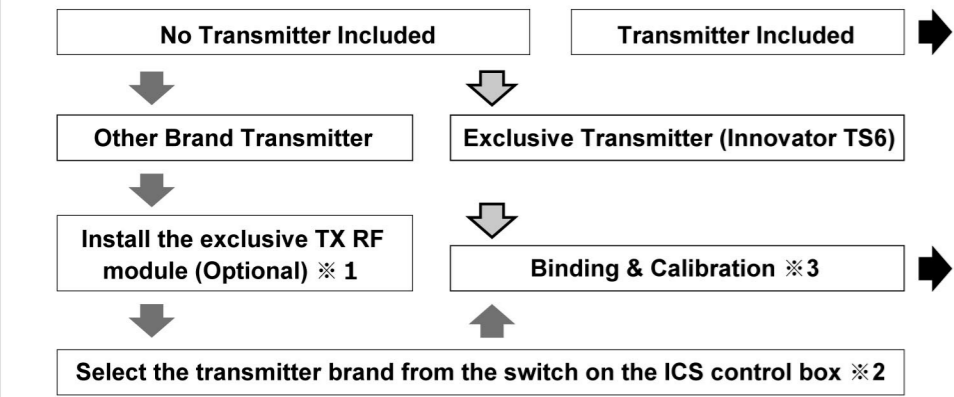


FLIGHT PROCEDURE

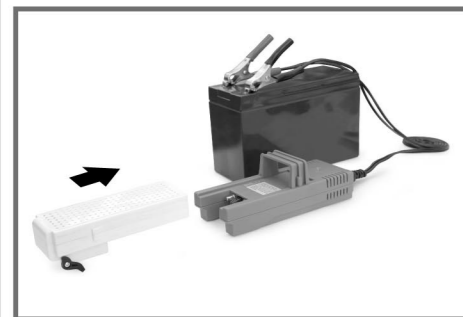
Pre-checking the control system



Note:

- *1 You must first purchase an exclusive Innovator TX RF module and plug it into your own transmitter. Please contact your local hobby shop or Innovator service staff if you are unsure.
- *2 Select the appropriate setting on the Transmitter Manufacturer Setting Switch which is located on the left side of the control unit. (refer: Page 3. Binding)
- *3 When using a transmitter brand other than the Innovator, please set the transmitter modulation on "PPM", then perform "Binding", "Tx Calibration" and "Servo Calibration" steps.

Start Flying



- 1) Charge the helicopter battery pack with a 12V DC power source. RED Led while charging / GREEN Led once charging is completed.

Note:

- 1) When using a poorly-charged battery pack, the Innovator helicopter can not be started and will emit the "initial voltage error" alarm signal.
- 2) Initial battery pack charge may take longer than 1 hour.



- 2) Install 8pcs AA fresh alkaline cells or a fully charged 9.6V rechargeable battery pack (#2946-1) into the transmitter.

Note:

- If the Tx power is too low, a "Beep-Beep-Beep" warning signal is emitted and the LED indicator will also flash on the transmitter.



- 3) Use the L-wrench and M3 bolts and nuts to install and tighten the rotor blades properly. Then fully extend the main rotor blades.

Note:

- 1) Please ensure blades direction is correct.
- 2) Blades should be able to pivot on their axis with just a little resistance.



- 4) Set all the trim levers to neutral position and pull the throttle stick to the lowest position. Turn on the transmitter by pressing the "PWR" button.

Note:

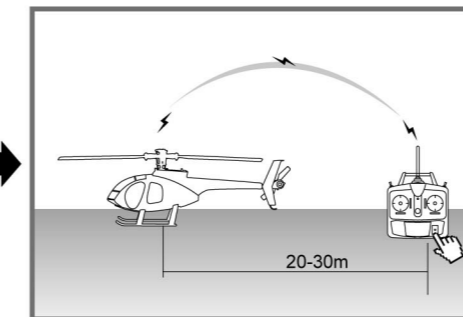
- 1) If you hear "Beep—Bu—Beep—Bu...", please lower the throttle trim lever a little until the buzzer changes to "Beep-Beep-Beep-Beep..."
- 2) Ensure the "SW POS Fly Mode" switch located on the left side of the transmitter is set to your preferences. "Fly Mode" and "6CH" switches should be set on "0" position on take-off.



