



Ramsey Winch Company
OWNER'S MANUAL
 ATV Electric Winch Model ATV 2500



BADGER 2500 WINCH					
LAYER OF CABLE	1	2	3	4	5
Rated line pull per layer (lbs)	2500	2090	1800	1580	1400
(kgs)	1133	947	815	716	634
Cumulative cable capacity per layer (ft)*	7	15	25	37	50
(m)*	2.12	4.56	7.6	11.3	15.2
(3/16" - 4.8mm - dia. cable)					

*CABLE MUST BE UNIFORMLY WOUND ONTO DRUM.

Line pull (lbs)	NO	500	1000	1500	2000	2500
first layer (kgs)	LOAD	227	453	680	906	1133
Line speed (fpm)	18	17	15	12	11	7.5
first layer (mpm)	5.5	5.1	4.6	3.7	3.4	2.3
Amp draw (12v)	36	60	90	116	140	160

Congratulations

You have purchased the finest winch available in its service class. It features a highly efficient 3 stage planetary gear set which transmits torque from a permanent magnet motor. A safe positive clutch allows free spooling for quick cable deployment. Your Ramsey winch was designed and manufactured to provide you with the utmost in utility. As with any device that combines power and movement in its use, there are dangers if improperly used. At the same time, there are easier and faster ways for getting the job done if certain precautions are taken first. Please read this manual carefully. It contains useful ideas in obtaining the most efficient operation from your Ramsey

Winch and safety procedures you need to know before beginning use. When you follow our guidelines for operation, your Ramsey winch will give you many years of satisfying service. Thank you for choosing Ramsey. You will be glad you have one working for you.

Please Note: Ramsey ATV 2500 winches are designed primarily for ATV use. This winch is not designed to be used in industrial applications (car haulers /carriers, wreckers, hoisting, etc.), and Ramsey does not warrant it to be suitable for such use. Ramsey makes a separate, complete line of winches for industrial/commercial use. Please contact the factory for further information.



CAUTION: READ AND UNDERSTAND THIS MANUAL BEFORE INSTALLATION AND OPERATION OF WINCH. SEE SAFETY PRECAUTIONS.

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Safety Precautions To Guard Against Possible Injury.....

- A. Keep yourself and others a safe distance to the side of the cable when pulling under load.
- B. Do not step over a cable, or near a cable under load.
- C. Use supplied hook strap when handling hook for spooling wire rope.
- D. Do not use ATV to pull a load on the winch cable. This could result in cable breakage and/or winch damage
- E. Use a heavy rag or gloves to protect hands from burrs when handling winch cable.
- F. Apply blocks to wheels when ATV is on an incline.
- G. Winch clutch should be disengaged when winch is not in use and fully engaged when in use.
- H. Modification, alteration, or deviation to the winch should only be made by Ramsey Winch Company.
- I. Keep the duration of your pulls as short as possible. If the motor becomes uncomfortably hot to the touch, stop and let it cool for a few minutes. Do not pull more than one minute at or

near the rated load. Do not maintain power to the winch if the motor stalls. Electric winches are for intermittent usage and should not be used in constant duty applications.

- J. Do not use winch in hoisting applications due to required hoist safety factors and features.
- K. Do not exceed maximum line pull ratings shown in tables. Shock loads must not exceed these ratings.
- L. To respool correctly, it is necessary to keep a slight load on the cable. Do not allow the cable to slip through your hand and do not approach the winch too closely. When all the cable except a few feet is in, stop and finish spooling in cable by rotating the drum by hand with clutch disengaged. Always use hook strap to hold hook when spooling.
- M. Do not use the winch to hold a load while moving. Secure the load with tie-downs. The winch is not designed to be a load-holding device.



Tips for Safe Operation

Don't underestimate the potential danger in winching operations. Neither should you fear them. Do learn the basic dangers and avoid them.

Observe spooling of cable onto drum. Side pulls can cause cable to pileup at one end of the drum. To correct uneven stacking, spool out that section of the cable and move it to the other end of the drum and continue winching. Uneven spooling which causes cable pileup can interfere with the winch tie rods causing damage to the winch.

Do not engage clutch with motor running.

Never connect the hook back to the cable. This causes cable damage. Always use a sling or chain of suitable strength.

