FLYING TIPS!

Take off - – *First select your Control Mode setting to the level you are most comfortable with. We suggest starting with the (B) Manual Control Mode setting. To take-off, the rotors need to spin up to speed to produce lift. For great take-offs use the following steps. 1) Pull the trigger (throttle) completely up and watch the helicopter leap off the ground. 2) Once off the ground, gently reduce the throttle so that the helicopter is at the desired height above the ground.*

Altitude Control *- the throttle control is a digital proportional system, therefore fine movement of the LEFT STICK will produce minor changes in the helicopter altitude.* **Tip!** *Take time to practice controlling the altitude and getting accustomed to the throttle sensitivity.*

Trimming - *Once flying at the desired height the VRC Shadow Helicopter may be spinning under the rotors instead of holding a heading. Adjust the trim control so that the VRC Shadow Helicopter body does not spin. While the VRC Cyclic is operated with one hand, it is necessary to use the other hand to adjust trimming. The VRC Cyclic can be operated in wither hand as it is completely symmetrical. Turn the Trim Control Knob on the VRC Cyclic to the left (Counter Clockwise) if the body is spinning to the right (Clockwise). Turn the Trim Control Knob on the VRC Cyclic to the right (Clockwise) if the body is spinning left (Counter Clockwise). If the (A) Virtual Control Mode is enabled, avoid tilting the VRC Cyclic to the left or right when adjusting trim as this may counter the effects of the trim adjustment. Note: Many factors affect the trim of the VRC Shadow Helicopter such as battery condition, throttle setting and damage to the rotors. It will most likely be required to adjust the Trim Control Knob more than once during a flight. Once trimmed, minor corrections can be managed using the steering control. See TROUBLESHOOTING section for more information*

Forward / Reverse Flight – *Regardless of Control Mode setting the best forward flight motion is achieved by gently moving the RIGHT STICK up, this produces the smoothest transition from hover to forward moving flight. To reverse the Micro Mosquito 4x4, move the RIGHT STICK down. Sharp or abrupt movements can cause the helicopter to "porpoise" or swing, but might be required to overcome a slight wind or draft.*

Direction Control – - *Direction control convention is based as if you were sitting in the pilot's seat of the helicopter so that when the helicopter is flying towards you the steering will appear to reverse. It is very important to note that the left / right steering of the VRC Shadow Helicopter is dependent upon on the Control Mode setting on the VRC Cyclic. Please refer to the (A) Virtual Control Mode or (B) Manual Control Mode sections of this instruction manual for a quick explanation of Directional Control for your selected VRC Cyclic Control Mode Switch setting.*

TROUBLESHOOTING

ISSUE:	CAUSE:	CORRECTIVE ACTION:
VRC Shadow Helicopter will not start, LED on VRC Shadow Helicopter is OFF.	1) Helicopter not turned on. 2) Battery is not charged. 3) Helicopter was not set to OFF during charging. 4) Rotors locked for overload protection.	1) Turn helicopter on. 2) Ensure helicopter is off and charge battery. 3) Ensure batteries are fresh. 4) Adjust helicopter's on/off switch to OFF, then switch on again.
Helicopter will not start, LED on helicopter is ON.	1) VRC Cyclic is not turned ON. 2) Speed control is not initialized . 3) Battery is low.	1) Turn VRC Cyclic on. 2) Pull the trigger on the VRC Cyclic completely and then release it completely to initialize speed control. 3) Ensure helicopter is OFF and charge battery.
Helicopter is flying too high.	1) You need to reduce the throttle.	1) Release the Trigger on the VRC Cyclic gradually until desired altitude is attained.
Helicopter is flying too low.	1) Needs more power/throttle. 2) The battery in the helicopter is low. 3) The batteries in the charger are drained.	1) Pull the Trigger on the VRC Cyclic gradually until desired altitude is attained. 2) Ensure the helicopter is OFF and charge the battery. 3) Remove batteries from charger & replace with new batteries and charge the helicopter again.
Helicopter doesn't hover.	1) The helicopter drifts forwards/backwards.	1) If you are using (A) Virtual Control Mode, you will need to tilt the Cyclic forward or backward to compensate and hold the helicopter in position. If you are using (B) Manual Control Mode, you will need to pivot the Manual Control Stick up with your thumb or down with your thumb to compensate and hold the helicopter in position.
Helicopter doesn't fly backwards	1) The helicopter only flies backwards briefly then spins to fly forward.	1) Aerodynamics make flying backwards more difficult than flying forwards and this flight pattern is normal. Practice flying backward and control the left/right motion to keep the helicopter pointed in the direction you desire.
Helicopter doesn't move fast enough.	1) The battery charge is getting low. 2) The tail rotor is damaged. 3) The helicopter center of gravity is no longer correct.	1) Turn the helicopter off and charge the battery. 2) Replace the damaged tail rotor with the appropriate new unit from the replacement rotor kit (available in stores) 3) Tape a clip on the bottom front area of the helicopter to add weight to adjust the center of gravity towards the front. See also "Helicopter doesn't hover" issue.
Helicopter always turns.	1) Trim control VRC Cyclic is not set correctly. 2) The rotor blades have sustained damage / or wear from use: a. Helicopter spins counter clockwise. b. Helicopter spins clockwise.	1) Adjust the trim control knob on the VRC Cyclic. See the FLYING TIPS section. 2) Gently bend more curvature into the blades. a. Adjust the top rotor blades. b. Adjust the bottom rotor blades.
Helicopter fails to take off.	1) Locking pin under the body has detached from the drive shaft. 2) The rubber stopper on the top of the drive shaft has detached.	1) Replace locking pin as shown. 2) Replace the rubber stopper (part separately available inside Replacement Parts Kit).

