

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Powerwinch®

Free Fall Rope and Chain Windlass

Unpacking

When unpacking, inspect carefully for any damage that may have occurred during transit. Make sure any loose fittings, bolts, etc., are tightened before putting unit into service.

General Safety Information

⚠ DANGER *Danger means a hazard that will cause death or serious injury if the warning is ignored.*

⚠ WARNING *Warning means a hazard that could cause death or serious injury if the warning is ignored.*

⚠ CAUTION *Caution means a hazard that may cause minor or moderate injury if the warning is ignored. It also may mean a hazard that will only cause damage to property.*

NOTE: Note means any additional information pertaining to the product or its proper usage.

The following safety precautions must be followed at all times:

1. Read all manuals included with this product carefully. Be thoroughly familiar with the controls and the proper use of the equipment. Only persons well acquainted with these rules of safe operation should be allowed to use the winch.

⚠ DANGER *Never stand between load or anchor point and product. If rope breaks, it could snap with enough force to cause serious injury or death.*

⚠ DANGER
Do not use electrical wire sizes or types other than those specified or included with this product.



⚠ DANGER *Always tie off the anchor to a secure mount while cruising to prevent anchor from breaking free.*

2. This product is intended to lift anchors. Never use product to lift or move people or animals.
3. Do not wear loose fitting clothing, scarves, or neck ties during operations of the product. Loose clothing may become caught in moving parts and result in serious personal injury or death.

⚠ WARNING
Use supplied or recommended circuit breakers for safe installation. The warranty will be void and fire could result from using improper circuit breakers.



4. Make sure area around anchor point is clear of people or objects before releasing or retrieving anchor.

⚠ CAUTION *When product is not in use, anchor must be tied off onto a cleat to relieve motor tension and prevent boat damage. When trailering boat, anchor must be tied off.*

5. Never substitute cable for rope.

⚠ WARNING *Always disconnect wiring harness from battery before attempting to install, service or relocate unit.*

6. Use of a davit with an open loop is not recommended with this product. Use a davit with a closed loop to prevent serious personal injury and/or property damage.

⚠ WARNING *Never place any object in gypsy while retrieving or free-falling anchor. Serious injury could result.*

⚠ CAUTION *Use only spliced rope and chain rodes. Shackles should not be used to secure rope to chain. Shackles will damage winch and could cause personal injury. Use of shackles will also void warranty.*

7. Stand away from product when in use and keep children away from product area at all times.
8. When replacing rope and chain, always use Powerwinch® brand or Powerwinch® certified rope and chain.

⚠ CAUTION *Do not attempt to pull a load greater than rated load of product. Personal injury and/or property damage could occur.*

9. Do not operate product under the influence of alcohol and/or drugs.
10. Inspect entire rope for weak or worn condition or kinking (short tight twist or curl) before use. Replace worn or kinked rope for proper performance from product.
11. Inspect the entire chain for broken or bent links before use. Chain with bent or broken links should be replaced to obtain proper performance.

Installation

⚠ DANGER *This product requires the use of a closed loop davit or bow roller. Davit or bow roller must be installed prior to installing anchor winch to ensure proper performance.*

To install anchor winch, refer to Figure 1 and the following instructions:

TOOLS REQUIRED (NOT INCLUDED):

1. Electric drill
2. 2 1/2" hole saw
3. 11/32" drill bit
4. 5/8" drill bit
5. Adjustable wrenches
6. Terminal crimping tool and wire cutter
7. Center punch
8. Hammer
9. Voltmeter

MATERIAL REQUIRED (INCLUDED WITH WINDLASS):

1. Three 5/16"-18 stainless steel threaded rods. These rods secure windlass to boat. Length is determined by thickness

Installation (Cont'd)

- of boat deck.
- 2. Three lock washers (5/16" stainless steel)
- 3. Three plain washers (5/16" stainless steel)
- 4. Three nuts (5/16"-18 stainless steel)

MATERIAL REQUIRED (NOT INCLUDED):

NOTE: A wiring kit from Powerwinch® (Part No. P55800) is available which contains items 2-13.

