Amateur Radio Communication Antenna
3.5MHz High Performance Center Loading Mobile Antenna
(3.5-3.8MHz can be operated)

**HF80CL**
Fold over whip element structure

**Operation instructions**

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

HF80CL is for amateur use. Please transmit on the amateur bands.

**<Warning>**

To avoid inviting accidents, please follow the following notices.

1. Nuts and screws can be loosened by vibration during driving. Be sure to check those fastening devices from time to time and retighten if necessary.
2. Strong impact can cause to break the antenna and may invited accidents by falling the item. It is recommended to drive away from those obstacles such as branches.
3. Strong vibrations caused by diesel engines may damage the antenna. It is recommended to install the antenna at the location where has least vibrations as possible.
4. Touching the antenna during transmission may cause to electricity. Be sure to confirm to see if there in no one around the antenna if transmission is taking place while the car is parked.
5. Don’t drive a car with the antenna tilted. Driving the car with the antenna tilted may cause serious human accident.
6. To install the antenna, be sure to take those things such as local traffic regulations, and physical length of the car in account, and especially it has to be installed the location where is not easily reachable by people.
7. Adjust the antenna thoroughly on operating frequency before operation. Using unadjusted antenna may cause to damage transceiver.
8. If the thunder seems to rumbling the vicinity, do not touch the antenna and coaxial cable to avoid electrocution by lightning.
9. Select strong enough place to install the antenna to avoid damaging the car body falling the antenna.

**<Description>**

Center loading type that is high performance is employed in the HF80CL (length: 2.22m mobile antenna)
1. It is easy to adjust the frequency by changing the upper element. 3.5-3.8MHz can be operated.
2. Fold over whip element structure eliminates troublesome antenna detachament when the car is parked in your garage. Whip element section of the antenna can be tilted for desired direction by pull the element up and incline for any direction.

**Installation location**

Since this antenna is designed to install on car body only, VSWR of the antenna may not be lowered when it is installed on the place where has different grounding condition such as on balcony railings.

**<Parts number>**

The unit is consisted of the antenna following parts.

- Upper element (M68001)
- Set Screw (M4x4) (M68005)
- Loading coil (M68002)
- Set Screw (M4x4) (M68005)
- Lower element (M68003)
- Set Screw (M4x4) (M68005)
- Fold over section (in matching section)
- Matching section (M68004)

**<Assembly and Adjustment>**

1. Set the upper element in the upper part of the loading coil and fasten the set screw temporarily.
2. The element of HF80CL is adjusted to lower frequency of amateur band at initial condition. Please check the resonated frequency with SWR/power meter.
3. Calculate the difference between the resonated frequency and the desired frequency after confirming the resonated frequency. Referring to the below frequency change amount, calculate the element adjustment length. If the frequency is lower than the desired one, cut the element. If the frequency is higher than the desired one, set the element at higher position.

Frequency change amount: Approx. 11 KHz/cm

**<Attention>>**

- Do not touch the antenna during transmission to avoid electrocuting.
- Since VSWR of an HF antenna varies depending on installation locations, be sure to adjust at the place where the antenna is operated in practice.
- Adjustment has to be take place at the place where is no obstacles or power line, and where does not hinder other cars and pedestrians.
- Due to insufficient earth capacity correct adjustment can not be performed at the place where has vast space under the car such as on a bridge or in the multi-level parking lot.
- To avoid interfering other stations, adjustment has to be performed with least RF power and shortest time as possible.

**<Warning>>**

- Setscrew for the bracket must be connected to car body directly to have electrical interconnection. VSWR cannot be lowered if the bracket and car body are insulated.
- VSWR may not be lowered if installing the antenna at gutter mount or roof center where is away from car body. The place mounted with antenna bracket may get the rusty and make the rust-proof on it.
- Be careful not to have the waters into the car from the entrance of coaxial cable to the car.
- Wire the coaxial cable without any problem when driving.
- Don’t install antenna, bracket and coaxial cable at the place where is close to other wire, terminal box of the car; otherwise, fatal accident should happen.

**Fold over whip element structure**

1. Loosen the lock nut and pull up when turned down.
2. When setting up, raise the antenna vertically, set the element into the element holder, and fasten with lock nut.

**<Specifications>**

- **Frequency**: 3.5MHz (3.5-3.8MHz)
- **Max Power Rating**: 120W (SSB), 40W (FM)
- **Impedance**: 50Ω
- **VSWR**: Less than 1.5 (at resonated frequency)
- **Length**: 2.22m
- **Weight**: 590g
- **Connector Type**: M+J
- **Type**: 1/4 wave center loading

Though the product being purchased is 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.

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