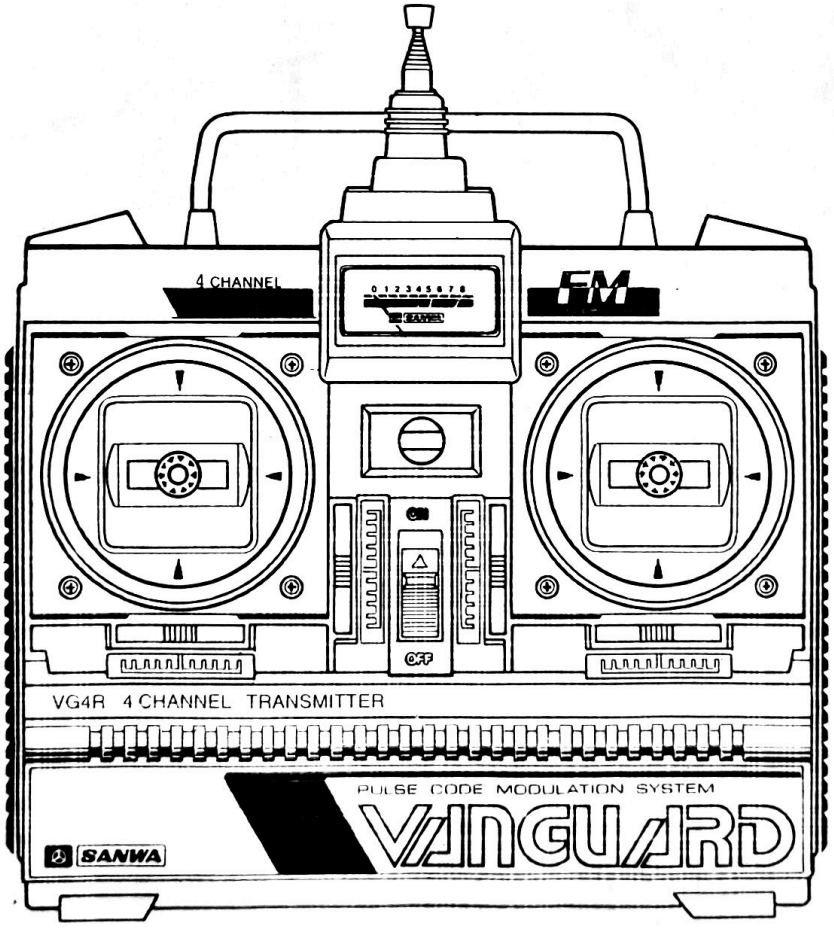
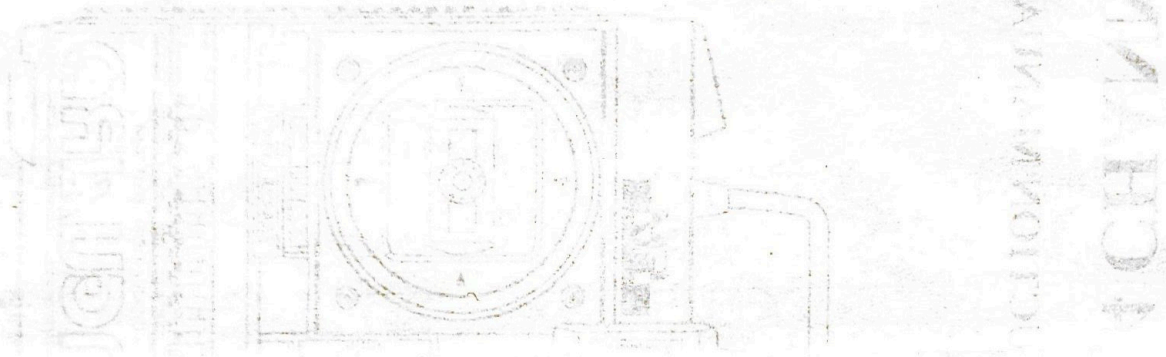
VANGUARD FM 4 CHANNEL

