

Hillcrest AB

with AutoBrake

Owner's Manual **Last Manufactured April, 2011**



INSTRUCTIONS FOR REPORTING DAMAGES DURING SHIPMENT

Call or e-mail Kangaroo, with your invoice number. Please specify which product on your invoice is damaged. Kangaroo will send replacement merchandise promptly, generating a provisional invoice for the replacement items. Then . . .

DO NOT return damaged merchandise to Kangaroo; we will contact the carrier to file a claim. Don't destroy any carton or packing material in which merchandise was shipped. The carrier reserves the right to inspect the packing material. The carrier may contact you for an inspection visit or send a pickup for the merchandise.

RETURN ADDRESS

Kangaroo Products Company
111 Kangaroo Dr.
Columbus, North Carolina 28722

Phone: (800) 438-3011
(828) 436-2101

Email: iwalk@KangarooGolf.com

Our regular business hours are Mon. - Fri., 8 - 5 Eastern Time

For additional repair tips about your Hillcrest AB call or email Kangaroo tech support at 828-436-2101 ext. 2400 or johnraines@kangaroogolf.com.

New Batteries and accessories can be ordered on the public site www.KangarooGolf.com.

Once the motorcaddie is in manual mode, turn the power to the caddie ON and the speed control dial up. Does your caddie work with the CaddieCommand totally disconnected?

If the caddie is functioning properly using the speed control, you will now need to check the distance timer function. Turn your ON-OFF switch to the OFF position. Turn the Distance Timer knob (CaddieCommand ON-OFF switch) ON. Then set your speed thumb-wheel on the "distance mark". Now, turn the power to the caddie ON. Does your caddie shut OFF after a short period of time? If it does, then the problem is in your CaddieCommand and not the motorcaddie. The CaddieCommand needs to be sent into the factory for repair.

My CaddieCommand centering knob is pointing top center but my front wheel is not tracking straight.

The straight-up position of the centering knob's white arrow may not align the front wheel for dead-straight tracking. With the POWER ON, rotate the knob slowly to adjust the front wheel right or left as needed. The knob is very sensitive and even the slightest rotation of it will reposition the centering point.



clip boot and wiggle it vigorously, to see if you can get your machine to "cut out." If you can, you do have a loose wire! Then try the same thing with the other wire, below the black boot. You can do this same test if your motorcaddie has shut-down and you want to trouble-shoot for this condition. Follow the same procedure to see if the "wiggle" will cause your machine to "run."

If you've discovered you have a loose wire under your crocodile clip, you're probably not going to be able to fix it yourself. If you're handy, you may be able to install a replacement Battery Wire Kit. Contact Kangaroo Technical Service to order the kit (which will come with instructions), or send your chassis to the factory. You can also visit an authorized service location if there's one nearby.

My Hillcrest AB with CaddieCommand Stopped Running

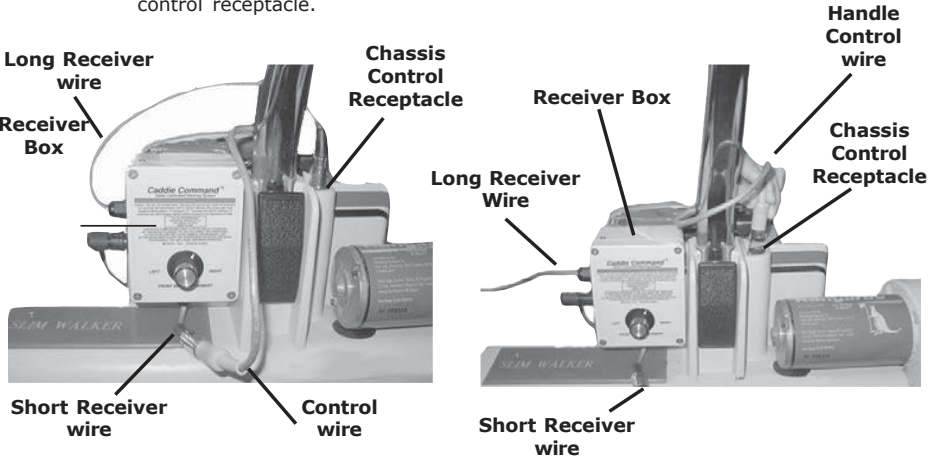
My caddie keeps shutting OFF during my round of golf.

Your CaddieCommand has a built in safety feature. If you don't give a Go/Left/Right command within so many seconds (please refer to your CaddieCommand Owner's Manual), your caddie will automatically shut OFF. Depress "Go" button on transmitter to restart. If problem persists, try the following...

Manual Mode Test.

First, take the CaddieCommand receiver box out of the wired circuit by unplugging both wires of your CaddieCommand. Then connect the handle control wire to the receptacle on the chassis as if you didn't have the CaddieCommand. This is termed "Manual Mode".

To put the caddie in complete manual mode, disconnect the long receiver wire from the control receptacle. Then disconnect the short receiver wire from the control wire. Plug the control wire into the control receptacle.



Wires Configured for CaddieCommand Operation

Wires Configured for Manual Mode

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Trouble-Shooting Tips

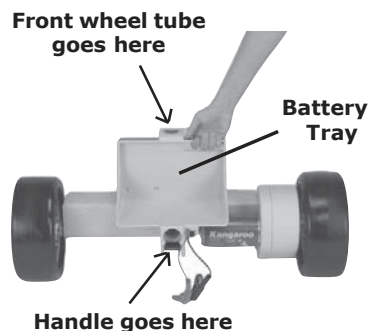
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Hillcrest AB Assembly

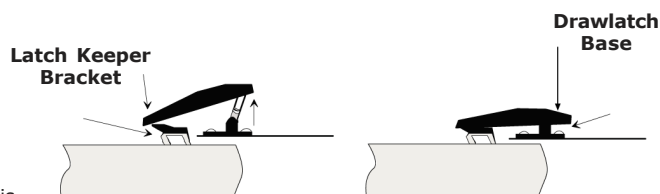
Your Hillcrest is shipped without the rear wheels attached. See page 9 for assembly instructions and photo.

