



# QUICKART 2000

## OPERATING INSTRUCTIONS

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### QUICKART ELECTRIC UTILITY MACHINE

#### MANUFACTURED BY:

DANE INDUSTRIES  
9855 – 13<sup>TH</sup> AVE. N.  
PLYMOUTH, MN 55441

PHONE: 612-544-7779  
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## QUICKART 2000

### INTRODUCTION

Thank you for purchasing the Dane Industries QuickKart 2000. With proper operation and maintenance, the QuickKart will provide years of dependable service. This manual contains information, which will assist in the training, operation and maintenance of the QuickKart. Please read it thoroughly and review it regularly.

The QuickKart is a tool, which will increase workplace safety and productivity. Those goals will only be accomplished if all employees using the QuickKart are thoroughly trained in the safe operation of the QuickKart. We urge all of our clients to develop and implement a training and certification program for all employees using and supervising the use of the QuickKart. This manual, our training program and our training video are provided to assist you in developing your own operator's certification program.

If you have questions regarding the safe operation or maintenance of the QuickKart, which are not covered in this manual, please contact us at our toll-free service line: 888-544-7779.

Daniel T. Johnson  
President and CEO

**March 19, 1999 Revision**

# **QUICKART 2000** **OPERATING INSTRUCTIONS**

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# **QUICKART 2000** **OWNER'S MANUAL** **OPERATING INSTRUCTIONS**

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## QUICKART 2000 WARNINGS & SAFETY NOTES

Please read all the information included in this manual and the service instructions prior to operating or servicing the QuickKart. In addition, make certain all operators have been given and passed the certified operators course before using the QuickKart.

### **IMPORTANT SAFETY NOTE:**

THE RED BATTERY PLUG MUST BE DISCONNECTED FROM THE JUNCTION BOX ANY TIME MAINTENANCE IS BEING PERFORMED UNDER THE COVER! (See diagram on page 7.)

- 1) The QuickKart is designed to push shopping carts. Any other use of the QuickKart is prohibited unless specifically endorsed by the manufacturer. Improper usage and operation of the QuickKart may void the warranty.
- 2) You must be at least 16 years old with a valid driver's license to operate the QuickKart. In certain states, regulations may require operators to be older. Please check your state's regulations regarding operation of motorized equipment before using the QuickKart.
- 3) Never carry passengers on the QuickKart 2000!
- 4) When the QuickKart is to be left unattended or in storage, turn it "OFF" and remove the key.
- 5) Do not leave the QuickKart unattended while it is turned "ON".
- 6) Operate the QuickKart at a safe speed; go only as fast as safety considerations allow. Take into consideration the location of store entrances, sidewalks, pedestrian and vehicle traffic, driveways, and parking lot layout.
- 7) Always operate in slow speed when near store guests. Operating conditions, such as wet or slippery pavement or slopes can affect the stopping distance of the QuickKart. Do not push more carts than the individual operator can safely control when those conditions are present. **Do not exceed 40 carts at a time under any circumstance.**

## QUICKART 2000 WARNINGS & SAFETY NOTES

- 8) Do not drive off of curbs or the edges of hardened surfaces higher than one inch.
- 9) Always look behind the QuickKart before and while operating in reverse.
- 10) Batteries must be fully charged initially before using the QuickKart.
- 11) **The electrolyte in a storage battery is an acid, which can cause severe burns to the skin and eyes. Wear appropriate protective clothing when working with batteries. Always use protective eyewear (chemical splash goggles or face shield) when adding water. Treat all electrolyte spills with an extended flushing with clear water. Contact a physician immediately if contact is made with battery acid.**
- 12) **DO NOT OVERFILL THE BATTERIES** - fill the batteries with water only to the bottom of the plastic tube which extends downward from the cap. Overfilling the batteries will void the QuickKart and battery warranties. Check water level at least monthly. Inadequate water levels may damage batteries and void the battery manufacturer's warranty.
- 13) Hydrogen gas is formed when charging the batteries. Use a location with adequate ventilation when charging QuickKart batteries. Never smoke near batteries. Do not charge batteries in an area with open flame or where there is electrical equipment that could cause an electrical arc.
- 14) Do not lay metal objects (wrenches, screwdrivers, etc.) on any of the batteries to prevent electrical short circuits.
- 15) Batteries are heavy. Always use care and proper lifting technique to avoid injury when removing or replacing batteries.
- 16) Make sure QuickKart is properly secured when changing tires. (See instructions on page 24.)

## UNPACKING THE QUICKART 2000

- 1) The QuickArt 2000 is typically shipped on a wooden pallet. It comes with six individual components that are packaged on the pallet. Care must be taken not to damage them during the unpacking. The six components are:
  - a) **QuickArt**, the basic electric machine with two keys,
  - b) **Battery Charger**, used to recharge the QuickArt,
  - c) **Beacon Post**, a metal tube with a box, lights and antenna,
  - d) **Remote Control Transmitter**, to remotely control the QuickArt,
  - e) **Package of a bolt and a nut** for final mounting of the beacon post, and
  - f) **Cart Coupler Hardware** (yokes) for the cart coupler.
- 2) Remove all the plastic film that is wrapped around the system components. Take care not to bend beacon post components (especially the antennas) when removing the plastic. Cut banding material, which holds the QuickArt to the pallet.
- 3) Strapped to the pallet, beneath the QuickArt, is a small box containing the remote control, beacon post bolt and nut, and cart coupler hardware. Remove this box and set it aside.
- 4) To remove the QuickArt from the pallet, use a sturdy wooden board(s) to create a ramp. Remove all straps holding the QuickArt to the shipping pallet. Insert the key and turn on the QuickArt. Turn the twist grip slowly and guide the QuickArt forward, down the ramp to the floor.
- 5) The Beacon post hinges from a center position on a bolt and nut already installed. Swing it to an 11:00 o'clock position. Remove the bolt at the bottom of the beacon post bracket. Swing open the QuickArt body by lifting it from the handle side. There is a white plug at the end of the beacon post, which is attached to a cable that extends into the tube. Feed this plug through the hole in the center of the beacon post-mounting bracket. Pull gently on this plug and cable as you straighten the beacon post to a full vertical position. Replace the bolt in the bottom holes and tighten lightly. Use care not to damage the wires. Insert the plug into the vacant junction box socket located near the edge of the machine. This socket is labeled "Beacon". Make sure the plug and socket orientations are aligned. Take care not to damage the antenna, lights or the cable connectors at the ends of this beacon post.
- 6) To attach the cart coupler yokes, refer to the diagram on pages 12 and 13.
- 7) Each hand-held remote control transmitter operates on a unique pre-programmed code. For the QuickArt to operate in the Remote Mode, the receiver, which is in the beacon post, must be programmed to match the hand held transmitter. See page 22 for directions how to program the remote control transmitter.



## QUICKART 2000 IMPORTANT MAINTENANCE NOTES

### Check the QuickKart daily, for safe operation.

Improper use or operation of the QuickKart, or the lack of proper maintenance, may result in decreased performance or damage to the QuickKart. The following four parts of the QuickKart need regular and routine maintenance.

1. **Batteries** – Check and maintain the battery water levels weekly. You must be 18 years old to service batteries. Use distilled water to prolong battery life. Improper water levels will shorten the life of the batteries or may damage them and void the manufacturer's warranty. Always wear safety goggles when filling batteries.
2. **Tires** – Tires are solid (foam filled). Check weekly for wear. When no tread remains they are to be replaced.
3. **Front Body Hinge** – Oil monthly
4. **Rear Swivel Wheel Bearing** – Grease every 6 months (grease gun compatible).

**If at any time the QuickKart does not operate correctly, immediately turn it off and remove the key to prevent further operation. Immediately report any malfunctions to the store manager responsible for the QuickKart and Dane Industries at 1-888-544-7779.**

### **WARNING**

**Do not permit open flame, sparks or smoking  
during maintenance.**

**Adequate ventilation is essential for safety.**

**Do not lay metal objects on the batteries.**

## OVERVIEW OF OPERATION

The QuickKart is an electrically powered shopping cart collection machine. It has several unique and patented features, which allow it to be used safely and simply in the shopping cart collection process.

The QuickKart provides the pushing power for a single employee to safely and easily move a maximum of forty shopping carts from the parking lot into the store. Its ability to operate in both manual and remote control mode allows a single employee to steer the chain of carts from the front of the cart line while controlling the QuickKart as it pushes and follows from behind.

The QuickKart has proven its ability to work in all types of weather ranging from extreme heat or cold as well as rain and snow. The QuickKart has operated dependably in winter weather as cold as -20 degrees. It will also push carts through loose snow. On packed snow the QuickKart 2000 will push 10 to 20 carts. Winter operation can be enhanced with the use of optional snow tires.

