

Kangaroo CaddieCommand®

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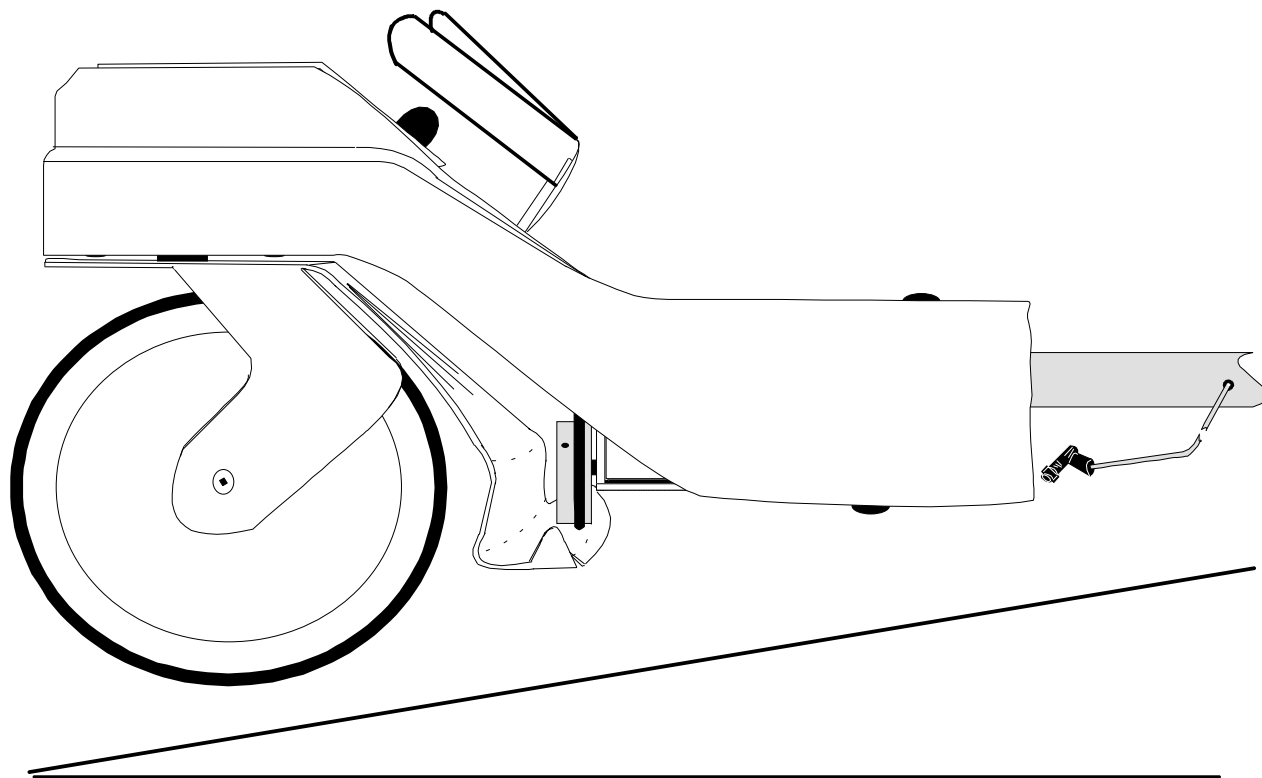
(828) 894-8241



U.S. Patent no. 5,265,686

Serial Number — 6000 and up

Radio Transmitter/Receiver Model TX600-845C
RX600-840C



Congratulations to you on your selection and purchase of CaddieCommand, the very best motorcaddie remote control system available. It is the perfect complement to the world's finest motorcaddie, your Hillcrest.

What you have acquired is a superbly conceived, meticulously fabricated, and sensibly operated remote control system which will provide many years of satisfying service to you.

In order for you to get the most from your investment, it is necessary for you to carefully read and fully understand this manual.

