

V TYPE MOTOR DRIVED DIPOLE ANTENNA FOR AMATEUR RADIO (3.5~30MHz)



HFV330

Operation Instructions

To use this antenna properly, read this instruction thoroughly before using it. Keep this manual carefully at hand for later use.

•The contents of this Operation Instructions will be changed in future without advance notice.

•Description

- ①HFV330 is a compact V type dipole antenna for HF bands(3.5~30MHz) , which the adjustment of antenna is controlled by the electric motor.
- ②It is very easy to assemble. After installation, you can adjust the antenna by SDC2(Tuning controller for HFV330). 3.5~25MHz can be operated by the element length longest. 21~30MHz can be operated by the element length shortest.
- ③This antenna is more compact but Max power rating is 250W(SSB).
- ④The narrow space design is very good for field or apartment use.
- ⑤HFV330 is a V type dipole antenna(90 degree fixing), which has only a little influence from the surroundings.

<<Warning>>

- Do not use the product under unusual conditions.
Do not use the product when unusual conditions happen such as smoking, unusual smell or sound. Keeping using of the product under those situation may cause to a fire, electrify or damage. Pull out the cigar plug from the cigar socket at once. Ask the dealer to repair it. Never repair it by yourself because it is dangerous.
- Do not overhaul or reconstruct the product. It may cause to have a fire, electrify or damage.
- Do not put wire, metal or substance into the product.
It may cause to have a fire, electrify or damage.
- Do not use the product at the place where inflammability gas is generated. It may cause to have a fire or explode.
- Do not use the product except for the specification of the operation instructions. It may cause to have a fire or electrify.
- Do not damage, process, bend, twist or pull the power supply cord.

Do not put something heavy on the product or heat it up.

Breaking the cord may cause to have a fire, electrify or damage.

- Do not use the product when cigarette lighter is inserted loosely.
It may cause to have a fire, electrify, or damage.
- Do not touch the power supply plug or the product with wet hands.
Do not use the product where is easily reachable by babies and children.
It may cause to electrify or do themselves an injury.
- Do not soak the products in water.
Do not get wet the product. It may cause to have a fire, electrify or damage.
- Do not drop the product. Do not give them big impact.

<<Attention>>

- Do not install the product where is got the direct rays of the sun.
Do not install the products near the jet of the air conditioner. It may cause to have a fire, transform, discolor or damage.
- Do not wipe it off with thinner or benzene. If it becomes too dirty, wipe it off the neuter detergent.
- For the safety, be sure to cut off the power supply when it is not used.
- Do not put something heavy on the product.
- Use the product under rated specification only.

-----Note-----

<<Installing the antenna>>

- ①Do not install on a rainy or windy day since it is dangerous.
- ②Do not attempt to install the antenna only by yourself. Installing the antenna alone on the roof may lead you dangerous accident.
Always ask your friends for help installing the antenna.
- ③Do not drop the antenna, tools and attachment when installing the antenna in the height. Assemble the antenna on the ground before installing it.

<<Antenna location>>

- ①If the HFV330 is located on the roof of a house or top of a building, look around the roof to see if there are any obstacles such as an electric wire or TV antenna. The HFV330 has to be located as far

as away possible from those things to obtain its maximum performance.

Installing the antenna too close to the building wall may cause bad effect for electrical characteristics of the antenna.

- ②Do not install the antenna where is easily reachable by people.
- ③Install the antenna firmly not to fall down due to the strong wind.
Locate the antenna at the safe place where people and building are not inflicted injures even if the antenna falling down.

<<Before transmitting>>

Transmit after confirming if the antenna works normally by an SWR meter.

<<During transmitting>>

Touching the antenna during transmission may cause to electrify. Pay attention not to touch the antenna especially for children if installing on balcony railing.

<<Rumbling Thunder>>

If the thunder seems to rumble in the vicinity, do not touch the antenna and coaxial. When you do not use the radio, take off the cable from the radio.

<<If there is something wrong, stop transmitting immediately>>

Keeping transmitting with high VSWR may cause the radio to be damaged. Stop transmitting immediately and check the following matters. If it does not solve the problem, please ask the dealer or Diamond Antenna Corporation.

[Condition : If the antenna does not seem to receive well or propagate well.]

Check 1 : Is the antenna too close to the building wall? VSWR is higher and the radiation pattern is disturbed. Please install the antenna from the building as far as possible.

