

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® Boat Trailer Winch

Description

Trailer winches are used for launching and loading boats. This winch features power-in/free-wheel out capabilities. A lanyard cord is supplied for remote operation.

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.*

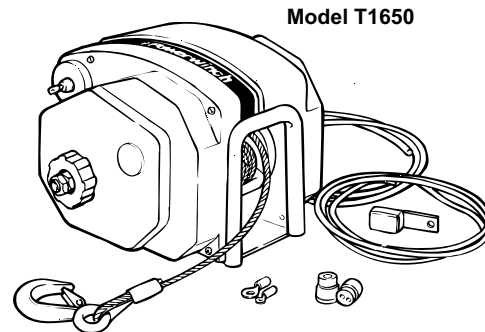
▲ CAUTION *Caution means a hazard that may cause minor or moderate injury if the warning is ignored. It also may mean a hazard that will only cause damage to property.*

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

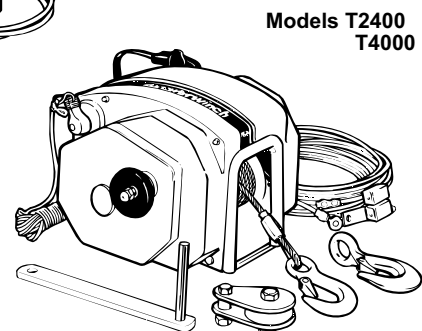
The following safety precautions must be followed at all times:

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.

▲ WARNING *Always unplug the wiring harness to prevent accidental starting before attempting to install, service, relocate or perform any maintenance.*



Model T1650



Models T2400
T4000

2. Never use the winch to lift or move people or animals.
 3. Stand away from the winch when in use and keep children away from winch area at all times.
- ▲ WARNING** *Always stand clear of the area behind and between the load or anchor point and the winch. Serious injury could occur, if the cable breaks.*
4. Always keep hands clear of cable spool (drum area).
 5. Do not wear loose fitting clothing, scarves, or neck ties. Loose clothing may become caught in moving parts and result in serious personal injury.
 6. **Never** use the winch for overhead lifting.
 7. Always wire the winch with circuit breakers. Failure to use the breakers could cause overheating thus creating a potential fire hazard or motor damage.

▲ DANGER *The cable fasteners on this or any winch are not designed to hold rated loads. Always leave a minimum of five wraps of cable on the drum at the bottom layer to achieve a rated load.*

8. Inspect the entire cable for weak or worn condition or kinking (short tight twist or curl) before each use.
9. When replacing the cable, **always** use a Powerwinch cable with the same winch rating and cable strength.
10. Never substitute rope for cable. Possible injury could occur.
11. Do not attempt to pull a load greater than the rated load of the winch.
12. Do not use the winch to hold or support the load once a job is complete or to permanently secure the load. Damage could occur to the winch or the load.
13. Never wrap the winch cable around the load. Use an Ecostrap™ or chain to prevent the cable from kinking or fraying.

14. Always wear leather gloves when handling the cable. Steel cable can cause hand injuries.

CAUTION After using the winch, always disconnect the power cord from the socket to avoid moisture collection in the socket and prevent the possibility of short circuiting.

15. Always block the vehicle wheels to help prevent the vehicle from rolling

when pulling a load with the winch.
16. Do not operate the winch under the influence of drugs, alcohol, or other medication.

WARNING Secure the boat to the trailer after winching the boat onto the trailer or personal injury could occur.

Specifications

Various load conditions will affect the winch performance. The line pull required

for a specific application depends on the weight of the load, condition of the trailer rollers, and the degree of the loading ramp incline. The chart below is based on a single line pull and is a guideline to aid in calculating pulling requirements.

NOTE: The noise level of this winch in operation is below 98db (A).

Chart 1 - Approximate Rolling load capacities

% incline (° incline)	Level Surface 0°	5% 3°	10% 6°	20% 11°	30% 17°	50% 26°	70% 35°	100% 45°
T1650	16,500	10,005	7,530	5,250	3,915	2,790	2,295	1,935
T2400	24,000	13,340	10,040	6,800	5,220	3,720	3,060	2,580
T4000	40,000	23,345	17,570	11,900	9,135	6,510	5,355	4,515

- A 10% incline (or 6°) is 1 foot rise in 10 ft.
- To convert from pounds (lbs) to kilos (kgs) divide by 2.2.
- Capacity can be increased (almost doubled) by using a pulley block.

Chart 2 - Winch and boat capacities

Model	Single Line Capacity	Double Line Pull	Approximate* Boat Weight	Approximate* Boat Size
T1650	1,650 lb.	—	4,000 lb.	14-17 ft.
T2400	2,400 lb.	4,300 lb.	7,500 lb.	17-23 ft.
T4000	4,000 lb.	7,500 lb.	11,500 lb.	23-30 ft.

* Boat size and weight is approximate and varies depending on boat type. When calculating boat weight be sure to use fully loaded weight - including boat, motor, fuel, water, gear etc.

