

Thank you for purchasing a Futaba SKYSPORT⁷. Before using your SKYSPORT⁷, read this manual carefully and use your R/C set safely. After reading this manual, store it in a safe place.

See the glossary page 22 for a definition of the special terms used in this manual.

APPLICATION, EXPORT, AND RECONSTRUCTION

1. This product may be used for model airplane or surface use if on the correct frequency.

The product described in this manual is subject to regulations of the Ministry of Radio/Telecommunications and is restricted under Japanese law to such purposes.

2. Exportation precautions

(a) When this product is exported from Japan, its use is to be approved by the Radio Law of the country of destination.

(b) Use of this product with other item models may be restricted by Export and Trade Control Regulations. An application for export approval must be submitted.

3. Modification, adjustment, and replacement of parts

Futaba is not responsible for unauthorized modification, adjustment, and replacement of parts of this product.

THE FOLLOWING STATEMENT APPLIES TO THE RECEIVER (FOR U.S.A.)

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, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

THE RBRC™ SEAL (FOR U.S.A.)

The RBRC™ SEAL on the (easily removable) nickel-cadmium battery contained in Futaba products indicates that Futaba Corporation of America is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful lives, when taken out of service within the United States. The RBRC™ program provides a convenient alternative to placing used nickel-cadmium batteries into the trash or municipal waste which is illegal in some areas.

Futaba Corporation of America's payments to RBRC™ makes it easy for you to return the spent battery to Futaba for recycling purposes. You may also contact your local recycling center for information on where to return the spent battery. Please call 1-800-8-BATTERY for information on Ni-Cd battery recycling in your area. Futaba Corporation of America's involvement in this program is part of its commitment to protecting our environment and conserving natural resources.



NOTE: Our instruction manuals need to encourage our customers to return spent batteries to Futaba or a local recycling center in order to keep a healthy environment. RBRC™ is a trademark of the Rechargeable Battery Recycling Corporation.

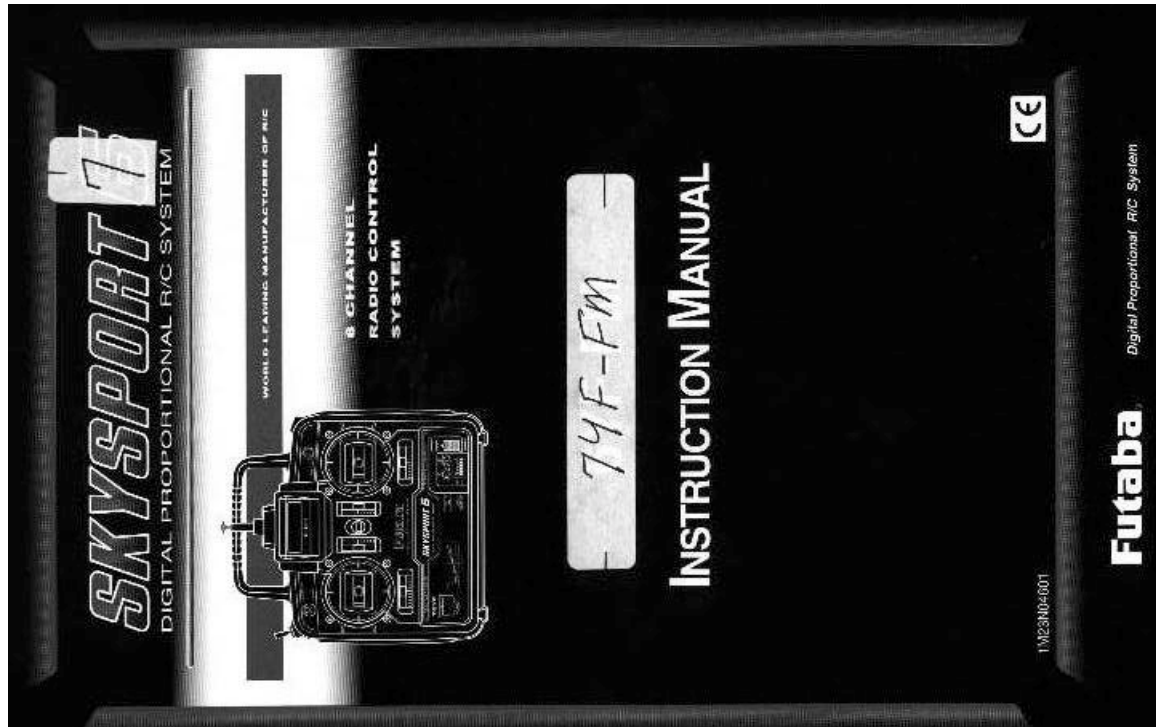
No part of this manual may be reproduced in any form without prior permission.