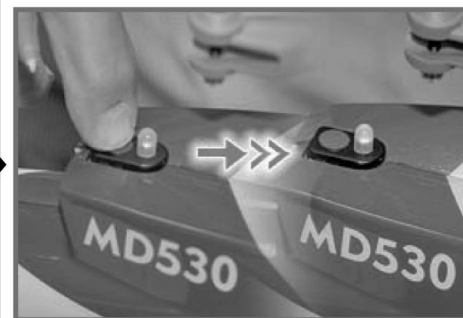
- 5) Insert the fully-charged battery, and push the battery tray up to its locked position. The buzzer will emit a "Beep—Beep-Beep-Beep..." signal.

Note:

- If you hear "Beep—Bu—Beep—Bu...", please lower the throttle trim lever a little until the buzzer changes to "Beep-Beep-Beep-Beep..."



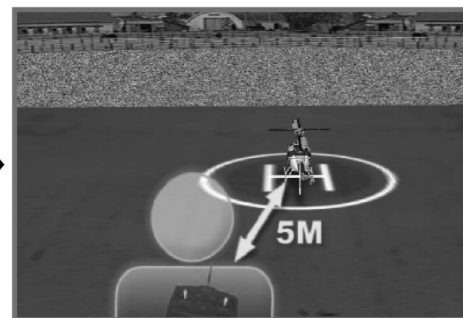
- 6) Hold the "Binding SW" switch to reduce signal strength. Walk some 20-30 meters away from the Innovator Helicopter, move the sticks and visually check control movements. Once servos movements and controls are visually confirmed, the Innovator is ready to fly.



- 7) Press and hold the red Start button (about 2.5sec). The buzzer will sound like an engine powering up. The red LED then turns green.

Note:

- 1) Upon inserting the battery pack in the Innovator, it is recommended to wait 10 seconds before pressing the start button to ensure the built-in gyro device has fully settled.
- 2) Refrain from moving, rotating or shifting the Innovator helicopter when pressing the Start button.



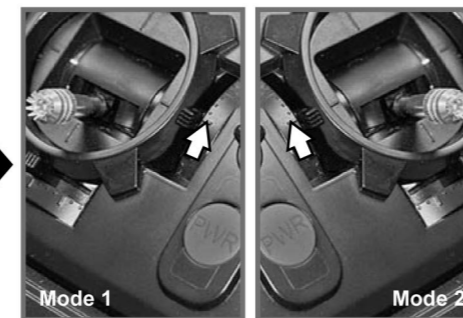
- 8) Position the Innovator 5 meters or so away from you. Nose out, tail in.



- 9) Increase throttle gradually to lift the Innovator off the ground to perform a hover checking.

Note:

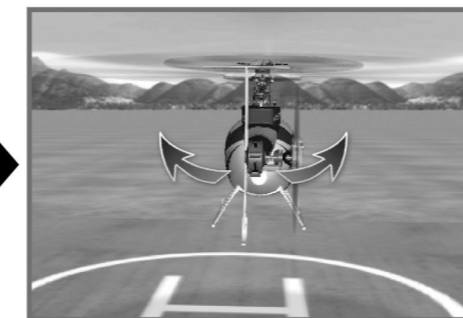
- If any unusual vibrations are experienced, please inspect the Innovator helicopter to identify the cause.



- 10) It's recommended to adjust the throttle trim lever up about 6-8 clicks until the main rotor reaches a constant RPM, then gently push the throttle stick up and start a new flight.

Note:

- Adding too much throttle trim will change the throttle hovering position.



- 11) If the tail shakes slightly at constant intervals, please land immediately. It is a preset visual signal for low battery.

Note:

- If any warning is issued, please land the helicopter immediately.



- 12) Unplug the battery from the Innovator first, and then turn off the transmitter by pressing the "PWR" button for 3 seconds until the LED turns off.

WARNING & STATEMENT

Instruction and caution for operating the Charger

- DANGER**
 - Please proceed with charging in a safe environment.
 - Please do not charge in a car nor indoor.
 - The charger is only compatible with the Innovator battery pack.
 - Please do not charge an expanded or damaged battery.
- WARNING**
 - Please keep the charger away from humidity.
 - Please do not charge battery pack in a car engine cabin.
- CAUTION**
 - Please do not charge while the battery is still warm.
 - Please unplug the alligator clips from the power source after charging.
 - Please do not charge if a temperature warning is on.