NOTICE!

IF YOU HAVE ANY PROBLEMS OR CONCERNS ABOUT THIS PRODUCT, CONTACT OUR CUSTOMER CARE CENTRE BEFORE RETURNING IT TO ANY RETAIL STORE!

Please contact us at: *Email: info@interactivetoy.com*

Phone: Outside North America: +1 416 444 6873 Inside North America: 1 866 214 2220

Address: Interactive Toy Concepts,1192 Martin Grove Road,Toronto, Ontario, Canada. M9W 5M9

Web site: www.interactivetoy.com

IMPORTANT SAFETY INFORMATION

Keep the VRC Shadow Helicopter away from face, eyes and hair at all times. Keep fingers away from moving rotors or propellers. Do not fly the VRC Shadow Helicopter near or at other people or animals. Use caution when flying, make sure people around you know that you are playing the VRC Shadow Helicopter. Recommended for use indoors only in rooms without obstacles, breakable objects or fans. The VRC Charger provided in this package is for charging the VRC Shadow Helicopter ONLY. Do not use any other source to charge the VRC Shadow Helicopter. Do not attempt to overcharge your VRC Shadow Helicopter. Disconnect the VRC Shadow Helicopter from the Charger when not in charging. Follow the charging instructions provided in this instruction manual.

IMPORTANT BATTERY INFORMATION

Use only batteries recommended in this instruction manual. Do not mix old and new batteries. Battery installation should be performed by an adult. Be careful to install the batteries with the correct polarity, as indicated. Do not use rechargeable batteries. Do not mix alkaline, standard, lithium, rechargeable, or different types of batteries. The supply terminals are not to be short-circuited. Exhausted batteries are to be removed as they will hinder performance. Never leave a battery unattended while it is being charged. Never leave a battery unattended in the presence of children. VRC Shadow Helicopter charging time will increase with usage as the condition of the C cells diminish. The VRC Shadow Helicopter set takes one 9V battery and six C-size batteries (not included).

FCC NOTE: U.S. ONLY

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: 1) This device may not cause harmful interference. 2) This device must accept any interference received including interference that may cause undesired operation. Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These Limits are designed to provide reasonable protection against harmful interference in a residential installation. This generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures: - Reorient or relocate the receiving antenna - Increase the separation between the equipment and receiver - Connect the equipment to an outlet on a circuit different from that to which the receiver is connected - Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Notice: Canada only.

This radiocommunication device complies with all the requirements of Industry Canada Standard RSS-310. Operation is subject to the following two conditions: 1) This device may not cause harmful interference. 2) This device must accept any interference received, including interference that may cause undesired operation. Field Strength and measurement distance: 27.145MHz – 57.7 dBµV/m at 3 meter. 49.860MHz - 62.65 dBµV/m at 3 meter.

Limited 30-day warranty

Product is warranted by Interactive Toy Concepts Limited against manufacturing defects in material and workmanship under normal use for (30) days from the date of purchase.

