

APPENDIX 5
USER INSTRUCTION BOOK

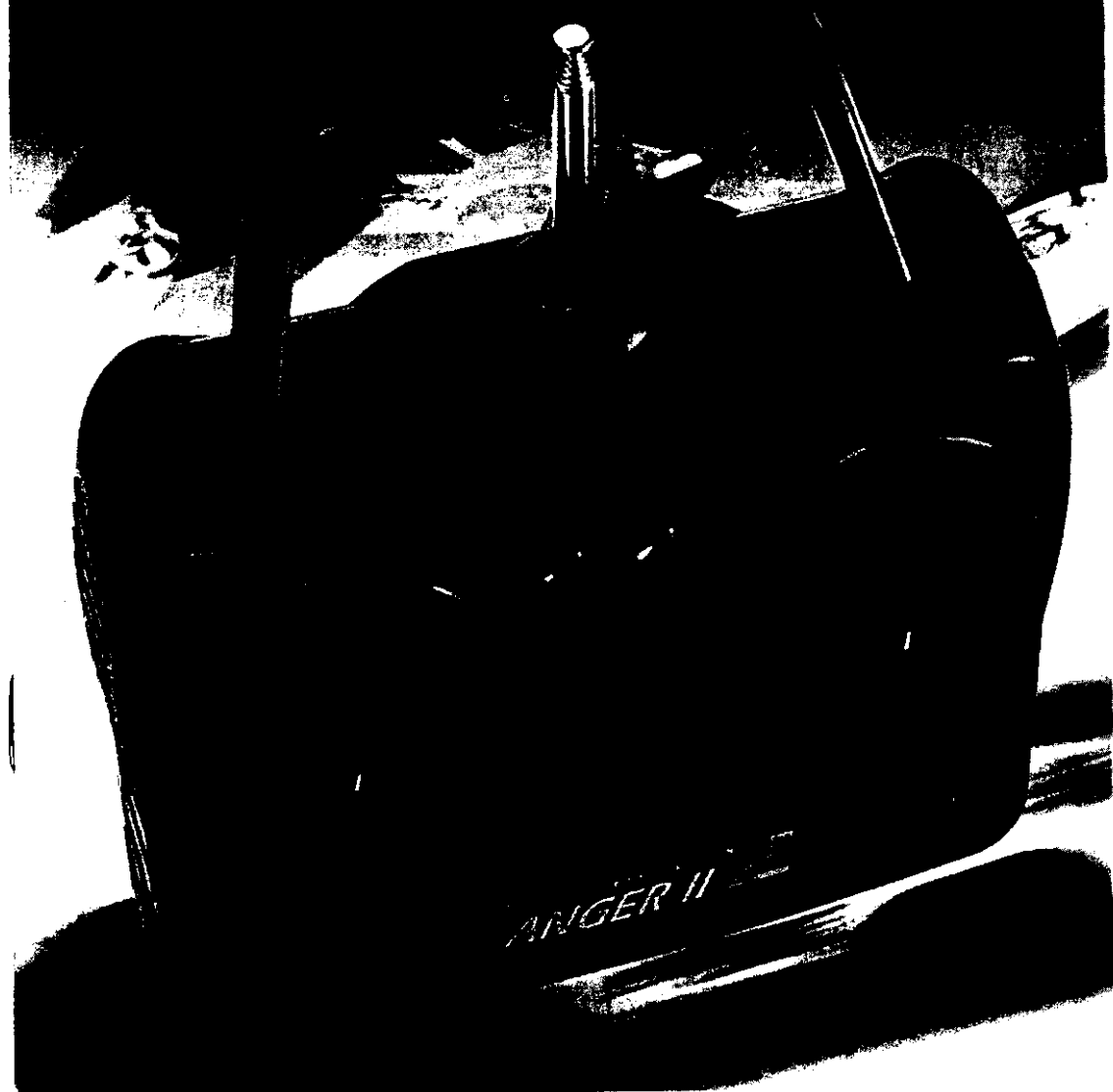
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USER INSTRUCTION BOOK
FCC ID: IFHRANGER2ZA72

