



Model – 100W MagLoop

1. Introduction

Thank you for choosing the **Alpha Antenna 100W Magnetic Loop**. This compact, high-performance antenna is designed for HF operation, offering excellent portability and efficiency for amateur radio operators. Ideal for limited-space environments, field operations, and emergency communications.

2. Specifications

- **Frequency Coverage:** 10–40 meters (extendable with tuning)
 - **Power Handling:** 100W PEP SSB / 50W CW / 20W Digital & FM
 - **Antenna Type:** Magnetic loop
 - **Tuning Method:** Manual capacitor adjustment
 - **Connector:** SO-239
 - **Dimensions:** Approx. 36–40 inches loop diameter
 - **Weight:** ~5 lbs
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3. Package Contents

- Magnetic loop assembly
- Variable tuning capacitor housing with integrated tripod adapter
- Two support masts, coupler, and coax clips
- Coaxial feedline (optional)
- Quick-start guide

4. Safety Precautions ⚠

- **RF Safety:** Maintain at least 10 feet (3 meters) distance from the loop during Maximum Output for transmission.
 - **Weather:** Avoid operating outdoors in thunderstorms or heavy rain.
 - **Power Limits:** Do not exceed rated power to prevent capacitor damage.
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5. Assembly Instructions

1. **Unpack** all components and inspect for damage.
2. **Assemble and insert the masts** into the hole on the housing tuning box.
3. **Attach the loop** to the tuning capacitor housing using the provided connectors.
4. **Secure the housing** to a stable base or tripod.
5. **Connect coax** from your transceiver to the SO-239 connector on the Inner Loop.
6. **Ensure all connections** are tight.

See Figure 1 – Assembled Depictions on the last page.

6. Set up and Tuning

1. **Set up** the antenna in an open area, away from large metal objects.
2. **Set your tuner** into bypass mode.
3. **Select frequency** on your transceiver.
3. **Adjust power to 5W** before tuning and set mode to FM.
4. **Adjust the tuning knob** slowly while monitoring SWR.
5. **Fine-tune** until SWR is at its lowest point (ideally 1.9:1 or better).
6. **Transmit** using the least amount of power needed to accomplish contact.
 1. **This saves** battery life and maximizes operational safety.

7. Tips

- **Orientation Matters:** Rotate the loop for best signal reception or rejection of noise.
 - **Height:** Even 3–6 feet above ground can yield good results; higher may improve performance.
 - **Band Changes:** Retune each time you change frequency significantly.
 - **Portable Use:** Ideal for POTA, SOTA, field day, or emergency deployments.
 - **If SWR is high** across the band, check coax and connections.
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8. Maintenance

- Wipe down loop and housing after outdoor use.
 - Inspect coax connectors regularly for corrosion.
 - Store in a dry place when not in use.
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9. Troubleshooting

Issue	Possible Cause	Solution
High SWR	Poor tuning or bad feedline	Retune, check coax
Weak signals	Obstructions or low height	Relocate antenna to open space
High noise floor	Nearby electronics interference	Move away from noise sources

10. Warranty & Support

Your Alpha Antenna 100W Magnetic Loop is covered by a limited manufacturer warranty. For service, contact Alpha Antenna with proof of purchase.

11. Optional Assemblies

40-80 Meter Element: Rated at a maximum of 20W PEP SSB / 10W CW / 5W Digital.

- a) Connect the two longest elements (Default outer loop and Booster Cable) in series with the Barrel Connector.
- b) Form a double loop and secure it with the black nylon coaxial clips.
- c) Screw the PL-259s on either end of the double loop onto the two SO-239s on the tuning box.
- d) Then place one of the concentric outer loops into the top slot of the black Coax Mounting Clip with two slots and the other double loop into the bottom slot.

6, 2, 440MHz ADD-ON ELEMENT: Rated maximum of 100W PEP SSB / 50W CW / 10W Digital.

Video of assembly: <https://youtu.be/LJ0Hx0nHLXE>

- a) Remove the t-connector from the small inner feed loop.
- b) Re-connect the t-connector to the coax end that has a soldered pin in its' PL259.
- c) On the PL259 without the soldered center pin, attach the barrel connector of the 6M, 2M, 440MHz add-on element and form a single loop with these coaxial elements.
- e) secure the end of the add-on element to the coax of the inner loop using a nylon coax clip.
- f) Tune by sliding the element in and out of the nylon coax clip.

FIGURE 1 - Assembled Depictions