Instruction and caution for operating the Innovator

- DANGER**
 - Always fly the Innovator in a secured environment.
 - Flying a RC helicopter is potentially dangerous. Please always maintain a safe distance between the helicopter, bystanders and obstacles.
 - Please beware of rotating blades, they may cause serious damages and injuries.
 - Unexpected failure may occur.
 - Blades may start rotating unexpectedly.
- WARNING**
 - Blades may explode.
 - Please beware of blades arc while flying, always maintain a safe distance from the Innovator.
 - Please keep the Innovator safe from humidity.
 - Please ensure only original parts are used for maintenance and modification.
- CAUTION**
 - Please ensure complete safety at the field for pre-flight and during flight.
 - Safety is your 1st priority, never fly the Innovator under unsecured conditions.
 - Please pay attention to the low-battery visual warning from the Innovator during flight, and land immediately when the warning is issued.
 - Please properly inspect and maintain the Innovator at all times.
 - Please refer to the e-Manual for changing parts and maintenance.

Instruction and caution for operating the Transmitter

- DANGER**
 - The radio system may encounter interferences under different flying conditions.
 - The radio system may encounter interferences from other electronic devices.
- WARNING**
 - The controllable distance may vary at different flying fields.
 - Please fly at a secured field and away from obstacles such as trees or electric poles.
 - Please keep the transmitter away from humidity.
 - Do not fly the Innovator under the rain.
- CAUTION**
 - Please ensure the radio system is operating properly before flying.
 - Please proceed with a complete Range Checking before flying. Push the Binding SW switch (or Power Reduction Button) and visually confirm servos movements (20 meters or so).
 - Please keep the antenna perpendicular to the ground.

Instruction and caution for operating the Battery Pack

- DANGER**
 - The battery may ignite during flight or charging.
 - Please charge with Innovator charger only.
 - Please use the battery pack with Innovator only.
 - Please refrain from placing the battery pack under direct sunlight or in a high temperature environment.
 - Please do not charge an expanded or damaged battery
 - The connectors are highly conductive, please avoid foreign objects to directly contact the connectors.
- WARNING**
 - Avoid strong impacts.
 - Please keep safe from humidity.
- CAUTION**
 - Overloading can easily damage the battery pack.
 - Please do not overdischarge.
 - Please do not charge when the battery is warm (immediately after flying for instance).
 - Improper operation or storage may effect the battery pack operating lifecycle and performance.

STATEMENT

- Never charge the battery pack under extreme low or high temperatures.**
Suitable charging condition: Temperature: 5°C~40°C Humidity: 35%~85%
- Please refrain from simply discarding used battery packs. Please follow Waste Disposal / Recycling regulations in your country.**

CUSTOMER SERVICE

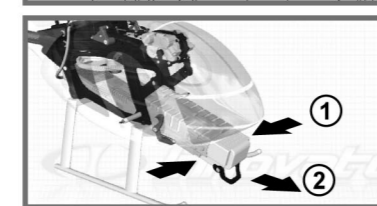
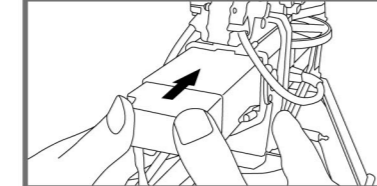
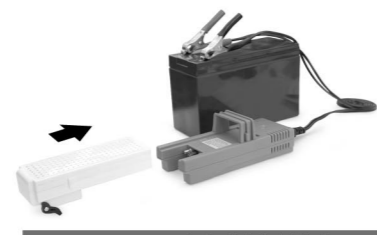
For the latest product information on the Innovator models, and best technical support and after service, please feel free to contact your local hobby shop or Innovator/Thunder Tiger authorized distributor. You can also visit the official Innovator website at www.innovator-rc.com for more detailed information.

INTRODUCTION

Battery & Charger

1. Charging the Li-Po Battery Pack

- 1) Please only use the Innovator exclusive charger.
- 2) It is recommended to use 12V DC input power source only. (Ex: 12V Lead-acid Battery).
- 3) To prevent from any potential fire, please do not charge in a flammable environment.
- 4) Connect the charger cable to the power source properly. The LED on the charger will flash in GREEN.
- 5) Plug the battery pack into the charger.
- 6) The charger LED will switch to RED, confirming it is charging.
- 7) For safety consideration, DO NOT leave the charger unattended during charging.
- 8) When charging is finished, "beeps" will be emitted and charger LED will switch to GREEN.



