

Mobile Discone Antenna
For Reception 100-1600MHz Wide Band Non-Directional
Antenna Available for transmitting for the range
144/440/1200MHz

DIAMOND
ANTENNA

D220SA

OPERATION INSTRUCTIONS

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

Safety Precautions

Note beforehand that the company shall not be liable for any damages suffered by the customers or third parties in using that product, or for any failures and faults that occur the use or misuse of this product, unless otherwise provided for under the law.

■ Type and meaning of the marks

 DANGER	This mark indicates an imminently hazardous situation, which, if not avoided, could result in death or serious injury.
 WARNING	This mark indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
 CAUTION	This mark indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury or only property damage.

DANGER

- Don't install the antenna on a rainy or windy day since it is dangerous.
- Don't touch the antenna during transmitting since it is dangerous.
- If there is a thunderstorm during operation, stop the operation immediately and remove the cable from the transceiver. If that doesn't make it in time, don't touch the antenna and the cable. It may be severely injured or die due to getting and electronic shock from a lightning strike.

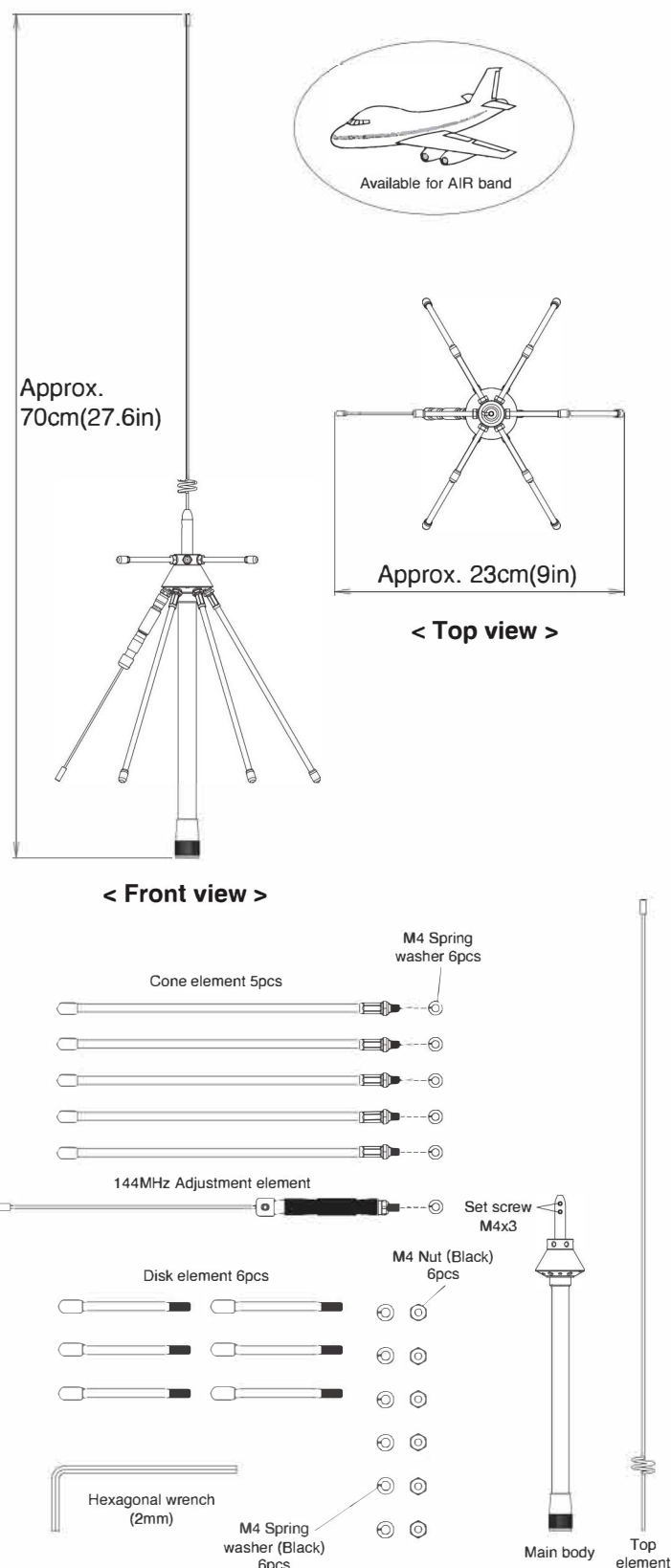
WARNING

- Don't mount on a magnet base. If the antenna comes in contact with an obstacle or when driving at high speed, it may topple over, and falling may cause injury to others or cause an accident.
- Install the antenna firmly not to fall down due to the strong wind. Even if falling down the antenna, locate the antenna at the safe place where people and building are not inflicted injuries.

CAUTION

- Make sure to adjust the antenna before using it.
- Install the antenna as far away as possible from any obstacles to obtain its maximum performance.
- Keeping transmitting with high VSWR may cause the transceiver to be damaged. Stop transmitting immediately and check the antenna.
- If there is a broadcasting station, transmission station or other station with strong radio waves nearby, reception may not be possible due to suppression.
- When attaching the antenna to a vehicle, place it in a location that does not obstruct the driver's view.
- Tighten the screws securely, especially when replacing elements, because the screws in each part may loosen during driving.