APPENDIX 5

hitec INSTRUCTION MANUAL
RANGER II Z

영어(ENGLISH)



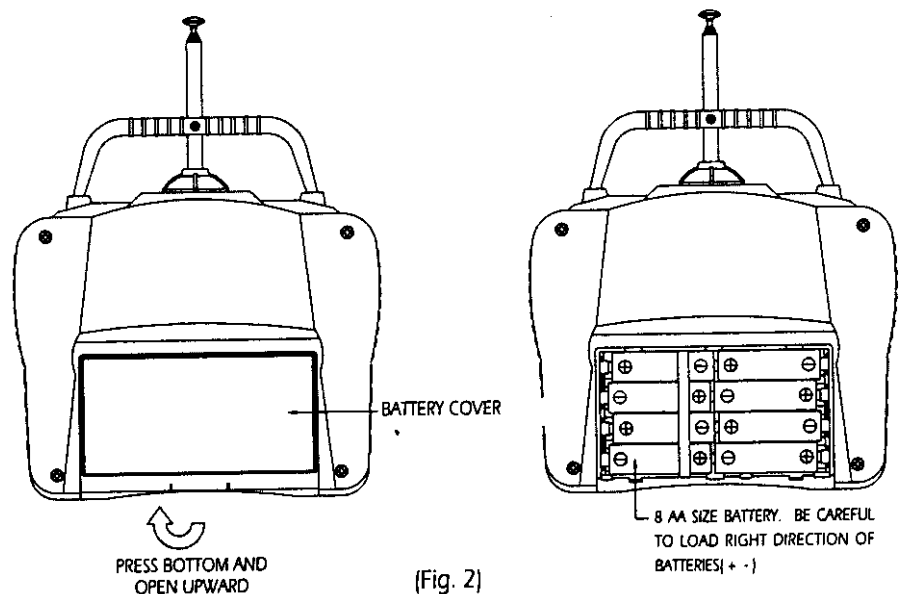
Hitec RANGER II Z

Set-up and installation of your new Ranger 2Z

Please read the following section carefully before attempting to install the Ranger 2Z system.

BATTERY INSTALLATION

1. The transmitter requires eight and the receiver battery pack needs four AA size batteries. These can be Alkaline or Ni-cad cells. If you choose to install Ni-cad batteries, the optional CG-22(220V) or CG-25A(117V) Hitec overnight wall charger can be used to re-charge them.
2. When loading the batteries make sure the receiver and transmitter switches are in the "off" position.
3. Open the battery door in the back of the transmitter by squeezing the tab on the bottom of the battery door and lifting up.
4. Load batteries into the appropriate slots, taking care to install according to the proper polarity. (Fig. 2)



(Fig. 2)

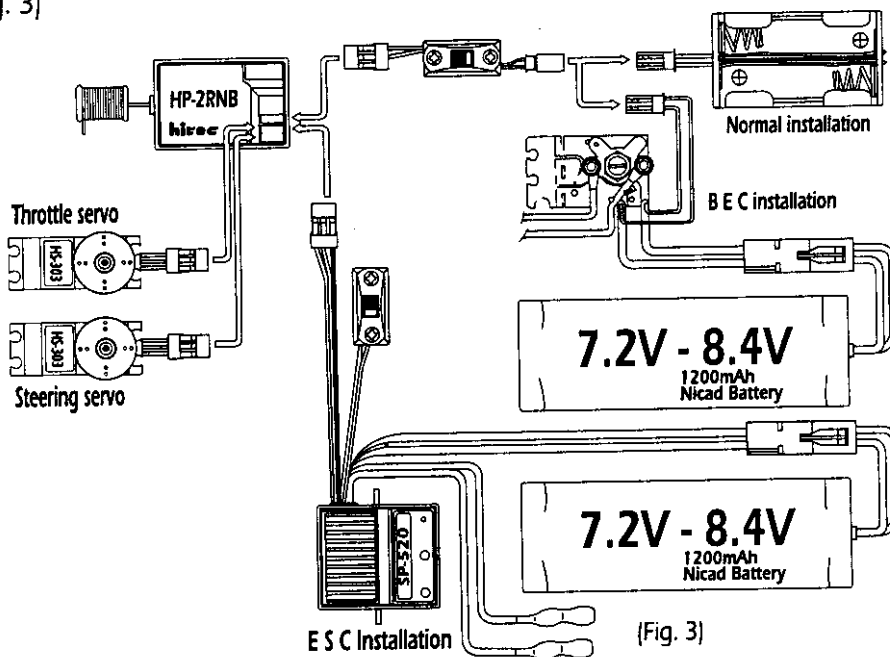
5. Replace the battery door and turn the power "on". If the batteries are fresh and charged, the green L.E.D. will be lit. Should the battery power drop to an unacceptable level, the red L.E.D. will flash, warning the user of impending failure.