Observe your winch while winching. If possible, while standing at a safe distance. If you use ATV drive to assist, stop and get off every few feet to assure the cable is not piling up in one corner. Jamming cable can break your winch.

Do not attach tow hooks to winch mounting apparatus. They must attach to ATV frame.

When double lining during stationary winching, the winch hook should be attached to the chassis of the ATV. Since the greatest pulling power is achieved on the innermost layer of your winch, it is desirable to pull off as much line as you can for heavy pulls. If this is not practical, use a snatch block and double line arrangement.

Neat, tight spooling avoids cable binding which is caused when a load is applied and the cable is pinched between two other wraps of cable. If this happens, alternately power the winch in and out a few inches. Do not attempt to work a bound cable under load, free by hand.

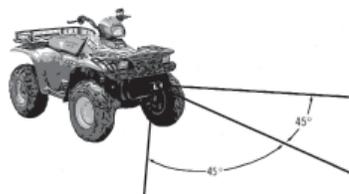
Techniques of Operation

The best way to get acquainted with how your winch operates is to make a few test runs before you actually need to use it. Plan your test in advance. Remember you hear your winch as well as see it operate. Get to recognize the sound of a light steady pull, a heavy pull, and sounds caused by load jerking or shifting. Soon you will gain confidence in operating your winch and its use will become second nature with you.

Your winch will not only pull your ATV up or ease your ATV down a steep grade, it will also pull another ATV or a load while your ATV is anchored in a stationary position.



For basic self-recovery, anchor to a tree or heavy rock. When anchoring to a tree, always use a tree trunk protector.



Winches equipped with cable guide fairleads can pull from several directions. Pull from an angle only to straighten up the ATV--otherwise you can damage structural members or other parts of your ATV and cause excess cable buildup on one end of the winch drum.

When pulling a heavy load, place a blanket, jacket or tarpaulin over the cable five or six feet from the hook. It will slow the snap back in the event of a broken cable.

Use the ATV wheel power to help the winch, but don't overtake the winch line. Plan your pull. You can't always hook up and pull out in one step. Examine all the areas for anchoring possibilities as well as leverage situations, direction, and goal.

General Installation

The winch shown in this owners manual is solely and exclusively designed for ATV mounted, non-industrial applications. All other applications will void warranty.

1. Install Winch and Mounting Kit according to instructions supplied with Mounting Kit. Tighten mounting bolts to 16 ft-lbs (21.6 Nm) torque.
2. It is very important that the winch be mounted on a flat surface, with the cable feeding from the bottom of the drum.

CAUTION: SUPPLIED 7/8" LONG MOUNTING BOLTS WITH LOCKWASHERS ARE FOR A RECOMMENDED WINCH MOUNTING PLATE THICKNESS OF 3/16". IF A DIFFERENT MOUNTING PLATE THICKNESS IS USED, THE BOLT LENGTH MUST BE ADJUSTED ACCORDINGLY OR DAMAGE TO WINCH MAY OCCUR. REPLACEMENT BOLTS MUST BE SAE GRADE 5 OR EQUIVALENT.

3. Do not attach motor and battery leads until instructed to do so.
4. Refer to installation instructions for the Rocker Switch on page 4 to install the Rocker Switch.

Rocker Switch Installation

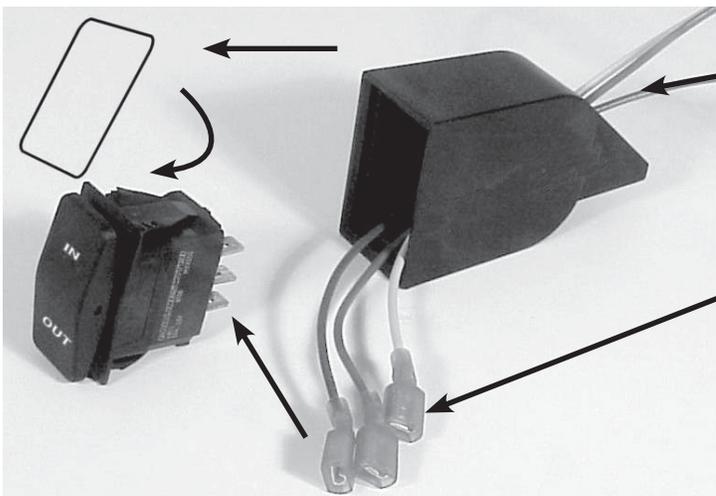
The Rocker Switch will mount to the handle bars of the ATV.

