

GRA-RPG

Operating Instructions for the GRA-RPG Antenna

This antenna is designed for amateur radio use. Only transmit on the licensed band frequencies to ensure compliance and safety.

Transmission and Equipment Safety: Avoid transmitting continuously at a high VSWR (Voltage Standing Wave Ratio), as this may damage your radio equipment. If you detect unusually high VSWR, stop transmitting immediately and seek assistance from your dealer.

Regular Maintenance: Nuts and screws may loosen due to extended use during driving. Regularly check these fasteners and tighten them as needed to assure proper operation.

Driving Precautions: Be aware of potential damage from strong impacts, which can break the antenna and cause accidents if it falls. Drive cautiously, especially near obstacles such as branches. Diesel engine vibrations can also damage the antenna; install it in a location with minimal vibration.

Safety During Transmission: Touching the antenna while it is transmitting can be dangerous. Ensure no one is near the antenna during transmission, especially when the car is parked.

Installation Guidelines: Use a robust and large bracket for antenna installation. Choose a location that minimizes the risk of damage to the car body in case the antenna falls. Ensure the antenna is installed within the car's total width and length, and in a spot where people do not frequently walk by and have access to it.

Antenna Performance and Safety Precautions: Before using the antenna, confirm that its performance is satisfactory. Poor performance can damage the transceiver. Avoid touching the antenna and coaxial cable during thunderstorms to prevent electrocution from lightning.

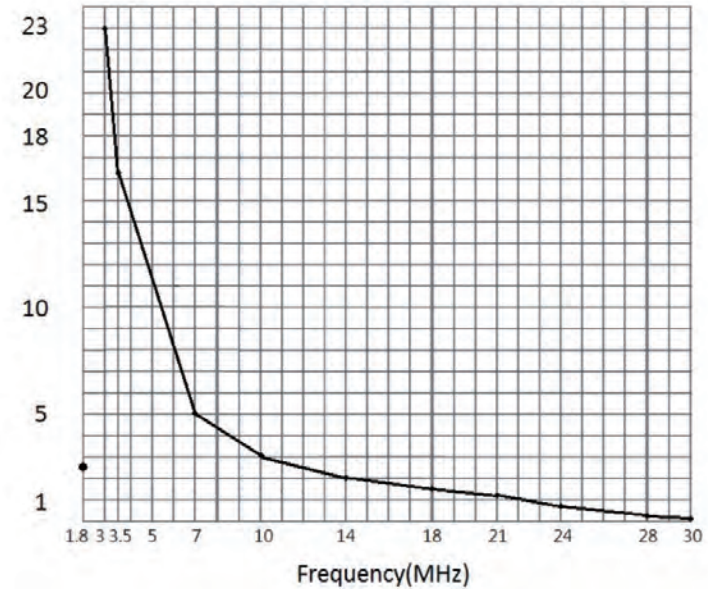
Cable Management and Driving Safety: Route the coaxial cable in a way that does not interfere with driving. Avoid placing the antenna, antenna bracket, or coaxial cable near other electrical circuit wiring or switch boxes to prevent fire hazards or electrocution. Adjusting the frequency while driving is hazardous; do not do it.

Installation of GRA-RPG: The antenna should be grounded to the car body, ensuring a solid connection to reduce the standing wave ratio. Avoid mounting the antenna close to other antennas or car bumpers, as this may adversely affect the VSWR. The GRA-RPG is a heavy and long antenna; select a sufficiently strong installation point.

Adjustment Instructions

1. Place the SWR power meter between the transceiver and receiver (for the HF band).
2. Adjust the radio to the operating frequency and set it to CW or FM mode (Power: below 10W).
3. Please refer to the image on page 2 left to pre-adjust the coil position for frequency tuning.
4. Be aware that there are no user-serviceable parts inside this antenna. Improper adjustment of the antenna coil top may result in damage to internal components, including breaking of the coil wire.
5. Do not use a high-pressure water jet to clean this product, as it may cause both cosmetic and substantial damage.

Measurement chart for tuning



This is a preliminary guide; specific adjustments might vary depending on the installation location. Fine-tuning is required.

Connector

The GRA-RPG antenna is available with two types of connectors: 3/8"-24 and UHF. Please ensure compatibility between the connector type and your equipment when making a purchase. In this manual, all illustrations and references are made using the 3/8"-24 connector as a standard example.