The contents of this manual are subject to change without prior notice.

This manual has been carefully written. Please write to Futaba if you feel that any corrections or clarifications should be made.

Futaba is not responsible for the use of its product.

SKYSPORT are registered trademarks of FUTABA Corporation.



CONTENTS

3

FOR SAFETY	4
Meaning of Special Markings	4
Precautions During Flight	4
NiCd Battery Charging Precautions	6
Storage and Disposal Precautions	7
Other Precautions	8
BEFORE USE	9
Set Contents	9
Name and Handling of Each Part	10
Transmitter Operation and Movement of Each Servo	14
INSTALLATION AND ADJUSTMENT	15
Connections	15
Adjustments	17
USING OTHER FUNCTIONS	18
Using the Frequency Board	18
Non-slip Adjustable Lever Head	18
Stick Lever Spring Tension Adjustment	18
Trainer Function	19
REFERENCE	20
Range	20
Troubleshooting	21
Glossary	22
Repair Service	23

FOR SAFETY

BEFORE USE

INSTALLATION
AND
ADJUSTMENT

USING
OTHER
FUNCTIONS

REFERENCE

FOR SAFETY

FOR SAFETY

To ensure safe use, observe the following precautions.

Meaning of Special Markings

Pay special attention to the safety at the parts of this manual that are indicated by the following marks.

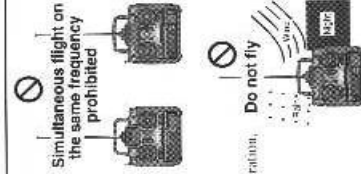
Mark	Meaning
⚠ DANGER	Procedures which may lead to a dangerous condition and cause death or serious injury to the user if not carried out properly.
⚠ WARNING	Procedures which may lead to a dangerous condition or cause death or serious injury to the user if not carried out properly, or procedures where the probability of superficial injury or physical damage is high.
⚠ CAUTION	Procedures where the possibility of serious injury to the user is small, but there is a danger of injury, or physical damage, if not carried out properly.

Symbol:

⊘ Prohibited **!** Mandatory

Precautions During Flight

⊘ ⚠ WARNING	Do not fly simultaneously on the same frequency. Interference may cause a crash.
⊘	Use of the same frequency will cause interference even if the modulation method (AM, FM, PCM) is different.
⊘	Do not fly on rainy or windy days, or at night. Water will penetrate into the transmitter and cause faulty operation, or loss of control, and cause a crash.



FOR SAFETY

5

⊘ Do not fly in the following places:

- Near other R/C flying fields (within about 3km)
- Near people on the ground, or objects in the air
- Near homes, schools, hospitals, or other places where there is a lot of people
- Near high tension lines, high structures, or communication facilities

Radio wave interference and obstructions may cause a crash. A crash caused by trouble in the R/C set, or the model itself, may cause death or property damage.

⊘ Do not fly when you are tired, sick, or intoxicated.

Fatigue, illness, or intoxication will cause a loss of concentration or normal judgment and result in operation errors and a crash.

Ⓜ Extend the antenna to its full length.

If the antenna is too short, the effective range of the radio waves will become shorter.

Ⓜ Always test the digital proportional R/C set before use.

Any abnormality in the digital proportional R/C set, or model, may cause a crash.

Before starting the engine, check that the direction of operation of each servo matches the operation of its control stick. If a servo does not move in the proper direction, or operation is abnormal, do not fly the plane.

Ⓜ Check that the transmitter antenna is not loose.

If the transmitter antenna comes off during use, control will be lost and the model will crash.

CAUTION

⊘ When placing the transmitter on the ground during flight preparations, be sure that the wind cannot knock it over.

If it is knocked over, the throttle stick may be pushed to full high and the engine will race and create a dangerous situation.

⊘ Do not touch the engine, motor, and FET amp during and immediately after use. They are hot and will cause a burn.

FOR SAFETY

6

Ⓜ When turning on the power switch

After setting the transmitter throttle stick to maximum slow.

1. Turn on the transmitter power switch.
2. Then turn on the receiver power switch.

When turning off the power switch
After stopping the engine.

1. Turn off the receiver power switch.
2. Then turn off the transmitter power switch.

If the power switch is turned off in the opposite order, the engine may go to full throttle unexpectedly and cause an injury.

