

R/C 37# HELICOPTER

User Handbook



Specifications:

Main Rotor Diameter: 590 mm
Tail Rotor Diameter: 115 mm
Overall Length: 630 mm
Overall Height: 145 mm

All-up Weight: 640 g (Battery included)
Drive System: 380 SD
Battery: Ni-MH12V 650mAh

Features:

- 1) Metal main frame, CCPM mode, 3D version with alterable pitch structure.
- 2) Autorotation Landing protection.
- 3) Tail blades driven by belt provide stable flight and low noise.
- 4) 6-channel transmitter with 3D conversion mode, PIT & PLT knobs.
- 5) Mode lock switch to free lock the parameters of PIT & PLT.

100% READY-TO-FLY R/C HELICOPTER

R/C 37#
HELICOPTER

Contents

Introduction	2
Warning	2
Cautions	3
Transmitter Features	4
General Inspection Before Flight	5
Blade Tracking	6
Adjustments & Tuning	6
Controlling The HM 37	8
3D Aerobatic Flying	10

R/C 1
EXPERT

Introduction

The HM 37 is high performance Ready-to-Fly Collective Pitch (CP) Aerobatic Electric Helicopter for outdoors on calm days. At about 640 grams, the HM 37 will fly for 5-10 minutes on the 3 Cell 11.1V 1500mAh Li-Po batteries, depending on the type of flight.

Although the HM 37 is not difficult to operate, it does take more skill and practice to master than a fixed pitch helicopter. We recommend that you read these instructions thoroughly and carefully first.

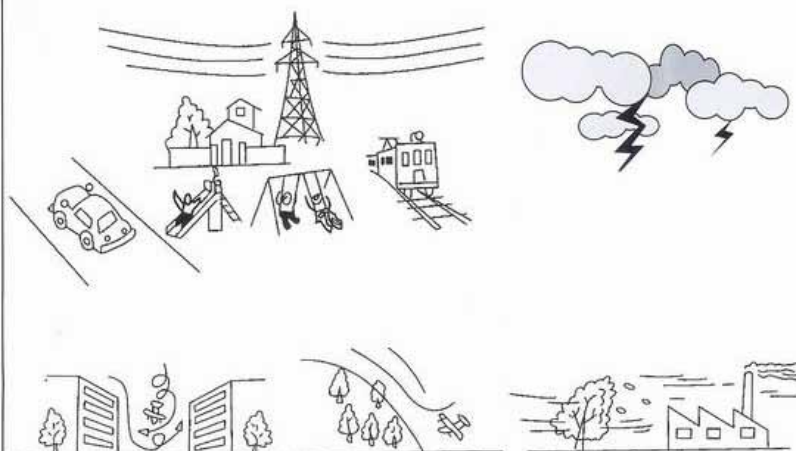
Warning

1. The HM 37 is not a toy. It is a precision machine requiring proper assembly and setup to avoid accidents and it is the responsibility of the owner to operate this product in a safe manner as it can cause serious personal injury and damage to property due to carelessness or misuse.
2. When charging the battery pack, do not overcharge! If batteries get hot during charging, discontinue charging immediately and disconnect the battery from the charger. Never leave battery unattended while charging. If you are unsure of how to charge this battery, please contact us or seek the advice of your local hobby shop. Never let children charge batteries without adult supervision.
3. To avoid an out of control model always turn the transmitter on first then connect the battery to the helicopter. When turning off the helicopter, always disconnect the battery first, and then turn off the transmitter. If the orders are reversed the helicopter may become uncontrollable and cause serious damage.
4. If you are in doubt of your ability, we strongly recommend that you seek assistance from experienced radio controlled helicopter modelers or join your local model flying club to gain the required knowledge and skill. As the manufacturer and distributor, we assume no liability for the use of this product.
5. Children under the age of twelve (12) are strictly prohibited from playing with this electric helicopter.