You may also seek technical advice via the Web. Sign up for the Kangaroo Owners CyberClub: <http://www.kangarogolf.com/welcome.htm>

The Kangaroo CaddieCommand remote control system consists of three lightweight components that easily attach to the Hillcrest or Hillcrest AB motorcaddies. It operates on an FM Pulse Code Transmittal System that is FCC approved, and requires no operators license. The CaddieCommand is relatively low power (*milliamps*) and is subject to little outside interference.

The Transmitter and Receiver devices comply with part 15 of FCC rules. Operation of these devices are subject to the following two conditions:

- (1) The devices may not cause harmful interference, and
- (2) The devices must accept any interference received, including interference that may cause undesired operation.

FCC ID: OVPTX600-845C
OVPRX600-840C

<u>Component</u>	<u>Weight</u>
Steerable Front Wheel Assembly	11 lbs.
Hand-Held Transmitter	5.5 oz.
Radio Receiver Module	1/2 lb.

Performance Specifications

Maximum Range of **GO/Stop Operation**..... **100 YARDS**
Maximum Range of **DIRECTIONAL Operation**..... **50 YARDS**
Maximum **Turning Angle** of Motorcaddie..... **20 Degrees**
Time-Lapse from Straight Ahead to Full Turn..... **2 Seconds**
Time-Lapse from Turn Button Release to Straight Ahead..... **2 Seconds**
Turning Radius (on Pavement)..... **16 Feet**
Replacement Transmitter Battery (Alkaline Battery)..... **9 Volt**
Radio Operating Frequency Range **903.37 - 921.37MHz**

INSTALLATION OF CaddieCommand Remote Control

Before using the CaddieCommand for the first time, follow the steps as listed below.

1. Install the CaddieCommand ON-OFF decal (*stapled inside front cover*). Switch the timer to the OFF position. Grasp the knob and lift it straight off the timer stem. It should slide off without much resistance. Peel the new decal from the solid white paper backing. Carefully place it over the timer stem. Align the decal with the sides of the existing timer decal and press it into place. Remove the *white see-through* protective paper from the decal. Replace the timer knob by aligning the white reference mark at the OFF position. Gently press it back on the stem until it stops. **NOTE:** The timer reference marks are now displayed on the outer edge of the decal.
2. On **Hillcrest** motorcaddies with serial numbers **prior** to 57484 and **Hillcrest AB** motorcaddies **prior** to serial number 80493, a radio frequency filter wiring harness must be installed on the motor. The frequency **filter** (*Ferrite Bead & Capacitor*) **will enable** the motorcaddie to reach **maximum signal range**. *If a wiring harness is needed, it and detailed instructions are included with the CaddieCommand.* Motorcaddies manufactured after the above serial numbers already have the filter installed.
3. The antenna is *permanently* mounted inside the receiver to make it more water resistant. You should **not** attempt to open the CaddieCommand receiver—doing so will break the seal and *void the warranty*.

A, B, C, D, E, F, G, H

Each CaddieCommand remote system is built using one of eight frequencies, licensed by the FCC for the Kangaroo CaddieCommand. The frequencies are lettered A, B, C, D, E, F, G & H. They are identified on the top corner of each receiver module. Each frequency utilizes dozens of individual codes to operate the CaddieCommand.

It is possible for two CaddieCommand units, of the same frequency (A-H) operating in close proximity, to affect each other. This does **NOT** mean that one operator will be able to control the other CaddieCommand, but, if both players give their caddies signals at the same time, the signals will counteract. Neither of the units will respond to any signal. However, if one operator is much closer to his own caddie, it is probable that his unit would respond to the signal and not affect the other.

To operate the CaddieCommand interference-free, we recommend a different frequency for each CaddieCommand in your group. To avoid problems, please advise Kangaroo Products of frequencies in use in your group when placing an order.

