid. C. Reverse electric connections.
<i>Motor runs extremely hot</i>	A. Long period of operation B. Motor overloaded C. Damaged or faulty brake mechanism	A. Stop operation and allow motor to cool. B. Reduce load. Use double line. C. Replace or repair brake mechanism.

# Specifications

## TB75

Maximum Load Capacity	Rolling: 6800kg (15000lb) / Marine: 5670kg (12500lb) / Pulling: 2948kg (5000lb)
Cable Type	Steel 7.2mm (D) x 10m (L)
Electrical Requirements	12VDC
Free Spool Clutch	NO

## TW145

Maximum Load Capacity	6577kg (14500lb)
Cable Type	Steel 9.5mm (D) x 24m (L)
Electrical Requirements	12VDC
Free Spool Clutch	YES

## TW145D

Maximum Load Capacity	6577kg (14500lb)
Cable Type	"Dyneema" 12mm (D) x 26m (L)
Electrical Requirements	12VDC
Free Spool Clutch	YES

## TW200D

Maximum Load Capacity	7711kg (17000lb)
Cable Type	"Dyneema" 12mm (D) x 28m (L)
Electrical Requirements	12VDC
Free Spool Clutch	YES





**Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally, the information available at [www.datastreamserver.com/safety](http://www.datastreamserver.com/safety)**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.</li> <li>• Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use. Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).</li> <li>• Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.</li> <li>• Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.</li> </ul> | <ul style="list-style-type: none"> <li>• The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.</li> <li>• This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.</li> <li>• If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.</li> </ul> |
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