- 1. Marine plywood for under deck support (optional)
- 2. Six 1/4" - 20 x 1/2" hex head stainless steel screws
- 3. Six 1/4" - 20 x 1/2" stainless steel nuts
- 4. Ten 5/16" 8-gauge ring terminals
- 5. #12 AWG red wire class 105°C (12" length needed)
- 6. #12 AWG black wire class 105°C (12" length needed)
- 7. Four 5/16" 12-gauge ring terminals
- 8. #8 AWG black wire class 105°C (6-gauge for runs over 40')
- 9. #8 AWG red wire class 105°C (6-Gauge for runs over 40')
- 10. 1" diameter heat shrink tubing
- 11. 2" diameter heat shrink tubing
- 12. Wire ties
- 13. Four 12-gauge insulated female disconnects
- 14. Silicone sealer
- 15. Loctite® 242 thread locker (optional)

MOUNTING WINDLASS ONTO DECK

1. Place mounting template in desired position on deck and secure with tape into position. Ensure center-line of gypsy lines up with centerline of davit or bow roller.

IMPORTANT: Be certain anchor winch is positioned above rope locker before drilling any mounting holes. The anchor line and chain will feed into rope locker through a 2 1/2" hole in boat deck and a molded part called the rode glide. Minimum rope locker dimensions required for proper storage of anchor lines are shown in Chart 1.

Line Dimensions	Locker Dimensions (L x W)
1/2" x 200'	15" x 17"
1/2" x 300'	15" x 24"

Chart 1

2. Using a punch, mark center of each mounting hole to be drilled. Remove template and drill holes with an electric drill. There are three 11/32" holes for mounting studs, one 2 1/2" hole for deck insert, and one 5/8" hole for wiring harness.
3. Place round side of insert into 2 1/2" hole and seat deck insert so lip is flush with boat deck. The half circle portion of deck insert must be pointing toward bow of boat.
4. Insert three mounting studs into threaded holes on underside of the windlass. A small amount of thread locker can be used to secure studs in housing. Use two mounting nuts

5. Gently guide winch over rode glide so loop on windlass housing slides over deck insert. Slide three mounting studs into the three mounting holes in deck. Feed wiring harness from underside of winch through 5/8" hole.
6. The windlass must fit squarely over deck insert and onto deck. Slide

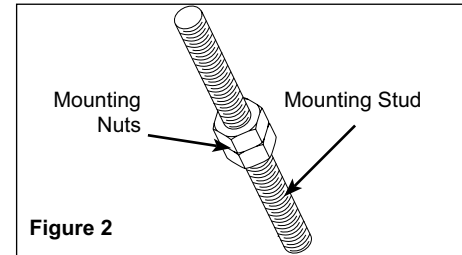


Figure 2

- flat washers and lock washers onto mounting studs. Tighten nuts to fully secure the winch to the deck.
7. Examine windlass to make sure unit is securely fastened and that centerline of gypsy is aligned with centerline of bow roller or davit.

Wiring Installation

WIRING AND SWITCH INSTALLATION

CAUTION Do not use electrical wire sizes or types other than those specified or included with this product.



DANGER Use supplied or recommended circuit breakers for safe installation. The warranty will be void and fire can result from using improper circuit breakers.



WARNING Always disconnect wiring harness from battery before attempting to install, service or relocate unit.

CAUTION Follow order of wiring steps to ensure power is not applied to the windlass until all wires and circuit breakers are installed



WARNING Always keep wires away from intense sources of heat. Be sure newly installed wires are away from any exposed bare wires.

