Comet GP-6

Comet GP-6 Dual-Band Base Antenna Instruction Manual

Model: GP-6

Introduction

The Comet GP-6 is a high-performance dual-band vertical antenna designed for amateur radio base stations. It operates on the 2-meter (144 MHz) and 70-centimeter (440 MHz) bands, providing reliable communication for both simplex and repeater operations. Constructed with a durable fiberglass radome and aluminum alloy hardware, the GP-6 is built to withstand various environmental conditions, ensuring long-term performance.

This manual provides essential information for the safe and effective installation, operation, and maintenance of your Comet GP-6 antenna.

Safety Information

Always prioritize safety during installation and operation. Failure to follow safety guidelines can result in injury or equipment damage.

- **Power Lines:** Never install the antenna near overhead power lines. Maintain a safe distance from all electrical wires.
- **Weather Conditions:** Avoid installation during lightning storms, strong winds, or other adverse weather conditions.
- **Stable Mounting:** Ensure the antenna is securely mounted to a sturdy mast or structure capable of supporting its weight and wind load.
- **Grounding:** Proper grounding of the antenna and mast is crucial for lightning protection and safe operation. Consult local electrical codes for grounding requirements.
- **Tools:** Use appropriate tools and wear protective gear, including gloves and eye protection, during installation.

Package Contents

Verify that all components are present before beginning installation:

- Comet GP-6 Dual-Band Vertical Antenna (two-piece fiberglass radome)
- Mounting hardware (clamp-on type)

- Assembly instructions (this manual)

Note: Coaxial cable and mast are not included and must be purchased separately.

Setup and Installation

Follow these steps for proper assembly and installation of your GP-6 antenna.

1. Antenna Assembly

1. Carefully unpack all components and inspect for any damage.
2. Connect the two sections of the fiberglass radome. Ensure they are securely joined according to the markings or design. The antenna is pre-tuned and does not require further adjustments.

2. Mounting Location

Select a mounting location that is as high as possible and clear of obstructions (buildings, trees, metal structures) to ensure optimal performance. Consider accessibility for future maintenance.

3. Mast Installation

The included clamp-on mounting hardware is compatible with mast diameters ranging from 1.25 to 2.5 inches. Ensure the mast is robust enough to support the antenna, especially in high wind conditions (up to 112 MPH).

- Attach the mounting brackets to the antenna base.
- Securely fasten the antenna to the mast using the provided clamps and hardware. Tighten all bolts firmly to prevent rotation or slippage.

4. Coaxial Cable Connection

The GP-6 features an SO-239 connector. Use a high-quality 50-ohm coaxial cable (e.g., LMR-400 for longer runs) with a PL-259 connector to connect the antenna to your transceiver.

- Connect the PL-259 connector of your coaxial cable to the SO-239 connector on the antenna.
- Apply weatherproofing (e.g., self-amalgamating tape, silicone sealant) to the connection point to prevent moisture ingress. The recessed design of the connector helps minimize water entry.
- Route the coaxial cable neatly and secure it to the mast at regular intervals to prevent strain and movement.

5. Grounding

Proper grounding is essential. Connect the antenna mast to an earth ground using heavy gauge wire and appropriate grounding rods. Consult local regulations for specific grounding requirements.

Image: The Comet GP-6 Dual-Band Base Antenna, showing its white fiberglass radome and mounting point. This image illustrates the antenna's overall appearance and how it might look when installed on a mast.

Operating Instructions

The Comet GP-6 is designed for straightforward operation once properly installed.

- **Frequency Bands:** The antenna operates on 2 meters (144-148 MHz) and 70 centimeters (440-450 MHz).
- **Power Handling:** The GP-6 can handle up to 200 watts SSB and 100 watts FM. Ensure your transceiver's output power does not exceed these limits.
- **SWR Check:** Before transmitting, always check the Standing Wave Ratio (SWR) using an SWR meter. The GP-6 is pre-tuned for low SWR across its operating bands. An SWR of 1.5:1 or lower is generally acceptable. High SWR can indicate an installation issue or damage and may harm your radio.
- **Omnidirectional Pattern:** The antenna provides a 360-degree omnidirectional radiation pattern, suitable for general coverage in all directions.

Maintenance

The Comet GP-6 is built for durability and requires minimal maintenance.

- **Periodic Inspection:** Annually inspect the antenna, mast, mounting hardware, and coaxial cable for any signs of wear, corrosion, or damage. Check for loose connections.
- **Weatherproofing:** Re-apply weatherproofing to the coaxial connector as needed, especially after severe weather.
- **Cleaning:** The fiberglass radome can be cleaned with a mild soap and water solution if it becomes dirty. Avoid abrasive cleaners.
- **Storm Preparation:** In areas prone to severe weather, consider temporarily lowering the antenna if possible, or ensure all mounting hardware is exceptionally secure.

Troubleshooting

If you experience issues with your GP-6 antenna, consider the following common troubleshooting steps:

Problem	Possible Cause	Solution
High SWR	◦ Loose or corroded coaxial connector ◦ Damaged coaxial cable ◦ Antenna element damage ◦ Proximity to metal objects	◦ Check and tighten all connections. ◦ Inspect coaxial cable for kinks or damage; replace if necessary. ◦ Visually inspect antenna for physical damage. ◦ Ensure antenna is clear of obstructions.
Poor Signal Reception/Transmission	◦ High SWR (see above) ◦ Incorrect antenna height or location ◦ Faulty transceiver or feedline	◦ Address high SWR issues. ◦ Optimize antenna height and clear line of sight. ◦ Test with a known good radio/cable.

If problems persist, contact Comet customer support or a qualified amateur radio technician.

Specifications

Feature	Specification
Model Number	GP-6
Frequency Bands	2M (144-148 MHz), 70cm (440-450 MHz)
Gain (VHF)	6.5 dBi
Gain (UHF)	9.0 dBi
Max Power (SSB)	200 Watts

Feature	Specification
Max Power (FM)	100 Watts
Impedance	50 Ohms
Connector Type	SO-239
Construction	Two-piece, UV-stabilized fiberglass radome
Wind Resistance	Up to 112 MPH
Mast Diameter Compatibility	1.25 to 2.5 inches
Product Dimensions	66 x 6 x 2 inches (approximate)
Item Weight	3.4 pounds

Warranty Information

Comet products are manufactured to high standards. This product is covered by a manufacturer's warranty against defects in materials and workmanship. The specific terms and duration of the warranty may vary by region. Please retain your proof of purchase for warranty claims.

For detailed warranty information, refer to the official Comet website or contact your local dealer.

Support

For technical assistance, installation questions, or further information regarding your Comet GP-6 antenna, please contact Comet customer support. Contact details can typically be found on the official Comet website or through your authorized dealer.

When contacting support, please have your product model number (GP-6) and proof of purchase available.