Check2 : Did you assemble the antenna correctly? Please read the instruction again and reconfirm the assembly.

Check3 : Is the coaxial cable something wrong? Please check if soldering the connector is okay and the wire breaks by the volt-ohm meter.

•Parts Description

Base plate unit

- Fixing plate (M99001)1
- Bracket for Element(with volt and nut)
(M99002)4
- Balun (M99003)1
- Pan head screw (with spring washer, flat washer
and nut)(M99004).....8
- Fixing pedestal for Balun (with volt and nut)
(M99005)1
- U volt set M8 (with spring washer and nut)
(M99006)2
- Coil unit (M99007).....2
- Balun connecting wire (M99008).....2
- Element (M99009)2
- Hose clamp (M99010)2
- Set screw M5 (M99011)2
- Hexagonal wrench (M99012)1
- Controller SDC2 (M99013)1
- Connecting cable (15m) (M99014)1
- Inside fuse (for cigarette plug ,2A) (M99015) ...1

•Assembling Instruction

①Before start the operation, you have to select the Element length long or short for your desired frequency bands.

- Set the Element longest for 3.5~25MHz.
- Set the Element shortest for 21~29MHz.

On each frequency bands setting, fasten the screw A tightly which is in the center of the element by phillips head screwdriver or spanner. (ref. Fig-1)

②Screw the Element which was assembled in ① in the screw part on the top of Coil unit by hand. Then screw the Set screw using Hexagonal wrench for locking. (ref. Fig-1)

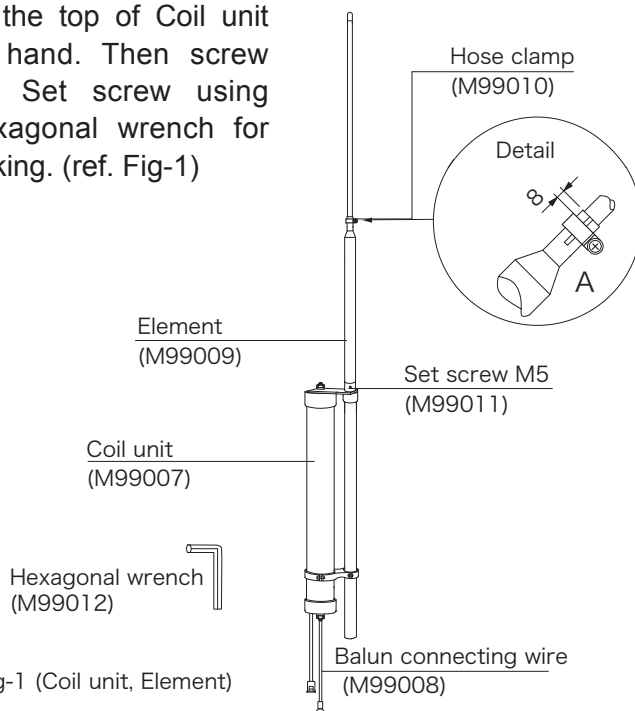


Fig-1 (Coil unit, Element)

③Fix the Base plate unit on the mast by two U-volts(M8). (ref. Fig-2)

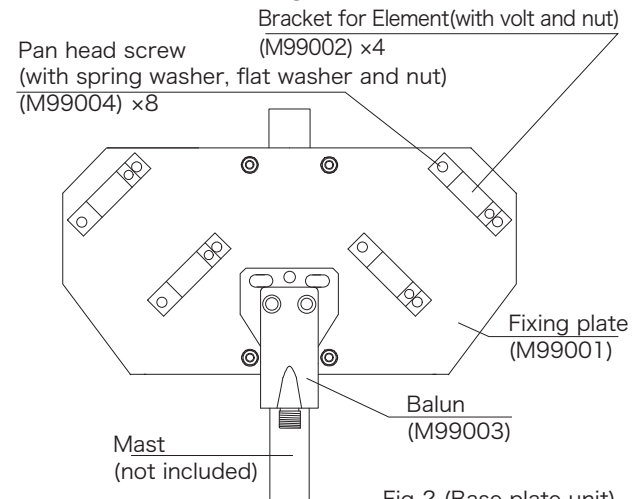


Fig-2 (Base plate unit)

④Through the black FRP pipe ($\phi 32$) which has been assembled in ② into the two Brackets for Element then fix them in well balance like Fig-3 on the Base plate unit which has been fixed on the Mast and fasten the screw B~E which are in the side of Bracket for Element. The length from the FRP pipe edge to the Bracket for Element have to be 30mm. (ref. Fig-3)

(The right or left Coil unit is same. Fixing which unit is all right.)