Cautions

1. Because the helicopter is operated by radio control, it is important to make sure you are always using fresh and/ or fully charged batteries. Never allow the batteries to run low or you could lose control of the helicopter.
2. Do not allow any of the electrical components to get wet. Otherwise electrical damage may occur.
3. You should complete a successful range check of your radio equipment prior to each new day of flying, or prior to the first flight of a new or repaired model.
4. If the helicopter gets dirty, don't use any solvents to clean it. Solvents will damage the plastic and composite parts.
5. Always turn on the transmitter before plugging in the flight battery and always unplug the flight battery before turning off the transmitter.
6. Never cut the receiver antenna shorter or you could lose control of the helicopter during flight.
7. When flying the helicopter, please make sure that the transmitter antenna is completely extended and is pointed up toward the sky, not down toward the ground.

Don't fly your helicopter at the places with these signs



Transmitter Features

6-ch Transmitter Features:

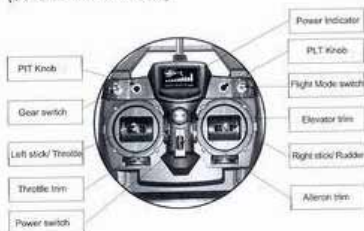
1. 3D conversion mode switch, and PIT & PLT knobs available;
2. Mode locking switch is capable of locking the adjusted PIT and PLT parameters;
3. Brand new design for the sticks and ergonomic design adopted;
4. Alteration of the frequency by changing the crystal oscillator;
5. CCPM and traditional modes freely alterable;
6. It is used for the operations of helicopter, glider and airplane.

Control Identification and function:

(MODE I - EUROPE & AUSTRALIA)



(MODE II - NORTH AMERICA)



MODE I

1. Left stick/ Rudder. It controls your helicopter forward, backward, left, and right. Push up to fly your helicopter forward, pull down to fly backward, push leftward to fly left, and push rightward to fly right.
2. Right stick/ Throttle. It controls your helicopter ascending, descending, left moving and right moving. Push up to ascend your helicopter, pull down to descend, push leftward to move your helicopter left, and push rightward to move right.

MODE II

1. Left stick/ Throttle. It controls your helicopter ascending, descending, left, and right. Push up to ascend your helicopter, pull down to descend, push leftward to fly left, and push rightward to fly right.
2. Right stick/ Rudder. It controls your helicopter forward, backward, left moving and right moving. Push up to fly your helicopter forward, pull down to fly backward, push leftward to move your helicopter left, and push rightward to move right.

3. Power Indicator. The indicator is consisted of three colors: red, yellow, and green. Green LED on means the electricity is enough to fly; Green LED off and red LED on indicate the power is not enough and stop flying; Both green and red LED show the power is in extreme shortage, and please stop flying at once.

4. Gear switch. Convert the gear switch to fold or release the skid landing system. Switching the switch up is ON, and switching the switch down is OFF.

5. Flight mode switch. Convert the flight mode. Switching up is the normal flight mode, and switching down is the inverted flight mode.

6. PLT knob. PLT offers the function of the pitch travel adjustment. Clockwise tuning the PLT knob increases the travel, and counterclockwise tuning decreases the travel.

7. PIT knob. It is used to set up the collective pitch. Clockwise tuning the PIT knob increases the size, and counterclockwise tuning decreases the size.

8. Elevator trim. It controls and modifies your helicopter forward and backward. Push up to fly forward, and pull down to fly backward.

9. Rudder trim. The trim controls and modifies your helicopter leftward and rightward. Move the trim left to fly leftward, and move right to fly rightward.

10. Throttle trim. The throttle trim controls your helicopter to ascend and descend. Push up the trim to ascend, and pull down to descend.

11. Aileron trim. The aileron trim controls your helicopter leftward and rightward. Push the trim left and fly left, and push the trim rightward and fly right.

12. Power switch. Turn on or off the power of the transmitter. Push up the switch to turn on the power, and push down to turn off.

13. Antenna. Transmit the signals.

14. Charge jack. Charge the battery back.

15. Battery box. Please note the polarities while inserting the batteries.

16. Cover of the battery box. Open the cover as the arrow direction.

Transmitter DIP Switches:

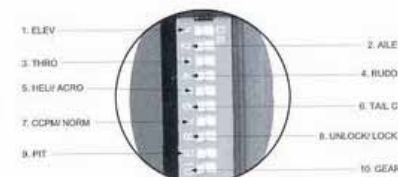
1. If you have completed all of the previous set up steps and your model still does not seem to respond correctly, double check the DIP switches on the back of transmitter to make sure they are in the correct positions. Using the switch diagram (Fig.a), make sure the first 4 dip switches are in the correct positions. If the helicopter still does not respond correctly, please do not hesitate to seek the assistance of your local Hobby Shop.
2. You have now finished checking all the settings and adjustments. Pull the throttle stick to the Throttle Down position and disconnect power off. Never turn the transmitter off before disconnecting the battery as the HM 37 may become uncontrollable.