Chart 3 - Winch specifications

Model	Line Speed @ Capacity (FPM)	Gear Ratio	Voltage (Volts)	Circuit Breaker (Amps)	Unit Weight (lbs)	Depth	Height	Width
T1650	15	270:1	12	30	22	10"	10"	8"
T2400	14	225:1	12	60	34	10"	10"	8"
T4000	8	450:1	12	60	39	10"	10"	8"

Installation

MOUNTING

The winch can be mounted on the trailer in the same position and location as a present winch. After removing the hand winch, bolt the Powerwinch unit using a minimum of (2) 3/8" Grade 5 machine bolts and lock nuts. The Powerwinch Quick Mount Kit (P7700000AJ) is available from the dealer.

The cable hook on the winch and the bow eye on the boat should be at the same height when the boat is in the fully loaded position on the trailer. If the bow eye is too high, extra pull is required of the winch and extra stress is exerted on the boat's stern and bow eye.

To achieve equal height of the winch and boat, raise or lower the winch stand. In most cases, the trailer manufacturer will have an adapter available for use with a winch.

CAUTION *A minimum of 12 inch clearance is required between the winch and the bow eye to prevent the cable hook from being drawn into the winch drum when the boat is in the fully loaded position on the trailer.*

If necessary, extend the bow stop to obtain the clearance.

When using a double line pull (using a pulley block), install an appropriate

eye bolt on the winch stand as close as possible to the base of the winch. If a Quick Mount Kit is used, make sure the winch is in the forward position before installing the eye bolt.

PERMANENT WIRING FOR MODELS T2400 AND T4000

To permanently wire the winch, refer to Figure 1 follow the outlined procedures.

1. Attach the circuit breaker to the **positive (+)** battery post or to the **positive (+)** battery side of the starter solenoid (See Figure 1).

CAUTION *Never attach the circuit breaker to the battery ground terminal.*

2. Run the wire under the vehicle to the battery, attaching at suitable intervals to the vehicle frame. Use nylon wire ties (not supplied) to secure the wire to the vehicle frame about every 18 inches. If no wire ties are available use electrician's tape. Avoid sharp edges or places where the wire might rub.
3. Attach the ground wire (black) to the vehicle frame using a 5/16" bolt and lock nut. Before attaching the wire, clean the metal with a wire brush, steel wool, or sandpaper.
4. Remove the knock out plug in the

spare tire well and draw the excess wire up into the vehicle.

PERMANENT WIRING FOR MODEL T1650

To permanently wire the winch, refer to Figure 2 follow the outlined procedures.

1. Strip approximately 3/8" of insulation from each wire end.
2. Grasp one end of the red and black wires, insert the wires into rubber boot and the plug cover.
3. Attach the **red** wire to the **gold** terminal and attach the **black** wire to the **silver** terminal.
4. Firmly tighten the two screws that hold the wires in place. Screw the plug cover into the plug base and slide the rubber boot firmly over the plug.
5. Run the red and black wires under or through the vehicle. Drill holes to feed the wires and be sure to protect the wires from damage by using grommets (not supplied). Worn wire insulation can cause short circuits. At 10" intervals, join the red and black wires together using electrical tape or wire ties.
6. Attach the 5/16" ring terminal to the end of the black wire and crimp together.

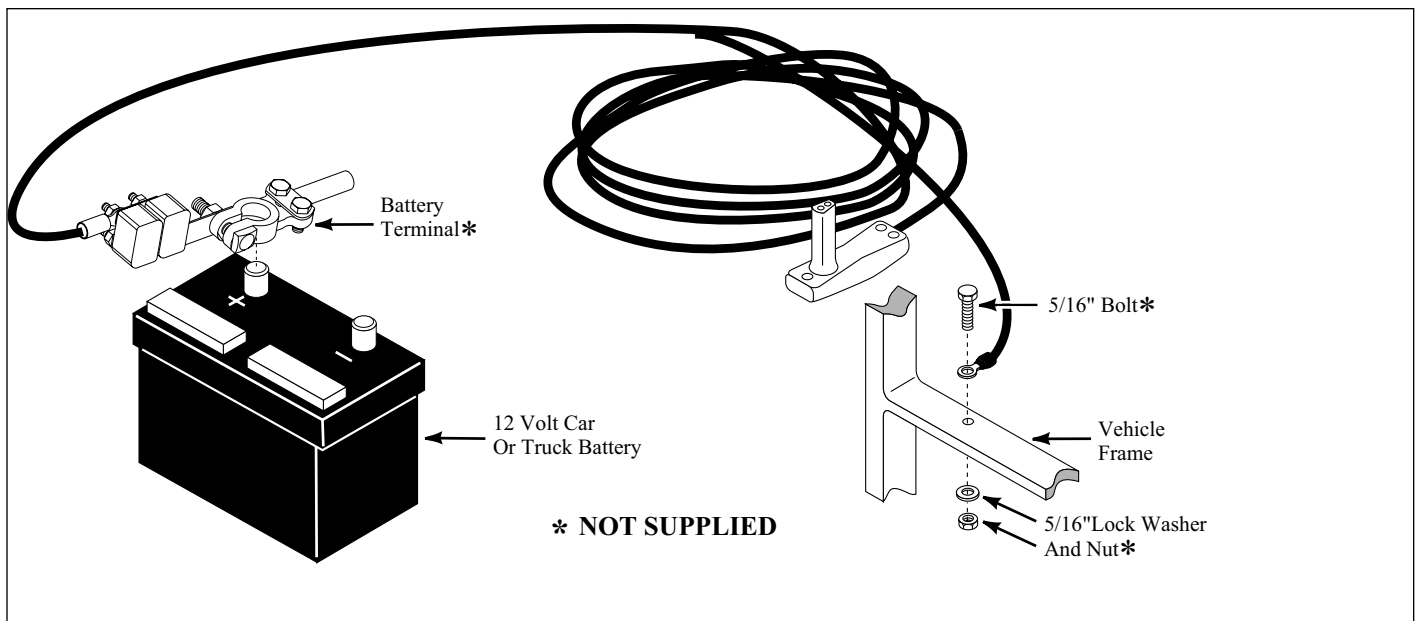


Figure 1 - Permanent Wiring Hookup for Models T2400 and T4000

⚠ WARNING Connect the positive wire before grounding the black wire to the vehicle frame to prevent electrical arcing.