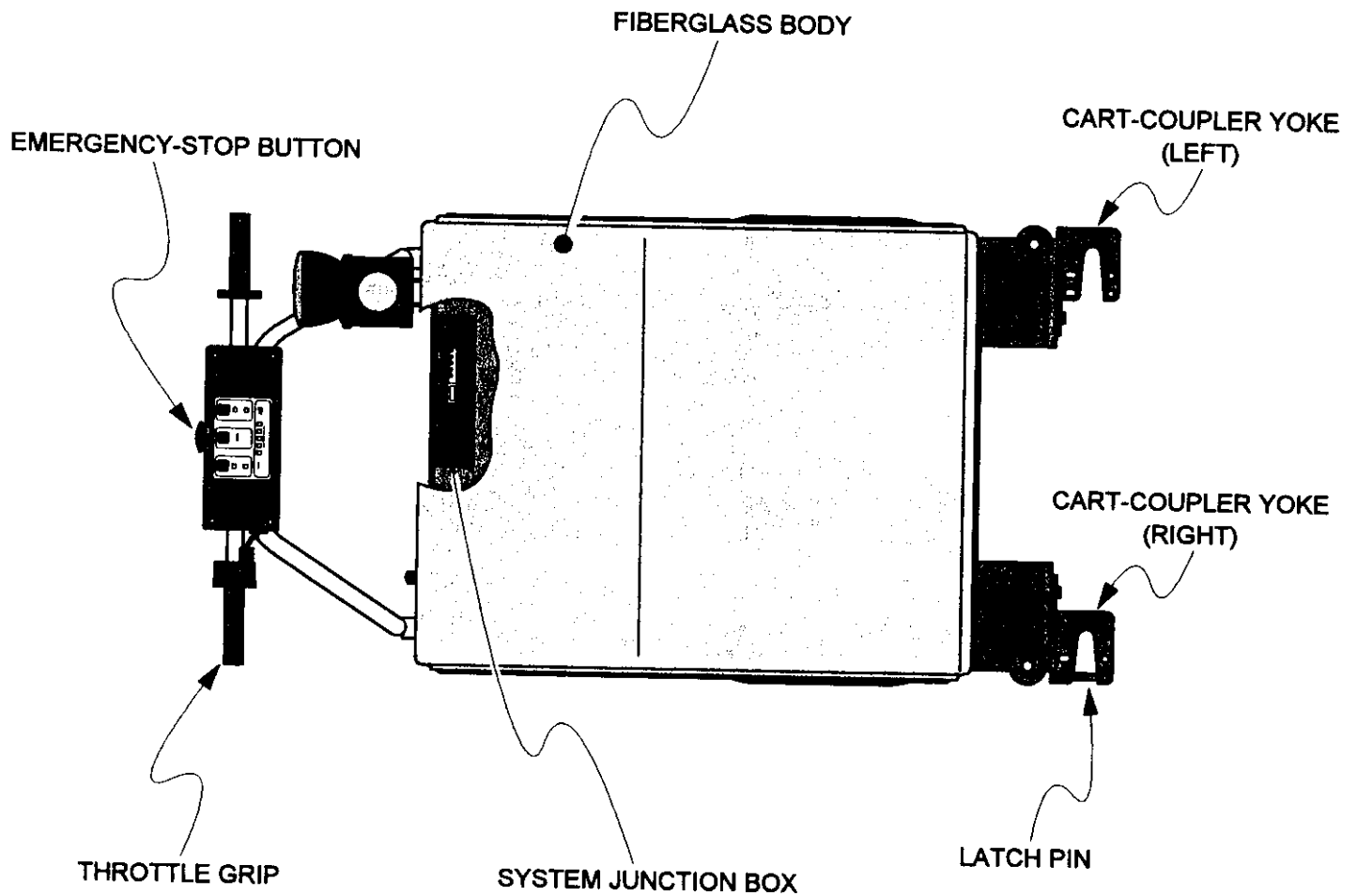
**The QuickKart operates on a 36-volt battery system. It will operate continuously for up to ten hours on a single charge. Cold weather will reduce operating time. It will require approximately eight hours to fully recharge the batteries.**

**Each hand-held remote control transmitter operates on a unique pre-programmed code. For the QuickKart to operate in the Remote Mode, the receiver, which is in the beacon post, must be programmed to match the hand held transmitter, see page 22 for details. The remote is powered by an internal 9-volt battery, which should be changed every two months for dependable operation. The small light on the remote will cease to operate when the battery needs replacing. After battery replacement, the remote must be reprogrammed; see page 22 for details.**

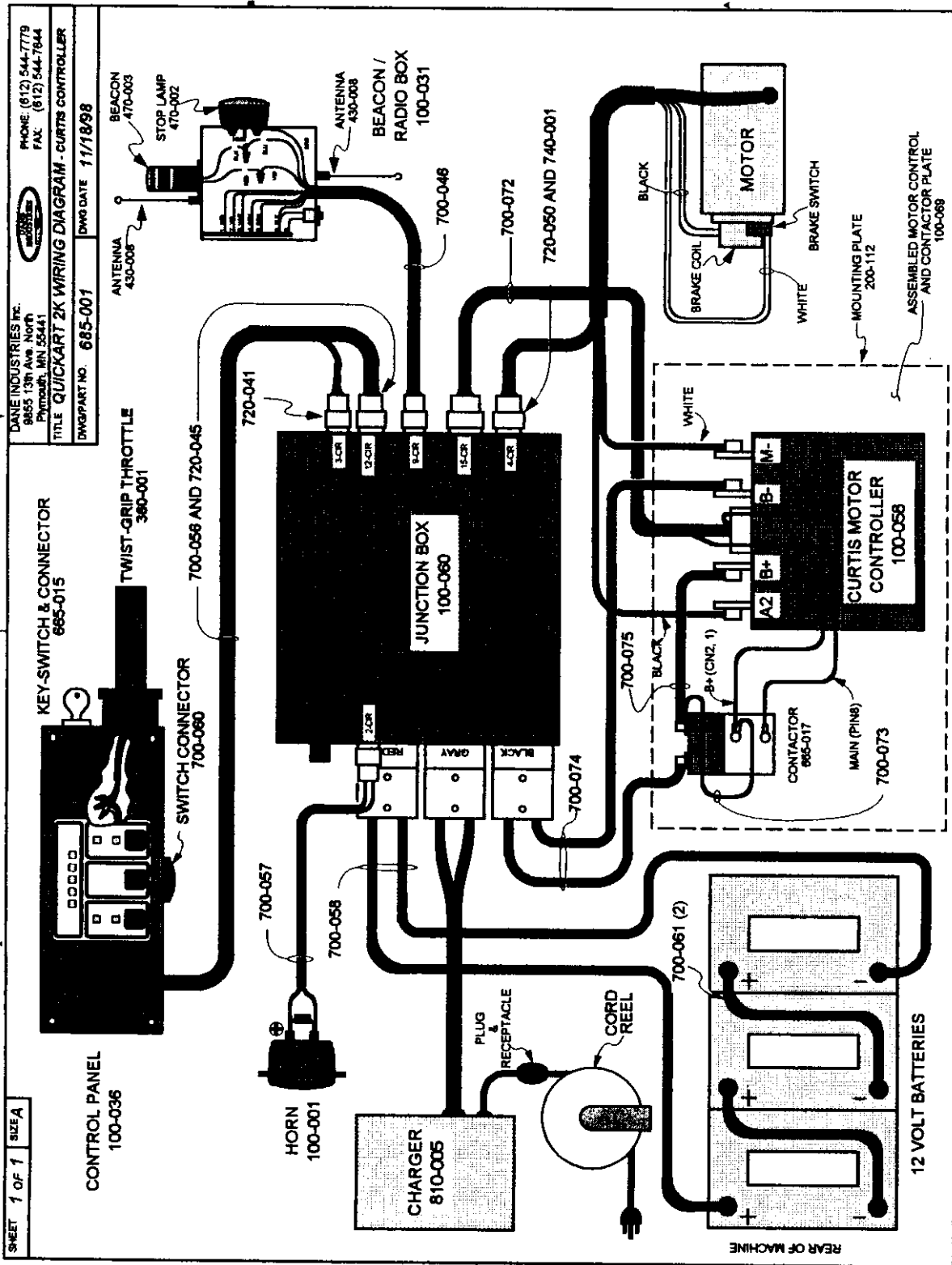
The QuickKart is a productivity-enhancing tool, which will be most effective when it is well maintained and used responsibly. Training of employees is very important. Please read and review this manual. We strongly recommend that a training and operator certification program be developed and implemented to assure adequate training and safe operation.

The use of the Dane Industries' "Cart Depot" creates an integrated system for cart collection, which enhances productivity even further. Additional optional accessories are also available. These include an optional snowplow and salt spreader.

