

50/144/430MHz Base station Tri Band High Performance Radialless Vertical Antenna VX1000

DIAMOND
ANTENNA

Repeater frequencies compatible
FRP outershell
300MHz utility communications band receiving

Operation Instructions

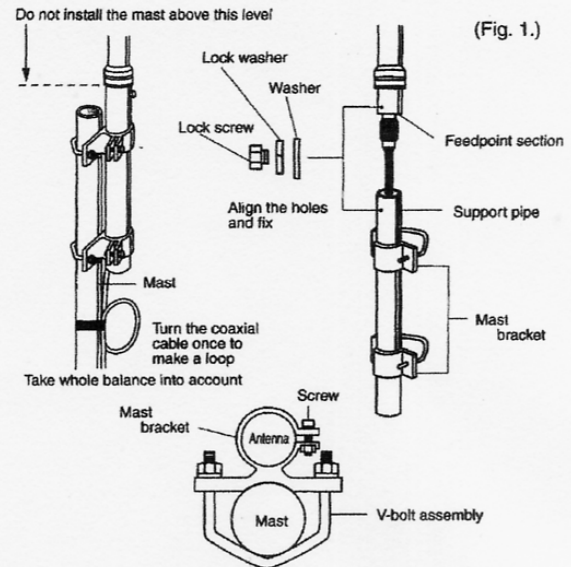
To use this antenna properly, read this instructions thoroughly before using the antenna. Keep this manual carefully at hand for later use.

Description

1. The VX1000 is a base station omni directional vertical antenna, which covers 50/144/430MHz amateur bands with high performance and low VSWR. 50MHz can be adjusted by upper adjustment elements.(50.5-52MHz)
2. Compact, radial less and lightweight construction permits the antenna to be installed at places like balcony railing very easily.
3. Professional antenna quality 60m/sec(135MPH) maximum wind resistance and excellent waterproof eliminates VSWR change caused by weather conditions.
4. DC ground structure of the antenna protects a radio equipment being connected to the antenna from high voltage caused by thunder lightning.
5. 50/144/430MHz bands can be operated simultaneously by using optional Triplexer. Diamond's genuine Triplexer is recommended.
6. The VX1000 employs gold plated connector center conductor.

Assembling

1. Fix the mast bracket assemblies on the support mast. Connect coaxial cable assembly to the feed point section of the antenna through inside of the pipe. Align the hole of the pipe and the hole at the lower feed point section of the antenna and fix with a lock screw.
2. Fix the antenna firmly by taking whole balance into account as shown in the Fig. 1.



Adjustment

The VX1000 antenna is completely adjustment free(144/430MHz). If VSWR of the antenna is too high, it might be due to the poor contact at somewhere in connecting sections. It is recommended to check each connecting section at coaxial cable to feed point section as well as soldering sections. And if the antenna is located too close to a house or building, VSWR of the antenna can not be lowered.

Only 50MHz band, the desired frequency can be adjusted by the upper element length. With longer element size, the frequency will move to lower side and shorter length move the frequency to higher level. The frequency change per 1cm length is 150kHz.