Before Beginning Installation

1. Install mounting kit and winch according to the mounting kit instructions.
2. **Disconnect negative (-) battery cable from battery. Turn off vehicle ignition.**
3. **Disengage winch clutch.**
4. Remove hood or cowling as necessary for easier access to installation area.
5. Locate and mark mounting location for Solenoid Assembly.
6. Locate accessory wire from vehicle ignition switch that is powered only when ignition is ON. Use this wire when splicing to Red wire on Rocker switch.
7. Make sure locations are close enough for wiring connections to be made without making alterations to wire lengths.

CAUTION: Do NOT CONNECT NEGATIVE BATTERY CABLE OR ENGAGE CLUTCH UNTIL INSTALLATION IS COMPLETE. WINCH COULD BEGIN SPOOLING CABLE UNEXPECTEDLY CAUSING INJURY OR DAMAGE TO WINCH.

Solenoid Mounting: Choose a mounting location that will remain protected and dry. Solenoid should be mounted on a flat surface.



Installing the Solenoid

1. Use Solenoid Assembly as a guide to mark and drill (2) 7/32" holes in location determined for solenoid.
2. Use (2) 3/4" long #10 capscrews (item #14-3), (2) #10 flat washers (item #14-8), and (2) #10 locknuts (item #14-5) to mount solenoid. Tighten to 60 in-lbs (7 Nm) torque.

Installing the Rocker Switch

For clarification, see wiring schematic on page 6.

1. Position Tube Clamp (item #14-12) on handle bars in convenient location.



2. Mount Rocker Switch housing to Tube Clamp using #10 capscrew, locknut, flat washer, and shake-proof washer (items #14-3, #14-5, #14-8, and #14-9). Tighten securely.
3. Push the Green, Red, and Yellow wires through the back of the switch housing.
4. Install the Gasket onto the Rocker Switch.
5. Connect Yellow wire (item #12-3) to top terminal on Rocker Switch (terminal behind "IN" position). Connect Red wire (item #12-1) to middle terminal on Rocker switch. Connect Green wire (item #12-2) into bottom terminal of Rocker switch.
6. Slide Green, Yellow, and Red wires into loom (item #12-4). Slide loom up to back of the switch housing.
7. Snap switch and switch housing together.

8. Push Accessory wire from ignition and other end of Red wire into plastic Splice (item #14-10).
9. Fold splice clip over itself and snap closed.
10. Route wires from Rocker Switch down the handle bars. Turn the handle bars fully right and left to ensure plenty of clearance.
11. Make sure wires are not drawn taut across any surfaces that could damage them. Use cable ties to anchor wires. Tie off excess.

Connect Wiring to Solenoid

CAUTION: TIGHTEN NUTS ON TERMINAL STUDS TO 35-40 IN-LBS. (4-4.5 Nm) TORQUE. DO NOT OVER-TIGHTEN.

1. Connect Red Battery Lead (Item #13-2) between "A" terminal on Solenoid and positive (+) vehicle battery terminal.
2. Connect Black Motor Lead (item #13-4) between #2 terminal on motor and C terminal on solenoid. Connect Black w/Yellow Stripe Motor Lead (item #13-1) between #1 terminal on motor and B terminal on solenoid.
3. Connect Black Battery Lead (item #13-3) to "E" terminal on Solenoid and route to negative (-) vehicle battery terminal **but do not connect**.
4. Plug Yellow wire from switch into right terminal (terminal above black with yellow stripe motor lead). Plug Green wire from switch into left terminal (terminal above black motor lead).