Warranty is validated upon receipt of proof or purchase and confirmation of UPC code.

Proof of Purchase

Lithium Polymer Rechargeable Batteries must be recycled or disposed of properly.

FCC NOTE:

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

VRC

virtual • reality • control

INSTRUCTION MANUAL

INTER ACTIVE TOY

AGE 8+

WARNING: *The VRC Shadow Helicopter is a delicate machine, before removing it from the packaging please read the instructions.*

Congratulations on the purchase of your 3-channel VRC Shadow Helicopter. VRC or Virtual Radio Control is a revolutionary new line of flying toys that are controlled by a sophisticated "Cyclic" just like a real aircraft. The VRC Cyclic is operated in a manner similar to a traditional joystick allowing the user to enjoy a truly virtual flying experience that is unlike anything else. Two modes of operation ensure that novice and advanced users alike can enjoy hours of virtual flying fun. The advanced users will find the Virtual Control Mode (A) to be the most challenging as it replicates the same type of control that would be found in a real helicopter. The novice or intermediate users will find the Manual Control Mode (B) to be the most easily accessible play method as it is the most similar to common video game controllers. The helpful tips in this manual will enhance your experience regardless of your level of expertise. Look for these Tips symbols for extra help.

UNPACKING YOUR VRC SHADOW HELICOPTER

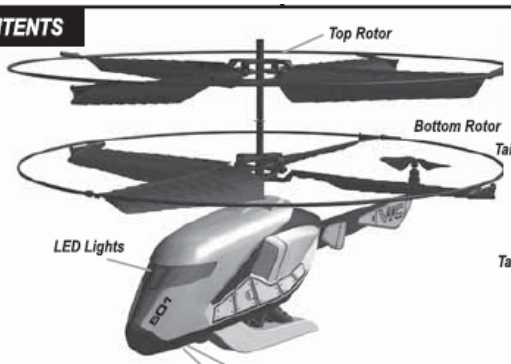
To prevent damage during shipping the VRC Shadow Helicopter is securely fastened in the package. Please ensure that all of the tie-down and fastening locations are unfastened before attempting to remove the helicopter. Be very careful when removing the helicopter to prevent damaging it.

RELEASING THE CHARGE BASE

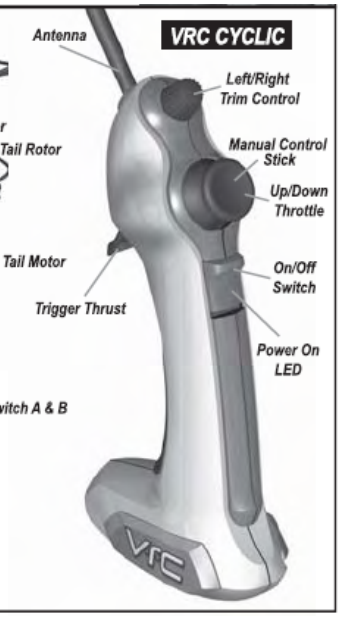
To release the Charge Base from the packaging, rotate the locks and align the arrows on the charge base to the sticker, the lock will then release.

COMPLETE PACKAGE CONTENTS

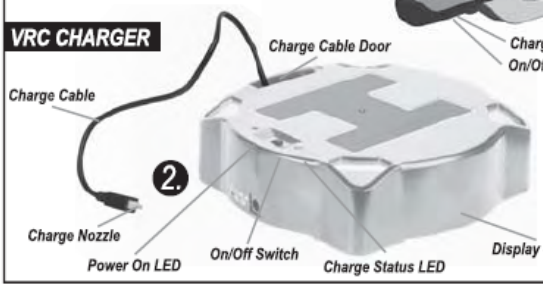
1. VRC Shadow Helicopter
2. VRC Charger
3. VRC Cyclic with built-in antenna
4. Instruction Manual



VRC CYCLIC



VRC CHARGER



INSTALLING BATTERIES

The VRC Shadow Helicopter has a built-in, non-replaceable, rechargeable Lithium-Polymer battery. It is necessary to install one 9 Volt battery (not included) into the Cyclic (controller) and six C-size batteries (not included) into the VRC Charger. Please note, it is possible to use an external AC adapter (not included) instead of the six C-size batteries by plugging the adapter it into the charger and a wall electrical outlet. (The AC adapter specifications are listed further below.) As described below, battery installation is easy.