Steady the chassis by using the hand-hold, located in the battery tray. Insert the **lower front wheel** tubing into the hole located in front of the battery tray.



Note: The handle and front wheel tubing will fit in either hole-- therefore be sure the **motor is on the top right side**, while standing behind the motorcaddy.

Insert the upper handle tubing into the top of chassis just behind the battery tray.



Adjustment

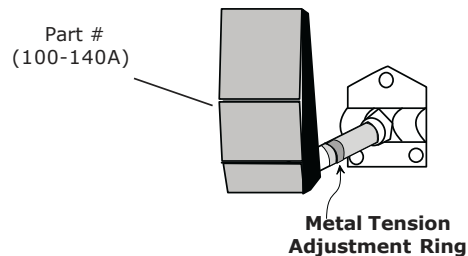
If the handle or lower tube is loose, turn the drawlatch metal adjustment ring **CLOCKWISE** to tighten.

CAUTION: Do not over-tighten; the drawlatch will break when latched.

If the drawlatch will not lock in place, loosen the drawlatch by turning the metal adjustment ring **COUNTER-CLOCKWISE**.

NOTE:

The Metal adjustment ring may be difficult to turn. If so, a standard pair of needle nose pliers can be used to make adjustments.



Note: To avoid possible breakage, always **close draw-latches before** placing chassis into your car.

My Hillcrest AB (without CaddieCommand) Stopped Running.

Did the motorcaddy die gradually as the round of golf progressed?

When the motorcaddy starts out with enough power and slowly diminishes toward the end of the round, it's probably your battery. If your battery is over a year old and fully charged, you may need to order a new battery. If you have doubts that your battery is the problem, try borrowing or swapping batteries with a friend.

My battery seems okay, but the motorcaddy was a little sluggish in the beginning of play, then died during my round of golf.

Did the motorcaddy seem to be struggling on inclines? If so, reach down and touch the motor. If the motor is **HOT** to the touch, then your motor will need to be serviced or replaced. It is normal for the motor to be warm to the touch, but it should never get **HOT** to the touch.

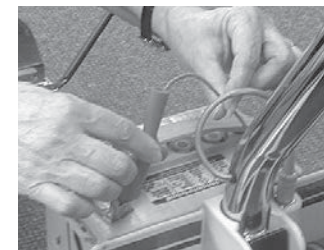
My motorcaddy stops and starts intermittently!

Check the plug on the control wire and the receptacle on the chassis. Make sure they are clean of any debris and that they are dry. Use "canned air" like the type used on computer keyboards to carefully blow out both the handle plug and the control receptacle.

Did the motorcaddy just stop during the round of golf?

As electric machines age, loose electrical connections increasingly become the cause of breakdowns, not the physical wear-out of parts. Kangaroo's engineers are aware of this, designing strain reliefs for wiring harnesses and anticipating electrical "weak points" that could cause your motorcaddy to stop dead.

The most common cause of total electrical shutdown on your Kangaroo is a loose connection of a copper cable to your battery terminals underneath the red or black boot. A loose wire under either can shut your 'roo down, Sport! The copper wire can get jerked, or intermittently fail to make good connection — despite apparently intact insulation.



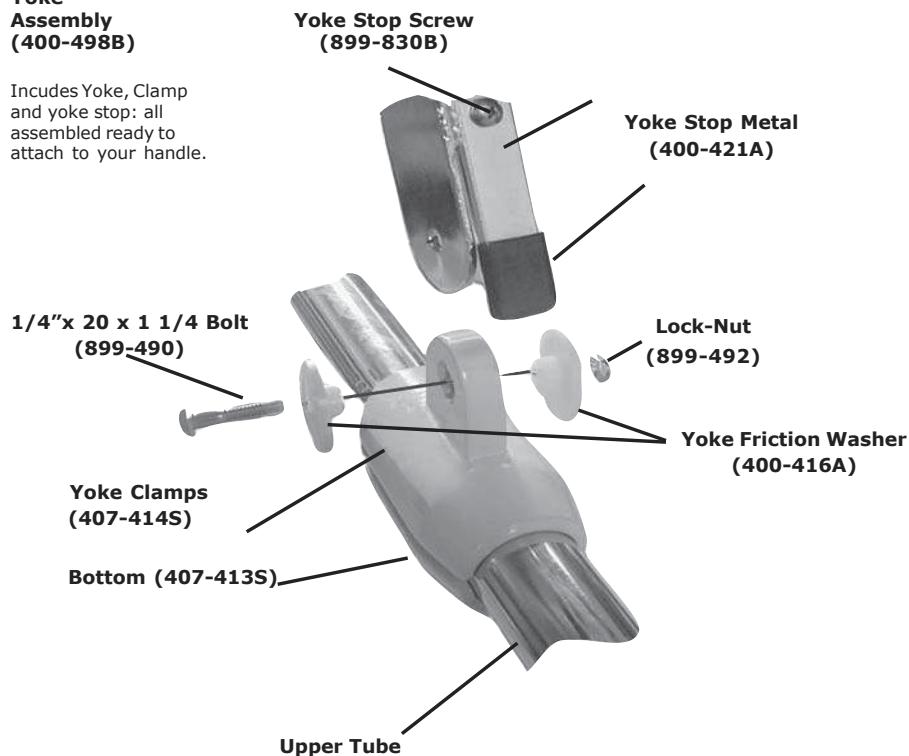
If you're experiencing either a mysterious shutdown or intermittent total loss of power, don't jump to the conclusion you have a part failure. First do the "wiggle your crocs" test! Your battery should be connected up, but put the wheels in "free wheeling" so your motorcaddy won't travel. Turn the machine on. Now grasp the wire below the red crocodile-

My Upper Bag Support keeps falling down.