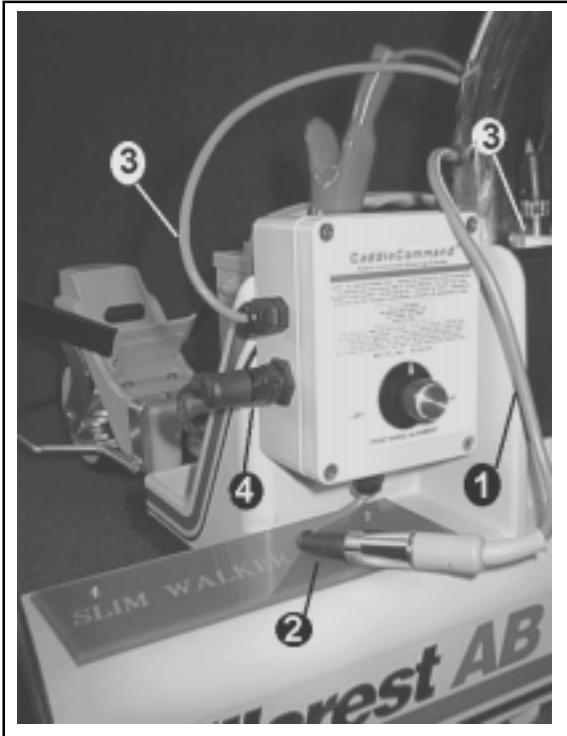
No changes or modification not expressly approved by Kangaroo Products Company can void the user's authority to operate this device.

Attaching the CaddieCommand to your Motorcaddie

The steerable front wheel assembly interchanges with the regular front wheel assembly of the Hillcrest and Hillcrest AB motorcaddies. Simply remove the original front wheel assembly. Insert the steerable front wheel assembly and secure it with the drawlatch. **Note:** Some minor adjustments to the drawlatch may be needed. See your Hillcrest Owners Manual for Drawlatch Adjustment.

Connecting your CaddieCommand

Slip the receiver clip over the left rear of the battery tray (opposite side of the motor). The module should rest on the left side rear of the chassis.



Be sure the switch is in the **OFF** position. Insert the gray wired handle plug ① into the female receptacle on the short wire of the receiver module ②. Insert the red-stripe marked plug (long wire) into the female receptacle on top of the chassis ③.

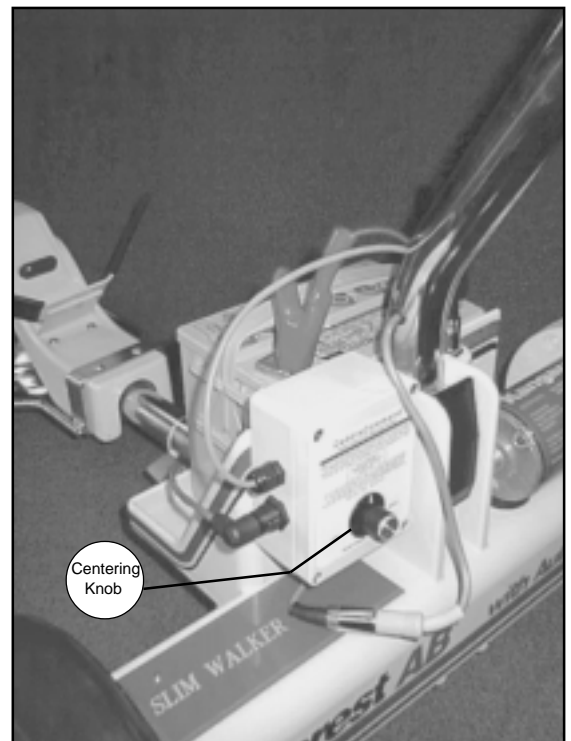
To connect the steerable front wheel cable, insert its black plug into the receptacle on the lower left side of the receiver module ④. Push inward on the lock ring while twisting it clockwise—until it stops. **Caution: Do not force the locking ring. It will turn easily; forcing it will cause breakage.** When the ring stops turning, the plug is locked in position. There should be approximately 1/8 to 1/16 inch of space between the plug lock ring and the threads on the receptacle.

Centering the Steerable Front Wheel

Once the CaddieCommand has been assembled to your motorcaddie, the front wheel must be centered, so the unit will track straight. Turn the **SPEED** to the slowest position and turn **ON** both the CaddieCommand (*distance timer*) and the power switch. Locate the knob on the rear of the receiver module. (See illustration)

Use this knob to adjust the front wheel. Do not attempt to turn the front wheel by hand. The front wheel **must be centered with the electronics**. The knob is very sensitive. Rotate it slowly to adjust the front wheel right or left as needed. (The white arrow on the knob is an indicator only and may not always align exactly to center.)

