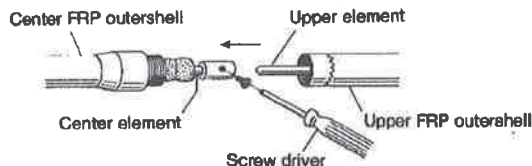


2m/70cm Dual Band High Performance Gain Vertical Base Station Antenna Series

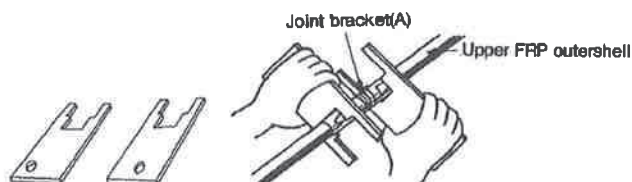
Assembling the X510M/X510N

Outlook and inner construction of the X510M and X510N are identical except that the X510M employs UHF connector while X510N employs N connector.

1. Connect upper and center elements. To pull out element joint bracket at the top of center element, make upper part of the element down and shake lightly.



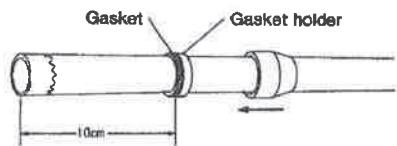
Note ; Be sure to assemble the antenna from upper element. If the antenna is being assembled from lower element, the element can not be pulled out from outershell and fasten properly.



2. After connecting these elements with a screw, push back center element downward in advance to connect upper and center outershells. Then connect upper and center outershells at upper joint bracket section.
3. Fasten upper part of the joint bracket(A) with a special wrench attached by holding lower part of the joint bracket(A) firmly with the wrench. Use narrow gap section of the wrench to fasten and hold each part of the bracket. For perfect waterproof, fasten the bracket until there is no gap between each part.

Note ; Be sure to fasten the bracket firmly, otherwise it may lead water leakage problem.

Note ; Adhesive NOTE seal is attached on the joint bracket. Remove the seal before installing the antenna. Gasket and gasket holders have to be fixed at 10cm from the edge of FRP outershell.



4. Connect center and lower elements.

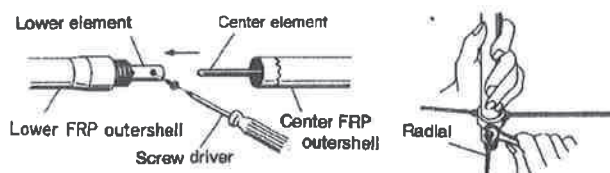
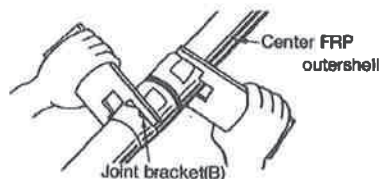


Fig. 1

Note ; Do not pull out lower element.

5. Fasten lower part of joint bracket(B) just as the same way as the joint bracket(A) with a special wrench attached. Use wide gap section of the wrench to fasten and hold each part of the bracket. For perfect waterproof, fasten the bracket until there is no gap between each part.



Note ; Be sure to fasten the bracket firmly, otherwise it may lead to water leakage problem.

6. Attach three radial elements as shown in Fig.1.
7. Attach two mast brackets on support pipe and fix them. Then connect a coaxial cable, with a UHF connector for the X510M and N connector for the X510N, to the feedpoint section through the pipe.

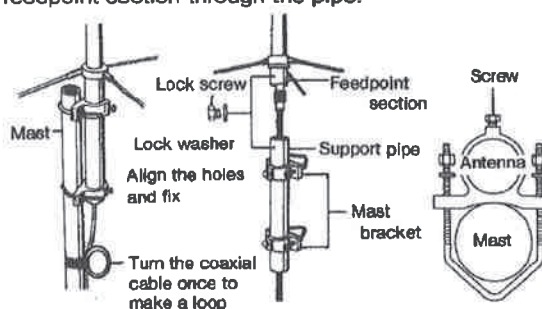


Fig. 2

8. Fix support pipe and feedpoint section of the antenna with lock screw by aligning the holes at the bottom of the section and upper part of the pipe.
9. Attach assembled antenna on a mast by taking whole balance into account as shown in Fig.2. Turn the coaxial cable once to make a loop at right below the antenna to escape excess load from the cable.

Note ; Though acceptable mast diameter is from 30mm (1.18"), it is recommended to use larger diameter mast as possible because the antenna is relatively large.

Note

Though all this antennas employ DC ground structure, circuit across center conductor section and ground section of the connector is open(not conducted)if it is measured by a voltohmm meter. If it is closed(conducted), check to see coaxial cable and/or connector thoroughly. Be sure to install the antenna vertically. Full performance of the antenna can not be guaranteed if the antenna is not installed vertically.