Is your yoke-stop broken? If so, you will need to order a new yoke stop. If your yoke stop isn't broken, check the screw to make sure it's tight. If the screw is broken off in the yoke, the fragment of the screw will have to be removed using an easy-out tool, or a new yoke will need to be purchased.

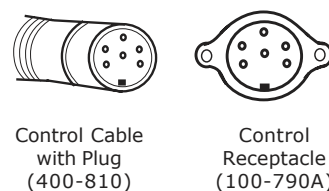
Yoke Assembly (400-498B)

Includes Yoke, Clamp and yoke stop: all assembled ready to attach to your handle.



Connect the plug from the handle to the receptacle in the chassis.

*Always **handle the plug** when connecting or disconnecting the control cable. Pulling on the wire can cause damage.*



Note: At this point of assembling your caddy for use, establish the habit of making sure the ON/OFF rocker switch (See page 6 photo) is in the "OFF" position before connecting your battery cables.

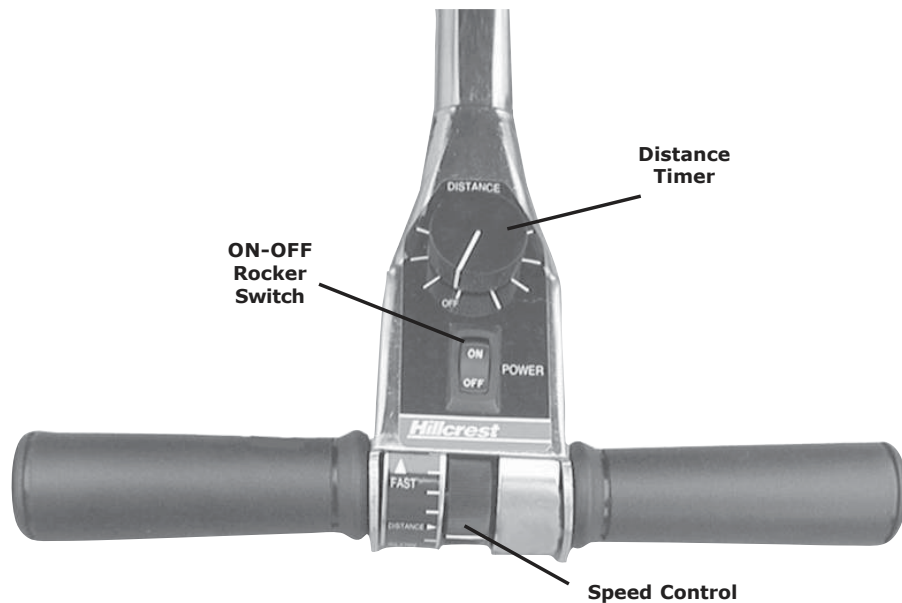
Remove the black plastic cover from the battery post. Set the battery into the battery tray with **posts to the back of** the battery tray. Connect the red clip to the (+) positive terminal and the black to the (-) negative terminal. If the cables are accidentally reversed, your motocaddy will not run until the polarity is corrected. (The caddy is equipped with reverse-polarity protection, and connecting the terminals backwards won't harm the unit.)

The upper bag support, also referred to as the yoke, is designed to fold up for easy transportation and storage. Pull it down until it comes to a stop. It can be adjusted to grip your golf bag by bending the arms open or closed as needed.

The yoke is attached to the upper tubing handle at the best position to hold most golf bags securely. If you have an unusual bag, or a personal preference for its position, its clamp can be moved up or down the tubing to any point you like. The yoke is secured with four 5/32" allen-type machine screws and a suitable wrench is provided with your caddy. Simply loosen the four screws and adjust the clamps accordingly, then re-tighten securely.

Your Hillcrest AB comes with an assortment of allen-type wrenches. They are provided for adjusting the upper bag yoke, keeping screws tight, and for adding accessories.

Controls



ON-OFF Switch:

The ON-OFF switch, located top center of the handle, is self-explanatory in operation. It is located for convenient access in starting or stopping your Hillcrest.

Speed Control and Operation:

Speed is controlled by the rotary thumb-wheel located between the handle grips. The speed control decal indicates speed in relation to the thumb-wheel position.

Note: Turning the speed control all the way down doesn't turn off controls, even if your motorcaddie isn't moving.

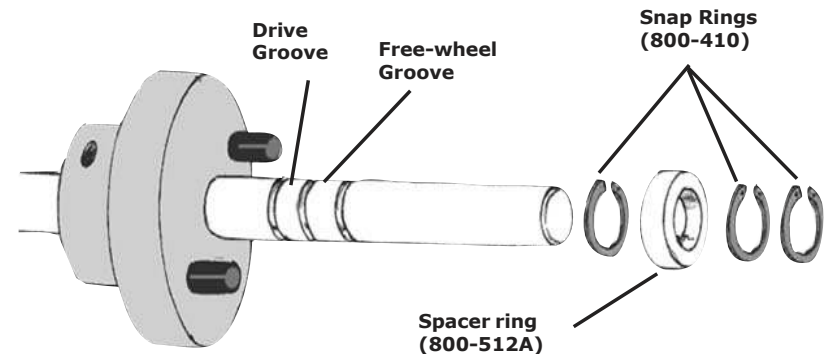
There is a feature, known in technical terms as "ramp up", that automatically provides a gentle start at any setting up to, and including, full speed. Even so, your Hillcrest is very powerful, and it's best to start out at lower speeds, at least until you become familiar with the motorcaddie.