7. Attach the 3/16" ring terminal to the end of the red wire and crimp together.
8. Connect the red wire with the 3/16" ring terminal to the circuit breaker.
9. Connect the circuit breaker to the battery terminal.
10. Attach the black wire with the 5/16" ring terminal to the vehicle frame.

Never attach the

⚠ CAUTION red wire with the circuit breaker to the negative (-) or ground battery terminal. Incorrect wiring will short circuit and damage the circuit breaker and/or motor which could cause damage to the vehicle and winch.

11. Insert the plug into the power socket on the winch.

TEMPORARY WIRING

To temporary wire the winch, follow the outlined procedures. A complete wiring harness is available from the dealer (Part Number P7866000AJ) for Models T2400 and T4000. Order part number P7865900AJ for Model T1650.

1. Attach two large "alligator" type clips, one to the circuit breaker and one to the end of the black wire.
2. Clip the black wire to the vehicle frame or negative side of the battery.
3. Run the red wire (with the circuit breaker) to the battery and clip the wire to the hot (positive) side of the battery.

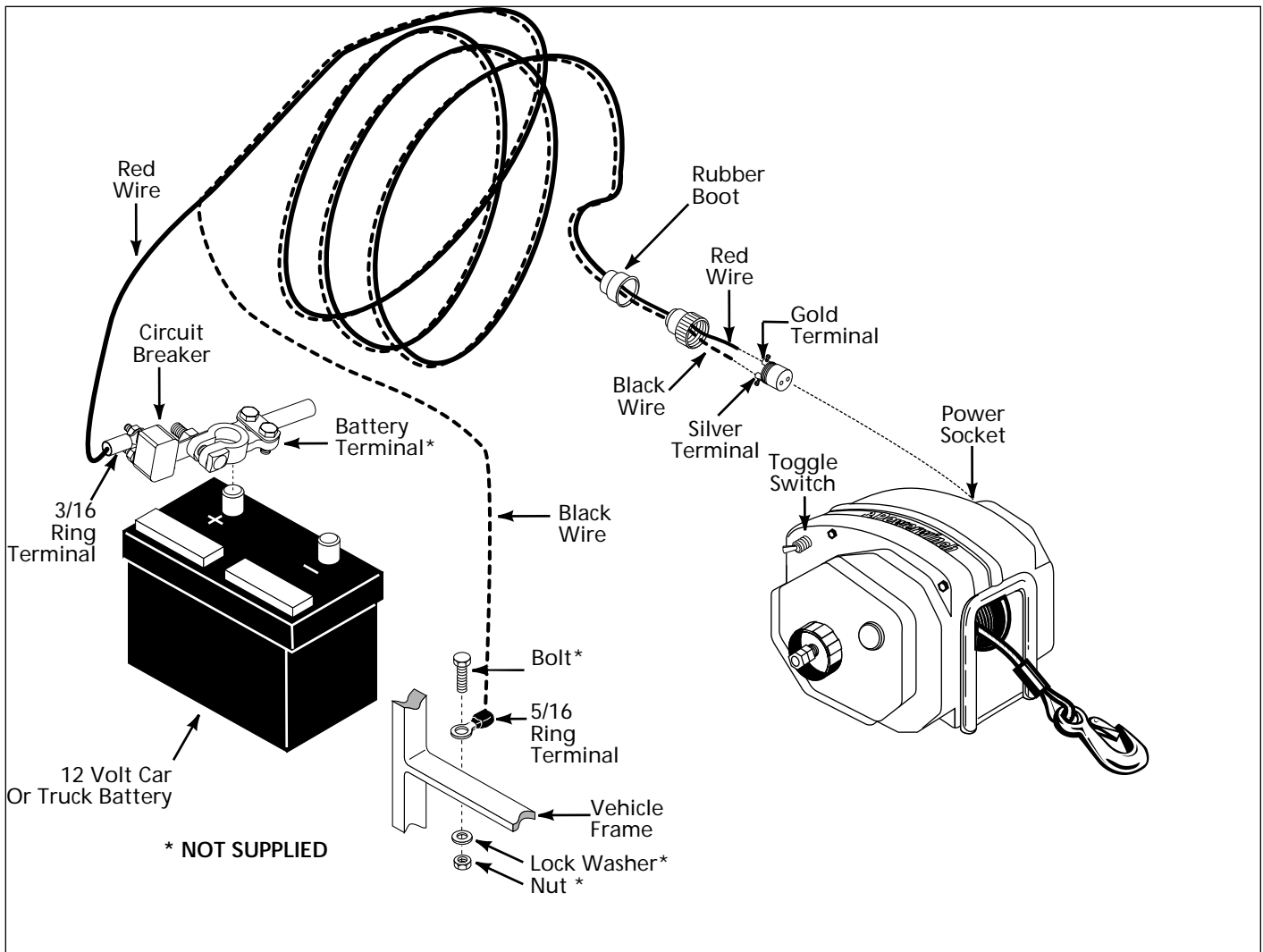


Figure 2 - Permanent Wiring For Model T1650

Operation

UNLOADING

To unload the boat, and follow the outlined procedures.