Make this adjustment a normal procedure each time you assemble the motorcaddie and CaddieCommand, and each time the front wheel becomes misaligned.



Automatic Self-Centering Front Wheel

The CaddieCommand's built-in centering control will automatically center the front wheel every time you stop transmitting a directional signal with the hand-held transmitter. The self-centering function will not work properly unless you center the front wheel **USING THE ELECTRONICS CENTERING KNOB** (*as shown on page 3*). If the CaddieCommand is not centered, the motorcaddie will not track straight.

During normal operation, a sensor in the CaddieCommand is detecting course conditions and allowing for small terrain deviations, thus allowing the caddie to follow a straight line of travel. If for any reason the front wheel becomes jammed and cannot return to center, the self-centering feature will shutoff after 6 seconds. To dislodge the obstacle, turn the power **OFF** and remove the obstruction. Turn the power back **ON**. The wheel should now *automatically* align itself. If it does not, re-adjust the Centering Knob as shown on page 3.

The centering and directional control in the front wheel can be damaged if the unit rams into any obstacle. When the motorcaddie must be maneuvered in close areas, it may be best to do so manually; for instance, across bridges, around trees or in parking lots. Damage caused by hitting obstacles is not covered under the manufacturers warranty. All CaddieCommand units **MUST** be returned to Kangaroo for proper repair. There are no user serviceable components inside.

(An optional front wheel "Bumper Guard" is available to protect the unit's centering components.)

Electronics (Transmitter & Receiver)

Receiver Module

The receiver module is the main control center of the CaddieCommand. It processes and relays all of the signals from the transmitter to the front wheel. The receiver module is **designed to receive a signal from the transmitter every 30 seconds**. If for any reason **the unit does not receive a signal within this time span, it will shut off**. **The auto shut-off will also stop the motorcaddie if it gets out of signal range**. This is a required safety function to prevent a runaway motorcaddie. In normal use, most golfers will be making many directional adjustment signal transmissions. However, if periodic steering adjustment is not needed, and the motorcaddie stops, just press the **GO** button and the unit will start.

Hand-Held Transmitter

The transmitter is supplied with a fresh, standard Alkaline 9 volt battery. The battery compartment is located on the bottom rear of the transmitter. The cover slides off for easy battery replacement. Under normal use, the 9 volt battery should last 3 months. Replace the transmitter battery at least every six months.

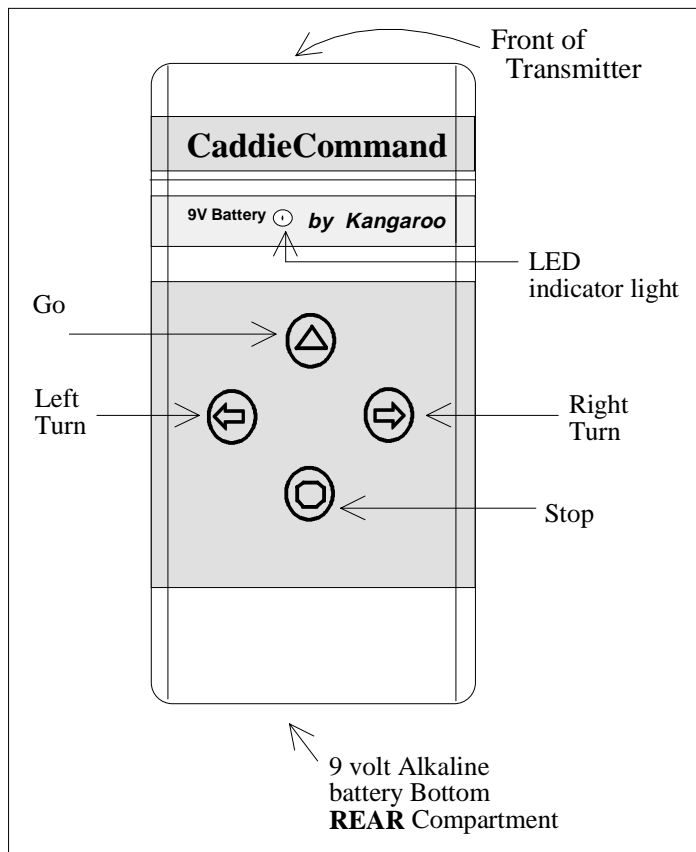
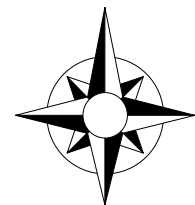
KEEP THEM DRY