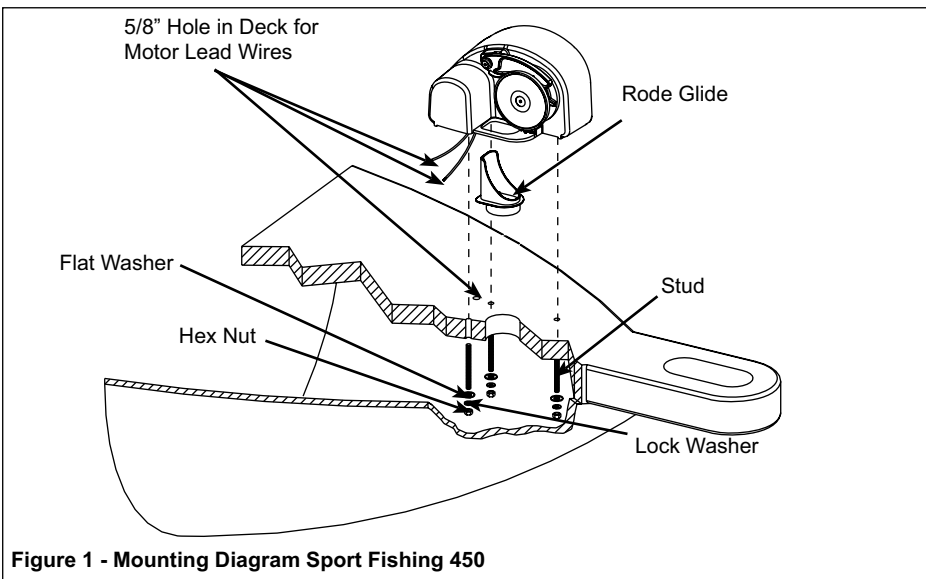


Figure 1 - Mounting Diagram Sport Fishing 450

Installation (Cont'd)

SWITCH INSTALLATION

⚠ DANGER

Make sure all crimps/connections can withstand at least 25 pounds of pullout force. Failure to make strong enough crimps between wire connectors and wires could create a fire hazard.



1. Select a suitable location (console, etc.) to locate switch. Make sure there is enough room behind switch mounting surface for entire switch and wires.
2. Cut a hole 1 3/8" high and 7/8" wide.
3. Apply a thin bead of silicone sealer around edge of switch mounting plate and attach plate using four #8 round head wood screws.
4. Measure and cut 8-gauge red and black wire to run from anchor winch to switch. Allow some slack to prevent connections from being too short and so connections can be crimped to end of wire. Install wire in boat before crimping any connections. Cable ties can be used to secure wiring to boat.
5. When running wire from anchor winch to switch, be sure to keep wire away from sources of intense heat or areas where the insulation of wire could be worn away.

6. After wire is installed and secured, connection to anchor winch can be made.
7. Crimp a 5/16" ring terminal to 8-gauge red wire just cut.
8. Using a 1/4"-20 x 1/2" screw, connect 8-gauge red wire to ring terminal on the green wire coming from anchor winch. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until tubing is secure.
9. Crimp a 5/16" ring terminal to 8-gauge black wire just cut.
10. Using a 1/4"-20 x 1/2" screw, connect 8-gauge black wire to ring terminal on black wire coming from anchor winch. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until the tubing is secure.

CONNECTING SWITCH TO WINDLASS WITH SWITCH CONVERSION WIRES.

Due to the size of the switch connectors, the Sport Fishing 450 switch cannot directly accept the 8 gauge wire connections coming from the battery and windlass. Switch conversion wires need to be created to make this connection. These wires, although 12 gauge wire, are short in length and will cause little power loss.

1. This switch wire is for the positive (red) lead.
2. Cut a 6" section of 12-gauge red wire and crimp a 5/16" ring terminal to one end.
3. Crimp an insulated female disconnect to other end.
4. Crimp a 5/16" ring terminal to 8-gauge red wire coming from anchor winch.
5. Using a 1/4"-20 x 1/2" screw, connect 8-gauge red wire coming from anchor winch to ring terminal on red switch wire. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until tubing is secure.
6. Plug insulated female disconnect on end of red switch wire to rocker switch on terminal marked "A".
7. To construct second switch wire and make connection to switch, cut a 6" section of 12-gauge black wire and crimp a 5/16" ring terminal to one end.
8. Crimp an insulated female disconnect to other end.
9. Crimp a 5/16" ring terminal to 8-gauge black wire coming from anchor winch.
10. Using a 1/4"-20 x 1/2" screw, connect 8-gauge black wire coming from anchor winch to ring terminal on black switch wire. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until tubing is secure.
11. Plug insulated female disconnect on end of black switch wire to rocker switch on terminal marked "B".

Switch to Battery

⚠ DANGER

Make sure all crimps and connections can withstand at least 25 pounds of pullout force. Failure to make strong enough crimps between wire connectors and wires could create a fire hazard.