Finish Installation

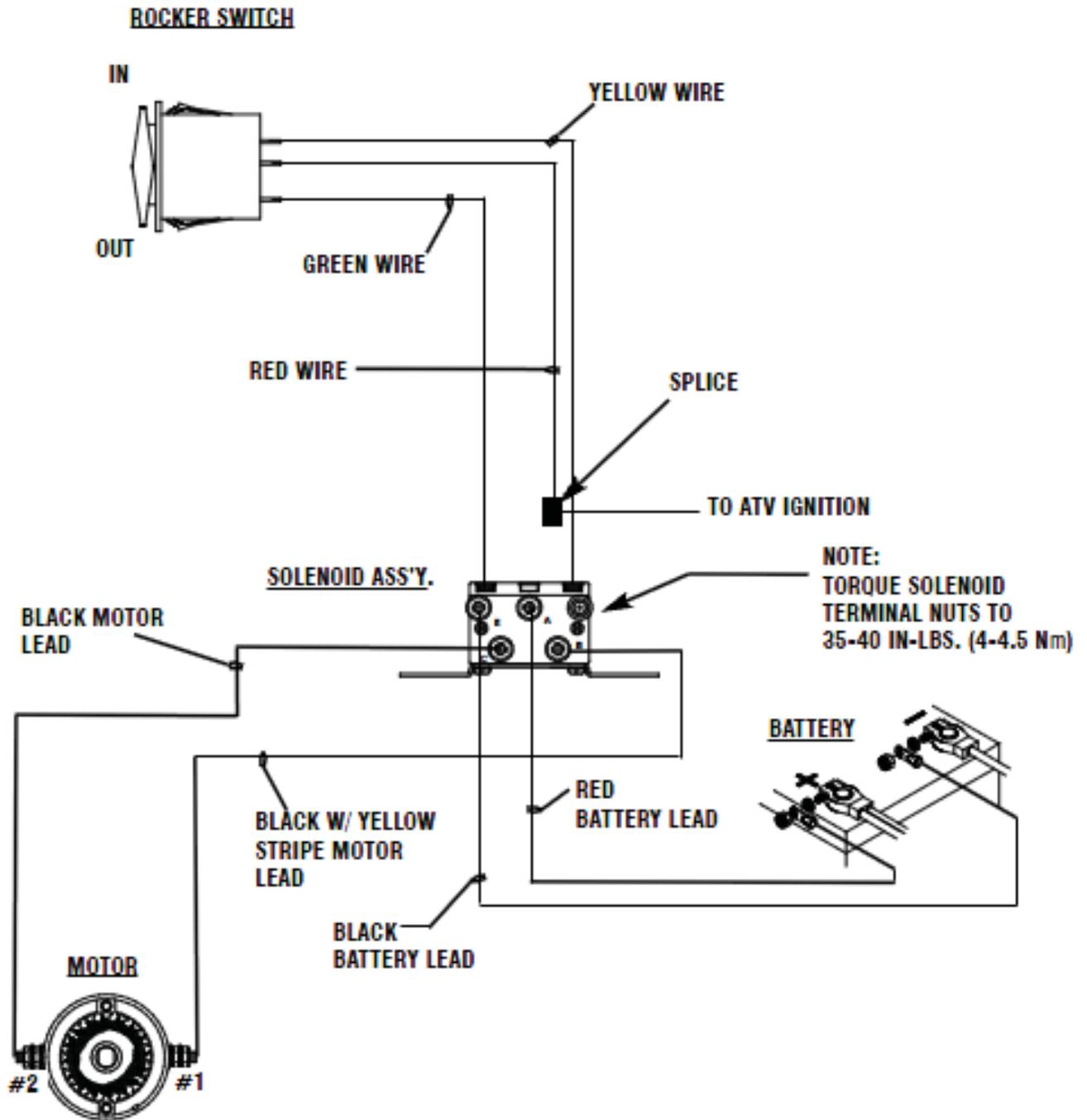
1. Confirm that winch clutch is disengaged.
2. Connect negative (-) battery cable to vehicle battery. Connect Black Battery Lead from winch to negative (-) vehicle battery terminal.
3. With ignition switch OFF, press Rocker switch to "OUT"—winch should not operate. If the winch does operate with the ignition off, confirm that proper accessory wire from ignition was spliced.
4. Spool a few feet of cable out by hand. Engage winch clutch.
5. Turn ignition switch ON and press Rocker switch to "OUT"—winch should spool cable out.
6. If winch does not operate with ignition on, check wiring to the schematic on page 6.
7. If winch spools cable IN instead of OUT, turn off ignition and reverse yellow and green wires on solenoid.

