BTECH TB-320A

BTECH Nagoya TB-320A Tri-Band Antenna Instruction Manual

Model: TB-320A

1. Overview

The BTECH Nagoya TB-320A is a versatile 39-inch fold-over tri-band antenna designed for 2m/1.25m/70cm (144/220/440 MHz) amateur radio bands. It features a PL-259 mount and includes an NMO to UHF (SO-239) adapter for flexible installation. This antenna offers omni-directional signal reception and transmission, making it suitable for various communication needs. Its robust stainless steel construction and convenient fold-over design enhance durability and practicality.

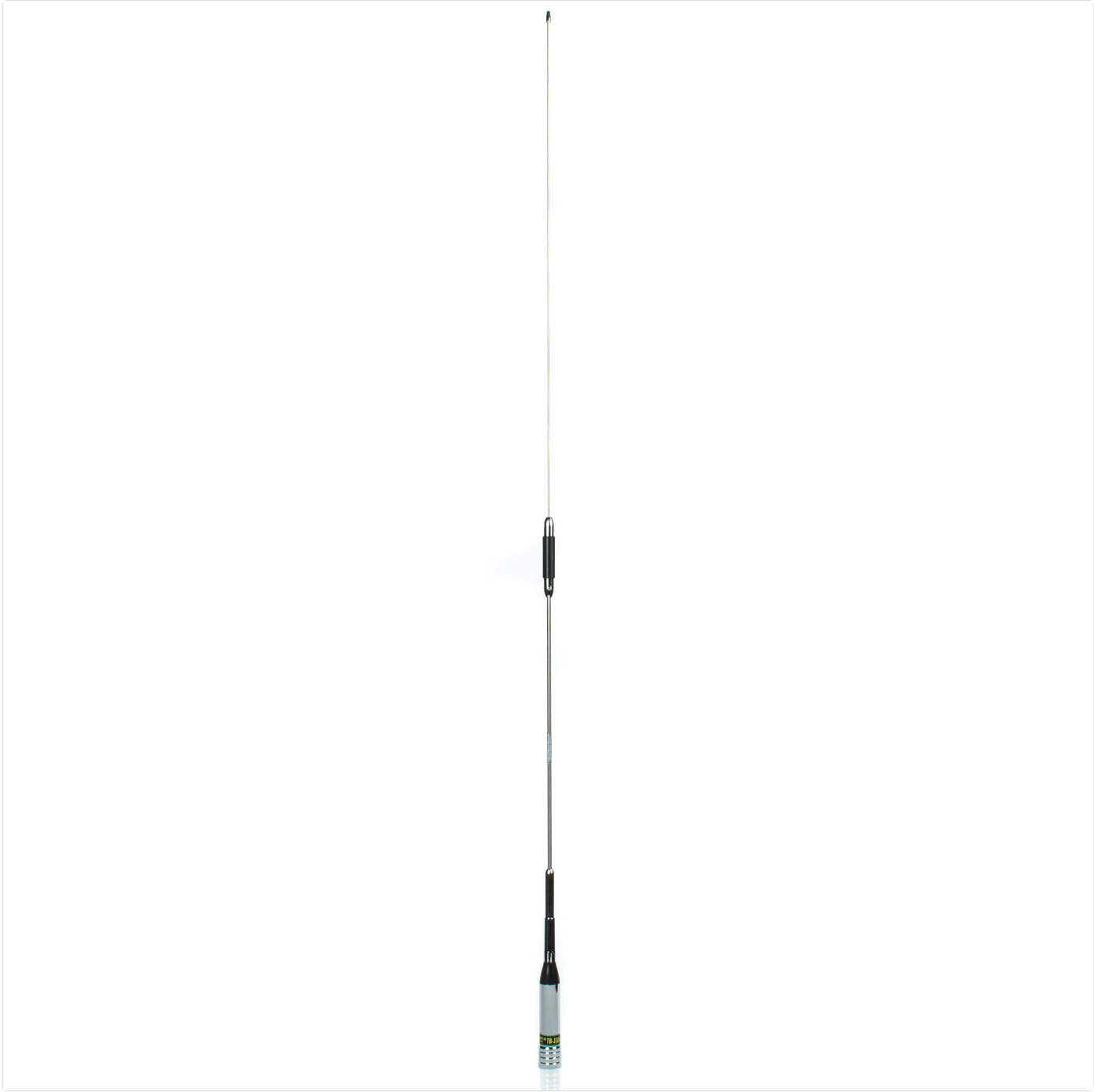

Figure 1: Nagoya TB-320A Tri-Band Antenna with PL-259/NMO Mount.

2. Product Features

- **Effortless Installation and Omni-Directional:** The Nagoya TB-320A is designed for easy setup, making it accessible even for those new to radio equipment. Its omni-directional capability ensures that it picks up signals from all directions, providing consistent and reliable communication. Measuring approximately 38.5 inches, this stainless steel antenna is both robust and efficient, striking a balance between size and performance.
- **Ready-to-Use with No Tuning Required:** One of the key advantages of the TB-320A is its readiness for immediate use for Amateur users, as it requires no additional tuning. This feature saves time and makes it a convenient choice for users who prefer a plug-and-play experience. It is ready to work on the 2 meter, 1-1/4 meter (220), and 70-cm amateur bands.
- **High-Quality Construction:** The antenna boasts a satin finish, enhancing its durability and aesthetic appeal. It also features a gold plunger-type contact pin, ensuring a superior and reliable connection, which is critical for maintaining consistent signal quality.
- **Convenient Fold-Over Design:** The TB-320A features a thoughtful fold-over design, allowing the antenna to be easily

lowered in environments where height is a constraint, such as parking garages or under low overhangs. This design aspect adds a level of practicality, particularly for vehicle-mounted setups, ensuring that the antenna can adapt to varying spatial limitations.