RADIO CONTROL INSTRUCTION MANUAL





IMPORTANT - NEW SANWA 'Z' CONNECTORS

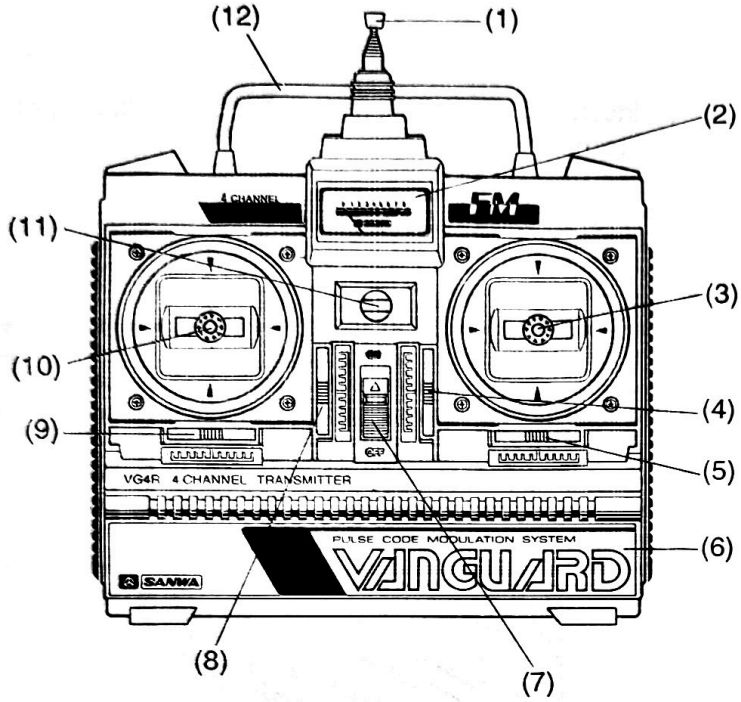
This latest Sanwa radio control set is fitted with the new Sanwa 'Z' connector system and is fundamentally different to all previous Sanwa plug systems.
All 'Z' connectors are BLUE in colour and receivers are either blue externally or are marked with a 'Z' connector label.

DO NOT INTERMIX THE OLD AND NEW TYPES OF PLUG IN ANY WAY.

The polarity of the positive and negative wires has been transposed and intermixing will result in extensive damage.

If in any doubt, please consult your local Sanwa Dealer.

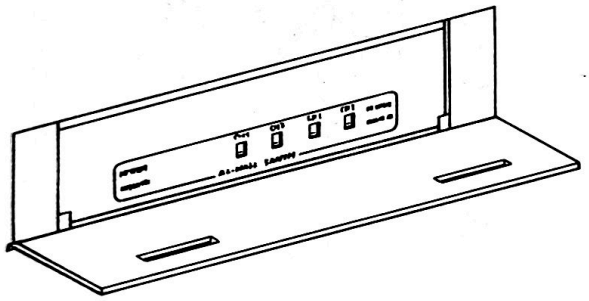
SANWA VANGUARD FM 4 CHANNEL



TRANSMITTER FEATURES AND FUNCTIONS

The SANWA VANGUARD Radio Control Systems are primarily intended for the flying of fixed wing model aircraft.

1. Retractable antenna
2. Expanded Scale Voltmeter (ESV)
3. Control stick, horizontal-ailerons, vertical-elevator (Mode II); throttle (Mode I)
4. Trim lever, elevator (Mode II); throttle trim (Mode I)
5. Trim lever, ailerons
6. Trimmer cover
7. Power switch
8. Trim lever, throttle (Mode II); elevator trim (Mode I)
9. Trim lever, rudder
10. Control stick, horizontal-rudder, vertical-throttle (Mode II); elevator (Mode I)
11. Neck strap connecting hook
12. Carrying handle