Factory Settings

When checking the DIP switch positions, you will only need to verify switches #1-4. The other DIP switches should not be touched.

CHANNEL	TX FUNCTION	AIRPLANE FUNCTION
1	ELEV	Elevator
2	AILE	Aileron
3	THRO	Throttle
4	RUDD	Rudder
5	HELI/ ACRO	Revolution mixing in normal mode
6	TAIL C	Revolution mixing
7	CCPM/ NORM	CCPM/ Normal mode
8	UNLOCK/ LOCK	Lock PIT and PLT knobs
9	PIT	Pitch Dual Rate switch
10	GEAR	Fold the skid landing

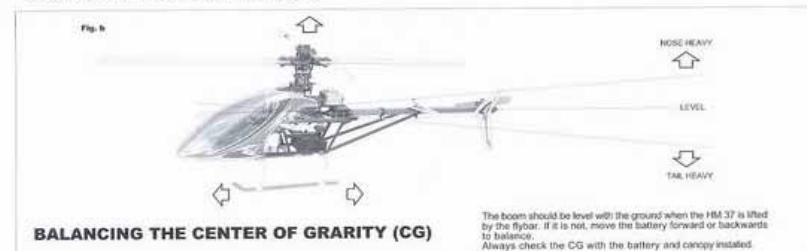
Fig. a



General Inspection Before Flight

The HM 37 is a Ready-to-Fly Electric Helicopter. All you need to do is to check the blade tension and install the battery. The battery has been partially charged at the factory and should have enough power to perform the initial flight check and trimming. Please make sure the battery pack has been fully charged before performing 3D aerobatic maneuvers or fast forward flight.

1. The main rotor blades are attached at the factory. Before flight, make sure that the blades are tight, but still free enough to straighten out when they spin. If they are too loose the blades may wobble and make the HM 37 unstable during flight.
2. To install the battery, disassemble the canopy by gradually pulling the rubber grommets off the horizontal mount bar.
3. Plug in the supplied wall charger and attach the battery pack. Caution: The battery will be fully charged in about 2 hours if it's completely discharged. Do not overcharge! Overcharging the battery will cause serious damage or may cause the battery to explode! The battery has finished charging when it is warm to the touch. If the battery gets hot during charging, discontinue charging immediately and disconnect the battery from the charger. Never leave the battery unattended while charging. If you are unsure of how to charge this battery, please contact us or seek the advice of your local hobby shop. Never let children charge batteries without adult supervision.
4. To install the battery, slide the battery on the bottom of the metal chassis plate, behind the motor. If the battery feels loose, wrap the fixing strap around one of the chassis lugs a second time to remove any slack.
5. Reinstall the canopy by pushing the two rubber grommets onto the horizontal mount bar and insert the cutouts over the front landing skid struts.
6. To adjust the center of gravity, position the flybar at a 90° degree angle to the tail boom. Pick up the HM 37 by the flybar and position the battery so that the tail boom is parallel to the floor. (Fig. b)



The boom should be level with the ground when the HM 37 is lifted by the flybar. If it is not, move the battery forward or backward to balance. Always check the CG with the battery and canopy installed.

Blade Tracking

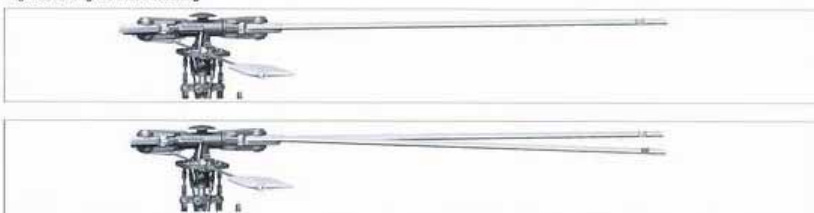
Blade tracking is a crucial component to the proper flight characteristics of your HM 37. If the blades do not track properly (if they do not follow the same path when they are spinning) they can create vibrations, instability and drag on the motor which will create a loss in power. The tracking has been set at the factory but may need some minor adjustment to optimize it. The blade tracking should be checked before every flight or after any changes or repairs have been made.