3. Setup

Proper installation is crucial for optimal performance of your Nagoya TB-320A antenna. This antenna is designed for mobile use, typically requiring a metallic surface (ground plane) for effective operation, such as a vehicle's roof or trunk lid.

3.1 Connecting the Antenna

1. Identify the antenna base connector. The TB-320A comes with a PL-259 connector.
2. If your radio or mount requires an NMO connection, use the included NMO to UHF (SO-239) adapter. Connect the PL-259 end of the antenna to the SO-239 side of the adapter, then connect the NMO side of the adapter to your NMO mount.
3. Ensure all connections are hand-tightened securely to prevent signal loss. Avoid over-tightening, which can damage the connectors.

Figure 2: Close-up of the TB-320A antenna base with PL-259 connector.

Figure 3: NMO to UHF (SO-239) Adapter.

3.2 Mounting the Antenna

For vehicle installations, mount the antenna on the highest possible metallic surface of your vehicle, such as the center of the roof or trunk. This provides the necessary ground plane for optimal performance. Route the coaxial cable carefully to avoid pinching or damage, ensuring it does not interfere with doors or windows.

Video 1: This video demonstrates connecting a Nagoya antenna (model UT-72G) to a handheld radio and discusses its performance. While the antenna model differs, the connection principles are similar and relevant for understanding general antenna setup.

4. Operating Instructions

The Nagoya TB-320A antenna is designed for immediate use on the 2 meter, 1-1/4 meter (220), and 70-cm amateur bands without requiring additional tuning. Once properly installed and connected to your radio, you can begin transmitting and receiving.

4.1 Using the Fold-Over Feature

The antenna features a convenient fold-over mechanism. To lower the antenna, gently push the antenna mast at the hinge point until it locks into the folded position. This is useful for clearing low obstacles such as garage entrances or tree branches. To return the antenna to its upright position, simply reverse the process, ensuring it locks securely into place for optimal performance.

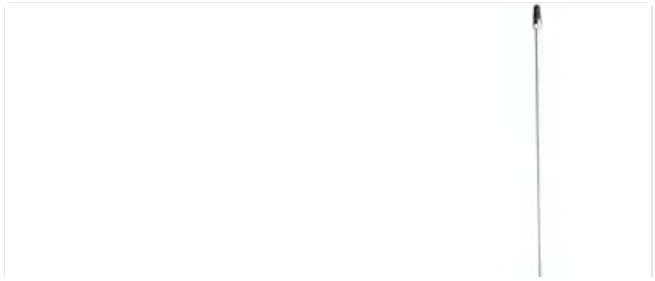

Figure 4: Nagoya TB-320A antenna in folded position.

5. Maintenance

Regular maintenance ensures the longevity and performance of your antenna.

- **Inspection:** Regularly inspect the antenna and its connections for any signs of wear, corrosion, or damage. Pay close attention to the coaxial cable for kinks or cuts.
- **Connections:** Ensure the PL-259 connector and any adapters are securely tightened. Loose connections can lead to signal degradation.
- **Cleaning:** Keep the antenna clean from dirt, dust, and debris, especially the fold-over mechanism, to ensure smooth operation. Use a soft, damp cloth for cleaning. Avoid harsh chemicals.
- **Environmental Factors:** In harsh weather conditions (e.g., heavy snow, ice, strong winds), consider folding down the antenna or removing it to prevent damage.

6. Troubleshooting

If you encounter issues with your antenna, consider the following troubleshooting steps:

- **Poor Reception/Transmission:**
  - Check all cable connections to ensure they are secure and free from damage.
  - Verify the antenna is properly mounted on a suitable metallic ground plane (e.g., a vehicle's metal roof or trunk).
  - Ensure your radio is set to the correct frequency and power output for the band you are operating on.
  - Test with a different antenna or radio if possible to isolate the problem.
- **Antenna Not Folding/Unfolding Smoothly:**
  - Inspect the fold-over mechanism for any obstructions or debris.
  - Clean the hinge area and apply a small amount of silicone lubricant if necessary.
- **High SWR (Standing Wave Ratio):**
  - High SWR indicates an impedance mismatch, which can reduce performance and potentially damage your radio.
  - Ensure the antenna is fully extended and locked in place.
  - Verify the coaxial cable is not damaged or kinked.
  - Confirm the antenna is mounted on an adequate ground plane.
  - While the TB-320A is pre-tuned, environmental factors or mounting location can affect SWR. If persistent, consult an experienced amateur radio operator.

7. Specifications

Specification	Value
Model Number	TB-320A
Brand	BTECH
Antenna Type	Radio Antenna

Specification	Value
Frequency Bands	2m/1.25m/70cm (144/220/440 MHz)
Length	Approximately 39 inches (38.5 inches)
Connector Type	PL-259 (UHF Male)
Included Adapter	NMO to UHF (SO-239)
Impedance	50 Ohms
Color	Black
Item Weight	10.4 ounces
Product Dimensions	24 x 1.5 x 3.5 inches (packaged)
UPC	722589229565
Manufacturer	BTECH

8. Warranty and Support

BTECH is a USA-based company committed to providing excellent local support for any issues that may arise with your product. As a brand focused solely on engineering and developing radio products, BTECH aims to offer high-quality radios and accessories with comprehensive features, backed by a real USA warranty and dedicated support.

For further assistance or to explore other BTECH products, please visit the official BTECH storeBTECH Store on Amazon.