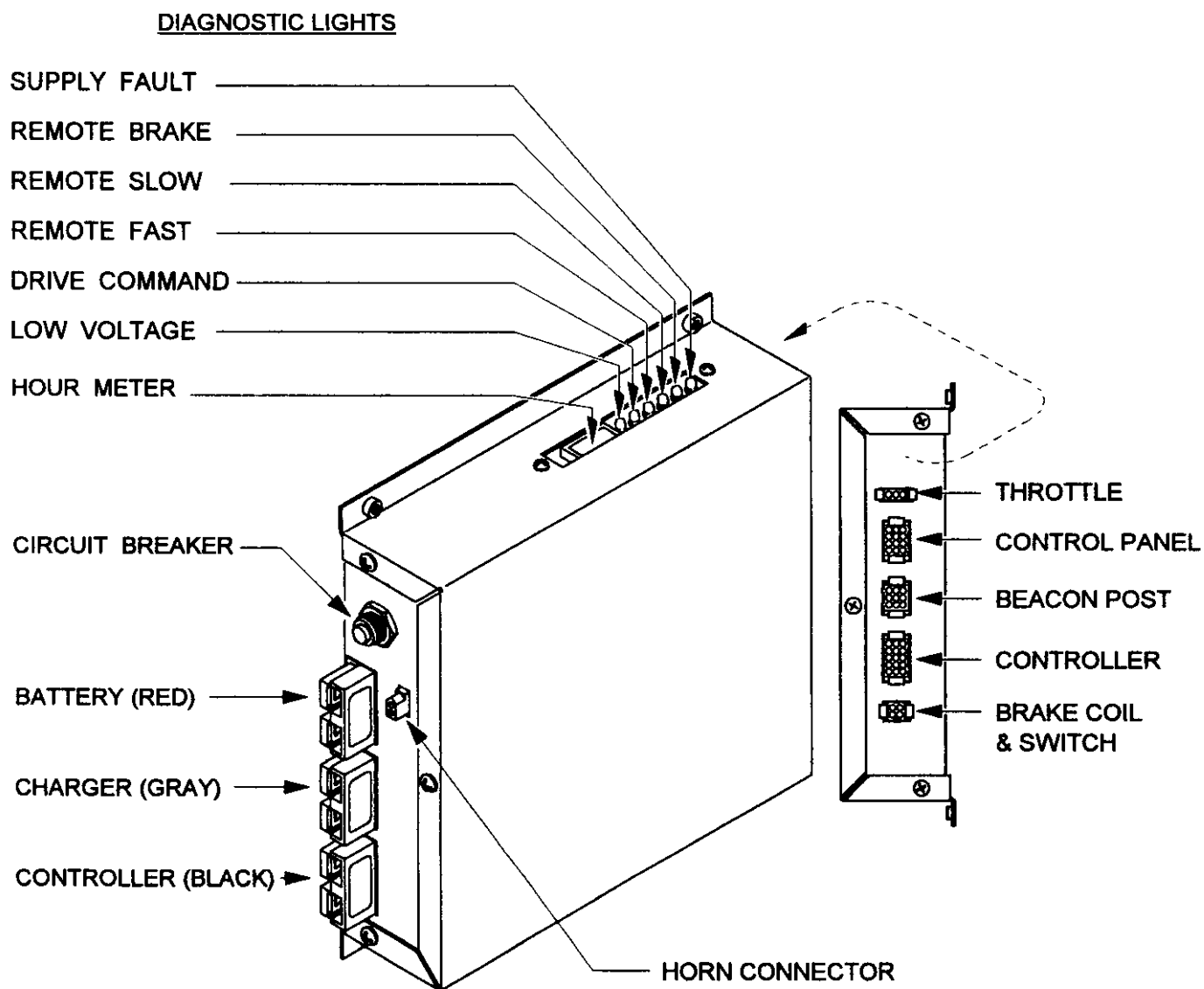
## QUICKART 2000 – TOP VIEW



# SYSTEM WIRING DIAGRAM



# SYSTEM JUNCTION BOX

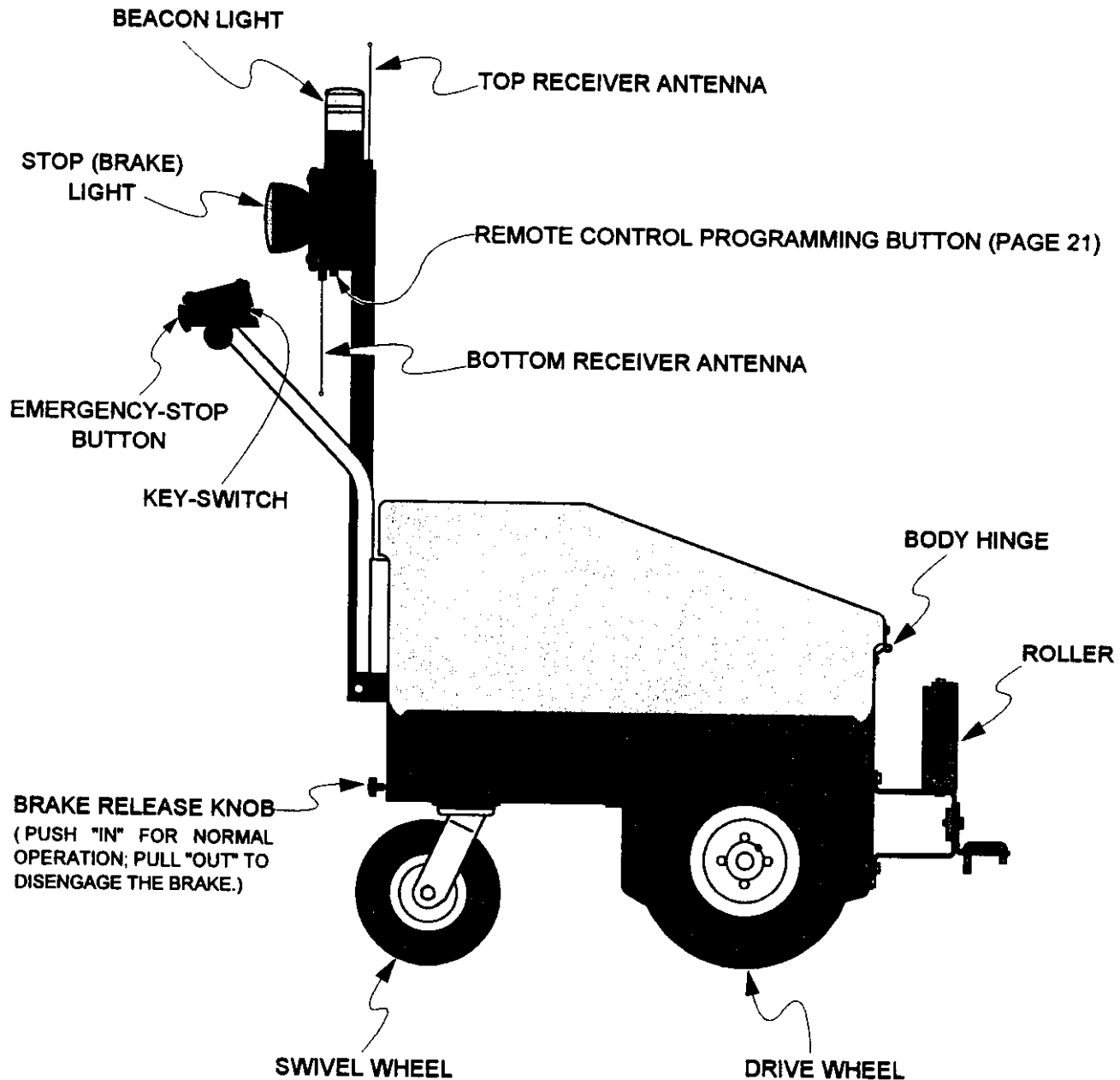


SEE PAGE 6 FOR JUNCTION BOX LOCATION INSIDE MACHINE

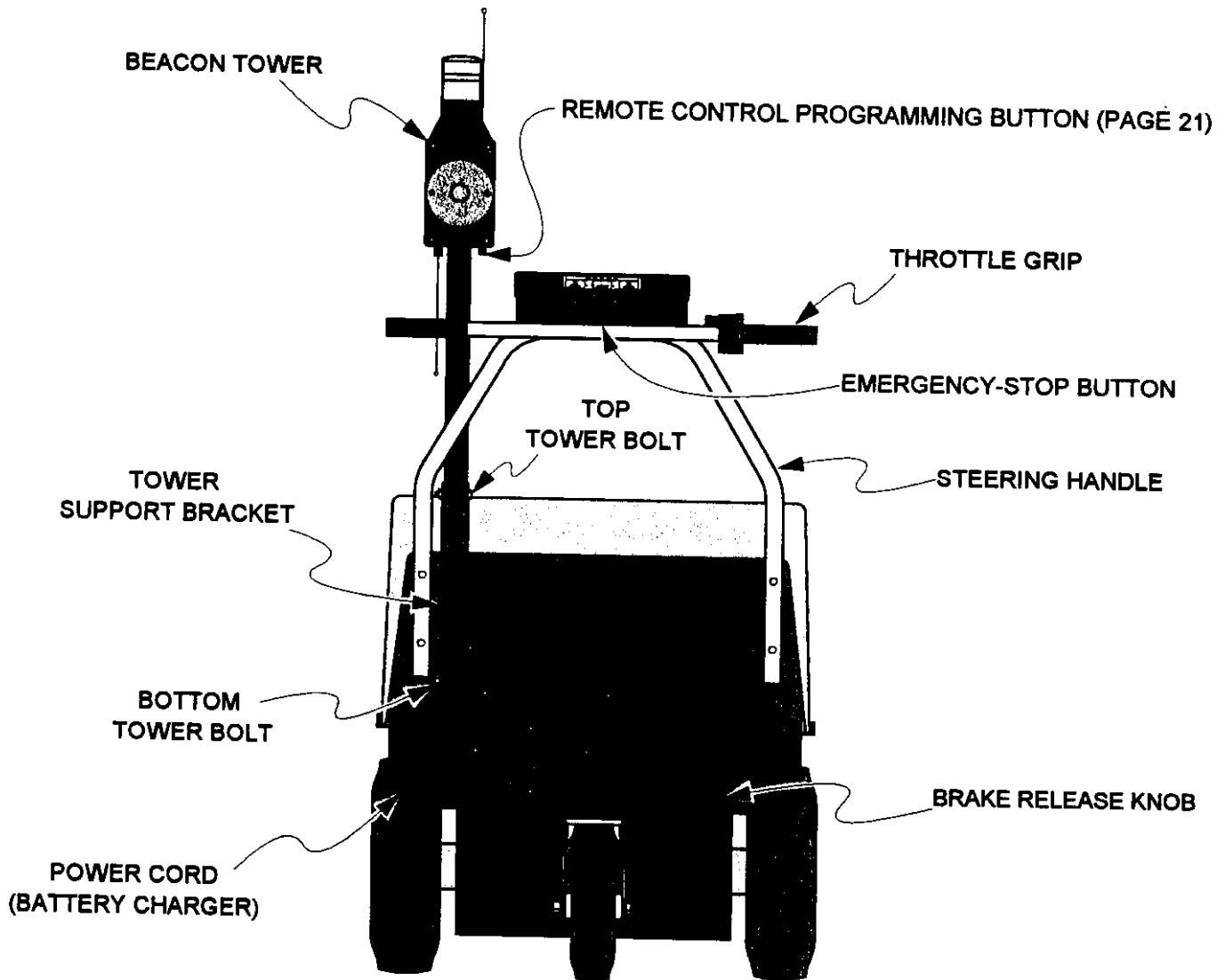
## SYSTEM JUNCTION BOX DIAGNOSTIC LIGHTS

- Supply Fault:** There are two conditions which cause this diagnostic light to come on:
1. When this light remains on (but not flashing) it indicates the machine was turned off by pushing on the blue emergency button on the control panel. The machine will not function while the light is on. To reset, turn the key switch off, then on again. This condition does not require service. (The key switch is the correct way to turn off the machine when it is stored or set aside for periods of time.)
  2. When this light is flashing, it indicates that there is a problem in either the beacon post or the control panel. In a fault condition the "supply fault" light starts flashing as soon as the machine is turned on with the key switch. The machine will not function while the light is flashing. The control panel lights may remain lighted for 3-seconds then shut down but the fault light will remain flashing as long as the fault condition exists.
- To determine if the problem is in the beacon post, turn off the machine with the key switch, unplug the cable leading to the beacon post then turn the key switch on again. If the problem is in the beacon post the machine will operate normally but only in the "manual" mode. If the problem is somewhere in the control panel circuitry, the fault light will continue to flash and the panel lights will go off in about 3 seconds.
- Remote Brake:** LED lights to indicate presence of "Brake" command from receiver. It has no effect in manual mode.
- Remote Slow:** LED lights to indicate presence of "Slow" drive command from receiver. Must light in conjunction with "Drive" Command LED in "Remote" mode in order to operate machine.
- Remote Fast:** LED lights to indicate presence of "Fast" drive command from receiver. Must light in conjunction with "Drive" command LED in "Remote" mode in order to operate machine.
- Drive Command:** LED lights to indicate drive signal is being sent to motor control.
- Low:** LED lights when battery voltage is too low to operate machine properly (below approximately 27 volts).
- Hour Meter:** Hour glass symbol blinks every ten seconds when drive command is present to indicate that meter is timing machine operation.