▲WARNING *Clear the area around and behind the boat of people, animals, and obstructing objects before loading or unloading or personal injury could occur.*

1. Attach the winch cable hook to the bow eye on the boat.

▲WARNING *Always stand clear of the area behind and between the load or anchor point and the winch. Serious injury could occur if the cable breaks.*

The clutch control knob on the side of the winch controls the loading and unloading operation (See Figure 3). Turning the knob **counterclockwise releases the brake** and allows the cable to free-wheel out.

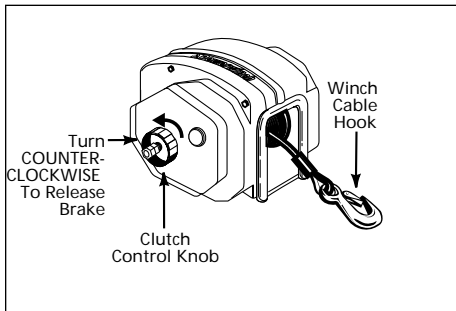


Figure 3

2. Turn the clutch knob **slowly in a counterclockwise motion to release the brake** on the winch.
3. Allow the boat to slide off the trailer (a slight push may be necessary to start the boat down the run).

The following warning is for **Model T1650 ONLY**.

▲WARNING *Once the boat is moving, do not attempt to slow or stop the boat motion by turning the clutch knob. The knob will free-wheel with the outgoing cable. Any contact with the clutch knob while in motion could result in personal injury.*

The following statement is for Models **T2400 and T4000 ONLY**.

If needed, turn the clutch knob counterclockwise to use the brake to slow the boat at launch.

4. When the boat is in the water, release

the winch cable hook from the bow eye. Be sure to keep constant pressure on the cable when rewinding the cable with no load. A loose cable may rewind improperly and damage the levelwind plate. Secure the cable hook to prevent personal injury or property damage.

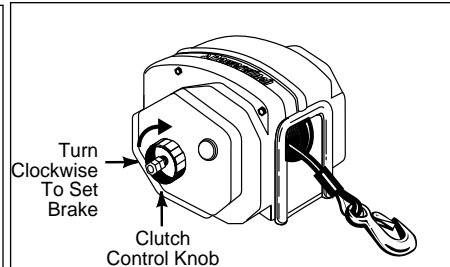
LOADING

1. Align the boat and trailer.

▲WARNING *Always stand clear of the area between the load or anchor point and the winch. Serious injury could occur if the cable breaks.*

2. Free-wheel the winch cable out and attach the cable hook to the eye on the boat.
3. Turn the clutch control knob **clockwise until finger tight** to set the brake (See Figure 4).

Figure 4



4. Step clear of the winch and winch cable area and power in the cable until the boat touches the bow stop.
5. Secure the boat to the trailer once the boat is fully loaded.

Do not use the winch to hold the weight of the boat while in transit.

▲ DANGER *Always secure the boat to the trailer before towing the boat and trailer*

6. Remove the winch cable hook from the bow eye and power-in the cable. Secure the cable hook to prevent personal injury or property damage.

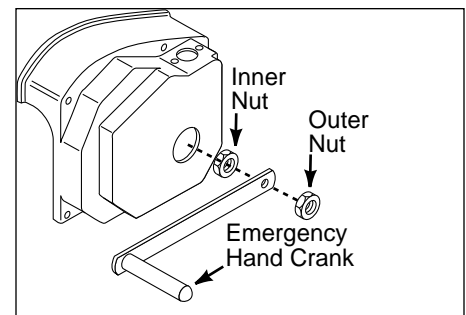
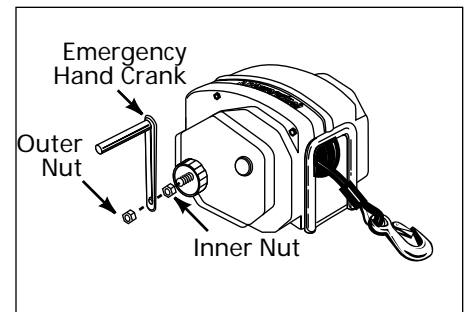
EMERGENCY HAND CRANK

The emergency hand crank is included on some models. This emergency hand crank should only be used when there is no power source i.e. dead battery. The emergency hand crank should never

be used to help a running motor. To use the winch in manual mode, follow the procedures outlined below.

1. Disconnect winch wiring harness from battery.
2. Turn the clutch control knob clockwise until tight. **DO NOT** overtighten the knob or clutch damage will occur (See Figure 5).

Figure 5 Emergency Hand Crank (T1650 top



T2400/T4000 bottom)

2. Remove the outer nut shown in Figure 5 and place the emergency hand crank on the shaft.
3. Tighten the outer nut firmly against the hand crank.

After using the emergency hand crank, follow the procedures outlined below.