SYSTEM FEATURES

TRANSMITTER

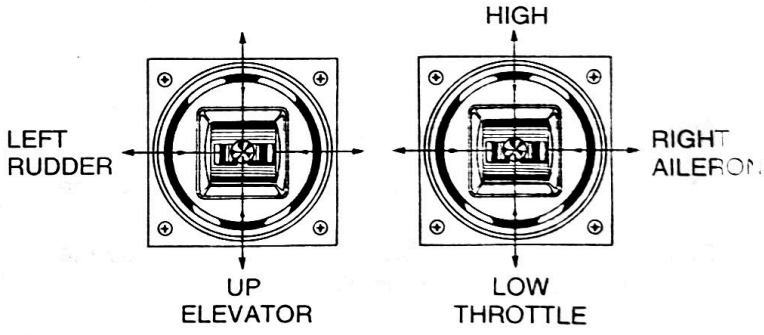
- High Power (500 mw) internal RF Module
- Advanced Gimbal Design with control stick length and tension adjustment
- Finely ratcheted trim controls for accurate adjustment
- Expanded Scale Voltmeter (ESV)
- Servo reversing available on all primary channels
- Internal Plug-in NiCd transmitter battery

RECEIVER:

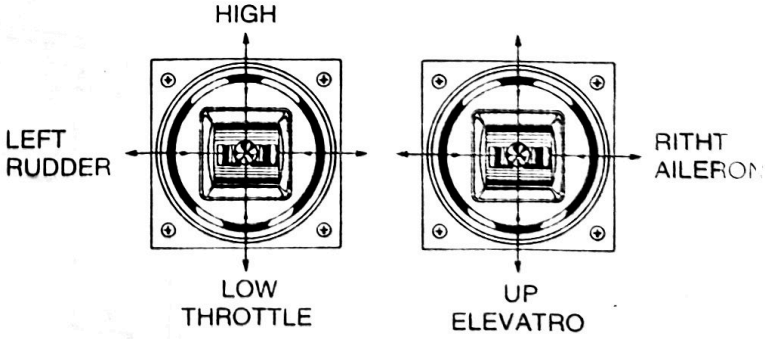
SANWA STANDARD FM receivers feature advanced design to achieve out-standing range and noise suppression.

SERVOS:

The VANGUARD 4 unit is available with standard SANWA servos.



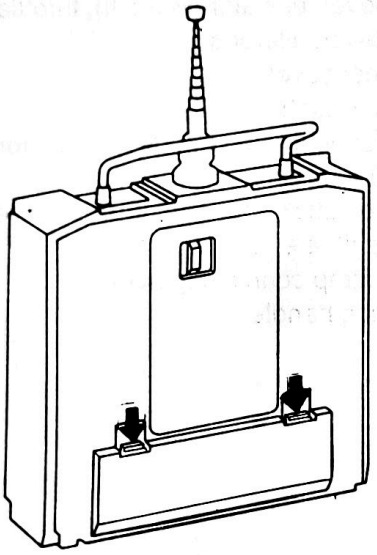
MODE I

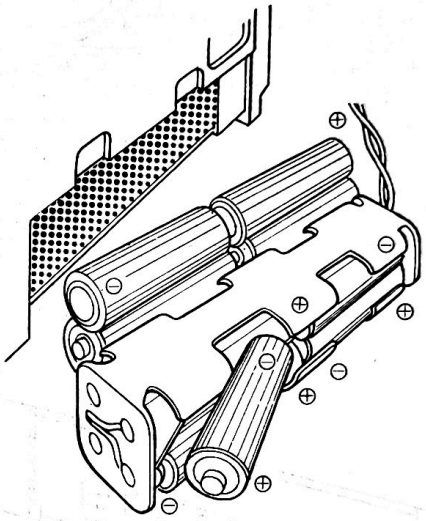


MODE II

Method of Replacing Batteries

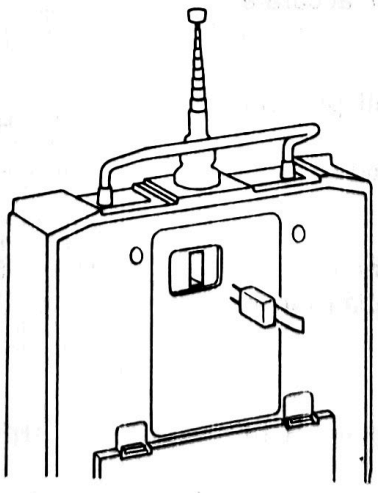
1) Press the tab on the battery lid, then pull back and remove the battery cover.
2) Withdraw the battery case inside, and insert eight UM-3 batteries in accordance with the polarity indicated on the bottom of the case.
3) Insert the battery case into the transmitter, and close the battery cover.