Normal Operation:

1. Turn dial to desired speed setting
2. Turn ON-OFF switch to ON. You can vary the speed control to suit your own walking pace.
3. To stop, turn ON-OFF switch to OFF. There's no need to change the speed control when stopping and re-starting.

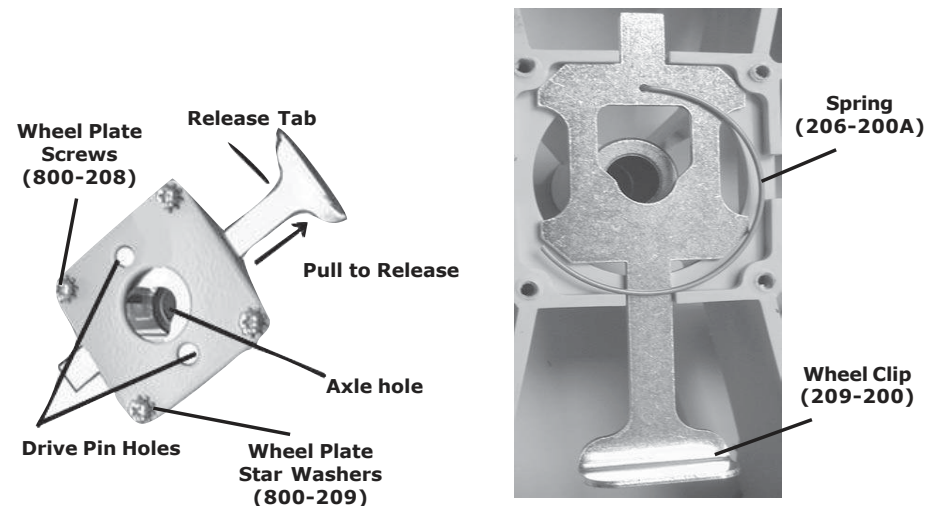
Rear wheel doesn't fall off if I switch it to the opposite side of the motorcaddie.

Check the rings on your axle to ensure they are all there. Make sure none of the three snap rings are worn or missing.



Axle rings all seem to be there and in place.

Next remove the wheel plate by removing the four screws and star washers. Check to make sure the wheel clip is seated correctly in the wheel, and the spring is in its proper place. See photo at right for proper spring position/location.

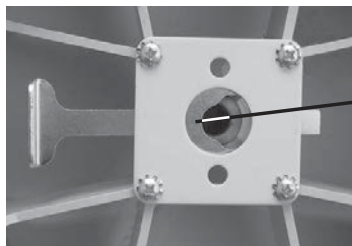


One of my rear wheels won't stay attached.

Switch your wheels (right to left, and left to right) to see if the same wheel comes off on the opposite side of your caddie.

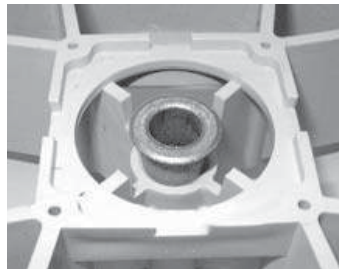
Rear wheel won't stay attached regardless of which side of the caddie it is on.

Check the center of the wheel plate to see if the wheel clip is as shown in the photograph below and on page 23, bottom right. There should be minimal wear. Also check to see if all four wheel plate screws and star washers are in place.

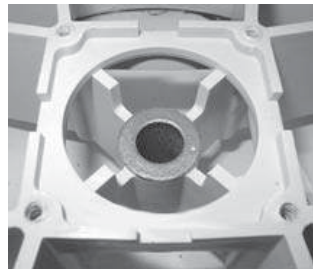


Minimal wear in this area

If all is fine with the wheel plate, check to see if the bronze bushing located in center of the wheel, beneath the wheel plate, is inserted as far down in the hole as it will go. If the bushing isn't seated into the hole completely, take a hammer and screwdriver and lightly tap the bushing back down to ensure it is seated in the hole as far down as it will go.



Bushing Raised



Bushing Seated

**Bronze Bushing
Part # 300-210B**

Runaway and Circuitry Protection:

The Hillcrest will automatically shut itself off if the switch is left ON for an excessive period of time. The reason for this is to shut it off in a possible runaway situation. This also allows the solid state circuitry a cool-down period. To avoid activation of this safeguard, turn OFF the rocker switch each time you stop. Merely turning the speed all the way down will not reset this internal timer and will cause the Hillcrest to unexpectedly shut off. If you forget, and your motorcaddie unexpectedly "cuts out" or is "dead", turn the ON-OFF switch to OFF and then back ON to restart the Hillcrest.

Distance Timer Operation:

The distance timer allows your Hillcrest to travel ahead and stop at an approximate chosen distance. It is not a precise measuring device (which would violate the Rules of Golf).

When set on a certain mark, your Hillcrest **will vary actual distance traveled** depending on the speed and distance settings. Therefore, use the speed setting marked "Distance" as your reference speed when using the distance timer. This will help you learn to judge the *approximate* distance your Hillcrest travels on any particular timer setting.