INSTALLING THE VRC CYCLIC BATTERY

1) Unscrew the small screw on the battery door located at the bottom of the Cyclic using a Philips screwdriver.
2) Remove the battery door.
3) Install one 9 Volt battery as shown in the illustration.
4) Replace the battery door and tighten the screw using a Philips screwdriver. Do not over tighten the screw.

INSTALLING THE VRC CHARGER BATTERIES

1) Flip the VRC Charger upside down and unscrew the two screws on the battery door using a Philips screwdriver.
2) Remove the battery door.
3) Install the 6 C-size batteries as shown in the illustration.
4) Replace the battery door and tighten the two screws using a Philips screwdriver. Do not over tighten the screws. Flip the VRC Charger right side up.

PRE FLIGHT- SYSTEM PREPARATION

Charging your helicopter:

1) Ensure the helicopter's on/off switch is in the OFF position.
2) Plug the charger into the helicopter (as shown).

3) Ensure charger is ON-charging will start automatically.
4) Let the VRC Charger run its charge cycle. A full Charging period will take about 15-20 minutes. When charge is finished the green LED on the charger goes out. The VRC Shadow Helicopter is now ready to fly.

Charger – Red and Green color LEDs showing VRC Charger power, battery power and charging status when the helicopter is plugged in.

Red LED is ON:	Power switch in "ON" position.
Red LED Dim:	The battery voltage is low.
Green LED is Flashing:	The helicopter is charging.
Green LED is OFF:	The helicopter is fully charged.

Tip! *GET IN THE AIR FAST!!! THE HELICOPTER IS PARTIALLY CHARGED SO YOU CAN FLY IMMEDIATELY OUT OF THE BOX.*

Tip! *CHARGE TIME VARIES BASED ON HELICOPTER AND CHARGER BATTERY CONDITIONS. TYPICALLY AFTER A 7 MINUTE FLIGHT THE HELICOPTER WILL NEED A 15 MINUTE CHARGE.*

Tip! *YOU DO NOT NEED TO WAIT FOR THE CHARGE TO BE COMPLETE TO FLY, SHORTER CHARGE TIMES = SHORTER FLIGHT TIMES.*

Tip! *YOU CAN POWER THE CHARGER BY USING AC CURRENT IF YOU SUPPLY YOUR OWN AC ADAPTER AND PLUG IT INTO THE COAXIAL INPUT JACK ON THE SIDE OF THE CHARGER. THE ADAPTER SHOULD BE RATED WITH DC 9V, 450mA OUTPUT AND CENTRAL PIN POSITIVE. THE CHARGER OPERATION AND CHARGE TIME WILL REMAIN UNCHANGED.*

NOTICE: Interrupting the charge before the charge cycle is completed will not damage the battery, however for the longest flight times please let the charger finish its charge cycle. Allowing the helicoper to be left alone fully discharged may damage its internal battery!

PILOT INFORMATION NOTICE!

The VRC Shadow Helicopter is an indoor helicopter only. The technology that makes the helicopter stable and easy to fly will prevent you from flying in winds!

GETTING TO KNOW THE VRC SHADOW HELICOPTER

BASIC FUNCTIONS:

Control Mode Switch *- Switches the Control Mode Cyclic between manual and virtual control.*

On / Off Switch *- turns the VRC Cyclic On and Off.*

LED *- lights up red when the VRC Cyclic is on.*

Antenna *- Switches the Control Modis built into the VRC Cyclic permanently. Attempting to remove the antenna may damage the VRC Cyclic and void the warranty.*

Trim Control Knob *- Corrects unwanted in-flight rotation of the VRC Shadow Helicopter.*

Tilt Control *- Allows for Virtual Control of the VRC Shadow Helicopter*

Manual Control Stick – *Allows for Manual Control of the VRC Shadow Helicopter*

The VRC Cyclic is a digital proportional radio, therefore small movements in the Manual Control Stick or slight tilts will produce precise control. The design of the Cyclic is advanced for maximum hand comfort regardless of the Control Mode selected, or whether you're using your right or left hand. Please note, the antenna is not removable. The radio control range is up to 10M, and depends on interference within the operation environment. The 3 channels of operation will allow the user to control the altitude, turning, and forward or backward motion of the VRC Shadow Helicopter.