# QUICKART 2000 – SIDE VIEW

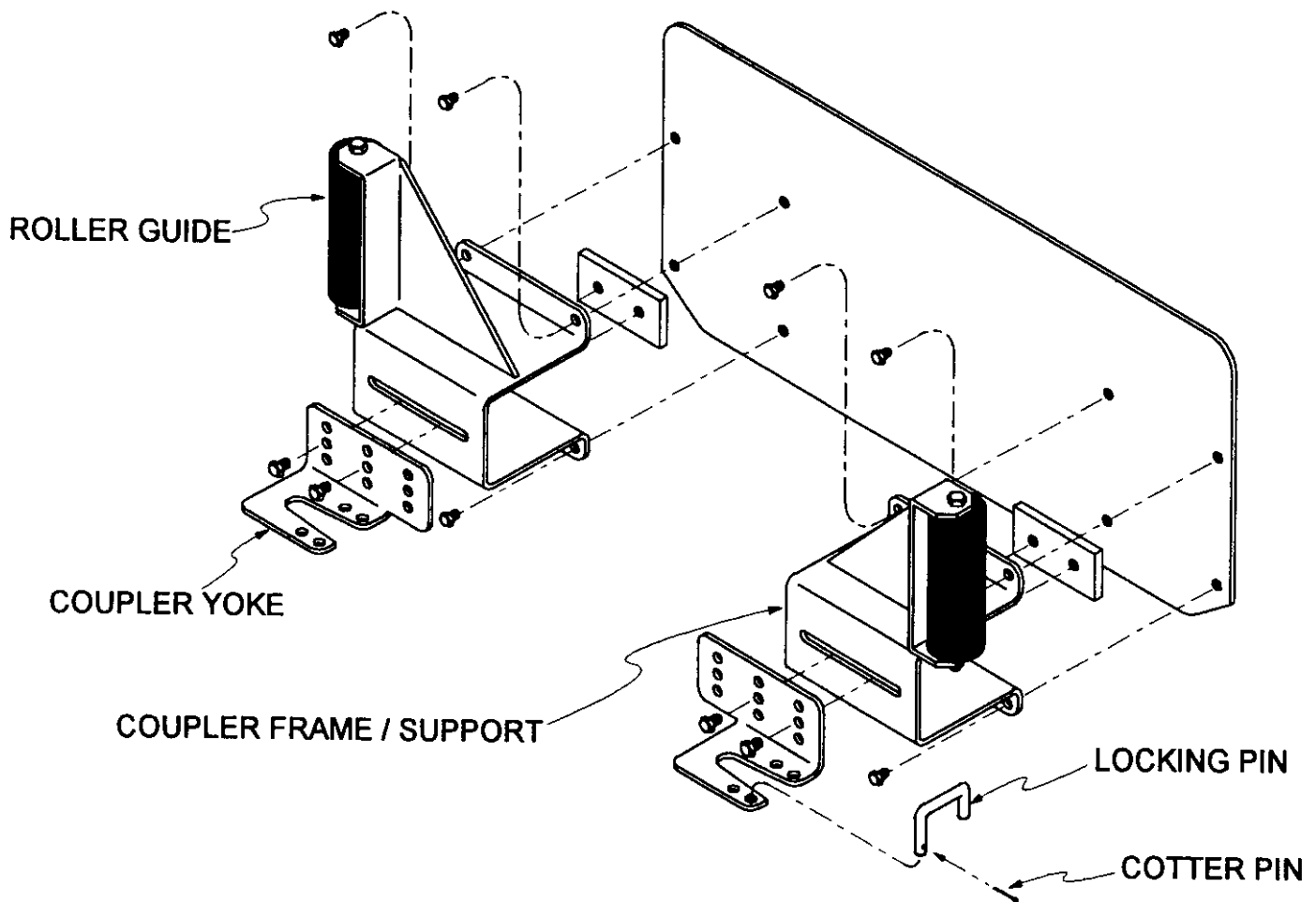


## QUICKART 2000 – REAR VIEW

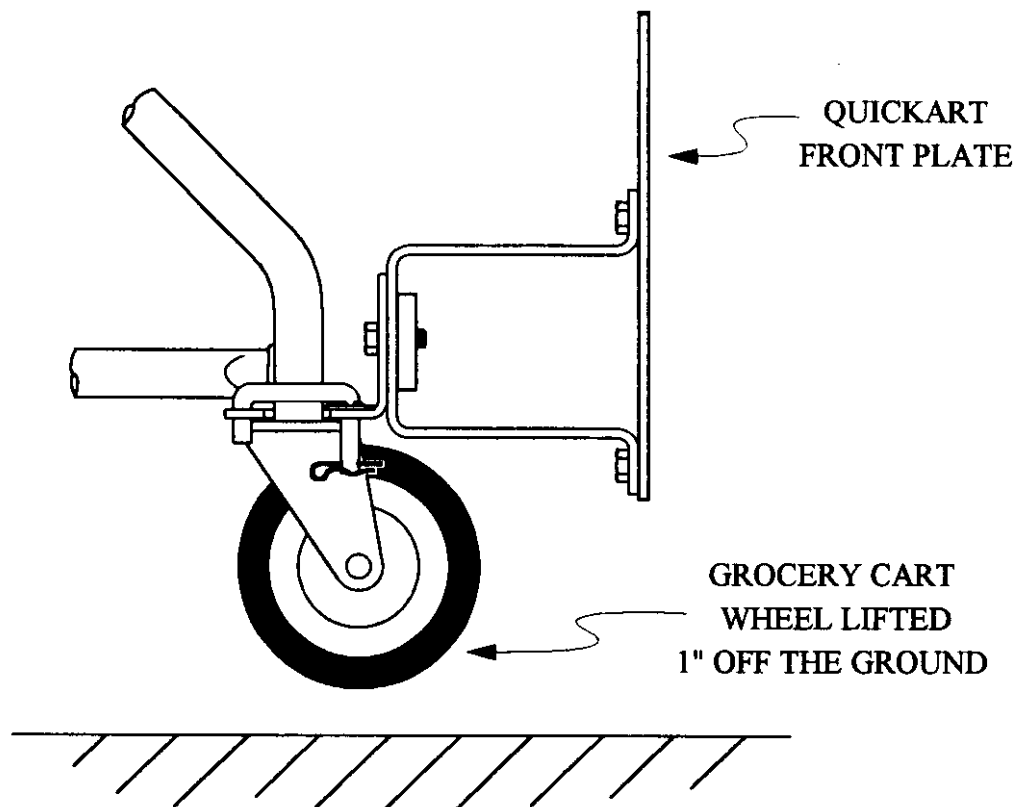




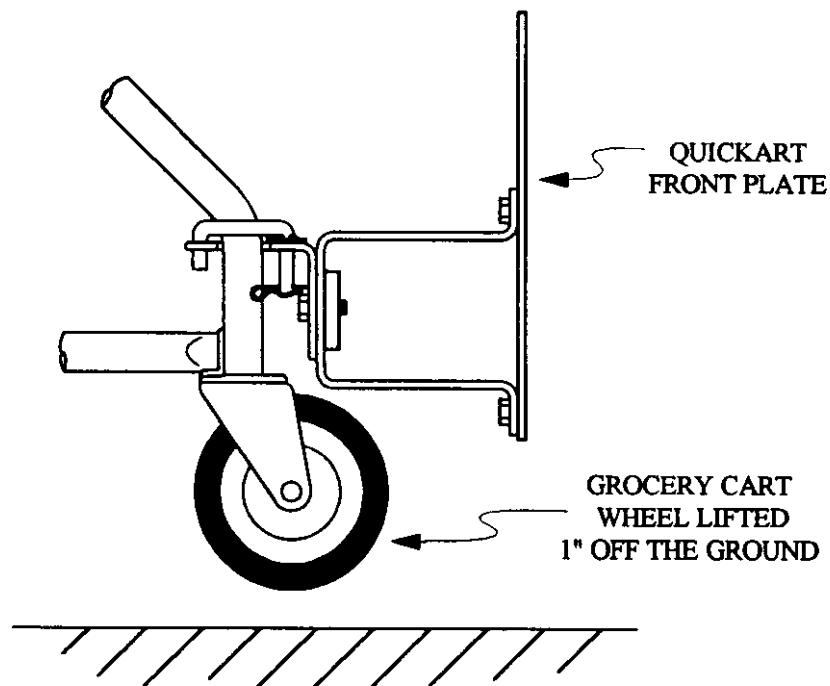
# CART COUPLER & ROLLER GUIDE ASSEMBLY



## ATTACHING THE COLLECTION CART



## OPTIONAL METHOD OF CART ATTACHMENT



## ORIENTATION TO THE QUICKART 2000

**MANUAL MODE:** Manual Mode is defined as operating the QuickKart while walking behind the QuickKart 2000. Direction is controlled by the handle bar. Speed is controlled by turning the twist grip throttle. Direction is controlled by touching the touch pad switch located on the control panel. When the switch is pressed, the direction changes between forward and reverse as indicated by the direction light.

**REMOTE MODE:** (See diagram on page 16.) Remote Mode is defined as operating the QuickKart with the remote control while standing or walking alongside the lead cart of the cart chain coupled to the QuickKart 2000. Steering is controlled by guiding the lead cart in the desired direction. Forward speed, brakes and horn are operated with the hand held radio remote control. While in remote mode, the QuickKart will only move forward.

**CONTROL PANEL:** (See diagram on page 16.) At the top of the Control Panel are 5 lights which show the percent of remaining battery capacity (BATTERY CHARGE LEVEL). When the batteries are fully charged the light at the "100" mark will be lighted. As the QuickKart is used throughout the day, the lights will slowly change from 100 to 80, 60, and 40 until the light for 20 is lighted. The charging level is most accurately shown when the QuickKart is pushing carts. When the 20% capacity light starts to flash on and off, it means there are approximately 4 minutes of remaining power before the QuickKart automatically shuts down. If the QuickKart does shut down, reset the breaker that may allow another 4 minutes to reach the charging station. Recharge the batteries for at least 8 to 10 hours or until fully recharged.

The control panel also includes a series of 4 lights and panel button switches with the following functions:

The light labeled "**MANUAL**" is for manual operation and "**RADIO**" is for remote operation. The push button switch, just below these two lights, will toggle between manual and remote control. The QuickKart will automatically set to manual operation and forward whenever it is turned on. It cannot be moved from manual to remote operation when the QuickKart is moving, only when it is stopped.

## ORIENTATION TO QUICKART 2000 (cont.)

The light labeled "**FORWARD**" is for Forward-Direction operation and "**REVERSE**" is for Reverse-Direction operation. The push button switch, just below these two lights, will toggle between forward and reverse QuickKart direction. The QuickKart will always be set to forward operation whenever it is turned on. The switch will not change the operational direction until the QuickKart is stopped. For safety, the remote mode allows operation only in the forward direction.