1. Measure and cut 8-gauge red and black wire to run from switch location to the battery. Allow some slack to prevent

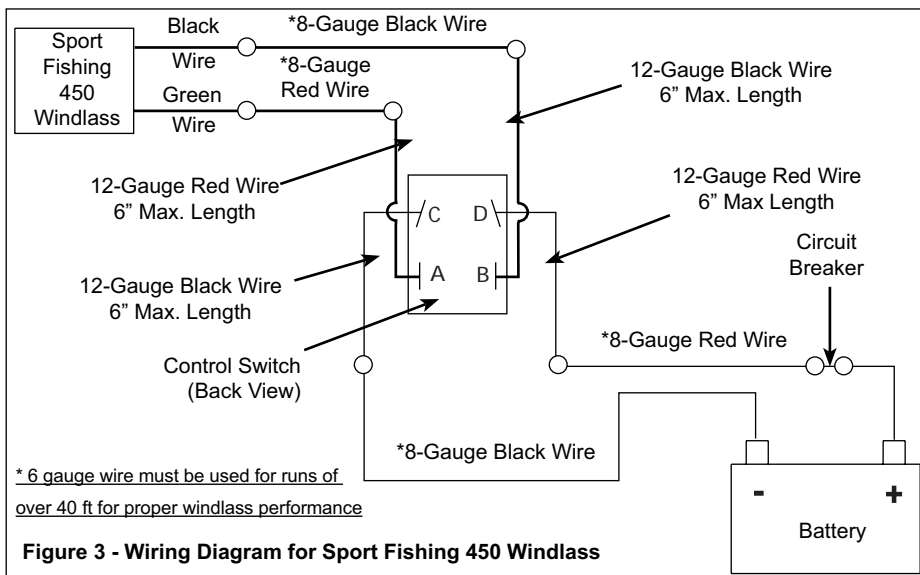


Figure 3 - Wiring Diagram for Sport Fishing 450 Windlass

Installation (Cont'd)

connections being too short leaving enough room to crimp end of wire. Install wire in boat before crimping any connections. Use cable ties to secure wiring to boat.

2. When running wire from switch to battery, be sure to keep wire away from sources of intense heat or areas where insulation of wire could be worn away.
3. After wire is installed and secured, make remaining switch connections .

Due to the size of the switch connectors, the Sport Fishing 450 switch cannot directly accept the 8 gauge wire connections coming from the battery and windlass. Switch conversion wires need to be created to make this connection. These wires, although 12 gauge wire, are short in length and will cause little power loss.

4. Make two more conversion wires to attach battery wiring to switch by following these steps:
 - a. This switch wire is for the positive (red) lead to battery.
 - b. Cut a 1 foot section of 12-gauge red wire and crimp a 5/16" ring terminal to one end.
 - c. Crimp an insulated female disconnect to other end.
 - d. Crimp a 5/16" ring terminal to 8-gauge red wire coming from battery.
 - e. Using a 1/4"-20 x 1/2" screw, connect 8-gauge red wire coming from battery to ring terminal on red switch wire. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until tubing is secure.
 - f. Plug insulated female disconnect on end of red switch wire to rocker switch on terminal marked "D".
 - g. To construct second switch wire and make connection to switch, cut a 1 foot section of 12-gauge black wire and crimp a 5/16" ring terminal to one end.
 - h. Crimp an insulated female disconnect to other end.

- i. Crimp a 5/16" ring terminal to 8-gauge black wire coming from battery.
- j. Using a 1/4"-20 x 1/2" screw, connect 8-gauge black wire coming from battery to ring terminal on black switch wire. Tighten a 1/4"-20 nut to secure ring terminals together. Protect junction by placing a 1" diameter piece of heat shrink tubing over connection and applying heat until tubing is secure.
- k. Plug insulated female disconnect on end of black switch wire to rocker switch on terminal marked "C".

Battery Connections

1. Crimp a 5/16" ring terminal to end of 8-gauge red and black wire coming from switch.
2. Create a jumper to connect circuit breaker to battery by cutting a 1 foot piece of 8-gauge red wire and crimping a 5/16" ring terminal to each end.
3. Assemble circuit breaker to jumper by placing ring terminal onto post marked "bat" and secure with nut on circuit breaker
4. Assemble circuit breaker to switch by attaching remaining 8-gauge wire to post on circuit breaker marked "aux."
5. Protect connection by placing a piece of 2" diameter heat shrink tubing over connection and applying heat until tubing is secure.
6. Connect 8-gauge black wire from switch to negative (-) battery terminal.
7. Connect 8-gauge black wire from switch to negative (+) battery terminal.
8. Snap control switch into switch plate and proceed to unit test instructions.

Unit Test

1. With no rope or chain in gypsy, press switch in upward position. If wiring to switch terminals is correct, gypsy will spin counterclockwise.
2. If gypsy does not turn, but motor runs, switch is incorrectly wired.
3. To correct, exchange wires at terminals A and B on switch.