⑤There are two wires out of the Coil unit. Connect the terminal which has a round hole to the terminal of Balun. The another wire with a connector is for connecting the Controller SDC2 (included). Connect this cable to the forked side of Connecting cable (15m).

※If you need longer the cable, please use the optional extension cable 10m (ETK10) (not included).

⑥Connect the coaxial cable(with MP connector) from the transceiver to the M connector part of Balun. Make the connector part waterproof by self-melting tape and vinyl tape(not included) in permanent installing.

⑦Though it is no need especially to make the connection part from Controller waterproof, please make the part waterproof same as the M connector in Balun and the coaxial cable in permanent installing.

⑧Fix the coaxial cable and Connecting cable on the Mast by vinyl tape to avoid the lord on the connection part of coaxial cable and

Connecting cable.

⑨ Please check the bellow points before start operation of Controller.

- Is the length selection long or short of Element OK for your desired frequency bands?
- Is the screw fixing of Hose clamp, Bracket for Element and Balun terminal, the nut fixing of U volt and the fixing of the M connector and the Connecting cable tight?

· If SDC2 is operated especially with one of the Connecting cable is open, you cannot adjust the antenna because the right and left Coils are in unbalance operation.

<<Note>>

- Power supply voltage of the SDC2 is DC12V(10-14.5V usable). Please use it with the prescribed voltage.
- If the polarity of the power supply is wrong, the power supply is not going to turn ON because of a safety circuit.
- The fuse of the cigar plug is 2A. When changing the fuse, please use the prescribed standard one.
- Do not push more than two buttons at the same time. Do not tune the frequency change dial during moving the coil. It may cause malfunction and the antenna may be damaged.
- The controller cannot be auto-tuning. The fine tuning by manual operation is required.
- The SDC2 is not the water proof structure. Do not get water to the product.
- Since the inside of the SDC2 is a complicated electronic circuit, do not use it where is a strong magnetic field or high temperature and humidity.

· How to use the SDC2

- ① Connect the Connecting cable (15m) to the connector out of Controller SDC2. (ref. Fig-4)
- ② Plug the cigar plug out of Controller SDC2 into the cigar socket of your DC power supply. If your DC power supply has no cigar socket, though you can use with cutting the cigar socket line wire and connecting the plus and minus wire to the terminal plus and minus of the DC power supply, be sure to put the fuse (2A) in the plus line for safety.
- ③ Power supply voltage of the SDC2 is DC12V(10-14.5V usable).
- ④ To turn on the power switch ON, LED lamp turns on and the current operation situation is shown on the display panel.
- ⑤ Turn the frequency change dial and set the operation frequency.
- ⑥ When pushing the GO button, the frequency and "GO HOM POSITION" will be shown in the display panel, and the motor in the Coil unit will be moved. Then the selected "frequency "and "position count number" will be shown.
- ⑦ When the Coil goes to the selected frequency, the Coil will be stopped automatically. After stopping the Coil, please transmit at less than the output 10W. Make fine adjustment of the SWR by UP/DOWN buttons for your desired frequency. (SDC2 cannot be auto-tuning. Please be sure to make fine adjustment.)