Maximum slow: Direction in which the engine or motor runs at the slowest speed.

Ⓜ When adjusting the digital proportional R/C set, always stop the engine, except when necessary.

If the engine suddenly goes to high speed, it may cause an injury.

Ⓜ When flying, always install the frequency board to the transmitter antenna. When the frequency was changed, also change the frequency board.



Nicd Battery Charging Precautions

WARNING

Ⓜ Always charge the nicd battery before each flight.

If the battery goes dead during flight, the plane may crash.

Ⓜ Charge the digital proportional R/C nicd battery with the special charger, or digital proportional R/C quick charger, sold separately.

Overcharging may cause burns, fire, injury, blindness, etc. due to overheating, breakage, electrolyte leakage, etc.



CAUTION

- ⊘ **Do not use commercial *nickel* penlight batteries.**
During quick charging, the battery holder contacts may overheat and damage the equipment, or prevent charging.
- ⊘ **Do not short the *nickel* battery connector terminals.**
Shorting the terminals may cause sparking and overheating and result in burns or fire.
- ⊘ **Do not drop or apply strong shock to *nickel* battery.**
The battery may be shocked and cause overheating or breakage and electrolyte leakage and result in burns or damage by chemical matter.



Storage and Disposal Precautions

WARNING

- ⊘ **Do not leave the digital proportional R/C set, battery, model airplane, etc. within the reach of small children.**
Touching and operating the digital proportional R/C set, or licking the battery, may cause injury or damage due to chemical matter.
- ⊘ **Do not throw the *nickel* battery into a fire or heat the *nickel* battery. Also, do not disassemble or rebuild the *nickel* battery.**
Breakage, overheating, and electrolyte leakage may cause injury, burns, or blindness.

- ⚠ **When not flying the model, store the digital proportional R/C set with the *nickel* battery in the discharged state. Recharge the *nickel* battery before the next flight.**
If a partially discharged *nickel* battery is recharged many times, its memory effect will reduce the flight time substantially and may cause a crash, even if the battery is recharged.

Nickel Battery Electrolyte

The electrolyte in the *nickel* battery is a strong alkali and can cause blindness if it gets in the eyes. If you get the electrolyte in your eyes, immediately wash your eyes with water and see a doctor. If you get the electrolyte on your skin or clothes, it may cause a burn. Immediately wash it off with water.

CAUTION

- ⊘ **Do not store the digital proportional R/C set in the following places:**
 - Where it is very hot (104°F or more) or very cold (-14°F or less).
 - Where the set will be exposed to direct sunlight.
 - Where the humidity is high.
 - Where there is strong vibration.
 - Where it is dusty.
 - Where there is steam and heat.
- Storing the digital proportional R/C set in the places above may cause distortion and trouble.

- ⚠ **If the digital proportional R/C set will not be used for a long time, remove the *nickel* batteries from the transmitter and the model and store them in a dry place.**

If the batteries are left in the transmitter and model, the battery electrolyte may leak out and degrade the performance and shorten the life of the transmitter and model.

Nickel Battery Recycling

Used *nickel* batteries are an important resource. Stick tape over the terminals and take the used batteries to a *nickel* battery recycling center.

Other Precautions

CAUTION

- ⊘ **Do not get fuel, waste oil, etc. on plastic parts.**
The plastic may melt and fail to function.
- ⚠ **Always use Genuine Futaba transmitter, receiver, servos, FET amp, *nickel* battery, and other optional parts.**
Futaba is not responsible for damage, etc. caused by the use of parts other than Genuine Futaba parts. Use the parts described in the instruction manual and catalogs.



BEFORE USE

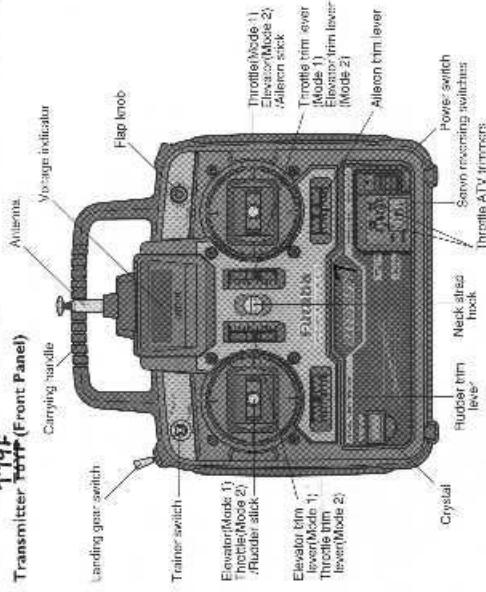
Set Contents

After opening the carton, first check if the following items are provided.
The set contents depend on the type of set, and these are the standard.