Use great care in operating the motorcaddie around water. The transmitter is sealed to be water resistant. However, if dropped into a puddle, pond, or creek, it may become damaged.

The receiver module should be protected at all times against water damage. If the caddie runs into a body of water and the receiver module becomes submerged, the electronic circuit board inside will be destroyed. When washing the unit, always remove the receiver module. If the CaddieCommand electronics are damaged by extreme exposure to water, *ie. submerged in a pond*, the damage will not be covered under the manufacturer’s warranty.

The Red Light located on the top front of the transmitter, labeled “9v Battery”, signals the user in two ways.

1. When a signal is given; the light will flash twice — once with the pressing of the button, and again when the button is released.
NOTE: The buttons are easy to press. There is no need for excessive force. When the indicator light flashes, the signal has been sent.
2. When the 9 volt battery is weak; the light will stay on continuously, indicating the 9 volt battery **MUST** be replaced. The CaddieCommand may have a loss of signal strength and a loss of range when the battery is weak. To test the battery, press and hold any function button. If the light stays on while the button is depressed, the battery is weak and should be replaced.



The position of the transmitter is important during signal transmission. In order to achieve maximum range, hold the transmitter with the control buttons on top and the back of the transmitter toward the ground. Point the front of the transmitter toward the motorcaddie. The transmitter will operate if held otherwise, but the overall operating range will be decreased. The range will also be affected if there are obstacles between you and the motorcaddie such as trees, buildings, cars, etc.

Reminder :

The arrows indicate steering direction as if you were operating the caddie manually. If the caddie is coming toward you, the steering direction of the arrows must be reversed.



OPERATION

Connect the CaddieCommand to your Hillcrest or Hillcrest AB as instructed on page 3. Familiarize yourself with the controls on the hand-held transmitter on page 4 and page 5.

To operate the motorcaddie in the remote mode, turn **ON** the distance timer. Turn the power switch **ON**. The hand-held transmitter is now controlling the motorcaddie.

NOTE: When using the CaddieCommand, the distance timer becomes an **ON/OFF** switch for the remote system, and will not function as a normal distance timer.

Set the Speed Control Thumb Wheel on the Hillcrest handle to match your walking pace. To start the motorcaddie, **PRESS GO** button on transmitter. Hillcrest will start and ramp up to your preset speed. **PRESS GO** button a second time and the Hillcrest will automatically increase and ramp up to 90% of its maximum speed (approximately 4.5 mph). **PRESS GO** button a third time and the Hillcrest will automatically decrease its speed to your original preset speed. **PRESS GO** a fourth time and it will increase and so on. . . every alternate activation of the **GO** button will increase or decrease motorcaddie speed.

To start the motorcaddie, **PRESS GO**. To steer, **PRESS AND HOLD** the appropriate **Arrow Button**. Once the turn is achieved, release the button and in two seconds the front wheel will automatically return to center. **NOTE:** The directional buttons will operate when the motorcaddie is stopped.

To stop the motorcaddie, **PRESS STOP**. (Pressing the stop button on the transmitter **DOES NOT** activate the Hillcrest AB's maximum braking system for motorcaddies with serial numbers below 87737. To achieve maximum braking the power switch must be turned **OFF** manually). If you stop the motorcaddie on a hill, always **turn** it across the slope **to park** it. Kangaroo Motorcaddies **DO NOT** have a parking brake and will creep down a hill on their own.