Check the Tracking: To check the tracking of the blades, the battery must be installed, the gyro initiated and the two different colored blade tracking decals placed on each blade tip. Place the HM 37 on an elevated stable surface so that you can view the blades at eye level. Make sure you are a safe distance from the blades when applying the throttle. As you bring the blades up to speed use the colored tracking decals to note which blade is tracking lowest (Fig. c). Power down the HM 37 and adjust the pitch of increments. Turn the control link so that it starts to lengthen, bringing the blade up. Tightening the control link will cause the blade to go down. After each adjustment, check the tracking and readjust as necessary until the blades track as close to even as possible.

Note!

Proper Blade Tracking is crucial to a proper flying Collective Pitch Helicopter. Refer to the Blade Tracking Instructions on PAGE 06 before flying your HM 37 for the first time or after any repairs or adjustments. Blades that are not tracking properly can lead to erratic and unstable flying.

Fig. c Checking the Blade Tracking



Adjustments & Tuning

ADJUSTMENTS & TUNING (MODE I - EUROPE & AUSTRALIA)



Attention:

Before connecting the battery to the control board, you must confirm the following settings:

- The crystals on the transmitter and receiver must match each other.
- Antenna is screwed in and extended, batteries are fully charged and transmitter has been turned on.
- The throttle stick (RIGHT CONTROL STICK) must be located in the throttle down position, otherwise serious damage to the HM 37 and personal injury may occur!
- Make sure the 3D Model switch is in the Normal Model Position.

If all of the above settings are confirmed, connect the battery to the control board.

- After the battery is connected, the red indicator light on the helicopter control board will start blinking rapidly for 5-10 seconds, which indicates that the control board and gyro are initializing. This process is for self-adjustment of the system. **DO NOT TOUCH THE HM 37 WHEN THE GYRO IS INITIALIZING!** Once initialized, the indicator light will be a solid red light. If the light does not blink after the battery is connected, please check that you have switched on the transmitter and that the battery has been fully charged. **NOTE:** If the throttle stick is not in the Throttle Down position when the battery is connected, the gyro will still initialize but the throttle stick will not be active until it is returned to the Throttle Down position.
- If the main rotor blades start rotating, and the right control stick has not been pushed forward, slowly adjust the transmitter trim (3) (see picture) until they stop rotating. If the tail blades start rotating, carefully adjust the transmitter trim (1) until they stop operating or rotate slowly.
- Test the flight controls to make sure they are operating properly and will move the swash plate in the direction you want to fly. Push the left control stick forward and the swash plate will tilt forward. Push the right control stick to the right and the swash plate will tilt to the right.
- Push the right control stick slightly forward. Keep your fingers, eyes and other objects well away from the rotating parts. When the main rotor blades start rotating, the tail blades should start rotating simultaneously.
- Slowly push the right control stick forward to increase rotor speed. The HM 37 may not take off vertically; it may go forward or backwards, left or right. Use trim sliders (2 & 4) to fine tune the HM 37 while hovering. You may also find the helicopter's nose will swing to the left or right side when you increase throttle. In this case, you need to adjust the transmitter trim (1).

ADJUSTMENTS & TUNING (MODE II - NORTH AMERICA)



Attention:

Before connecting the battery to the control board, you must confirm the following settings:

- The crystals on the transmitter and receiver must match each other.
- Antenna is screwed in and extended, batteries are fully charged and transmitter has been turned on.
- The throttle stick (LEFT CONTROL STICK) must be located in the throttle down position, otherwise serious damage to the HM 37 and personal injury may occur!
- Make sure the 3D Mode switch is in the Normal Mode Position.

If all of the above settings are confirmed, connect the battery to the control board.

- After the battery is connected, the red indicator light on the helicopter control board will start blinking rapidly for 5-10 seconds, which indicates that the control board and gyro are initializing. This process is for self-adjustment of the system. **DO NOT TOUCH THE HM 37 WHEN THE GYRO IS INITIALIZING!** Once initialized, the indicator light will be a solid red light. If the light does not blink after the battery is connected, please check that you have switched on the transmitter and that the battery has been fully charged. **NOTE:** If the throttle stick is not in the Throttle Down position when the battery is connected, the gyro will still initialize but the throttle stick will not be active until it is returned to the Throttle Down position.