At this point, replace the alkaline cells or charge the batteries if they are Ni-cads

RADIO SYSTEM INSTALLATION

When installing the system in the model of your choice, please follow the detailed instructions found in the model kit.

1. Install the receiver to protect it from vibration and potential crash damage.
2. Typically one servo will be used for the steering and the other servo will be used to operate a mechanical speed control, or not used at all and an optional electronic speed control will be used.
3. If your vehicle is electric, there will be a proportional speed control you will wish to use. If your speed control is mechanical, it will require a servo to operate it. The battery and switch harness found in the kit must also be used to provide the receiver with power. (Fig. 3)
4. Should your model use an electronic speed control that has the option of the B.E.C. circuit (battery eliminator circuit), this feature will eliminate the receiver battery and use the motor battery to feed the receiver and servos through the speed control. (Fig. 3)



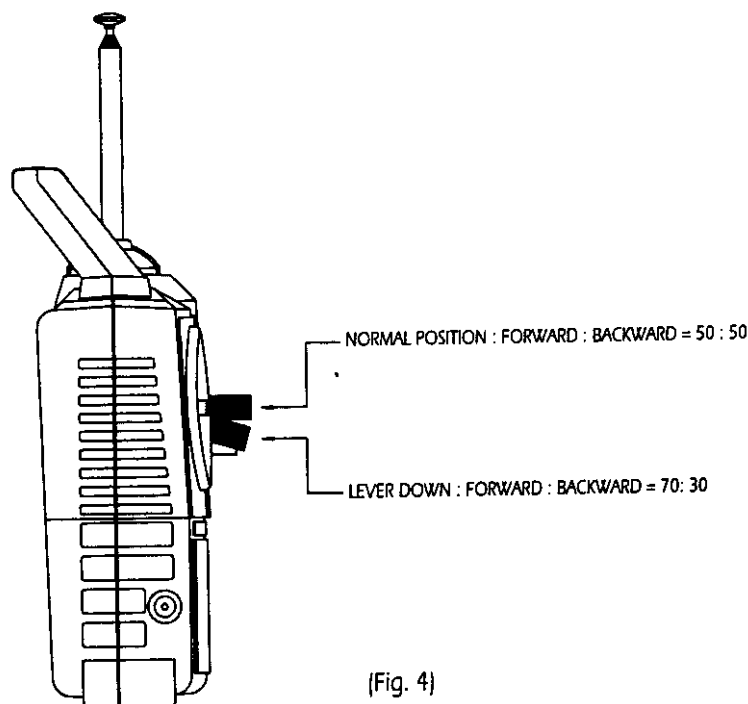
(Fig. 3)

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5. Please refer to the instructions that accompany your electronic speed control for installation.