Hillcrest AB's with a serial # 87737 or higher are fitted with an electronic control board that activates Automatic Braking (AB) with CaddieCommand when the **STOP** button is pushed. To stop the motorcaddie, **PRESS STOP**. If you stop the motorcaddie on a steep hill, you may need to turn it across the slope to park it. Kangaroo motorcaddies **DO NOT** have a parking brake and may creep down a hill on their own.

Play it Safe

Expect an orientation period to learn the controls of the CaddieCommand. Do not try to learn the controls in close quarters. **Never try to operate the motorcaddie while it is out of your sight!** Play it safe! Your new Kangaroo is not a toy. Always use common sense while operating.

Manual Operation

To operate the motorcaddie in the manual mode, **PRESS** the transmitter's **STOP** button. Turn **OFF** the handle's power switch and distance timer. Adjust the speed control and turn **ON** the power switch.

BEHAVIOR BY MODEL COMPARISON

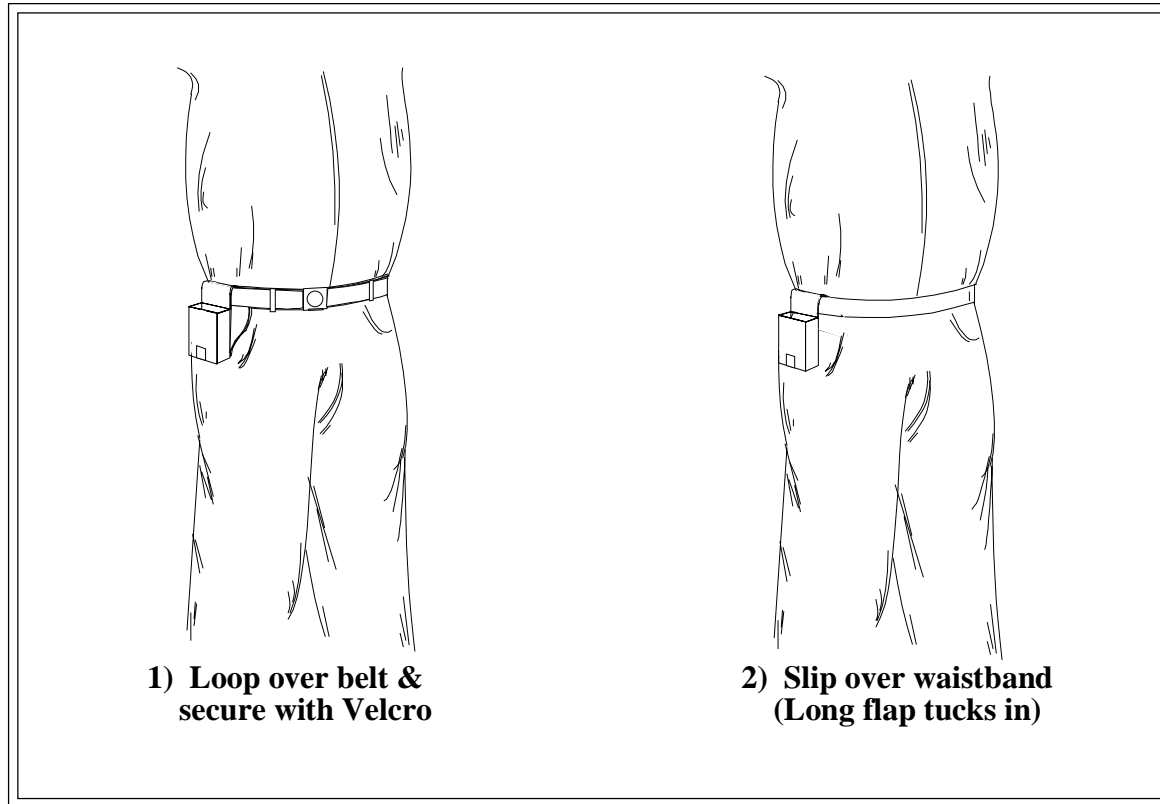
Hillcrest

1. Use **extreme caution** when operating the regular Hillcrest on hilly courses under remote control. The regular Hillcrest does not slow itself going down hills, so avoid steep hills when under remote control. To go down steep hills, turn the CaddieCommand **OFF** at timer switch and walk with the caddie under manual control.
2. The regular Hillcrest can track straight nicely when traveling across a slope. It will have a slight tendency to steer downhill, typical of any wheeled device.
3. When attempting a turn, the regular Hillcrest will be less responsive as it tries to drive straight ahead due to the equal drive force from both rear wheels.
4. The regular Hillcrest will not turn sharply since both rear wheels try to drive forward equally.
5. When stopping on a hillside, park the caddie crosswise to prevent rolling. **There is no parking brake.**

Hillcrest AB

1. The Hillcrest AB (with AutoBrake) can travel down hills under greater control because of its “in gear” braking. When the **STOP** button on the transmitter is depressed, *some* braking is achieved. This is equivalent to walking with the caddie with the speed control at its slowest position. To achieve maximum braking, the main power switch on the handle must be switched OFF!
 - 1a. For serial number 87737 and higher, full remote autobraking: see reverse page.
2. The Hillcrest AB will steer itself downhill more readily when it is traveling across a slope than the regular Hillcrest. This tendency is due to the independence of the rear wheels allowed by the differential gearbox. It may be necessary to steer the Hillcrest AB manually on side hills to achieve the desired course of travel.
3. The Hillcrest AB gives prompt response to steering input. If the caddie/golf bag set-up is particularly rear weight biased, it is possible that there could be some delay or resistance to turning. Damp grass can heighten this condition.