Since the X510M and X510N employ different connector types, be sure to use a coaxial cable which has corresponding connector type to feed the antenna.

Since N connector is relatively complicated compared with conventional UHF type connector, utmost care has to be taken to handle connector to coaxial cable connection. It is recommended to practice test transmission for adjustment as short and least power as possible.

Warning

Do not touch or come close to the antenna during transmission.

Do not install the antenna where is easily reachable by the children.



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● Specifications

Frequency : 144-146MHz, 430-440MHz
Gain : 8.3dB(2m), 11.7dB(70cm)
Impedance : 50ohms
VSWR : Less than 1.5 : 1
Max. power rating : 200w
Rated wind velocity : 40m/sec.(90MPH)
Mast diameter accepted : 30-62mm(1 1/5" to 2 2/5")
Length : 5.2m(204.7")
Weight : 2.0kg(4.4lbs.)
Radial length : approx. 52cm(20.5")
Connector : UHF(X510M), N(X510N)
Type : Three 5/8-wavelength C-Load phased-vertical (2m),
Eight 5/8-wavelength C-Load phased vertical (70cm)

● Part name (number)

60701 Upper FRP outershell with upper element
60702 Outershell joint bracket(A)
60703 Gasket holder(A)
60704 Gasket(A)
60705 Center FRP outershell with center element
60706 Outershell joint bracket(B)
60707 Gasket holder(B)
60708 Gasket(B)
60709 Lower FRP outershell with lower element and impedance matching section(X510M)
60710 Lower FRP outershell with lower element and impedance matching section(X510N)
60711 Radial element holder
60712 Support pipe
60713 Lock screw with washers
60714 Radial element with nut
60715 Mast bracket with lock screw
60716 V-bolt assembly(nuts and washers)

FOR YOUR SAFETY

Read the following safety precautions before start assembling the antenna.

- Assemble the antenna on the ground or wide and flat place such as on balcony before installation.
- Do not assemble or install the antenna on a place where you can not have enough distance from any electric power lines.
- Do not install the antenna on a rainy or windy day.
- Do 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.
- Do not use iron or aluminum ladder at a reachable distance from any electric power lines.
- Do not install the antenna on a mast which is not grounded properly.
- Do not have your family members or friends touch or come close to the antenna, unless they have realized its potential danger.

TO AVOID FATAL ACCIDENT

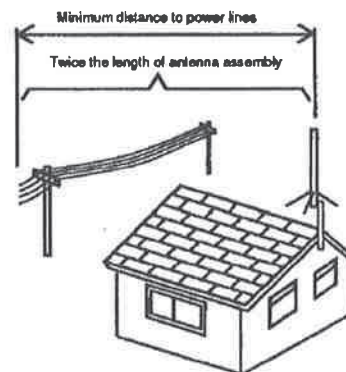
- Do not attempt to sustain the antenna, or any part of support structure if it begins to fall down. Let it fall by itself.
- Do not attempt to remove or restore the antenna or any part of support structure if it touches a electric power line by chance. Let it be as it is, do not touch it, and call your local electric power company immediately.

IN CASE OF AN ACCIDENT

- Do not touch a person or an animal who is or seems to be in contact with the antenna or any support structure which is fallen on a live electric power line. Touching one may lead you to be electrocuted.
- Do not attempt to separate a person or an animal who is or seems to be in contact with the antenna or any support structure which is fallen on a live electric power line by yourself. Call or have someone call a police officer, ambulance, doctor immediately.

ANTENNA INSTALLATION PRECAUTIONS

To determine antenna installation location, there are several factors to be taken into account. First thing is antenna propagation direction to specific target stations. As to whether there is any obstacles such as tall buildings on the line of sight. Next is specific installation location. As to whether specific location is adequate in terms of antenna support and surrounding safety.



- Do not attempt to install the antenna by yourself if you do not have any experience in installing base station antenna. Ask your experienced friends or professional for help.
- Do not attempt to install the antenna at a location where does not have enough distance from nearby electric power lines. It is advised to install the antenna at least twice of total antenna height from nearby electric power lines.
- Do not install the antenna on any type of tower, pole or telescopic mast which exceeds 30 feet high, if you do not have enough experience in installing the antenna on that kind of location. Ask your experienced friends or professional for help.
- Do not use more than 1/10" section if you install the antenna on iron plumber's pipe. Attach guy wire if multiple pipes are used to install the antenna.

DIAMOND ANTENNA CORPORATION

15-1, 1-chome, Sugamo Toshimaku, Tokyo 170, Japan Phone : (03) 3947-1411 Telex : 272 2420 DIATNA J Cable Address : DIANTNA



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