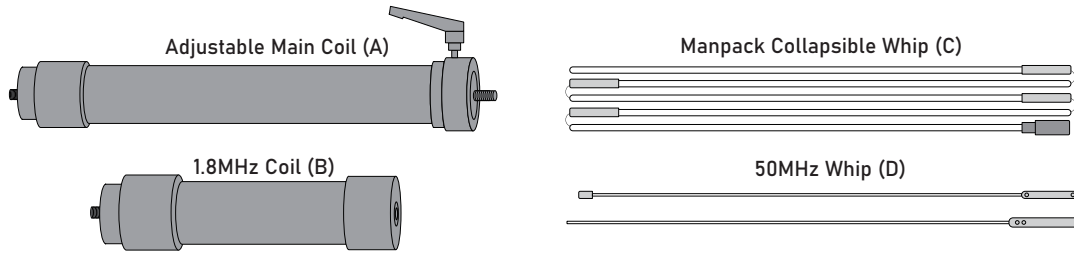


3/8"-24



UHF(PL259)

● **Parts Configuration**

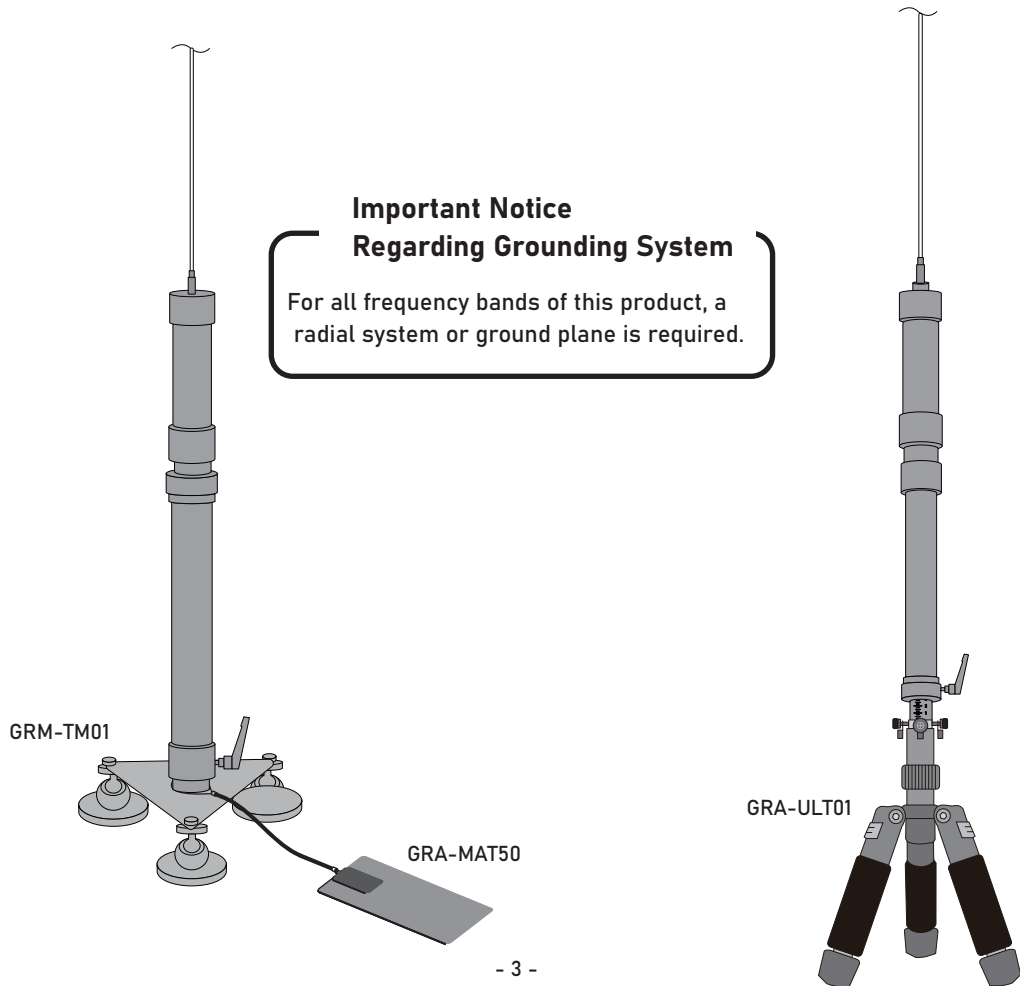


● **Parts List**

Adjustable Coil(A)	1	Manpack Collapsible Whip(C)	1
1.8MHz Coil(B)	1	50MHz Whip(D)	1

**Important Notice
Regarding Grounding System**

For all frequency bands of this product, a radial system or ground plane is required.



● **Adjustment Method**

To adjust for each frequency band, refer to the diagram on page 2 and move the coil up or down to the target position.

● **Frequency Band Adjustment Method**

1. To operate on the 1.8MHz frequency band, add the 1.8MHz coil set. Connect the main coil (A), the 1.8MHz additional coil (B), and the Manpack Collapsible Whip (C) in sequence from bottom to top. For all other frequency bands, you may remove coil (B).
2. Loosen the hand-screw on the coil (A), slide the coil, and refer to the frequency and scale chart on the page 2. Observe the SWR meter while matching the resonance point (optimal SWR point).
3. Use Whip (C) for 1.8MHz to 30MHz. For operating on 50MHz, please switch to Whip (D) and also retract coil (A) to its shortest length.

· Maximum Size of GRA-RPG: The total length of coil (A) extended to its maximum, plus coils (B) and (C), is approximately 320.5 cm / 126.18 inches.