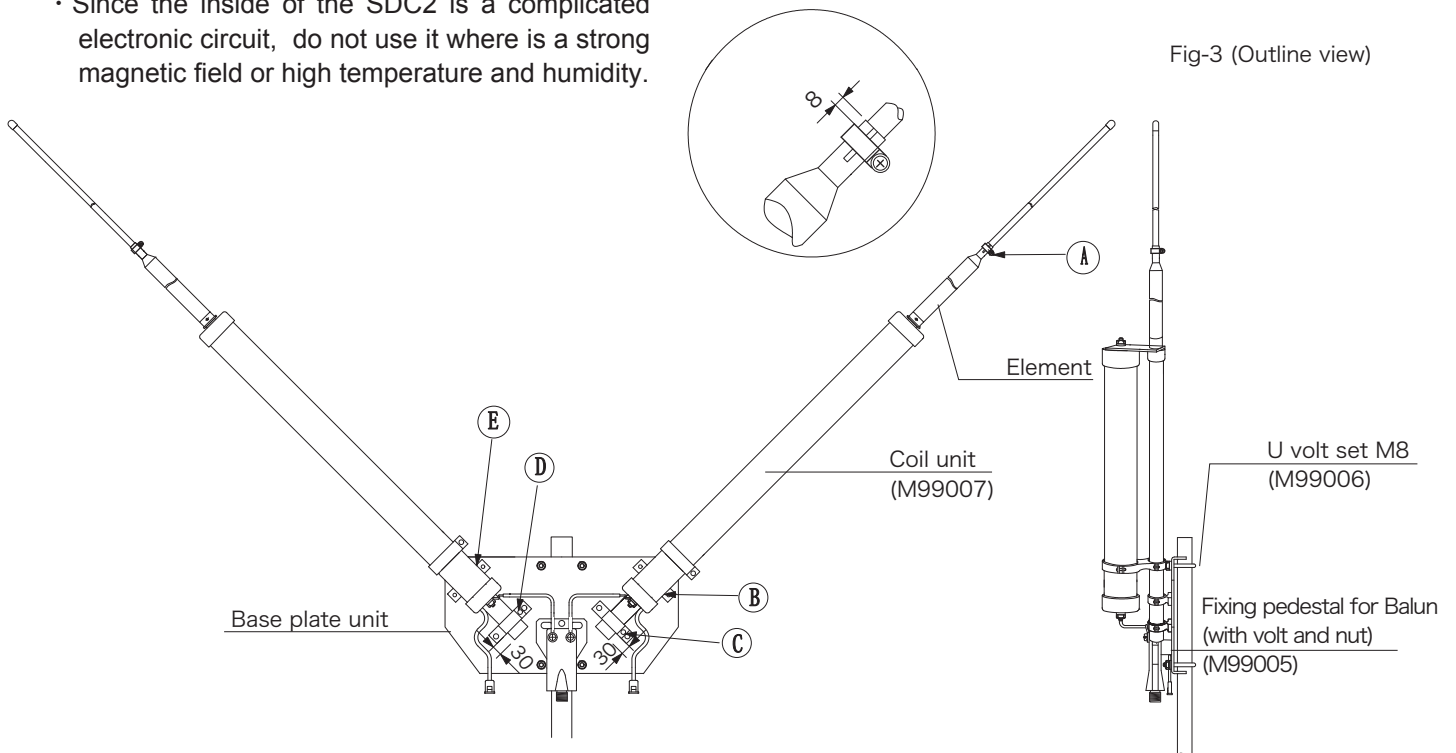


Fig-3 (Outline view)

- ⑧ If you want to stop the moving during tuning operation, push the RESET button. The Coil will be stopped at the position.
- ⑨ When you want to re-start the UP/DOWN movement, go back to ⑤ or pushing UP/DOWN buttons and do manual operation.
- ⑩ If you select the Element short for 21~29MHz, there is a little position gap of tuning stopping position. Please make fine adjustment by pushing UP/DOWN.

<<Wiring and Connection>>

- ① Display panel : The operation situation is shown.
- ② Frequency change dial : To change the operation frequency.
- ③ GO button : To start the operation.
- ④ UP button : To go the Coil up. (To tune lower frequency)
- ⑤ DOWN button : To go the Coil down. (To tune higher frequency)
- ⑥ RESET button : To stop the Coil during moving the Coil.
- ⑦ Power switch : To turn ON/OFF.
- ⑧ Cigar plug : To connect with a cigar socket and take power supply.
- ⑨ Connector for connection with the antenna.

·Specifications

- Frequency / 3.5~25MHz (in the Element long)
21~30MHz (in the Element short)
- Impedance / 50Ω
- VSWR / Less than 1.5 (at the resonate frequency)
※ It depends on the height above ground.
- Max. power rating / 250W SSB. 80W(FM/CW)
- Rated wind velocity / 35m/sec.
- Element length / Approx. 2.53m
- Turning-radius / Approx. 1.8m
- Weight / Approx. 5.9kg
- Wind surface area / Approx.0.2m²
- Mast diameter accepted / 38~60φ
- Connector / M-J
- Type / V-dipole (reduced type)
- Power supply voltage & current / DC12V 300mA
- Length of control cable / 15m

■ Though these products purchased are manufactured under strict quality control, if damage is caused by transporting, ask your dealer promptly.

■ Design and specification of these products will be changed for future improvement without advance notice.

Fig-4 (SDC2)