1. Remove the outer nut shown in Figure 5 and remove the emergency hand crank off the shaft.
2. Tighten the outer nut firmly against the inner nut.

Maintenance

LUBRICATION

The cable should be lubricated a minimum of once a year with Whitmore's Wire Rope Spray, WD40 or a similar product. Spray the shaft and the cable as the cable is being wound. Remove the cover and lubricate the gears a minimum of once a year with a lithium base grease. Be careful not to get grease on the clutch

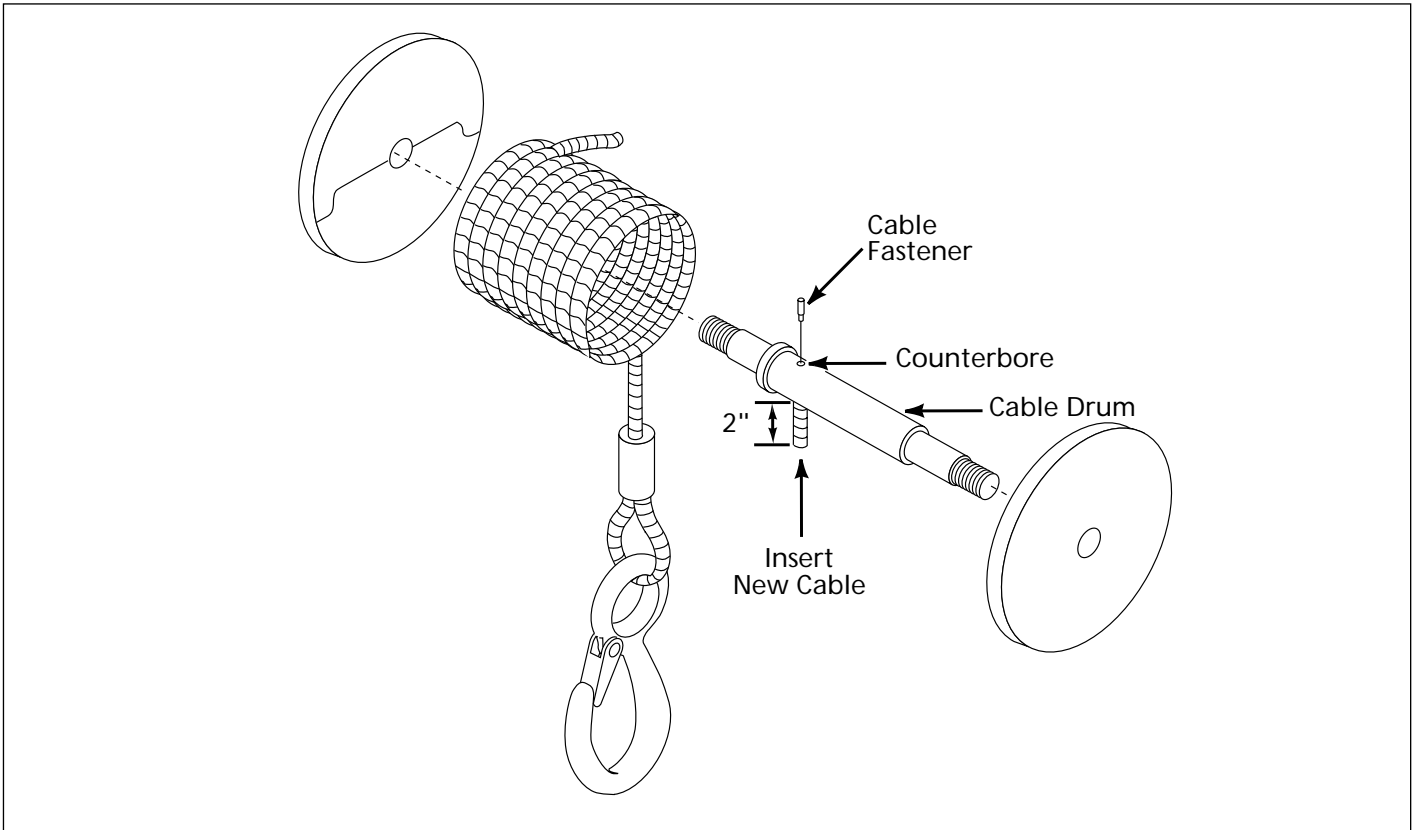


Figure 6 - Cable Replacement

lining.

CABLE REPLACEMENT

⚠ WARNING Always unplug the wiring harness to prevent accidental starting before attempting to install, service, relocate or perform any maintenance.

To replace the cable, follow the outlined procedures. Use an exact replacement Powerwinch cable. The winch rating and cable strength are carefully matched.

Never replace the cable with rope.

1. Unplug the wiring harness. Loosen the clutch knob and free-wheel the cable out.
2. Remove the two cover rods and the four cover screws.
3. Cut the old cable approximately 2" from the drum and push the remaining cable and fastener through the drum to remove (See Figure 6).
4. Insert the new cable into the drum shaft hole at the end opposite the counterbored end. Draw the cable through the hole and out the counterbored side of the shaft.

5. Push the cable through the fastener until the cable end is flush with the end of the fastener.
6. Crimp the fastener onto the cable and pull the cable through the drum shaft until the fastener seats inside the counterbore.
7. Install the cover, two cover rods and the four cover screws and connect the wiring harness.
8. Power-in the cable with a light load to help wind the cable straight into the drum.

the wire rope will easily kink and tangle inside the winch.