- If the main rotor blades start rotating, and the left control stick has not been pushed forward, slowly adjust the transmitter trim (2) (see picture) until they stop rotating. If the tail blades start rotating, carefully adjust the transmitter trim (1) until they stop operating or rotate slowly.
- Test the flight controls to make sure they are operating properly, and will move the swash plate in the direction you want to fly. Push the right control stick forward and the swash plate will tilt forward. Push the right control stick to the right and the swash plate will tilt to the right.
- Push the left control stick slightly forward, keep your fingers, eyes and other objects well away from the rotating parts. When the main rotor blades start rotating, the tail blades should start rotating simultaneously.
- Slowly push the left control stick forward to increase rotor speed. The HM 37 may not take off vertically; it may go forward or backwards, left or right. Use trim sliders (3 & 4) to fine tune the HM 37 while hovering. You may also find the helicopter's nose will swing to the left or right side when you increase throttle. In this case, you need to adjust the transmitter trim (1).

Fig. d



6. Pitch And Throttle Adjustment Dials: (Fig.d)

Pitch Adjustment Dial:

As throttle input increases in the Normal Flight mode, the Cyclic Collective Pitch Mixing (CCPM) system automatically adds pitch to the blades to help lift the helicopter off the ground. The amount of pitch and how fast it is added can affect the flight characteristics of the HM 37. You can adjust the amount of added pitch using the Pitch Adjustment Dial. A lower pitch setting makes the HM 37's flight characteristics more docile. A higher pitch setting will give the helicopter a more aggressive flight characteristic. Beginning pilots should learn with a medium to docile pitch setting.

Throttle Adjustment Dial:

The Throttle Adjustment Dial works in much the same way as the Pitch Adjustment Dial but it controls the head speed (RPM of the blades) instead of pitch input. A higher head speed will make the cyclic controls more responsive to stick inputs but it will shorten the flight time. A slower head speed will make the helicopter more docile.

Note: If you increase the amount of pitch, you must also increase the amount of throttle to keep the helicopter from "bogging" and feeling sluggish.

Controlling The HM 37

LIFT THE HELICOPTER



Mode I
(Europe/Australia)



Push Right control stick forward.

Mode II
(North/South America)



Push Left control stick forward.

LOWER THE HELICOPTER



Pull Right control stick backward.



Pull Left control stick backward.

ROTATE LEFT



Push Left control stick left.



Push Left control stick left.

ROTATE RIGHT



Push Left control stick right.



Push Left control stick right.

The principle of flying:

The HM 37 Aerobatic CP Helicopter that utilizes direct CCPM to control cyclic and pitch inputs. The cyclic control system consists of servos, swashplate, stabilizer and main rotor blades. Their pitch angle is varied cyclically by the servos via the swashplate. This action tilts the rotational plane of the flybar paddles, and thereby the main rotor and the swashplate. The CCPM system on the HM 37 uses three channels (servos) to transfer control inputs to the swashplate. To make sure the control input forces are distributed evenly to the swashplate, the three servo control points are evenly spaced 120° apart. Unlike Fixed Pitch Helicopters that climb and descend by varying the speed of the rotor blades (more or less throttle), a Collective Pitch Helicopter uses a constant rotor speed and varies the pitch (angle) of the blades to climb and descend. In 3D mode (explained later in this manual). The HM 37 can change blade pitch positively and negatively to allow it to fly inverted and perform other aerobatic maneuvers. Like most conventional helicopters, the HM 37 always rotates around its vertical axis and the tail rotor counteracts this unwanted rotation by producing thrust in the lateral directions. The tail rotor's thrust can be varied purposely in order to change the HM 37's heading. There are two basic functions required to control the HM 37: (1) climbing and descending is controlled by altering the pitch of the blades. (2) rotation around the vertical axis is controlled through the thrust of the tail rotor by varying its rotational speed. However, you must also be able to steer the HM 37 forwards and backwards and to both sides. This task is carried out by the cyclic control system. If the swashplate inclines forwards, the plane of the flybar paddles also inclines forwards. The result is that the thrust of the rotor is directed slightly towards the rear instead of vertically, and the HM 37 responds by moving in the forward direction. There are four control functions of the control system, and we need all of them to properly fly the HM 37.