Because the markings DO NOT indicate yardage, take time to experiment and learn how far your Hillcrest will travel on the various settings.

Setting the Distance Timer:

With ALL controls off:

Set the white line on your speed control wheel to the "Distance" mark, which is a safe speed while operating in distance mode.

Estimate distance and set distance timer knob to an appropriate mark. All measurements are **APPROXIMATE**. Each mark is for your reference only and distances traveled will vary depending on your speed and distance settings.

To activate the distance mode, distance timer **Must** be turned on and set **BEFORE** the power to the motorcaddie is turned on.

Turn ON-OFF switch to ON. Your Hillcrest will start, travel to your selected distance, and stop.

Put your distance timer knob in the fully OFF position when not using this feature. Otherwise your caddie will "cut out" inadvertently during operation.

AutoBrake Operation:

The Hillcrest is equipped with a transaxle drive train that engages the motor/gear drive unit and wheels at all times. The motorcaddie will not free-wheel when pushed forward.

As you go downhill, with the power still switched ON, turn the speed control thumb-wheel downward to a slower setting. The motorcaddie will slow down and give you a feeling of security as you drive down the hill.

If the slope is extremely steep, you may turn the power switch OFF, which will provide approximately 50% more braking power than just turning the speed control to its slowest setting. If this is too much braking power, alternate turning the power switch OFF and ON until you reach the bottom of the hill.

WARNING: If you must tow your Hillcrest AB either forward or backward, always put the Hillcrest into free-wheeling **FIRST!** Gear damage may result from pulling or pushing your Hillcrest AB with great force or for long distances. Damage incurred from failure to disengage drive wheels from gear train is **NOT** covered by warranty. See free-wheeling instructions on page 9.



AutoBrake isn't supposed to STOP your motorcaddie. Rather, it slows it down when going down hills. It does NOT function as a parking brake. Therefore, always make sure the motorcaddie is turned sideways when you're stopped on a slope.

Overcurrent Protection:

An electric motor draws current to meet the load placed on it. If the load is too great, there is danger that excess amperage will be drawn, damaging controls, wiring or the motor itself. An example of this could be a motorcaddie stopped by shrubs or trees, or unable to roll, while the power is still on.

Your Hillcrest is equipped with an overcurrent protection circuitry. It turns itself OFF most situations that cause current draw to approach the danger level.

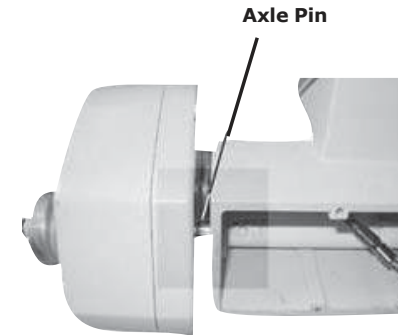
In this event, reset your Hillcrest by turning it OFF manually at the ON-OFF switch. After you have corrected the problem, cleared the obstacle, etc., turn your Hillcrest back On and continue normal operation.

My motor is running, but the wheels aren't turning.

Do you hear any growling or grinding noise coming from the gearbox? If so, then there are broken or cracked gears in the gearbox that will need replaced. Return to Kangaroo factory (North Carolina) for repair.

WARNING: Don't open the gearbox or attempt to service the transaxle gear train. It is tuned at the factory to minimize gear noise. It also contains a special lubricant, which is sealed inside by a gasket.

If you aren't hearing any noise, then you may have a sheared axle pin. Ordering the pin from Kangaroo is simple and installation is easy. Authorized Service Centers can do this (for a charge), or it can be done at Kangaroo.



If the axle pin (shown in photo above) is **not** missing or sheared, the problem may be with a roll pin inside the gearbox that has sheared, loosened, or the motor pinion gear may be worn. In such cases your chassis must be returned to Kangaroo for repairs.



My motorcaddie isn't keeping a straight line.

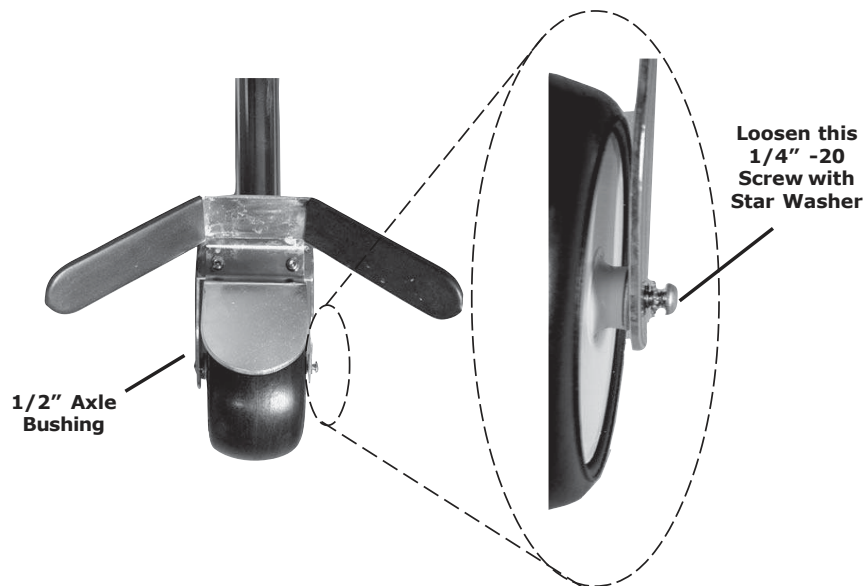
The standard front wheel is out of alignment. It is best to put your motorcaddie on a paved level surface to test your motorcaddie.