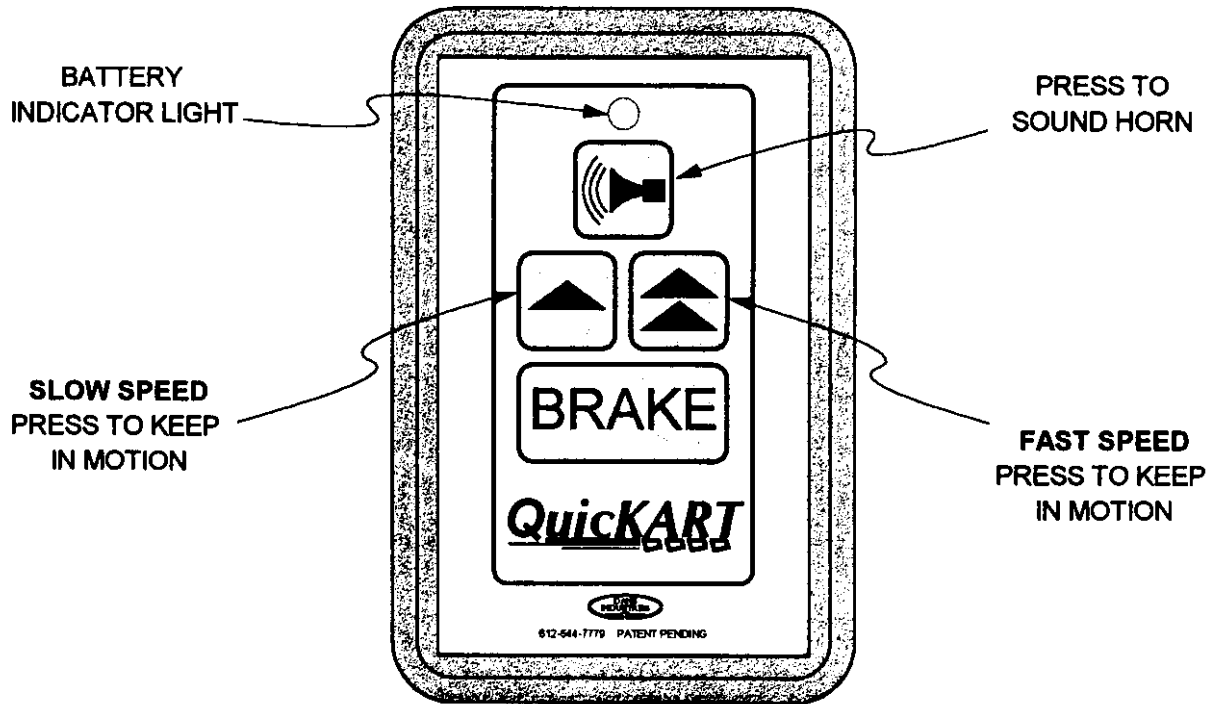
Pressing the "**HORN**" button will sound the horn loudly as long as it is pressed.

A large blue "**EMERGENCY**" button is located on the backside of the control panel. (See top and side views of the QuickKart on pages 6 and 11) This is located so that light contact with the body will bring the machine to an abrupt stop. To restart the machine after the "**EMERGENCY**" button has been activated, turn off the key switch, wait 2 seconds, then turn it back on.

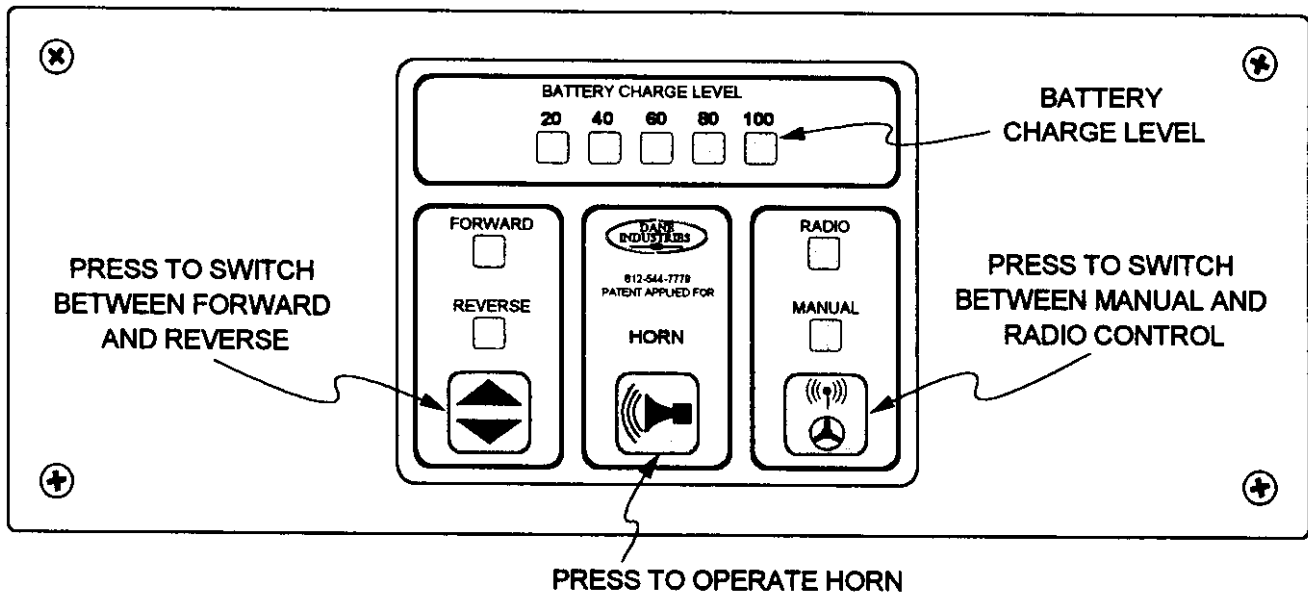
**STEERING:** In Manual Mode, the QuickKart 2000 is turned by exerting light pressure on the handlebars, to the left or right, similar to steering a bicycle. In Remote Mode, steering is controlled by guiding the lead cart in the desired direction.

**ACCELERATION AND BRAKING:** Acceleration and braking of the QuickKart are controlled by the twist grip throttle located on the right handle bar. QuickKart speed is controlled by twisting the throttle, similar to a motorcycle throttle. Braking action occurs as pressure is released. Braking force can be controlled for quick or gradual stops. Twisting the grip slowly brings the QuickKart to a gradual stop. Releasing it rapidly stops the QuickKart very quickly. Maximum braking force is applied when the throttle is fully released.

## HAND-HELD REMOTE CONTROL



## CONTROL PANEL



## OPERATION OF THE QUICKART 2000

### **MANUAL MODE:**

To operate the QuickKart 2000 in the Manual Mode, perform the following steps:

- 1) Insert the key into the key-switch located on the control panel. Turn the key clockwise to turn the QuickKart "on".
- 2) Lights on the control panel will show the system status (see illustration on page 16). Confirm that all systems are working properly.
- 3) In manual operation, while standing behind the machine, both hands on the handles, slowly twist the throttle control and the QuickKart will start to move forward. Slowly release the pressure on the throttle control and the QuickKart will slow to a stop. When the throttle control is fully released, the electronic brakes will be applied. When moving forward or backward, a sudden release of the throttle control will cause the automatic brake to bring the QuickKart to a sudden halt.
- 4) To change the direction of travel, the QuickKart must be stopped. Press the direction switch on the control panel and the light for the selected direction will be displayed.
- 5) To turn the power off, press the emergency stop button or turn the key counter-clockwise. **Note: Do not leave the machine "ON" and do not leave the key in the switch when unattended.**
- 6) The collection of grocery carts begins by walking the QuickKart into the parking lot to a location where customers have left carts. To attach the first cart, open the locking U-pin on the left side of the cart coupler assembly. Position the rear of the first shopping cart so that its vertical rear frame is aligned with the yoke openings on the coupler assembly. Lift the cart slightly off the ground and move it sideways until it engages both coupler yokes. Then, put the locking U-pin back into place to secure the shopping cart. It is recommended that the first cart be left permanently in place or if removed at night, identified, so the same cart is always attached to the cart. The coupler yokes can be adjusted up and down and from side to side to accommodate various types and sizes of grocery carts. See illustration on page 13.
- 7) Additional shopping carts can now be collected to form a train of a maximum of 40 carts.

## OPERATION OF QUICKART (cont.)

### REMOTE MODE:

The QuickKart can be operated in the remote mode by pressing the "**Radio/Manual**" switch located on the control panel.

- 1) While in remote mode, only one person is needed to collect shopping carts. This person gathers the carts and adds them to the train while using the remote control to control forward speed, braking and the warning horn. It is recommended that carts be formed into a line and then the machine brought up to the line in the "**SLOW**" speed to nest the carts. Continue to use the "**SLOW**" speed while operating near entrances and near store guests. The "**SLOW**" speed is .70 mph. The "**FAST**" speed allows movement at a safe walking pace of 2.80 mph as carts are returned to the store.
- 2) Only one button of the remote control is usable at a time. Press the "**SLOW**" or "**FAST**" button for the speed desired for the existing conditions. The QuickKart will briefly coast when the control buttons are released, helping to prevent a separation of carts. If a sudden stop is required, press the "**BRAKE**" button. Sudden stops will require the operator to hold back the lead cart at the front of the train to prevent cart separation.
- 3) When the QuickKart 2000 is stopped, the parking brake automatically engages. This prevents the QuickKart from rolling on slopes or being pushed manually. If it is necessary to push the QuickKart (i.e. dead battery or machine not working), the parking brake can be released by pulling the release lever marked "**BRAKE RELEASE**" on the lower right corner at the back of the machine. Once the parking brake is released, the QuickKart will not operate until the parking brake is pushed back in. It is recommended that the brake be released only if batteries are dead and manual pushing is required.
- 4) The QuickKart 2000 follows the train of shopping carts as guided by the cart attendant. The actual turning radius of the cart chain is a function of the design of the shopping carts being used. The tighter the carts nest together the longer the turning radius will be. After some experience the QuickKart operator will become familiar with this and be able to judge what turns will be practical. In practice the operator places one hand on the cart, at the front of the train, walking along side and guiding the cart in the desired direction. The other hand is used to operate the hand held remote control transmitter. When turning the cart chain it is easier to maintain safe footing by leaning against the lead cart rather than pulling.

## BATTERY CHARGING

The QuicKart 2000 is powered by three, 12-volt, 130 ampere/hour batteries. Under normal usage they will power the QuicKart for 10 or more hours, when the ambient temperatures are above approximately 40 degrees F. Colder temperatures will reduce the operating time of the batteries and increase the charging time. To optimize battery power, store the QuicKart in a room with a temperature of at least 50 degrees F.

To recharge the batteries, park the QuicKart in a well-ventilated location near an electrical outlet. The QuicKart must be turned off and the key removed.

FIRST, pull out the charger plug located at the lower left rear of the QuicKart. The plug is part of a retractable reel located inside the body.