Flying Environments:

The HM 37 will fly in a spacious room without any obstacles or outdoors with calm winds up to 5-7mph. Make sure that the air is calm. Drafts caused by open windows or doors should be avoided. We recommend learning in a room with a flat, smooth floor on which the HM 37 can slide and where the air is calm. Soft carpet is not a good choice for flying, because it could hook the skid of the HM 37 and cause damage.

Attention:

Errors and carelessness in assembling and flying the HM 37 can result in serious personal injury and damage to property. Never touch the spinning rotor blades or any other exposed moving parts.

Operation Procedures:

1. Place the HM 37 in the middle of the room, you should always stand at least 6 ft (2m) from the HM 37 and behind the tail. Make sure that your HM 37 and transmitter have been assembled properly and adjusted completely. Switch the transmitter on, then connect the fully charged battery to let the gyro initiate. Once the gyro initiates, check once more that the servos are operating correctly before proceeding.
2. Now you are ready to start learning to fly. The control diagrams on the next two pages will help you trim and fly the helicopter.
3. Initially you do not need to worry about how to operate your HM 37 skillfully. Through practice. You will become more confident operating the controls and adjusting the throttle. When your fingers respond to the movements of the HM 37 spontaneously, you are ready for more advanced flying. Please note that the directions described on this page are if you are facing the tail of the HM 37. If you are facing the nose left and right will be reversed as your right is now the HM 37's left.

CONTROLLING THE HM 37 (CONT)

4. Push the throttle up gradually until the HM 37 starts to become light. The HM 37 may initially swing to the left when you increase throttle. This is because of the thrust of the tail rotor and the rotation of the main rotor (this is an unavoidable deviation during take off). Open the throttle gradually until the HM 37 becomes light, and then carefully move the throttle stick further until it is ready to lift off. Observing the HM37's response, correct any movement using the corresponding trim settings if necessary. Do not lift off the ground until you are confident that you have set the trims correctly. Don't fly too high, keep its height below one meter (3 ft.) off the floor. If there is any instability or shaking or if the helicopter is out of control, please land at once. The only thing that helps at this stage is to practice and then practice some more.

5. Try to control the HM 37 using the smallest possible corrective commands. The sooner you notice a movement and respond to it, flying deviation. Be patient as it does take time to learn all the required skills to control the HM 37. All successful pilots have mastered the skill of flying through lots of practice.

6. Once your flying time increases and you are capable of controlling your HM 37 in the air, you can slowly increase its height off the ground. The HM 37 will become more stable as it is flown a little higher, this is because it leaves its own down thrust turbulence. If you fly the HM 37 in a small room you may find that after a short time it flies unevenly and unpredictably. This is because the HM 37 quickly moves the air in the room and creates a turbulent environment, if this occurs land and take a break for a minute, the air will calm down quickly. When you are able to control the HM 37 smoothly at 3 meters high and can vary the altitude, you are now ready for advanced flying!

7. You might like to try flying the HM 37 outdoors or set up a flying course to test your skill (set up your flying course with soft material such as cushions so you don't damage the helicopter if you lose control). You can also practice with the nose of the helicopter facing you, just remember that your left and right will now be reversed! Try these three flying box patterns to practice your advanced flying skills.

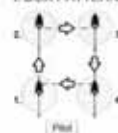
i. With the tail towards you, fly the HM 37 in a box pattern. Slide the helicopter sideways, forwards and backwards instead of using the tail rotor to turn.

ii. Repeat the box pattern facing the side of the helicopter. Practice flying from both sides.

iii. Repeat the box pattern with the front of the helicopter facing you.

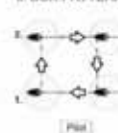
iv. Once you master the box patterns, try flying a figure 8 pattern.

i. BOX PATTERN



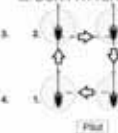
(Tail)

ii. BOX PATTERN



(Side)

iii. BOX PATTERN



(Nose)

Mode I
(Europe/Australia)



TILT NOSE DOWN AND MOVE FORWARD

Mode II
(North/South America)



Push Left control stick forward.