A. VIRTUAL CONTROL MODE:

When the Control Mode Switch on the VRC Cyclic is set to A, the Virtual Control Mode is engaged. This is an advanced level mode so it is recommended to try Mode B first. The basic principle behind Virtual Control Mode seems simple but it may take a bit of getting used to. The turning, as well as forward and backward flight of the VRC Shadow Helicopter are controlled by tilting the VRC Cyclic as described below.

- *To fly forward, tilt the VRC Cyclic forward.*
- *To fly backwards, tilt the VRC Cyclic backwards.*
- *To turn the helicopter to the left, tilt the VRC Cyclic towards the left.*
- *To turn the helicopter to the right, tilt the VRC Cyclic towards the right.*

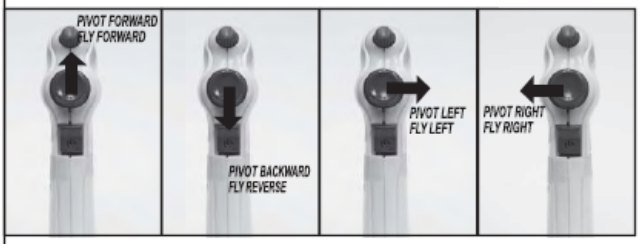
The VRC Cyclic uses digital proportional control when it is tilted forward, backwards or sideways.Tilt the VRC Cyclic slightly in any direction will yield moderate changes in flight behavior and tilting the VRC Cyclic all the way will yield more profound results.

It is very important to always remember to bring the VRC Cyclic back to its normal upright position to achieve a stable flight. It is further suggested to avoid making sudden moves with the VRC Cyclic to avoid destabilizing the VRC Shadow Helicopter. Just like in a real helicopter, the VRC Shadow Helicopter will respond to each hand motion, so a steady hand will make for a steady flight.

Notes:
-The Manual Control Stick on the VRC Cyclic is inoperable in this Virtual Control Mode.
-The Trigger on the VRC Cyclic is used for throttle (altitude control) in Virtual and Manual Control Mode.

B. MANUAL CONTROL MODE:

When the Control Mode Switch on the VRC Cyclic is set to B, the Manual Control Mode is engaged. This is a novice to intermediate level mode and should be instantly familiar to those with some video game experience. Instead of tilting the Cyclic, the turning, forward and backward motion of the VRC Shadow Helicopter are accomplished by pivoting the VRC Cyclic's Manual Control stick to the right, left, up and down with the thumb.



- *To fly forward, pivot the Manual Control Stick on the VRC Cyclic up.*
- *To fly backwards, pivot the Manual Control Stick on the VRC Cyclic down.*
- *To turn the helicopter to the left, pivot the Manual Control Stick on the VRC Cyclic towards the left.*
- *To turn the helicopter to the right, pivot the Manual Control Stick on the VRC Cyclic towards the right.*

The Manual Control Stick uses digital proportional control when it is pivoted up, down or sideways. Pivot the Manual Control Stick slightly in any direction will yield moderate changes in flight behavior and pivoting the Manual Control Stick all the way will yield more profound results.

The VRC Shadow Helicopter will respond to each motion of the thumb on the Manual Control Stick, so a steady thumb will make for a steady flight.

Notes:
-The VRC Cyclic's Virtual (Tilt) Control is inoperable in this Manual Control Mode.
-The Trigger on the VRC Cyclic is used for throttle (altitude control) in Manual and Virtual Control Mode.

PRE-FLIGHT CHECKLIST:

1) Turn on VRC Cyclic.
2) Turn VRC Helicopter on.
3) Set the helicopter on a horizontal flat surface for the best launch.
4) Select either the (A) Virtual Control Mode or (B) Manual Control Mode by pressing the Control Mode Switch to the corresponding letter.
5) Pull the Trigger completely, then release completely to initialize speed control.
6) Gently increase the throttle by pulling the trigger (thrust) to ensure that the rotors start spinning. Now that you know your VRC Shadow Helicopter is functioning as it should- RELAX! -DO NOT TAKE OFF!

TIP! Be sure to read the next section on "FIRST FLIGHT- TRIMMING YOUR HELICOPTER" before your first flight!