Rocker Switch Operation

Press Rocker Switch toward "IN" position to spool cable "IN" and press Rocker Switch toward "OUT" position to spool cable "OUT".



Electrical Schematic (Rocker Switch)



Winch Operation

The winch clutch allows rapid unspooling of the wire rope for hooking onto the load or anchor point. The clutch is operated by the shifter located on the end of the winch as follows:

1. To disengage the clutch, turn the clutch shifter to the "FREESPOOL" position. Wire rope may now be freespoiled off the drum.
2. To engage the clutch, turn the clutch shifter to the "ENGAGED" position. The winch is now ready for pulling.



Your battery must be kept in good condition. A fully charged battery and proper connections are essential. Run the vehicle engine during winching operations to keep battery charged.

Maintenance

Corrosion on electrical connections will reduce performance or may cause a short. Clean all connections. In salty environments use a silicone sealer to protect from corrosion.

To minimize corrosion of the internal motor components that may occur due to condensation, power the winch in or out periodically. Energizing the motor will generate heat, which will help dissipate any moisture buildup in the motor. This should be performed at periodic intervals (such as with each oil change to your vehicle). Note: Refer to Troubleshooting Guide if the motor has been submerged.

All moving parts in the winch are permanently lubricated with broad temperature range lithium based grease. Under normal conditions factory lubrication will suffice.

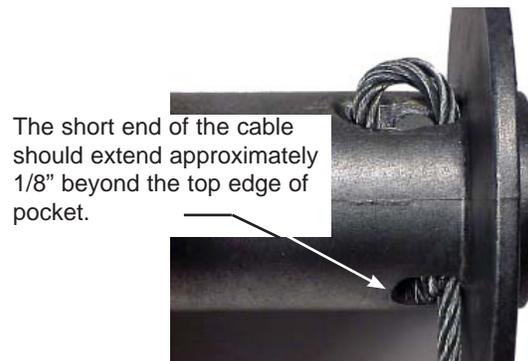
Lubricate cable periodically using light penetrating oil. Inspect for broken strands and replace if necessary. If the cable becomes worn or damaged, it must be replaced.

Cable Installation

Note: Cable should be installed so that it feeds from the bottom of the drum.

Unwind the new cable by rolling it out along the ground to prevent kinking. Remove old cable and observe the manner in which it is attached to the cable drum flange, watching carefully for the cable anchor puck.

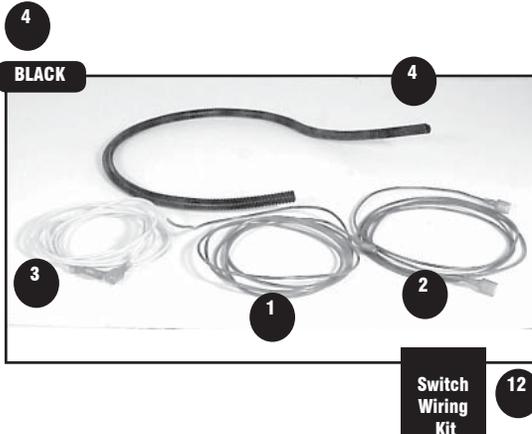
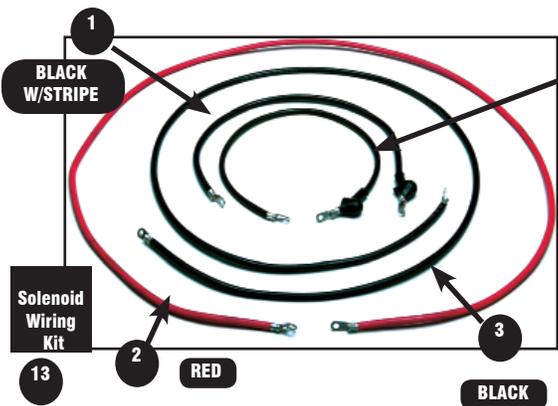
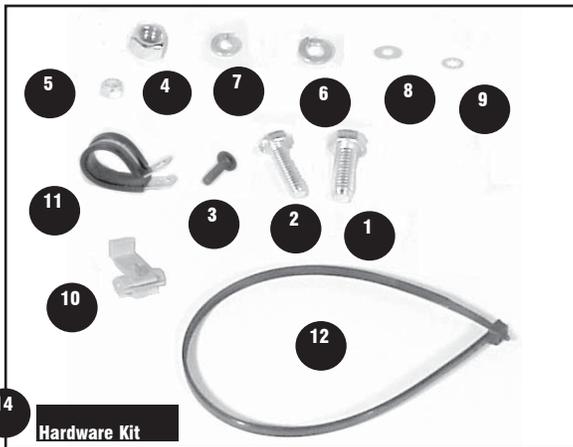
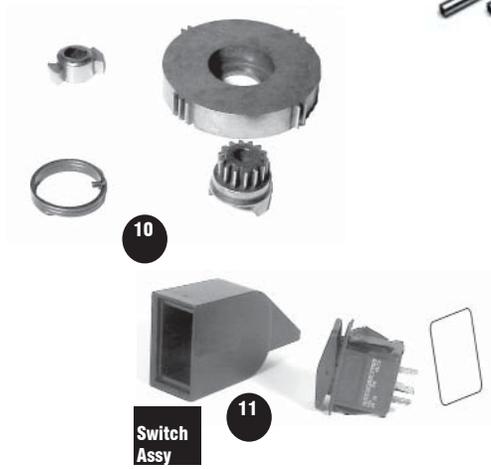
Before installing the new cable assembly, securely wrap the end of the cable with tape to prevent fraying.