● Overall view and part name



● Description

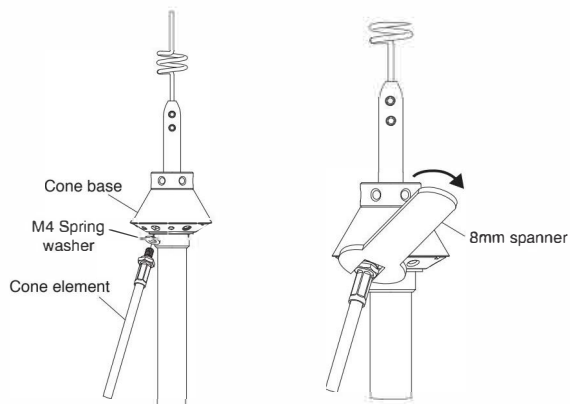
1. For reception 100-1600MHz wide band non-directional antenna. Available for transmitting for the range 144/440/1200MHz. (Amateur bands only)
2. The 144MHz adjustment element is included. It is possible to adjust the best resonance point depending on the installation conditions.
3. The D220S is designed as a mobile antenna but it is possible to use it as a fixed station antenna together with Diamond BK11 (Balcony Railing Bracket for installing a mobile antenna).

● How to assembly

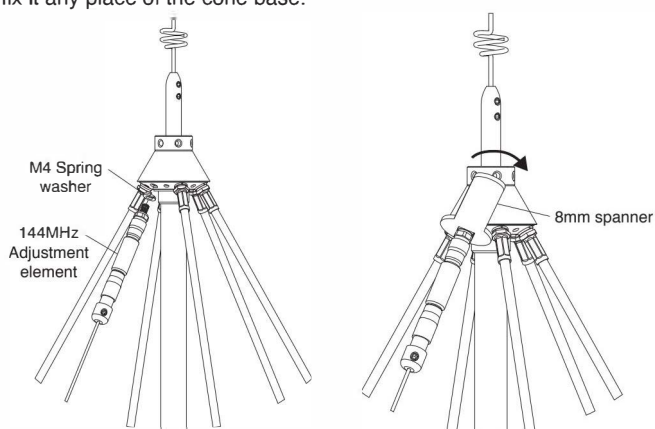
- ① Loosen two set screws (M4x3) by hexagonal wrench and put the top element to the end. Fasten two set screws firmly. Make sure if it is fixed. Nuts and screw can be loosened by vibration during driving.



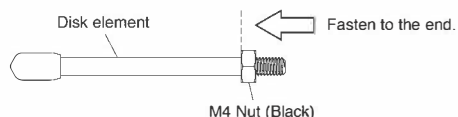
- ② Attach the cone element and M4 spring washer to the cone base. After setting by hand then fasten by 8mm spanner. (Don't apply too much torque.)
The rest of 4pcs cone element should be attached in the same way.



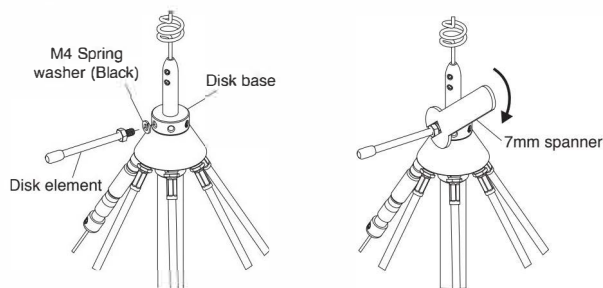
- ③ Put the M4 spring washer and the 144MHz adjustment element on the cone base. After setting by hand then fasten by 8mm spanner. It is possible to fix it any place of the cone base.



- ④ Attach the M4 nut (black) to the disk element. The nut should be fastened to the end of the screw.



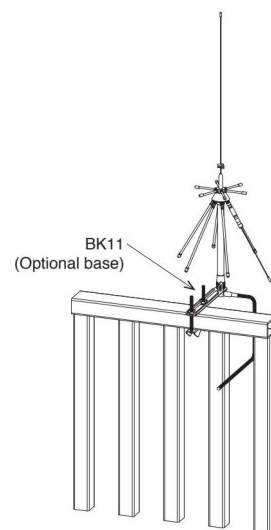
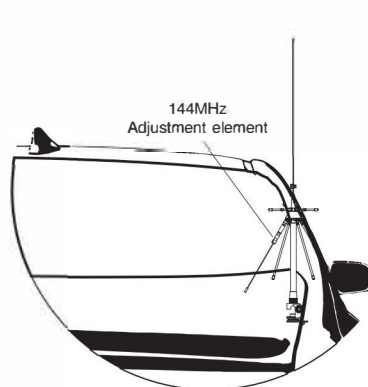
- ⑤ Attach the disk element and M4 spring washer (black) to the disk base. After setting by hand then fasten firmly by 7mm spanner. (Don't apply too much torque). The rest of 5pcs disk element should be attached in the same way.



● Installation

It is not necessary to use the antenna bracket as the grounding but fix the antenna bracket on the vehicle firmly.

It is possible to use the D220S as a fixed station antenna together with Diamond BK11 (Balcony Railing Bracket for installing a mobile antenna).



(ex) Installed on railing of the balcony.

⚠ Caution

The 144MHz adjustment element is made of stainless. For your safety, install it towards the vehicle as above drawing.

● Specifications

Receiving frequency range	100-1600MHz
Transmitting frequency range	144/440/1200MHz
Gain	2.15dBi (144/1200MHz) 3.4dBi (440MHz)
Impedance	50Ω
VSWR	Less than 1.5 (Amateur bands only)
Max. power rating	50W (FM)
Length	Approx. 70cm(27.6in)
Max. diameter	Approx. 23cm(9in)
Weight	Approx. 350g(0.77lb)
Connector	Type M (Plug)
Type	1/2λ (144MHz), 5/8λ (440MHz)

- Though these products purchased are manufactured under strict quality control, if damage is caused by transporting, ask your dealer promptly.
- Design and specifications of these products will be changed for future improvement without advance notice.