Transmitter	(not for U.S.A.)	(not for U.S.A.)
Receiver	R127DF or R116FB	
Servo	S3001(x4)	
Receiver Not Battery Battery holder	Battery holder R2-BSS-B	
	Servo horn Servo tray Receiver Switch Extension cord Small screwdriver	
	Charger Frequency board	

If the set contents are incomplete, or if you have any questions, please contact the dealer.

Name and Handling of Each Part



Power switch: Turns the transmitter on or off. In the upper position, the power is turned on.

Voltage indicator: This is an expanded scale voltmeter. It is not calibrated in volts. When the needle deflects to the boundary between the silver and red zones, recharge or replace the battery. Do not operate the transmitter if the needle falls down to the red area.

Antenna: Never operate the transmitter without extending this antenna or you may create interference in other models. This antenna is not intended to be removable.

Aileron, Elevator, Throttle and Rudder stick: Control each function. See page 14 for a transmitter operation instruction.

Aileron, Elevator, Throttle and Rudder trim: Used to shift the neutral or idle position of the each servo. As the throttle stick is moved forward towards the high throttle position, the throttle trim will have less effect.

Carrying handle: Provides an easy means of transporting the transmitter.

Neck strap hook: Clip the neck strap only to this hook when neck strap use is required.

Servo reversing switches: Switches that reverse the direction of operation of the servos. The lower position is the normal side and the upper position is the reverse side.

- <Channe display>
1 Aileron (CH1)
2 Elevator (CH2)
3 Throttle (CH3)
4 Rudder (CH4)
5 Landing gear (CH5)
6 Flap (CH6)
- <Operating direction display>
REV Reverse side
NOR Normal side



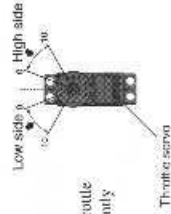
BEFORE USE



Landing gear switch: Controls the raising and lowering of retractable landing gear. Not all models will use this function.



Flap knob: Controls the flap servo(CH16).

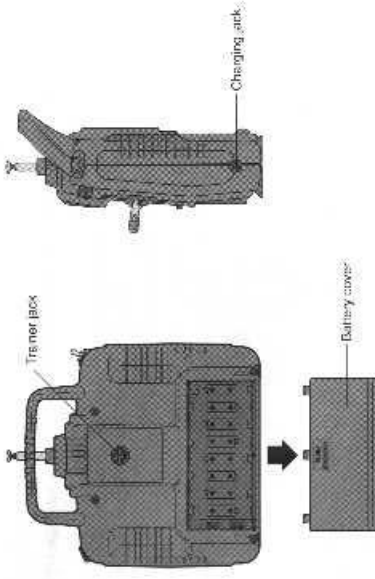


Throttle ATV trimmer(LOW/HIGH): Used to adjust throttle servo travel limits. Servo travel can be adjusted independently in each direction.



Trainer switch: Operates the instructor transmitter when using the trainer function. The student transmitter can be operated only while this switching is being pressed.

Transmitter T74F (Rear Panel/Side Panel)



Trainer jack: Connects the trainer cord when using the trainer function. The trainer cord is sold separately. See page 19 for the trainer function operation instructions.

Battery cover: Use when replacing the battery. Slide the cover downward while pressing the part marked "PUSH".

Charging jack: Charging jack when charging the transmitter nicd battery.

BEFORE USE



Do not charge a dry battery.

A dry battery may be charged and cause overheating or breakage and electrolyte leakage and result in burns or damage by chemical matter.

Charging the Nicd Battery



WARNING



Never plug the special charger into an AC outlet other than specific voltage.

If the charger is plugged into an AC outlet other than specific voltage, overheating, sparking, etc., may cause burns, fire, etc.



Use the special charger, or digital proportional R/C quick charger, sold separately to charge the digital proportional R/C nicd battery.

Overcharging will cause burns, fire, injury, or blindness due to overheating, breakage, electrolyte leakage, etc.



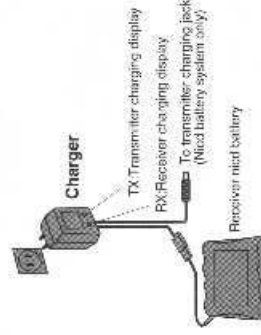
CAUTION



When not using the nicd battery charger, disconnect it from the AC outlet.