LEVELWIND PLATE

1. When powering-in the cable, the motor will continue to run for a few seconds after releasing the switch, especially without a load. Be sure to allow for the extra cable when powering-in. Do not let the cable hook go into the winch and bend the level wind plate.
2. When winding the cable onto the cable shaft with no load, keep the cable taut (tight) going into the drum. With no load,

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Winch will not operate	1. Disconnected or bad wiring or bad circuit breakers	a. Start checking the wiring at the battery. Bypass the circuit breakers and test the winch. If the winch operates, replace the circuit breakers. b. Check the wiring insulation for worn or bare spots that may be causing a short. c. Check all connections for tightness.
	2. Bad plug	a. Check the male connection at the end of the wiring kit by using probe light across the two prongs inside the plug. If the light illuminates, the wiring is correct. b. Remove the two cover connecting screws and rods from the cover containing the female socket. Plug the male socket into the female socket. Use a probe light across the two connections on the underside of the female socket. Replace the appropriate socket if the light does not illuminate. If the light illuminates, check the switch and/or motor.
Clutch does not hold	1. Worn or broken roller clutch	Replace roller clutch (Models T2400 and T4000 only).
	2. Worn gears or clutch lining	Replace gears or lining.

Technical Information

For information on the operation or repair, please call 1-800-793-4793.

Replacement Parts Information

For information regarding where to order replacement parts, call 1-800-793-4793. Please have the following information available:

Winch Model Number

Winch Serial Number

Part Number and Description

Address correspondence to:

SFEG/Powerwinch

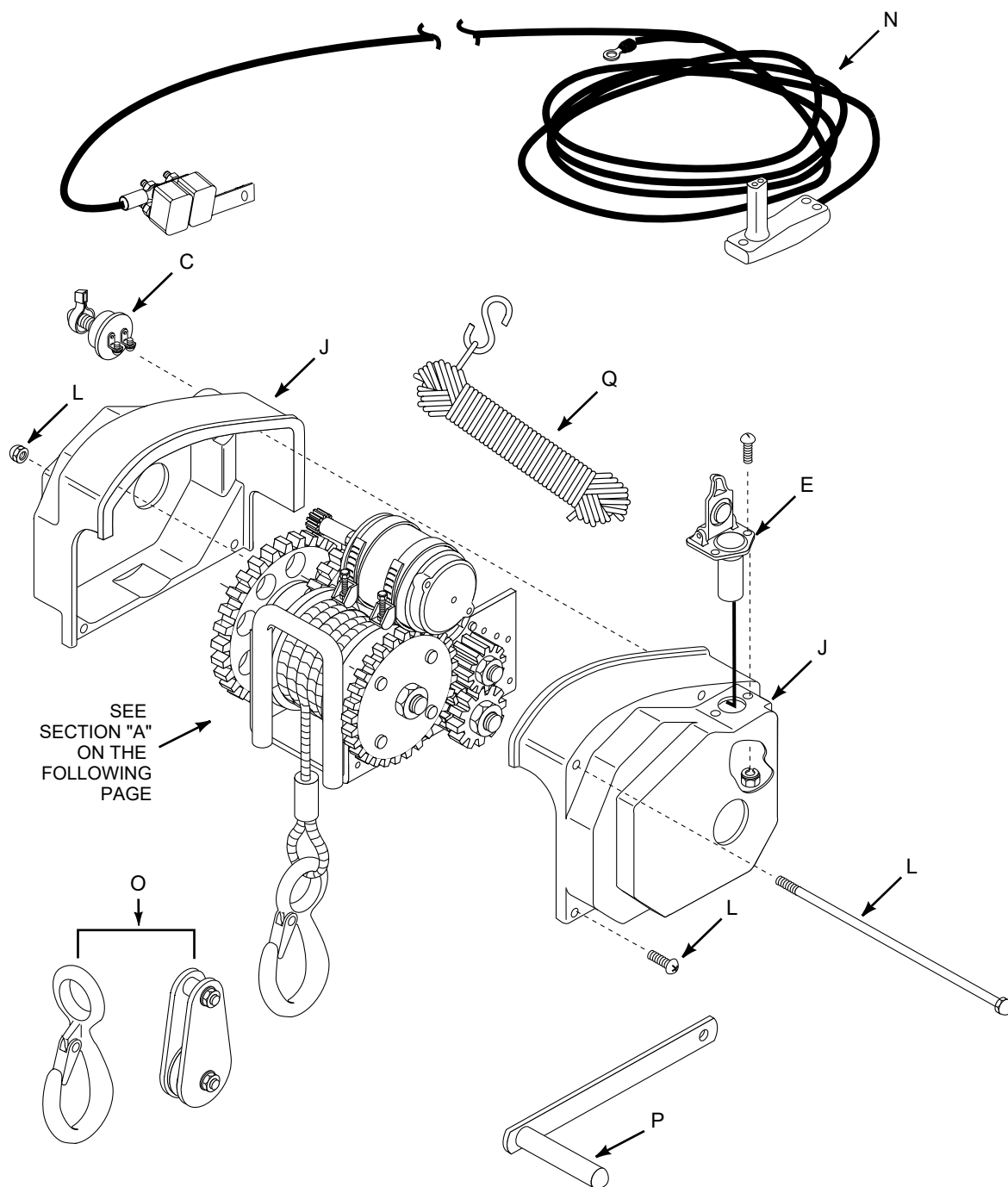
2268 Fairview Blvd.