The center of gravity and weight distribution in your golf bag can affect the straight line travel of your motorcaddie. In some cases you may need to make the alignment adjustments with your golf bag on the motorcaddie, or re-adjust the contents of your bag for better balance.

While standing in front of the motorcaddie, hold the front wheel and loosen the screw on the **right side** and move the wheel (very slightly, a little means a lot) in the opposite direction that it was tracking.

DO NOT LOOSEN BOTH SCREWS!

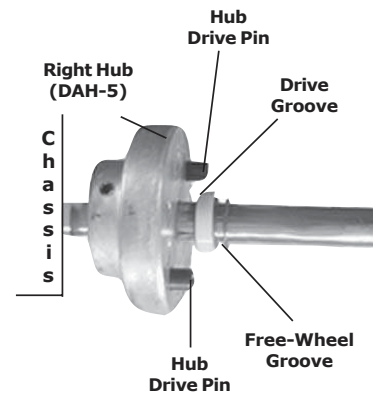
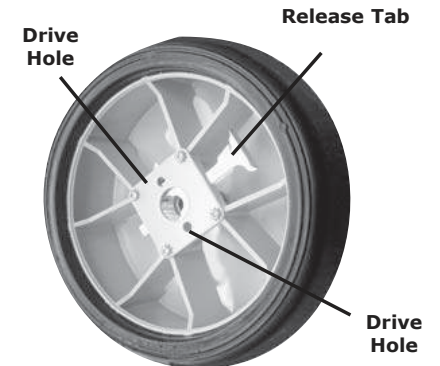
Tighten the screw back down and run the motorcaddie forward to check alignment. You may need to do this procedure several times in order to get the motorcaddie in alignment and track straight.



Once wheel has been turned to the desired location, **hold it in place** while tightening screw!

Rear Wheel Assembly and Removal

Both rear wheels on the Hillcrest AB motorcaddie are easily removed and replaced. The wheel is held in place by a spring-loaded Release Tab on the inside of the wheel. The Tab seats into a groove on the axle. There is a groove for the Drive position and one for the free-wheeling position.



To **INSTALL** the wheel on the axle, pull the wheel Release Tab back. While holding the Release Tab, place the wheel on the end of the axle. Slip wheel all the way against the hub, aligning the drive pins on the hub into the drive holes in the wheel. When the wheel is on the axle, up against the hub with drive pins engaged, release the tab. This will allow the Release Tab to lock into the Drive Groove, and the wheel should now be securely mounted on the axle. Wheels should **NOT** slide off the axle.

To **REMOVE** wheels, pull the Release Tab back toward the tire and slide the wheel off axle. Wheels are not left/right specific and can be installed on either side.

Free-Wheeling Function:

Free-Wheeling means that the wheels will turn freely without engaging the axle or gear train. This may be used for moving the Hillcrest AB when power is turned off. Placing the motorcaddie into Free-Wheeling is a **MUST** if the Hillcrest AB is to be pulled or towed.

To position each wheel into Free-Wheeling, pull the Release Tab on the inside of the wheel back towards the tire. Slide the wheel outward slightly on the axle. Position the wheel so that the Release Tab is centered in the Free-Wheel Groove. Let go of the tab to allow it to lock in the proper groove. Wheel should now spin freely. Hub drive pins will no longer be engaged into the wheel's drive holes. Now try to move the wheel outward on the axle to ensure the Release Tab is locked. The wheel will **NOT** slide off the axle if properly positioned.

OWNER MAINTENANCE

Don't Oil it!

The Hillcrest AB has been designed and manufactured to be essentially maintenance free. Do not open or attempt to service the transaxle gear train. It is tuned at the factory to minimize gear noise. It also contains a special lubricant, which is sealed inside by a gasket. The control system is well designed, with quality parts and full protection circuitry. There are no user serviceable components.

Keep it Clean!

The only type of maintenance required for the Hillcrest AB is to keep it clean. Use soap or mild detergent and water, then rinse with clean water. You **MUST** avoid getting water in the control plugs. Your Hillcrest can dry in the sun, but the stainless steel tubing should be wiped dry for the best luster. Never use an abrasive cleaner.

For Good Looks!

It is a good idea to use a quality automotive wax on the stainless steel to prevent fingerprints and smudges from showing up. The Hillcrest's polyurethane tires are made of a compound unaffected by conditions that deteriorate ordinary rubber. You may use a cleaner/preservative such as Armorall®, or a similar product, to keep it looking like new.

Normal Wear & Tear

The handle grips and Bag Huggers may deteriorate with use. This is normal wear and tear and is not covered by warranty.

FACTORY SERVICE

If you need repair or service, please follow this procedure:

1. Telephone or e-mail the factory-owned location on page 2 of this manual for advice from Technical Service.
2. If Technical Service instructs you to return your motorcaddie or part of it, pack your motorcaddie in the original carton or a sturdy substitute container. Enclose a note with Name, Address, Daytime phone number or e-mail, and description of the problem you discussed with Technical Service.

Any service, including parts and labor, is warranted for 60 days.



TROUBLE-SHOOTING TIPS

My Distance Timer isn't working.

Do you have a friend that has a Hillcrest AB with whom you can swap handles? If you put a friend's handle in your motorcaddie and their distance timer functions properly, then you will know your **distance potentiometer** in your handle needs to be replaced.

If the distance timer on your friend's handle isn't working in your motorcaddie, then your **control board** most likely needs to be replaced.

My motorcaddie runs on fast speed only.

Do you have a friend that has a Hillcrest AB with whom you can swap handles? If you put a friend's handle in your motorcaddie and their speed control functions properly, then the **speed potentiometer** in your handle needs to be replaced.