2. Installation & Replacement of the Battery Pack

- Installation of Battery Pack
 - 1) Push the red latch on the yellow battery tray and swivel the battery tray down.
 - 2) Load the battery pack into the yellow battery tray and ensure the battery is in position.
 - 3) Use both hands to hold the landing skid and use both thumbs to press the battery into the control unit until a "click" indicates the battery is fixed properly.
- Removing the Battery Pack
 - 1) Push the red latch on the yellow battery tray and swivel the battery tray down.
 - 2) Press the taps on both sides of the battery tray and pull the battery lever to remove the battery pack.

Operating the Transmitter

1. Transmitter batteries replacement / installation

- Using Alkaline batteries
 - 1) Remove the battery cover on the back of the transmitter.
 - 2) Install 8pcs "AA" size alkaline cells into the battery case which is connected to the transmitter.
 - 3) Slide on the battery cover and ensure it is closed securely.



• Using a 9.6V rechargeable battery pack (#2946-1)

- 1) Remove the battery cover on the back of the transmitter and disconnect the battery holder.
- 2) Plug the battery connector into the transmitter.
- 3) Slide on the battery cover and ensure it is closed securely.

* Only use the exclusive charger to charge the battery pack. Allow the battery pack to be fully charged before use.

2. Basic Controls

Servo Movement	Tx Control	Elevator Control	Rudder Control	Throttle Control	Aileron Control
Mode1					
Mode2					

3. Fly Mode and Auto Rotation / 6CH Switch Control

The "Fly Mode" & "Auto Rotation/CH 6" switches are located on the right/left shoulders of the transmitter (you can interchange these switches by changing the setting of "SW POS Fly Mode" switch located on the left bottom side of the Transmitter). Factory default setting function for these 2 switches is shown as below

Model	MD530 (Flight Parameter File : PCS-Nor-Hov-0001)			
Switch	Fly Mode			
Mode	0	1	0	1
Function	This flight mode is for indoor flight or no-wind outdoor flight. (Main Rotor RPM: 1,500 RPM)	This flight mode is for outdoor flight and wind speeds below than 4m/hr. (Main Rotor RPM: 1,700 RPM)	No function (for the aux channel use)	
Model	EXP (Flight Parameter File : PCS-Nor-Sport-0001)			
Switch	Fly Mode			
Mode	0	1	0	1
Function	This flight mode is for normal cruise flight. Not suitable for aerobatics. (Main Rotor RPM: 2,200 RPM)	This flight mode is for rolls, inverted and aerobatic flight. (Main Rotor RPM: 2,700 RPM)	Normal Flight	Auto Rotation (Motor will stop)



4. TX POWER MANAGEMENT

- Power On/Off
Upon installing the transmitter batteries, turn on the transmitter power by pressing the red "PWR" button located at the front of the transmitter until a short "Beep" is emitted. Transmitter power is now "On".
- Tx Low battery alarm
The LED flashes in RED and a series of "beeps" indicate low battery. Please land immediately and change/charge the battery.
- Auto Power-off
If the transmitter power is left "On" after flying or if there is no signal or stick movement for 3 minutes, the transmitter will automatically cut off to save battery power.

5. Binding SW switch - For "Binding" and "Range Checking"

A "Binding SW" switch is located at the front bottom right corner of the transmitter. Use this switch to execute "Binding" and low signal strength for "Range Checking" functions.

- Binding
Please refer to the "Binding & Calibration" section.
- Tx Low signal power checking (Range Checking)
Turn on the transmitter while simultaneously pressing the "Binding SW" button. Signal strength will be set to "Low Strength" status. The transmitter buzzer will also emit a short "Beep-Beep-Beep..." audio warning.

Note:
For additional information on the transmitter, please refer to the Innovator TS6 Instruction Manual (JC2151) available on the e-manual DVD or visit the official Innovator website at www.innovator-rc.com



Innovator Helicopter Alarm System

Alarms are issued according to operating conditions and default safety settings.