Fairview, TN 37062

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. Complete (fully and accurately) and return to the Company, the Warranty card included in the box. Otherwise, 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. At the Option of the Company, return the Product to the Company for inspection. Authorization must be given prior to any Product return. Call the Company at 1-800-793-4793 or write the Company at 2268 Fairview Blvd., Fairview, TN 37062, for authorization and complete instructions on how to return the Product directly to the Company.
 4. Use reasonable care in maintenance, operation, use and storage of the Product in accordance with the instructions contained in the Owner's Manual.
 5. Have Warranty work performed by a dealer or representative approved by the Company.
 6. 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) years 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. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



For Replacement Parts, Call 1-800-793-4793

Please provide following information:

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

Address parts correspondence to:

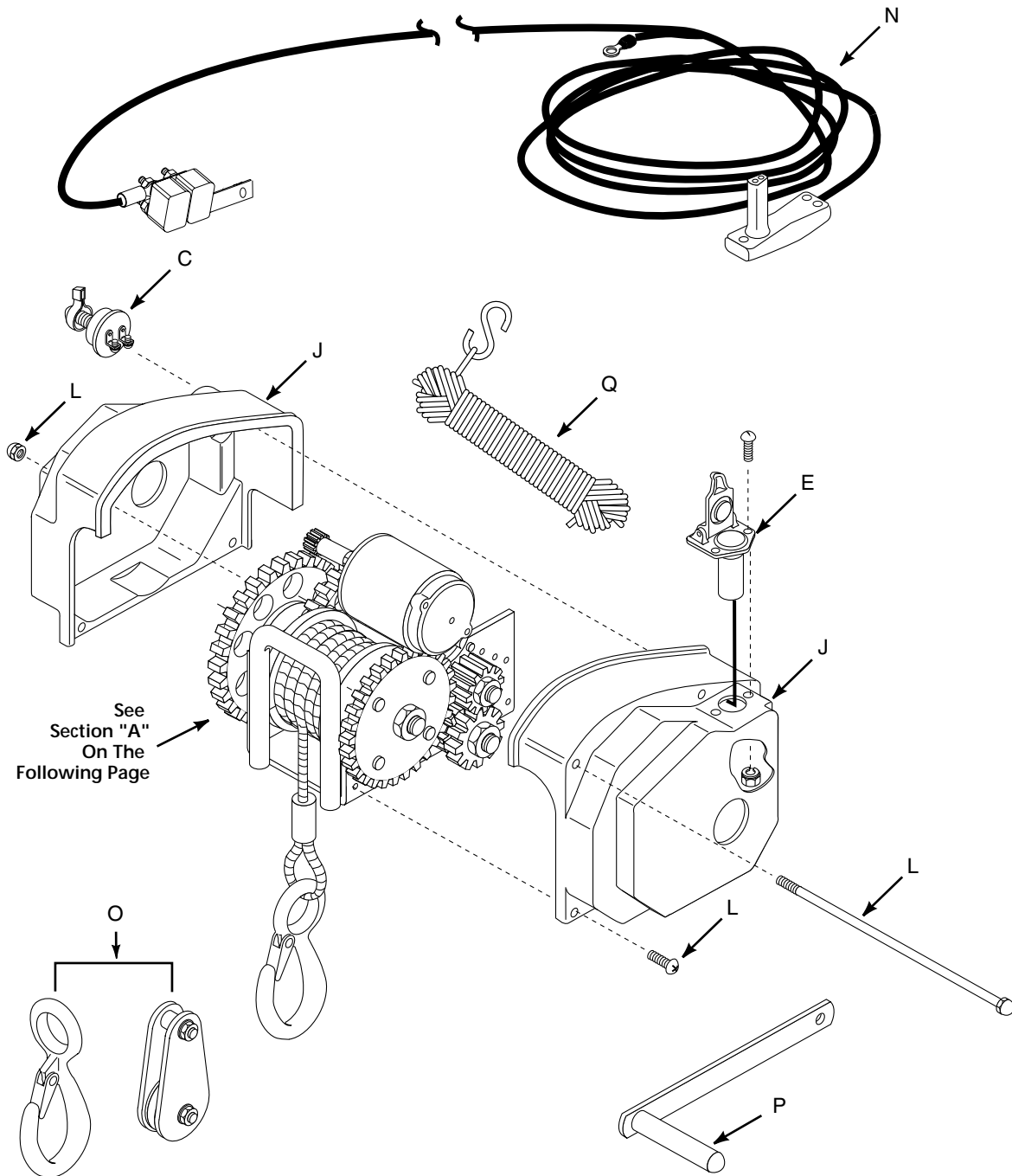
SFEG\Powerwinch
2268 Fairview Blvd.
Fairview, TN 37062