SECOND, connect the charger's 6-foot power cord to a wall receptacle. The battery charger will automatically shut off when the batteries are fully charged. This takes between eight to ten hours, depending upon initial state of charge and battery condition. **Make sure the power to the wall receptacle is not turned off during the nightly recharging time.**

To put the QuicKart back into service, after the batteries are fully charged, disconnect the charger's power cord from the wall receptacle and allow the reel to retract the plug into the QuicKart's body.

The meter or lights on the front panel of the battery charger shows the charging rate. Fully discharged batteries will result in a charging rate of 10 to 20 amperes. As the batteries become fully charged this rate will drop to less than 10 amperes.

**(Also refer to the Battery Charger Operating Instructions and Limited Warranty in Tab 2 section of this manual)**

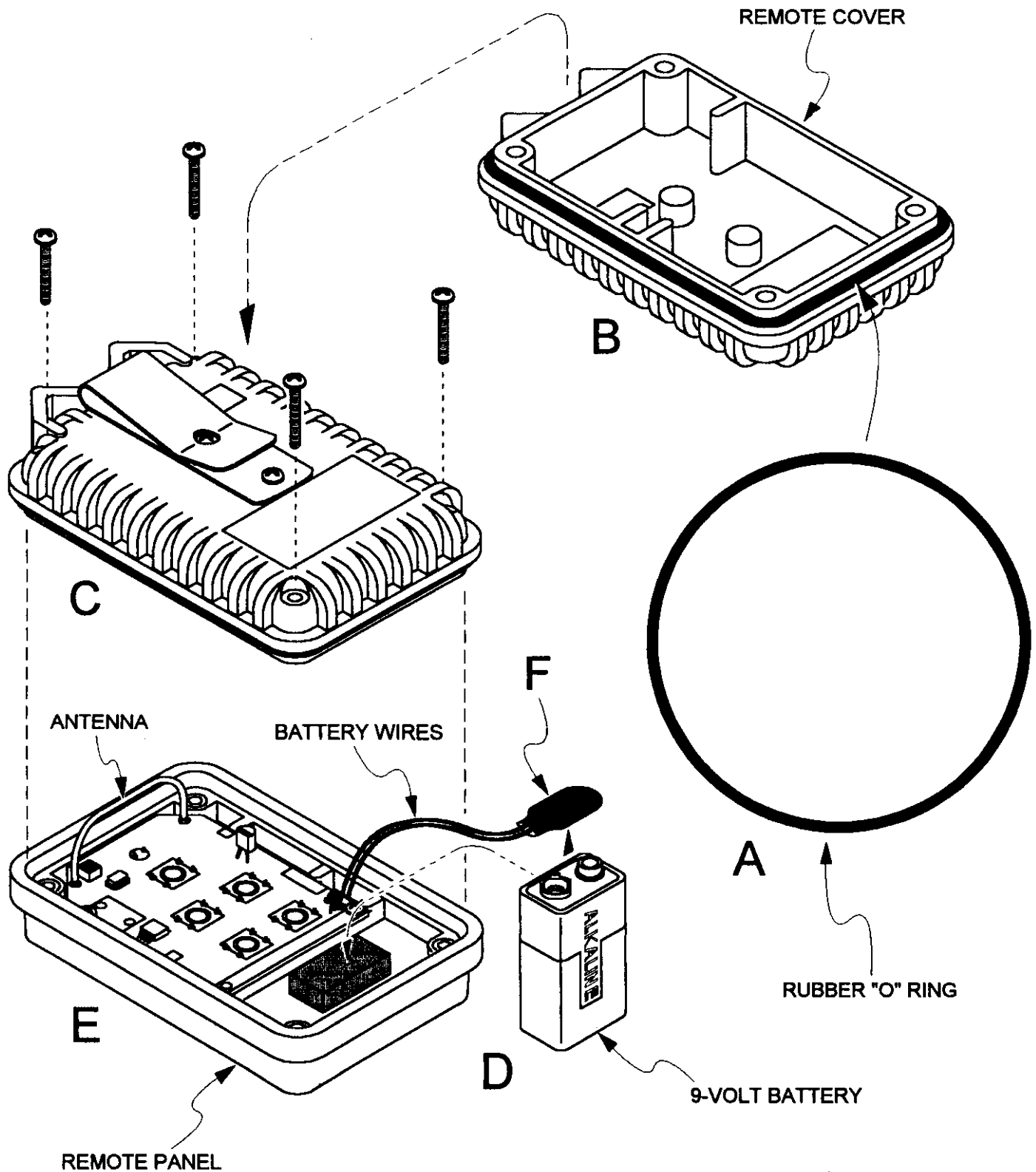


## REMOTE CONTROL: BATTERY CHANGING

**Refer to Diagrams on page 21.**

1. The remote control is to be taken apart only when the battery needs replacing. There are no adjustments or switches inside the module. As long as the small light on the remote panel lights-up the battery does not need replacing.
2. To open remote control, place the control panel face down on a table top and use a medium size Phillips screw driver to remove the four (4) screws from the corners of the remote's back cover, figure "C".
3. After the screws are removed, leave the remote face down and carefully pry the back cover, figure "C", off of the control panel side; use a 10-cent coin or similar tool inserted in the slot where the front and back covers meet. Make sure the cover is carefully lifted straight up so it will not bend or break the antenna wire (soldered to the printed circuit board) or allow the battery to fall out resulting in damaging or breaking the connecting wires.
4. To replace the battery, remove the wire clip, figure "F", that attaches to the battery. DO NOT pull on the black or red wire or allow the battery to fall free and strain these same wires. Attach a new 9-volt battery.
5. Properly dispose of the old battery in an environmentally correct depository.
6. Examine the inside of the remote for any signs of condensation or water. If signs of moisture do appear, keep the back cover off the remote for a few hours to allow it to dry out.
7. Both ends of the small internal loop antenna wire are to be anchored firmly to the circuit board. If one or both of the ends are loose, re-attach the back cover and return the remote control to Dane Industries for repair.
8. The insides of the remote are protected from water penetration with an "O" ring, figure "A" sealing the cover and panel at the point they overlap. The O-ring is normally round but is pulled into a rectangular shape as it is placed over the lip of the remote cover, figure "B".
9. With the "O" ring stretched over the base-mounting flange, figure "C"; place the back cover on the front panel. Make sure the "O" ring stays in place as the screws are inserted and tightened.
10. Test to make sure the panel light comes on when one of the four function switches is pushed. (Make sure the QuickKart machine is turned off to prevent an accident).
11. Reprogram the remote control as described on page 22.

## REMOTE CONTROL: BATTERY CHANGING



## PROGRAMMING THE REMOTE CONTROL

Each hand-held remote control transmitter operates on a unique pre-programmed code. For the QuicKart to operate in the Remote Mode, the receiver, which is in the beacon tower, must be programmed to match the hand held remote control. Every time the battery in the remote control is replaced, the remote control needs to be reprogrammed to match the receiver code in the beacon tower. If the QuicKart stops responding to the remote control, check the status of the remote battery by depressing one of the remote buttons. If the red LED light does not illuminate, change the battery and reprogram the remote control as follows:

- 1) Turn on the QuicKart.
- 2) Switch to "**RADIO**" on the control panel.
- 3) Hold remote about arms length from the beacon post.
- 4) Simultaneously push these three buttons:
  - Rubber button located on the underside of the square box on the beacon post (see pages 10 and 11);
  - Brake button on the hand-held remote (page 16);
  - Horn button on the hand-held remote (page 16).
- 5) The horn should sound indicating the reprogram is complete and the QuicKart is ready for operation.
- 6) If the horn did not sound, retry the above steps making sure that the switch on the control panel is on "**RADIO**". If the horn still did not sound, you can also determine if the reprogram was successful by pressing the slow button on the remote to see if the QuicKart now responds to the remote signal.

## QuicKart 2000 MAINTENANCE

### **Check the QuicKart daily, for safe operation.**

Routine maintenance should only be performed by those permitted by federal and state age regulations. Repairs should only be completed by Dane Industries or an authorized service technician.

**Batteries:** Recharge to a full charge after each day's usage. Inspect and clean connections weekly. Check for electrolyte level weekly. **Federal law requires that you must be at least 18 years old to service the batteries of the QuicKart.**

**Throttle Control:** (Acceleration and braking) Check for proper operation every time the QuicKart is operated.

**Front Body Hinge:** Oil monthly

**Safety Beacon and Stop Light:** Check for proper operation every time the QuicKart is operated.

**Steering:** Check for play in the handle.

**Tires:** Tires are foam filled and will not accept air. General tire conditions should be checked weekly. Replace when the tread on the tires is worn almost smooth.

**Wheels:** Check front wheels monthly for bent rim and missing or loose lug nuts. Apply grease to rear swivel wheel each month using a standard grease gun.

**Wiring:** Check all wiring for loose connections and broken/missing hardware weekly.

If the QuicKart malfunctions in any way, turn it off and remove the key. Immediately report the malfunction to the appropriate store manager as well as Dane Industries. Do not use the QuicKart until it has been repaired by an authorized service technician.

### **WARNING**

**Do not permit open flame, sparks or smoking  
during maintenance.**

**Adequate ventilation is essential for safety.**

**Do not lay metal objects on the batteries.**

## CHANGING FRONT TIRES

### **FRONT DRIVE TIRES:**

Turn QuicKart off and remove key.

QuicKart must be on a flat surface.

Use protective eye wear at all times.

- 1) Slightly loosen the four (4) lug nuts, about 1/2 turn, from the wheel needing service. Use a 9/16-inch socket. **IMPORTANT:** Do not remove any of the nuts, only slightly loosen them while the wheel is still on the ground.
- 2) Use a jack to lift the front of the QuicKart off the ground approximately 2 to 3 inches. Insert a sturdy and stable block under the frame to hold it securely in this elevated position.
- 3) Unscrew the four 9/16-inch, front wheel lug nuts and place them in a location where they will not become lost. Remove the wheel. The new or repaired wheel is placed back on the front hub with the tire stem facing out. Replace the 4 lug nuts with the beveled side toward the inside and tighten.
- 4) Using the jack, lift the QuicKart off the supporting block (see item #2 above). Remove the block and use the jack to lower the QuicKart to the ground. Tighten the 4 lug nuts again ensuring that they are tightened to a minimum of 50 foot-pounds torque.

## CHANGING REAR TIRE

### **REAR CASTERED TIRE:**

Turn QuicKart off and remove key.

QuicKart must be on a flat surface.

Use protective eye wear at all times.