Mode II
(North/South America)



Push Right control stick forward.

LIFT NOSE AND MOVE BACKWARDS



Pull Left control stick backward.



Pull Right control stick backward.

SLIDE LEFT WHEN HM 37 IS FACING YOU



Note: Direction is reversed when the HM 37 is facing you!



Push Right control stick left.



Push Right control stick left.

SLIDE RIGHT WHEN HM 37 IS FACING YOU



Note: Direction is reversed when the HM 37 is facing you!



Push Right control stick right.



Push Right control stick right.

3D Aerobatic Flying

Note: You should master basic flying skills BEFORE attempting 3D aerobatic flying!

Now that you have mastered the basic flying skills, it's time to learn some aerobatic maneuvers. When learning to fly 3D maneuvers, altitude is extremely important. If a problem occurs, the more altitude you have, the more time you'll have to correct and recover.

3D Flying Mode:

To fly aerobatic maneuvers, the helicopter must be in 3D Flight Mode. The Flight Mode toggle switch located in the upper right of the transmitter switches between Normal and 3D flight modes (Fig. e). In Normal Flight Mode, the first 50% of the throttle movement is for spooling up the rotor head. As throttle input passes the 50% mark, the CCPM system gradually increases the pitch of the blades to create lift and get the helicopter into the air. Landing will also occur in the Normal Flight Mode. In the 3D Flight Mode, the throttle stick function switches from controlling the throttle to controlling the pitch angle of the rotor blades. The HM 37 must be flying to switch into the 3D Flight Mode so therefore, you should only switch into the 3D Flight Mode when the throttle input is 50% or higher. When the helicopter is in the 3D Flight Mode, the CCPM system will hold the motor at a constant RPM. The throttle stick is now controlling pitch. At 50% throttle stick, the blades will have 0% pitch (they will be flat). Increasing the throttle input above 50% will add positive pitch to the blades and generate more lift. Decreasing the throttle input below 50% will add negative pitch to the blades and force the helicopter down when flying upright. Understanding this factor is key to successful 3D flight. There are very few instances where you will use negative pitch while flying upright but when you are inverted, less throttle stick will create more negative pitch, which translates into positive pitch (because you're upside down) and the HM 37 will gain altitude.

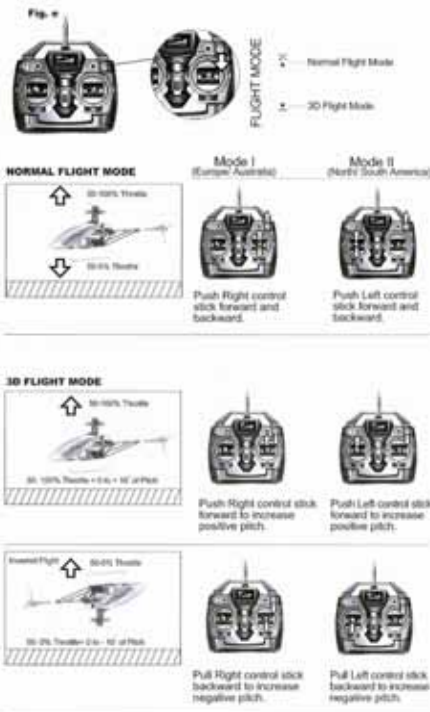
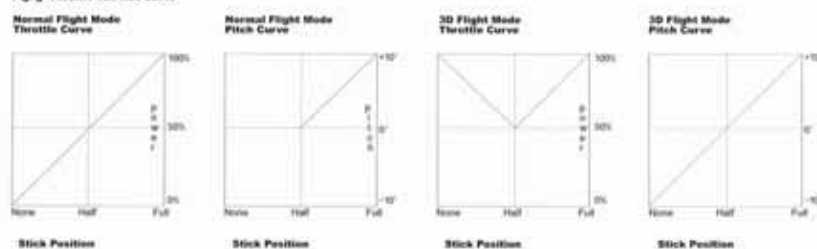


Fig. f Blade Pitch



Fig. g Throttle vs. Pitch Curve



Note: You should master basic flying skills BEFORE attempting 3D aerobatic flying!

3D Maneuvers:

There are many advanced aerobatic 3D maneuvers that you will be able to perform with your HM 37 as your skill level increases. Until then we'll start with two of the basic maneuvers that start the more advanced tricks.