FIRST FLIGHT-TRIMMING YOUR VRC SHADOW HELICOPTER

Your VRC Shadow Helicopter must be "trimmed" to stop unwanted rotation. First, pull the trigger (throttle) on the VRC Cyclic just enough to simply raise the helicopter to eye level and turn the Trim Control Knob (as shown) on the VRC Cyclic either to the left or right until the helicopter stops spinning. This should be done every time you fly your helicopter. Trim setting will vary as the helicopter battery drains. Re-adjust trim during flight as required.

FLYING TIPS!

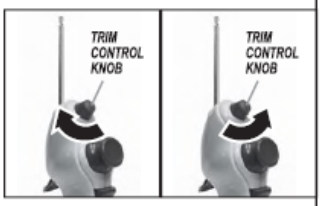
Take off – First select your Control Mode setting to the level you are most comfortable with. We suggest starting with the (B) Manual Control Mode setting. To take-off, the rotors need to spin up to speed to produce lift. For great take-offs use the following steps.

1) Pull the trigger (throttle) completely up and watch the helicopter leap off the ground.
2) Once off the ground, gently reduce the throttle so that the helicopter is at the desired height above the ground.

Altitude Control - the throttle control is a digital proportional control system, therefore fine movement of the Trigger will produce minor changes in the VRC Shadow Helicopter altitude.

TIP! Take time to practice controlling the altitude and getting accustomed to the throttle sensitivity.

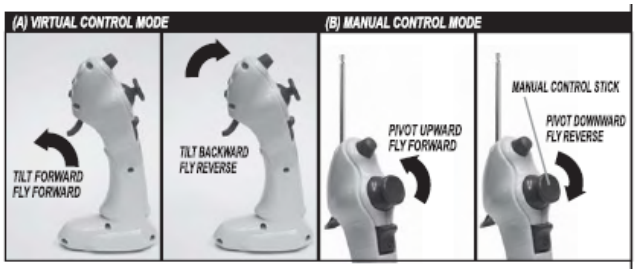
Trimming - Once flying at the desired height the VRC Shadow Helicopter may be spinning under the rotors instead of holding a heading. Adjust the trim control so that the VRC Shadow Helicopter body does not spin. While the VRC Cyclic is operated with one hand, it is necessary to use the other hand to adjust trimming. The VRC Cyclic can be operated in wither hand as it is completely symmetrical. Turn the Trim Control Knob on the VRC Cyclic to the left (Counter Clockwise) if the body is spinning to the right (Clockwise). Turn the Trim Control Knob on the VRC Cyclic to the right (Clockwise) if the body is spinning left (Counter Clockwise). If the (A) Virtual Control Mode is enabled, avoid tilting the VRC Cyclic to the left or right when adjusting trim as this may counter the effects of the trim adjustment.



Note: Many factors affect the trim of the VRC Shadow Helicopter such as battery condition, throttle setting and damage to the rotors. It will most likely be required to adjust the Trim Control Knob more than once during a flight. Once trimmed, minor corrections can be managed using the steering control.

See **TROUBLESHOOTING** section for more information.

Forward / Reverse Flight – If you are using **(A) Virtual Control Mode,** you will need to tilt the VRC Cyclic forward to fly the helicopter forward, and you will need to tilt the VRC Cyclic backward to fly the helicopter in reverse. If you are using **(B) Manual Control Mode,** you will need to pivot the Manual Control Stick upward with your thumb to fly the helicopter forward, and you will need to pivot the Manual Control Stick downward with your thumb to fly your helicopter in reverse. Sharp or abrupt control movements can sometimes cause the helicopter to swing wildly, but might be required to overcome a slight wind or draft.



Direction Control - Direction control convention is based as if you were sitting in the pilot's seat of the VRC Shadow Helicopter so that when the helicopter is flying towards you the steering will appear to reverse. It is very important to note that the left / right steering of the helicopter is dependent upon on the Control Mode Switch setting on the VRC Cyclic. Please refer to the **(A) Virtual Control Mode or (B) Manual Control Mode** sections of this instruction manual for a quick explanation of Directional Control for your selected VRC Cyclic Control Mode Switch setting.

REPLACING THE MAIN ROTORS

Slide the (2) Lower Rotor (long stem) down the main vertical drive shaft. Slide down both of the supplied (4) spacers. Next, slide the (1) Upper Rotor down the main vertical drive shaft. Finally, support the main vertical drive shaft from the bottom and slide the small rubber stopper (3) onto the top to hold the rotor assembly together. Squeeze all components together.