The transmitter and receiver nicd batteries can be charged simultaneously or independently.

- 1 Connect the charger transmitter connector to the transmitter charging jack and the charger receiver connector to the receiver servo nicd battery.
- 2 Connect the charger to an AC outlet.
- 3 Check that the charging LED light.
- 4 At the end of charging, disconnect the charger from the AC outlet.



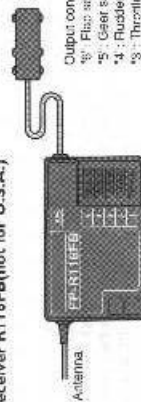
Receiver R1127DF



- Output connector/Battery connector
- *7: (Not Used) (CH7)
 - *6: Flap servo (CH6)
 - *5: Gear servo (CH5)
 - *4: Rudder servo (CH4)
 - *3: Throttle servo (CH3)
 - *2: Elevator servo (CH2)
 - *1: Aileron servo (CH1)
 - *0: Battery connector

Crystal: The crystal is replaced from the side of the receiver.

Receiver R116FB(not for U.S.A.)



- Output connector/Battery connector
- *6: Flap servo (CH6)
 - *5: Gear servo (CH5)
 - *4: Rudder servo (CH4)
 - *3: Throttle servo (CH3)
 - *2: Elevator servo (CH2)
 - *1: Aileron servo (CH1)

Crystal: The crystal is replaced from the rear of the receiver.

Servo S1003



Accessories: The following items are supplied with the set:

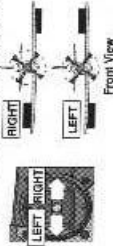
- Spare servo horn: Use to match the application.
- Servo mounting parts: Rubber bushing, grommet, wood screw

Transmitter Operation and Movement of Each Servo

Before making any adjustments, learn the operation of the transmitter and the movement of each servo. (In the following descriptions, the transmitter is assumed to be in the standby state.)

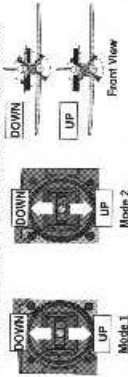
Aileron Operation

When the aileron stick is moved to the right, the right aileron is raised and the left aileron is lowered, relative to the direction of flight, and the plane turns to the right. When the aileron stick is moved to the left, the ailerons move in the opposite direction. To level the plane, the aileron stick must be moved in the opposite direction. When the aileron stick is tilted and held, the plane will roll.



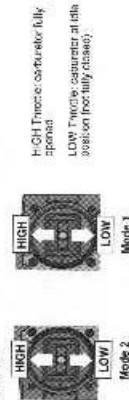
Elevator Operation

When the elevator stick is pulled back, the tail elevator is raised and the tail of the plane is forced down, the air flow applied to the wings is changed, the lifting force is increased, and the plane climbs (UP operation). When the elevator stick is pushed forward, the elevator is lowered, the tail of the plane is forced up, the air flow applied to the wings is changed, the lifting force is decreased, and the plane dives (DOWN operation).



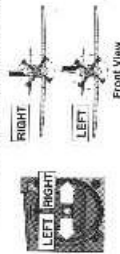
Throttle Operation

When the throttle stick is pulled back, the engine throttle lever arm moves to the SLOW (low speed) side. When the throttle stick is pushed forward, the throttle lever arm moves to the HIGH (high speed) side.



Rudder Operation

When the rudder stick is moved to the right, the rudder moves to the right and the nose points to the right, relative to the direction of flight. When the rudder stick is moved to the left, the rudder moves to the left and the nose points to the left and the direction of travel of the plane changes.



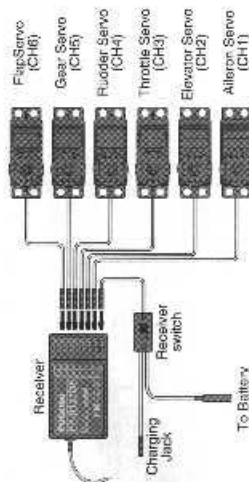
INSTALLATION AND ADJUSTMENT

This section describes the installation method and adjustment method after installation when installing the receiver, servos, etc. to the plane.