The Roll:

The first 3D maneuver you should learn is the roll. The illustrations to the right will show you the stick inputs and helicopter movements needed to perform a roll. Start the roll from Fast Forward Flight (FFF) heading in a down wind direction. If it is your first time performing a roll or any other 3D maneuver, make sure you have plenty of altitude so you can recover if anything goes wrong.

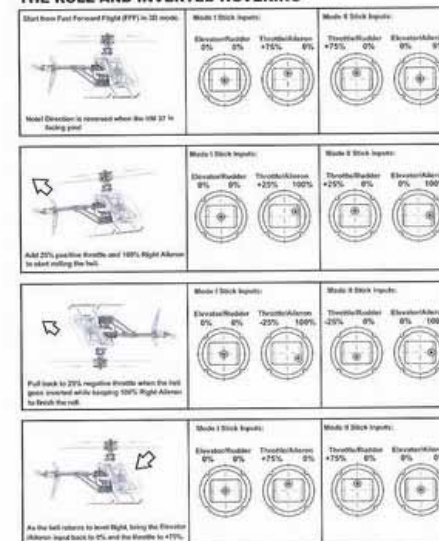
Inverted Hover:

If you want to hover the HM 37 inverted, use the same stick inputs for the roll but when you get the helicopter inverted, bring the aileron stick back to its zero position at center and use small inputs of negative throttle (negative pitch) and aileron stick inputs to keep the HM 37 level during inverted flight. To exit inverted flight, continue the steps used to finish the roll.

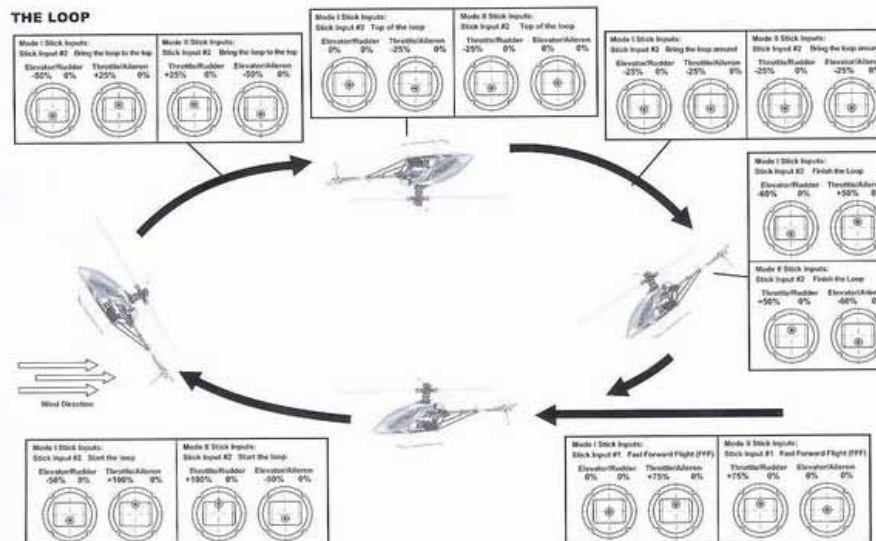
The Loop:

The loop should only be attempted after you have mastered the controls associated with the roll. The loop is a FFF maneuver that should be practiced at a higher altitude. Use the illustrations and stick input diagrams shown below to perform the loop.

THE ROLL AND INVERTED HOVERING



THE LOOP



Caution

- Any unauthorized adjustment on this product could result in a violation of part 95 of the FCC Rules. Please have a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users of the services.
- Replacement of any transmitter component (crystal, semiconductor, etc) could result in a violation of part 95 of the FCC Rules. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment.
- The antenna provided is a unique antenna. By installation of unauthorized antenna to this equipment, such unauthorized installation could void the user's authority to operate the equipment.
- A license may be required to operate this product in some countries. Consult about the license issue from the radiology department of the country.
- Changes or modifications to this unit not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment. Any change to the equipment will void FCC grant.

Note

This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 95 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment 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 TV which can be determined by turning the equipment off and on, the user is encouraged to try to 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 into 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.



TRC WALKERA PRODUCT

The specifications of the R/C aircraft may be altered without notice.