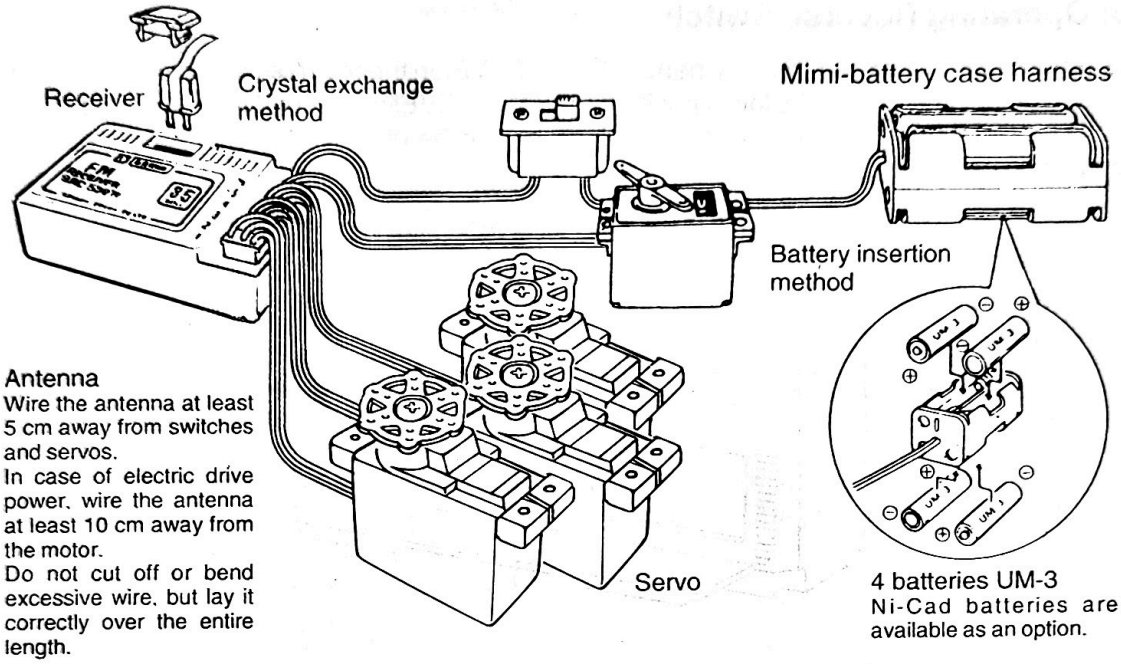
Method of Replacing Crystals

1) Be careful not to confuse the crystals of the transmitter and receiver.
2) When changing the band, be sure to change the ribbon color on the transmitter as well.
3) The band color on the transmitter and receiver crystals is on the crystal pull-out ribbon.



Method of Connecting Receiver

- Connector holes are provided in the end of the case. Insert each connector of the servo into hole indicated for each servo function.