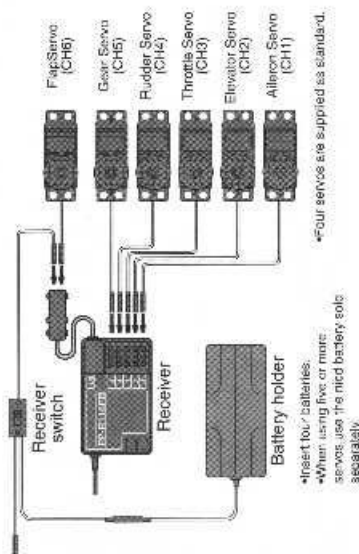
Connections

Connection examples are shown below. Make the connections matched to the type of set.

Connection Example(R127DF)



Connection Example(R116FB)(not for U.S.A.)



WARNING

- (Connector Connection)**
Insert the receiver, servo, and battery connectors fully and firmly.
If vibration, etc. causes a connector to work loose during flight, the plane may crash.
- (Receiver Vibrationproofing / Waterproofing)**
Vibrationproof the receiver by wrapping it in sponge rubber or some such material.
If the receiver may get wet, waterproof it by placing it in a plastic bag.
If the receiver is subjected to strong vibration and shock, or gets wet, it may operate erroneously and cause a crash.

- (Receiver Antenna)**
Do not cut or bundle the receiver antenna.
Also, do not bundle the antenna together with the servo lead wires.
Attach the antenna with a rubber band, etc.
Use a rubber bushing, etc. at the part at which the antenna comes out of the fuselage so that it will not break. Also tie a knot in the antenna wire near the fuselage so that the antenna cannot be pulled out.

- (Servo Throw)**
Operate each servo horn over its full stroke and adjust so that the pushrod does not bind or is not too loose.
Unreasonable force applied to the servo horn will adversely affect the servo and drain the battery quickly.

- (Servo Installation)**
Install the servos to the servo mount, etc. through a rubber bushing. Also install the servos so that the servo case does not directly touch the servo mount or other parts of the fuselage.

- (Servo Horn Screw)**
Use the horn set screw supplied with the servo.
If a long screw is used, the interior of the servo may be damaged.

- Power Switch Installation**
When installing a receiver power switch to the fuselage, cut a rectangular hole somewhat larger than the full stroke of the switch knob and install the switch so it moves smoothly from ON to OFF.
Also install the switch where it will not come into direct contact with engine oil, dust, etc. Generally, install the switch to the fuselage at the side opposite the muffler exhaust.

Adjustments

The operating (direction, neutral position), and steering angle of each servo are adjusted.

⚠ CAUTION

- 1 The basic linkage and adjustments of the fuselage conform to the fuselage design drawings, and kit instruction manual. Be sure that the **center of gravity** is at the prescribed position.

Adjustment Procedure

Before making any adjustments, set all the SERVO REVERSER switches on the front of the transmitter to the Jaws(NOR) position and set the both THROTTLE A/T V trimmers (LOW/HIGH) in the maximum ("10") point. (Set the switches and the trimmers with a small screwdriver, etc.)

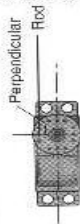
Turn on the transmitter and receiver power switches and make the following adjustments

- 1 Check the **direction of operation of each servo**.



tion.1

- 2 Check the **alternon, elevator, and rudder neutral adjustment and left-right (up-down) throw**.



Check that when trimmed in the center, the servo horn is perpendicular to the servo and check the neutral position of the fuselage control surfaces (alternon, elevator, rudder, etc.). If the neutral position has changed, reset it by adjusting the length of the rod with the linkage rod adjuster.

When the throw is unsuitable (different from steering angle specified by the kit instruction manual), adjust it by changing the servo horn and each control surface horn rod.

- 3 Check the **engine throttle (speed adjustment) linkage**.

Change the servo horn installation position and hole position so that the throttle is opened fully when the throttle stick is set to HIGH (forward) and is closed fully when the throttle stick and throttle trim are set for maximum slow (backward position and lower position, respectively).

- 4 After all the linkages have been connected, **recheck the operating direction, throw, etc.**

Before flight, adjust the alternon in accordance with the kit and engine instruction manuals.

- 5 Fly the plane and trim each servo.

USING OTHER FUNCTIONS

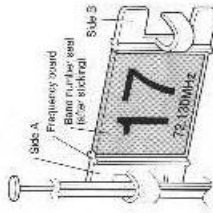
Using the Frequency Board

- 1 Stick the band number seal to the frequency board.
- 2 Install the frequency board to the antenna.

Pass the frequency board over the small part of the antenna and slide it to the large part.

Use side A or side B, depending on the thickness of the antenna.

Cut off the unused side along the slot with cutters, etc.