Note

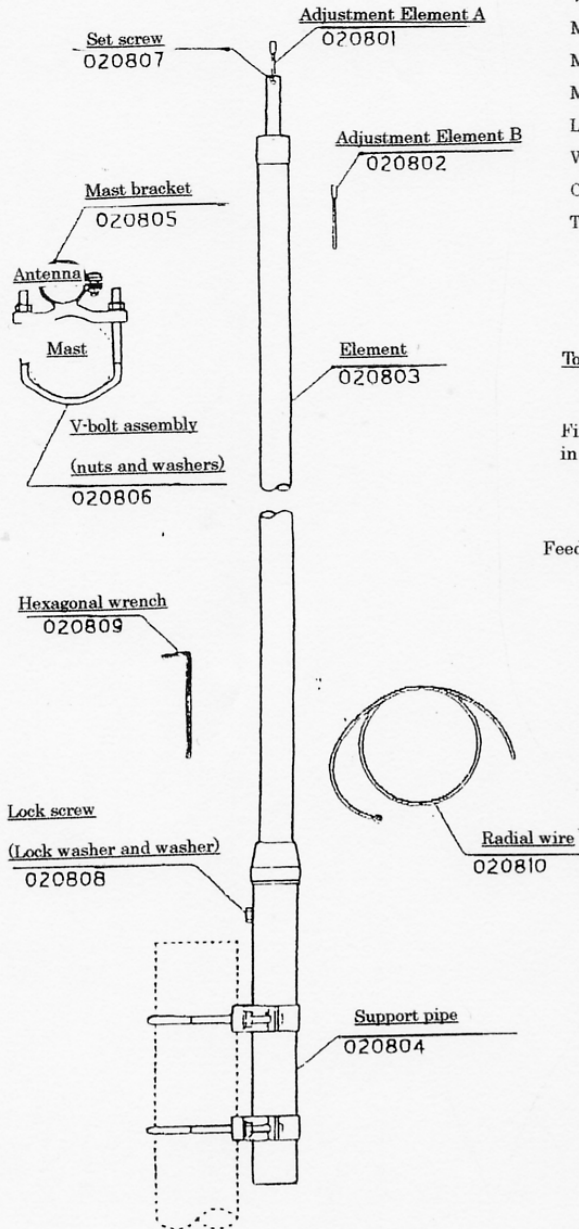
Though DC ground structure is employed in the VX1000, while measuring the antenna by a tester, center conductor and ground section of the antenna feed point section is open(not short circuited). If it is short circuited, be sure to fully check coaxial cable system including feed point connector section.

DIAMOND ANTENNA CORPORATION

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Part name (number)

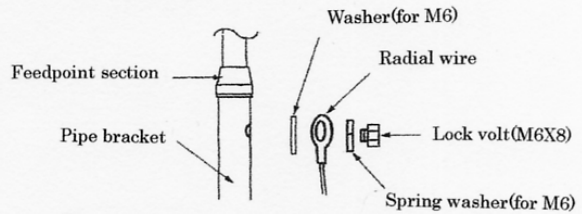


Specifications

Frequency: 50.5-52MHz, 144-146MHz, 430-440MHz
 Gain: 1.5dBi(50MHz), 2.15dBi(144MHz), 5.5dBi(430MHz)
 Impedance: 50ohms
 VSWR: Less than 1.5:1
 Max power rating: 150W SSB (sum of all bands)
 Max wind resistance: 60m/sec(135MPH)
 Mast diameter accepted: 30-62mm
 Length: 1.42m
 Weight: 0.8Kgs.
 Connector: M
 Type: 1/2 wave (50MHz)
 1/2 wave radial less (144MHz)
 2 x 5/8 wave radial less (430MHz)

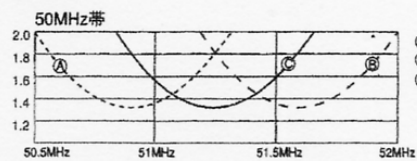
To install a radial element

Fix radial element attached as shown in the following figure.

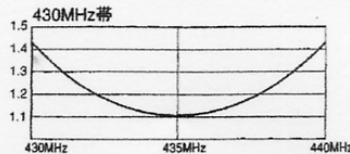
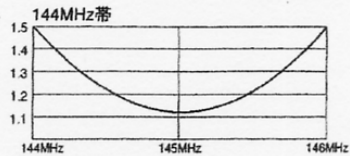


The wire can be taped along the coaxial cable or stretched and fixed at an appropriate location around the antenna.

● VSWR



Ⓐ Element longest
 Ⓑ Element shortest
 Ⓒ Adjust around
 51.25MHz



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FOR YOUR SAFETY

Read the following safety precautions before starting 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 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.

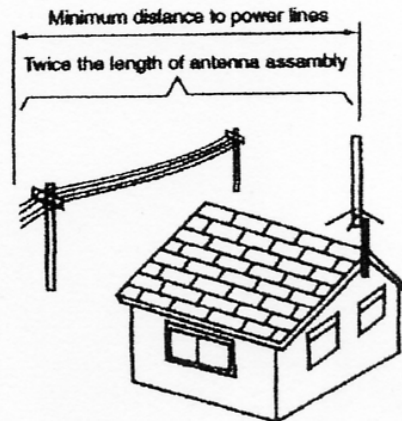
IN CASE OF AN ACCIDENT

- 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.

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