Electrical Current Error		Beep-----	Initial Current: >2A, Motor don't start Over Max Current (STD:45A, Exp:80A), Motor stop
Communication Error		Beep---Beep---Beep---Beep---	Tx signal failure: Motor Stop Tx signal degradation: All channel hold
Battery Voltage Error		Beep---Beep---Beep---Beep---	Initial Voltage: Lower than 12.2V, motor doesn't start Minimum Voltage: Lower than 8V, then Motor Stop
Tx Control Error		Beep---Bu---Beep---Bu---	Before starting, if the throttle stick doesn't be put on the lowest position, then motor doesn't start.
Low Battery		BeepBeep---BeepBeep---BeepBeep---BeepBeep---	STD: Voltage lower than 10.6V, then the tail starts yawing. EXP: If the battery capacity is less than 1300mAh, then the tail will yawing.
Battery Temperature Error		BeepBeepBeep---BeepBeepBeep---BeepBeepBeep---	Battery temperature higher than 90°C, motor stop. Battery temp. higher than 70°C, power decade. ESC temp. higher than 80°C, power decade.

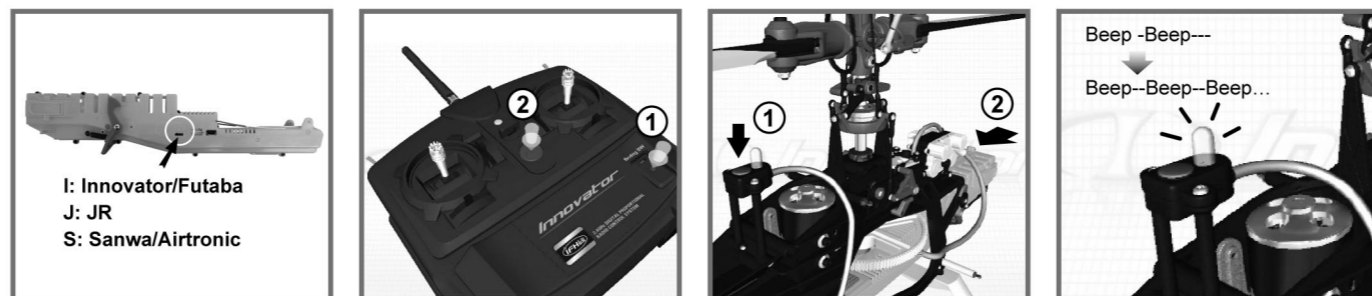
BINDING & CALIBRATION

Use the following 3 quick setup steps- "Binding", "Tx Calibration" & "Servo Calibration" to reset the Innovator control system and binding with the transmitter. Calibration & Binding are set at the factory. Under normal operation, performing this setup is not necessary. However, following a crash or other accident leading to communication loss between Tx / Rx, the system can be easily reset by following 3 easy steps.

Note:
Incorrect procedure of these 3 steps could further degrade performance. Please proceed with setup cautiously.

1. Binding

This operation establishes communication between the transmitter and the receiver through a special ID encoded in the transmitter's signal.

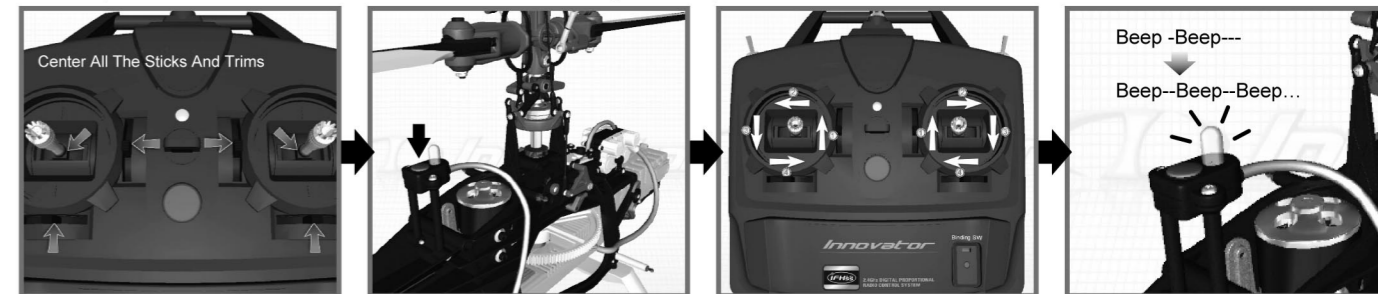


- (1) If using other transmitter brand, please set the transmitter modulation on "PPM" mode.
- (2) Select the appropriate setting on the Transmitter Manufacturer Setting Switch which is located on the left side of the control unit.
- (3) Position both sticks and trim levers to the center /neutral position.
- (4) Press and hold the bind button on the transmitter. Then press the "PWR" power button.
- (5) Press and hold the start button on the helicopter and simultaneously insert the battery pack in the yellow battery tray.
- (6) A single "Beep---" is emitted, release the power button. Binding process is initiated.
- (7) A series of "Beep-Beep---" confirms binding is successful. The buzzer will then ring a continuous "Beep-Beep-Beep...".
- (8) Proceed with Tx calibration, or remove the battery pack to stop the procedure.