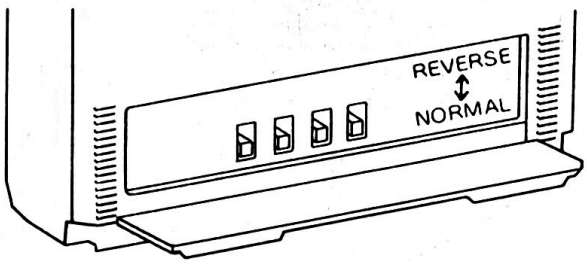
List of Receiver Connector Position:

Number	4ch Position
1	Throttle
2	Aileron
3	Elevator
4	Rudder
B	Battery

Method of Operating Reverse Switch

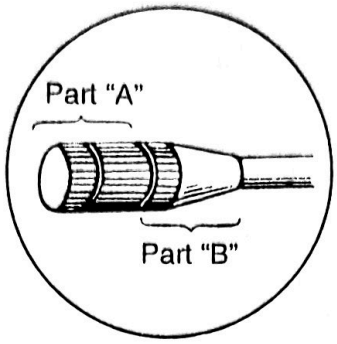
1) When the reverse switch on the trimmer panel at the front of the transmitter is set to the lower position (NORMAL), the direction of rotation is as displayed on the servo indicator.

2) When the reverse switch is set to the upper position (REVERSE), the direction of rotation is the reverse of the displayed on the servo indicator.



SERVO REVERSING:

The VANGUARD transmitters include servo reversing on all channels. This feature makes it possible to select the direction of servo rotation of the channels. Consequently, servo installation is greatly simplified and the direction of the servo rotation becomes unimportant. The servo reversing switches are located under the panel on the front of the transmitter.

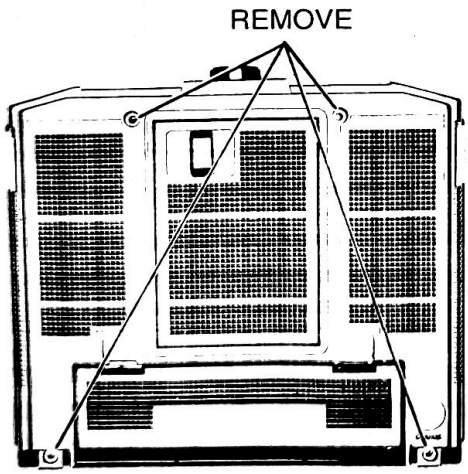


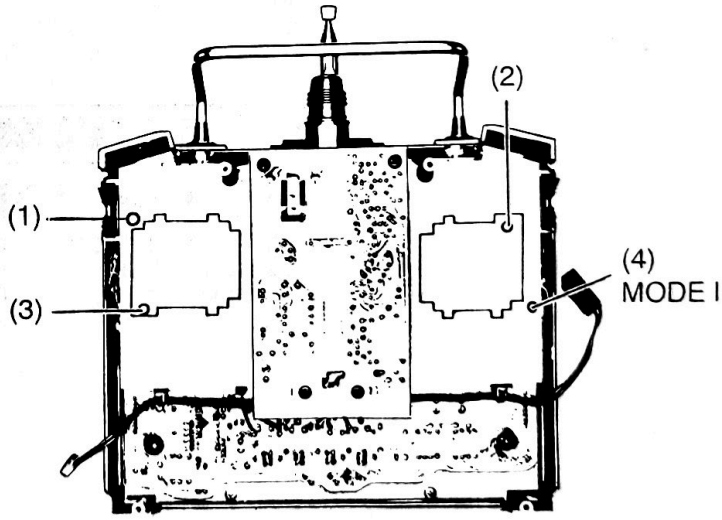
CONTROL STICK LENGTH AND TENSION ADJUSTMENT

The length and spring tension of the control sticks can both be adjusted as required by the individual flyer. Both procedures are simple.

To the spring tension, first remove the four rear cover screws as indicated on the sketch below (Figure 4.) The rear cover can now be lifted off. Three of the four screws indicated on the right hand sketch of a Mode II transmitter are visible. They control stick tension as follows: (1) Elevator Mode II; (2) Rudder; (3) Aileron; (4) elevator Mode I. Adjust the screw in for more tension.

Adjusting the control stick length is even easier. To do so, hold Part B with the fingers and unscrew Part A counterclockwise to loosen the two pieces. Now screw Part A in or out to the desired position, and lock it in place by screwing Part B against it. It is recommended that at least four threads be left inside Part A at its longest length for best results.





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