OPERATION CHECK

1. Plug the switch harness and servo connectors into the proper slots according to Fig. 1. The connectors are polarized, so they should fit into the receiver only in the proper way. NEVER USE EXCESSIVE FORCE TO PLUG IN CONNECTORS.
2. Always turn the transmitter power switch "on" first, before the receiver switch to avoid damaging your equipment.
3. Move the trim levers to the "neutral" position
4. Check to see the servos move in the proper direction when the control-sticks are moved. If you wish to change the direction of rotation, use the servo reversing switches on the front of the radio.
5. If you wish to have more forward throttle stick movement, push down the neutral position adjustment lever, this will give 30% more forward movement. (Fig. 4)



(Fig. 4)

HELPFUL HINTS

Antenna

Both the transmitter and the receiver antenna must be fully extended when in use. Do not cut off any excess receiver antenna wire or bundle it up, this will cut down on the operating range of the system.

Changing Frequency

Hitec offers a matched pairs of TX and RX crystals to be used in changing the frequency of your Ranger 2Z system. Caution: frequency can be changed only within the same band, you cannot change from 75Mhz to 40 or 27Mhz just by changing crystals.

Water, Dust and Fuel

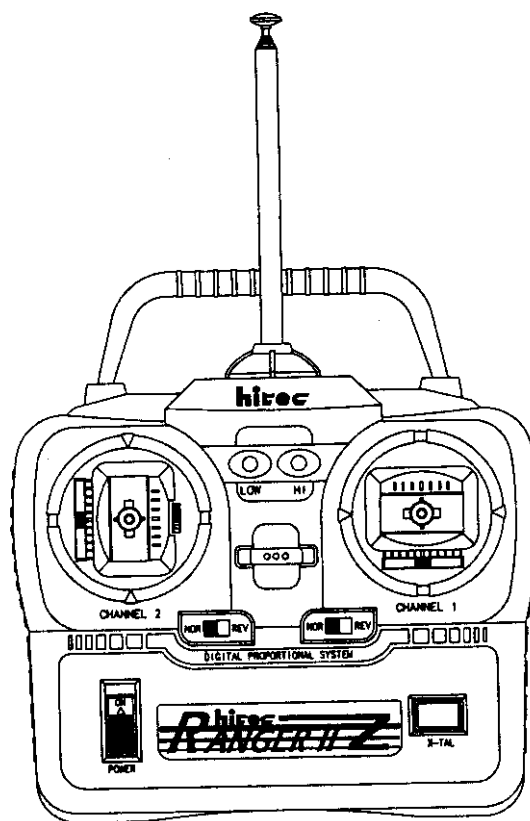
Take suitable measures to protect your system from water, dust, oil and fuel.

Servo Linkage

Install your linkages to be free from binding and slop. If you hear severe "humming" from the servo it is an indication the servo is working too hard and the geometry of the linkage should be adjusted.

Throttle Ratchet

The spring mechanism on the throttle stick may be disconnected and an optional ratchet part # 58314 is available to fit on the throttle control-stick to facilitate a ratchet effect with detents.



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APPENDIX 6

TRANSMITTER TUNE-UP PROCEDURE

1. Attach 12.0 Vdc power supply.
2. Using a spectrum analyzer and a short pick-up antenna, look for 75 MHz signal with sufficient scan width to see 30-150 MHz spurious.
3. Adjust T1, T2, T3 and T4, for maximum output at operating frequency and minimum output at any harmonics.
4. Repeat Step 3.
5. Check for minimum emissions from 30 to 760 MHz.

TRANSMITTER TUNE-UP PROCEDURE
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APPENDIX 7

CIRCUITS AND DEVICES TO STABILIZE FREQUENCY

Transmitter output frequency is determined and stabilized by crystal oscillator Q1.

CIRCUITS AND DEVICES TO
STABILIZE FREQUENCY
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APPENDIX 8

CIRCUITS TO SUPPRESS SPURIOUS RADIATION,

Final RF amplifier spurious emissions are attenuated by a "PI" matching network consisting of L2, C27, C30, T4, C33, and L5.

CIRCUITS TO SUPPRESS SPURIOUS
RADIATION, LIMIT MODULATION
AND CONTROL POWER
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APPENDIX 8

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