Slide the cable through narrow end of the pocket against drum flange and wrap the cable around the anchor puck. Pull the cable and anchor back into the wide end of the pocket leaving approximately 1/8" beyond edge of pocket as shown. Use a hammer and drift punch to drive the back side of the wire rope, firmly seating the wire rope and anchor into the pocket.

Wind on the cable by pulling in a light load to keep the tension constant. Allow the cable to swivel by using a length of chain or a swivel block between the cable hook and the load.

ATV2500



Parts List

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	251214	MOTOR KIT
2	1	251247	MOTOR END GEAR SET
3	1	251191	CLUTCH KIT
4	1	251192	CABLE DRUM KIT
5	1	251213	CLUTCH END GEAR KIT
6	1	251236	ROLLER FAIRLEAD KIT
7	1	251195	BUSHING KIT
8	1	251196	TIE BAR KIT
9	1	251234	SOLENOID KIT
10	1	256116	BRAKE KIT
11	1	257536	ROCKER SWITCH KIT
12	1	299728	SWITCH WIRING KIT ¹
13	1	299724	SOLENOID WIRING KIT ²
14	1	257535	HARDWARE KIT ³

¹ Switch Wiring Kit, as shown on facing page, consists of the following components:

ITEM NO.	QTY.	DESCRIPTION
12-1	1	123" RED WIRE
12-2	1	123" GREEN WIRE
12-3	1	123" YELLOW WIRE
12-4	1	24" LOOM

² Solenoid Wiring Kit, as shown on facing page, consists of the following components:

ITEM NO.	QTY.	DESCRIPTION
13-1	1	37" MOTOR LEAD - BLACK W/YELLOW STRIPE
13-2	1	97" BATTERY LEAD - RED
13-3	1	97" BATTERY LEAD - BLACK
13-4	1	37" MOTOR LEAD - BLACK

³ Hardware Kit, as shown on the facing page, consists of the following components:

ITEM NO.	QTY.	DESCRIPTION
14-1	4	5/16-18UNC X 1" LG HX HD Z/P CAPSCREW
14-2	2	3/8-16UNC X 1" LG HX HD GR5 Z/P CAPSCREW
14-3	3	#10-24NC X 3/4 LG TRUSS CROSS RECESS F/B CAPSCREW
14-4	2	3/8-16UNC REG HX HD GR2 Z/P NUT
14-5	3	#10-24NC HEX LOCK NUT
14-6	4	5/16" MED Z/P LOCK WASHER
14-7	2	3/8" MED Z/P LOCK WASHER
14-8	3	#10 Z/P FLAT WASHER
14-9	1	#10 SHAKE-PROOF WASHER
14-10	1	WIRE SPLICE
14-11	1 PKG	CABLE TIES (12 EA)
14-12	1	TUBE CLAMP