Non-slip Adjustable Lever Head

The length of the stick lever head can be adjusted.

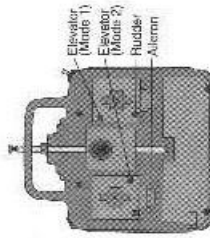
- 1 Unlock lever heads A and B by turning them in the arrow directions.
- 2 Set the stick to the most comfortable length and lock the lever heads by turning them in the opposite direction of the arrows.



Stick Lever Spring Tension Adjustment

The stick spring strength can be adjusted. The operating feel of the alternon, elevator, and rudder sticks can be individually adjusted.

- 1 Remove the four transmitter rear case screws and remove the rear case.
- 2 Adjust the spring strength by turning the screw of the channel you want to adjust.
- 3 Close the rear case and tighten the four screws.



Trainer Function

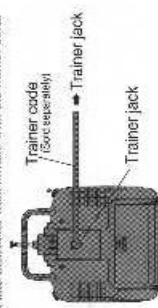
The trainer function is a very effective way for training students. To use it, the special trainer cord (sold separately) is necessary. The special trainer cord can be connected to SKYSPORT14, SKYSPORT16, 7U series, 8U series, and PCM1024Z series transmitters.

⚠ WARNING

- ⊘ Never turn on the student transmitter power switch. Tuning on the power switch will cause interference and a crash.
- ❗ Set the student and instructor transmitters to the same settings. For example, if the direction of operation is reversed, control will be lost and the plane will crash.
- ❗ The opposite side can only use an FM (PPM) type transmitter. If the modulation method is different, control is impossible.

Connection

Connect the student and instructor transmitters with the trainer cord.



Operating Instructions

Instructor side: Turn on the power switch and extend the antenna to its full length. When the trainer switch is not pressed, the instructor has control. When the trainer switch is pressed, control is transferred to the student.

Student side: Never turn on the power switch.

REFERENCE

*Specifications and ratings are subject to change without prior notice.

Ratings

Transmitter T74F

(2 sticks, 6 channels, FM transmitter)
Transmitting frequency: 29, 36, 38, 40, 41, 50, 60, 72, 75 MHz
Modulation method: FM (Frequency Modulation)
Power requirement: 12V (penlight battery x 4) or 9.6V nicd battery
Current drain: 100mA
Receiver R116F8 (not for U.S.A.)
(6 channels, FM receiver)
Receiving frequency: 29, 36, 38, 40, 41, 60, 72 MHz
Intermediate frequency: 455kHz
Power requirement: 6V (penlight battery x 4) or 4.8V nicd battery (optional with servo)
Current drain: 22mA
Size: 33.4x50.4x20.5mm
Weight: 30g

Receiver R127DF

(7 channels, FM dual conversion receiver)
Receiving frequency: 60, 80, 72, 75 MHz
Intermediate frequency: 1st IF: 10.7MHz, 2nd IF: 455kHz
Power requirement: 6V (penlight battery x 4) or 4.8V nicd battery (optional with servo)
Current drain: 10.0mA
Size: 64.3x35.8x21.0mm
Weight: 40.5g
Servo S3003
(Standard servo)
Power requirement: 4.8V or 6V (optional with receiver)
Current drain: 8mA (idle)
Output torque: 3.8kg cm (1/5 sec)
Opening speed: 0.23sec/60 degrees (4.8V)
Size: 40.4x19.6x30mm
Weight: 17.2g

Frequencies

The following frequencies and channel numbers may be used for aircraft and surface in the United States:

72 MHz Band: (Aircraft only)

72,010 11	72,210 21	72,410 31	72,610 41	72,810 51
72,030 12	72,230 22	72,430 32	72,630 42	72,830 52
72,050 13	72,250 23	72,450 33	72,650 43	72,850 53
72,070 14	72,270 24	72,470 34	72,670 44	72,870 54
72,090 15	72,290 25	72,490 35	72,690 45	72,890 55
72,110 16	72,310 26	72,510 36	72,710 46	72,910 56
72,130 17	72,330 27	72,530 37	72,730 47	72,930 57
72,150 18	72,350 28	72,550 38	72,750 48	72,950 58
72,170 19	72,370 29	72,570 39	72,770 49	72,970 59
72,190 20	72,390 30	72,590 40	72,790 50	72,990 60

50 MHz Band: (Aircraft/aircraft -1 to Amateur license required)

50,800 00	50,900 06
50,820 01	50,920 08
50,840 02	50,940 07
50,860 03	50,960 06
50,880 04	50,980 09

75 MHz Bands: (airboat only)

75.410 81	75.510 71
75.420 82	75.520 72
75.430 83	75.530 73
75.440 84	75.540 74
75.450 85	75.550 75
75.460 86	75.560 76
75.470 87	75.570 77
75.480 88	75.580 78
75.490 89	75.590 79
75.500 90	75.600 80

Troubleshooting

If your digital proportional R/C set does not operate, its range is short, it intermittently stops operating, or it operates erratically, take the action shown in the table below. If this does not correct the trouble, please contact a Futaba dealer.