Note:
If binding fails, a continuous "Beep---" is emitted. Please remove the battery pack and re-execute the binding process.

2. Transmitter Calibration

This operation automatically optimizes the system for smoother and better controllability. The transmitter needs to be set when it is first paired with the helicopter. The transmitter also needs to be reset when resetting the helicopter.

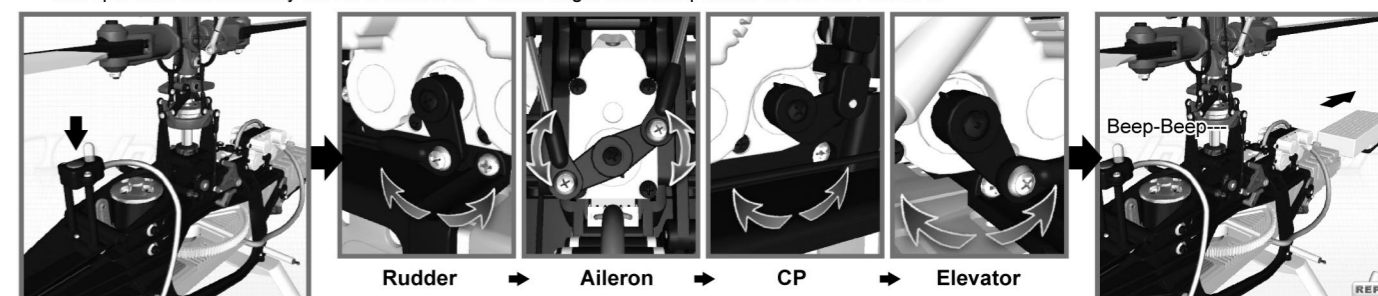


- (1) Set all the transmitter trim levers and sticks to neutral position.
- (2) Press and hold the start button until a "Beep-Beep" is emitted, then release the start button.
- (3) Simultaneously move both radio sticks in a smooth and circular motion.
- (4) A "Beep-Beep---" is emitted, confirming Tx calibration is successful.
- (5) Proceed to servo calibration, or remove the battery pack to stop the procedure.

Note:
After several circular stick movements, if the Innovator does not respond, calibration failed. Please repeat previous steps, starting with "Binding" and "Tx Calibration".

3. Servo Calibration

This operation automatically resets to default the control angle & neutral position on the servomotors.



- (1) Following successful Tx calibration, press and hold the start button until a "Beep-Beep-Beep" is emitted, then release the start button.
- (2) The servos start the auto calibration procedure by moving back and forth.
- (3) A "Beep-Beep---" is emitted, confirming servos calibration is completed. Remove the battery pack.

Note:
1) Once servo calibration is completed, please ensure all servo horns are located on the neutral position. If not, a linkage or obstacle may have hindered the servo movement during calibration. In this case, please repeat previous steps, starting with "Binding", "Tx Calibration" and "Servo Calibration".
2) Under normal conditions (no crash, no disassembly, no loss of neutral position...), servo calibration is not required and procedure is normally completed after successful Tx calibration.

Basic Adjustments

- Inspecting blades tracking
 - 1) Increase throttle until the main rotor reaches a stable hovering RPM and check blades tracking position by evaluating the difference between red and blue tracks.
 - 2) Determine the high tracking blade, and adjust this blade's front linkage by half a turn longer (counter-clockwise) at a time.
 - 3) Repeat 1), if both blades still do not keep consistent tracking, adjust the low blade front linkage by half a turn shorter (clockwise) at a time.
 - 4) Repeat the above adjustments until the blades track level.
- Adjusting throttle stick to middle position for hovering
 - 1) Hover the helicopter, and check the throttle stick position
 - 2) If the stick position is too high, then shorten both linkages half a turn. If the stick position is too low, then increase the linkage half a turn.
 - 3) Repeat step 2) until the throttle stick position is in the middle when hovering.
- Adjusting the tail drive belt tension
 - 1) The tail drive belt must always be under full extension since the tension on the pulley drives the tail rotor.
 - 2) Loosen the 4 screws located at the rear of the main frame. Slightly pull the tail tube back, then re-tighten the 4 screws.