Using Proper Rope and Chain

▲ WARNING *Use of rope not specified by*

Powerwinch® could result in unit or property damage or personal injury and will void warranty

This product is a uniquely designed device to raise and lower anchors using spliced rope and chain rodes (a rode is a length of rope and chain). It is very important that only sizes and brand of spliced rope and chain rodes specified by Powerwinch® are used in this product. Use of non-specified ropes and chains could cause reduced levels of performance and/or serious personal injury and/or property damage. Use of non-specified ropes and chains will also invalidate product warranty. The ropes and chain specified for this anchor winch are shown below.

Powerwinch® Recommended Rope and Chain Sport Fishing 450 Windlass

Recommended Rope:	1/2" dia. three strand, medium lay, premium Powerwinch rope or New England rope.
Recommended Chain:	1/4" Acco G4 Hi-Test Chain.

Loading Rope and Chain

1. Feed rope through davit or bow roller and pull toward windlass. Make sure rope is not twisted or kinked and can freely run through bow roller or davit.
2. Lift finger and insert rope into rode guide and down into rope locker. Allow enough slack so rope can be tied off in rope locker. Place remaining rope between the gypsy halves.
3. Release finger and make sure rope is firmly seated in the gypsy.
4. Go below to rope locker and tie rope off.
5. Press switch in up position and begin retrieving rope and chain into rope locker.
6. New rope may be quite stiff and could be difficult to work with at first. We suggest that after tying off the rope in the rope locker and loading the first 3 feet of rope into the windlass, throwing the entire rode into the water and allow it to uncoil. Retrieving the rope with the windlass will pull out all kinked areas

and neatly coil it in the rope locker.

Dropping the Anchor

Once an anchoring spot has been found, the anchor may be released.

1. Turn boat into wind and place motor(s) in neutral.
2. After the boat has stopped all forward progress, drop anchor by pressing windlass switch to down position for five seconds.

⚠ CAUTION

Do not reverse direction of the windlass switch while in free fall. Reversing the direction of the windlass switch will cause severe gear train damage and void your warranty.

3. The anchor will release from the bow roller or davit and freefall to the sea bed. Once the anchor has begun free falling, it is safe to release the switch.
4. After desired amount of rope has been released from the windlass press the windlass switch in the up position and retrieve 3 to 5 feet of line.
5. Allow the boat to drift back with the wind to set the anchor.
6. Tie the anchor line off securely to a deck cleat.

⚠ CAUTION

Tie off anchor line to a deck cleat. Do not use the windlass to hold the full anchor load. Failure to do so could cause damage to the gear train of the windlass and invalidate the warranty. Serious personal injury could also result.

Retrieving the Anchor

1. To retrieve anchor, align bow of boat with anchor rode.
2. Place motor(s) in forward and move boat slowly toward anchor point. While moving, press windlass switch up and retrieve anchor rope.

⚠ CAUTION

Do NOT pull boat to anchor point solely with anchor winch. The anchor winch's gear train or motor could suffer damage. The boat's motor MUST be used to move boat toward anchor point.

⚠ CAUTION

Never use windlass to break anchor free. Serious damage to the windlass could result and your warranty will be void.

3. When chain begins entering gypsy, this is an indication that the rode is almost retrieved. Take care to prevent anchor

from being pulled up too quickly into davit or bow roller.

4. When anchor enters davit or bow roller, do not place too much tension on chain between anchor winch and anchor. This could cause damage to gypsy or davit. It may also degrade free-fall performance on next anchor drop.

⚠ CAUTION

Slamming the anchor into the davit or bow roller upon retrieval with the windlass could cause serious damage to the gear train of the windlass. If the gear train has been damaged, it should only be serviced by an authorized Powerwinch service center. Repairs to the gear train which resulted from slamming the anchor into the davit upon retrieval will not be covered under warranty.

Maintenance

1. Following each boat outing, flush exterior of winch with fresh water. Use only mild detergents to clean exterior. Use of solvents may cause damage and reduce effectiveness of corrosion resistant parts, paint and gaskets, as well as void product warranty.
2. Every 6 months inspect gypsy, stripper, finger and deck insert for wear. Replace any worn components.
3. Check electrical connections every 6 months for corrosion. Replace any connection or wire which is damaged, corroded, frayed or worn.
4. Check rope periodically for abrasion or deep cuts. Never splice an old rope with a new rope. If replacement is necessary, use only Powerwinch® rope specifically designed for this product.
5. Check chain periodically for bent links and corrosion. Damaged links can become jammed in gypsy or damage stripper and finger. Use of damaged chain will void warranty.