If the speed control on your friend's handle doesn't work in your motorcaddie, then your **control board** probably needs to be replaced.

My motorcaddie has suddenly lost the AutoBrake function.

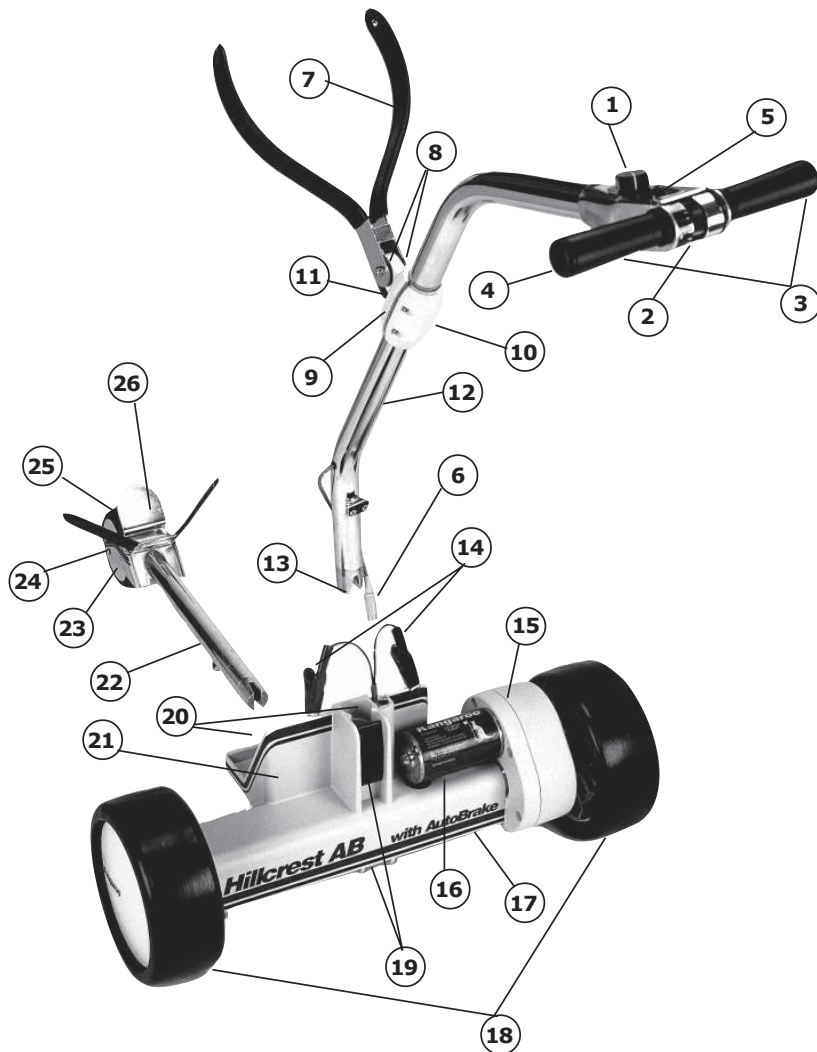
There is a brake resistor built into your control board. If your motorcaddie does not automatically brake when power is switched OFF, the control board underneath the chassis needs to be replaced or factory serviced.

OTHER AVAILABLE OPTIONS

Kangaroo's factory sells a number of accessories to customize your Hillcrest motorcaddie. To learn about them, visit www.KangarooGolf.com to see current offerings and prices. Some of the current accessories may attach to your Hillcrest AB differently. Call Kangaroo to confirm they will work with your motorcaddie. Some of the popular options are Sand & Seed Holder, Basket (for sweater, etc.), Umbrella Holder, storage cover, and Fourth Wheel (to prevent tip-backs of your motorcaddie).



Hillcrest AB Parts List



12

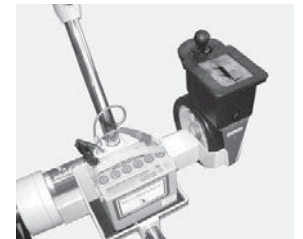
Bracket for Observation Seat OR Ball & Club Washer order code: 600-102S

This bracket installs beside your left drive wheel to accommodate the optional spring-loaded Observation Seat. Comes with instructions for mounting. This bracket can also be used for installing an optional Ball & Club washer, if you don't want to use your Observation Seat.



Chassis Bracket for Ball & Club Washer order code: 600-403

This bracket easily accommodates the weight of an optional Ball & Club washer, and is easier to attach to your motorcaddy chassis than the seat bracket. However it isn't suitable for the Observation Seat, because the seat causes stresses that require the additional strength of the Bracket for Observation Seat.



Wedge Clip to Install Ball & Club Washer on a Seat Bracket order code: 600-004

The simple solution for Owners who wish to install **both** an Observation Seat and a Ball & Club Washer on the motorcaddy. The Wedge Clip attaches with two bolts to the Observation Seat bracket, so the blue wedge below the Ball & Club washer can fit into this Wedge Clip.



Wedge Clip bolts to seat bracket



17

SigmasTek Deep Cycle Battery

BAT-SIGMAS

Maintenance-free gel cell battery. Lasts longer: permanently sealed valves keep the six battery cells properly pressurized and prevents oxygen contamination. Comfortable handle. Engineering tests prove cost-per-round will be less than inferior batteries.

You must use at least a 31 amp-hour, 12-volt **Deep- Cycle** battery on Kangaroo motorcaddies. Do not use a "cranking" or starting battery. In North America the battery should say "deep-cycle" on the label. In Britain it may say "traction" on the label.