Check point	Check item	Action
Transmitter/receiver battery	Dead battery	Replace the battery. Charge the next battery.
	Incorrect loading	Reboot the batteries in the correct polarity.
	Fully contact connection.	If the contact spring is deformed, correct it.
Transmitter antenna	Dirty contacts	Wipe with a dry cloth.
	Loose	Screw in.
Crystal	Not extended to full length	Extend fully.
	Disconnected. Wrong band. Different from specification	Push in. Match bar's interconnective band. Replace with specified crystal.
Connector connector	Incorrect wiring. Disconnection	Reinsert. Push in.
Receiver antenna	Close to other wiring. Not cut? Not bundled?	Separate from other wiring. Request repair. Install in accordance with instruction manual.
Servo linkage	Binding or looseness	Adjust at the usage side
Motor (electric motor slave)	Noise countermeasures.	Install a noise absorbing capacitor.

Glossary

The following defines the symbols and terms used in this instruction manual.

Aileron (AIL.) Control surface of the left and right sides of the main wing of an aircraft. It usually controls turning of the aircraft.	Reverse (REV.) With the servo reversing function, this is used to mean the reverse side. The opposite side is the normal side.
Channel Represents the number of control systems. It can also represent the number of servos that are operated.	Rod A bar that connects the servos and the fuselage control surfaces.
Down Means down elevator. It is the direction in which the trailing edge of the elevator is coming down.	Servo horn A part that is installed to the shaft of a servo and changes the rotating motion of the servo to linear motion and transmits the linear motion to a rod. Servo horns come in various shapes.
Elevator (ELE.) Control surface that raises up and down on the horizontal stabilizer of an aircraft. It usually controls up and down.	Servo mount Fuselage base for installing a servo in the fuselage.
Linkage Mechanism that connects the servos and the fuselage control surfaces.	Sack Rod for operating the transmitter.
Modulation method Two modulation methods are used with radio control: AM (Amplitude Modulation) and FM (Frequency Modulation). Radio sets for aircraft usually use FM. Another method that encodes and transmits the modulated signals is called "PCM".	Throttle (THR.) Part that controls the air mixture at the engine intake. When opened (throttle high side), a large air mixture is sucked in and the engine speed increases. When closed (throttle low side), the engine speed decreases.
Neutral Means the neutral position. It is the state in which a transmitter stick returns to the center when not operated.	Trim A device that fine adjusts the neutral point of each servo for safe flying. It is a mechanism that corrects bad tendencies of the aircraft.
Normal (NOR.) For the servo reversing function, it is the normal side. The opposite side is the reverse side.	Up Means up elevator. Director in which the trailing edge of the elevator is pointing up.
Rudder (RUD.) Tail control surface that controls the direction of the aircraft.	

Repair Service

Before requesting repair, read this instruction manual again and recheck your system. Should the problem continue, request repair service as follows:

Describe the problem in as much detail as possible and send it with a detailed packing list together with the parts that require service.

- Symptom (including when the problem occurred)
- System (transmitter, receiver, servo's and model numbers)
- Model (model name)
- Model Number and Quantity
- Your Name, Address, and Telephone Number
- Dated Proof of Purchase (For Warranty Claims)

Please read the warranty card supplied with your system.

When requesting warranty, please send the card along with some type of dated proof of purchase.

If you have any questions regarding this product, please consult your local hobby dealer or contact the Futaba Service Center. The address and telephone number are listed below. (For U.S.A.) (Telephone inquiries are accepted from 8:30 AM to 5:00 PM PST daily, except on Saturday, Sunday and Holidays.)

Address (For U.S.A.)

Futaba Corp. of America
4 Stuebner
Irvine, CA 92616 (949) 455-9888

FUTABA CORPORATION

Makuhari Techno Garden 206, 604-1-1 Nakao, Mihara-ku, Chiba 261 8355, Japan
Phone: (041) 296-5118 Facsimile: (041) 296-5122