Technical Assistance

For information regarding operation or repair of this product, please call 800-243-3097 for assistance.

For Replacement Parts, Call 1-800-243-3097

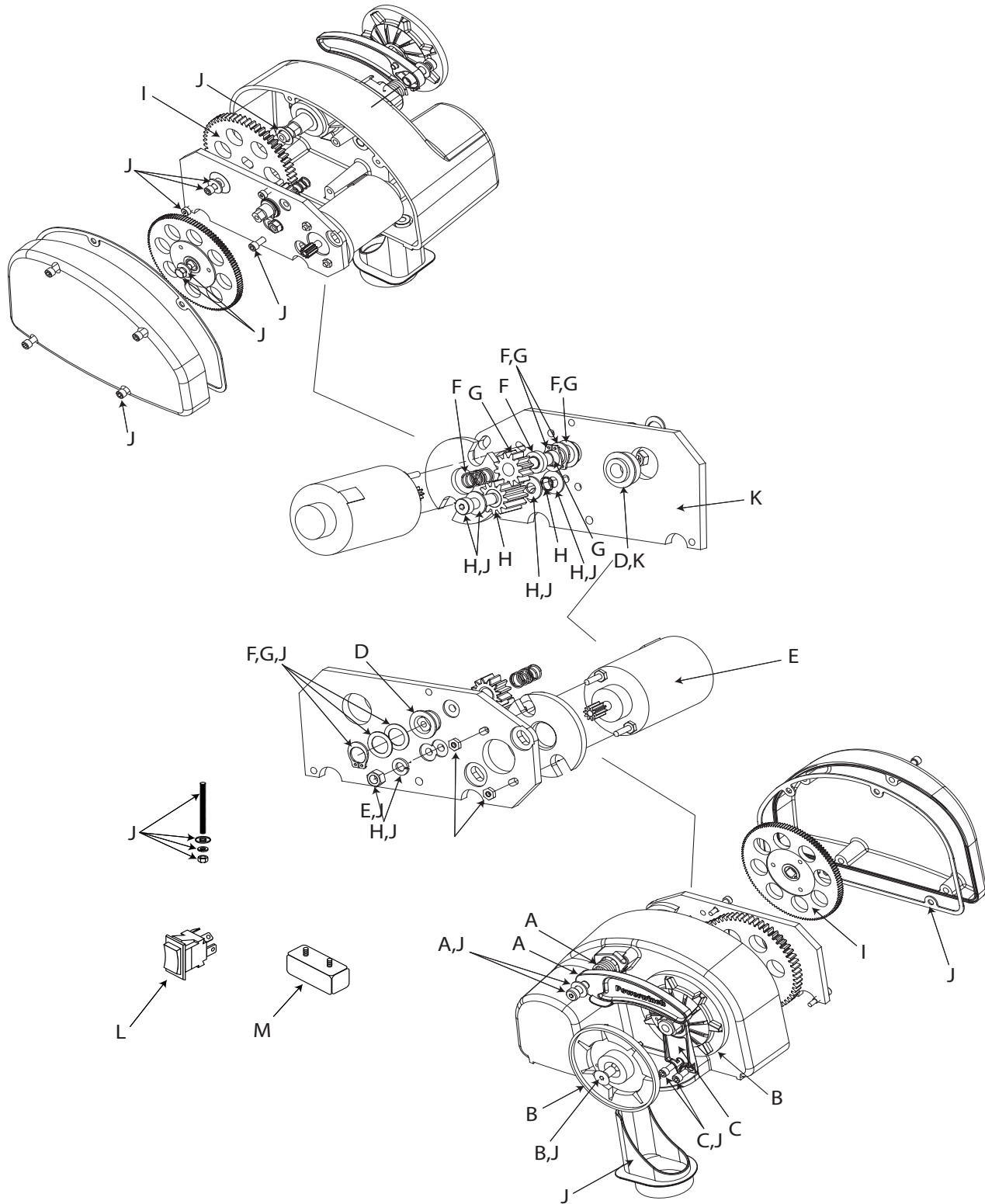


Figure 7 - Replacement Parts Illustration for Sport Fishing 450 Windlass

For Replacement Parts, Call 1-800-243-3097

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address parts correspondence to:

Carefree/Powerwinch
2145 West 6th Ave
Broomfield, CO 80020

PART NUMBER	DESCRIPTION	ITEM
R001430	REPLACEMENT FINGER KIT	A
R001431	REPLACEMENT GYPSY KIT	B
R001432	REPLACEMENT STRIPPER KIT	C
R001433	REPLACEMENT BEARING KIT	D
R001434	REPLACEMENT MOTOR KIT	E
R001435	REPLACEMENT SHOCK ABSORBER KIT	F
R001436	REPLACEMENT SPINOFF GEAR/SHAFT KIT	G
R001437	REPLACEMENT LOCKING GEAR KIT	H
R001438	REPLACEMENT GEAR KIT	I
R001439	REPLACEMENT FASTENER KIT	J
R001440	REPLACEMENT MOTOR PLATE KIT	K
R001441	REPLACEMENT SWITCH KIT	L
P1027600AJ	REPLACEMENT CIRCUIT BREAKER KIT	M

Troubleshooting Guide Sport Fishing 450 Windlass

Symptom	Possible Cause(s)	Corrective Action
Product will not operate	1. Disconnected, bad wiring or bad circuit breakers	1. Check each connection with a voltmeter and with switch engaged. Check circuit breaker connection closely 2. Replace fuse
Rope slips or jams when retrieving	1. Wrong rope size 2. Rope is frayed and worn 3. Rope is too stiff	1. Replace rope with Powerwinch® certified 1/2" rope or three strand, medium lay, New England rope. 2. Replace rope 3. Replace rope
Chain slips or jams when retrieving or free falling	1. Wrong chain size 2. Chain links are bent or corroded 3. Chain is kinked	1. Replace chain with Powerwinch® certified chain or 1/4" Acco G4 High Test chain 2. Replace chain 3. Unkink chain
Anchor line will not free-fall	1. Rope tangled in rope locker 2. Chain is kinked 3. Anchor is wedged in bow roller	1. Be sure rope is not kinked or twisted before anchoring 2. Unkink chain 3. Free anchor

LIMITED WARRANTY

- A. This Limited Warranty is given by the Powerwinch Division of the Scott Fetzer Company (the "Company") to the original purchaser (the "Purchaser") of a Powerwinch Product (the "Product") specified in this manual. This Limited Warranty is not transferable to any other party.
- B. Responsibilities of the Company under this Limited Warranty:
1. Repair or replace (at the discretion of the Company) any part or parts of the Product found by the Company to be defective within a two (2) year period from the date of purchase.
 2. The Company will pay the transportation charge for shipment back to the Purchaser of any Product received for legitimate Warranty repair.
- C. Responsibilities of the Purchaser under this Limited Warranty:
1. Purchaser will have to show dated proof of purchase to qualify for service under the provisions of the Limited Warranty.
 2. Promptly notify the Seller or the Company of any claim hereunder.
 3. Use reasonable care in maintenance, operation, use and storage of the Product in accordance with the instructions contained in the Owner's Manual.
 4. Have Warranty work performed by an authorized Powerwinch warranty repair center or representative approved by the Company.
 5. Except as noted in B.2., transportation charges are the responsibility of the Purchaser.
- D. This Limited Warranty covers:
1. Defects in workmanship or materials.
 2. Any part or parts of the Product sold or manufactured by the Company.
- E. This Limited Warranty does not cover:
1. Any failure that results from improper installation of the Product.
 2. Any failure that results from accident, Purchaser's abuse, neglect, modification, improper maintenance, or failure to operate and use the Product in accordance with the instructions provided in the Owner's Manual supplied with the Product.
- F. There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to two (2) year from date of purchase. This is the exclusive remedy and any liability for any and all incidental or consequential damages or expenses whatsoever is excluded. Some states do not allow limitations on how long an implied warranty lasts, or do not allow exclusion or limitation of incidental or consequential damages, the above limitations may not apply to you.

Do Not Return Your Product To The Factory. Unauthorized Returns Will Delay Repair of Your Product and Incurr Additional Shipping Charges to You.

This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Powerwinch reserves the right to alter specifications on any product without notice. All rights reserved. This publication or parts thereof may not be reproduced in any form without written permission.