BADGER 2500 Trouble Shooting Guide

CONDITION	POSSIBLE CAUSE	CORRECTION
MOTOR RUNS IN ONLY ONE DIRECTION	Defective solenoid or stuck. Defective Rocker Switch	Jar solenoid assembly to free contacts. Check each solenoid by applying +12 volts to coil terminal (it should make an audible click when energized). Replace Rocker switch.
MOTOR RUNS EXTREMELY HOT	Long period of operation.	Cooling-off periods are essential to prevent overheating.
MOTOR RUNS, BUT WITH INSUFFICIENT POWER OR WITH LOW LINE SPEED	Insufficient battery Bad connection Insufficient charging system.	Test for faulty battery. Check battery cable for corrosion; clean and grease Replace with larger capacity charging system.
MOTOR RUNS, BUT DRUM DOES NOT TURN	Clutch not engaged.	If clutch engaged but symptoms still exist, it will be necessary to disassemble winch to determine cause and repair.
MOTOR WILL NOT OPERATE	Defective solenoid or stuck solenoid. Defective Rocker Switch. Defective motor. Loose connections.	Jar solenoid assembly to free contacts. Check each solenoid by applying +12 volts to coil terminal (it should make an audible click when energized). Replace Rocker switch. If solenoids operate, check for voltage at armature post; replace motor. Check all electrical connections from the battery to the motor.
MOTOR WATER DAMAGED	Submerged in water or water from high pressure car wash.	Allow to drain and dry thoroughly, then run motor without a load in short bursts to dry windings.

NOTES

Warranty Information

Ramsey Winches are designed and built to exacting specifications. Care and skill go into every winch we make. If the need should arise, warranty procedure is outlined on the back of your self-addressed, postage paid warranty card. Please read and fill out the enclosed warranty card and send it to Ramsey Winch Company. If you have any problems with your winch, please follow instructions for prompt service on all warranty claims.

Limited Lifetime Warranty

Ramsey Winch offers a limited lifetime warranty for each new Ramsey ATV winch against manufacturing defects in workmanship and materials on all manufactured components. Warranty registration cards for each winch must be submitted at the time of purchase, or within 90 days. Online registration of your winch is available at www.ramsey.com. New cable assemblies are warranted against defects in workmanship and materials. No warranty applies after initial use. All Ramsey mounting kits and other accessories carry a 1-year limited warranty against defects in materials and workmanship.

This warranty is void if winch is used in commercial/industrial applications other than front mount self recovery. Electrical components consisting of motors, solenoids, wiring, wire connectors, and associated parts carry a limited 1-year warranty.

The obligation under this warranty, statutory or otherwise, is limited to the replacement or repair at the manufacturer's factory, or at a point designated by the manufacturer, of such part as shall appear to the manufacturer, upon inspection of such part, to have been defective in material or workmanship. This Warranty does not obligate Ramsey Winch Company to bear the cost of transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to a product upon which repairs or alterations have been made, unless authorized by the manufacturer, or for equipment misused, neglected, or improperly installed.

Important notice: To the fullest extent permitted by applicable law, the following are hereby excluded and disclaimed:

- 1. All warranties of fitness for a particular purpose;**
- 2. All warranties of merchantability;**
- 3. All claims for consequential or incidental damages.**

There are no warranties that extend beyond the description that appears on the face hereof.

Some states do not allow the above exclusions or disclaimers in consumer transactions and as such this disclaimer/exclusion may not apply to your particular case.

To the extent such warranties of fitness for a particular purpose or merchantability are deemed to apply to this product, they exist only for so long as the express limited warranty elsewhere set forth is in existence.

Ramsey Winch Company makes no warranty in respect to accessories, same being subject to the warranties of their respective manufacturers. Ramsey Winch Company, whose policy is one of continuous product improvement, reserves the right to improve any product through changes in design or materials as it may deem desirable without being obligated to incorporate such changes in products of previous manufacture.

If field service at the request of the buyer is rendered and the fault is found not to be with Ramsey Winch Company's product, the buyer shall pay the time and expense of the field representative. Bills for service, labor or other expenses which have been incurred by the buyer without express approval or authorization by Ramsey Winch Company will not be accepted.

This Warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.



Quality Management System



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