Schauer Smart Charger

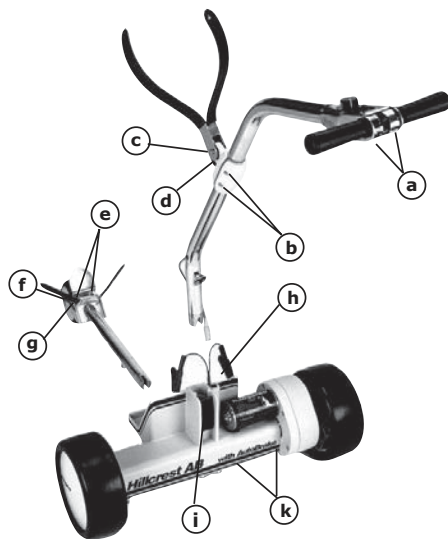
SCBC

Best charger you can have, available exclusively from Kangaroo. Leave charger connected continuously to your battery -- even for months! Extends battery life, automatically reduces input voltage during storage mode. Tends battery with safe minimal amperage.

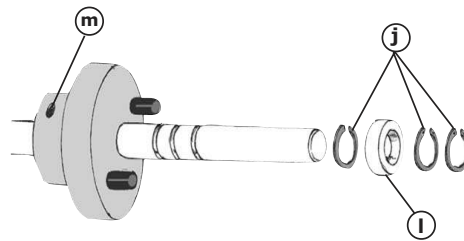
Spare Parts

Kangaroo's factory stocks spare parts for your Hillcrest. **When ordering parts, be sure to let us know the 5-digit serial number of your motorcaddie (found on the motor) because specifications change.**

Ref. #	Part Code	Part Description
1	400-280	Distance Timer Knob
2	400-280	Speed Control Knob
3	400-411	Cushioned handle grips
4	400-511A	Spring cap 1" plug - DISCONTINUED
5	400-320	On/Off Rocker Switch
6	400-810	Control cable w/plug
7	400-498B	Yoke assembly complete - includes huggers and strap (no clamps)
8	400-416A	Yoke washers
9	407-414S	Top yoke clamp w/cork - <i>painted silver</i>
10	407-413S	Bottom yoke clamp - <i>painted silver</i> Yoke
11	407-421B	stop Metal - BLACK only
12	400-400	Upper Tube Complete - DISCONTINUED
13	800-430	shim
14	100-001A	Croc Clip Kit with Wire
16	100-104C	Motor
17	100-106	Control "Circuit" Board
18	201-201A	Wheel & Tire Assembly
19	100-140A	Drawlatch (two per motorcaddie)
20	100-107B	Chassis insert
21	100-116S	Chassis without inserts - <i>silver</i>
22	300-300	Lower tube and front wheel
23	300-311B	front tire hub (need 2)
24	300-309	front wheel hub (need 2)
25	300-310B	Front wheel axle
26	307-307M5	Lower Bag Mount - <i>painted silver</i>



Hardware Diagram



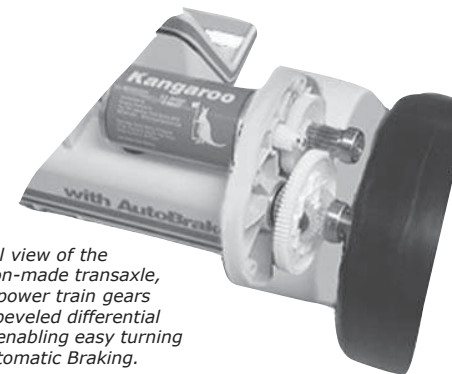
Ref #	Part Code	Description	Need
a	899-370	Handle screws	2
b	899-360A	Yoke clamp screw	4
c	899-309	Yoke screw	2
d	899-830B	Yoke stop screw	1
e	800-220	Lower Bag Mount screw	2
f	899-309	Front wheel screws	2
g	899-310	Front wheel star washer	2
h	899-110	Recpt. screws	2
i	899-150	Drawlatch screws	6
j	800-410	Axle Retainer Ring	6
k	899-831	Control board screws	4
l	800-512A	AB axle ring spacer	2
m	DRP	Roll Pin 3/16 x 1 1/2	2

Parts not shown on diagrams

Part Code	Description
400-309A	Speed potentiometer
400-310	Distance Potentiometer
100-790A	Control Wire with Receptacle
700-008	Upper Bag Huggers
700-009	Lower Bag Huggers
110-900	AB long axle (left side)
110-800	AB Short axle (right side)
DAH-3	Hub Dx with roll pin (left side)
DAH-5	Hub AB with roll pin (right side)
100-010A	Axle bearing
300-210B	1/2" Bronze bushing
600-100A	Hillcrest Seat (complete)

Left/Right defined from rear of motorcaddie in its direction of travel with your hands on controls.

TECHNICAL SPECIFICATIONS:



Internal view of the precision-made transaxle, with 4 power train gears plus 4 beveled differential gears, enabling easy turning and Automatic Braking.

Motor:
High torque, 2-pole armature/permanent magnet, 12-volt DC

Drive Train:
Double reduction, sealed maintenance-free self-lubricating gear drive with differential and direct-drive hubs

Controls:
All solid-state motor control, 45 amp capacity, all circuitry under overcurrent and reverse polarity protection.

All parts and specifications subject to change without notice.

Part Code	Description	Need
103-114	Bevel Gears	4
103-111	Output Gear	1
103-110	Gearbox gasket	1
103-120	Gearbox wide housing (BLACK)	1
103-806	Spacer Washers	2
103-807	Metal Shims (2 needed when replacing 103-111)	2