4. The Hillcrest AB can execute sharper turns because of the variable drive to the wheels via the differential gearbox.
5. When stopping on a hillside, park the caddie crosswise to prevent rolling. **There is no parking brake.**

CaddieCommand Transmitter Holster



*Shoot Straight . . .
while your holster accommodates your CaddieCommand Transmitter.*

Kangaroo is pleased to provide a transmitter holster *free* of charge, with your purchase of a new CaddieCommand radio-control system. It can be worn two ways:

- 1) Looped over a belt with the back flap secured by the Velcro. Or
- 2) Slipped over the waistband of pants or a skirt.

Try it both ways, to decide which you prefer! Its long back flap is stiff enough to hold the unit secure. When you put your transmitter away, flip the long flap forward, secure with Velcro, and store in a safe, dry place.

We're sure you're going to enjoy many fun rounds with your new CaddieCommand! **Be sure to study the Owners Manual—and to replace the transmitter's battery every 3 months!**



Kangaroo CaddieCommand

Manufacturer's Limited Warranty

Kangaroo Products Co.



Your Kangaroo CaddieCommand is manufactured to rigorously uphold specifications necessary for this type of product in order to provide dependable service to the golfer. It incorporates years of research and development involving construction and evaluation of countless prototypes.

The CaddieCommand is guaranteed to the original purchaser against defective materials and workmanship for a period of one year from the date of purchase, providing a signed and dated WARRANTY CARD is sent to KANGAROO PRODUCTS CO. within 30 days of the date of purchase.

The company will repair or replace, at its option, free of charge, any CaddieCommand or part thereof found to be defective when returned to the factory for inspection (shipping charges are the responsibility of the customer.) Written confirmation or request for repairs or replacements **must** accompany all merchandise.

IMPORTANT: Damage or failure due to accident, abuse, misuse or neglect is specifically **excluded** under this warranty.

This guarantee is in lieu of all other guarantees, expressed or implied, and we cannot authorize any person to assume for us any other obligation or liability in connection with the sale of this product.

Features and manufacturer's specifications are subject to change without notice.

This product is manufactured for the sole purpose of remotely controlling a Kangaroo Hillcrest motorcaddie during a game of golf. Other use voids the warranty and releases manufacturer and its sales agents from liability.

Do not attempt to repair, alter, or modify any CaddieCommand Remote Control System or component thereof without prior authorization from Kangaroo's Technical Service Department. Failure to comply automatically voids the manufacturer's warranty!