- 1) Lift the back of the QuicKart so the rear castered wheel is approximately 2 inches off the ground. This is accomplished by using a jack under the rear frame of the QuicKart, in the center. Once the QuicKart is lifted, place a sturdy and stable block in each corner then lower the jack so the weight of the QuicKart is resting on the blocks.
- 2) With two ¾" wrenches, remove the nut on the bolt at the center of the wheel hub. With the nut removed, pull the bolt out and the wheel will be free from its position in the yoke. Save the hardware and use it when replacing the wheel.
- 3) When replacing the wheel, insert the center sleeve in the center and place the plastic washer on each side. Slide the wheel into the fork, insert bolt, apply nut and tighten.
- 4) Using the jack, lift the QuicKart off the supporting blocks (Item #1 above), remove the blocks then lower the QuicKart to the ground.

**Note:** Variations in the hardware configuration may occur. Save all hardware and use it as it was removed when replacing wheel.

## TECHNICAL SPECIFICATIONS

Weight (with batteries) -----	510 pounds
Length -----	44 inches (3 feet, 8 inches)
Width -----	26 inches (2 feet, 2 inches)
Height (to top of antenna wire on mast) -----	56 inches (4 feet, 8 inches)
Height (to top of folded antenna mast) -----	42 inches (3 feet, 6 inches)
Front wheel tread -----	22 inches
Wheel base -----	19.5 inches forward 14 inches reverse
Turning radius - -----	less than 2 feet
Tires, front -----	12 inches diameter
Tires, rear -----	8 inches diameter
Chassis -----	Welded steel with powder coating
Body -----	Fiberglass
Safety -----	10 Amp secondary breaker Automobile type horn Beacon warning light Brake light Emergency stop switch Automatic brake Unique remote security code

## TECHNICAL SPECIFICATIONS (cont.)

Brakes -----	Electronic dynamic Mechanical
Electrical system -----	Three 12-volt batteries 130 amp hours each
Charger -----	Input 120 VAC 36 VDC, 10 amperes max.
Speed -----	Forward            0 – 3.0 MPH max. Reverse            0 – 1.5 MPH max. Remote <b>SLOW</b> 0.70 MPH Remote <b>FAST</b> 2.80 MPH

### **REMOTE CONTROL:**

Power Requirement: Standard 9-volt radio battery, 10 mA current draw

Range: 100 feet maximum



## QUICKART WARRANTY

2/1/99

- 1) Parts:** One (1) Year Limited Warranty from date of shipment.
- 2) Labor:** Ninety (90) Day Limited Warranty from date of shipment
- 3) Batteries:** Covered by the manufacturer's warranty.

### 1) PARTS – Limited Warranty

All parts except batteries (see Section 3 below), tires, cord reel and circuit breakers needing resetting are warranted by Dane Industries to be free of defects in material and workmanship for a period of one (1) year from date of shipment. This warranty **does not include** tire wear or wear and tear caused by abuse, negligence, freight damage or damage caused by improper use or care, or by external sources such as fires, floods or other acts of God.

Should any component fail during the first year of ownership except those mentioned as not under warranty, the component in question is to be returned to Dane Industries or to an authorized Dane Industries representative for inspection. If the component has failed due to a defect in material or workmanship, it will be exchanged or repaired at the discretion of Dane Industries at no charge to the QuickKart owner.

Dane Industries, Inc. will cover the costs of shipping parts covered under warranty to the customer based on UPS standard ground rates.

### 2) LABOR – Limited Warranty

Dane Industries will cover labor charges for work performed in the field for ninety (90) days from the date of shipment as a result of defects in materials or workmanship. Charges incurred for failure to charge and maintain the batteries in the QuickKart or change the battery in the hand held remote are exempted. Non-warranty service performed during the same visit as for warranty service is not covered by the warranty.

### 3) BATTERIES – Manufacturer's Warranty

The QuickKart has several battery options, and each battery offers different warranty features. The Standard equipment in the QuickKart 4000 is the Trojan T105 lead acid battery. The QuickKart 2000 standard equipment battery is the Delco M27 maintenance free battery. The batteries have the following warranties:

*Trojan T-105:* 18-month free replacement for failure due to defective parts or workmanship.

*Delco M27MF:* 12 month free replacement for any failures due to defective parts or workmanship.

# OPERATING INSTRUCTIONS LESTRONIC II BATTERY CHARGER (FOR BUILT-IN OR PORTABLE CHARGERS)

**LOOK FOR THIS TRIANGULAR SYMBOL TO POINT OUT SAFETY PRECAUTIONS. IT MEANS BECOME ALERT - YOUR SAFETY IS INVOLVED. IF YOU DO NOT FOLLOW THESE SAFETY INSTRUCTIONS, INJURY OR PROPERTY DAMAGE CAN OCCUR. SAVE THESE IMPORTANT INSTRUCTIONS.**



## IMPORTANT SAFETY INSTRUCTIONS

1. **SAVE THESE INSTRUCTIONS** - This manual contains important safety and operating instructions for your battery charger.
2. Before using battery charger, read all instructions and cautionary markings on (1) battery charger, (2) battery, and (3) product using battery.
3. **CAUTION - TO REDUCE RISK OF INJURY, CHARGE ONLY LIQUID ELECTROLYTE (WET) LEAD ACID RECHARGEABLE BATTERIES. OTHER TYPES OF BATTERIES MAY BURST CAUSING PERSONAL INJURY AND DAMAGE.**
4. Do not expose charger to rain or snow.
5. Use of an attachment not recommended or sold by the battery charger manufacturer may result in a risk of fire, electric shock, or injury to persons.
6. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger.
7. Make sure cord is located so that it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
  - a. Pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
  - b. Extension cord is properly wired and in good electrical condition.
  - c. Wire size is large enough for AC ampere rating of charger.
9. Do not operate charger with damaged cord or plug - replace it immediately.
10. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified service center.
11. Do not disassemble charger; take it to a qualified service center when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

11. To reduce risk of electric shock, unplug charger from a live outlet or disconnect AC power to the outlet before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.

## INTRODUCTION

This battery charger is a self-regulating charger with a minimum of moving parts, designed for long, trouble free service. Built-in line voltage compensation produces a consistent output when the AC supply voltage varies by as much as 10% from nominal. The charger utilizes convection cooling which maximizes the reliability and minimizes any maintenance costs. **ONLY LIQUID ELECTROLYTE (WET) LEAD ACID BATTERIES** should be recharged with this charger to ensure superior battery performance and life. A patented

electronic circuit turns the charger on and off automatically. When the battery has reached its maximum state of charge, the circuitry will turn the charger off.

## RECEIVING AND INSTALLATION

When the charger is received, portable chargers should be checked for possible in-transit damage. If any damage is found, it should be reported as a claim to the carrier.

Proper installation of the charger is important in order to achieve good charger performance and to prevent damage to the charger and batteries. The charger should be located in a clean, cool, dry and well ventilated area. To permit free air flow for convection cooling, allow three inches minimum between the charger and any wall and six inches between the charger and other equipment. Position the charger on a foundation of stone, brick, concrete or grounded metal.

**▲ DANGER - TO REDUCE THE RISK OF FIRE, DO NOT USE THE CHARGER NEAR FLAMMABLE MATERIALS OR VAPORS.**

## AC INPUT AND GROUNDING INSTRUCTIONS

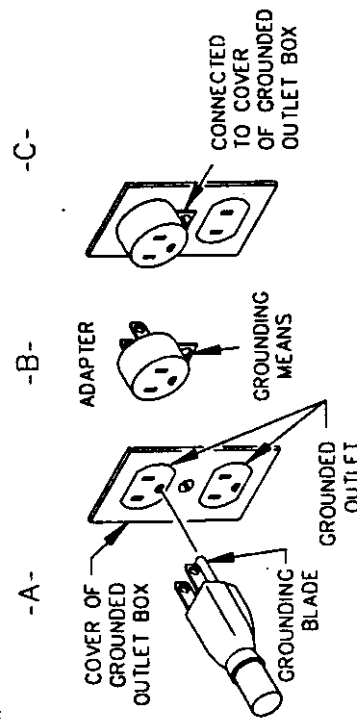
**▲ CAUTION - TO REDUCE THE RISK OF ELECTRIC SHOCK OR FIRE, DISCONNECT POWER TO RECEPTACLE BEFORE INSTALLING OR REMOVING UNIT.**

FOR 120 VAC NOMINAL, 60 Hz CHARGERS:

**GROUNDING INSTRUCTIONS** - Chargers should be grounded to reduce the risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The installed plug must be plugged into an outlet that is properly installed and grounded in accordance with all electrical codes and ordinances.

**▲ DANGER - NEVER ALTER AC CORD OR PLUG PROVIDED IF IT WILL NOT FIT OUTLET. HAVE A PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN. IMPROPER CONNECTION CAN RESULT IN A RISK OF ELECTRICAL SHOCK.**

This battery charger is for use on a nominal 120 volt circuit and has a grounding plug, which looks like the adapter illustrated in figure A. A temporary adapter, which looks like the adapter illustrated in figures B and C, may be used to connect this plug to a two-pole receptacle as shown in figure B if a properly grounded outlet is not available. The temporary adapter should be used only until a grounded outlet can be installed by a qualified electrician.



**NOTE: The use of the adapter shown in figures B and C is not permitted in Canada.**

**⚠ DANGER - BEFORE USING ADAPTER AS ILLUSTRATED, BE CERTAIN THE CENTER SCREW OF OUTLET PANEL IS GROUNDED.**

The green-colored rigid ear or lug extending from adapter must be connected to a properly grounded outlet. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet plate and make ground connection to grounded outlet.

**FOR 230 VAC NOMINAL, 50 Hz CHARGERS**

This battery charger must be grounded to reduce the risk of electric shock. This charger is equipped with an electrical cord having an equipment-grounding conductor which must be connected to the ground prong of an appropriate plug for a nominal 230 Volt, 50 Hertz circuit. This plug must be connected to an appropriate AC outlet which is properly installed and grounded in accordance with the National Electrical Code and all local codes and ordinances.

**EXTENSION CORD REQUIREMENTS**

Always use a three conductor No. 12 AWG heavy duty cord with ground, properly wired, in good electrical condition and keep it as short as possible. Make sure the pins on the plug of the extension cord are the same number, size and shape as the AC plug of the battery charger. The use of an improper extension cord could result in a risk of fire or electrical shock. Locate all cords so they will not be stepped on, tripped over or otherwise subjected to damage or stress.

**OPERATING INSTRUCTIONS**

1. Connect AC supply cord to a properly grounded single phase outlet of the proper voltage and frequency as specified on the charger front.
2. Connect the DC output plug, if not already connected, by grasping the plug body and pushing it straight into the receptacle until it is fully engaged. The black wire must be connected to battery negative (-), and the red or white wire to battery positive (+). Make sure all connections are clean and tight.
3. The charger will start after a short delay as indicated by the transformer hum and the ammeter movement.