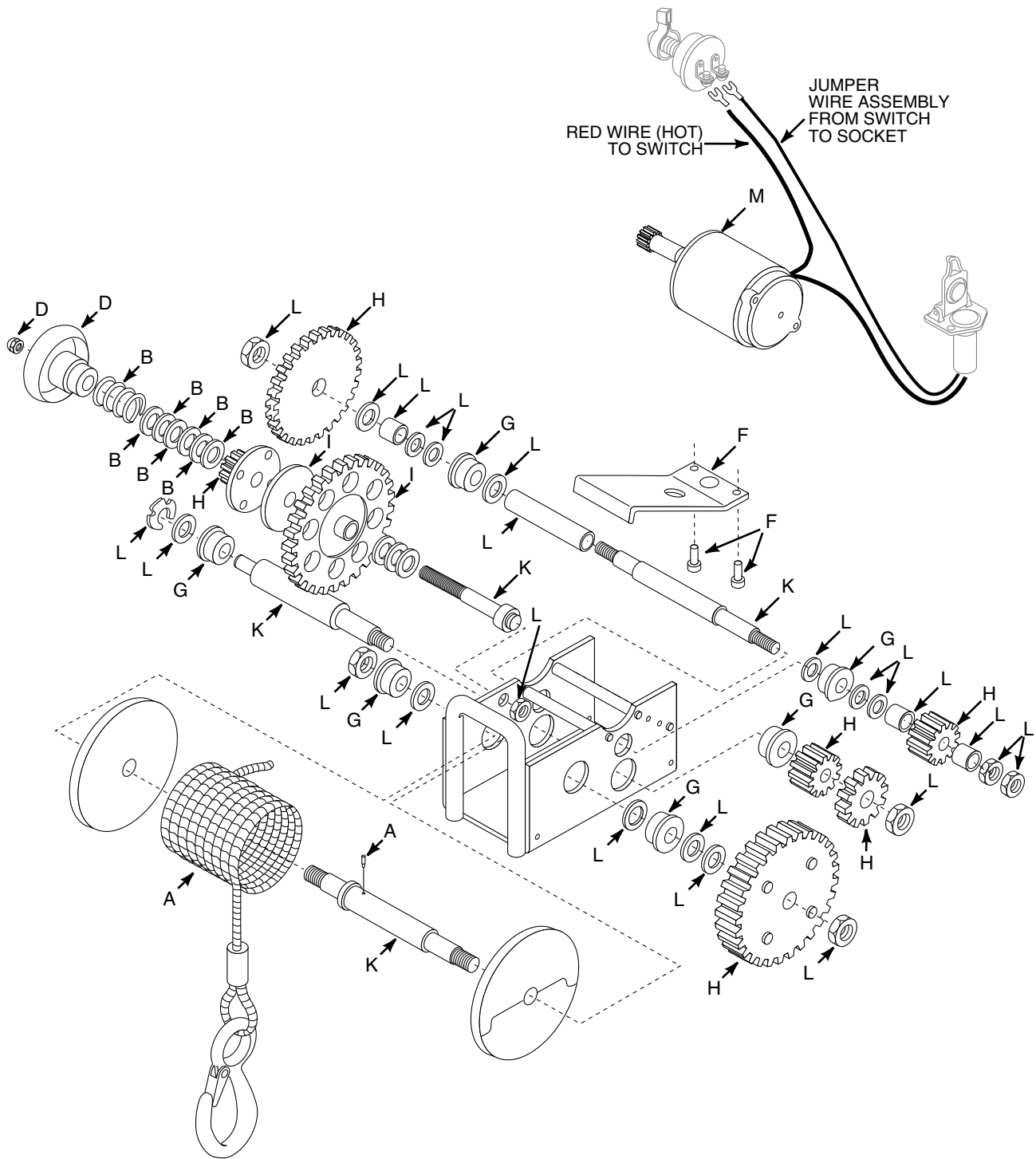
Replacement Parts List

PART NUMBER	DESCRIPTION	ITEM
P7188800AJ	REPLACEMENT CABLE	A
P7160901AJ	CLUTCH WASHER KIT	B
P7811700AJ	SWITCH KIT	C
P7940200AJ	CLUTCH KNOB KIT	D
P7810300AJ	SOCKET KIT (*)	E
R001275	LEVELWIND PLATE KIT	F
R001281	BEARING KIT	G
R001282	GEAR KIT	H
R001283	120T GEAR KIT	I
P10545	COVER KIT (*)	J
R001285	SHAFT KIT	K
R001286	FASTENER KIT	L
R001287	MOTOR WITH GEAR	M
P7830201AJ	WIRING HARNESS	N
P7904300AJ	PULLEY BLOCK	O
P7704100AJ	EMERGENCY HAND CRANK	P
P7901300AJ	LANYARD CORD	Q

* Denotes fasteners are included with kit

Notes





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SFEG/Powerwinch
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Replacement Parts List

PART NUMBER	DESCRIPTION	ITEM
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P7160901AJ	CLUTCH WASHER KIT	B
P7811700AJ	SWITCH KIT	C
P7940200AJ	CLUTCH KNOB KIT	D
P7810300AJ	SOCKET KIT (*)	E
R001288	LEVELWIND PLATE KIT (*)	F
R001289	BEARING KIT	G
R001290	GEAR KIT	H
R001291	120T GEAR KIT	I
P10544	COVER KIT (*)	J
R001293	SHAFT KIT	K
R001294	FASTENER KIT	L
R001295	MOTOR WITH GEAR	M
P7830201AJ	WIRING HARNESS	N
P7904300AJ	PULLEY BLOCK	O
P7704100AJ	EMERGENCY HAND CRANK	P
P7901300AJ	LANYARD CORD	Q

* Denotes fasteners are included with kit

Notes