**⚠ WARNING - LEAD ACID BATTERIES GENERATE GASES WHICH CAN BE EXPLOSIVE. CHARGE ONLY IN WELL VENTILATED AREAS. DO NOT DISCONNECT CHARGER DC OUTPUT TERMINALS FROM BATTERY WHEN CHARGER IS ON. THE RESULTING ARCING AND BURNING COULD CAUSE THE BATTERY TO EXPLODE. KEEP SPARKS, FLAME AND SMOKING MATERIALS AWAY FROM BATTERY.**

If the charger must be stopped, always disconnect the AC cord from its outlet to terminate the charge.

4. Monitor the ammeter for correct charge rate. Normal charging at the finish charge rate for the last 3 to 5 hours is important to achieve equalization of all battery cells every time the batteries are charged. New batteries or batteries charged in cold temperatures (below 50 degrees F) will require more time to achieve full charge.
5. Charger turns off automatically when battery is fully charged. Charge time varies with battery size and depth of discharge. Allow 8 hours for normal charging. Severely discharged batteries may require up to 12 hours to be properly charged and equalized. After the charger has turned off, disconnect the AC supply cord from outlet, then disconnect the DC output plug from the battery on portable chargers only.

**⚠ CAUTION - DO NOT LEAVE CHARGER ON WHILE UNATTENDED FOR MORE THAN TWO CONSECUTIVE DAYS. SEVERE OVERCHARGING AND POSSIBLE DAMAGE TO BATTERIES WILL RESULT IF CHARGER SHOULD FAIL TO TURN OFF.**

**MAINTENANCE INSTRUCTIONS**

The battery charger requires minimal maintenance. It should be kept clean and all connections are to be tightly secured. In the event of intermittent operation, examine and tighten, if necessary, all connections. **BE SURE THE CHASSIS IS SECURELY GROUNDED.** If any problems cannot be resolved, consult a qualified service center.

Observe the following battery cycle maintenance procedures to obtain good performance and maximum cycle life.

1. Always observe the following personal safety precautions when working with lead acid batteries:

- a. Someone should be within range of your voice or close enough to come to your aid when you work near a battery.
- b. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- c. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.
- d. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood eye with running cold water for at least ten minutes and get medical attention.
- e. NEVER smoke or allow a spark or flame in the vicinity of batteries.
- f. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause explosion.
- g. Remove personal metal items such as rings, bracelets, necklaces, and watches when working with a lead acid battery. A lead acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.
- h. NEVER charge a frozen battery.

**⚠ DANGER - TO REDUCE RISK OF ELECTRIC SHOCK, ALWAYS DISCONNECT THE AC SUPPLY CORD FROM ITS OUTLET AND THE DC OUTPUT CORD FROM THE BATTERY BEFORE ATTEMPTING ANY MAINTENANCE (CHANGING FUSES, ETC.) OR CLEANING OF THE BATTERY CHARGER.**

2. New batteries should be given a full charge before their first use because it is difficult to know how long batteries have been stored.
3. Limit use of new batteries for first five cycles. New batteries are not capable of their rated output until they have been discharged a number of times.
4. Do not excessively discharge batteries. Excessive discharge can cause polarity reversal of individual cells resulting in complete failure shortly thereafter. Limited use of new batteries will minimize the chance of cell reversal.
5. CHECK THE LEVEL OF THE ELECTROLYTE IN CONVENTIONAL LIQUID ELECTROLYTE LEAD ACID BATTERIES MONTHLY. MAINTAIN THE PROPER ELECTROLYTE LEVEL BY ADDING DISTILLED OR PURIFIED WATER WHEN NECESSARY. Electrolyte levels lower during discharge and rise during charge. Therefore, it is mandatory that water be added to cells ONLY when they are fully charged - do not overfill. Old batteries require more frequent additions of water than new batteries.
6. Keep tops of batteries clean and dry to prevent excessive self discharge. Keep battery terminals reasonably tight.

## **Limited Warranty**

Lester Electrical warrants each new Lester Battery Charger for defects in material and workmanship for a period of two years from the date of manufacture of the complete unit.

Repairs can be made at the Lester factory. To do so send the defective unit with transportation charges prepaid to:

**Lester Electrical  
625 West "A" Street  
Lincoln, NE 68522  
Attention: Repair Department**

For repairs made at other than the Lester factory, Lester will provide only the replacement parts. Defective parts should be sent with transportation charges prepaid to the Lester factory at the previously mentioned address.

If the unit or parts are found in the reasonable judgment of Lester to be defective in material or workmanship, repair, or replacement will be made by Lester without charge for parts or labor. Repair or replacement will be at the discretion of Lester, with replacements being made using current models or parts performing the equivalent function. Labor charges other than those incurred at the Lester factory are not covered under this warranty. All expenses associated with delivering defective items to the Lester factory and the expense of returning repaired or replaced items from the Lester factory to the owner will be paid for by the owner. All warranty work accomplished at the Lester factory will be completed within a reasonable time after receipt of defective items.

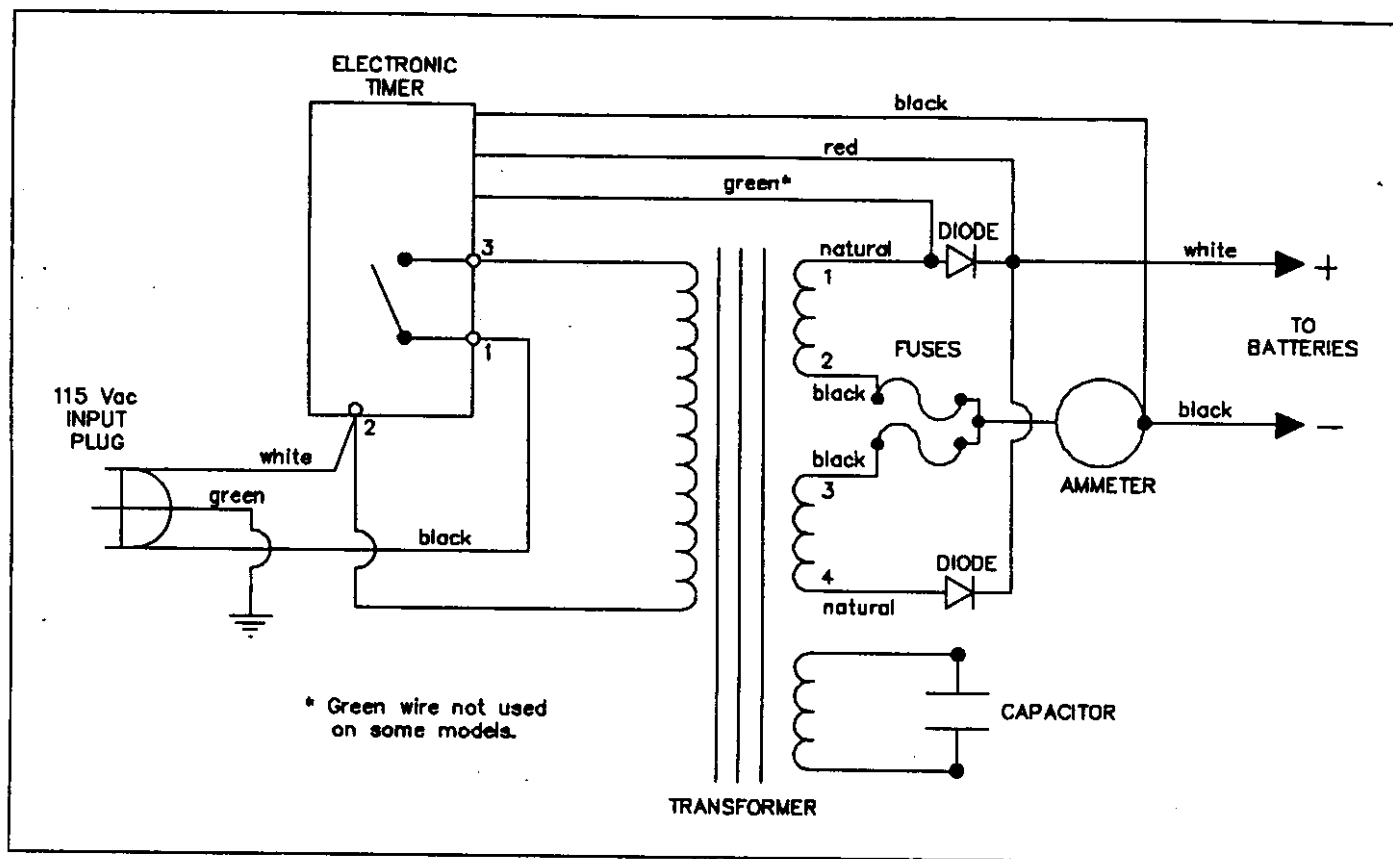
This warranty does not cover any semiconductor parts, such as diodes, which are vulnerable to electrical overloads beyond the control of Lester. Warranty on parts not manufactured by Lester, which include, but are not limited to, timers and ammeters is limited to the period specified in the original manufacturer's warranty.

This warranty does not cover any charger that has been subject to misuse, neglect, negligence, or accident, or operated in any way contrary to instructions specified on the charger case and in the owner's manual. No claim of breach of warranty shall be cause for cancellation of the contract of sale of any Lester charger. Lester assumes no responsibility for loss of time, inconvenience, or other damage, consequential or otherwise, resulting from a defective charger. All implied warranties (including merchantability) are limited in duration to the two years from date of manufacture warranty period.

Some states do not allow the exclusion or limitation of incidental or consequential damages; or limitations on how long an implied warranty lasts, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Lester's obligation under this warranty is strictly and exclusively limited to the repair or replacement of defective items. Lester issues this warranty in good faith and with full confidence in the workmanship and quality of Lester products.

FORM 01717  
REVISION A



PARTS LIST FOR LESTRONIC II CHARGER  
MODEL 21460 TYPE 36LC10-2ET  
120 VAC 60 HZ

PART NO.	DESCRIPTION
26388S	CASE ASSEMBLY
20315S	TRANSFORMER ASSEMBLY
16354S	HEATSINK ASSEMBLY, WITH DIODES
02534S	AMMETER
09685S	TIMER, ELECTRONIC
03820S	CAPACITOR, 2.0 MFD, 660 VAC
03894S	BUSHING, 7K-2, INSULATOR FOR CORDS
03822S	CORDSET, AC
26387S	CORDSET, DC, NO PLUG
14973S	CORDSET, DC, 9' LESTER RUBBER PLUG
03837S	FUSEHOLDER ASSEMBLY
03838S	FUSE, 15 AMP